Structure du capital et performance des entreprises familiales françaises introduites en bourse

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"Happiness lies in the joy of achievement and the thrill of creative effort"

Franklin D. Roosevelt

THESIS SUMMARY

This thesis aims to analyze the capital structure and performance of French family firms going public. From a sample of 90 family firms belonging to CAC All-Tradable from 2010 to 2013, we find that the capital structure of family firms is characterized by a low level of debt with a preference for short-term debt relative to long-term debt. Moreover, the capital structure of family firms is in line with the classical theories of financing, the hypothesis of market timing, the theory of optimal debt ratio and the pecking order theory. Then we analyze the short-term and long-term performance of French family firms going public through Initial Public Offerings. The results show the different expropriation techniques employed by the family firms' owners. On the initial public offering date, the majority of family firms' owners are simultaneously CEOs and Chairmen of boards of directors. After going public, the family firms' owners hold around 80% of the firms' cash flow rights and we observe that the difference between their cash flow rights and their voting rights has increased. First-day underpricing is around 2% which shows that family firms are almost fairly priced upon issuance. The family firms outperform the market index in the first three months of issuance and after the third year. We also find that the ownership and control rights change from pre- to post-IPO date explains the short-term and long-term performance unlike governance mechanisms.

Keywords: Corporate Governance, IPO, Firm Performance, Capital Structure, Family Firms.

RÉSUMÉ DE THÈSE

Cette thèse a pour objectif d'analyser la structure du capital et la performance des entreprises familiales Françaises qui s'introduisent en Bourse. A partir d'un échantillon de 90 entreprises familiales appartenant à l'indice CAC All-Tradable de 2010 à 2013, nous constatons que la structure du capital des entreprises familiales est caractérisée par un faible niveau d'endettement avec une préférence pour l'endettement à court terme par rapport au long terme. De plus, la structure de capital des entreprises familiales vérifie les théories classiques du financement, l'hypothèse de 'market timing', la théorie du ratio d'endettement optimal et de la théorie du financement hiérarchique. Ensuite, nous analysons les performances à court terme et à long terme des entreprises des entreprises familiales Françaises qui s'introduisent en Bourse. Les résultats montrent les différentes techniques d'expropriation employées par les propriétaires des entreprises familiales. A la date de l'introduction en bourse, la majorité des propriétaires des entreprises familiales sont à la fois les directeurs généraux et les présidents des conseils d'administration. Après l'introduction en bourse, les propriétaires des entreprises familiales détiennent environ 80% des droits des flux de trésorerie et nous constatons que la différence entre leurs droits aux flux de trésorerie et leurs droits de vote a augmenté. La sous-évaluation au premier jour est voisine de 2%, ce qui révèle que les entreprises familiales sont correctement évaluées lors de l'émission. Les entreprises familiales surperforment l'indice de marché dans les trois premiers mois de l'émission et après la troisième année. Nous trouvons aussi que le changement des droits de propriété et de contrôle avant et après l'introduction en Bourse explique les performances à court et à long terme contrairement aux mécanismes de gouvernance.

Les Mots Clés : Gouvernance des Entreprises, Introduction en Bourse, Performance, Structure de Capital, Entreprises Familiales.

CHAPITRE 1: LA STRUCTURE DU CAPITAL DES ENTREPRISES FAMILIALES

1. INTRODUCTION

Ampenberger et al. (2013) expliquent que le « puzzle de la structure du capital » (choix de l'entreprise d'une structure de capital optimale), reste l'un des grands problèmes non résolus dans la littérature de l'économie financière. De nombreux travaux de recherche ont été menés en essayant d'expliquer la théorie de la structure du capital à partir de différents points de vue depuis 1958. Modigliani et Miller (1958), considérés comme les pères de la théorie de la structure du capital, ont été les premiers à présenter un théorème expliquant la décision de l'entreprise de lever des capitaux.

Une théorie majeure dans la structure du capital, est la théorie statique ou la « théorie de l'arbitrage ». Cette théorie remonte à Kraus et Litzenberger (1973) et a été plus tard développée par Miller (1977). Elle suppose l'existence d'un ratio d'endettement ciblé où le coût marginal d'une unité supplémentaire de la dette (c'est-à-dire les coûts de détresse financière), est égal aux bénéfices marginaux d'une unité supplémentaire de la dette (c'est-à-dire le bouclier fiscal de la dette). La deuxième grande théorie de la structure du capital est la « théorie d'ordre hiérarchique » qui a été fondée sur une perspective dynamique des opportunités d'investissement et les asymétries d'information. La théorie a été proposée par Donaldson (1961) et modifié par Myers et Majluf (1984). Elle suppose que, d'abord, les entreprises préfèrent financer des opportunités de croissance avec des fonds internes (disponibles de flux de trésorerie à partir des bénéfices non répartis) sur la délivrance des titres de créance ou de participations, puis, en second lieu, préfèrent émettre des titres de créance sur les titres de participation, et, en troisième, préfèrent émettre des titres de participation. Leland et Pyle (1977) ont porté sur les aspects de signalisation derrière la décision de la structure du capital. Alternativement, Fama (1980), Berger et al. (1997) et Masulis (1988) ont porté sur les perspectives de l'aversion au risque dans la détermination des décisions de la structure du capital, tandis que Harris et Raviv (1988), Stulz (1988) et Ellul (2008) ont porté sur les considérations relatives au contrôle des entreprises, où ils ont principalement discuté le risque de prise de contrôle. En outre, Baker et Wurgler (2002) ont soulevé la théorie des problèmes de synchronisation de marché mentionnant que, à différents moments, différentes possibilités peuvent se poser pour financer la croissance, soit par emprunt, soit par actions, en fonction du coût de chaque option. Jensen et Meckling (1976), Easterbrook (1984) et Jensen (1986) ont discuté le coût de l'agence comme un déterminant efficace de la théorie de la structure du capital.

Le coût de l'agence a toujours été un point focal pour de nombreux chercheurs dans le domaine de la finance d'entreprise, qui de nombreuses théories ont été établies sur. Selon de nombreux aspects importants tels que les environnements juridiques et des droits la protection des investisseurs, la fiscalité d'un pays, les systèmes économiques et bien d'autres, les coûts d'agence varient en conséquence. Par conséquent, dans des circonstances différentes, les gestionnaires ont réagi différemment et ont adopté des politiques différentes pour atténuer les coûts d'agence, ce qui a eu des répercussions sur les décisions en matière de structure du capital de leurs entreprises. Néanmoins, malgré les recherches généralisées menées sur la théorie de la structure du capital couverte de plusieurs aspects et perspectives, les chercheurs ne convergent pas sur les déterminants finis de la structure du capital ultime, qui reste énigmatique spécifiquement dans le contexte des entreprises familiales. En outre, l'asymétrie de l'information impose son poids sur les investisseurs, qui cherchent plus hautes normes de transparence en temps de fraudes sophistiquées et innovantes qui, malheureusement, de nombreux gestionnaires et les vérificateurs indépendants, parfois se sont impliquées dans (par exemple, Enron, Arthur Andersen, Worldcom, Parmalat, etc.). En conséquence, les actionnaires sont de plus en plus conscients de la nécessité de scruter et d'inspecter les états financiers des établissements, les notes complémentaires aux états financiers, et tous les rapports publics en raison de scandales d'entreprises récents résultant des pertes énormes qui sont liés principalement soit à des problèmes d'agence ou d'asymétries d'information. En conséquence, dans ce chapitre, nous allons essayer d'analyser à la fois la théorie de l'agence et la théorie de l'asymétrie de l'information en tant que déterminants de la structure du capital des entreprises familiales Françaises.

2. REVUE DE LA LITTÉRATURE ET HYPOTHÈSES

2.1. La Théorie de l'Agence et le Financement de la Dette

Ampenberger et al. (2013) affirment que la littérature et les résultats empiriques sur la théorie du financement et la structure du capital des entreprises familiales sont brêfs et peu concluants. En raison de nombreux scandales financiers qui ont été associés au problème de l'agence, les entreprises ont adopté un large éventail de mécanismes de gouvernance pour atténuer son impact et ses coûts financiers. Financement de la dette à travers toutes ses exigences en matière de processus et de surveillance a été trouvé pour être l'un des principaux mécanismes de gouvernance et donc eu un impact sur les décisions des entreprises. Ci-dessous, nous allons discuter les principales théories de la littérature qui suggèrent la relation entre l'entreprise familiale et le niveau de la dette.

2.1.1. Théorie de l'Agence et le Niveau Bas de la Dette dans le Cas des Entreprises Familiales

– ***L'aversion au risque des entreprises familiales:*** Jensen et Meckling (1976), Fama (1980), et Grossman et Hart (1982) affirment que les gestionnaires des entreprises familiales préfèrent un levier financier bas parce qu'il réduit le risque de faillite et protège leur capital humain qui est sous diversifié. Les propriétaires des entreprises familiales sont bien conscients que, en augmentant la dette, le risque financier sera considérablement augmenté qui va augmenter la volatilité de leurs entreprises, surtout dans les moments difficiles.

– ***La perte de contrôle des entreprises familiales:*** Mishra et McConaughy (1999) ont constaté que les entreprises familiales ont un niveau de dette significativement plus faible que les entreprises non familiales parce que les fondateurs des entreprises familiales craignent de perdre contrôle de leurs entreprises à la suite d'une détresse financière grave ou dans le cas de dépôt de bilan, au cours de laquelle les détenteurs de titres d'emprunt peuvent prendre contrôle de leurs entreprises.

– ***Le contrôle efficace de la propriété de la famille:*** Friend et Lang (1988), Jensen et al. (1992) et Holderness et Sheehan (1988) trouvent que le ratio de la dette est lié négativement à la propriété managériale. Selon la théorie de l'agence, les créanciers de prestations de surveillance éventuellement augmentée quand il y a l'absence d'actionnaires véritables et efficaces des représentants sur le conseil d'administration de l'entreprise, qui ne peuvent pas exercer les tâches de surveillance à proximité de la gestion de cabinet, et quand les agents se comportent pour leur propre intérêt plutôt que les intérêts des actionnaires. Donc, dans les entreprises familiales où les fondateurs des entreprises sont présents et impliqués dans la gestion des entreprises, le rôle de détenteurs de titres d'emprunt diminue et le niveau de la dette diminue ainsi.

2.1.2. Théorie de l'Agence et le Niveau Supérieur de la Dette dans le Cas des Entreprises Familiales

– ***L'expropriation et l'enracinement par les propriétaires des entreprises familiales:*** Shyu et Lee (2009) soutiennent que généralement dans les entreprises familiales, les actionnaires principales utilisent des droits de contrôle excédentaires à affaiblir la capacité des mécanismes de contrôle interne qui pourrait survenir par l'intermédiaire de porteurs de capitaux propres supplémentaires et la présence des membres indépendents représentants sur le conseil d'administration, contraignant leur enracinement et leur activité d'expropriation. Quand il y a une séparation significative entre la propriété et le contrôle au sein des entreprises familiales, et, par conséquent, la possibilité d'extraction de la richesse à l'esprit, le niveau d'endettement plus élevé pourrait être un mécanisme efficace pour conserver le contrôle et l'expropriation des actionnaires minoritaires.

– ***Le risque de perdre le contrôle de leurs entreprises:*** Stulz (1988) avance que les entreprises ayant un actionnaire de contrôle doivent présenter supérieur effet de levier financier, car elle augmente leurs droits de vote. Kim et Sorenson (1986) et Ugurlu (2000) montrent qu'une entreprise avec une forte concentration de propriété par les initiés familiaux est associée à un niveau d'endettement plus élevé.

– ***Les flux de trésorerie mécanisme disciplinaire pour les propriétaires des entreprises familiales:*** Jensen (1986) soutient que les actionnaires préfèrent un endettement plus élevé, car il réduit le problème de surinvestissement, notamment dans des entreprises ayant des flux de trésorerie disponibles. En conséquence, les propriétaires des entreprises familiales peuvent obtenir un financement de la dette dans une tentative pour améliorer le comportement de leurs dépenses et donc établir une gestion des flux de trésorerie stable.

– ***Le marché du contrôle des sociétés et de la menace pour les propriétaires des entreprises familiales:*** De nombreuses études (Harris et Raviv, 1988; Stulz, 1988, et John et Litov, 2010) trouvent une relation forte entre l'endettement des entreprises et l'activité sur le marché du contrôle.

Dans ce chapitre, nous allons suivre la méthode présentée par Jensen et Meckling (1976) et Fama (1980), qui ont discuté que les gestionnaires des entreprises familiales préfèrent un levier financier bas parce qu'il réduit le risque de faillite. En outre, nous allons également suivre Mishra et McConaughy (1999), qui ont constaté que les entreprises familiales utilisent un niveau bas de la dette, car ils craignent de perdre le contrôle de leurs entreprises à la suite d'une détresse financière grave. En conséquence, nous allons tester les deux hypothèses suivantes:

Hypothèse 1: Dette et propriété d'initié sont liés négativement.

Hypothèse 2: la dette et la propriété institutionnelle sont liés négativement.

2.2. La Théorie de l'information asymétrique et le financement de la dette

Tout d'abord, nous allons expliquer le modèle de Flannery (1986) en expliquant la relation entre la théorie de l'asymétrie de l'information et le financement de la dette. Dans ce modèle, les hypothèses suivantes ont été amorcées: deux entreprises qui sont équivalents, et ont une valeur actuelle nette (VAN) positive et des informations privées, mais un type est plus risqué que l'autre. Dans ce modèle, les entreprises avec des informations privées favorables sont désignées comme ceux ayant des projets à faible risque, alors que les entreprises avec des informations privées défavorables sont désignées comme ceux qui ont des projets à haut risque. Il est également supposé que les deux types d'entreprises auront besoin de financement de la dette pour leurs projets. À la fin d'une période, les créanciers apprennent si les projets ont été améliorés ou non. Entreprises avec des informations privées favorables ont une plus forte probabilité de mise à niveau de leurs projets que ceux avec des informations défavorables. Les entreprises avec des informations privées défavorables sont prêtes à payer un taux élevé de la dette à long terme pour éviter des coûts attendus en roulant sur la dette à court terme. Les créanciers peuvent déduire une partie de ce qui était initialement informations privées d'une entreprise, et de l'utiliser dans l'attribution des notes de risque. Donc, ils attribuent des notes de risque inférieurs à des entreprises qui choisissent de dette à court terme, et des notes de risque supérieur à ceux qui choisissent la dette à long terme.

Deuxièmement, le modèle de Diamond (1991) a également étudié la relation entre l'asymétrie d'information et le financement de la dette, bien que d'un point de vue différent. Le modèle de Diamond diffère du cel de Flannery que les entreprises ne sont pas équivalentes et que pas tous les projets ont un VAN positive. Les entreprises ont des informations privées que leurs projets ont un VAN positive ou négative, qui ne seront pas révélés aux créanciers. Les créanciers ne peuvent pas observer si les projets ont un VAN positive ou négative, mais ils sont capables pour attribuer des notes de risques initiaux sur la base d'autres différences d'observation. Mais de façon similaire à cel de Flannery, les créanciers apprennent si les projets ont été mis à jour à la fin d'une période. Parce que certains de ces projets ont un VAN négative, les créanciers peuvent refuser de refinancer la dette à court terme à la fin d'une période, créant un risque de liquidité pour les entreprises de la dette à court terme. En conséquence, les entreprises avec des informations privées favorables et défavorables aux notes de risque faibles ou intermédiaires peuvent choisir dette à court terme, alors que les entreprises avec des informations privées favorables avec des notes de risque intermédiaires peuvent choisir dette à long terme.

Troisièmement, Rajan (1992) met l'accent sur le pouvoir de négociation d'une entreprise demandant le financement de la dette. Lorsque le pouvoir de négociation d'une entreprise est faible, l'entreprise tend à préférer les prêts à long terme, même si elle doit payer des intérêts plus élevés parce que, en vertu du financement bancaire à court terme, la banque dispose d'un droit explicite à renégocier les termes du contrat. L'auteur explique que dans le financement bancaire à long terme, la renégociation a lieu seulement si la banque abandonne une partie de son contrôle des loyers. Les entreprises à faible pouvoir de négociation préfèrent le financement à long terme pour empêcher de rouler la dette à court terme, et de limiter ainsi le financement de la banque. L'inverse vaut pour les entreprises à fort pouvoir de négociation.

Beaucoup d'autres études empiriques également précisaient les mesures de l'asymétrie d'information, indépendamment du fait que l'information privée est favorable ou défavorable. Par exemple, Barclay et Smith (1995) constatent que les entreprises avec des valorisations plus faibles, les dépenses de recherche et de développement plus élevés, et plus le potentiel de croissance ont tendance à émettre plus de dette à court terme, en accord avec l'idée que plus les asymétries d'information sont associées à plus courte échéance. De même, Ortiz-Molina et Penas (2008) trouvent que les petites entreprises, qui, sont susceptibles d'être relativement opaques, ont tendance à faire usage de plus la dette à court terme.

3. ÉCHANTILLON, DONNÉES ET MÉTHODOLOGIE

3.1. Échantillon

Dans ce chapitre, nous visons à fournir des preuves supplémentaires sur les théories de la structure de capital et d'analyser l'effet d'une multitude de variables sur la structure du capital des entreprises Françaises et nous allons également tester la différence dans la structure du capital entre les entreprises familiales et non familiales en France. Notre échantillon est constitué d'entreprises cotées sur l'indice CAC All-Tradable. La plateforme Bloomberg est la source des données. Nous avons effectué une recherche intensive et recueilli de l'information pour chaque entreprise individuellement. Si aucune information ne se trouve, nous excluons la société de la recherche. Le test d'hypothèse ne soit pas mené sur les données mensuelles de séries chronologiques; plutôt, nous avons transformé les données de séries chronologiques dans les données transversales faisant la moyenne des valeurs de chacune des variables de 2008 à 2013 pour chaque entreprise. Par conséquent, le test d'hypothèse a été menée sur la valeur moyenne par mois par variable par entreprise (Buferna et al., 2005). L'indice CAC All-Tradable inclus 330 entreprises à la date de sélection, cependant, après l'exclusion du secteur financier, notre étude a été menée sur 293 entreprises (dont 90 sont des entreprises familiales et 203 sont des entreprises non familiales).

3.2. Statistiques Descriptives

Notre échantillon est composé de 293 entreprises, 203 sont des entreprises non familiales (NFF) et 90 sont des entreprises familiales (FF).

Tableau 1: Comparaison de la structure de propriété

Structure de Propriété	**Entreprise Familiale (Moyenne)**	**Entreprise Non-Familiale (Moyenne)**	**Résult**

Pourcentage des initiés actions en circulation	27.73	2.86	>0***
Pourcentage d'actions institutionnelles en suspens	14.70	32.04	<0***

Comme le montre, le pourcentage moyen des initiées actions en circulation pour les entreprises familiales et les entreprises non familiales cotées sont 27,73% et 2,86% respectivement. Le pourcentage moyen d'actions institutionnelles en suspens pour la famille et les entreprises non familiales est de 14,7% et 32,04% respectivement. Cela montre à quelle structure mesure de propriété diffère entre les entreprises familiales et non familiales de en termes d'initié et la propriété institutionnelle. Les entreprises familiales ont beaucoup plus de concentration de la propriété d'initié à partir des propriétaires des entreprises familiales qui ont des droits de flux de trésorerie élevés. Cependant, les entreprises familiales ont une structure de propriété institutionnelle beaucoup plus faible par rapport à des entreprises non familiales, qui peut être attribuée à plusieurs raisons, surtout à la crainte de perdre le contrôle par les propriétaires de la famille entreprises, et la crainte de mécanismes de surveillance plus strictes actionnaires institutionnels utilisent habituellement chaque fois qu'ils sont présents dans les conseils des entreprises. Inversement, les entreprises non familiales ont beaucoup plus faible propriété d'initié en raison de la grande dispersion et la structure diffuse parmi beaucoup plus grand nombre d'actionnaires, et en raison de la présence d'actionnaires institutionnels supérieurs qui reçoivent habituellement des sièges au conseil d'administration des sociétés d'administration, mais ne concernent pas directement dans La direction de l'entreprise.

Tableau 2: Distribution des variables de la dette dans les entreprises familiales par industrie

Industrie	**Médiane dette totale**	**Poids**	**Médiane dette-capitaux propres**	**Poids**	**Médiane % des emprunts à court terme de la dette totale**	**Médiane % des emprunts à long terme de la dette totale**	**Emprunts à court terme% -Emprunts à long terme%**
Les matériaux de base	161	12%	0.51	10%	15%	24%	-9%
Communications	81	6%	0.42	8%	8%	11%	-3%
Consommation cyclique	119	9%	0.58	12%	17%	16%	1%
Consommateurs, non cyclique	298	23%	0.35	7%	9%	8%	1%
Énergie	484	37%	2.31	46%	20%	60%	-40%
Industriel	122	9%	0.67	13%	16%	18%	-2%
La technologie	48	4%	0.20	4%	6%	7%	-1%
Moyenne pondérée	**136**	**100%**	**0.46**	**100%**	**11%**	**13%**	**-2%**

Tableau 3: Distribution des variables de la dette dans des entreprises non familiales par industrie

Industrie	Médiane dette totale	Poids	Médiane dette-capitaux propres	Poids	Médiane % des emprunts à court terme de la dette totale	Médiane % des emprunts à long terme de la dette totale	Emprunts à court terme% - Emprunts à long terme%
Les matériaux de base	301	4%	0.38	10%	9%	18%	-9%
Communications	365	5%	0.35	9%	6%	4%	2%
Consommation cyclique	800	10%	0.84	21%	11%	23%	-12%
Consommateurs, non cyclique	565	7%	0.63	16%	9%	27%	-18%
Énergie	4,810	62%	0.51	13%	8%	23%	-15%
Industriel	761	10%	0.87	22%	10%	28%	-18%
La technologie	95	1%	0.34	9%	7%	9%	-2%
Moyenne pondérée	**648**	**100%**	**0.61**	**100%**	**9%**	**20%**	**-11%**

Tableaux 2 et 3 permettent une comparaison de la structure de capital par branche entre les entreprises familiales et non familiales. Nous avons décidé d'utiliser la médiane plutôt que la moyenne pour éliminer l'effet de la valeur aberrante sur notre analyse. Le passif total médian dans les entreprises non familiales est d'environ 4 fois le médian des engagements totaux des entreprises familiales, qui pourrai être expliqué par la plus grande taille des entreprises non familiales et le besoin plus élevé de financement. Le ratio médian dette-capitaux propres par entreprise dans les entreprises familiales est beaucoup plus faible que dans les entreprises non familiales, ce qui indique que les entreprises non familiales ont tendance à compter sur la dette de financement plus que les entreprises familiales. En particulier, toutes les entreprises ont tendance à compter de manière significative sur les emprunts à long terme plus les emprunts à court terme dans presque toutes les industries. Cependant, par rapport aux entreprises non familiales, les entreprises familiales utilisent plus les emprunts à court terme et moins emprunts à long terme.

Les tableaux ci-dessous représentent les tests les plus importants pour l'hypothèse alternative des différences de moyens entre les entreprises familiales et non familiales pour diverses variables de la structure du capital et de contrôle à 1% (***), 5% (**) et 10% (*) des niveaux de signification. Le tableau 4 montre la taille des deux types d'entreprises. En utilisant trois définitions distinctes pour la taille (capitalisation boursière actuelle, le total des actifs et le capital total), le t-test indique que les entreprises familiales Françaises sont beaucoup plus petites que les entreprises non familiales Françaises au niveau de 1%, qui auront une incidence sur la structure du capital des entreprises comme nous le verrons.

Tableau 4: Comparaison par taille de l'entreprise

Taille de l'entreprise	Entreprise Familiale Moyenne	Entreprise Non-Familiale Moyenne	Résult
La capitalisation boursière actuelle	1,465	4,342	< 0***
L'actif total	1,924	10,397	< 0***
Capital total	1,965	7,091	< 0***

Le tableau 5 montre la comparaison de la structure du capital des deux types d'entreprises. Pour définir la structure du capital des entreprises, nous avons inclus le total du passif, les emprunts à court terms, les emprunts à long terme, les emprunts à court term pour le total du passif, les emprunts à long term pour le total du passif, le ratio total de la dette, le ratio de la dette aux capitaux propres, dette à long terme sur le capital total, passifs à cour terme aux passifs à long terme, le coût de la dette, le coût des capitaux propres. Le t-test indique que les entreprises familiales Françaises ont des niveaux significativement plus faibles de la dette que les entreprises non familiales au niveau de 1%. Les chiffres de la dette des entreprises sont en milliers d'euros.

Tableau 5: Composition du Structure du Capital

La Structure du Capital	Entreprise Familiale Moyenne	Entreprise Non Familiale Moyenne	Résult
Le passif total	1,233	6,989	<0***
Les emprunts à court terme	16	105	<0***
Les emprunts à long terme	234	1,973	<0***
Les emprunts à court terme pour le total du passif	12	10	>0**
Les emprunts à long terme pour le total du passif	16	24	<0**
Ratio total de la dette	33	29	<>0**
Ratio de la dette aux capitaux propres	40.34	61.10	<0***
Dette à long terme sur le capital total	13.99	21.92	<0***
Passifs à court terme aux passifs à long terme	1.61	2.25	=0***
Le coût de la dette	1.82	2.12	<0***
Coût des capitaux propres	9.69	10.97	<0***

Nous constatons que le passif total moyen des entreprises familiales est significativement plus petit que cel des entreprises non familiales au niveau de signification de 1%. Les emprunts à court terme et à long terme dans les entreprises familiales sont moins que celles des entreprises non familiales. Cela peut être dû au fait que la taille des entreprises familiales est plus petite que celle des entreprises non familiales. Les entreprises familiales ont un pourcentage plus élevé de dette à court terme au passif total et un pourcentage inférieur des emprunts à long terme pour le total du passif au niveau de signification de

5%. Proportionnellement, les entreprises familiales ont un pourcentage de la dette portant intérêt plus faible par rapport aux entreprises non familiales, ce qui se reflétera dans le coût d'emprunt. Les pourcentages de l'emprunt pour le total du passif impliquent que les entreprises familiales Françaises tentent d'emprunter sur une base à court terme par rapport au passif total plus que les entreprises non familiales. Cela va en ligne avec les conclusions de Bevan et Danbolt (2002) qui rapportent que la taille et la dette à court terme sont corrélées négativement, tandis que la taille et la dette à long terme sont corrélées positivement. En outre, lorsqu'on compare la proportion du total des fonds levés par les porteurs d'obligations à des fonds totaux soulevées par les détenteurs d'actions capturés par le ratio dette-capitaux propres, nous remarquons que les deux types d'entreprises avaient une moyenne inférieure à 1,00, ce qui signifie que les détenteurs d'actions sont la principale source de financement qui est cohérent avec les conclusions de Gallo et Vilaseca (1996). Nous remarquons que le coût de la dette des entreprises familiales est significativement inférieur à cel des entreprises non familiales au niveau de 1%, et le coût des capitaux pour les entreprises familiales est également plus faible que cel des entreprises non familiales au niveau de 1% aussi. Par conséquent, le coût moyen pondéré du capital des entreprises familiales est presque inférieure à celle des entreprises non familiales.

4. RÉSULATATS DES REGRESSIONS ET INTERPRÉTATIONS

Après avoir effectué le test d'hypothèse et avoir un aperçu sur les principales composantes de la structure du capital des entreprises familiales Françaises, nous allons tenter d'expliquer la structure du capital des entreprises familiales Françaises qui comptaient 90 entreprises par l'intermédiaire d'un modèle de régression linéaire multiple. Nous avons présenté trois types d'estimations de régression qui sont les MCO communs, "entre" des estimations aussi appelé le modèle à effets aléatoires, et "dans" estimations a également évoqué le modèle à effets fixes.

La propriété interne semble avoir une faible relation positive avec le niveau de la dette et en particulier la dette à court terme, car presque toutes les estimations significatives sont positives et ont la même petite ampleur. Cependant, la propriété d'initié ne semble pas affecter le pourcentage de dette à long terme ou le pourcentage de dette à court terme puisque les estimations sont proches de 0. La relation positive entre le pourcentage des actionnaires initiés et la dette à court terme pourrait être expliquée par le fait que la dette à court terme peut atténuer les problèmes d'agence. Comme toute tentative par les actionnaires pour extraire la richesse de détenteur de titres d'emprunt est susceptible de restreindre l'accès des entreprises à la dette à court terme dans l'avenir immédiat (Buferna et al., 2005). Cette relation peut être due aux effets controversés de la propriété d'initié, l'effet négatif de l'enracinement et de l'effet d'alignement positif. Cependant, les résultats concernant l'effet de la propriété institutionnelle sur la performance de l'entreprise sont très robustes et indiquent clairement la relation négative entre la surveillance et le niveau de la dette. Cette relation pourrait être expliquée par le fait que plus le pourcentage d'action institutionnelle en suspens, le moins nécessaire devient le rôle de surveillance et de réglementation de la dette dans les entreprises familiales. Cela est particulièrement le cas puisque les entreprises familiales ne souffrent pas beaucoup de coûts d'agence en raison des niveaux élevés de propriété d'initié qui distingue les entreprises familiales et donc ne nécessitent pas un niveau élevé de la dette pour surveiller les actions des gestionnaires.

En ligne avec la théorie de l'arbitrage et de la théorie d'ordre hiérarchique, l'état que les entreprises rentables ont beaucoup bénéfices et donc un besoin moindre pour le financement externe et donc la dette, et l'hypothèse de market timing retenu, de plus en plus l'entreprise familiale Française ne compte pas sur l'endettement pour financer leurs investissements. Titman et Wessels (1988) et de Rajan et Zingales (1995) prouvent la relation négative entre le niveau de la dette et la croissance dans les pays développés comme la France. En outre, les entreprises avec des options de croissance ont des coûts plus élevés de détresse financière (Rajan et Zingales, 1995) et par conséquent devraient avoir une dette inférieure. L'asymétrie d'information est positivement liée au niveau de la dette sans effet remarquable sur leur échéance comme prévu. Selon Gugler et al. (2008), les entreprises familiales sous-investissent en raison de problèmes d'asymétrie d'information et donc aura un faible besoin de financement externe.

Grâce à notre analyse, les résultats concernant l'effet de la performance sur la préférence du gestionnaire de la dette sont importants et très robuste. En outre, l'effet du ratio de distribution sur la maturité de la dette a été significatif. Ceci pourrait être expliqué par la variété des hypothèses éprouvées sur l'effet négatif et positif de dividendes sur l'effet de levier. Les résultats démontrent clairement une relation négative entre le ratio de distribution du dividende et de la dette à long terme, et une relation positive entre le ratio de distribution du dividende et de la dette à court terme.

CHAPITRE 2: LA PERFORMANCE À COURT TERME DES ENTREPRISES INTRODUITES EN BOURSE

1. INTRODUCTION

Une offre publique initiale (IPO) est un processus long et complex impliquant une incertitude élevée (Daily et al., 2003) qui se traduit par la transformation d'une entreprise d'une société privée é une société cotée en bourse, permettant aux entrepreneurs, employés, investisseurs en capital risque, et d'autres investisseurs d'encaisser leurs investissements (Yang et al., 2011). En raison de leurs importances pour l'entreprise, les introductions en bourse ont été l'objet de recherches de la gestion depuis les années 1960 (Reilly et Hatfield, 1969) et largement couverts par la littérature théorique et empirique (Peterle, 2013). Les entreprises cherchent de multiples avantages à rendre publique, et ces motivations sont influencées par la structure de propriété, la taille et l'âge de l'entreprise, et par l'environnement institutionnel et réglementaire du pays d'accueil (Bouzouita, Gajewski et Gresse, 2015). Ces avantages comprennent, entre autres, la réalisation de la croissance, la résolution des problèmes de succession, cherchant à profiter des périodes haussières, l'amélioration de la surveillance externe, le renforcement du pouvoir de négociation avec les créanciers, l'augmentation de la liquidité du titre, l'augmentation de capital de réputation et social, et le partage de risque des investisseurs.

La sous-évaluation de l'IPO, qui mesure la performance de l'IPO au court terme, est définie comme la différence entre le prix de l'offre au prix du marché, ce qui représente la valeur intrinsèque des actions. La littérature financière concernant les performances des IPO a documenté deux anomalies que de nombreux chercheurs ont tenté d'observer et d'expliquer de différentes perspectives et théories. À court terme, la sous-évaluation est observée après la première journée de négociation (Ibbotson, 1975), tandis que dans le long terme, généralement de un à cinq ans plus tard, la sous-performance est observée pour la plupart des introductions en bourse (Ritter, 1991).

Ljungqvist (2005) a documenté que l'asymétrie de l'information entre les investisseurs et les émetteurs est un facteur clé de tels sous-évaluation. L'ampleur de la sous-évaluation représente le niveau d'incertitude associé aux investissements (Ritter, 1984). Particulièrement, McDonald et Jacquillat (1974) ont montré l'existence de la sous-évaluation de 31 nouvelles introductions en bourses Françaises sur la période 1968-1971 lors de leur cote officielle sur le marché secondaire. Le rendement ajusté marché a été calculé selon l'indice CAC40 et était égal à 3% sur le premier jour, de 4,42% dans la première semaine et de 5% dans le premier mois après la date de l'IPO. En outre, dans une étude sur 131 IPOs Françaises entre 1983 et 1986, Husson et Jacquillat (1990) ont rapporté que le rendement moyen initial ajusté marché était de 4%. Derrien et Womack (2003) ont documenté une sous-évaluation de 9,5% en France, de 1992 à 1998. En outre, Derrien et Degeorges (2001), basés sur un échantillon de 243 introductions en bourse sur la période 1991-1998, ont trouvé un rendement initial moyen de 17,5%. De même, Ginglinger et Faugeron-Crouzet (2001), dans un échantillon de 292 introductions en bourse entre 1983 et 1994, ont trouvé un rendement moyen de 18,67%. Bouzouita, Gajewski et Gresse (2015) ont aussi constaté une sous-évaluation sur le marché Français pour les entreprises introduites en bourse.

Dans cette thèse, nous allons étudier les mécanismes de gouvernance des entreprises familiales Françaises lors de leur émission sur les sous-évaluations. Nous allons essayer d'observer les droits de propriété et de contrôle pour les fondateurs des entreprises, les initiés non familiaux et les actionnaires publics sur les dates pré et post-IPO, et leurs effets sur la performance à court terme.

2. REVUE DE LA LITTÉRATURE ET HYPOTHÈSES

2.1. La Sous-Evaluation des Entreprises Familiales et Propriété

Une étude récente suggère que les pratiques améliorant l'efficacité dans les entreprises familiales telles que l'engagement d'objectifs à long terme et le développement du capital humain (Bertrand et Schoar, 2006) sont plus forts que ceux des entreprises non familiales. L'absence de conflit d'intérêts entre les propriétaires et les gestionnaires dans les entreprises familiales serait très apprécié à la fois par le souscripteur et les investisseurs et donc pourrait conduire à une sous-évaluation inférieure sous l'hypothèse que la sous-évaluation est en quelque sorte le prix que les entreprises doivent payer pour faire l'introduction en bourse réussir d'une part, et d'autre part, est ce que les investisseurs reçoivent en acceptant de prendre des risques et d'investir dans des introductions en bourse.

Hypothèse 1: Il existe une relation négative entre le niveau de la propriété de la famille et de l'IPO sous-évaluation.

2.2. IPO sous-évaluation et les mécanismes de gouvernance des entreprises familiales

Filatotchev et Bishop (2002) ont constaté que les investisseurs pré-commercialisation sont susceptibles de payer des prix plus élevés pour les actions des entreprises familiales lorsque les émetteurs adoptent de bonnes pratiques de gouvernance d'entreprise.

- Fondateur - Directeur Général au moment de l'introduction en bourse

Malgré le grand impact le fondateur peut avoir sur une sous-évaluation, le test de l'effet du statut fondateur et directeur général sur la sous-évaluation est assez inexploré et montre des résultats ambigus (Daily et Dalton, 1992).

Hypothèse 2: Il existe une relation négative entre la présence d'un fondateur-directeur général et la sous-évaluation IPO.

- La dualité du Directeur Général / président du conseil d'administration

La dualité du Directeur Général / président du conseil d'administration peut réduire l'efficacité de la surveillance par le conseil d'administration et prévoit la possibilité de se bénéficier plus que la société (Salancik et Pfeffer, 1977). Certaines études rapportent que cette dualité peut entraîner l'abus de pouvoir par un Directeur Général / président du conseil d'administration (Daily et Dalton, 1993).

Hypothèse 3: Il existe une relation négative entre la dualité de la position Directeur Général / président du conseil d'administration de l'entreprise et de la sous-évaluation IPO dans les entreprises familiales.

- La taille du conseil d'administration

La taille du conseil d'administration a été suggérée comme un facteur important lié au contrôle de l'entreprise et a été étudié dans de nombreux articles. Cependant, les résultats de ces études ont été mixtes. Dans les entreprises familiales, l'effet de la taille du conseil d'administration sur la performance de l'IPO est encore incertain.

- La nomination d'administrateurs indépendants

Jensen (1993) a suggéré que le conseil peut surveiller sa firme de plus près et prendre les mesures de gouvernance appropriées si il est suffisamment petit, mais avec suffisamment d'administrateurs indépendants pour assurer un suivi efficace. Anderson et Reeb (2004) ont constaté que les intérêts des actionnaires minoritaires sont mieux protégés lorsque les administrateurs indépendants ont plus de pouvoir par rapport à détenteurs de blocs de la famille.

Hypothèse 4: Il existe une relation négative entre la proportion d'administrateurs indépendants et la sous-évaluation dans les entreprises familiales.

- <u>La propriété des membres du conseil d'administration</u>

Beatty et Zajac (1994) ont trouvé une relation négative entre la propriété des membres du conseil d'administration et le niveau de surveillance. Les auteurs ont conclu que l'augmentation de leur propriété se traduira par une plus faible proportion d'administrateurs externes et une structure de direction unitaire.

Hypothèse 5: Il existe une relation négative entre la participation de membres du conseil et la sous-évaluation pour les entreprises familiales.

Hypothèse 6: Il y a une forte relation entre la sous-évaluation et la partie du capital retenue par le fondateur.

- <u>La dualité des classes des actions de sociétés familiales</u>

Lorsque les fondateurs ou leurs familles utilisent des mécanismes de renforcement du contrôle pour créer un fossé entre leurs flux de trésorerie et les droits de contrôle, la valeur de l'entreprise est réduite. Claessens et al. (2002) et Cronqvist et Nilsson (2003) ont trouvé des effets de valorisation positifs associés à des augmentations des droits de flux de trésorerie, et des effets négatifs à des droits de contrôle au-delà des droits de flux de trésorerie.

- <u>Le capital détenu par le fondateur</u>

De nombreux auteurs ont mis en évidence l'association entre le niveau du capital retenu par les initiés et la valeur de l'entreprise. Du point de vue de la théorie de l'agence, en raison des risques d'expropriation, un haut niveau de capital détenu par le fondateur peut être associé à des risques plus élevés d'expropriation des droits des minorités, et dans de telles circonstances, les investisseurs potentiels vont acheter des actions uniquement lorsque qu'ils sont gravement sous-évalués. Pourtant, du point de vue de la théorie du signal, plus les propriétaires / dirigeants sont confiants quant aux perspectives futures de la société, plus ils conservent une forte proportion du capital. Cette confiance permet de réduire l'incertitude des investisseurs du marché secondaire (Certo et al., 2001a), résultant en une réduction de la sous-évaluation.

3. ÉCHANTILLON, DONNÉES ET MÉTHODOLOGIE

3.1. Échantillon

Nous avons extrait toutes les entreprises de l'indice CAC All-Tradable à l'exception des sociétés financières (SIC 6000-6999) qui sont soumis à des réglementations juridiques particulières. Notre choix de l'indice CAC All-Tradable a été pris pour poursuivre le travail accompli dans chapitre 1, en utilisant le même échantillon de la plateforme Bloomberg et parce que nous avions besoin d'une référence large et représentatif à comparer nos résultats. Notre échantillon final est constitué de 86 entreprises familiales Françaises sur 107 entreprises familiales cotées de 1994 à 2013. Nous avons également extrait les prix quotidiens de l'indice et de chaque entreprise dans notre échantillon en utilisant Thomson Reuters Datastream, ainsi que les prix d'offre, les dates et le nombre d'actions émises. Le reste des données ont été recueillies manuellement auprès du prospectus de chaque entreprise.

3.2. Mesure de la sous-évaluation

Dans notre thèse, nous allons mesurer la performance de l'IPO à court terme en se référant à la déclaration initiale ajustée pour le rendement de l'indice de marché.

$$\mathrm{U}\,m = \frac{\mathrm{EP} - \mathrm{OP}}{\mathrm{OP}} - \frac{\mathrm{I1} - \mathrm{I0}}{\mathrm{I0}} = \frac{\mathrm{EP}}{\mathrm{OP}} - \frac{\mathrm{I1}}{\mathrm{I0}} \text{ or } \mathrm{U}\,m = \ln\left(\frac{\mathrm{EP}}{\mathrm{OP}}\right) - \ln\left(\frac{I1}{I0}\right)$$

EP désigne le prix d'équilibre de l'IPO qui est le prix de clôture au jour n (au jour 1, au jour 2, etc.) et OP désigne le prix d'offre de l'IPO. I1 désigne le prix de clôture de l'indice au jour n (au jour 1, au jour 2, etc.) et I0 désigne le prix d'ouverture de l'indice le jour de l'introduction en bourse de l'action.

3.3. Statistiques Descriptives

Le nombre d'offres totales pour les entreprises familiales qui ont appartenu à l'indice CAC All-Tradable de 1994 à 2013 qui répondent à nos critères énoncés ci-dessus sont 86 entreprises et celles-ci sont réparties entre sept industries: (1) les matériaux de base; (2) les communications; (3) la consommation cyclique; (4) la consommation, non cyclique; (5) l'énergie; (6) les industriels; et (7) la technologie. Le montant brut est basé sur le nombre d'actions émises à la date de l'IPO fois le prix d'offre. Le total du produit brut relatif était égal à 2,316.3 millions d'euros pour les 86 entreprises familiales Françaises, ce qui rend un produit moyen par entreprise de 26,9 millions d'euros. Cette moyenne est considérée comme extrêmement faible par rapport à une société Française, ou à d'autres sociétés Européennes, qui sont en moyenne de 1,058.2 millions d'euros et 580,8 millions d'euros par entreprise (Torstila, 2001).

Tableau 6: Statistiques descriptives du sous-évaluation

Variable	Moyenne	Médiane	Minimum	Maximum	Quartile Infér.	Quartile Supér.	Gamme	Écart type	Asymétrie
UP_1d	1.92%	0.00%	-12.56%	30.86%	-0.61%	1.11%	43.42%	6.74%	2.59
UP_2d	7.30%	1.51%	-16.39%	61.57%	-0.46%	16.38%	77.97%	12.09%	1.43
UP_3d	15.00%	5.50%	-17.61%	405.99%	-0.19%	20.06%	423.61%	45.50%	7.65
UP_4d	17.94%	6.32%	-16.08%	406.15%	-0.14%	23.46%	422.23%	46.72%	6.96
UP_5d	18.96%	10.11%	-18.96%	408.62%	0.51%	24.12%	427.58%	47.41%	6.76
UP_10d	26.58%	13.56%	-16.20%	394.34%	1.12%	35.22%	410.54%	50.67%	4.86
UP_15d	29.63%	13.35%	-26.27%	381.13%	2.95%	38.81%	407.40%	54.34%	3.68
UP_30d	35.16%	13.00%	-28.98%	682.84%	0.00%	37.52%	711.82%	87.29%	5.38

Up_1d, UP_2d, UP_3d, etc. réfèrent à la sous-évaluation mesurée après 1 jour, 2 jours, 3 jours, etc. de l'émission. Nous remarquons que, en moyenne, les 86 entreprises familiales Françaises ont été valuées très équitablement parce que la sous-évaluation au premier jour était en moyenne de 1,92%, avec une médiane de 0,00%, et un quartile inférieur et supérieur de -0,61% et 1,11%, respectivement. Globalement, ces chiffres nous amènent à croire que les entreprises familiales étaient presque au juste prix le jour de leur émission, et donc il ne devrait pas être une grande préoccupation de la part des principaux actionnaires de ces entreprises sur l'argent laissé sur la table car aucune grande sous-évaluation avait eu lieu lors de leur émission. Ici, nous pouvons supposer que la présence de la famille dans la gestion de ces entreprises et dans le conseil d'administration et d'être les principaux actionnaires, empêche leurs entreprises de la sous-évaluation profonde, qui est généralement commis par les souscripteurs à favoriser leurs principaux clients, faciliter l'introduction en bourse et réduire le risque de l'émission, comme vu précédemment. Cependant, on constate que dans les jours suivants, et jusqu'à le premier mois de l'émission, une période de modes rapides a été créée l'augmentation de la sous-évaluation moyenne de 1,92% sur le premier jour de l'émission à 35,16% le trentième jour de l'émission. Cette augmentation rapide et forte des rendements IPO peut être expliquée par l'optimiste forte des investisseurs et les spéculateurs exigeant d'acquérir des actions IPO pour la recherche de rendements élevés à court terme.

Tableau 7: Statistiques descriptives pour le control et propriété

Variable	Statistiques Descriptives (Suppression des données manquantes)								
	Moyenne	Médiane	Min	Max	Quartile Infér.	Quartile supér.	Gamme	écart-type	Asymétrie
%_CF_FF_Pre-IPO	74.9%	76.3%	12.7%	100.0%	58.4%	96.6%	87.3%	23.0%	-65.3%
%_CF_Others_Pre-IPO	25.1%	23.7%	0.0%	87.3%	3.4%	41.6%	87.3%	23.0%	65.4%
%_CF_Public_Pre-IPO	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.6%	0.1%	927.4%

%_VO_FF_Pre-IPO	76.2%	79.2%	12.7%	100.0%	63.8%	97.4%	87.3%	22.7%	-82.8%
%_VO_Others_Pre-IPO	23.8%	20.8%	0.0%	87.3%	2.6%	36.2%	87.3%	22.7%	82.9%
%_VO_Public_Pre-IPO	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.6%	0.1%	927.4%
%_CF_FF_Post-IPO	62.3%	63.9%	10.3%	98.3%	47.7%	79.1%	88.0%	20.8%	-39.7%
%_CF_Others_Post-IPO	18.2%	17.0%	0.0%	65.4%	3.0%	26.7%	65.4%	16.4%	76.5%
%_CF_Public_Post-IPO	19.6%	18.2%	0.0%	50.6%	10.0%	26.0%	50.6%	11.8%	60.4%
%_VO_FF_Post-IPO	66.9%	68.8%	10.3%	98.3%	50.9%	84.6%	88.0%	21.0%	-61.6%
%_VO_Others_Post-IPO	17.9%	16.5%	0.0%	65.4%	2.6%	26.3%	65.4%	16.8%	86.4%
%_VO_Public_Post-IPO	15.3%	13.5%	0.0%	50.6%	6.7%	21.3%	50.6%	10.8%	110.2%
Chge_Dif_CF_VO_FF	3.3%	2.1%	-6.4%	17.1%	0.0%	5.5%	23.5%	4.1%	106.1%
FF_%_CF_Chge	-16.2%	-16.9%	-51.1%	94.6%	-25.0%	-9.5%	145.7%	17.4%	295.5%
FF_%_VO_Chge	-11.0%	-10.7%	-50.2%	149.1%	-17.7%	-5.1%	199.3%	20.9%	519.1%
Dif_CF_VO_Public	-4.3%	-2.9%	-15.5%	0.0%	-8.5%	0.0%	15.5%	4.5%	-68.1%
CF_Board_Pre-IPO	78.5%	85.5%	0.1%	100.0%	66.8%	97.6%	99.9%	23.4%	-137.9%
CF_Board_Post-IPO	64.4%	66.3%	0.1%	98.3%	53.4%	79.3%	98.2%	21.9%	-78.9%
Board_CF_Change	-18.3%	-17.3%	-47.7%	1.4%	-25.0%	-10.0%	49.1%	11.5%	-56.6%

% _CF_FF_Pre-IPO et% _CF_FF_Post-IPO: Pourcentage des droits de flux de trésorerie pour les propriétaires des entreprises familiales à la date de pré-introduction en bourse et post-IPO jour.
% _CF_Others_Pre-IPO et% _CF_Others_Post-IPO: Pourcentage des droits de flux de trésorerie pour les autres, tels que les banques d'investissement, les administrateurs et les employés non familiaux à la date pré-IPO et sur post-IPO jour.
% _CF_Public_Pre-IPO et% _CF_Public_Post-IPO: Pourcentage des droits de flux de trésorerie pour les actionnaires publics sur pré-IPO date et sur la date post-IPO.
% _VO_FF_Pre-IPO et% _VO_FF_Post-IPO: Pourcentage des droits de vote pour les propriétaires des entreprises familiales à la date de pré-introduction en bourse et post-IPO jour.
% _VO_Others_Pre-IPO et% _VO_Others_Post-IPO: Pourcentage des droits de vote pour les autres, tels que les banques d'investissement, les administrateurs et les employés non familiaux à la date pré-IPO et sur post-IPO jour.
% _VO_Public_Pre-IPO et% _VO_Public_Post-IPO: Pourcentage des droits de vote pour les actionnaires publics sur pré-IPO date et sur la date post-IPO.
Chge_Dif_CF_VO_FF: variation de la différence entre les droits de flux de trésorerie et des droits de vote pour les propriétaires des entreprises familiales.
FF _% _ CF_Chge: propriétaires pourcentage des flux de trésorerie des entreprises familiales du changement droite.
FF _% _ VO_Chge: les propriétaires des entreprises familiales de pourcentage voter changement droite.
Dif_CF_VO_Public: différence entre le bien des flux de trésorerie et de droit de vote pour les actionnaires publics.
CF_Board_Pre-IPO et CF_Board_Post-IPO: FLUX DE TRÉSORERIE droit de propriété pour les membres du conseil d'administration sur les pré-IPO date et le post-IPO jour.
Board_CF_Change: la trésorerie Changer droit pour les membres du conseil d'administration de pré-date post-IPO.

Nous avons remarqué une différenciation nette entre les droits de flux de trésorerie donnés aux porteurs de parts des entreprises et des droits de vote. Nous rappelons que les droits de flux de trésorerie sont soumis à des créances résiduelles de la société, y compris tous les types de dividendes, le bénéfice et les pertes selon le pourcentage des droits de flux de trésorerie chaque investisseur détient à leur égard au total des droits de flux de trésorerie accordées pour tous les actionnaires. Toutefois, les droits de vote accordés pour les entreprises familiales pour les initiés et pour les actionnaires publics dépendent des entreprises de statuts internes décidées par le conseil d'administration. Ces droits de vote peuvent alors être totalement différents entre ces deux types d'actionnaires, même en présence d'un nombre égal des droits de flux de trésorerie accordées pour les deux types. Le pourcentage de droits de flux de trésorerie des propriétaires de l'entreprise familiale avant l'introduction en bourse a une moyenne de 74,9% et une médiane de 76,3%, un quartile inférieur et supérieur de 58,4% et 96,61% et un écart type de 22,97%. Cela montre clairement que les propriétaires des entreprises familiales et leurs descendants contrôlent strictement l'entreprise en ayant les droits de trésorerie relativement élevé. Pourtant, tous ces pourcentages se baissent après l'IPO. Le pourcentage de la moyenne et la médiane des droits de flux de trésorerie des propriétaires de l'entreprises familiales après l'introduction en bourse a enregistré 62,3% et 63,9%. Ces chiffres ne révèlent pas grand-chose sans les comparer à, et en regardant, la variation en pourcentage des droits de vote pour les propriétaires de l'entreprise familiale, qui se baisse de 11% et de 10,7% pour la moyenne et la médiane, respectivement. Ainsi, la diminution moyenne en pourcentage des droits de flux de trésorerie a enregistré 16,2% tandis que celle des droits de vote enregistré de 11%. Cela signifie qu'en moyenne, les propriétaires des entreprises familiales ont eux-mêmes bénéficié de l'introduction en bourse en se consacrant davantage de droits de vote par rapport à leurs droits de flux de trésorerie. En conséquence, la séparation entre les droits de flux de trésorerie et les droits de vote a empiré depuis l'introduction en bourse.

Tableau 8: Les statistiques descriptives sur les mécanismes de gouvernance

Variable	**Statistiques descriptives - Valide N = 86**								
	Moyenne	**Médiane**	**Min**	**Max**	**Quartile Infér.**	**Quartile supér.**	**Gamme**	**écart-type**	**Asymétrie**
Offering_Price	17.23	16.65	1.88	51.83	8.00	24.39	49.95	9.77	0.60
Board_Size	4.67	4.00	3.00	11.00	3.00	6.00	8.00	1.82	1.20
%_Independent	20.5%	16.7%	0.0%	66.7%	0.0%	37.5%	66.7%	22.8%	58.6%
Separation_Shares	0.67	1.00	0.00	1.00	0.00	1.00	1.00	0.47	-0.76
CEO/Chair Duality	0.77	1.00	0.00	1.00	1.00	1.00	1.00	0.42	-1.29
CEO_Founder	0.80	1.00	0.00	1.00	1.00	1.00	1.00	0.40	-1.55
High_Tech	0.22	0.00	0.00	1.00	0.00	0.00	1.00	0.42	1.37
Age	16.9	12.5	0.9	187.0	5.8	20.7	186.1	22.1	5.7

Le tableau 8 montre que les prix moyens et médians des entreprises sont 17,23 € et 16,65 €, avec un quartile inférieur et supérieur de 8 € et 24,39 €, respectivement. Cela montre que le prix de l'action le plus préférable pour émission de nouvelles actions est entre la gamme modeste de 8 € et 25 € pour des préférences de liquidité. Nous remarquons que la moyenne et le médian de la taille du conseil d'administration de l'entreprise familiale est 4,67 et 4,00, respectivement, avec un minimum et un maximum de 3 membres et 11, respectivement. Cela nous indique que, en moyenne, les entreprises familiales Françaises ont un conseil de taille réduite par rapport à une entreprise Française ou Européenne. Cela peut être dû au refus des entreprises familiales d'augmenter la taille du conseil d'administration en comprenant des administrateurs professionnels et indépendents qui peuvent exercer des activités de surveillance supplémentaires sur ces entreprises. Ceci est également montré dans le pourcentage d'administrateurs indépendants, qui a une moyenne de 20,5% et une médiane de 16,7% avec un quartile inférieur et supérieur de 0% et 37,5%, respectivement. Le pourcentage d'administrateurs indépendants des entreprises familiales Françaises est également inférieur à la moyenne pour une entreprise Française.

Comme le montre, 67% des entreprises familiales Françaises ont séparation des actions, ce qui est clairement considéré comme une tentative d'exproprier la richesse des actionnaires minoritaires. Les propriétaires des entreprises familiales favorisent considérablement leurs intérêts tout au long de l'émission par l'attribution de droits de vote double à eux-mêmes, leurs descendants et parents directs. Cela va certainement exacerber la séparation entre les droits de flux de trésorerie et les droits de vote et de détruire l'image de l'intégrité des entreprises envers le public.

En outre, environ 77% des entreprises familiales Françaises ont leurs dirigeants qui occupent le poste de président du conseil d'administration sur le jour de l'IPO. Ceci est aussi une autre méthode de contrôle que les propriétaires des entreprises familiales exercent fortement au cours de leurs entreprises. D'une part, le côté négatif de telle action est lié à l'expropriation des actionnaires minoritaires à travers le contrôle direct et l'influence des décisions du conseil d'administration de l'entreprise et de la direction de la firme de l'opération quotidienne. D'autre part, le côté positif de telle action est la meilleure communication entre les membres de la direction et les membres du conseil d'administration par le biais d'une personne, ce qui peut améliorer les performances de l'entreprise comme de nombreux chercheurs conviennent. Cependant, après les nombreux scandales les marchés financiers ont été témoins au cours des dernières décennies, en particulier ceux liés aux mécanismes de gouvernance d'entreprise, et conformément à la loi Sarbanes-Oxley, il a été fortement recommandé que les entreprises se différencient clairement entre la position du chef de la direction de l'entreprise et celui du président du conseil d'administration.

Nous avons également constaté que près de 80% des entreprises familiales Françaises étaient gérées par la même personne qui a fondé l'entreprise. De même, les dirigeants fondateurs étaient présents dans près de 80% des entreprises familiales. Cela révèle trois idées importantes à discuter. La première est que, en moyenne, les entreprises sont prêts à aller publique, même pendant le temps où le PDG de la firme est le même que le fondateur d'entreprise et pas ses descendants, ce qui nécessite une action courageuse. Le second montre que les fondateurs des entreprises familiales trouvent que IPOs sont des moyens pour la croissance et des solutions possibles pour le passage des entreprises à leurs descendants allant au-delà de la vie des fondateurs. Et la troisième montre la robustesse et de la persistance des fondateurs d'une entreprise dans la gestion de l'entreprise qu'ils ont créée et qui est resté au sommet de la direction de l'entreprise jusqu'à ce que le jour de l'émission. En outre, on constate que près de 22% de toutes les entreprises familiales appartiennent à l'industrie de la haute technologie et les 78% restants appartiennent aux six autres industries. Pour l'âge des entreprises, nous affirmons que la moyenne et la médiane des entreprises familiales sont égales à 16,9 ans et 12,5 ans, respectivement. Cependant, nous remarquons ici que l'écart type de l'âge des entreprises est égal à 22,1 ans. Cela montre que les entreprises publiques en cours sont assez jeunes.

4. RÉSULATATS DES REGRESSIONS ET INTERPRÉTATIONS

Pour expliquer la sous-évaluation à partir des droits de vote et de contrôle et certains mécanismes de gouvernance, nous allons utiliser deux modèles de régression linéaire multiple en changeant les prédicteurs qui répondent à ces variables. Dans le premier modèle, nous allons aborder la propriété et les droits de contrôle pour les propriétaires des entreprises familiales et le changement entre les deux droits après l'émission. Dans le second modèle, nous allons aborder certains mécanismes de gouvernance spécifiques fixés par les entreprises familiales le jour de l'émission.

4.1. Les droits de contrôle et les droits de vote

Nous allons inclure dans ce modèle quatre variables de contrôle qui sont l'éclatement de la bulle, l'industrie de la haute technologie, le logarithme naturel de produit brut, le logarithme naturel de l'âge et les trois variables indépendantes restantes liées aux droits de vote et de contrôle pour une tentative d'expliquer la sous-évaluation de la première journée.

Toutes les variables utilisées dans le modèle ont des niveaux très acceptables de variance de l'inflation (VIF), car ils sont tous moins que le seuil de 4 utilisé et soutenu par Pan et Jackson (2008). On peut donc supposer que nous ne disposons pas d'un problème de multicolinéarité et nous pouvons inclure toutes les variables dans la régression linéaire multiple. Nous notons que le R-carré du modèle est égale à 16,15% et le R-carré ajusté a enregistré 8,62%. En outre, le p-valeur du modèle est inférieure à 5%. Concernant les variables de contrôle, nous avons mentionné que seule la variable pré-DotCom est statistiquement significative au niveau de 5% avec un bêta de coefficient de -0,246, tandis que le high-tech, le produit brut et l'âge sont tous statistiquement non significatifs et leurs bêtas standardisés ne sont statistiquement pas différents de zéro. Concernant les variables indépendantes, nous notons que les changements des droits de flux de trésorerie pour les familles et les droits de flux de trésorerie des actionnaires publics sont statistiquement significatifs à 10% et 1% respectivement. Leurs bêtas standardisés sont égaux à -0,295 et -0,506 respectivement. Cependant, la différence entre les droits de flux de trésorerie et les droits de vote de la variable des actionnaires publics est statistiquement insignifiante. Nous attribuons ce résultat à la possibilité de domination des investisseurs et opportunistes envisagés au court terme qui se soucient moins à des droits de vote que de réaliser des rendements élevés et rapides.

4.2. Mécanismes de Gouvernance

Nous avons remarqué d'abord qu'il n'y a pas de problème de colinéarité entre les variables puisque tous les VIFs sont beaucoup moins que le seuil de 4. Toutefois, bien que le R-carré enregistré 9,75%, le R-carré ajusté est tombé à zéro et la p-valeur est supérieure de 51%. En outre, et de façon surprenante, aucune des variables indépendantes et de contrôle semble être statistiquement différente de zéro ou à présenter une amélioration dans l'explication de la sous-évaluation. Par conséquent, aucune de ces variables de contrôle ne contribue à une explication de la sous-évaluation combinée avec des mécanismes de gouvernance. Nous attribuons ce résultat à la possibilité que les investisseurs des introductions en bourse se soucient plus de la variation de propriété et de contrôle, que sur les mécanismes de gouvernance. Par conséquent, les mécanismes du gouvernement ne constituent pas une variable importante pour expliquer les rendements anormaux de l'IPO du premier jour.

CHAPITRE 3: LA PERFORMANCE À LONG TERME DES ENTREPRISES INTRODUITES EN BOURSE

1. INTRODUCTION

Comme nous l'avons vu dans le chapitre précédent, l'offre publique initiale (IPO) est une étape très importante et fondamentale dans la vie de l'entreprise et une question centrale dans la finance d'entreprise, car il transforme la firme d'une société privée à une société détenue par le public, changer considérablement la structure de propriété, la structure du capital, le potentiel de croissance, les exigences législatives, les normes d'information et de communications publiques, les objectifs stratégiques, les inspections par les analystes, les niveaux de concurrence, l'image social, le capital humain, et les règles générales de l'entreprise. Dans le chapitre précédent, nous avons parlé des anomalies de performance des IPOs résumées par une sous-évaluation à court terme et d'une sous-performance à long terme. Ces deux anomalies ont été les points centraux de nombreuses recherches à travers le monde, pour tenter d'expliquer ces sources.

La sous-performance à long terme décrit l'observation que les entreprises IPOs, au cours de la période postérieure à l'introduction en bourse de un à cinq ans, ont tendance à sous-performer par rapport au marché et par rapport aux entreprises publiques ayant des caractéristiques similaires, telles que la taille, l'industrie, la structure du capital, etc. (Loughran et Ritter, 1995; Ritter, 1991). Par exemple, de nombreuses études menées dans différents pays ont confirmé la sous-performance d'un (Aggarwal et Rivoli, 1990), deux (Hanley, 1993), trois (Loughran et al., 1994; Ritter, 1991), et cinq ans (Loughran et Ritter, 1995) après l'émission. La performance à long terme de l'IPO est devenue le centre de l'attention plus que tout temps avant (Espenlaub et al., 2000) et donc le champ est d'attirer plus de recherches pour expliquer la performance de l'IPO de différents aspects.

En France, Leleux (1993) a étudié la performance à long terme de 69 introductions en bourse lancées entre 1985 et 1991 et a trouvé un rendement anormal ajusté de -11,2%. Remarquablement, en résumant les études existantes, Loughran et al. (1994) ont montré que la sous-performance à long terme est seulement 4,8% pour la France. Loughran et al. (1994) commentent que le marché Français est fiable pour les investisseurs axés sur le long terme, car ils ne perdent pas l'argent investi au cours de la période de prix de l'offre, comme cela a été documenté par Gounopoulos et al. (2007). En outre, Chahine (2008) a également examiné la performance à long terme pour les actions Françaises pour la période 1996-1998 et a trouvé des rendements anormaux cumulés de -9,94%.

Nous allons examiner l'introduction en bourse performance à long terme des 86 entreprises familiales Françaises qui ont été choisis dans le chapitre précédent dans le cadre de mécanismes de gouvernance d'entreprise et la structure de propriété pré- et post-IPO, avec d'autres variables. Nous allons aussi observer la relation entre les niveaux de sous-évaluation de ces entreprises et leur performance à long terme. En conséquence, l'objectif de notre recherche dans ce chapitre est de plus savoir sur les performances à long terme des entreprises familiales Françaises, compte tenu de leurs mécanismes de gouvernance et la structure de propriété pré et post-IPO, en appliquant différents modèles et de tests, allant de six mois à six ans après introduction, en tenant compte de toutes les entreprises lancées entre 1994 et 2013 (qui est, sur une période de 20 ans). Tout d'abord, nous allons mesurer la performance à long terme; d'autre part, nous allons expliquer les sources et les raisons de ces performances via différents mécanismes et variables, visant à prévoir et à améliorer la performance subséquente.

2. REVUE DE LA LITTÉRATURE ET HYPOTHÈSES

2.1. Sources de sous-performance

Il est crucial de noter que nous ne pouvons pas ignorer, isoler ou de séparer les raisons et les sources d'introduction en bourse de la sous-évaluation de l'IPO à la sous-performance. Il en est ainsi parce que la sous-évaluation et la sous-performance sont liées entre eux: ils dérivent d'un et un seul événement, qui est l'offre publique initiale. Ritter (1991) soutient que les explications possibles pour la sous-performance observée dès 1.526 offices de propriété industrielle aux États-Unis pendant la période 1975-1984 comprennent (1) l'erreur de mesure des risques, (2) la malchance, ou (3) les modes et plus d'optimisme.

2.1.1. La relation entre la sous-évaluation et la sous-performance

Aggarwal et Rivoli (1990) font valoir que la mauvaise performance de l'IPO à long terme peut être dûe à des bulles spéculatives. Une explication sur les rendements anormaux à court terme est que l'offre est initialement sous-évaluée, ce qui signifie que les actions sont vendues ci-dessous de leur valeur intrinsèque à l'émission. Ainsi, un rendement anormal initial au premier jour aura lieu, illustré par un cours de clôture très élevé en fin de journée par rapport au prix d'offre. L'explication des modes a été mentionné par Shiller (1990) pour expliquer la sous-performance à long terme, qui a affirmé que les entreprises vont publique lorsque les investisseurs sont irrationnellement trop optimistes sur le potentiel futur de certaines industries.

Nous allons supposer que les entreprises familiales ne se comportent pas très différente de celle d'autres entreprises sur le long terme, et l'association qu'Aggarwal et Rivoli (1990) ont discuté entre la sous-évaluation et la sous-performance sera également testée.

Hypothèse 1: Les entreprises familiales Françaises seront sous-performées à long terme.

Hypothèse 2: La sous-performance à long terme des entreprises familiales Françaises disparaîtra lorsqu'on utilise le prix d'émission à la place de la clôture du premier jour dans le calcul du rendement.

Hypothèse 3: Pour les entreprises familiales Françaises, il existe une relation négative entre la sous-évaluation et la sous-performance.

2.1.2. La Relation entre le Phénomène de Marché d'émission chaude et la Sous-Performance

L'une des variables explicatives les plus importants pour la performance à long terme qui a été largement discutée, testée et constatée par de nombreux chercheurs pendant plusieurs décennies est le phénomène de marché « émission chaude ». Son importance réside dans le fait que cela affecte profondément non seulement la performance à court terme mais aussi à long terme. Yi (2003) fait valoir qu'au cours des 30 à 40 dernières années, de nombreux chercheurs ont observé le motif récurrent de cycles à la fois le volume et les rendements moyens initiaux des IPOs, qui est généralement désigné comme le phénomène de marché d'émission chaude. Marchés d'émission chaudes, qui sont des périodes avec des rendements initiaux anormalement élevés se trouvent à être associée à une augmentation du volume des introductions en bourse. D'autre part, les marchés «d'émission froide», avec des rendements initials relativement faibles, ont tendance à se produire vers la fin des périodes de haut volume.

Hypothèse 4: La performance à long terme des entreprises familiales Françaises est positivement associée à la synchronisation des introductions en bourse pendant les périodes d'émission chaude.

2.1.3. La relation entre Venture Capital soutenu IPO et Sous-performance

Jain et Kini (2000) montrent que les introductions soutenues par des sociétés capital-risque sont plus susceptibles de survivre par rapport à d'autres parce qu'ils attirent des investisseurs prestigieux, influencent les gestionnaires dans les décisions stratégiques, influencent les investisseurs institutionnels, et attirent plus d'analystes à la suite de la ferme. Lorsque les introductions en bourse sont soutenues par des sociétés capital-risque, les investisseurs estiment que leurs investissements sont plus sûrs.

2.1.4. La relation entre la réputation des souscripteurs et la sous-performance

De nombreux chercheurs se sont intéressés à mesurer et évaluer la sensibilité de l'IPO et à la performance à long terme selon le nom, la réputation, l'expérience, le profil, les dossiers antérieurs, et le professionnalisme des souscripteurs. Carter, Dark et Singh (1998) document qui la sous-performance des actions des IPOs par rapport au marché sur une période de détention de trois ans est moins sévère pour les introductions en bourse souscrits par plusieurs souscripteurs prestigieuses.

3. ÉCHANTILLON, DONNÉES ET MÉTHODOLOGIE

3.1. Échantillon

Nous nous référerons au même échantillon d'entreprises familiales Françaises que nous avons travaillées dans chapitre 2.

3.2. Les modèles de performance à long terme

Certains des modèles que nous avons menées sont les rendements cumulatifs moyens ajustés (CAR), le modèle à trois facteurs de Fama et French (1993), et deux modèles de régression linéaire multiples adaptées, visé au modèle 1 et 2. Dans modèle 1, nous allons tenter d'expliquer la performance à long terme prenant les droits de propriété et de contrôle avant et après l'introduction, et dans modèle 2, nous allons plutôt envisager les mécanismes de gouvernance établis par les entreprises familiales le jour de leur émission. Dans les deux modèles, nous allons utiliser le cinquième jour de la sous-évaluation comme une variable de contrôle pour l'examen de performance à court terme pour toutes les entreprises, en plus de leurs mécanismes de propriété et de gouvernance.

3.2.1. Le rendement cumulatif anormal ajusté

Le rendement cumulatif anormal ajusté (CAR) de l'événement mois *q* à l'événement mois *s* est la somme de la moyenne des rendements anormaux de référence ajusté et est calculé comme suit:

$$CAR_{q,s} = \sum_{t=q}^{s} AR_t$$

3.2.2. Le modèle à trois-facteurs de Fama et French

La performance des introductions en bourse est mesurée sur l'alpha du Jensen, de la régression suivante:

$$R_{(q,s)} - R_f = \alpha_{(q,s)} + \beta_{(q,s)}[R_{m,(q,s)} - R_f] + s_{(q,s)}SMB_{(q,s)} + h_{(q,s)}HML_{(q,s)} + \varepsilon_{(q,s)}$$

3.2.3. Les Régressions Linéaires Multiples

Comme indiqué, nous essayons d'expliquer la performance à long terme au moyen de deux modèles. Le modèle 1 comprend les droits de propriété et de contrôle, tandis que le modèle 2 inclut des mécanismes de gouvernance.

3.3. Statistiques Descriptives

L'OP représente le prix d'offre et le CP représente le prix de clôture du premier jour. Le 1M, 6M, et 12M se réfèrent à l'achat et à l'inclusion de toutes les actions IPO dans le portefeuille après 1, 6 et 12 mois suivant leur émission. Nous constatons que le plus grand nombre d'offres appartient à l'industrie de la technologie, qui représente 19 introductions en bourse de 1996-2001, qui est, pendant le rallye de la bulle d'internet, avec un pic en 2000 avec 8 IPOs. Après 2001, aucune introduction n'a été émise liée à l'industrie de la technologie. Le deuxième plus grand nombre d'introductions en bourse appartient à la fois à l'industrie non cyclique consommateur et l'industrie, avec un total de 17 introductions en bourse pour chaque industrie, qui est très proche de l'industrie de la technologie avec 19 introductions en bourse. Les troisième et quatrième chiffres les plus élevés concernent les communications et les industries de consommation cycliques, avec un nombre total de 16 et 15 introductions en bourse, respectivement. Les industries des matériaux de base et de l'énergie ont eu le plus faible nombre d'introductions en bourse, qui est, seulement 1 IPO pour chacune.

4. RÉSULTATS DE LA PERFORMANCE À LONG TERME

4.1. Résultats de l'indice de référence ajusté cumulatifs rendements anormaux

Parmi toutes les cinq dates d'entrée (OP, CP, 1M, 6M, et 12M), l'OP et le CP génèrent en moyenne les plus hauts rendements anormaux de 31% et 28,8%, respectivement au premier mois après introduction, comparativement à un rendement mensuel anormal moyen de seulement 0,95%. En conséquence, cela a certainement eu une influence considérable sur les résultats de CAR et BHAR sur les soixante-deuxième mois. Les investisseurs entrant dans le portefeuille des IPOs à l'OP ou au CP peuvent générer un rendement anormal cumulé de 106,8% et 104,2%, respectivement, à la fin de soixante-deuxième mois. Les investisseurs entrant dans le portefeuille des IPOs après 1M, 6M et 12M peuvent générer un rendement anormal cumulé de 74,8%, 73,9% et 78,5%, respectivement, à la fin de soixante-deuxième mois.

Ainsi, les investisseurs qui ratent l'occasion d'investir dans l'introduction en bourse sur le premier jour de l'émission sont mieux d'attendre 12 mois avant d'entrer dans le portefeuille des IPOs que d'entrer à seulement 1 ou 6 mois plus tard. Cependant, investir ailleurs devrait générer sur une période de 1 an un rendement qui est au moins égal ou supérieur au rendement généré si les actions d'IPO devaient être investi après 1 ou 6 mois, ce qui représente le coût d'opportunité. Cependant, même si on exclut le très haut premier mois avec un rendement anormal de 28,8% à l'OP et de 31% au CP, les entreprises familiales génèrent encore un CAR positif dans le long terme. Ces rendements positifs à long terme commencent à apparaître à la fin de la deuxième année après l'émission pour les trois dates d'entrée, qui sont 1M, 6M, et 12M. Cela signifie que les investissements dans le portefeuille des IPOs, génèrent des rendements anormaux négatifs dans les premiers mois, permettra d'atteindre des rendements anormaux positifs à long terme de plus de 70%. En outre, cela montre que les rendements positifs à long terme de ces entreprises familiales observées ne proviennent pas uniquement du premier mois, qui sont directement associés à l'effet IPO, mais qu'en outre ces entreprises familiales semblent surperformer leur indice de référence du marché sur le long terme, mois après mois, pour atteindre des niveaux bien au-dessus de 70%.

4.2. Les résultats du modèle à trois-facteurs de Fama et French

Nous avons réalisé quatre régressions en utilisant le modèle à trois facteurs de Fama et French pour les quatre périodes de détention de 3, 4, 5, et 6 ans en utilisant les rendements équipondérés. Nous remarquons que le R-carré est de 43% pour le portefeuille de période de 3 ans et 56% pour la période de 6 ans. Cela signifie que moins de 44% de la variance du portefeuille demeure inexpliquée par ces variables. Le p-value des 4 régressions sont statistiquement significatives au niveau de 0,01 ‰, avec F-statistiques très élevées.

Nous remarquons que les alphas de Jensen pour les quatre périodes de détention sont tous positifs et statistiquement significatifs au niveau de 5% pour le portefeuille tenant de 3 ans et 4 ans et au niveau de 1% pour les 5 ans et 6 ans. Par conséquent, dans ce cas, les investisseurs qui achètent des actions d'IPO de chaque entreprise familiale et en les tenant pour des périodes de 3, 4, 5 et 6 ans peuvent générer des rendements anormaux de l'ordre de 1% par mois, ce qui est statistiquement significative. Pour les versions bêta de coefficients standardisés, nous remarquons que le facteur lié à la dette (HML) pour les quatre périodes de détention différents ne soit pas statistiquement significativement différent de zéro.

La prime de risque de marché (Rm-Rf) et le facteur lié à la taille (SMB) sont statistiquement très significativement différent de zéro au niveau de 1 ‰ et ils sont tous positifs. La version bêta de coefficient positif et statistiquement significatif pour les PME peut être attribué au fait que la plupart des entreprises familiales Françaises sont de petite taille. En fait, la taille de l'émission moyenne des entreprises familiales Françaises est d'environ 27 millions d'euros, tandis que la taille de l'émission moyenne des entreprises Françaises typiques est 1,058 millions d'euros. Par conséquent, nous constatons que le modèle de Fama et French présente un haut degré d'explication des rendements des IPOs des entreprises familiales, qui atteint 56% pour la période de détention de 6 ans comparativement à 27% dans le modèle de CAPM.

4.3. Résultats des régressions linéaires multiples

En regardant les résultats de la régression du Modèle 1 pour les rendements à long terme anormales calculées suivant la méthode de la CAR, nous remarquons que le R-carré est 18,62% pour la période de détention de 4 ans et 21,28% pour la période de détention de 5 ans avec une p-value inférieure à 1% pour toutes les périodes de détention. Nous remarquons aussi un alpha positif et statistiquement significatif au niveau de 1% pour toutes les périodes de détention, allant de 62,66% pour la période de détention de 3 ans à 171,89% pour la période de détention de 6 ans. La différence entre les flux de trésorerie et les droits de vote pour les actionnaires publics et le pourcentage des droits de flux de trésorerie après l'émission pour les actionnaires publics sont à la fois statistiquement significativement différent de zéro. Nous notons que ce modèle montre que près de 20% de la variance des rendements anormaux calculés par la CAR peut être expliqué par le changement de droits de propriété et de contrôle avec une signification statistique très élevée.

Dans Modèle 2, nous essayons d'expliquer la performance à long terme calculée par la CAR pour de périodes différentes via des mécanismes de gouvernance. Nous remarquons que le R-carré est 14% pour la période de détention de 3 ans et 21% pour la période de détention de 6 ans avec des niveaux de signification statistique acceptables. Nous remarquons également que la sous-évaluation du cinquième jour est statistiquement significativement différente de zéro au niveau de 1% pour les 4 périodes de détention. Les résultats du modèle montrent également que pour tous les mécanismes de gouvernance les bêtas sont statistiquement significativement différents de zéro, sauf pour la séparation en actions pour la période de détention de 6 ans, ce qui montre une version bêta négative au niveau de signification statistique de 5%. Nous pouvons en déduire que les mécanismes de gouvernance présentés dans notre modèle ne présentent pas un bon niveau d'explication de la performance de l'IPO à long terme.

Toutefois, les deux modèles 1 et 2 ne semblent pas être très fiables dans l'explication de la performance à long terme mesurée à la fois par la CAR pour les 4 périodes de détention. Bien que le R-carré pour certaine régressions est d'environ 20%, il change tout au long des périodes de détention. Par conséquent, nous pouvons rejeter l'hypothèse que le changement de droits de propriété et de contrôle avant et après la date de l'émission avec les mécanismes de gouvernance sont des fiables et robustes pour expliquer le CAR de la période de conservation de 3 ans à 6 ans.

4.4. Test d'hypothèse

Hypothèse 1: Les entreprises familiales Françaises seront sous-performées à long terme.

Hypothèse 2: La sous-performance à long terme des entreprises familiales Françaises disparaîtra lorsqu'on utilise le prix d'émission à la place de la clôture du premier jour dans le calcul du rendement.

Ci-dessous, nous présentons un résumé des deux calculs de performance à long terme en utilisant les rendements anormaux cumulés (CAR) en supposant que les actions de l'IPO ont été achetées à seulement l'OP et le CP, qui sont suffisantes pour tester ces deux hypothèses.

Tableau 9: Test de moyens pour la performance à long terme

T	**Test de moyens contre la constante de référence (0,00%)**			
	CAR_CP Moyenne et p-value		**CAR_OP Moyenne et p-value**	
1	28.8%***	0.000	31.0%***	0.000
6	27.4%***	0.002	29.7%***	0.001
12	26.4%**	0.015	28.7%***	0.009
18	21.1%*	0.060	23.4%**	0.040
24	29.0%**	0.014	31.4%***	0.009
30	34.9%***	0.003	37.3%***	0.002
36	46.4%***	0.000	48.8%***	0.000
42	48.8%***	0.000	51.2%***	0.000
48	75.0%***	0.000	77.4%***	0.000
54	81.4%***	0.000	83.9%***	0.000
60	83.9%***	0.000	86.5%***	0.000
66	89.8%***	0.000	92.4%***	0.000
72	104.2%***	0.000	106.8%***	0.000

Les sommaires des résultats présentés dans le tableau 9 viennent de rejeter la première hypothèse en montrant clairement que, en moyenne, la performance de l'IPO à long terme est positive avec une signification statistique suffisante, calculée sur la base soit du prix d'offre (OP) ou au prix à la fermeture du premier jour (CP). Cependant, les rendements anormaux calculés en utilisant la CAR semblent être statistiquement significative. En outre, on observe également dans le tableau 9 que la performance à long terme des IPOs calculée soit par l'OP ou le CP ne change pas de beaucoup. Ceci est principalement dû au modeste rendement de l'IPO au premier jour des entreprises familiales Françaises ce qui est près de 2%. Nous rejetons l'hypothèse qui stipule que les entreprises familiales Françaises seront sous-performer leur indice de référence du marché ainsi que l'hypothèse qui indique que la sous-performance à long terme, si elle devait exister, disparaît quand y compris le rendement du premier jour, car nous avons vu que la différence entre les deux rendements calculés, soit à l'OP ou au CP, est non significative.

Hypothèse 3: Pour les entreprises familiales Françaises, il existe une relation négative entre la sous-évaluation et la sous-performance.

Les rendement des IPOs à long terme des actions achetées que dans leur premier jour de l'émission, que ce soit à leur prix d'offre ou à leur cours de clôture du premier jour, semblent être en corrélation positive avec la sous-évaluation des cinq premiers jours, excluant le premier jour sur la base de calculs de CAR. Donc on peut rejetter l'hypothèse 3.

Hypothèse 4: La performance à long terme des entreprises familiales Françaises est positivement associée à la synchronisation des introductions en bourse pendant les périodes d'émission chaude.

Comme indiqué précédemment, 59 sur 86 introductions en bourse des entreprises familiales ont été délivrés avant 2001 (éclatement de la bulle d'internet), ce qui représente 69% de toutes les introductions en bourse de notre échantillon. Cependant, comme dans le chapitre précédent, nous allons prendre cette année comme une période de coupure et de tester la performance à court terme IPO en considérant l'effet pré- et post-2001, lorsque tester la relation entre la performance à long terme IPO et la détermination si le moment de l'émission se produit avant ou après cette année. Fondamentalement, la période de la bulle d'internet a été remarquable à la fois la quantité et la taille des introductions en bourse émises et qui est explicable pour considerer la période de mode. Ainsi, nous rappelons que nous avons utilisé la variable fictive 1 si l'introduction en bourse a eu lieu avant 2001 et 0 sinon. Par conséquent, même si il était très clair que la période de la mode existait avant la bulle d'internet, aucune corrélation n'a été observée entre le rendement à long terme des entreprises familiales, qui nous conduit à rejeter la quatrième hypothèse, qui stipule que la performance des IPOs à long terme est associée positivement avec le calendrier des introductions en bourse pendant les périodes de bulle.

CONCLUSION

Dans cette thèse, nous avons cherché à découvrir la structure du capital des entreprises familiales Françaises en démarrant de la théorie de l'agence et la théorie d'asymétrie d'information. Nous avons également observé le prospectus des IPOs de chaque entreprise familiale composante de l'indice CAC All-Tradable et nous avons enregistré le changement de propriété et de contrôle et de principaux mécanismes de gouvernance. Nous avons calculé la performance des IPOs au court et au long terme en utilisant différentes méthodes et modèles, et en utilisant l'analyse transversale et séries chronologiques de données.

Dans chapitre 1, nous constatons que les entreprises familiales se caractérisent par un faible niveau de la dette que les entreprises non familiales. En outre, les entreprises familiales semblent moins compter sur les emprunts à long terme que sur les emprunts à court terme, ce qui signifie qu'ils préfèrent rouler sur leur effet de levier à court terme le plus souvent et ne pas avoir gravement préoccupé par l'approche créanciers chaque fois qu'ils ont besoin de financement supplémentaire. Concernant le niveau d'endettement faible des entreprises familiales, nous pouvons l'expliquer en basant sur la théorie présentée par Jensen (1986), qui a fait valoir que la présence des propriétaires au sein de leurs entreprises augmente leur capacité à surveiller les gestionnaires et réduire ainsi les coûts de type 1 de l'agence, rendant le rôle disciplinaire de la dette moins pertinent et nécessaire. En outre, comme nos études et de plusieurs différentes études indiquent (par exemple Anderson et Reeb, 2003a; Villalonga et Amit, 2006), les entreprises familiales Françaises démontrent une meilleure performance que leurs homologues non familiales, qui signale leurs meilleures capacités à générer des fonds internes et des flux de trésorerie constants. Par conséquent, ils dépendent moins du financement extérieur (à la fois la dette et capitaux propres).

Dans chapitre 2, nous avons observé que les entreprises familiales Françaises avaient une sous-évaluation moyenne de 1,92% et une médiane de 0,00%. Nous avons attribué cette sous-évaluation inférieure du premier jour à l'alignement des intérêts entre les directeurs et les agents. D'autre part, le problème de type 2 de l'agence discuté par Zingales (1995) est bien présente entre la majorité et les actionnaires minoritaires de ces entreprises familiales. Nous avons remarqué que, en moyenne, les propriétaires des entreprises familiales ont essayé clairement à étendre leur contrôle sur leurs entreprises en assurant des niveaux plus élevés de droits de contrôle par rapport à leurs niveaux de droits de flux de trésorerie. Dans les modèles que nous avons utilisées, nous avons constaté que près de 16,2% de la variance de la sous-évaluation peut être expliquée par le changement de droits de propriété et de contrôle.

À l'inverse, seulement 9,8% de la variance de la sous-évaluation IPO peut être expliquée par des mécanismes de gouvernance.

Dans chapitre 3, nous avons mesuré les performances des IPO à long terme et nous avons essayé de l'expliquer à travers de deux modèles, l'un à travers le changement de droits de propriété et de contrôle et l'autre à travers les mécanismes de gouvernance. Cependant, les deux modèles semblent présenter des résultats explicatifs pauvres pour les quatre, cinq et six ans. Nous avons également essayé d'utiliser le CAPM et le modèle Fama et French en assumant différentes dates d'entrée dans les actions des IPOs. En outre, nous avons vu que les entreprises familiales Françaises ont tendance à surperformer l'indice large du marché trois ans après l'émission, tout en présentant des performances faibles de un à trois mois après la délivrance et jusqu'à la troisième année. Les rendements anormaux à long terme sont devenus stagnés pendant presque trois ans dans lequel non seulement n'avaient pas de valeurs ajoutées pour les investisseurs des IPOs, mais aussi les pertes ont été observées au cours de cette période. Après la troisième année, les entreprises familiales ont semblé récupérer toutes les pertes et de commencer à générer des rendements anormaux positifs, atteignant 100% avec la méthode de la CAR et de 67% avec la méthode BHAR. Nous mentionnons que si nous étions pour mesurer la performance à long terme en utilisant un, deux ou trois ans après leur publication, nous serions certainement trouver une sous-performance. Mais lors de la mesure de la performance à long terme quatre, cinq ou six ans après l'émission, nous trouvons des rendements anormaux positifs.

Ainsi, comme nous l'avons mentionné, nous visons dans les futurs projets de recherche à agrandir la taille de notre échantillon en incluant plus d'entreprises familiales et donc nous cherchons à réaliser une analyse comparative approfondie entre les entreprises familiales et non familiales sur une plus grande échelle en incluant des entreprises d'autres pays. En outre, nous cherchons à inspecter les mécanismes de gouvernance étendus sur la période de l'échantillon et non seulement prises à la date de l'IPO. Nous avons également mentionné qu'il est préférable de travailler sur des périodes d'échantillonnage plus récent. En plus, nous voulons travailler sur des échantillons Européens en prenant des pays où il y a des entreprises familiales qui ont les mêmes caractéristiques que les entreprises familiales Françaises en faisant des études de comparaisons approfondies.

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PRELIMINARY CHAPTER

1. INTRODUCTION

In the last decade, the phenomenon of family business has received increasing attention from academics and consultants as it is a predominant structure around the world (La Porta et al., 1999; Claessens et al., 2002; and Faccio and Lang, 2002). In fact, the Father of Economics, Adam Smith, stated that the real engines of growth in a free-enterprise economy are family firms. Nowadays, family businesses are regarded more and more as economically significant and distinctive business entities because they make an essential contribution to the economy, bring long-term stability, show specific commitment to local communities, feel responsibility as owners and have values to stand for.

For instance, a report published by Forbes in July 2013 states that family businesses generate over 50% of the US Gross National Product (GNP) and about 90% of all US businesses are family-owned or controlled by a family. However, the report mentions that the biggest issue with many family businesses is that they get stuck operating the same way they have for years, even when the business outgrows that structure. The founding generation holds on to the reins of leadership too long and will not pass control to their children. Therefore, less than one third of family businesses survive the transition from first to second generation ownership, and another 50% do not survive the transition from second to third generation. Family businesses only change when the pain is so great that they cannot stay where they are. However, it is not only tearing their company apart, but their personal lives as well. When this happens, the family has four choices: (1) sell the business, (2) merge the business, (3) shut the business down, and (4) stay the same. If they decide to stay the same, the key questions they then must answer are: (1) do they all stay in this business together or does someone exit? (2) is it time for the senior generation to pass the company on to the next one? and (3) do they bring in a professional manager? The report also mentions that for family businesses that are so rooted in tradition, the most difficult part of the decision is actually to implement a change that will bring a more profitable and happier business.

Another recent report, published by Forbes in June 2014 entitled ‘The Biggest Myth About Family Businesses’, clearly mentions that family-owned businesses are the backbone of the American economy. Studies have shown that about 35% of Fortune 500 companies are family-controlled and represent the full spectrum of American companies from small business to major corporations. In addition, family businesses account for 50% of US gross domestic product, generate 60% of the country's employment, and account for 78% of all new job creation. Additionally, the greatest part of America's wealth lies with family-owned businesses. Family firms comprise 80 to 90% of all business enterprises in North America (Astrachan and Shanker, 2003). Moreover, Anderson and Reeb (2003a) mention that in the Standard & Poor's (S&P) 500 companies, return on investment (ROI) of family firms is 6.65% higher than in non-family firms.

In addition, the Family Firm Institute Inc., states that family businesses show higher profitability in the long run, are less likely to lay people off, and more likely to hire despite the possibility of an economic downturn. This was also stated in the Forbes 2013 report. Moreover, family businesses are more likely to give charitably to their respective communities and engage in extensive philanthropic activities. In addition, family businesses have a more long-term strategic outlook due to their main motivation consisting of creating a legacy for generations to come, are less likely to raise debt, and are widely deemed to be financially prudent. For instance, the Mass Mutual American Family Business Survey in 2007 states that a majority of family businesses (around 60%) believed their ethical standards were more stringent than those of competing firms. They also report ethical standards being discussed often or always at meetings with employees, in discussions with customers and during board meetings.

Similarly, the importance of family businesses to the European economy cannot be underestimated since they are essential to growth and employment creation throughout the world's biggest economic area. In their 2014 Family Business Yearbook Report, Ernst & Young's Europe Leader, M. Peter Englisch, states that 'Family businesses are the lifeblood of the European economy'. For instance, 85% of the companies in Europe are family-owned, generating 70% of Europe's GDP and employing 60% of Europe's workforce. Additionally, the European Commission stated that family firms are distinguished by elementary factors that helped them survive the recent financial crisis of 2008, considered by many economists as the deepest financial and economic crisis since the Great Depression of 1929. Moreover, KPMG published in their report in 2013 that European family businesses represent €1 trillion in turnover and create over 5 million jobs in Europe.

As an example, in France 83% of businesses are categorized as family businesses, contributing 60% of the country's GDP and employing almost 50% of French workers (Family Business Monitor – FBN International and FBN France, 2008). Additionally, Faccio and Lang (2002) documented that more than 60% of all listed French firms are family firms, and 62% of the family businesses controlled more than 20% by a family member. Additionally, data show that family firms listed on the stock exchange are much less sensitive to industry shocks compared to non-family businesses (Sraer and Thesmar, 2007). Hence, through their extensive presence, strengths and specificities, family firms represent a vital engine for the economy's growth and sustainability. As a result, French family firms are usually referred to as the backbone of the economy (Fohlin, 2007).

In our inspection of the French family firms' initial public offering (IPO) prospectuses, we found that after issuance, the family firms' owners still held more than 62% of the firm's cash flow rights and more than 66% of the firm's voting rights. Additionally, more than 80% of these family firms were managed by the firms' founders on the IPO day and more than 76% also had their CEOs holding the position of the board's Chair on the IPO date. Moreover, the board of directors of these firms that majorly, if not wholly, consist of the firms' owners, their direct relatives and heirs, hold more than 64% of the firm's cash flow rights after going public. Moreover, the average board size of the family firms was around 4.67 members which is a relatively small board size. Also, the percentage of independent directors was around 20% showing immaterial presence of independent directors over the firms' boards. Last, but not least, on average, the percentage of public shareholders did not even reach 20% after going public.

Therefore, all these facts affirm that the listed French family firms are characterized by rigorous control by the firms' owners and their descendants over both the firm's management and board of directors. They control the majority of the firms' cash flow and voting rights even after going public. Moreover, the difference between cash flow rights and voting rights widened after the IPO as we will show in more detail in the subsequent chapter. This shows the extent of high ownership concentration in the listed French family firms by the family firms' owners, descendants and direct relatives, indicating that they do not easily relinquish control and even show clear minority expropriation covered by an IPO event. As a result, such family firms are worth all the attention and efforts to observe, analyze, and understand their capital structure.

As we will discuss in the subsequent section, agency theory is an important theory in corporate finance and was deeply observed by eminent researchers around the world due to its severe potential impact on a corporation's value, prospects, and survival. In addition, the asymmetric information imposes its weight on investors, who seek highest transparency in times of abundant, sophisticated, and innovative types of frauds that, unfortunately, many managers and sometimes independent auditors get involved in (e.g. Enron, Arthur Andersen, WorldCom, Parmalat, Tyco Ltd., Adelphia Communications Corp., etc.). As a result, shareholders are becoming more aware about further scrutinizing and inspecting firms' financial statements and public reports due to recent corporate scandals resulting in huge losses that are linked mostly to either agency problems or information asymmetries.

On the other hand, the IPO is considered one of the major fundamental changes a firm can experience during its lifetime, one that will definitely change its ownership structure, investment priorities, risk management, strategic plans, management style, taxation system, reporting standards, social image, reputation, and public communications. Therefore, due to their significance, IPOs have been the focus of management research since the 1960's (Reilly and Hatfield, 1969). Yet, due to the importance of the IPO topic and the lack of empirical research on family firms' IPOs (i.e. McConaughy, Matthews, and Fialko, 2001), especially in the French market with its context of unique corporate governance mechanisms and ownership and control structure, we aim to investigate them thoroughly.

However, it is important to mention that one of the main challenges that a privately-held firm faces when deciding to go public is the firm's ownership structure change. Yet, how such challenges are perceived by the firms' owners depend on the owners' perception toward sharing control with new shareholders and the country's economic system. For example, in market-based economies that depend on market financing, going public and, thus, losing control is almost always an option that principal owners think about, consider, and accept more easily whenever they need further finance to grow the business. On the other hand, in bank-based economies that depend on bank financing, going public and, thus, losing control is not one of the best options that the principal owners think about and desire whenever they need any additional financing.

Accordingly, La Porta et al. (1999) were among the first to document that the Anglo-American model of corporation, though widely held, is far from being widespread. Thus, the different economic aspects mentioned above, will eventually affect firms' ownership and control structures. Conversely, Faccio and Lang (2002) reported that in Continental Europe the ultimate shareholder controls, on average, more than 43% of voting rights. Interestingly, in France, Italy, Germany, and Austria, such ultimate shareholders retain majority control. Concentrated ownership is also pervasive in East Asian Countries. For instance, Claessens et al. (2000) found that more than two thirds of listed companies were controlled by a single large shareholder. Even in the US, Holderness et al. (1999) showed that block holdings are not a rare phenomenon (Rigamonti, 2007), though not as predominant as in Continental Europe or East Asia. So, in different countries, different ownership and control structures will be observed.

Consequently, in many countries, especially in Europe and East Asia, from the principal owners' perspective, the fear of losing control is ranked among the many disadvantages of going public and may influence the propensity to list (Roell, 1996). Similarly, Rigamonti (2007) argued that the original owners may be particularly concerned about the ownership structure. For such types of owners, losing control is definitely the last option to consider whenever they require additional financing for their firms. As a result, if such owners decide to go public anyway, they will do so by retaining ultimate control over their firms.

However, from a comparative perspective, we believe that the difference among countries toward owners' perception of going public and losing control, depends on many factors other than the country's economic system (e.g. market-based or bank-based). For instance, such differences may also depend, among many others, on the overall country's culture, legal system, shareholders rights protection, accounting system, market transparency, size, and volatility, as well as investors' risk and returns objectives, culture, and experience. Thhis is why we believe that it would not be appropriate to compare IPO performance of European firms with American or Asian ones, without controlling for these different aspects. From here, we can understand how some research papers that treat similar topics related to IPO performance in varying countries obtain contradictory and sometimes mixed results, if no proper control variables were considered in the research. IPO short-term performance is usually measured by IPO underpricing which is common in the finance literature.

Underpricing is generally calculated as the difference between the IPO offering price and the first-day market closing price. As we will see in subsequent sections, in the short term, scholars have generally documented the fact that IPOs are underpriced. However, underpricing may differ across countries and during different periods (Ibbotson, 1975; Welch, 1992; Ritter, 2002; Ritter and Welch, 2002; Loughran and Ritter, 2004; Gajewski and Gresse, 2006; Zouari et al., 2011).

Therefore, in this preliminary chapter, we will discuss the main classifications and characteristics of family firms, agency theory, and the main expropriation strategies employed by family firms' owners. Then we will discuss the main governance mechanisms to alleviate agency costs and last, discuss the IPO process, benefits, and timing.

2. CLASSIFICATIONS AND CHARACTERISTICS OF FAMILY FIRMS

In this section, we will review the main classification and definition of family firms on which we will base our analysis and dataset. As shown below, the definition of family firm is very wide and differs from one country to another, sometimes even differing within the same country. Then we will describe the main characteristics of family firms' owners who will affect most managerial, financial, and strategic decisions. For instance, as we will see, these decisions can be related to the firm's capital structure decisions, going public, or any other decision.

2.1. Classification of Family Firms

There is a multitude of proposed definitions of family firms depending on the level of control, ownership structure, managerial position, generational transitions, and many other factors. For instance, Ampenberger et al. (2013), who worked on German family firms, proposed that in a family firm, either the minimum level of cumulative ownership stake of the founding family is 25%, or one of the founding family members occupies a managerial position, or is represented on the supervisory board.

However, some studies such as Allouche and Amman (2000), '*Association des moyennes entreprises patrimoniales*' (ASMEP), BM&S, PWC, and FBN France specifically targeted the definition of family firms in France. For instance, Allouche and Amman (2000) stated that a French family firm is one where significant control is exerted at the ownership and managerial level. Whereas, ASMEP characterized family firms with 50% ownership for enterprises with 250 to 4,999 employees and managing entrepreneurship, while PWC suggested that in a family firm, family members should own part or all of the shares and should occupy managerial positions. Hence, all these definitions of family firms are based on the ownership and managerial aspect of family members in the firm (European Commission, Enterprise and Industry Directorate-General, 2008).

However, in this research, we define family firms similarly to Blondel et al. (2002) and Corstjens et al. (2005), who define a family firm as 'a company where one or several individuals or families are ultimate owners and represent the largest block of shares. Moreover, the owning family is not required to be descendants of the firm's founder(s) and is not required to be involved in the business. Non-family owned firms are those firms in which no individual, set of individuals, family or sets of families can be identified as the ultimate owner. Ultimate owner(s) are those shareholders who own at least 10% of the shares at each step of the ownership chain'. This definition is found most appropriate because influence via ownership is well documented (Blondel et al., 2002) and highly representative of the levels of control in family firms, especially since control via ownership was highly remarkable in 13 western European economies (Faccio and Lang, 2002). In addition, this definition is the most widely known and used definition of family firms.

2.2. Major Characteristics of Family Firms' Owners

After reviewing the main classification of family firms, it is crucial to review the major characteristics of family firms' owners, their behaviors toward the firms they create, manage and control, and to describe the different positions researched by many eminent authors in the field of corporate governance. Basically, we will tackle: (1) the longer investment horizon of family firms' owners compared to non-family shareholders, (2) the presence of family firms' owners in the company's management and decision-making process, and (3) the under-diversification effect of family firms' owners and its consequence on the firm as a whole.

2.2.1. Longer Investment Horizons

Anderson and Reeb (2003a) and Villalonga and Amit (2006) demonstrated that family firms' owners have longer investment horizons than other shareholders and view their ownership as an asset to pass on to their descendants, rather than wealth to consume during their lifetimes (e.g. Casson, 1999; and Anderson et al., 2003). In this regard, it has been argued that typical shareholders have more emotional independence than family firms' owners who have invested more than their private wealth in their firms. As a result, this will impact the investment horizon typical shareholders assume which is shorter than that of the family firms' owners. Usually, shareholders' main objective is to increase their wealth by investing in positive net present value (NPV) projects. When firms' management do not achieve this ultimate objective, many shareholders liquidate their shares in these firms and invest elsewhere, somewhere they can find better opportunities and where their wealth grows at higher rates.

Thus, we may observe the flow of funds of investors investing or divesting firms' shares in different circumstances. Here we mention the risk averse investors who when faced with two investments with a similar expected return (but different risks), will prefer the one with the lower risk. However, this might not be always the case for all types of investors. For instance, family firms' owners might be different in perceiving risk and in their level of risk aversion and, therefore, their investment behaviors might be different from other shareholders. This could be a valid reason for not observing family firms' owners liquidating their shares upon every crisis their firms face as usual shareholders might do. Thus, we may observe family firms' owners holding shares for many years, sometimes for decades, and not ready to abandon easily their position in the firm they have built during financial and economic crisis.

The possible reasons for such different behavior is that family firms' owners usually invest more than their money in their firms. At the top, mostly they have invested all available resources from time, effort, knowledge, skills, expertise, and dedication in their own firms and most of them admire passing their firms to their descendants. Additionally, many family firms' owners involve their families much in the firms' business and distribute most managerial and supervisory roles among family members. Thus, their firms do not only represent the family's wealth, but also the family's culture, history, tradition, social image, pride, source of satisfaction, and identity. The last thing they want is to lose it to outside shareholders who do not necessarily share the same values as the family itself.

However, sometimes their tactics and strategies to protect the family's interests are legal, lawful, ethical, legitimate, rightful, and impartial, but sometimes unfortunately they are not, evoking severe agency costs among the majority of controlling shareholders (i.e. the family firms' owners) and the minority non-controlling shareholders (i.e. the outsider shareholders). It is understandable, therefore, why family firms' owners have a longer investment horizon than other shareholders.

2.2.2. Active Involvement in Firms' Management

Another important characteristic of family firms' owners is their strong presence and direct involvement in the firms' management and, hence, in its daily operation and decision-making process. Eventually, this will result in lower information asymmetry between the firms' owners and managers. Thus, family firms' owners will be more updated, involved, and responsible over the firms' decisions compared to non-family and non-controlling shareholders, who mostly have less information about major management decisions and are mostly marginalized. Therefore, from their positions, family firms' owners have much power to control management, and get involved in most or all important decisions which is not the case for most minority shareholders.

Thus, direct monitoring by the families explains lower CEO compensation with respect to that of non-family firms. Thus, family firms' owners do not have to increase CEO incentives just to protect their own wealth or fear opportunistic behaviors of CEOs because they are almost always present in the firms' management, and mostly on the firms' board (Pichard-Stamford, 2002). Family firms' owners can exert very close and adequate control over the firms' CEOs and, therefore, they do not seek excessive compensations for rewarding CEOs to better align interests. This, consequently, explains why family firms' owners do not have to link CEO compensation to the firm's performance due to their strong presence in the firm.

On the other hand, Bertrand and Schoar (2006) stated that family ties could lead to the re-ordering of priorities assigned to the firm, so that the satisfaction of the family's utility function could become the prevalent aim rather than serving the whole firm including minority shareholders. However, in some cases, the private benefits gained by the family do not hurt the value of the firm, but in other circumstances, they reduce the firm's market value, then the consumption of private benefits of control takes place at the expense of minority shareholders. Similarly, Schulze et al. (2003) considered that family firms' owners could favor family interests over the firm's interests because of family loyalty.

Concerning employment, it has been argued that family firms may encourage internal labor market schemes favoring family members (within-family promotion), rather than competent recruitment processes. Thus, reducing the quality of applicants for executive managerial positions may eventually cause significant monitoring cost (Berghe and Carchon, 2003). Then again, when it comes to family firms, many researchers argue that family firms' owners who control and manage their firms for many years become highly entrenched (Gomez-Mejia et al., 2001; Gomez-Mejia et al., 2003). Similarly, Gomez-Mejia et al. (2001) find that executives with family ties to the firm's owners are more entrenched in their roles, with a weaker relationship between executive tenure and firm's performance.

However, Daily and Dalton (1992) indicate that paternalism contributes to the highly centralized decision-making structure, concentrating power and control among people with family links to the owners of family firms. Hence, opponents of these theories argue that entrenchment is not found exclusively in family firms, while hundreds or thousands of examples, facts and realities exist where non-family firms' executive directors have been involved in deep entrenchment activities and even in expropriating the firms' wealth for their own interests. Also, many non-family managers have been decreasing shareholders' wealth for years, and some have driven firms to bankruptcy while making huge fortunes out of them.

On the other hand, many argue that by concentrating power and control among people, firms become more efficient in decision-making compared to sophisticated and long hierarchical structure where many directors are involved in every decision the firm has to take. Last, but not least, having a family firm owner who gets involved in the decision-making process and in the firm's management and control might look normal and be highly acceptable depending on the culture and society. In the end, as mentioned earlier, an owner invests a lot in the firm he/she has created, from wealth to health, which makes them so emotionally and psychologically attached to their firms. Therefore, it would be normal for them to stay in charge and in full control over the strategic decisions the board has to adopt and implement, or even over some small and less important daily decisions the management has to take.

2.2.3. Concentrated and Under-diversified Equity Holdings

Many authors argue that founding families' concentrated and under-diversified equity holdings in their firm may translate into more conservative financial strategies. This often takes the form of less debt, more liquidity, and sounder balance sheets (Daily and Dollinger, 1992; Gallo and Vilaseca, 1996; and Anderson and Reeb, 2003a). Similarly, McMahon and Stanger (1995) and Mishra and McConaughy (1999) argue that family firms aim to lower the overall financial risk of the company and show a higher risk aversion compared to non-family firms. Thus, family firms shy away from high company growth to sustain their independence and therefore, they follow a conservative approach to company development with moderate company growth (Poutziouris, 2001). Correspondingly, family firms often follow the goal of lowering their financial risk exposure and consequently, they may follow a conservative approach of financing through the use of retained earnings rather than the use of external financing (McConaughy, Matthews, and Fialko, 2001).

Some authors argue that such policies will help the business survive until the new generation is ready to take over, and will leave successors with a healthier enterprise to run. As a result, financial positions are expected to be especially strong just before the handover to the next generation, especially in a world of high uncertainties, market volatility, fierce competition, and the constant need for funds to develop the firm and take it to the next level, while not relinquishing the control the family has established.

On the other hand, Anderson et al. (2003) considered that because of their undiversified exposure, family firms may use their control of a firm to avoid risks that are usually acceptable to other more diversified shareholders. Accordingly, many family firms' owners may decline positive NPV projects and eliminate the chance of increasing shareholders' wealth just because of their conservative and over-protective policies regarding their under-diversified investments. In that case, family firms' owners would be serving their own interests and preserving their own investments rather than those of the family as a whole, including minority shareholders. Last, we can argue that the under-diversified family firms owners' wealth and the high concern and tremendous fear of conceivable financial distress or bankruptcy, naturally lead the family firms' owners to expropriate minority shareholders, who are usually passive investors and, above all, much more able to diversify their investments and spread their firm-specific risk across different companies, industries, and even across countries.

As a result, these specificities of family firms' owners related to longer investment horizon, deeper involvement in the firms' management, and under-diversified equity holdings certainly affect the firm's decisions differently. Thus, the firm's managerial, strategic, and financial decisions will be different. For instance, as we will show in subsequent chapters, a different capital structure is observed for family firms than for non-family firms, and a different IPO performance in both the short-term and the long-term will also be observed. In addition, we will highlight the main corporate governance mechanisms set by family firms and the ownership and control rights pre- and post- issuance date. Now, after discussing the major characteristics of family firms' owners, we will examine below the major conflicts in family firms and the major tactics and strategies some family firms' owners follow in expropriating minority shareholders.

3. AGENCY THEORY AND CONFLICTS

It is indispensable to clearly understand the type of agency problems in family firms and to examine appropriate governance mechanisms suggested by many researchers and legal advisors and counselors to mitigate such problems. Research on family firms provides an avenue for developing agency theory in a new and fundamentally different context because incentives that motivate family shareholders are different from those of diversified shareholders. For instance, compared to non-family firms, family firms face less severe agency problems due to the separation of ownership and management (Type 1 problem), but more severe agency problems that arise between controlling and minority shareholders (Type 2 problem). We will discuss the major conflicts in family firms' structure and list the most expropriation strategies used by family firms' owners.

3.1. Agency Theory Review

Below we discuss the two main agency problems (Type 1 and Type 2) and will describe thereafter the different expropriation strategies followed by family firms' owners.

3.1.1. Principal-Agent Theory

Principal-agent theory (Jensen and Meckling, 1976) constitutes the primary framework for corporate governance discussion. As defined, an agency, in general terms, is the relationship between two parties, where one is a principal and the other is an agent who represents the principal in transactions with a third party. Agency relationships occur when the principals hire the agent to perform a service on the principals' behalf. Principals commonly delegate decision-making authority to the agents. Agency problems can arise because of inefficiencies and incomplete information.

Thus, according to this theory, people act with a short-term and opportunistic orientation while aspiring to maximize their personal financial utility. It is worth mentioning that the two problems that agency theory addresses are: problems that arise when the desires or goals of the principal and agent are in conflict, and the principal is unable to verify (because it difficult and/or expensive to do so) what the agent is actually doing; problems that arise when the principal and the agent have different attitudes towards risk. Because of different risk tolerances, the principal and agent may each be inclined to take different actions.

Thus, to mitigate such problems, principals create incentives for the agent to act as the principal wants because the principal faces information asymmetry and risk with regard to whether the agent has effectively completed a contract. Thus, this theory is concerned with resolving problems that can exist in agency relationships; that is, between principals (shareholders) and agents of the principals (company executives). Accordingly, this classic agency theory, described by Jensen and Meckling (1976), looks at protecting investors from managerial entrenchment and expropriation. As discussed earlier, this type of agency problem is referred to as a Type 1 agency problem.

However, Fama and Jensen (1983) stated that agency costs between owners and managerial agents can be advantageously low if there is a close alignment or even identity between the interests of owners and managers. No better example than the family firm can be given here in explaining the close alignment of interests between the family firms' owners and managers. It is worth noting that in our discussion of the family firms' characteristics in the previous section, we have mentioned that family firms' owners often get deeply involved in the firms' management and in the daily decision-making process (Daily and Dollinger, 1992; and Melin and Nordqvist, 2000). Accordingly, family firms' owners are assumed to be better monitors of managers than other types of large shareholders, suggesting that lack of alignment between managers and owners might be less prevalent in family than in non-family firms (e.g. Anderson and Reeb, 2003a; and Ben-Amar and André, 2006).

Similarly, La Porta et al. (1999) indicate that families are almost always involved in the management of the firm, which might result in greater alignment between the interests of shareholders and managers. Thus, in family businesses, the conflict of interests between the owners and the managers, and the risk that managers do not act in the best interests of shareholders, are minimal. Consequently, Type 1 agency problems in family firms are minimal as well. A controlling family's direct claim on its firm's residual returns creates an incentive to minimize costs (Alchian and Demsetz, 1972), and to closely monitor its managerial agents, making it difficult for them to divert resources into value-destroying activities (Anderson and Reeb, 2003a). Similarly, family firms possess a strong incentive to ensure capital is deployed sparingly and used intensively and that indirect production costs are tightly managed (Brickley and Dark, 1987).

Thus, controlling families reduce owner-manager conflicts either by directly appointing a family member as CEO or by effectively monitoring professional executives (Demsetz and Lehn, 1985; and Anderson and Reeb, 2003a). As pointed out by Dyl (1988) with respect to closely-held firms, the large investment of controlling shareholder's wealth within the firm creates the incentive to carefully scrutinize management actions.

3.1.2. Principal-Principal Theory

In corporate finance, the principal-principal agency problem is usually referred to as a Type 2 agency problem. It usually arises between the majority controlling shareholders and the minority non-controlling shareholders. In the family firm's case, the majority controlling shareholders are the family firms' owners, their close relatives, descendants or friends, who hold the majority of the firm's cash flow rights and voting rights and usually also hold primary key positions over the firms' management board and supervisory board. By contrast, minority shareholders are usually the dispersed, small, and outside investors who have no control and cannot closely monitor or exert any strategic changes over the firm's actions.

However, since the Type 1 agency problem, that is the principal-agent conflict, is not prevalent in the case of family firms where family firms' owners are heavily involved in the firms' management, we will focus in this chapter on the Type 2 agency problem. The Type 2 agency problem is not found exclusively in family firms but in any corporate structure where shareholders are divided into majority controlling shareholders and minority non-controlling shareholders. The Type 2 agency problem persists in most types of such corporations and in family firms as well. Consequently, more attention is being paid to different corporate governance mechanisms to mitigate such an important, if not inevitable, problem. Thus, here below we will concentrate on this type of agency problem by identifying the nature of conflicts between the controlling family shareholders and minority ones. We will also discuss different expropriation strategies followed by some family firms' owners.

3.2. Nature of Conflicts between Shareholders

As we have discussed, family firms do not really suffer from Type 1 agency problems (Jensen and Meckling, 1976) but from endogenous problems like altruism, owner opportunism, and self-control (Schulze et al., 2003). For instance, Claessens et al. (2002) explain that once a family has enough ownership for unchallenged control, it can begin to abuse its power by taking resources out of the business and here a Type 2 agency problem is created. Many authors argue that families have a powerful incentive to expropriate wealth from minority shareholders through various means (La Porta et al., 2000; and Bruton et al., 2003), what Young et al. (2001) call a 'principal-principal' or 'horizontal' agency relationship.

Consequently, a growing body of literature has shifted attention toward this type of agency problem between minority investors and large controlling shareholders (Shleifer and Vishny, 1997; and Morck and Yeung, 2003). Most firms around the world are controlled by a large shareholder, typically founders or their families (La Porta et al., 1999; Claessens et al., 2000; and Faccio and Lang, 2002). Villalonga and Amit (2006) suggest that controlling families have greater incentives for both monitoring and expropriation. For instance, La Porta et al. (1999) argued that the primary conflict in closely held firms is between majority and minority shareholders, with the former having the potential to expropriate wealth from the latter. Similarly, Shleifer and Vishny (1997) argued that the fundamental agency problem is not the conflict between outside investors and managers, but rather the conflict between outside investors and controlling shareholders.

Families tend to expropriate wealth when their control through their voting rights percentage is greater than their cash flow rights represented by their ownership percentage. A good example might be when family firms' owners hold control over 53% of the firms' voting shares (this percentage represents their voting rights) while holding only 47% of the firms' shares (cash flow rights).

Additionally, families may also expropriate in the presence of dual-class stock, pyramidal ownership, and cross-holdings (La Porta et al., 1999; Claessens et al., 2000; and Faccio and Lang, 2002). Such expropriation may also occur when family firms' owners have the incentive, willingness, and ability to extract private benefits at the expense of minority shareholders (e.g. Fama and Jensen, 1983; Shleifer and Vishny, 1997; and Bozec and Laurin, 2008). Additionally, separation of ownership from control via dual, pyramids or cross-holdings is widespread around the world. La Porta et al. (1999) and Faccio and Lang (2002) report that the use of devices separating cash flow from voting rights is common across European countries, though the discrepancy is particularly severe in some, including Italy. Claessens et al. (2000) also find that in East Asian countries, voting rights frequently exceed cash flow rights via pyramids and cross-holdings. In the US, control in excess of cash flow rights is achieved through dual-class shares and dual-class firms represent a significant niche (Smart and Zutter, 2003). It is worth noting that through our observation of French family firms, we have seen almost all firms involved in one way or another in minority expropriation via different methods, primarily through dual-class stocks and pyramidal ownership.

Relatedly, Anderson and Reeb (2004) consider that families may engage in reducing firm risk, enriching themselves at the expense of minority investors, engaging in non-profit maximizing objectives, misusing firm's resources or generally representing their interests over those of the firm's other stakeholders. Therefore, in this approach, it is suggested that family control creates agency costs. Similarly, if families in family firms are able to derive benefits through means that are not shared with other non-family shareholders, their actions may not be consistent with maximizing the value of the company. For instance, family firms' owner-CEOs sometimes are given an inordinate amount of discretion at the job, especially where they personally have voting control of the company. Often, these CEOs cannot be controlled effectively by directors and are free to follow their instincts and impulses unchecked (Le Breton-Miller and Miller, 2006). Moreover, Shleifer and Vishny (1997) pointed out that poorly performing CEOs who resist being replaced might be the costliest manifestation of agency problems.

However, the typical family firm provides family members with secure employment, as well as perquisites and privileges that they would not otherwise receive (Ward, 1987). An excellent example might be when a family firm's founder appoints his son as head of the accounting and finance department, his daughter as head of human resources and recruitment, his son-in-law as head of production, and his wife as head of operations management, and above all, the founder takes the position of the firm's CEO, and sometimes simultaneously the firm's Chair. Interestingly, Kets De Vries (1996) reports that family firm founders have a tendency to lavish their children with gifts, perhaps to make up for their absence from the household when their children were young. For this reason, we can consider that parental altruism may exacerbate agency problems. On the other hand, it is worth mentioning that Villalonga and Amit (2006) provide evidence suggesting that family firms with a founder CEO have less severe agency problems than those with a descendent CEO.

4. EXPROPRIATION STRATEGIES

Although expropriation strategies adopted by family firms' owners are broad and differently viewed among investors and business researchers, below we discuss some widely used in most countries.

4.1. Dual-Class Stock

Usually, dual-class stock is a stock issued for a single company with varying classes indicating the different voting rights and dividend payments. For instance, we may see family firms' owners issuing 'stock A' for family members that represents a normal stock with all rights and privileges given to a typical stock and sometimes with even superior conditions, and 'stock B' for the outside shareholders with far fewer rights and privileges in terms of voting control, representation on the board, and even the ownership proportion. For example, 'stock A' may represent 51% of the firm's cash flow rights whereas 'stock B' may represent 49% of the firms' cash flow rights. Different voting rights percentages may also apply by giving double voting rights for 'stock A' and single voting rights for 'stock B'.

Rigamonti (2007) considered that in a dual-class structure, the controlling shareholder retains shares with voting rights and issues shares with restricted voting (or non-voting) rights to outside investors, thus deviating from the one share-one vote rule. For example, if a firm has 100 shares outstanding, of which 50 are non-voting, the block-holder retains the majority of votes by holding 26 common shares. So, cash flow rights are 26% and voting rights 52% (26/50). Actually, this is what we have observed in almost all French family-controlled firms where the controlling shareholders are usually family firms' owners who created the firms and decided to take it public while retaining control over it via issuing dual-class stocks. Many authors agree and explain that dual-class stock serves purely as a control-mechanism by family shareholders (e.g. DeAngelo and DeAngelo, 1985; Partch, 1987; Doidge, 2004; and Gompers, Ishii, and Metrick, 2008).

Dual-class stock studies measure voting rights as the ratio of the number of votes associated with the shares held by the shareholder to the total number of votes outstanding in the company. In companies with multiple classes of shares, different classes may entitle their holders to a different number of votes per share and hold relatively more shares of the superior voting class.

Dual-class stock is in fact a manifestation of this agency problem between family shareholders and minority shareholders. Relatedly, La Porta et al. (1999), Claessens et al. (2002), Barontini and Caprio (2006), and Villalonga and Amit (2006) found that when founders or their families use control-enhancing mechanisms to create a wedge between their cash flow and control rights, firm value is reduced. On the other hand, Gompers, Ishii, and Metrick (2008) find that the single most important determinant of dual-class status is having a person's name in the firm's name (e.g. Wrigley, Renault, Picard, Ford, etc.), an obvious proxy for family control.

4.2. Pyramidal Ownership

The literature on pyramidal ownership of a corporation starts with La Porta et al. (1999) who define pyramidal ownership structure as an entity whose ownership structure displays a top-down chain of control. The authors also define a pyramid as an ownership structure where the firm has an ultimate owner (at either the 10% or 20% level) and there is at least one publicly traded company between the firm and the ultimate owner in the chain of voting rights. Rigamonti (2007) mentioned that in a pyramidal structure, a block-holder controls, for example, 51% of shares of firm A, which owns 51% of firm B, which owns 51% of firm C, and so on. The block-holder at the top of the pyramid owns the majority of voting rights of all firms across the pyramid, with an increasingly small investment in each firm down the line. In firm B, the shareholder owns 26% of cash flow rights (the product of ownership stakes along the line), while in firm C he/she owns 13.27% of cash flow rights. For instance, Faccio and Lang (2002) posit that 'firm Y is said to be controlled through pyramiding if it has an ultimate owner, who controls Y indirectly through another corporation that it does not wholly control' and note that 'pyramiding implies a discrepancy between the ultimate owner's ownership and control rights'.

On the other hand, Almeida and Wolfenzon (2006) provide a rationale for the use of pyramids. In their model, pyramidal structures emerge as families use a firm they already control to set up a new firm, allowing them to access the entire stock of retained earnings of the firm they control and to share the security benefits of the new firm with others of the original firm's existing shareholders – a valuable feature when internal funds are important and when the security benefits of the new firm are low, as is often the case in settings with poor investor protection. The direct result of the pyramidal ownership structure is a separation of actual ownership and control in firms located at the lower part of the pyramid structure (Claessens et al., 2000). The separation of actual ownership and control occurs because the pyramid structure enables the ultimate owners to establish control disproportionate to the amount of ownership they have in every one of the successive firms. It is worth mentioning that Claessens et al. (2002) highlighted that the impact of the pyramidal structure on firm valuation is negative.

Moreover, besides pyramidal ownership, other researchers discussed the presence of cross-holdings that are intended by a company to directly or indirectly control its own stocks (Rigamonti, 2007). Thus, it is clear that the use of holding companies for 'pyramiding' purposes is another way families can gain control and exploit minority shareholders with little ownership. In this case, there is too little alignment between the interests of the controlling owner and the other shareholders of the lower-tier firms. In this case, agency costs may increase between the family firms' owners and the minority shareholders as the interests of different classes of owners diverge.

The temptation among those in control may be to run the business for personal gain, to favor nepotism, sweetheart contacts, and lavish expenditures that benefit them at the cost of other shareholders, especially if they are able to keep a large percentage of their assets outside the business. Morck et al. (1998) argue that while the main agency problem in the widely-held firm involves managers not acting for shareholders' interests, agency problems in family firms involve managers acting solely for only one shareholder, the ultimate owner, and neglecting minority shareholders.

4.3. Ownership Structure with Multiple Large Shareholders

Bennedsen and Wolfenzon (2000) show that founders can optimally choose an ownership structure with multiple large shareholders to force them to form coalitions to obtain control. The authors believe that by grouping member cash flows, coalitions internalize to a larger extent the value consequences of their actions and, hence, take more efficient actions than would any of their individual members. Accordingly, coalitions serve as a commitment device. However, the formation of the controlling coalition within family firms is vital and can have a significant impact on the firm's performance (Bennedsen and Wolfenzon, 2000; Bloch and Hege, 2001; and Claessens et al., 2002).

On the other hand, Zwiebel (1995) and Maury and Pajuste (2005) suggest that family groups have a higher propensity to seek private benefits rather than serving the firm, enhancing performance and protecting minority shareholders. Therefore, the end results of ownership structure with multiple large shareholders remains mixed, as they may differ from one country to another based on the different socio-economic cultural and legal regimes. For instance, Faccio et al. (2001) found that the presence of multiple large shareholders dampens expropriation in Europe, but exacerbates it in Asia.

4.4. Excessive Compensation and Special Dividends

Morck et al. (1998) identify the possibility that family firms might use their concentrated block-holding to expropriate wealth from other shareholders through excessive compensation, related party transactions, and special dividends. For instance, family CEOs with enough votes can abuse their power by extracting resources from the company or by hiring cronies or incompetent relatives (Faccio et al., 2001; Schulze et al., 2001; Morck and Yeung, 2003; and Schulze et al., 2003). Family CEOs may view their firms as personal fiefdoms. They have the discretion to act, or to resist acting, without board or top team intervention, and that can lead to risky decisions or, in the cases of lengthy tenures, strategic stagnation (Finkelstein and Hambrick, 1996). However, Barontini and Bozzi (2010) demonstrated that family firms pay their CEOs more than non-family firms, as documented by previous papers (i.e. Finkelstein and Hambrick, 1989). They showed that the incentives for the family to extract private benefits and share them with the CEO in the form of higher compensation are larger when the family owns a limited stake of cash flows. But also, according to Barontini and Bozzi (2010), the excess compensation and its impact on future firm performance shows that the higher compensation paid to the CEO is actually a form of rent extraction, ruling out the alternative hypothesis of a premium due to the CEO for the higher skills required to manage a family-owned firm.

Yet the empirical evidence on this point is inconclusive. On a sample of German firms, Haid and Yurtoglu (2006) found positive impact of family ownership on CEO compensation. However, and to our knowledge, the lower pay of CEOs in family firms does not confirm either the absence or the existence of collusion between the family shareholders and the CEO in these firms.

As for CEO compensation and the firm’s performance, Hall and Liebmann (1998) found that the link between the two has become much stronger. As a result, managers tend to focus too strongly on short-term profits at the expense of long-term opportunities and that they neglect to pay dividends to the firm’s shareholders (Lambert, Lanen, and Larcker, 1989). On the other hand, some other authors argue that family firms’ boards decide to pay high dividends at times when the firm has high need of funds to serve family members’ interests, instead of plowing back its earnings inside the firm and preventing costly external financing activities. In similar cases, these special dividends are considered an expropriation tool of minority shareholders and probably an accusation of threatening the firm’s financial position. According to Bebchuk, Fried, and Walker (2002) clever executives always have the power and ability to manipulate the remuneration process to benefit them at the expense of the company.

4.5. Tunneling

Tunneling is defined as the transfer of assets and profits out of firms for the benefit of their controlling shareholders (Johnson et al., 2000). The authors explain that tunneling occurs where a company that a shareholder controls sells below the market price products, assets, financial resources or investment opportunities to companies in which the same shareholder owns a larger share of cash flow rights. In these cases, the differential between the market price and the effective price of the transaction is not shared among all shareholders in proportion to the shares owned, but determines a wealth transfer to the party in control (Dyck and Zingales, 2004). Johnson et al. (2000) showed that countries whose legal systems restrict more effectively such looting of firms had milder financial crises in 1997–1998.

However, it has been argued that tunneling is not always convicted by law, especially in civil law countries, and above all, it is not always easy to decide whether manager's actions represent tunneling or not. Yet, family firms' owners can still use tunneling in one way or another, pretending in servicing the firm, to benefit their own interests rather than the firm's interests. Thus, in such case, it is obvious that majority and controlling shareholders, through their managers and board members, if intended, can involve some expropriating activities though tunneling.

4.6. Earnings Management

Healy and Wahlen (1999) stated that earnings management (i.e. earnings smoothing and accruals) occurs when managers use judgment in financial reporting and in structuring transactions to alter financial reports, either to mislead some stakeholders about the underlying economic performance of the company or to influence contractual outcomes that depend on reported accounting numbers.

Conversely, it is obvious that earnings management cannot be conducted by any minority, individual or outsider shareholder. Usually, in earnings management, there are some parties, individuals or coalition of managers or directors who sometimes get the help of some key internal positions, who together have the willingness, ability, control, interests, and power to manipulate accounting and financial records, data and reports to serve their own interests and those of their favored ones.

Yet, empirical evidence regarding earnings management in family firms is mixed (Wang, 2006; Ali et al., 2007; Tong, 2007; Prencipe et al., 2008 and 2011). While numerous studies in the US and UK suggest that family firms tend to have less earnings management compared to non-family firms (e.g. Wang, 2006; Ali et al., 2007; Tong, 2007; and Cascino et al., 2010), other studies in Europe reveal opposite findings and indicate that family firms report a higher level of earnings management compared to non-family firms.

However, Wang (2006) found that family firms, on average, have higher earnings quality than non-family firms. Similarly, Ali et al. (2007), also using S&P 500 companies, report higher earnings quality in family firms than non-family firms, but that family firms disclose less information than non-family firms (i.e. Chen et al., 2008; and Anderson et al., 2009). Using a sample of Italian listed firms, Prencipe et al. (2008) found less income-smoothing behavior but more earnings management related to debt contracts in family firms than in non-family firms (Prencipe et al., 2008 and 2011). In this regard, we may assume that in Europe, the family firms' owners tend to expropriate minority shareholders' wealth via earnings management and sometimes are involved in accounting and financial data manipulation.

4.7. Collusion between Family Shareholders and CEO

The family and the manager could find it profitable to collude in expropriating minority shareholders and sharing the benefits between them (Burkart, Panunzi, and Shleifer, 2002). As a result, the CEO could be granted extra compensation as the premium for loyalty to the family in control and as a stake in the private benefits extracted (Barontini and Bozzi, 2010). Thus, the CEO may be appointed by the family to serve its own interests and his compensation include a stake in the private benefits that the family obtains through control. The higher compensation granted to the executives could be a form of rent extraction by the ultimate owner (Barontini and Bozzi, 2010).

Opponents of this viewpoint might argue that the higher pay of CEOs in family firms might be due simply to the specific high expertise, skills, and managerial know-how required by the CEO to run a family firm that might need special and higher attention, care, and resources than any non-family firm. On the other hand, some other opponents might argue that collusion between family shareholders and CEO is not always translated into or observed as a higher paid CEO, especially if the family firm CEO is a family member who may collude with the family shareholders to expropriate minority interests for the benefits of the family and by not simply seeking higher pay.

5. CORPORATE GOVERNANCE MECHANISMS IN FAMILY FIRMS

The potential for moral hazard conflict between the family and outside shareholders creates a new set of agency costs, including mutual monitoring and opportunity costs that may have an adverse effect on the firm (Shleifer and Vishny, 1997). Therefore, based on this literature, both parties, the family owners and the minority shareholders, have incentives to put in place an effective governance structure to mitigate such costs for the benefit of the firm as a whole and for the benefits of each party involved in the scene.

On the one hand, studies conducted on the relationship between governance issues and firm performance have demonstrated mixed results (Dalton et al., 1998). For instance, under the agency theory framework, we may consider that a company with good corporate governance will perform better over a period of time and that good governance can reduce risk and attract further investment (Agrawal et al., 1996). On the other hand, many studies that have demonstrated positive relationships between variables of interest and firm performance, when reviewed meta-analytically show negative relationships and no statistically significant relationships at all (Dalton et al., 1998).

Therefore, the diversity of results can be partly explained by differences in the theoretical perspectives applied, selected research methodologies, definitions of wide and ambiguous terminologies, measurement of performance, and conflicting views about board involvement in decision-making and, to some extent, the contextual nature of the individual firm and the family firm in particular. Thus, some important factors considered in measuring corporate governance have been identified and adopted differently by different researchers, with varying and sometimes contradictory results accordingly.

However, many variables have commonly been used in the literature by numerous authors as the indicators of corporate governance, such as board size, board composition, multiple classes of shares, number of meetings attended by directors, number of meetings held in a year, the existence of various committees such as audit committee, remuneration committee and the like, founder-CEO or not, percentage of ownership held by the family firms' owners, or percentage of voting rights held by the family firms' owners and their descendants, and the presence of institutional shareholders, block-holders or simply individual shareholders. Somehow, these are considered standard variables that should have more or less the same definition anywhere. But, culture, preferences, traditions, goals, and even the definition for a family firm, differ from one country to another, thus creating problems in comparing research results and findings across countries or even within the same country if different definitions were adopted.

In this section we define and explain the importance of corporate governance mechanisms in family firms. Then we discuss the different types and techniques of governance mechanisms. We will also discuss family firms and performance, the determinants of performance, and governance mechanisms and performance.

5.1. Definition and Importance

In their recent paper, Ritter et al. (2012) mentioned that the introduction of the Sarbanes-Oxley Act in 2002 by US authorities served as a paradigm that influenced analogous regulatory changes in Europe. The authors added that in the same year, the "Report of the High Level Group of Company Law Experts on a Modern Regulatory Framework for Company Law in Europe" issued by the European Commission, recommended corporate governance practices similar to the Sarbanes-Oxley Act's provisions. A number of member states responded by either issuing national corporate governance codes or revising existing ones. Although the contents vary across countries, the codes are highly aligned with EU guidelines in recommending a balance of independent and non-independent directors, the separation of the CEO and chairman-of-the-board positions, formal and transparent procedures for the appointment of directors to the board, and effective internal control systems (Akyol et al., 2014).

Therefore, we can see that there is a worldwide direction toward setting more stringent rules, regulations, and laws related to corporate governance mechanisms and protecting shareholders' rights. This awareness is on the rise, not only among legislators and governmental agencies, but also among corporations, investors, and analysts. For instance, nowadays, a widespread awareness about corporations' ratings in terms of governance mechanisms, social responsibility, and welfare is being observed. In the end, when shareholders' rights are protected, investors' confidence in the capital market and in corporations will increase. This, in turn, will increase the flow of capital into the markets allowing higher trade volume and sustainable growth. However, before discussing the different corporate governance mechanisms that can be applied to mitigate agency cost, it is important first to define corporate governance mechanisms and mention their rising importance in corporate structures and especially in family firms.

The Report of the High Level Group of Company Law Experts issued by the European Commission in 2002 stated that corporate governance is a system, having its foundations partly in company law and partly in wider laws and practices and market structures. Melin and Nordqvist (2000) define corporate governance in family firms as ‘the processes, principles, structures, and relationships that help the owner of the firm realize his particular vision, goals and objectives’.

The European Trade Union Institute illustrates that the concept of corporate governance is defined in a number of different ways. As a rule, however, it is understood to mean the system of company management and oversight. Governance is, consequently, to be understood as an integral organism in which different regulations and market forces interplay. This combination shapes the regulation of corporate governance. It was also argued that two main governance forms shall be distinguished, one internal, one external. External governance is closely linked to company financing through the capital markets. Alongside capital market regulations (for example, capital-market-law rules on disclosure, rendering of accounts, oversight of central decision-making bodies) which in turn influence the salability of shares (exit), a rich set of instruments for reacting and applying pressure is at the disposal of market actors. The regulations on external governance are already largely harmonized at European level. Internal governance refers to the possibility of influencing decisions within a company. In contrast to external governance, the rules on internal governance are harmonized on only a few points (for example, co-determination). In decision-making, in the first instance managements have to consider the interests of the following:

– Shareholder value approach: according to this, management actions are aimed solely at the interests of shareholders. The only thing that counts is maximizing their profits, for example, through dividends, share price gains or proceeds from sales.
– Mixed shareholder–stakeholder approach: according to this, management actions do not have to be oriented solely towards the interests of the shareholders but may also take into account other interest groups that are likewise closely and permanently linked to the company (stakeholders).
– Enlightened shareholder value approach: here again shareholders’ interests take precedence. However, ethical, charitable or environmental concerns also come into play; disregard for these could, in the long term, lead to losses for the shareholders.

It depends on the national legal background how these approaches are observed and implemented. Anglo-Saxon law is traditionally shaped by the shareholder value approach. Today, however, an ‘enlightened shareholder’ approach is probably the norm. German (continental European) law, in contrast, works on the principle that employees’ interests must be taken into account in company decision-making, or at least to a certain extent. There is a similar understanding in France and Italy. In British law there is some dispute concerning whether the board may at least consider the interests of other stakeholders.

Alternatively, in the US, the Chartered Financial Analyst Institute (CFA®) defines corporate governance as the system of principles, policies, procedures, and clearly defined responsibilities and accountabilities used by stakeholders to overcome the conflicts of interest inherent in the corporate form. Corporate governance affects operational risk and, hence, the sustainability of a corporation. Additionally, the quality of a corporation's corporate governance affects the risks and value of the corporation. Thus, effective and strong corporate governance is essential for the efficient functioning of markets, according to the CFA®.

In the US, corporate governance started to become important for market practitioners in the early 1990s. Today, it is a topic of discussion worldwide. International investors generally regard corporate governance as an important criterion in their investment decisions (Krafft et al., 2013). According to a Global Investor Opinion Survey, 15% of European institutional investors consider corporate governance to be more important than financial issues such as profit performance or growth potential (Krafft et al., 2013). Also, 22% of European institutional investors are willing to pay a premium of 19%, on average, for a well-governed company. The authors added that more and more countries are tightening the rules and regulation related to governance by adopting new standards inspired largely by US codes of best practice and establishing guidelines for publicly listed companies to try to improve firms' overall governance. The OECD (2004) Principles of Corporate Governance acknowledge that an effective corporate governance system can lower the cost of capital and encourage firms to use resources more efficiently, thereby promoting growth. These factors implicitly and explicitly support the belief that better corporate governance will result in higher firm value and more profitable firm performance (Krafft et al., 2013).

Governance structure is important in family firms because it helps reduce agency costs. For instance, Demsetz and Lehn (1985) and Anderson and Reeb (2003a) considered that since family firms have concentrated shareholdings, they have an increased incentive to reduce agency costs because the more concentrated ownership is, the greater the degree to which the benefits and costs are borne by the same owner (Demsetz and Lehn, 1985). More importantly, as the well-being of the family is tied directly to the welfare of the company, families have further incentives to reduce agency costs that might impede performance.

Additionally, governance structure is important in family firms because it facilitates transmission to future generations. One of the main goals of family managers is to pass the firm on to the family's next generation (Casson, 1999; and James, 1999). Also, family firms' owners often have a deep emotional investment in their companies (Bubolz, 2001) as their family's fortune, personal satisfaction, and even public reputation are tied to the business (Dyer and Whetten, 2006). Therefore, they view the firm as an asset to be passed on to subsequent generations (Chami, 1999), leading to strict adherence to maximizing the value of the firm (James, 1999). Because of their undiversified shareholding, long-term interest, and concern for reputation, family shareholders are more likely to accept adopting strong corporate governance mechanisms to maximize the firm's overall value.

Research reveals that most family businesses have a very short life span beyond their founder's stage. This is often the consequence of a lack of preparation by subsequent generations to handle the demands of a growing business and a much larger family. As a result, family businesses can improve their odds of survival by putting the right governance structures in place.

Last, but not least, governance structure is important in family firms because it helps to gain competitive advantage. Family firms have to strive to prepare for the future and continued growth by establishing logical organizational and governance structures, taking proper advantage of every available resource and growing its potential to maximum.

5.2. Types and Inter-relationships

After we have defined corporate governance structure and discussed its importance in family firms, we will examine different types of governance mechanisms and the inter-relationships among different parties involved in the firm's structure. As we have mentioned, the aim of such governance mechanisms is to solve the agency problems between majority controlling family shareholders and minority non-controlling outside shareholders.

Here we will observe some corporate governance mechanisms being adopted by family firms to mitigate the agency problem, such as family presence, parental altruism, board structure, presence of independent directors, supervisory board, institutional investors, private equity, silent partners, CEO compensation, dividends, debt, and takeover.

5.2.1. Family Presence

Agency theorists argue that concentration reduces monitoring costs because large owners have the incentive and often the expertise to monitor their managers (Jensen and Meckling, 1976). Given significant shareholdings, family firms' owners too, will possess the incentive, power, and information to control their managers, thereby reducing free-rider agency costs and boosting returns (Morck et al., 1988; and Anderson and Reeb, 2003a).

One stream of literature suggests that family control is, potentially, an agency cost reducing mechanism in itself. Family firms are concentrated block-holders with a unique incentive to overcome the free-rider problem that prevents atomized shareholders and some other block-holders from effectively monitoring management (Tufano, 1996; and Anderson and Reeb, 2003a). As the wealth of the family is directly tied to the future of the company, and decision-making in family firms is predicated on much longer time horizons than in non-family firms, family firms more strictly adhere to wealth maximization than their counterparts (Chami, 1999; and James, 1999). A family's special technical knowledge concerning a firm's operations may put it in a better position to monitor the firm more effectively.

Moreover, leaders who are 'insiders', whose names are on the business, and whose past, present, and future are tied to the reputation of their firm, may act as especially solicitous stewards (Bubolz, 2001; Le Breton-Miller and Miller, 2006). Their stewardship can manifest in lifelong commitment to the firm, assiduous management of organizational resources, and a host of competency creating investments (Davis et al., 1997). Relatedly, Ensley and Pearson (2005) show that management teams of family firms are more cohesive than those of non-family firms. Family ownership has the potential to generate a firm community with common goals, trust, and values compared to non-family ownership (Abdolmohammadi et al., 2009).

The average CEO tenure at family-run businesses is said to range between 15 and 25 years, while that of the typical public, non-family firm leader has reduced to three to four years (Le Breton-Miller and Miller, 2006). Thus, family firms' CEOs are usually quite secure in their jobs and operate with the expectation that they will be in office for a long time. This alone will cause some to be farsighted stewards of the business (Davis et al., 1997). Moreover, as noted, because the family name, fortune, and reputation are at stake, and because they are there for the long run, family CEOs may be more committed to the business and willing to do what is needed to make it strong (Donaldson and Davis, 1991). This may engender a number of strategic outcomes that bring superior return. Similarly, family firms seek to grow in the long term to be able to fulfill the demands of a growing family (Ward, 1997). Family firms pursue long-term oriented business strategies such as investing in R&D and keep good relations with the firm's employees (Le Breton-Miller and Miller, 2006)

Family CEOs, who anticipate lengthy tenures, shun quick-fix solutions. They are less apt than their shorter-term peers to make opportunistic, short-term decisions that may come back to haunt them later in their careers. They avoid potentially hazardous moves to boost revenues, such as acquisitions into areas beyond the firm's expertise (Fox and Hamilton, 1994; and Amihud and Lev, 1999). They also resist downsizing expedients that may reduce costs but destroy morale and erode the firm's human capital and knowledge base (Laverty, 1996). Unlike many outsider CEOs, family leaders are usually secure enough in their positions to resist being goaded into risky short-term expedients to impress the board with quarterly numbers.

Long family-CEO tenures may also be associated with long investment time horizons and a willingness to commit resources toward the ultimate health of the business, even if this means sacrifices in the short term (Laverty, 1996; and James, 1999). To increase returns over a prospectively lengthy career, family CEOs may make quintessentially farsighted investments such as those in research and development, training, and state-of the-art infrastructure. Indeed, some evidence reveals that family firms outspend non-family firms in R&D (Weber et al., 2003).

Multiple family executives bring to bear multifaceted expertise and, therefore, broader knowledge, to monitor a variety of managerial and employee ‘agents’. These executives can have both the incentive and knowledge to oversee diligently their managers in each part of the business (Le Breton-Miller and Miller, 2006). When family members collectively have a diversity of experience, their monitoring contributions can be especially valuable (Finkelstein and Hambrick, 1996). Moreover, family executives with common interests, mutual trust, and job security are in an ideal position to present frankly their points of view to the leader, thereby countering excesses or blind spots (Lansberg, 1999). Their family status lets them be honest without fear of adverse consequences to their careers (Bubolz, 2001).

On the other hand, in family firms, the owner family is willing to support company development in the long term through investment of financial as well as human resources (Achleitner et al., 2010). The so-called patient capital of a family is an important source of competitive advantage for family firms (Sirmon and Hitt, 2003). Family firms have the goal of long-term orientation because they aim to hand down the company to the next generation (James, 1999). The company represents not only an investment or employment opportunity, but also family tradition and capability (Le Breton-Miller and Miller, 2006). Family firms often feel socially responsible to secure the long-term existence of their company and, thereby, to protect the jobs of their employees (Stavrou et al., 2007). For family firms’ owners, employee satisfaction in their daily work life is of high priority to increase employee retention, but also because their reputation in society is important, particularly if the company name entails the family name as mentioned earlier (Dyer and Whetten, 2006).

Family firms trying to smooth the way for later generations have a strong incentive to build social capital in the form of enduring associations with external parties that can supply critical resources to successors

(Gomez-Mejia et al., 2001; and Adler and Kwon, 2002). These associations can take the form of long-term alliances with partners, suppliers, and major customers (Palmer and Barber, 2001). Such concerned family firms are also more apt to make the unusually generous investments that make those relationships attractive (Naphiet and Ghoshal, 1998; and Bubolz, 2001), as well as to lure well-networked board members who can help later generations with their contacts (Anderson and Reeb, 2004).

Because of the very long tenures and high trust environments existing in many family businesses, the older generation is often willing not only to share wisdom but to discuss their own mistakes (Bubolz, 2001). Such frankness would be quite rare in non-family businesses, where managers have careers to protect and are uncertain about their successors. Another way families help to pass the baton is by fostering a strong, value-driven corporate culture (Barney and Hansen, 1994; and Habbershon and Williams, 1999). In fact, Allouche and Amann (1997) found that among major French companies, family firms invested significantly more in training, benefits, and salaries than non-family firms. Reid and Harris (2002) found the same for Irish family firms.

Finally, family control tends to shield a firm from the disciplinary pressure of the market for corporate control, since concentrated share ownership reduces the probability of a hostile takeover (Gomez-Mejia et al., 2003). Moreover, it has been argued that family firms represent a special class of large shareholders that may have a unique incentive structure, a strong voice in the firm, and powerful motivation of managers (Demsetz and Lehn, 1985). If monitoring requires knowledge and information about firms' technology and processes, families potentially provide superior oversight because of their lengthy involvement with the firm (Anderson and Reeb, 2003a).

Family ownership can lead to better monitoring of managerial discretion and reduce principal-agent costs associated with diffused share ownership structures. It can also facilitate access to resources. As a result, family presence in the firm may provide a competitive advantage and improve short- and long-term performance (Anderson and Reeb, 2003a). Social capital is often viewed as an especially efficient governance mechanism at intermediate levels of asset specificity, such as in facilitating medium-term, complex transactions that involve non simultaneous exchanges (Lovett et al., 1999).

Owner-managers enjoy advantages in forming and sustaining personal business contacts and networks (Le Breton-Miller and Miller, 2006). In exercising their property rights, owner-managers generally have the authority necessary to commit the firm's assets to transactions 'on a handshake', and because such commitments are personal, they may be more binding than arm's length agreements (Blyler and Coff, 2003). Family firms might be an optimal governance structure in certain contexts or periods but inefficient in others. Morck and Yeung (2009) suggest that concentrated structures might be better (or even necessary) in periods of recovery (when stability is needed and risk-taking is not a good strategy), but not when major innovations (e.g. the IT revolution) have to be exploited.

In general, family shareholders should have strong incentives to maximize the value of the firm, either because they want to preserve the family's reputation, strictly related to the destiny of the firm that often bears the family's name (Davis et al., 1997; and Dyer and Whetten, 2006), as well as because they want to pass the firm to the family's next generation as mentioned earlier (Casson, 1999; and James, 1999). In addition, strong feelings of identity lead family managers to seek self-actualization in terms of achieving a firm's goals rather than individual goals (Davis et al., 1997).

5.2.2. Parental Altruism

Although altruism has the potential to create agency costs, Schulze et al. (2001) believe that the altruistic benefits unique to family ownership may be beneficial for all other owners. However, Becker (1981) and Bergstrom (1995) consider altruism to be an economic phenomenon that occurs when an individual pursues his/her self-interest by promoting that of others. Simon (1993) and Eschel et al. (1998) develop this notion in the context of the family by arguing that it is in each family member's interests to pursue their own interests by promoting the interests of the rest of the family. This, in turn, develops loyalty, facilitates communication, and increases time horizons for decision-making, ultimately reducing agency costs. Furthermore, parental altruism fosters loyalty, as well as commitment by the family firm's leadership to the organization's long-term prosperity (Ward, 1987).

5.2.3. Board Structure

Boards of directors can play a significant role in controlling agency problems, particularly in monitoring executive management (Fama and Jensen, 1983). However, literature suggests that a board can monitor its firm more closely and take appropriate governance actions if it is sufficiently small but with enough independent directors to ensure effective monitoring (Jensen, 1993). Relatedly, Westphal (1998) suggests that since governance mechanisms in family firms are limited, minority shareholders potentially rely on their boards to monitor and control the family's opportunism. More recently, Anderson and Reeb (2004) found that interests of minority shareholders are best protected when independent directors have greater power relative to family block-holders. Therefore, the importance is in having powerful independent directors to exert proper monitoring over the family firms' behavior and protecting the minority's interests.

Previous research on family ownership and corporate governance in the US (Anderson and Reeb, 2003a, 2003b, and 2004) found that board structure, in an environment of strong legal shareholder protection and low private benefits of control, is conducive to restricting opportunistic behaviors of controlling families. Furthermore, the board structure and its characteristics may influence strategic choices (Zahra and Pearce, 1989). The resource dependence and strategic change perspectives have suggested that, in addition to control functions, the board may also play service/resource and strategic roles in the decision-making process (Pfeffer, 1972; and Daily et al., 1999). Effective monitoring and service roles are usually a function of structural factors, such as the proportion of independent directors on the board, CEO/Chairman roles held jointly or separately (Zahra and Pearce, 1989; Daily et al., 1999; and Young et al., 2001).

Family members often have an important role in the management or supervisory board of the firm (Astrachan and Shanker, 2003; and Zahra and Sharma, 2004). Family firms often decide against external managers because they believe that the objectives of external managers differ from family-specific goals (Daily and Dollinger, 1992). The presence of external managers leads to a need for control mechanisms as the goals of management may not be in line with family goals (Westhead and Howorth, 2006). Additionally, a management board dominated by external managers can create agency problems as the managers act as agents with different objectives to the family as principal (Westhead and Howorth, 2006). Thus, a family firm needs to have by its side an effective board, usually not big enough to control and monitor. In return, external managers may consider family firms to be a less attractive career option, as their career possibilities are limited due to the dominant role of the family (Sirmon and Hitt, 2003).

- *Presence of Independent Directors*

The Vienot Report (1995) defines an independent director as a person absolutely devoid of any link of interest, direct or indirect contact with the company or its affiliates. The report adds that, consequently, the independent director must not be:

- An employee, the president or CEO of the company or its affiliates, otherwise, he/she must be stopped for at least three years.
- A major shareholder of the company or of its affiliates, related in any manner to a significant partner or its affiliates.

Boards should include independent directors in line with the prevalent regulatory framework or codes of governance. The responsibilities of the independent directors include contributing to strategy and monitoring managerial performance, as well as staffing the key audit, remuneration and nomination committees, and influencing the board's conduct (International Corporate Governance Network Principles). Several studies tell us that independent directors make decisions for the interests of the company, without being influenced by the purpose of family members, which is to keep full control of the company. Anderson and Reeb (2004) argue that costs of family ownership may be reduced by both independent directors and influential shareholders from outside the family. Such parties, if they are indeed independent, may contribute expertise and objectivity, provide alternative perspectives, and bring to bear critical information that a family might overlook.

Independent directors can also serve as more objective monitors of family executives, help in locating and hiring better managers, improve resource-allocation decisions, and avoid expropriation of firms' wealth by family members (Dalton et al., 1998; and Anderson and Reeb, 2004). Moreover, if these directors are significant shareholders, they have an added incentive to act as vigilant stewards over company resources (Finkelstein and Hambrick, 1996; Burkart, Gromb, and Panunzi, 1997; Burkart, Panunzi, and Shleifer, 2002; and Claessens et al., 2002). Board independence may be used as a signaling device by organizations that act to enhance or protect their legitimacy, especially in the investor community (North, 1990; and Peng, 2004). Wiseman and Gomez-Mejia (1998) argue that family-related directors face higher exit costs because leaving the firm would mean foregoing certain rights, perquisites and privileges associated with being part of the controlling family. As a result, these high exit costs translate into a higher level of entrenchment.

Non-family directors may provide additional external ties that can be used to access resources and knowledge that are more diverse than resources of the controlling family (Filatotchev and Bishop, 2002). These resource and institutional arguments suggest that presence of non-family directors improves the firm's competitive position. However, according to Baysinger and Hoskisson (1990), the board should be able to shift emphasis from financial control and evaluation of managerial decisions to strategic control more focused on longer-term organizational outcomes. Therefore, independent directors need to have strong incentives to perform monitoring, resource, and service functions effectively. Previous research links close involvement in strategy development and implementation with the personal financial risk approximated by ownership interests in the firm (Oswald and Jahera, 1991). Hambrick and Jackson (2000) indicate that share ownership not only creates financial incentives for independent directors, but also increases their identification with the company, making them more vigilant in their oversight and more generous in their time and attention.

However, family firms' boards tend to be less independent, with substantial representation by family members (Anderson and Reeb, 2003a and 2004). Family firms' owners prefer to have family members as directors because they tend to be proactive and have a collective desire to maintain unity and preserve their wealth (Business Week, 2003). Maintaining lack of transparency of corporate governance practices may facilitate getting family members on board without much interference from non-family shareholders. The resulting concern that non-controlling shareholders may have about the lack of transparency in corporate governance practices of family firms, would be reduced to the extent that these firms deliver superior performance (Anderson and Reeb, 2003a). Also, independent directors provide a line of defense for protecting the rights of non-controlling outside shareholders (Anderson and Reeb, 2004). Finally, independent board members can exercise constraint through participation in important committees such as the audit committee, compensation committee, or nominating committee, and may have the ability to prevent the nomination of an unqualified family member as CEO (Shleifer and Vishny, 1997).

- *Supervisory Board*

However, the monitoring function of board members is sometimes questioned. Generally, the supervisory board or non-executive directors share the same main functions of monitoring and advising the management board or executive directors (Hillman and Dalziel, 2003). In addition, the supervisory board may monitor the company closely and may offer the required non-financial support to management (Achleitner et al., 2008). However, in a family firm, the supervisory board is represented by the family firms' owner and the family manager who are either the same person or at least closely related. This makes it more difficult to monitor the family manager. Furthermore, family firms' owners often decide to appoint to the supervisory board family members or external parties who are friends or on good business terms with the family (Schulze et al., 2003). The supervisory board is also expected to advise the management, by consulting its team in important management decisions or by giving access to external networks (Hillman and Dalziel, 2003).

5.2.4. Institutional Investors

Anderson and Reeb (2003a and 2004) suggest that the presence of large external investors can mitigate the potential for moral hazard conflict between the family and outside shareholders. When control is dissipated among several large investors, a decision to expropriate minority shareholders requires the consent of a coalition of investors, and this coalition might hold enough cash flow rights to choose to limit expropriation of the remaining shareholders and pay the profits as efficient dividends (La Porta et al., 2000).

Interestingly, Bennedsen and Wolfenzon (2000) suggest a theoretical model explaining an alignment effect of a coalition of large shareholders whereby there is a positive relationship between the cash flow stake of the controlling coalition and total company value. Consistent with this prediction, in a sample of Finnish listed firms, Maury and Pajuste (2005) found, especially in family controlled firms, that the presence of other strong block-holders limits the incentive to expropriation.

The identity of such institutional investors has important organizational implications because different owners may have different objectives and decision-making horizons (Tihanyi et al., 2003). For example, banks and investment trusts may behave differently in terms of their strategic preferences (McConnell and Servaes, 1990; and Chang, 2003). It is worth mentioning that some authors (e.g. Brickley, Lease, and Smith, 1988; and Kochar and David, 1996) differentiate between 'pressure-resistant' and 'pressure-sensitive' institutional investors.

- Pressure-resistant institutions, such as investment funds, are unlikely to have strong business links with their investors and may have stronger influence on strategy choices and their performance outcomes (Hoskisson et al., 2002). Johnson and Greening (1999) also indicate that investment fund managers' objective is a high relative performance of their portfolio firms because of their own reward system.
- Pressure-sensitive investors, such as banks, are likely to have business relationships with the firms in which they invest (Kroszner and Strahan, 2001). Because they often have an obligation to support the management's agenda, their governance role tends to be more passive compared to 'activist' investors (Tihanyi et al., 2003).

Additionally, foreign investors based in developed market economies may provide local firms in their portfolio with access to a larger, global pool of financial resources compared to domestic institutions that mainly operate in the national capital markets (Taylor, 1990). This may make them better and more experienced monitors than domestically-oriented investors (Thomsen and Pedersen, 2000). Furthermore, different investment preferences held by foreign institutional investors, combined with their global investment experience, may provide their investor firms with access to strategic expertise and knowledge that help them to gain a competitive edge compared to companies funded by domestic investors, especially when expanding internationally (Tihanyi et al., 2003).

5.2.5. *Private Equity*

When they become shareholders, private equity firms usually receive additional information, control, and liquidation rights. Particularly in majority investments, this implies a drastic reduction in the independence and control of the family (Easterwood, Seth, and Singer, 1989; and Berg and Gottschalg, 2005). Also, in minority investments, private equity firms often gain special control or veto rights and the family has to share control over the company (Achleitner et al., 2008).

Interestingly, the presence of private equity firms exert an acceptable level of monitoring activities over the family firms' owners, managers, and board decisions, and most of the time, private equity firms participate in firms' basic and strategic decisions while preserving seats on the firms' board. Therefore, the presence of private equity firms, with all their experienced personnel and directors, who should be well known for their credibility and professionalism, should bring a minimum level of assurance for minority and non-controlling shareholders about the firms' management, who otherwise have no true insight over the firm's directions and monitoring activities. That is why the presence of private equity firms, especially the highly reputable ones, can be identified as corporate governance mechanisms that it would be really good to have in the firm.

5.2.6. *Silent Partners*

The silent partner provides the company with equity and participates in its profits, but he/she is not explicitly involved in management. However, the silent partner has the right to access the company's annual reports (Achleitner et al., 2008). A silent partner is usually entitled to a fixed rate of return on his investments and, in addition, expects to receive a variable return based on the company's earnings. Payments to the silent partner can be interpreted as a mechanism to discipline external managers because it reduces the free cash flow available for investments, thereby reducing the risk of over investments by management and decreasing agency costs (Achleitner et al., 2010).

Therefore, silent partners do not play major roles in directly monitoring the firm's management, or the board's strategic decisions and their role is limited to disciplining firms owners' spending behavior and reducing the free cash flow that can be used to expropriate minority shareholders. Consequently, compared to private equity, silent partners do not exert the required level of monitoring that minority shareholders usually desire or expect.

5.2.7. Debt Financing

The literature on the monitoring role of debt is extensive and has taken several different perspectives. Grossman and Hart (1982) were the first to argue that managers could pre-commit to work hard by using debt rather than equity. Debt can serve as a disciplining mechanism to contain agency problems between managers and dispersed shareholders by imposing fixed obligations on firms' cash flow or by reducing free cash flows (Jensen and Meckling, 1976; and Jensen, 1986). Harris and Raviv (1990) stress the importance of short-term debt in eliciting timely information from management. Issuing short-term debt, and therefore forcing management to continuously refinance or roll over the debt so frequently, provides more monitoring and imposes more discipline on management. This could work well in the presence of Type 1 agency problems where shareholders do not have true and deep insight or proper control over the agents' work and performance.

However, in family firms, the main owner (family) is usually involved in the key decision-making of the firm (Daily and Dollinger, 1992; and Melin and Nordqvist, 2000) which might result in greater alignment between the interests of shareholders and managers (La Porta et al., 1999) and, accordingly, the role of creditors in monitoring the managers' actions is not of high importance. Nevertheless, since the primary conflict in family firms is between majority and minority shareholders, with the former having the potential to expropriate wealth from the latter (La Porter et al., 1999), the internal monitoring mechanisms, such as the board of directors, usually are at the disposal of the controlling shareholder who, in the family firm, is the family founder. In this context, external mechanisms, such as debt and takeover, are the only recourse for mitigating such activities. In Continental Europe, where active takeover markets are fewer than in the US and the UK, debt seems to represent the only external monitoring mechanism.

Since April 2009, most countries' central banks have tremendously increased their awareness by closely monitoring their banks with respect to their credit and liquidity risks and in enforcing them to adopt vigorous standards in assessing the creditworthiness of their clients, in scrutinizing any credit request and, more importantly, to continue monitoring their clients for the full credit term. All these requirements were reviewed, updated, and dramatically enhanced after the infamous credit crunch of 2009 where, unfortunately, most banks in the US and Europe were severely hit and many went bankrupt. As a result, banks and creditors have become more stringent than ever in dealing with their clients' requests for credit or rolling over any old debt. Creditors' levels of skepticism have also increased and their presence has improved close monitoring of firms. This will certainly put more pressure on firms seeking credit in terms of presenting more documents, such as updated financial statements, management reports, and policies.

More importantly, these creditors have turned out to be more effective in terms of management monitoring, since most creditors require more and more to have seats on the firm's board and share the board's decisions. In conclusion, this is what minority shareholders would like to see and have.

Similarly, Shyu and Lee (2009) argue that in family firms, creditors are the only viable monitoring mechanism to protect minority shareholders. They considered that in countries where the protection of shareholders is weak, controlling shareholders usually use excess control rights to weaken the ability of internal control mechanisms to constrain their entrenching and expropriating activities. In such circumstances, external control mechanisms may be the only recourse available to remedy the problem. Unfortunately, the market for corporate control, one of the external mechanisms, that has worked very effectively in creating value for shareholders in many developed countries by throwing out incumbent executives, is very much needed in countries where shareholder protection is weak and excess control rights are prevalent.

However, not all creditors wield the same influence (Jensen, 1986) and studies have shown that providers of short-term debt can exercise their monitoring power more effectively than their long-term counterparts. Not surprisingly, managers, out of self-interest, inherently prefer longer-term debt, and many studies (e.g. Datta et al., 2005) have provided evidence confirming such a managerial preference.

5.2.8. CEO Compensation

Agency theory suggests that owners who do not run their firms should tie managers' pay to performance to incentivize them to work for the owners' benefit and to lessen the possibility of high expropriation (McConaughy, Matthews, and Fialko, 2001). This can actually be true when Type 1 agency problems occur where shareholders (i.e. the firm's principals) do not have direct monitoring over managers' activities (i.e. the firm's agents) and who are concerned about their wealth being expropriated. Accordingly, the board of directors, through the compensation committee, sets the CEO's compensations plan to be aligned with the firm's performance, trying to mitigate the agency problems.

However, in the case of family firms, as previously discussed, firms' owners or their families are usually always present in the firms' management and board of directors. Thus, firms' owners or their families are the most informed parties about the firms CEOs' main decisions and have direct monitoring over their performance. So, according to agency theory, family firms' CEOs should not be the highest paid and their compensations are not necessarily to be aligned with the firms' performance. On the other hand, what persists in family firms, is Type 2 agency problems which necessitate the CEO's compensation to be aligned with the firm's performance to mitigate such problems. It is worth mentioning that this type of governance mechanism, as many others, should be matched and adopted as a set of mechanisms to create a proper and effective governance structure.

5.2.9. Dividends

Dividends may serve to reduce free cash flows that might otherwise be expropriated (Jensen, 1986; La Porta et al., 2000; Faccio et al., 2001; and Farinha, 2003). Agency theory suggests that dividends help control agency problems between managers and shareholders by reducing free cash flows that force managers to raise capital market funding more frequently and, thus, subjects insiders to outside scrutiny (Rozeff, 1982; Easterbrook, 1984; and Jensen, 1986). Moreover, it was mentioned by DeAngelo and DeAngelo (2000) that family-dominated businesses are more apt to be characterized by extraordinary dividend payouts. However, in cases of low or no family members' involvement in the management board, the family is likely to not identify themselves strongly with the company and, hence, their focus lies on gaining high dividends that decrease the share of earnings available to use as internal financing (Davis et al., 1997).

In contrast, there is also some evidence that large family firms pay out lower dividends and reinvest a higher percentage of profits (Daily and Dollinger, 1992; Gallo and Vilaseca, 1996; and Anderson et al., 2003). La Porta et al. (2000), however, indicate that dividends can reduce agency problems between family shareholders and minority shareholders as they guarantee a pro-rata payout to all shareholders and remove corporate wealth from the controlling block-holders. Their dividend outcome model predicts that under a stronger legal protection system, minority shareholders will use their legal power to force controlling block-holders to distribute more cash. The system also makes rent extraction, such as asset diversion, legally more risky and expensive for insiders, thus, dividends become relatively more attractive. As such, dividends can play a significant role in controlling the agency problem among family firms, particularly in environments of strong legal shareholder protection and low private benefits of control. Accordingly, the expropriation argument suggests families prefer lower dividend payouts so as to preserve cash flows that they can potentially expropriate. However, as families potentially reduce agency problems through their better monitoring of managers or direct involvement in management, they make less use of dividends to address agency costs. Faccio et al. (2001) focus on dividend policy in East Asian and European family firms and provide evidence of expropriation of other shareholders by the founding family.

5.2.10. Takeover

Most governance mechanisms discussed so far are considered internal mechanisms that are usually generated, adopted, and implemented internally by the firm's board. Thus, the firm's board has substantial power to choose among those mechanisms that are usually considered opportunities for the firm's owners, especially the minority shareholders. On the other hand, takeovers and the market for corporate control are external mechanisms, usually generated, adopted, and implemented by major and institutional investors wishing to have a substantial ownership in the firm and seeking a dramatic change in the firm's board and management. Thus, the firm's board and management have no power, control, and authority over such external factors that most often represent real threats to the firms' managers.

Takeover used to be considered an effective way to take control over a firm's board and, thus, over the firm's decision-making process, but this strategy might not be as effective in the case of family firms where usually firms' owners hold the majority of shares making the real threat of takeover trivial. But still, takeover and the market for corporate control have some positive governance effects, in that they can change the ownership structure of a firm by having an enormous shares acquisition by a single or few investors. In such cases, minority shareholders with no proper representation on the firm's board and no monitoring power over the firms' major shareholders and CEO, are now replaced by a few solid and experienced investors who hold a major shareholding and who seek important changes over the firms' governance and management.

5.2.11. Inter-relationships among Various Governance Mechanisms

Prior researchers (e.g. Gugler, 2003; Anderson and Reeb, 2003b and 2004) have examined relationships between family firms and corporate governance mechanisms, but they have done so separately without addressing any endogeneity issues among the variables. However, there are complex inter-relationships among different corporate governance mechanisms. Each governance mechanism has associated costs and benefits. For example, higher dividends may reduce agency problems but also increase transaction costs (Rozeff, 1982). Similarly, higher debt disciplines managers by reducing free cash flows but also leads to higher default risk or agency costs of debt (Jensen et al., 1992). Additionally, a higher proportion of independent directors on the board may enhance monitoring but it also increases their communication and co-ordination costs (Raheja, 2005). Smaller boards can be more effective monitors but will lack the expertise and advice provided by additional directors (Coles et al., 2008).

Likewise, Easterbrook (1984) suggests that as all agency problem controls are costly, substitution among them should be expected. However, some questions should be raised whenever examining any governance mechanism such as: (1) How are individual governance mechanisms combined to form a governance structure? (2) Are some governance mechanisms more effective when used in conjunction? (3) What blend of different mechanisms of corporate governance constitutes an optimal governance structure?

Many authors worked to find answers to these questions. For instance, Fatma and Dufour (2005) showed there is a positive relationship between the presence of independent directors and company leverage. This means that independent directors, whose function is to secure the providers of resources, enable the company to increase its credibility and borrowing capacity. These same authors again showed there is a negative relationship between the presence of independent directors and the shareholders' weight. This implies that the goal of family shareholders, namely to retain almost exclusive control by avoiding external finance, is shaken. Thus, the presence of independent directors on the board is a way to secure the funds provided by outside investors.

In the end, we should not lose sight of the bigger picture and the ultimate objective managers seek all over the world, which is shareholders' wealth maximization. Thus, managers seek to implement the most efficient set of governance mechanisms to increase the value of the firm whatever type of firm this is. Thus, we will concentrate in the following section on the reaction of family firms under the contexts of different corporate governance mechanisms and how these mechanisms would affect the firms' performance.

6. THE IPO PROCESS, BENEFITS, AND TIMING

6.1. IPO Process

The IPO is the process by which a private company can go public by sale of its stocks to the general public. It could be a new or an old company that decides to be listed on an exchange and, hence, goes public. Equivalently, companies can raise equity capital through an IPO by issuing new shares to the public, or existing shareholders can sell their shares to the public without raising any new capital. The company that offers its shares, known as an 'issuer', does so with the help of investment banks, usually referred to as 'underwriters'. These banks usually have a long and successful tracking history in making firms public and raising the required capital to the issuers in a prompt and cost efficient way. Additionally, these investment banks have generally strong international relationships with other investment banks, institutional investors, and high net worth individuals, that helps them sell the firms' shares as quickly and easily as possible. It is generally agreed that the main duties of the underwriters are: to assess the issuing shares' value, determine the best offering price to launch the shares at, decide the type of securities to issue, and the time to bring it to market.

Since most IPOs are companies going through a transitory growth period and subject to additional uncertainty regarding their future cash flows and values, IPOs are risky investments. This is why it is more likely to see institutional investors and high net worth individuals invest in IPOs than any other individual, small or inexperienced investor because they have both the financial ability to invest and bear the risk and the willingness to hold risky securities. Moreover, such types of investors have the capacity to pay for legal and financial consultants to assess, analyze, and follow up the IPO shares.

However, since our research is focused on French family firms, it is imperative to review the very important IPO process in France, including the IPO regulations, prospectus, and procedures. Besides, more than any other country in the world, the French IPO market has been characterized by multiple mechanisms being used to sell IPOs without government interference in the choice (Ritter, 2003). Additionally, NYSE Euronext exceptionally hands over the initial negotiation mechanisms to the introducing firms unlike other European countries that hand it over to an investment bank (Boutron et al., 2007). Moreover, the auctioneer in France, which can be the stock market company, specifies the definitive flotation price on the basis of the order book.

6.1.1. Regulation of IPOs in France

The '*Autorité des Marchés Financiers'* (AMF) was established by France's legislature in 2003. It has a Board headed by the AMF Chairman and an Enforcement Committee empowered to impose disciplinary sanctions and fines. The AMF has a staff of around 450 and is financially independent thanks to the levies and contributions paid by the firms under its supervision. It co-ordinates its activities with other French regulators, especially in the banking and insurance sectors, and cooperates actively with its European and international counterparts. It also consults regularly with professionals, investors, and academics in an effort to take financial regulation forward.

More precisely, the AMF regulates participants and products in France's financial markets. It regulates, authorizes, monitors and, where necessary, conducts investigations and issues sanctions. In addition, it ensures that investors receive material information and provides a mediation service to assist them in disputes. Thus, the AMF is an independent public body with a remit to safeguard investments in financial products, ensure that investors receive material information, and maintain orderly financial markets.

To fulfill its remit, the AMF sets rules, authorizes participants, approves disclosures relating to corporate finance transactions, authorizes collective investment products, monitors the participants and savings products under its supervision, conducts investigations and inspections, has enforcement powers, informs investors, and offers a mediation service. Any firm wishing to go public and be listed on a stock exchange must prepare a prospectus that is highly regulated by the AMF and present it few months before the admission date.

However, the firm wishing to go public needs the assistance and support of an experienced and professional intermediary whose main role is to value the offering, prepare all necessary and legal documents, such as the IPO prospectus, with the input of the firm, contact potential investors, individual and institutional, to advertise the offering and be the intermediary between the issuing firm and the official authorities for any query or information needed. This intermediary is, in most cases, an investment bank that plays the role of underwriter.

Importantly, due diligence is required to compile the IPO prospectus where lawyers with the underwriting bank examine the company's legal, financial, and commercial aspects. The due diligence has many legal, financial, and commercial facets and its importance is extremely high in gathering the information needed for an investment decision process. Actually, the requirements and quantity of information differ from country to country (cf. I.2). The next step of the flotation process is to obtain the approval of the admission authority (the AMF in the case of France). Last, the initial pricing and placement of shares are organized either by the underwriter or in co-ordination with the exchange, depending on the institutional setting (cf. I.3). The choice between listing market segments is mainly based upon size and in some cases may also depend on listing costs. Primary markets are portrayed by three normal necessities, particularly bookkeeping records history, capital size, and floating capital. Likewise, the IPO candidate should provide a full set of audited financial statements for the three business years prior to the IPO date.

6.1.2. Procedures for Obtaining AMF Approval

To start with, any company wishing to conduct an IPO on a regulated market or be admitted to an organized multilateral trading facility (OMTF) with a public offering must first prepare a prospectus for AMF approval. The prospectus is prepared under the responsibility of the company and must be made available to the public before the offering begins. The draft prospectus must be filed with the AMF along with the legal and accounting documentation listed in Articles 1 and 3 of AMF Instruction DOC-2005-11. After the AMF has reviewed the draft prospectus, which it is required to do within 20 trading days of receipt of a complete document, the issuer must send the final version, along with:

1. A statement by the responsible person or persons that the information contained in the prospectus is true and exact.
2. A statement by the investment services provider or listing sponsor that conducted due diligence in accordance with the professional code established by the French Banking Federation (FBF) and the French Association of Investment Firms (‘*Association Française des Entreprises d’Investissement’* – AFEI).
3. A completion letter from the statutory auditors regarding the financial and accounting disclosures.

As mentioned earlier, the prospectus is prepared by the issuer and incurs the liability of signatories. AMF approval indicates that the prospectus contains the information required for an investor to decide whether to take part in the offering. Thus, the prospectus must be complete, comprehensible, and consistent, and the information must be true, exact, and precise. Nevertheless, AMF approval does not constitute endorsement of the merits of the offering or the authenticity of the accounting and financial documents presented; above all, it does not give an opinion on the structure of IPOs. However, as part of its tasks in safeguarding investments, ensuring orderly markets and making sure that markets receive material information, the AMF sets down rules for providing material information to the market, including the price spread that forms the basis for investment decisions, and rules to avoid an obvious imbalance in the allocation of securities to the detriment of individual investors (Art. 315-35 of the AMF General Regulation).

6.1.3. IPO Prospectus

As mentioned above, before securities are publicly offered and admitted to a market, a prospectus must be prepared that is approved by the AMF and whose content requirements are determined by Regulation (EC) 809/2004 of 29 April 2004. The prospectus contains all the information that investors require to make an informed assessment of the assets and liabilities, financial position, results, and future prospects of the issuer, and any guarantors of the financial instruments being offered to the public or admitted to trading, as well as the rights attaching to those securities and the way they are being issued. The type of information depends on the particular nature of the issuer and of the financial instruments it wants to offer to the public or have admitted to trading on a regulated market. ‘Offer of securities to the public’ means a communication to persons in any form and by any means, presenting sufficient information on the terms of the offer and the securities to be offered, so as to enable an investor to decide to purchase or subscribe to these securities and placing of securities through financial intermediaries. A prospectus must always be prepared for an IPO on a regulated market. On Alternext, a prospectus must be prepared for a first admission to the Alternext Paris public offering compartment. As mentioned earlier, the prospectus is prepared by the issuer and incurs the liability of signatories.

An issuer preparing to carry out an IPO and its advisers are often led to disseminate information about the company ahead of the approval and publication of the prospectus. To provide equal information to the market at the earliest possible stage before the offering, the IPO prospectus may be divided into two documents:

1. A base document about the issuer recorded by the AMF and published ahead of the offer period to allow the market to get a better understanding of the issuer.
2. A securities note together with a prospectus summary, approved by the AMF and published no later than the IPO opening day, giving details about the IPO and incorporating the base document by reference.

Once the AMF has given its approval, the prospectus must be effectively disseminated (Art. 212-27 of the General Regulation), made publicly available free of charge at the issuer's registered offices, posted on the issuer's website, and published on the AMF's website. However, it is important to note that promotional documentation relating to the offering, irrespective of form and distribution method (press inserts, leaflets, mail shots, internet banners), must be provided to the AMF before being disseminated (Art. 212-28 of the General Regulation). They must clearly state that a prospectus has been or will be published and indicate where and how investors can obtain it. If the prospectus has already been authorized, the company must give the issue date and the authorization number. All advertisements must contain a notice drawing attention to the section of the prospectus on risk factors. Basically, once a standalone or a base prospectus has been filed, the AMF sends the issuer a notice once the file is complete. It usually announces its approval within 10 trading days and 20 days for an initial public offering. The deadline is reduced to five working days for issuers that have already provided comprehensive information by previously drafting a registration document and registering or filing it with the AMF.

6.2. IPO Benefits

An equity sale through an IPO has two distinct features. First, by definition, it induces a change in the ownership structure of the firm. Second, given the presence of high initial returns, it leads to a transfer of wealth from the old owners to the new shareholders. Moreover, in their model, Benninga, Helmantel, and Sarig (2003) showed that the entrepreneur at each point in time chooses between remaining private or selling equity to well-dispersed outside investors. The trade-off is between the higher valuations diversified outside investors are willing to pay (from which the entrepreneur only benefits when the firm is public) and private benefits of control (which the owner only enjoys when the firm is private). When the entrepreneur's private benefits exceed the cost of being under-diversified, he/she will choose to remain private. Outside investors' valuations (and thus the cost of under-diversification) vary over time as market conditions and the firm's cash flows and prospects change and, therefore, so does the case for going public. Below we list the main benefits and reasons that stimulate family firms to go public.

6.2.1. Realizing Growth

One of the main obstacles firms can face is the lack of adequate and sufficient financing to grow their business, invest in new technology, experienced and talented human resources, specialized training, capital expenditure, and working capital. Therefore, firms find in IPOs an excellent opportunity to raise additional funds for growth prospects and requirements, without which, firms find deficiencies in growing the business and facing new challenges. Therefore, many family firms' owners have come to realize that going public is essential for long-term growth (McConaughy, Dhatt, and Kim, 1995; Deeds et al., 1997; Pagano, Panetta, and Zingales, 1998; and Welbourne and Cyr, 1999). Additionally, Bancel and Mittoo (2009) conducted a survey with 78 Chief Financial Officers (CFOs) from 12 European countries. Although the motivations for going public differed from one firm to another or from one country to another, most CFOs agreed that the main important benefit of IPO was to finance growth. Similarly, Mazzola and Marchisio (2003) confirm that IPO offers family-owned companies a possible way of financing future company growth. An IPO provides funding for the firm to undertake new projects as well.

6.2.2. Solving Succession Problems

The conventional wisdom about family business refers to the perceived lack of endurance of family businesses. The statistics that in only one out of three cases does the successive generation continue with the family business, and that the average lifespan of a family business is 24 years, have been repeated in articles on family businesses since they were first published by Beckhard and Dyer (1983). By going public, this very important problem of survival will be solved and the family firms' descendants or heirs can just hold shares in their parents' or ancestors' firms that have now been listed without being obliged to manage the whole company on their own. Thus, in addition to financing firms' growth, finding a solution for succession problems is what family firms' owners seek to achieve by going public (McConaughy, Dhatt, and Kim, 1995; Deeds et al., 1997; Pagano, Panetta, and Zingales, 1998; Welbourne and Cyr, 1999; and Mazzola and Marchisio, 2003). Additionally, Marchisio and Ravasi (2000) consider that IPO offers flexibility for family firms regarding management succession and the professionalization of management.

6.2.3. Taking Advantage of Bullish Periods

Ritter (1984 and 1991) proposes the 'Hot Issue Markets' explanation for a firm to go public. This theory reflects an opportunistic reason for going public, as a business tries to take advantage of bullish stock markets. Strong IPO activities are observed when markets have had bullish tendencies for some time and investors are consequently optimistic when paying higher share prices. During such periods, investors, analysts, and underwriters tend to overestimate future revenues, net earnings, and cash flows and, thus, investors tend to pay relatively higher prices to acquire firms going public. Accordingly, firms' values tend to be overestimated and, thus, issuers tend to take advantage of such situations to maximize their proceeds from going public by selling the maximum number of shares at the maximum possible price.

This approach establishes that companies know that investors are over optimistic about the potential earnings of firms that go public. As this behavior results in strong stock demand, a lot of 'poor performing' or immature companies take advantage of the situation and sell their shares by means of an IPO. Companies carrying out an IPO in hot issue markets often underperform other IPOs significantly in subsequent years. In particular, this occurs in the case of young growth firms (Ritter, 1991).

6.2.4. Enhancing External Monitoring

Bancel and Mittoo (2009) surveyed 78 Chief Financial Officers (CFOs) of firms that went public between 1994 to 2004 from 12 European countries and demonstrated that large firms consider enhanced external monitoring as the most important benefit of an IPO. At an IPO, family firms' owners send signals and invitations to the investment community to get to know more about the firm, its history, management style, board skills and strategies, production and line of business, current plans and future projects, financial records and performance and, most importantly, its current and projected cash flows that are the main determinants of the shares' values. As a result, numerous external financial analysts, investment banks, lending and commercial banks, investors' agents and representatives, legislative and tax authorities will be much more interested in following and monitoring the firm in depth and take proper actions on time to either praise or punish the firm and, more importantly, to monitor its spending behavior and cash flow management. Therefore, some family firms' owners would be interested in such a crucial monitoring channel being created upon IPO.

From the governance perspective, especially in the case of family firms where the agency problem mainly arises between the controlling (majority) and the non-controlling (minority) shareholders, such monitoring means is mostly appreciated and valued by minority shareholders where their control and monitoring over the firms' management is low and generally ineffective. Therefore, IPO can provide monitoring means for those shareholders, especially with the extensive requirements in distributing financial data and reports that are usually deeply reviewed and audited by external and qualified auditors and by disseminating other important disclosures related to performance, main operating activities, and strategic changes in the firms.

6.2.5. Strengthening Bargaining Power with Creditors

Bancel and Mittoo (2009) showed that family controlled firms view the IPO as a vehicle to strengthen their bargaining power with creditors without relinquishing control. Moreover, flotation can help access debt capital on more favorable terms (Rigamonti, 2007). By going public, the firm releases information to general investors, stimulates competition among potential lenders, ensures lower cost of debt or larger supply of funds, mitigating a potential credit crunch (Rajan, 1992). For instance, Pagano, Panetta, and Zingales (1998) document that Italian companies experienced a reduction in the cost of bank credit after an IPO.

By choosing to raise funds by going public, firms diversify their source of financing and, thus, rely less on creditors' funding and will have stronger bargaining power to discuss future financing conditions. This is a very important advantage for family firms, especially in bank-based economies like France where banks play major and ultimate roles in financing most privately-held companies, sometimes putting severe restrictions and regulations on firms and, above all, retain control during the financing period. We remember here Porter's five forces (bargaining power of supplier). However, with an IPO, family firms find alternative financing and boost growth by targeting the market directly, benefiting from a vast source of financing from dispersed individuals and institutional investors, not necessarily from one source, usually the bank and, most importantly, without relinquishing control.

6.2.6. Increasing Share Liquidity

Rigamonti (2007) explained that another reason for listing is liquidity provided by the enlargement of investors' base. Listing on an organized exchange allows shares to trade at a value that reflects all available information. Hence, diffuse ownership has the effect of lowering the firm's capital cost and increases the equilibrium price for the shares offered. Not only is secondary-market liquidity valuable to investors, but also to original shareholders, who may desire to dispose of additional shares after the IPO (Booth and Chua, 1996). Additionally, through IPO, firms' initial owners can find an exit for selling part or all their shares in the secondary market. Pagano, Panetta, and Zingales (1998) tested different IPO models in a sample of 69 Italian firms that went public between 1982 and 1992. They concluded that Italian firms chose to go public primarily to rebalance their leverage and to allow the pre-IPO owners and managers to liquidate their positions.

Bancel and Mittoo (2009) showed that English firms considered the increased share liquidity and ability to sell shares as the most important benefits of IPOs. This reason might be very important for some family firms' owners who want to liquidate some or all their shares at a fair market price in the most efficient, prompt, and discreet manner and, more importantly, with the lowest possible bid-ask spread. This is usually what investors in privately-held firms suffer once they decide to sell their shares to a third party. That is why many investors and family firms' owners appreciate liquidity so much and sometimes pay a certain price to obtain it, in some cases through an IPO and specifically through underpricing.

6.2.7. Increasing Reputational and Social Capital

Bancel and Mittoo (2009) also documented that most of the 78 questioned CFOs agreed that the main important benefits of IPO were to enhance visibility and create a prestigious outlook for the firm. Similarly, Marchisio and Ravasi (2001) surveyed 74 Italian IPOs and demonstrated that an increasing number of companies saw going public as a way to improve their reputational and social capital, with beneficial effects on their capacity to access external resources and opportunities for new entrepreneurial ventures. This study reveals that, besides the usual financial motives, the decision to go public is increasingly stimulated by a search for a higher visibility and is seen as an important step in the expansion and reinforcement of the network of relationships that sustains entrepreneurial activity.

These results support Bancel and Mittoo (2009) with regard to enhanced visibility and firms' prestigious outlook. For instance, some family firms that go public may take great advantage of the old age of their firm, mostly using its heritage, in the firm's sign and logo, to promote it and benefit from it. Others benefit from the IPO, considering it a sign of triumph for their hard work and efforts, and aim to build a successful track record out of it to benefit their reputational and social capital. Additionally, some firms choose to go public because it is a step forward for internationalization. Usually, family firms' owners and principals are interested in their firms' social image more than any other passive investor, because these images reflect their own culture, ideas, success, and behaviors. Thus, through IPOs, such firms' owners can spread the image they have built for their firms over years and increase their reputational and social capital in the whole market.

6.2.8. Sharing Investors' Risk

Rock (1986) states that one important motive behind going public for firms is the owners' risk aversion as risk is shared but limited among owners and financial backers of publicly listed companies. Also, IPO offers existing shareholders the chance to diversify their wealth (Pagano, 1993). This can apply to family firms since the owners have intensively invested a big part of their capital in their own firms and, therefore, some means of risk management in terms of IPO would be beneficial to some of these owners. By going public, family firms' owners can use the IPO proceeds to diversify their investments and, therefore, spread the overall investment risk. This is a tactic in risk management that some family firms' owners intend to follow and prepare for it for years. As we have seen, this is attributed to the family firms' owners' characteristics that we covered earlier. We mentioned that the family firms' owners have under-diversified equity holdings. Their investment is very focused in a single asset: the owners' firm. As a result, IPO is a plausible solution for those owners who look to diversify their risks and, therefore, can sell part of their firms' holdings to public shareholders at a desired price and desired time.

6.3. IPO Timing

IPO timing is crucial in an IPO decision as many players in IPO markets believe that timing affects IPO performance in one way or another. As a result, researchers in the field of corporate finance examined IPO timing through different scopes and angles focusing on the relationship between IPO timing and market conditions, IPO timing and changes in valuations, and IPO timing and IPO volume. However, to our knowledge, there is a lack of research about the IPO timing of family firms and, therefore, we cannot ascertain that family firms' behaviors toward IPO timing differ from those of non-family firms. Therefore, we will review the main literature covering IPO timing in general and for a typical IPO.

6.3.1. IPO Timing Related to Market Conditions

According to the timing hypothesis, managers choose a window of opportunity to launch an IPO. This window is identified as a function of the firm's performance or market conditions, such as changes in valuations and investment opportunities. For instance, Baker and Wurgler (2002) argue that firms time their IPO to coincide with periods of excessive valuations. Loughran, Ritter, and Rydqvist (1994) go further in claiming that issuers time their IPOs to coincide with periods of excessive optimism, consistent with the finding of Lee, Shleifer, and Thaler (1991) that more companies go public when investor sentiment is high. Such patterns can persist if rational investors are dissuaded by the cost of implementing arbitrage strategies (Shleifer and Vishny, 1997).

6.3.2. IPO Timing Related to Changes in Valuations

Pastor and Veronesi (2003) also studied the timing of IPOs, but emphasize the importance of changes in valuations (as captured by returns), rather than valuation levels (high market-to book ratio in the industry). All else being equal, firms are more likely to go public following recent improvements in market conditions, regardless of the level of valuations in the market. They found recent returns matter more than the level of market-to-book ratios, which supports this emphasis on changes rather than levels. Pastor and Veronesi (2003) also predicted that more firms would go public when uncertainty about their future profitability was high. This intuition builds on Pastor and Veronesi's (2003) insight that valuations increase in uncertainty about the growth rate in profits, due to the convex relationship between growth rates and terminal values.

6.3.3. IPO Timing Related to IPO Volume

Lowry (2003) studied the time-series of IPOs in the US, showing that the main determinants of fluctuations in IPO volume were changes in firms' demand for outside capital and proxies for investor sentiment. However, Helwege and Liang (2004) argued that firms going public in periods of high IPO volume do not differ in any key characteristic from those going public in low volume periods. Differently, Cook et al. (2003) document that IPO volume increases during industry profitability and stock valuations, whereas Pastor and Veronesi (2005) found that 'IPO waves' coincided with peaks in stock market returns, increases in aggregate profitability, positive revisions to analysts' long-term earnings growth forecasts, and higher volatility. According to Ritter (2003), the huge fluctuations in volume from period to period suggest that market timing considerations are relatively more important than the life-cycle considerations modeled by Chemmanur and Fulghieri (1999) in determining a firm's IPO timing.

6.3.4. IPO Performance Time Intervals

Concerning IPO performance time intervals, most researchers who studied and analyzed the performance of firms going public, differentiated their performance calculations based upon two main time intervals, either short-term or long-term. While the short-term time interval ranges mainly from one to five days after the IPO date (sometimes up to 10 or even 30 days), the long-term one can extend mainly from one to three years after the IPO date (and sometimes up to five years or longer).

7. CONCLUSION

As mentioned earlier, our research objective is to shed more light on the French family firms' capital structure decisions compared to non-family firms, and their short-term and long-term performance after going public. Thus, in the first chapter we will focus on the many comparative analyses between the listed French family and non-family firms. We will thoroughly analyze the main differences in the French firms' capital structure by focusing on their debt financing. Last, we present eight multiple linear regressions to attempt to explain firm's debt financing in most aspects through different explanatory variables.

In the second chapter we will focus on the IPO short-term performance of French family firms. We inspect the firms' prospectuses with respect to different governance mechanisms set by the family firms pre-IPO date and the ownership and control rights at pre- and post-IPO date for the family firms' owners, public shareholders, and other investors, such as non-family managers, employees, and investment banks. First, we present a thorough analysis of IPO firms and their distribution over the years in terms of IPO size, values, and industry affiliation. We also analyze the firm's governance mechanisms and the ownership and control rights change due to the IPO. Last, we present two different models for attempting to explain IPO short-term performance, one via ownership and control rights change, the other by governance mechanisms.

In the third chapter we focus on the IPO long-term performance of French family firms. We use different models and entry dates in the IPO portfolios to realize better and robust results. We calculate cumulative abnormal returns, buy-and-hold abnormal returns, wealth relatives, raw returns, and run the capital asset pricing model and the Fama and French multi-factor model, in addition to two models using multiple linear regressions.

CHAPTER 1: CAPITAL STRUCTURE OF FAMILY FIRMS

1. INTRODUCTION

Many researchers urge that family firms are a group of particular interest to study because of the specificities and particularities in the level of professionalization and the degree of family ownership concentration that affects the governance system, strategy, organization and performance of firms. Accordingly, the last few decades have witnessed numerous research papers conducted on the specificities of family firms in their corporate finance behaviors, in their performance drivers and growth. One of the most important theories in corporate finance that many researchers have been interested in studying is the capital structure theory. In particular, the investigation of the determinants of the capital structure has been one of the most active inquiries in corporate finance.

For instance, Ampenberger et al. (2013) explain that the "capital structure puzzle"[1] (i.e. a firm's choice of an optimal capital structure), remains one of the large unresolved issues in the financial economics literature. As a matter of fact, numerous research papers have been conducted trying to explain the capital structure theory from different perspectives starting in 1958. Modigliani and Miller (1958), considered the fathers of the capital structure theory, were the first to present a theorem explaining the firm's decision to raise capital. This theorem states that, under a certain market price process, in the absence of taxes, bankruptcy costs, agency costs, and asymmetric information, and in an efficient market, the value of a firm is unaffected by how that firm is financed. This means that it does not matter if the firm's capital is raised by issuing stock or selling debt, and it also does not matter what the firm's dividend policy is. That's why the Modigliani-Miller theorem (MM theorem) is also often called the capital structure irrelevance principle. In fact, two propositions were stated based upon this theorem, which are best known as Proposition 1 and

[1] The term "capital structure puzzle" refers to Myer's (1984) presidential address at the 1984 AFA meeting, when he asked the question: How do firms choose their capital structures? … We don't know.

2; however, we will focus more on Proposition 1, which was stated in two versions, without and with taxes assumption.

Under the no taxes assumption, Proposition 1 focuses on the value of the firm that is the same regardless of its financing decision. Therefore, if we consider two firms that are identical except for their financial structures, the value of the levered firm (Firm L), which is financed partly by debt and partly by equity, will be the same as the value of the unlevered firm (Firm U), which is financed by equity only. To see why this should be true, suppose an investor is considering buying one of the two firms' shares, U or L. Instead of purchasing the shares of the levered firm L, he/she could purchase the shares of Firm U and borrow the same amount of money that Firm L does. The eventual returns for either of these investments would be the same. So, the return of Firm L that pays its cost of debt to its debtholders, will be the same as the return of the Firm U minus the cost of borrowing to purchase additional shares of Firm U. Therefore, the price of L must be the same as the price of U minus the money borrowed, which is the value of L's debt. This discussion clarifies the role of some of the theorem's assumptions. However, Modigliani and Miller (1958) have implicitly assumed that the investor's cost of borrowing money is the same as that of the firm, which need not be true in the presence of asymmetric information, in the absence of efficient markets, or if the investor has a different risk profile than the firm. Due to the unrealistic assumptions this theory relies on, it was considered too theoretical.

Therefore, Modigliani and Miller (1963) expanded the theory by introducing taxes and costs of financial distress. Proposition 1, presented in their previous work in 1958, was modified to incorporate taxes, to state that the value of the levered firm is equal to the value of the unlevered firm plus the value of the debt tax shields (sometimes referred to as interest tax shield). This means that the firm that finances its assets through a mixture of debt and equity will be better off than an unlevered firm due to the presence of debt tax shield. This means that as long as debt increases, interest payment increases and taxable income decreases accordingly. Hence, when taxable income decreases, tax expense decreases as well. Here's the benefit of leverage financing in the presence of taxes, because less taxes will be paid as leverage increases and that's why this benefit is called the debt tax shields. Concisely, as debt tax shields increase, the firm's free cash flow increases and its value, which is fundamentally defined as the present value of the future (free) cash flows discounted at the required rate of return, increases as well.

Consequently, someone could hypothetically deduce that the value of a firm could be maximized if it finances 100% of its assets through debt to get the maximum benefits of the debt tax shields and generating the highest free cash flow. However, Modigliani and Miller (1963) clarified that as debt increases, the costs of financial distress increase as well, which in turn decreases a firm's value. The costs of financial distress include direct and indirect costs. Direct costs are related to the legal and administrative costs of liquidation or reorganization, including fees for lawyers, auditors, courts and money needed to file paperwork. In contrast, indirect costs are related to the costs associated with impaired ability to do business and the wasted time by management to concentrate on the financial distress instead of value creation.

As a result, a major theory in corporate finance, which is the static "trade-off theory," goes back to Kraus and Litzenberger (1973) and was later developed by Miller (1977). It assumes the existence of a target debt ratio where the marginal cost of an additional unit of debt, (i.e. the costs of financial distress), equals the marginal benefits of an additional unit of debt (i.e. the debt tax shield). In other words, the firm's management has to find the appropriate balance between the two, the costs and the benefits of an additional unit of debt, rather than choosing the hypothesized 100% debt financing, because even though the addition of debt increases the firm's value by decreasing the tax bill, it also increases the bankruptcy costs and thus decreases the firm's value in return. Thus, the authors discussed an optimal leverage level for every firm to achieve in order to reap the maximum benefits of an additional unit of debt but without exceeding that level, but afterwards value destruction will begin due to the increasing financial distress costs.

The second major capital structure theory is the "pecking-order theory" that was founded on a dynamic perspective of investment opportunities and information asymmetries. The theory was first suggested by Donaldson (1961) and then modified by Myers and Majluf (1984). It assumes that, first, firms prefer to finance growth opportunities with internal funds (available cash flow from the retained earnings piling) over issuing any debt or equity securities, then, second, prefer to issue debt securities over any equity securities, and, third, prefer to issue equity securities last.

Behind the pecking-order theory is the rationale that information asymmetries between informed firm insiders and uninformed outside investors lead to a mispricing of equity issues. As a result, a firm's management with the incentives of minimizing financing costs and raising additional funds in the smoothest and fastest way, will be first oriented towards the firm's internally generated funds (i.e. retained earnings). Then if these funds were depleted, the firm will solicit the credit market by issuing debt securities, including both investment-grade bonds and junk bonds, as well as short-term commercial papers, bank drafts, line of credits, notes, and securitized obligations, etc. and, as a last resort, they will issue equity. Myers and Majluf (1984) argue that equity is the least preferred means to raise capital because when managers (who are assumed to know better about true the condition of a firm than investors) issue new equity, investors believe that managers think that the firm is overvalued and managers are taking advantage of this over-valuation to get the maximum proceed of the issue. Moreover, the existing shareholders will not favor sharing a firm's wealth and future cash flows with a larger number of shareholders when more shares are issued. As a result, investors will place a lower value on the new equity issuance and this will eventually lead to selling the firm's shares and reducing the value of shares. In spite of the strength of those two most well known models in the determining the capital structure theory, which are the trade-off theory and the pecking-order theory, many other authors have attempted to analyze the capital structure theory through different perspectives.

For example, Leland and Pyle (1977) focused on the signaling aspects behind the capital structure decision. Consequently, a firm's management might be sending positive signals to the investment community if it raises additional funds through debt rather than equity, which might be interpreted as the firm being in a healthy financial position and that it is creditworthy to be able in raising funds through additional debt (i.e. the firm has sufficient financial capability to return the borrowed debt, and it also has the willingness and integrity to do so). Moreover, this also sends signals that the company has nothing to hide from or be afraid of in facing the debtholders' scrutiny about the true financial positions of the firm and to examine its sources of funds and monitor its expenditures and cash flow activities. On the other hand, if a firm's management intends to issue additional equity securities rather than debt, outsiders might believe that the firm's share value is overpriced and that management intends to cash the maximum amount out of the issue and therefore they punish the firm by selling or short-selling its shares. Moreover, the existing shareholders would think that if the firm is in a better position or has stronger financial projections and solid cash flow activities, it would rather raise the additional needed funds through debt financing instead. Conversely, if the firm's management intends to buy back its own shares, either from the accumulated cash or through debt financing, it would be strongly interpreted by outside investors that the firm's management, which already has superior and internal private information, knows that the current share price is being traded below its intrinsic value or the firm intends to invest in the near future in positive net present value (NPV) projects, which will increase the share price above the current level.

Alternatively, Fama (1980), Berger et al. (1997) and Masulis (1988) focused on the risk aversion perspectives in determining capital structure decisions, whereas Harris and Raviv (1988), Stulz (1988) and Ellul (2008) focused on the corporate control considerations, where they mainly discussed takeover risk and the capital structure decision behind such risk. In addition, Baker and Wurgler (2002) raised the theory of market timing issues mentioning that at different times, different opportunities may arise for finance growth through either debt or equity, depending on the cost of each alternative. Kayhan and Titman (2007) worked on the influence of firm history over the capital structure decisions where they agreed that each firm with its own specificities, and based on its business operation, culture, risk aversion policies, experience and history, will adopt different capital structure decisions. This theory is more basically about the firm’s behavioral finance.

Last, but not least, Jensen and Meckling (1976), Easterbrook (1984) and Jensen (1986) discussed agency cost as an effective determinant of capital structure theory. Agency cost has always been a focal point for numerous researchers in the corporate finance field, which many theories were established upon. Depending on many important aspects such as a country’s legal environments and investors’ protection rights, social behaviors and traditions, taxation and economic systems and many others, agency costs vary accordingly. Therefore, under different circumstances, managers reacted differently and adopted different policies to mitigate agency costs, which in turn had impacts on the capital structure decisions of their firms. Nonetheless, despite the widespread research conducted over the capital structure theory covered through several aspects and perspectives, researchers did not converge on finite determinants of the ultimate capital structure, which remains specifically puzzling in the context of family firms. As a result, in this chapter, we will attempt to analyze both the agency theory and the asymmetric information theory as determinants of the capital structure of the French family firms due to the following two reasons.

First, and as Ampenberger et al. (2013) confirm, few research papers were prepared attempting to analyze the capital structure theory of family firms through the agency theory and the asymmetric information theory. For instance, Ampenberger et al. (2013) explain that few research papers examined the family ownership type, its agency costs and the capital structure theory, and they added that existing empirical evidence on this issue is inconclusive. Thus, the authors analyzed the capital structure theory of German family firms starting from the agency theory. Therefore, in this chapter we will examine the existence of differences in capital structure of the French family and nonfamily firms, and the drivers behind these differences by emphasizing two main theories, the agency theory and the asymmetric information theory.

Second, to our knowledge, and as Ampenberger et al. (2013) affirm as well, most research papers conducted in this field were done in a market-based economy, mainly in the United States (e.g. Mishra and McConaughy, 1999; Fama and French, 2001; Baker and Wurgler, 2002; Anderson and Reeb, 2003a; Jostarndt and Wagner, 2006; Kayhan and Titman, 2007; Ellul, 2008; and John and Litov, 2010), ignoring countries such as France, which could be a distinctive country to base our research on, for many reasons. France has a different legal and institutional setting in comparison to Anglo-Saxon countries (La Porta et al., 1998; 1999; and 2000) and according to Gleason et al. (2000), France has a distinctive legal environment, tax environment, economic system, and technological capabilities that influence firms’ capital structure choices. Importantly, France is a bank-based economy distinguished by a high level of blockholder control (Mefteh and Oliver, 2010). Additionally, France still has concentrated ownership patterns with a large amount of family firms, even among listed companies (La Porta et al., 1999; and Faccio and Lang, 2002). As a result, such family firms are worth giving all the attention and efforts in observing, analyzing and understanding their capital structure. Thus we attempt to understand whether the capital structure of such firms differ from the nonfamily firms and which factors contribute most in explaining their capital structure.

Yet, it is worth considering that a country's economic and financial system plays a major role in identifying and shaping a firm's policy towards its capital structure, which not only depends on the owners' preferences, risk aversion, agency relationship, legal systems, or others. Thus, it is indispensable mentioning that family firms' owners are directly influenced by the country's financial system where they have resided and developed their firms, which will certainly affect their capital structure decisions. For instance, in bank-based financial systems, such as in Germany and Japan, banks play a leading role in mobilizing savings, allocating capital, overseeing the investment decisions of corporate managers and in providing risk management vehicles. Thus, in such systems, the financial markets are weaker than in the market-based systems, and the daily trade volume for the equity securities is much smaller in numbers and in value. Firms operating in such systems get naturally directed towards banks for raising funds for both, its working capital or for funding future projects and capital expenditures. Firms in such systems admire banks being principal in financing their growth and daily operations and as principal strategic partner for young firms.

On the other hand, in market-based financial systems such as England and the United States, securities markets share center stage with banks in terms of getting society's savings to firms, exerting corporate control, and easing risk management. In such systems, the financial markets for firms' equity and debt securities are huge in numbers and in values. Additionally, firms are exposed to a variety of financing sources for their operating, investing and financing needs such as numerous private equity funds, venture capitals, and other financial instruments. As a result, the firms' capital structure will be definitely influenced by the country's financial systems, as well as by the country's legal and economic system. However, as discussed earlier, in this chapter we will mainly focus on family firms' capital structure decisions from the perspective of the agency problems and the information asymmetries.

Nevertheless, despite the economic importance of family businesses in Europe and more particularly in France, we do not know of any work that directly attempts to understand the financing decisions of family-controlled public firms. Since the seminal work of Jensen and Meckling (1976), the question of how agency costs impact financing policy has dominated the literature while little, if any, attention has been given to the question of how family ownership structure affects financing policy. While these studies are insightful, they do not examine the effects of family ownership on a firm's financing decisions. In this chapter, we will address this gap in the literature by investigating the financing behavior of family and nonfamily firms in France. Thus, during this chapter, we will focus our attention on the debt financing of French family firms to further investigate the motives for such financing types and the different characteristics of the debt being used.

This chapter is organized as follows: Section 2 illustrates the literature review and hypotheses. Section 3 describes the sample, data and methodology. Section 4 illustrates the results and interpretations and Section 5 concludes.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. The Agency Theory and Debt Financing

A better understanding of the relationship between family firms and debt financing is necessary to shed more light on this important issue especially as many contradictory theories and results exist. For instance, Ampenberger et al. (2013) affirm that the literature and the empirical results on the capital structure theory and financing choices of family firms are brief and largely inconclusive. The authors argue that little is known about the nature of family firms' financing decisions and, in particular, whether their financing behavior differs from that of nonfamily firms. However, as previously mentioned, one of the major challenges family firms face is the management of the relationship between the majority, insiders, blockholders and controlling family shareholders from one part, and the minority, outsiders, dispersed and non-controlling shareholders from the other part. The problem that arises out of this relationship was referred to as the Type 2 agency problem. Yet, due to the numerous recent corporate scandals that were associated with this type of agency problem, firms have adopted a wide range of governance mechanisms to mitigate its impact, size, and financial costs. Debt financing through all its long process and monitoring requirements was found to be one of the major governance mechanisms and therefore had an impact on firms' decisions.

Below, we will discuss the main literature theories that suggest and describe the relation between the family firm and the level of debt, starting with the ones that describe the negative relationship between the two, then the ones that describe the positive relationship, and, last, the ones that describe the mixed and the no relationship at all.

2.1.1. Agency Theory and Lower Level of Debt in the Case of Family Firms

Many researchers suggest that family firms will have a lower level of debt for the reasons mentioned below.

– ***The risk aversion of family firms:*** Jensen and Meckling (1976), Fama (1980), and Grossman and Hart (1982) argue that family firms' managers prefer lower financial leverage because it reduces the risk of bankruptcy and protects their under-diversified human capital. Family firms' owners are well aware that by increasing leverage so high, the financial risk will be tremendously increased and thus increase the volatility of their firms' earnings, especially in difficult times when business revenues unexpectedly drop. Founding families who are usually large and undiversified investors face a high risk exposure to one single asset, which is their own firm that they have been developing over years and sometimes over decades. However, any private benefit of the founding family, like high social reputation, might be lost in the event of the firm's financial distress. Hence, family ownership might cause risk aversion and is thus expected to lead to lower leverage ratios (Ampenberger et al., 2013). Consequently, family firms' founders strive to maintain financial distress costs as low as possible, and therefore maintain a low to moderate debt levels compared to nonfamily firms, because if they ever risk their family firm, they would be risking almost everything they have. Moreover, society usually highly appreciates family firms' owners who are able to pass on their successful firms to their descendants, which is regarded as accomplishment act and it is well esteemed in many cultures. Therefore, family firms' owners would be more hesitant in raising funds through debt, or exceeding the use of debt, in order to not jeopardize their firms, which are mostly the unique source of their wealth, pride, esteem, social image and mostly the fruit of all their efforts for numerous years. Thus, the above-mentioned authors explained that there is a negative relationship between the family firms and lower level of debt from the risk aversion perspective.

– ***The loss of control of family firms:*** Mishra and McConaughy (1999) found that family firms have a significantly lower level of debt because they fear losing control over their firms as a result of a severe financial distress or in the case of bankruptcy filing, during which debtholders can take control of their firms. Gallo and Vilaseca (1996) showed that family businesses have low debt-to-equity, that is to say a low level of debt due to the fear of bankruptcy or loss of control of the company. For protecting their own interests and securing a well-balanced risk management on their investments, debtholders usually set restrictive covenants over a firm's management actions and cash flow spending. For instance, in the case of bankruptcy, debtholders will have priority of claims over firms' assets and cash flows above any equity holder or any other stakeholder. Thus, in such times, to secure their interests, debtholders will come to take control over a firm's management which has failed in managing distress times and bankruptcy. As a result, family firms' owners lose control over their own firms for the benefits of the debtholders. As a matter of fact, in order to prevent such dramatic, unpleasant and terrible outcomes, family firms' owners avoid as much as possible making debt the main source of their financing, fearing losing control over the firms they have built and preserved for years. As mentioned earlier, family firms' owners seem to have a great concern about losing control even after going public. For instance, we have mentioned that listed family firms' owners do still hold more than 62 percent of firms' cash flow rights and more than 66 percent of firms' voting rights. Thus, family firms' owners hold control over their firms much more than their cash flow rights permit them to do so. Moreover, we have also seen that more than 76 percent of these firms had their CEOs holding the position of the board's Chair on the IPO date as well. This shows to what extent family firms' owners have dealt with control over their firms even after going public, which means that losing control over their firms for the benefit of the creditors is the last possibility they ever think about. Family firms' founders who enjoy large private benefits of control (Faccio and Lang, 2002) and focus on maximizing their own benefits rather than that of all shareholders (Bertrand and Schoar, 2006), seem to be highly reluctant to use equity financing in order not to lose control (Stulz, 1988; and Amihud, Lev and Travlos, 1990).

– ***The effective monitoring of family ownership:*** Friend and Lang (1988), Jensen et al. (1992) and Holderness and Sheehan (1988) find that the debt ratio is negatively related to managerial ownership. According to the agency theory, creditors monitoring benefits eventually increase when there is absence of real and effective shareholders' representatives on the firm's board, who cannot exert close monitoring tasks, and when agents behave for their own interests rather than shareholders' interests. As a result, these shareholders would mostly appreciate and value the use of leverage because as mentioned earlier, debtholders have to secure their own interests and investments by closely and adequately scrutinizing, analyzing and monitoring firms' management, profitability, financial reports, cash flow spending, and strategic decisions. Thus, by safeguarding their own interests, debtholders would also be securing the interests of shareholders who mostly have no access to management monitoring by any other means. For those reasons, debtholders are usually considered an effective and adequate monitoring vehicle in such situations. On the other hand, such a highly required role of monitoring a firm's management by the creditors is of less importance in the case of family firms due to these reasons. First, family firms' founders have a major stake in the firms' cash flow rights and voting rights and therefore can exert closer monitoring of the firms' management from inside than any other outside shareholder or even any creditor can do. Second, family firms' founders usually maintain key positions in the firms' management board and therefore exert a strong influence over daily managerial decisions. Third, family firms' founders also hold a majority of seats of the supervisory board exerting great influence over a firm's long-term strategic decisions. As a result, the family founders do not have problems in monitoring managers' actions and therefore they do not require monitoring actions from the creditors because owners have already full control and influence over the firms' management. Consequently, the level of debt for these firms will be lower compared with nonfamily firms due to the little need for monitoring in the presence of family firms' owners. Similarly, according to Ampenberger et al. (2013), in family firms, the effective monitoring reduces the agency costs, consequently reducing the level of leverage. Therefore, founding shareholders who have substantial internal presence on the firm's board of directors and board of management can exert effective monitoring policies over the firms' cash flow spending behavior. As a result, family firms' owners seek less external monitoring mechanisms such as creditors, and therefore have lower levels of debt. However, as we will see in the subsequent section, for this explanation to be valid, it is assumed that the family firms' owners will act in the best interest of the whole firm by aiming to increase shareholders' wealth and by not engaging in any means for expropriating minority shareholders. Similarly speaking, for this to be valid, it is assumed here that either the Type 2 agency problem is not of great concern for minority shareholders or better governance mechanisms exist than counting on creditors to do so. Accordingly, family firms do not actually need creditors to monitor their own firms because they can perform that task on their own and in a more efficient way. Moreover, Anderson et al. (2003), using a sample of US family firms, study the effect of family ownership on the agency costs of debt and find that family ownership reduces the cost of debt as a result of fewer agency conflicts between equity holders and debtholders, suggesting that bondholders view family ownership as a safety device protecting their interests.

2.1.2. Agency Theory and Higher Level of Debt in the Case of Family Firms

However, many other researchers suggest that family firms will have higher levels of debt for other reasons, which are listed below.

- ***Expropriation and entrenchment by family firms' owners:*** Shyu and Lee (2009) argue that in family firms, the controlling shareholders usually use excess control rights to weaken the ability of internal control mechanisms that could arise via additional equity holders and the presence of outside representatives on the firms' board of directors, constraining their entrenching and expropriating activities. Thus, when there is a significant separation between ownership and control among the family firms, and consequently the possibility of wealth extraction in mind, higher debt level could be an efficient mechanism to retain firm control and expropriating minority shareholders. Relatedly, Zwiebel (1996) provides a theoretical model showing that capital structure arises as an optimal response of managers to simultaneous concerns for expanding and retaining control of their empires, thus expropriating minority shareholders and increasing their entrenchment. Therefore, the authors assume that the high levels of debt financing of family-controlled firms were behind expropriation and entrenchment behaviors. Consequently, the increase in debt financing is required to protect minority shareholders from expropriation, and for the numerous monitoring activities debtholders can exert over firms' management and cash flow spending behaviors. Thus, this explanation for higher levels of debt comes as a solution of the Type 2 agency problem where majority shareholders have ultimate control over both firms' cash flow and voting rights and who act in their own interests by expropriating minority shareholders' rights. Therefore, minority shareholders highly appreciate the high use of debt for monitoring the role debtholders can exert over a firm's management.

– ***The risk of losing control over their firms:*** Stulz (1988) argues that firms with a controlling shareholder should exhibit higher financial leverage, as it increases their voting control for a given level of equity investment. Thus, the long-term commitment of family owners can explain a high debt level due to a high concern about diluting their voting rights and any loss of control over the firm. Additionally, Kim and Sorenson (1986) and Ugurlu (2000) show that a firm with high ownership concentration by insiders or families is associated with a higher debt level. Similarly, Ellul (2008), based on a sample of 3,608 firms from 36 different countries, demonstrated that family blockholders who are concerned about the loss of control associated with external equity financing, find debt is a solution to receiving external financing without diluting control power over the firm's equity stake. As a result, family firms' owners are unlikely to take risky financing decisions that will dilute their power or even put their control at risk by sharing their firms' wealth, cash flows, business know-how, and strategic decision making-process with new shareholders instead of being the ultimate sole players and decision makers. Therefore, whenever family firms need additional funding for their future projects, they prefer raising funds through debt financing rather than issuing equity and losing control for new shareholders. As a result, a positive relationship exists between family firms and the level of debt.

– ***Mitigating agency cost of equity by family firms' owners:*** Kim and Sorenson (1986) considered that the positive relation between managerial ownership and leverage is explained by the agency costs of equity. Also, Harris and Raviv (1988) and Stulz (1988) affirm that a higher debt level reduces the agency problems related with concentrated ownership and minority shareholders. As a result, these researchers argue that the higher the insider ownership, the higher should be the costs of external equity associated with incentive to consume perks. Thus, family firms' owners will be directed to raise funds through debt, leaving a room for an effective external monitoring and thereby mitigating agency cost of equity. Equally speaking, for family firms where there is a high concentration of insiders, raising funds through additional equity financing will be too costly for a firm since outsiders have to assume the risk of being expropriated by the insiders and thus require a premium for accepting to finance the firm's projects. As a result, raising funds through equity financing becomes too costly, which will direct the firms' owners to raise funds through debt financing instead.

– ***Cash flow disciplinary mechanism for family firms' owners:*** Jensen (1986) argues that shareholders prefer higher leverage as it reduces the overinvestment problem, particularly in firms with excess free cash flow. As a result, family firms' owners may seek debt financing in an attempt to enhance their expenditures behavior and thus establish a steady cash flow management. In other words, debt financing plays an important role of cash flow disciplinary mechanism for family firms. According to Jensen, family firms shall then have a higher level of debt for achieving better management over their excess free cash flow. Although this disciplinary instrument does not solely apply to family firms since any type of firm can rely on debt financing to achieve more adequate cash flow management, it is discussed here to show that some behavior of increasing leverage by family firms can be explained though this motive.

– ***The legal system and its effects on family firms' owners:*** La Porta et al. (1999) show that countries with low investor protection levels are associated with ownership structures that are more concentrated. Additionally, Filatotchev and Mickiewicz (2001) show that, especially when shareholders protection is poor, dominant owner and creditors can collude at the expense of minority shareholders providing support to the role of debt as tool to expropriate wealth from minority shareholders. For instance, in Latin America, which is a region that ranks particularly low in terms of investor protection and high in terms of corruption, firms tend to prefer debt over equity (Céspedes, Gonzalez and Molina, 2010). Similarly, Driffield et al. (2007) by exploring a sample of Asian firms, covering countries with poor investor protection, show that firms with a separation between voting and cash flow rights bear a higher amount of debt. As a result, family firms' owners find that the use of debt financing is a way out for expropriating minority shareholders especially in countries where investor protection is low. Thus, owners collude with the debtholders to move out the cash from the firms to their own account through organized conspiracies. Accordingly, family owners' behavior toward their choice in capital structure is highly influenced by their country's legal system.

– ***The market for corporate control and the threat for family firms' owners:*** Many studies (Harris and Raviv, 1988; Stulz, 1988; Israel, 1991; Zwiebel, 1996; Berger et al., 1997; Garvey and Hanka, 1999; Novaes, 2002; and John and Litov, 2010) find a strong relationship between corporate leverage and the activity in the market for corporate control. A recent study by John and Litov (2010) finds that managers insulated from takeover threats are likely to increase leverage as a result of better financing conditions and better access to debt. In order to safeguard their interests, managers could largely increase leverage to keep control pressures away such as takeovers. However, increasing debt as a defensive strategy has been more deployed in the past. By increasing debt significantly, companies hope to deter raiders concerned about repayment after the acquisition. However, adding a large debt obligation to a company's balance sheet can significantly erode stock prices and jeopardize a firm's position and its ability in meeting the excessive debt obligations throughout the years. Yet, some firms' owners still find increasing debt financing excessively a defense strategy against takeovers. Thus they intensify leverage and exacerbate all the debt-related ratios such as the debt-to-equity ratio, the total debt ratio, the interest coverage ratio and the overall firm's credit rating.

– ***Seeking immediate investment opportunities by family firms' owners:*** Berger et al. (1997) and Mehran (1992) state that firms with higher insider ownership look for higher leverage ratios in order to increase a firm's value as a result of an alignment framework. Usually, raising funds through debt is much easier and less costly than raising funds through equity, especially in the presence of numerous debt instruments and huge international debt markets. Also, in the presence of substantial investment opportunities and the immediate need for financing, family owners prefer raising funds through debt rather than going through the long process of issuing equity securities, especially when the founding families have already built a long-standing and firm relationship with its creditors, mainly banks in the case of France. Similarly, sometimes family firms find great investment opportunities or unexpected positive NPV projects that shall be promptly secured. As a result, such firms seek debt financing for its simplicity in raising funds rather than going into the complexity of equity financing. Such a reason could lead to higher debt financing for family firms than equity financing. Moreover, some firms may increase debt financing just to keep their cash balance high so they are able to promptly invest in some unexpected positive NPV projects.

2.1.3. Agency Theory and Mixed Debt Results in the Case of Family Firms

Brailsford et al. (2002) considered that at moderate levels of managerial ownership, the incentive effect takes place, making the disciplinary role of debt unnecessary. But, when managerial ownership increases, the control by managers over a firm increases as well, resulting in a higher managerial discretion, which could lead to a higher leverage ratio to mitigate the risk of wealth-destroying actions by managers. Yet again, when insider ownership reaches a certain high point, managerial discretion as well as economic involvement of managers in the firm become so high they lead to a decrease of leverage for reducing bankruptcy risk. Alternatively, one can argue that the alignment role played by managerial shareholding makes debt exploitation redundant at high levels of insider ownership. Therefore, according to Brailsford et al. (2002), there is an inverted U-shaped relationship between the managerial ownership level, and the use of financial leverage that is generally considered an effective monitoring mechanism against expropriating minority rights.

Studying managerial ownership, Morck et al. (1988) also found an inverse U-shaped relationship between ownership stakes and valuation. Another theoretical model producing such a concave relationship was produced by Stulz (1988) who stated that there exists a curvy-linear relationship between managerial ownership and firm value. According to the author, the firm value increased in the initial period where ownership is more concentrated and the monitoring costs are decreased. However, as management becomes more insulated, the value of the firm decreases.

Conversely, Croci et al. (2011) demonstrated over a sample of 777 large European firms during the period 1998 to 2008 that the financing behavior of family- and nonfamily-controlled firms is sharply different. Specifically, they show that family-controlled firms rely more on debt and syndicated loans for their funding needs while they are averse to equity and convertible debt financing. On the other hand, Anderson and Reeb (2003b) find no evidence for the relationship between managerial ownership and capital structure choices.

In this chapter, we will follow the review of literature presented by Jensen and Meckling (1976), Fama (1980), and Grossman and Hart (1982) who argued that family firms' managers prefer lower financial leverage because it reduces the risk of bankruptcy. In addition, we will also follow Mishra and McConaughy (1999) who found that family firms use a significantly lower level of debt because they fear losing control over their firms as a result of a severe financial distress. In addition, we will also follow Friend and Lang (1988), Jensen et al. (1992) and Holderness and Sheehan (1988) who found that the debt ratio is negatively related to managerial ownership which is the case of most family firms. Accordingly, we will be testing the following two hypotheses:

Hypothesis 1: Debt and insider ownership are negatively related.

Hypothesis 2: Debt and institutional ownership are negatively related.

2.2. The Asymmetric Information Theory and Debt Financing

As mentioned in the previous sections, a large body of literature finds that firms' financing choices are affected by information asymmetry between the insiders who are mainly the family firms' owners and outside investors who are creditors and investors. Thus, in this section, we will explore the relationship between asymmetric information and debt maturity, via analyzing different models conducted by researchers in the field. First, we will explain Flannery's (1986) model in explaining the relationship between the asymmetric information theory and debt financing. In Flannery's model, the following assumptions were initiated: two types of firms that are initially observationally equivalent, both have positive NPV projects and private information, but one type is riskier than the other one. In Flannery's model, firms with favorable private information are referred to as the ones having low-risk projects, while firms with unfavorable private information are referred to as the ones having high-risk projects. Additionally, it is assumed that both types of firms will require debt financing for their projects for which they will approach creditors. At the end of one period, creditors learn whether projects were upgraded or not. Basically, firms with favorable private information have a higher probability of upgrading their projects than those with unfavorable information. At that time, all firms that initially chose short-term debt must roll it over at a new interest rate and incur additional transactions costs.

In this model, if transactions costs are sufficiently high, a separating equilibrium may exist in which firms with favorable private information issue short-term debt at a relatively low interest rate and roll it over. And those with unfavorable private information issue long-term debt at a relatively high rate. Thus, firms with unfavorable private information are willing to pay the high rate on long-term debt to avoid expected costs in rolling over short-term debt (i.e. the transactions costs plus a relatively high probability of paying a higher rate in the second period). Firms with favorable private information, in contrast, face a lower probability of a high rate in the second period, and so are willing to bear the transactions costs to obtain the lower rate on short-term debt in the first period. In equilibrium, creditors can infer some of what was initially a firm's private information, and use it in assigning risk ratings. Thus creditors assign lower risk ratings to firms that choose short-term debt, and higher risk ratings to those that choose long-term debt. As a result, according to Flannery's model, debt maturity of the required loan is predicted to be positively related to risk ratings. This means that low debt maturity financing denotes low risk ratings, while high debt maturity financing denotes high risk ratings. Similarly, some other researchers such as Titman and Wessels (1988) and Kale and Noe (1990) were consistent with Flannery's model, but they didn't include the transactions costs as Flannery's did.

Second, Diamond's (1991) model also studied the relationship between asymmetric information and debt financing, although from a different perspective from Flannery. Diamond's model differs from Flannery's in that firms are not initially observationally equivalent and not all projects have positive NPVs. Firms have private information that their projects have either positive or negative NPV, which will not be revealed to creditors. Thus, creditors do not observe whether projects have positive or negative NPV, but are able to assign initial risk ratings based on other observational differences. Moreover, no additional transactions costs are required for financing via short-term debt. But similarly to Flannery's model, creditors learn whether projects were upgraded at the end of one period. Because some of the projects have negative NPV, creditors may refuse to roll over short-term debt at the end of one period, creating liquidity risk for firms with short-term debt, certainly for those that have negative NPV projects. It is assumed that firms with favorable private information are referred to the ones having positive NPV projects, while firms with unfavorable private information are referred to the ones having negative NPV projects. As a result, firms with favorable private information and with sufficiently low risk ratings may choose short-term debt at relatively low interest rates because of a high likelihood of being able to roll over their debt after one period. In contrast, those with favorable private information and intermediate risk ratings may choose long-term debt at a higher rate to reduce their greater liquidity risk of being unable to roll over short-term debt after one period. Finally, firms with unfavorable private information, and either low or intermediate risk ratings may mimic the actions of firms with favorable private information, otherwise, they may be identified by creditors as having negative NPV projects and be denied credit. As a result, firms with favorable and unfavorable private information with low or intermediate risk ratings will choose short-term debt, whereas firms with favorable private information with intermediate risk ratings may choose long-term debt. This therefore contrasts with Flannery's model, in which it is argued that creditors can predict and assume the firms' risk ratings through the maturities of the debt being in request, suggesting short-term debt financing for low-risk rating and long-term debt financing for high-risk rating, Diamond's model assumes that risk rating has already been observed by creditors, and firms with low-risk rating will request short-term financing while firms with intermediate-risk rating will request long-term financing.

Third, Rajan (1992) focuses on the bargaining power of a firm requesting debt financing. Therefore, when the bargaining power of a firm is low, the firm tends to prefer long-term loans, even if it has to pay higher interest because, under short-term bank financing, the bank has an explicit right to renegotiate contract terms. The author explains that under long-term bank financing, renegotiation takes place only if the bank gives up some of its rent control. Thus, according to Rajan, choosing long-term contracts allows the firm to limit the bargaining power of the bank and lessen its imminent control. Hence, when referring to firms with low bargaining power, on is usually referring to firms of a smaller size, generating lower revenues and cash flows, having average credit history, but also having moderate level of debt that allows the firms to raise additional leverage. Typically, such firms are more likely to maintain a very formal and strict relationship with their bank. Hence, they usually accept their bank's financing conditions with very small room for negotiation because they are not in a strong position to do so. That's why, according to Rajan, such firms prefer long-term financing to prevent rolling-over short-term debt, and thus going to their banks for financial aid as little as possible. The opposite applies for firms with high bargaining power, which usually are of a bigger size, generate higher revenues and cash flows, compile long successful credit history, and also have a moderate level of debt that also allows the firms to increase leverage. Generally, such firms are more likely to maintain a very strong, excellent and lenient relationship with their bank. Hence, they are strong enough to negotiate their bank's financing conditions and sometimes impose some customized terms. Thus, such firms usually prefer short-term debt financing, and rolling-over their debt as needed as much as possible without worrying about getting finance in the future.

Fourth, Berger et al. (2005) commented on many models' results and observed that most of the studies discussed, used both debt maturity structure and new debt issues. Hence, the authors include some measures of asymmetric information by focusing on bank loans to small businesses. The authors argue that small businesses tend to fit the profile of risky firms under conditions of asymmetric information for which the theories are written. The small business loans have a broad range of maturities from one day to thirty years. The authors focused on loans made by banks given that the relationship between debt maturity and firm risk ratings should be strongest when informational asymmetries are greatest.

On the other hand, the authors argue that when a firm is associated with low informational asymmetries, the relationship between debt maturity and firm risk ratings weakens. This means such firms could approach creditors for either short-term debt or long-term debt regardless of their credit ratings. For instance, when there is a high transparency level in the relationship between the firm and its creditor and thus when the latter has full access on the firm's real activities, forthcoming projects, financials and performance, the firm's credit rating is not the factor that defines that debt maturity. According to Berger et al. (2005), in low information asymmetries, firms with average to low risk ratings could require long-debt debt while firms with high risk ratings could require short-term debt as well. Therefore, the request for different debt maturities in low information asymmetries is not related to a firm's risk ratings, but to the firm's requirements and preferences and the willingness of the creditor to finance the firm for whichever period it requires because of the presence of the low information asymmetries. Yet, in high information asymmetries, the relationship between the debt maturity and the risk ratings makes it more likely that firms with high risk ratings will require longer debt maturity than firms with low risk ratings; however, the creditor will further scrutinize the firm's position and thus will be unwilling to grant such long-term debt financing. Therefore in such situations, the risk for creditors is much higher than in low information asymmetries, since the relationship with the firm is opaque and thus granting long-term debt financing is even riskier than granting them short-term debt financing, justifying the higher cost of debt for the longer term than shorter term loan.

Many other empirical studies also specified measures of asymmetric information or informational opacity of firms, regardless of whether the private information is favorable or unfavorable. For example, Barclay and Smith (1995) find that firms with lower valuations, higher research and development (R&D) spending, and more growth potential tend to issue more short-term debt, consistent with the notion that greater informational asymmetries are associated with shorter maturity. Equally, Stohs and Mauer (1996), Scherr and Hulbert (2001) and Ortiz-Molina and Penas (2008) find that smaller firms, which are likely to be relatively opaque, tend to make use of more short-term debt. Conversely, other theories of debt maturity stress the importance of matching maturities of firms' assets and liabilities, and taxes (Kane et al., 1985; and Brick and Ravid, 1985).

Nonetheless, evidence with regard to firm age is mixed and less clear. For instance, Scherr and Hulbert (2001) find that older firms issue less short-term debt, while Ortiz-Molina and Penas (2008) find that older firms issue more short-term debt. However, none of the studies to our knowledge distinguish the effects of asymmetric information on maturity by risk rating. Table 1 below summarizes empirical literature reviews on the relationship between debt maturity and asymmetric information.

Table 1: Summary of debt financing and asymmetric information

Authors	Main literature conclusions	Results
Barclay and Smith (1995)	They argue that among publicly traded industrial firms with bond ratings, those with higher bond ratings tend to use more short-term debt and those with lower bond ratings tend to have more long-term debt. Those without bond ratings generally have more short-term debt. If one interprets firms with high bond ratings as low risk, firms with low bond ratings as intermediate risk, and unrated firms as high risk, then their results as a whole may be considered to be consistent with Diamond's predicted non-monotonic relationship.	The non-monotonic relationship using bond ratings may be considered to be consistent with the predictions of Flannery's model for low-risk firms, but not for high-risk firms.
Stohs and Mauer (1996)	They use bond ratings for publicly traded industrial firms and find evidence of a non-monotonic relationship between firm risk ratings and debt maturity	
Scherr and Hulbert (2001)	They use an accounting measure for risk ratings (Altman Z-Score) for small businesses and also find	

	evidence of a non-monotonic relationship between firm risk ratings and debt maturity	The relationship using accounting measures for risk ratings does not have implications for Flannery's model. The risk rating in Flannery's model is based at least in part on the revelation of private information by firm maturity choice. Although bond ratings may reflect such a revelation, accounting measures cannot.
Johnson (2003)	He studies nonfinancial traded firms and uses three different types of risk ratings, two based on accounting data (firm size and earnings volatility), and one based on whether the firm's debt is investment grade. Johnson's accounting indicators have the non-monotonic relationship with the debt maturity structure, but the indicator for investment grade debt is negatively related to the proportion of short-term debt, which may be considered to be contrary to the predictions of Diamond's model, under which low-risk firms would have short-term debt.	
Mitchell (1993)	He focuses on the maturity of new debt issues and uses data on publicly traded corporations and finds that those with higher bond ratings tend to have longer maturities rather than shorter ones.	The relationships found in the bond-ratings studies of Mitchell (1993) and Guedes and Opler (1996) appear to conflict with the upward-sloping function predicted by Flannery's model.
Guedes and Opler (1996)	Their study finds that firms with investment-grade ratings tend to issue shorter- and longer-term debt, while non-investment grade firms tend to issue debt with intermediate maturity, which would appear to conflict with some of the predictions of Diamond's model.	
Ortiz-Molina and Penas (2008)	They use data on small businesses and specify an accounting measure for the risk rating (prior delinquency). They find that firms rated as lower-risk tend have longer maturities than those rated as high-risk.	The relationship in Ortiz-Molina and Penas (2008) does not have implications for Flannery's model because of the use of accounting data for risk rating.

Starting from the assumption that family firms have a better alignment of interest between major shareholders and managers, and that family firms' managers fear to lose their under-diversified investment for the benefit of creditors in case of financial distress (Jensen and Meckling, 1976; Fama, 1980; and Grossman and Hart, 1982), we presume that family firms have relatively lower risk than nonfamily firms. Then we will follow Diamond's models by presuming that firms with low risk (i.e. family firms as we deduced), prefer to raise funds through short-term debt at a lower rate and roll it over. So for this section, we will be testing the following hypothesis.

Hypothesis 3: Family firms' debt maturity is lower than that of nonfamily firms.

3. SAMPLE, DATA AND METHODOLOGY

3.1. Sample

The sample consists of publicly held firms traded on the CAC All-Tradable Index excluding the companies in the financial sector since financial companies (SIC 6000–6999) are subject to legal regulations regarding capital structure (Mefteh and Oliver, 2010). The analysis is based on listed companies' figures because all companies traded on exchanges are subject to external auditing and hence offer an acceptable level of transparency; in addition to that, publically held firms offer an acceptable level of disclosure, allowing me to obtain the data needed (Corstjens et al., 2005; and Gallo and Vilaseca, 1996).

CAC All-Tradable Index is a new index replacing the SBF 250 in which the number of values is unlimited and it reflects the evolution of all companies listed on Euronext Paris. It also allows us to represent the evolution of the stock market over the long-term and serves as a benchmark to certain mutual funds (FCP) and Sicav. We choose to use post-crisis monthly data to avoid the problem of data heteroscedasticity and for data availability constraints. We do not replace firms that are delisted or firms that are newly listed. The Bloomberg platform was the source of the core of the data and in the case of missing information. Thus, we have used Bloomberg Terminal, which is a computer system provided by Bloomberg L.P. that enables professionals in finance and other industries to access the Bloomberg Professional service through which users can monitor and analyze real-time financial market data and place trades on the electronic trading platform. The system also provides news, price quotes, and messaging across its proprietary secure network. It is also worth noting that most large financial firms have subscriptions to the Bloomberg Professional service. We conduct an intensive research and collect information for each firm individually. However, if no information is found, we exclude the company from the research. Traditionally, the choice of the optimal capital structure of firms is the result of numerous determinants reflecting information asymmetry, performance, corporate governance structures and other factors (Mefteh and Oliver, 2010).

Through this chapter, we aim to provide further evidence on capital structure theories and analyze the effect of a multitude of variables on the capital structure of French firms and we will also test for the difference in the capital structure between family and nonfamily firms in France. In addition to that, we will shed more light on one of the important subjects in literature, which is the question of preferable debt maturity in French family and nonfamily firms (Barclay and Smith, 1995; Stohs and Mauer, 1996; Datta et al., 2005;

and Ortiz-Moelina and Penas, 2008). We first prepared a comparative table in which we conduct a test of hypothesis to check if the mean of various variables reflecting level of debt and their corresponding maturities of the company is greater, smaller, or equal in family firms than nonfamily firms with 10%, 5% and 1% significance levels. The maturity of debt was reflected by the dependent variables: percentage of short-term debt in total debt and percentage of long-term debt in total debt. To assure high accuracy in all dependent variables all mild and extreme outliers were removed from the dataset. After testing if the means are different, superior or inferior to one another, the test presenting the most significant result is adopted.

The hypothesis test is not conducted on time-series monthly data; rather we transformed the time-series data into cross-sectional data by averaging the values of each of the variables from 2008 to 2013 for each firm. Hence, the hypothesis test was conducted on the average value per month per variable per firm (Buferna et al., 2005). CAC All-Tradable Index included 330 firms at the date of selection, however, after excluding the financial sector, our study was conducted on 293 cross sections (out of which 90 are family firms and 203 are nonfamily firms).

3.2. Descriptive Statistics

Below is a descriptive table for the 293 firms distributed among the 9 different industries – basic materials, communications, consumer cyclical, consumer non-cyclical, diversified, energy, industrial, technology and utilities – and as mentioned above they are grouped between 203 nonfamily firms (NFF) and 90 family firms (FF).

Table 2: Distribution of firms per industry

Industry	Total	%	NFF	%	FF	%
Basic materials	14	4.8%	11	5.4%	3	3.3%
Communications	40	13.7%	25	12.3%	15	16.7%
Consumer, cyclical	46	15.7%	27	13.3%	19	21.1%
Consumer, non-cyclical	63	21.5%	46	22.7%	17	18.9%
Diversified	3	1.0%	3	1.5%	0	0.0%
Energy	8	2.7%	7	3.4%	1	1.1%
Industrial	59	20.1%	44	21.7%	15	16.7%
Technology	55	18.8%	35	17.2%	20	22.2%
Utilities	5	1.7%	5	2.5%	0	0.0%
Total	293	100.0%	203	100.0%	90	100.0%

We note that the three biggest industries for all firms are the consumer non-cyclical (first), industrial (second) and technology (third) making 60.4% of total firms. These three industries are also the dominant ones for the nonfamily firms with the exact ranking, making 61.6% of total nonfamily firms. However, we noticed that the three biggest industries for the family firms are technology (first), consumer cyclical (second) and consumer non-cyclical (third) with a total of 62.2% of total family firms. It is worth noting that the communications represent 16.7% of all family firms, whereas they just represent 12.3% of all nonfamily firms, showing that family firms are successful in this industry, as well as in the technology industry where they come first with 22.2% of total family firms belonging to the technology industry against 17.2% of nonfamily firms that do belong to this industry. Furthermore, in family firms, the industrial ones had the same percentage of the communications with 16.7% of total family firms against 21.7% for the nonfamily firms. Also, the consumer cyclical firms represent 21.1% of total family firms against 13.3% of total nonfamily firms making the biggest difference between the two types of firms.

Below, we present two figures for the distribution of firms among industries. Figure 1 plots the distribution of all firms among the 9 industries according to the number of firms per industry. Figure 2 plots separately the distribution of family and nonfamily firms among the 9 industries.

Figure 1: Distribution of all firms per industry.

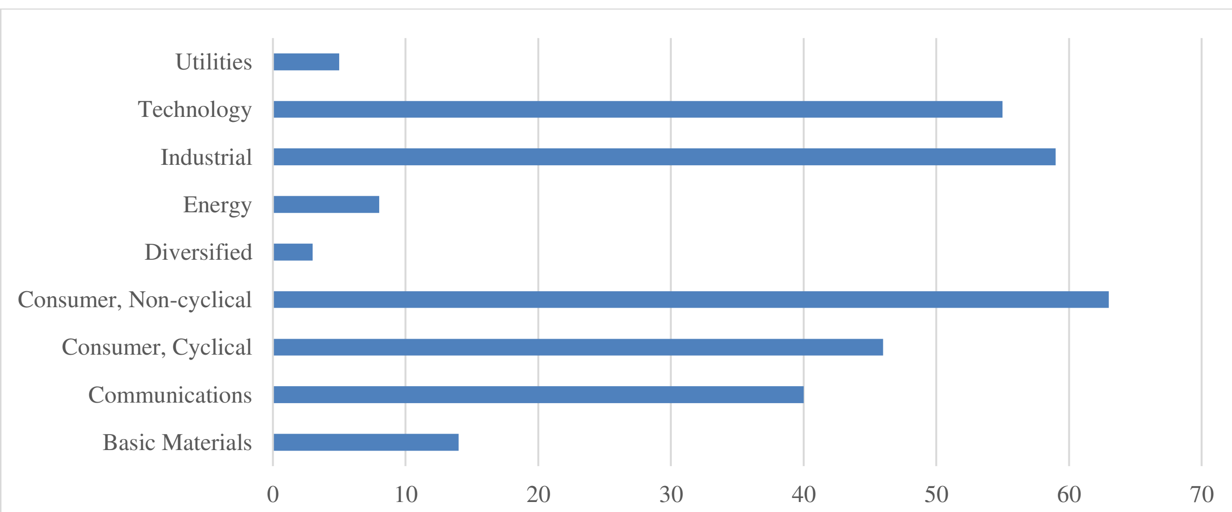
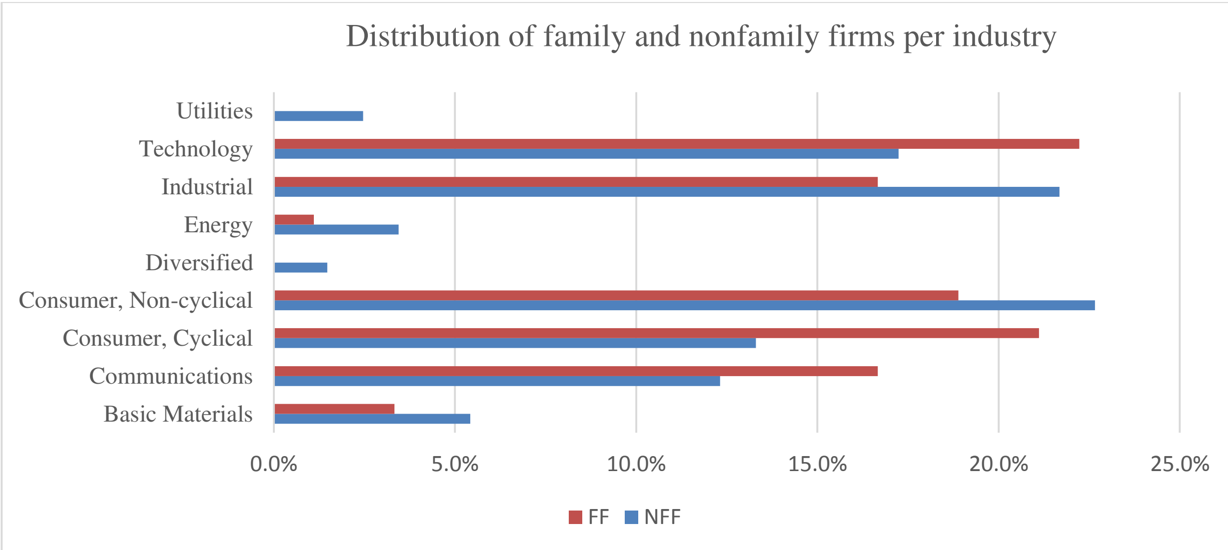


Figure 2: Distribution of family and nonfamily firms per industry.



As mentioned earlier and as clearly shown in Figure 1, the family firms belonging to the three industries – technology, consumer cyclical and communications – are leaders compared with nonfamily firms with a total of 62.2% against 53.2%. Therefore, we notice that family firms are successful in technology-related and consumer cyclical industries, which exceeded in percentages that of the nonfamily firms. Yet, we also notice that industries that usually require a high level of investment, heavy capital expenditures, or some special legal approvals contain more nonfamily firms than family firms such as utilities, industrial, energy, consumer non-cyclical and basic materials. For instance, the utilities industry includes two firms related to water treatment, two firms related to electric-integrated, and one firm gas distribution.

Usually big corporations and sometimes governmental wholly or partially owned corporations are involved in such types of industries and not family firms. Also, the energy firms dealing in energy production and treatment require special types of investment, governmental approval and skills, which usually nonfamily firms are in a competitive advantage to work with rather than family firms. Another example is the basic materials industry, which contains firms specialized in gold mining, steel producing, chemicals, industrial gases, etc. Below is a comparative table illustrating the means of percentage insider shares outstanding and the means of percentage institutional shares outstanding of family and nonfamily firms.

Table 3: Ownership structure comparison

	Family firms mean	Nonfamily firms mean	Result
Ownership structure			
Percentage insider shares outstanding	27.73	2.86	>0***
Percentage institutional shares outstanding	14.70	32.04	<0***

As shown, the listed French family firms have a mean of percentage insider shares outstanding of 27.73%, which is statistically greater than the mean of the percentage of insider shares outstanding of the nonfamily firms of 2.86% at the 1% significance level. Moreover, the family firms' mean of percentage institutional shares outstanding is 14.7% is statistically smaller than the mean of that of the nonfamily firms of 32.04% at the 1% significance level too.

This shows to what extent ownership structure differs between family- and nonfamily firms in terms of insider and institutional ownership. Family firms have much greater concentration of insider ownership from the family firms' owners, their descendants and relatives who have stakes in the firms' cash flow rights and at the same time have top managerial positions in the firm such as CEO positions. Also, family firms have a much lower institutional ownership structure compared with nonfamily firms, which can be attributed to many reasons, most importantly to the fear of losing control by the family firms' owners, and the fear of stricter monitoring mechanisms institutional shareholders usually employ whenever they are present on the firms' boards. Conversely, nonfamily firms have much lower insider ownership due to the widely dispersed and diffused structure among much bigger number of shareholders, and due to the presence of higher institutional shareholders who usually get seats on the firms' board of directors but do not directly involve into the firm's management.

However, these numbers about firms' insider and institutional ownership, which are extracted from 2008 to 2013 for the listed family firms, are quite different than the numbers presented in chapters, 2 and 3, for three main reasons. First, since in chapters 2 and 3, the IPO performance was the main research focus, covering both, the short- and the long-term performance respectively, all ownership data were extracted just pre- and post-IPO date for an attempt to observe their effects on performance. Moreover, as we will see in the subsequent chapters, we covered IPOs issued over 20 years, which is from 1994 to 2013, and we noticed that the majority of IPOs were issued before 2001. Yet, from the date of issuance until 2008, many firms were delisted for many reasons and/or their ownership structure had changed greatly during all these long years. Therefore, since their issuance, firms could have raised additional funds through the issuance of additional shares in what is called the seasonal equity offering (SEO), changing dramatically the ownership structure from the IPO until the subsequent years. Second, the data about firms' ownership structure used in chapters 2 and 3 were wholly hand-collected from each firm's IPO prospectus on pre- and post-IPO date. Such prospectuses show the ownership composition pre-IPO date, and the number of shares intended to be issued on IPO date. On the other hand, the data used in this chapter about firms' insider ownership were extracted from the Bloomberg platform from 2008 to 2013. Thus, the ownership data were extracted from two different sources and covering different time periods, which can create some discrepancies depending on the criteria the Bloomberg platform uses to disclose ownership data. Third and most importantly, the type of data is fundamentally different between the two chapters. In this chapter, we aim to disclose the insider ownership data within each type of firms, which are related to ownership held by top managers such as CEOs only and not the whole family ownership. However, in chapters 2 and 3 we aimed to show all family firms' ownership structure regardless of the position of each owner or descendant holds in the firm.

For instance, we might see a family owning 60% of the firm's cash flow rights, but just one member of the family holding a top managerial position with 20% ownership rights, and the remaining family members are just owners without having managerial positions. This is why we have found a divergence of ownership data between this chapter and the remaining two chapters because there is a different in the time period, the data source, and the data type.

Table 4: Distribution of debt variables in family firms per industry

Industry	**Median total liab.**	**Weight**	**Median debt-to-equity ratio**	**Weight**	**Median % ST borrowings of total liab.**	**Median % LT borrowings of total liab.**	**Short-term borrowings%- Long-term borrowings %**
Basic materials	161	12%	0.51	10%	15%	24%	-9%
Communications	81	6%	0.42	8%	8%	11%	-3%
Consumer, cyclical	119	9%	0.58	12%	17%	16%	1%
Consumer, non-cyclical	298	23%	0.35	7%	9%	8%	1%
Energy	484	37%	2.31	46%	20%	60%	-40%
Industrial	122	9%	0.67	13%	16%	18%	-2%
Technology	48	4%	0.20	4%	6%	7%	-1%
Weighted average	136	100%	0.46	100%	11%	13%	-2%

Table 5: Distribution of debt variables in nonfamily firms per industry

Industry	Median total liab.	Weight	Median debt-to-equity ratio	Weight	Median % ST borrowings of total liab.	Median % LT borrowings of total liab.	Short-term borrowings % - Long-term borrowings %
Basic materials	301	4%	0.38	10%	9%	18%	-9%
Communications	365	5%	0.35	9%	6%	4%	2%
Consumer, cyclical	800	10%	0.84	21%	11%	23%	-12%
Consumer, non-cyclical	565	7%	0.63	16%	9%	27%	-18%
Energy	4,810	62%	0.51	13%	8%	23%	-15%
Industrial	761	10%	0.87	22%	10%	28%	-18%
Technology	95	1%	0.34	9%	7%	9%	-2%
Weighted average	648	100%	0.61	100%	9%	20%	-11%

Table 4 and Table 5 allow a comparison between family firms and nonfamily capital structure characteristics by industry. We decided to use the median instead of the mean to eliminate the outlier's effect on our analysis. The median total liabilities in nonfamily firms is approximately 4 times the median total liabilities in family firms, which could be explained by the larger size of nonfamily firms and higher need for financing.

It is worth highlighting that the median debt-to-equity ratio per firm in family firms is a lot lower than that in nonfamily firms, which indicates that nonfamily firms tend to rely on debt financing more than family firms. Particularly, it is notable that all firms tend to significantly rely on long-term borrowing more than short-term borrowing in almost all industries. However, compared with nonfamily firms, family firms use more short-term borrowing and less long-term borrowing.

Comparing by industry, family firms belonging to the energy, industrial, consumer cyclical or basic material industries rely the most on short- and long-term borrowing similarly to nonfamily firms with the additional finding that the nonfamily firms belonging to the consumer non-cyclical rely most on long-term borrowing.

Table 6: Ownership and management characteristics of family firms per industry

Industry	Average tenure executives	Average tenure BOD	Majority shareholder	Family management	Median debt-to-equity ratio
Industrial	11.9	7.24	2.87	0.93	0.67
Consumer, cyclical	8.99	9.25	3.26	0.72	0.58
Basic materials	4.00	6.55	2.00	0.67	0.51
Communications	8.75	7.11	2.60	0.93	0.42
Consumer, non-cyclical	13.43	11.48	2.88	0.88	0.35
Technology	11.38	8.80	3.10	0.95	0.20
Average	9.74	8.41	2.79	0.85	0.46

Knowing the strong influence of ownership structure particularly family ownership, the level of entrenchment and of control on capital structure, we aim to analyze the relation between the variables mentioned above and the debt-to-equity ratio by industry. The average tenure of executives and board of directors represent entrenchment, and insider ownership and family management represent agency cost. The industries in this table are stated in descending order of debt-to-equity ratio.

It is noticeable that all industries present very close results regarding the number of majority shareholders that range between 2 and 3. In addition, the technology and consumer non-cyclical industries present relatively very high family ownership, tenure of BOD and executives and family management leading to the lowest two debt-to-equity ratios. The basic materials and communications industries with low managerial entrenchment and low agency cost have the third and fourth debt ratios.

However, the consumer cyclical industry presenting high levels of board of directors tenure and majority shareholders and lower than average tenure of executives and family ownership has the second highest debt ratio. Finally, what is specific to the industrial industry is a positive relation between the debt and the family ownership, number of major shareholders, average tenure of the board of directors and executives.

Table 7: Debt-to-equity of family and nonfamily firms in percentiles

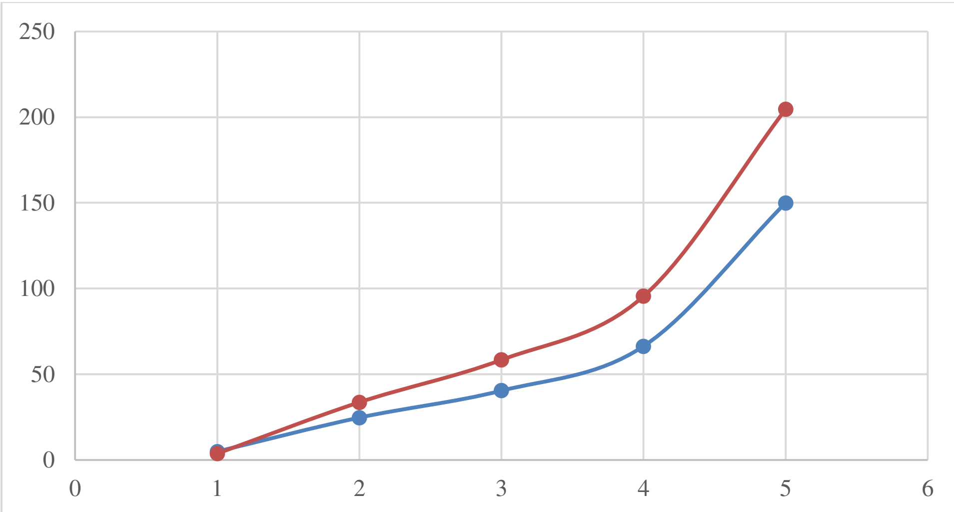
Median	Type	Total assets	Financial leverage	% insider shares outstand.	R&D expend./ net sales	Free cash flow	Debt-to-equity	Degree of financial leverage
Group 1	FF	88.96	1.62	28.42	1.05	5.18	4.92	1.01
	NFF	97.12	1.65	0.09	11.06	2.49	3.74	1.01
	FF-NFF	-8.16	-0.03	28.33	-10.01	2.69	1.17	0.00
Group 2	FF	43.76	2.15	19.28	15.79	0.61	24.69	1.06
	NFF	333.85	2.10	0.24	14.51	0.90	33.64	1.05
	FF-NFF	-290.08	0.05	19.04	1.28	-0.30	-8.95	0.01
Group 3	FF	235.22	2.36	25.62	3.88	2.26	40.39	1.14
	NFF	1,733.72	2.40	0.19	2.68	21.71	58.37	1.18
	FF-NFF	-1,498.50	-0.04	25.43	1.2	-19.45	-17.98	-0.05
Group 4	FF	371.12	2.70	26.38	1.09	2.49	66.34	1.19
	NFF	1,174.91	3.00	0.39	3.64	6.77	95.48	1.22
	FF-NFF	-803.79	-0.30	25.99	-2.55	-4.28	-29.14	-0.03
Group 5	FF	237.39	3.82	18.94	2.32	1.11	149.98	1.42
	NFF	2,734.28	4.57	0.08	3.17	12.28	204.55	1.33
	FF-NFF	-2,496.89	-0.75	18.85	-0.86	-11.17	-54.57	0.09
Average difference	FF-NFF	-1,019.49	-0.21	23.53	-2.19	-6.50	-21.89	0.01

After demonstrating that family firms tend to rely on leverage less than nonfamily firms, we decided to deepen our analysis by studying the factors driving this divergence. Hence, for the purpose of comparing family and nonfamily firms that are relatively similar in capital structure, we divided family and nonfamily firms in 5 groups according to their financing techniques measured by the median of the debt-to-equity ratio. For each of the 2 subgroups, the family and the nonfamily firms, the 1st group's upper bound is the 20th percentile of the debt-to-equity ratio, the 2nd group's upper bound is the 40th percentile, the 3rd group's upper bound is the 60th percentile, the 4th group's upper bound is the 80th percentile and the 5th group's upper bound is the highest median of debt-to-equity ratio. Specifically, we computed the median of different factors affecting capital structure in each of the 2 subgroups and computed the difference aiming to explain the difference between the two firms' types' capital structures. The conclusions drawn from this table are the following:

1. Family firms have a lower size as measured by assets than nonfamily firms in the 5 bins. However, this difference is the largest in the 3^{rd} and 5^{th} group signaling that the more family and nonfamily firms use the debt, the bigger the gap between their sizes.
2. In the previous table we demonstrated that family firms rely less on debt than nonfamily firms in their capital structure. Through this table, we show that for all firms represented by all five groups except for one, family firms represent a slightly lower level of financial leverage than nonfamily firms which proves that they rely less on debt for financing purposes. This is also highlighted by the negative difference between the levels of debt-to-equity in family and nonfamily in 4 out of 5 groups (i.e. from the 2^{nd} till the 5^{th} bin).
3. It is highly remarkable and noteworthy that in every group family firms represent a much higher percentage of insider ownership. This could be highly informative regarding the reasons behind the lower level of debt of firms. For instance, insider ownership drives a firm's leaders toward high levels of risk aversion, which diverges their plans from debt as they fear interest payments that negatively affect the bottom line, and risks of losing control in case of financial distress and bankruptcy.
4. According to this table, both types of firms have almost the same degree of financial leverage. This result signifies that both subgroups' earning per share is almost equally sensitive to interest payments. Hence, the difference between the two subgroups financing decisions is not based on the effect of interest payments on the bottom line.

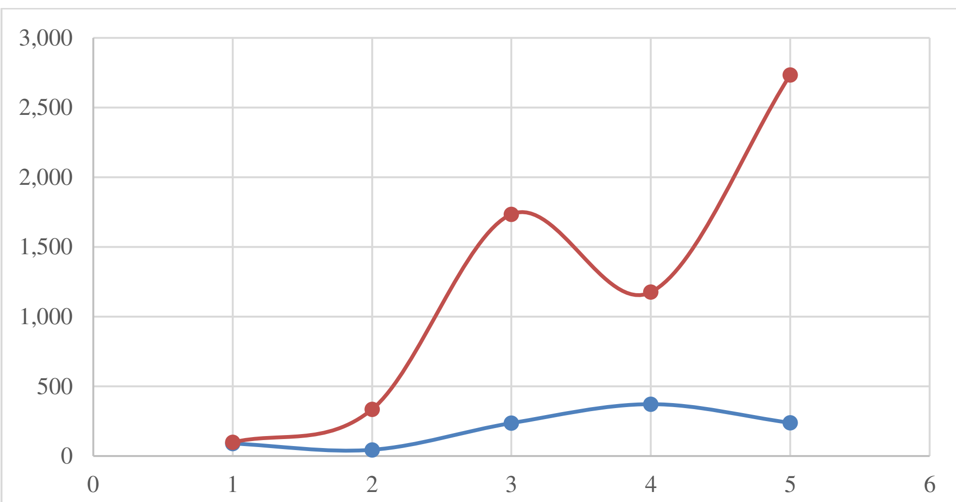
For all the graphs below we divided family and nonfamily firms in 5 groups according to their financing techniques measured by the debt-to-equity ratio. For each of the 2 subgroups, the 1^{st} group's upper bound is the 20^{th} percentile of the debt-to-equity ratio, the 2nd group's upper bound is the 40th percentile, the 3^{rd} group's upper bound if the 60^{th} percentile, the 4^{th} group's upper bound is the 80^{th} percentile and the 5^{th} group's upper bound is the maximum median of debt-to-equity ratio. The red graph represents nonfamily firms, whereas the blue graph represents family firms.

Figure 3: Debt-to-equity ratio.



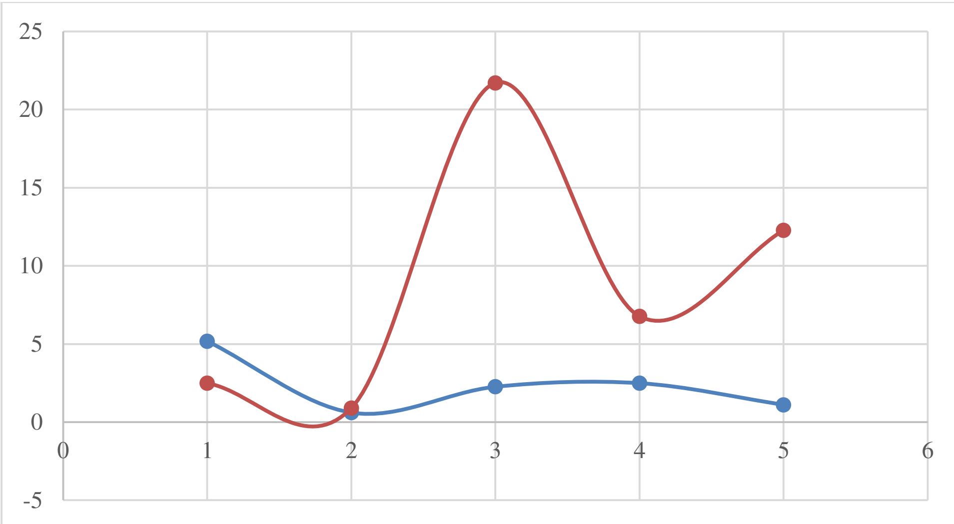
All family firms use lower levels of debt compared with equity than nonfamily firms. However, as the debt-to-equity ratio increases in the 2 types of types of firms, the difference between the debt-to-equity ratios in family and nonfamily firms increases.

Figure 4: Total assets in function of debt-to-equity.



It is remarkable that as debt-to-equity ratio increases in both types of firms, family firms experience a significant increase in size whereas the size of family firms remains comparatively very low and approximately stable. This might signal the use of debt is proven to have a significant positive effect on nonfamily firms pulling that type of firm closer to using debt as the principal means of financing.

Figure 5: Free cash flow in function of the debt-to-equity ratio.



In the first group, family firms tend to have greater free cash flow than nonfamily firms. However, as the debt-to-equity ratio increases (i.e. as we go from the first group to the second) we notice a big jump of free cash flow in nonfamily firms and stability in the level of free cash flow for nonfamily firms. From there on, for any level of debt, nonfamily firms present a significantly higher level of free cash flows than family firms which reflects their higher ability of raising debt and paying the interest payment explaining their higher reliance on debt for financing.

3.3. Hypotheses Testing

Hypothesis 1: Debt and insider ownership are negatively related.

Almost two-thirds of family companies are managed by a member of the owning family (Family firm institute, Inc.), making insider ownership a preliminary variable in the model. However, this has two opposing effects. The larger the fraction of a company's shares held by its managers, the more entrenched they are. Hence, insider ownership could be negatively related to debt due to its entrenchment effect. In contrast, it could have an alignment effect, which reduces agency cost. For instance, Berger et al. (1997) and Mehran (1992) state that firms with higher insider ownership look for higher leverage ratios in order to increase firm value as a result of alignment framework. However, Kim and Sorenson (1986) considered a positive relation between insider ownership and leverage driven by the agency costs of equity: the higher the managerial ownership, the higher should be the costs of external equity associated with incentive to consume perks. Hence, to keep control pressures away such as takeovers, managers can choose to increase leverage largely. Moreover, from the management perspective, debt is a direct mechanism to control opportunistic behavior in the use of firm's resources (Jensen and Meckling, 1976). However, according to Fama and Jensen (1983), when family is involved in management, the decision process tends to lose efficiency because of their risk aversion. In this respect, family firms managed by family members will tend to have less debt when compared with similar but nonfamily firms. From the direct ownership perspective, consistent with the idea that more supervision comes along higher debt levels (Stulz, 1988), families as dominant shareholders (which is the case of all the family firms in our sample), can increase debt inducing more creditor's supervision and therefore reducing the potential management's opportunistic behavior (Jensen and Meckling, 1976).

Thus, since contradictory theories are present, we decided to choose our first hypothesis as follows: (H1) debt and insider ownership are negatively related. Insider ownership is measured as the percentage outstanding shares currently held by insiders.

Hypothesis 2: Debt and institutional ownership are negatively related.

Berger et al. (1997) believe that firms with greater institutional shareholdings are more leveraged. Gugler et al. (2008) expect that managers' discretion to pursue their own goals declines when the percentage of institutional shareholding increases, since institutional shareholders are mainly interested in share performance. Hence, the higher the percentage of institutional shareholding, the lower the agency cost and less significant is the disciplinary role of debt due to external monitoring. Besides, if families are performing monitoring in lieu of debt then the need for debt is not evident. Therefore, we expect a negative relation between the percentage institutional ownership and the level of debt. Percentage institutional shareholding is the percentage of shares outstanding held by institutions. We decided to choose our second hypothesis as follows: (H2) debt and institutional ownership are negatively related.

Hypothesis 3: Family firms' debt maturity is lower than that of nonfamily firms.

If it assumed that less information asymmetry implies preference for equity relative to debt, then the higher the level of information asymmetry, the more significant the disciplinary role of debt becomes. Hence, we predict that debt and the level of information asymmetry are positively related in French family firms. Usually a good signal for the presence of information asymmetry is the relatively wide spread between the bid and the ask prices of shares. The percentage bid-ask spread is the average of all bid-ask spreads taken as a percentage of the mid-price. For a trading day to contribute to the calculation, there should be at least ten valid bid-ask spread points on that day. The values used are subject to the condition that more than 50% of trading days in the period are eligible to contribute to the calculation. Our third hypothesis will be: (H3) Family firms' debt maturity is lower than that of nonfamily firms.

The tables below represent the most significant tests for the alternative hypothesis of difference, inferiority and superiority in means between family and nonfamily firms for various capital structure and control variables at the 1% (***), 5% (**) and 10% (*) significance levels. We observe in the tables the significant differences between the two groups of firms.

Table 8 shows the size of the two types of firms. Using three separate definitions for size (current market capitalization, total assets and total capital), the t-test indicates that the French family firms are significantly smaller than the French nonfamily firms at the 1% level. The numbers of the firm size are in thousands of euros. For instance, the average total assets of family firms are almost equal to €1.924 million versus €10.397 for the nonfamily firms, and the average total capital of family firms are almost equal to €1.965 million versus €7.091 for the nonfamily firm.

It is worth recalling that total assets are equal to the summation of all, the interest-bearing and non-interest-bearing short-term and long-term debt and the total stockholders' equity whereas total capital are equal to the summation of all interest-bearing debt only and the stockholders' equity, therefore excluding the non-interest-bearing debt. Thus, as mentioned above, on average, the French family firms are much smaller in size than the nonfamily firms which will affect the firms' capital structure as we will see subsequently.

Table 8: Firm size comparison

	Family firms mean	**Nonfamily firms mean**	**Result**
Firm size			
Current market capitalization	1,465	4,342	< 0***
Total assets	1,924	10,397	< 0***
Total capital	1,965	7,091	< 0***

Table 9 shows the capital structure of the two types of firms. For defining firms' capital structure, we included total liabilities, debt-to-equity, dividend payout ratio, short-term borrowing, long-term borrowings, long-term debt to total capital, short-term borrowing to total liabilities, long-term borrowing to total liabilities, short-term to long-term liabilities, total debt ratio, cost of debt, and cost of equity. The t-test indicates that the French family firms have significantly lower levels of debt than nonfamily firms at the 1% level. The numbers of the firm's debt are in thousands of euros.

Table 9: Capital structure comparison

	Family firms mean	**Nonfamily firms mean**	**Result**
Capital structure			
Total liability	1,233	6,989	<0***
Short-term borrowing	16	105	<0***
Long-term borrowing	234	1,973	<0***
Short-term borrowing to total liabilities	12	10	>0**
Long-term borrowing to total liabilities	16	24	<0**
Total debt ratio	33	29	<>0**
Debt-to-equity ratio	40.34	61.10	<0***
Long-term debt to total capital	13.99	21.92	<0***
Short-term to long-term liabilities	1.61	2.25	=0***
Cost of debt	1.82	2.12	<0***
Cost of equity	9.69	10.97	<0***

For instance, through the comparison we find that the average total liabilities of family firms are significantly smaller than the average total liabilities of nonfamilies at the 1% level with €1.233 million for family firms versus €6.989 million for nonfamily firms. Total liabilities include all interest-bearing and non-interest bearing short-term and long-term debt. Additionally, both short-term and long-term borrowings in family firms are less than nonfamily firms since the mean in family firms are €0.016 million and €0.234 million and in nonfamily firms €0.105 million and €1.973 million respectively. Yet, this may be due to the fact that the size of family firms is smaller than that of nonfamily firms as previously mentioned; hence, much less debt is needed to finance family firm's assets.

It is worth recalling that whenever evaluating a firm's total debt and the firm's capacity to repay it to its creditors, analysts observe carefully the firm's interest-bearing debt in addition to the whole debt levels because such type of debt imposes the firm not only to repay the debt principals but also the interests to its creditors. Thus, the level of scrutiny interest-bearing debt is subjected to is much higher than the non-interest bearing debt and that's why our observation was focused on the interest-bearing debt instead.

Hence, we compare the percentage of short-term borrowing to total liabilities and the percentage of long-term borrowing to total liabilities between the two types of firms. Interestingly, we find that family firms have higher percentage of short-term borrowings to total liabilities and lower percentage of long-term borrowings to total liabilities at 5% significance level. Specifically, short-term borrowing to total liabilities in family firms had an average of 12% versus 10% for the nonfamily firms. And long-term borrowing to total liabilities in family firms had an average of 16% versus 24% for the nonfamily firms. These percentages show the proportion of the short-term and the long-term interest-bearing debt only to total liabilities respectively. Non-interest-bearing debt is not included in these percentages. Together, the interest-bearing short-term and long-term debt represent around 28% (=12%+16%) of total liabilities in French family firms whereas they represent around 34% (=10%+24%) of total liabilities in nonfamily firms. As a result, proportionately, family firms have lower percentage of interest-bearing debt compared with nonfamily firms, which will reflect the total cost of borrowing with respect to total liabilities of both types of firms. Separately, the percentages of borrowing to total liabilities imply that the French family firms attempt to borrow on short-term basis with respect to total liabilities more than the French nonfamily firms do, and they also imply the French family firms attempt to borrow on short-term basis with respect to total liabilities less than the French nonfamily firms do. Moreover, the proportion of short-term borrowing to long-term borrowing for family and nonfamily firms is equal to 0.75 (=12%/16%) and 0.42 (=10%/24%) respectively. Therefore, once again, it is clear that family firms prefer to raise more short-term borrowing rather than long-term borrowing compared with nonfamily firms.

Thus, this goes in line with the findings of Bevan and Danbolt (2002) who report that size and short-term debt are negatively correlated while size and long-term debt are positively correlated. Additionally, this could be explained by the fact that "the use of short-term debt may mitigate the agency problems, as any attempt by shareholders to extract wealth from debtholders is likely to restrict the firms' access to short-term debt in the immediate future."

Moreover, when comparing the proportion of total funds raised by the debtholders to total funds raised by the equity holders captured by the debt-to-equity ratio, we notice that both types of firms had an average below 1.00, which means that the equity holders are the major source of financing rather than debtholders. Yet, family firms' average debt-to-equity ratio of 40% is significantly less than that of nonfamily firms of 61% at the 1% level. This also shows that family firms rely more on equity financing compared with nonfamily firms than on debt financing. For example, for every €40 raised by debt, the equity holders finances the family firm by €100 (i.e. 40%), whereas for every €61 raised by debt, the equity finances the nonfamily firm by €100 (i.e. 61%). So, proportionately, nonfamily firms rely more on debt financing compared with family firms. In fact, according to Ugurlu (2000), managerially controlled firms (similar to family firms) have lower debt ratio than the institutionally controlled firms (similar to nonfamily firms). Moreover, family firms have a low debt-to-equity level, which is consistent with Gallo and Vilaseca (1996). Additionally, we notice that the cost of debt of family firms is significantly lower than that of nonfamily firms at the 1% level, with 1.82% versus 2.12% respectively. The cost of equity for family firms is also lower than that of nonfamily firms at the 1% level too, with 9.69% and 10.97% respectively. Consequently, the weighted average cost of capital of family firms is nearly lower than that of nonfamily firms since both, the cost of debt and equity is lower for family firms than nonfamily firms. As a result, from the risk point of view, it is assumed that family firms hold a lower level of risk than nonfamily firms, have lower percentage of debt, lower interest-bearing short-term and long-term debt to total liabilities, lower debt-to-equity ratio and lower cost of debt and equity.

Table 10 shows some information asymmetries measures and proxies for both types of firms. For instance, we will use the percentage of average bid-ask spread, the number of analysts covering the firm, and the average trade volume for implying to information asymmetries between the firm's insiders and outsiders. Beside these three measures, we included the average managerial compensation to earnings before interests and taxes, average managerial compensation in absolute figure and the dividend payout ratio.

Table 10: Asymmetric information comparison

	Family firms mean	**Nonfamily firms mean**	**Result**
Asymmetric information			
% average bid ask spread	1.76	1.18	>0**
Number of analysts covering the firm	6.04	11.58	<0***
Volume	2,059,416	14,003,171	<0***
Average managerial compensation/EBIT	48,470	3,721	>0*
Average managerial compensation	410,340	1,444,850	<0**
Dividend payout ratio	23.19	49.80	<0***

We notice that family firms seem to have a higher level of information asymmetries compared with nonfamily firms when looking at the three mentioned proxies. Thus, in family firms, we notice that the percentage bid-ask spread is significantly higher than that of nonfamily firms at the 5% level, with 1.76% versus 1.18%. This goes in line with Attig et al. (2006) who collect the ultimate ownership data for the 1,167 Canadian traded corporations, for the 1994–1996 period, to examine the relationship between stock liquidity and ultimate ownership structure. The authors' results suggest that the presence of family increases the bid-ask spread. In addition, the magnitude of the deviation between ultimate ownership and ultimate control at the presence of families is important in determining the bid-ask spread. Furthermore, they document that mechanisms of enhancing control, for example, a pyramid in the case of family firms, significantly affect bid-ask spreads. As mentioned earlier and as we will see in further detail in the subsequent two chapters, family firms' owners have clearly used the IPO to increase their voting rights with respect to their cash flow rights. For instance, family firms' owners cash flow rights pre- and post-IPO date were equal to 74.9% and 62.29% respectively, whereas their voting rights pre- and post-IPO date were equal to 76.21% and 66.91% respectively. In absolute percentages, the cash flow rights have decreased by 12.61% whereas the voting rights have decreased by only 9.3%. Moreover, the gap between the cash flow rights and voting rights at pre-IPO date was equal to 1.31% whereas with the post-IPO date it becomes equal to 4.62%. So on average, the cash flow rights of family firms' owners have decreased after the IPO by 16.22% whereas their voting rights have decreased by only 11.02%.

In addition, the share liquidity marked by the average trade volume is significantly lower for family firms than that of nonfamily firms at the 1% level with 2 million versus 14 million traded shares. It is generally known that the spread size from one asset to another will differ mainly because of the difference in liquidity of each asset. Thus, highly liquid assets that are heavily traded in the market have lower bid-ask spread compared to assets that are marginally traded.

For instance, it is generally known that share market liquidity refers to the 'ease' by which shares can be traded, and there are two essential features in defining the word ease. The first feature should be the speed at which a stock is being traded in the market. So a liquid stock is one that can be sold quickly, which means when a market order is placed to buy or sell stock, investors will not wait for long before its order is executed. For this to happen there must always be willing buyers when sellers choose to sell. The second feature should be the price at which the stock is being traded in the market. Liquidity also implies that a stock can be sold without materially affecting the market price. In other words, there must be sufficient demand to support the price during the course of the transaction. Clearly, most things can be sold quickly if sellers are willing to accept a low price. But if a significant price adjustment is required to facilitate the sale, the market is not liquid. We can bring these two factors together and define liquidity as: "*The ability to trade a substantial amount of a financial asset at close to current market prices*."

Generally, the most useful measure of liquidity for any stock is its average daily trading volume. The daily trading volume varies from one day to another so it is best to use an average figure over a certain period, usually over 30 or 90 days. Yet, another liquidity measure that is commonly used is the share turnover ratio, which is calculated in two ways, thus giving two different but very close interpretations. The first one is by dividing the average daily trading volume by the float (1). The float represents the company's total number of shares outstanding minus those owned by insiders and what the company is holding back as treasury stock. In other words, the float represents the shares available for public trade. The second way to calculate the share turnover is by dividing the total number of shares traded over a period by the average number of shares outstanding for the period (2). Using both calculations, the higher the share turnover, the more liquid the shares of the company with respect to the float and the number of shares outstanding. Table 11 below represents a real-time example of the share turnover ratio of two corporations, IBM and HPQ:

Table 11: Share turnover ratio

	IBM	**HPQ**
Average daily volume (3 months) (in millions) = a	4.1	12.1
Float (in millions) = b	983.1	1,810.0
Share turnover ratio (1) = a/b	0.41%	0.67%
Total shares traded in 3 months (in millions) = c	259.2	766.9
Shares outstanding (in millions) = d	984.7	1,820.0
Share turnover ratio (2) = c/d	26.33%	42.14%
Average daily trade value (in millions of US$)	$664	$395

The share turnover ratio calculated using both ways (1) and (2) show that HPQ stock is relatively more liquid than IBM stock with respect to both, their float (1) and their shares outstanding (2). It is also known that large companies typically deliver high liquidity even when their turnover ratios are low. Therefore, instead of looking solely on the average trade volume and the float, we should also look at the average trade value to have an idea about the value traded and not only the volume or the quantity traded. So the average value traded is equal to the average of the product of the daily stock price and the daily trading volume over a certain period. Thus, by looking at the average trade value of IBM and HPQ, we find them equal to $664 million and $395 million respectively, which means that IBM daily trade value is around 68% bigger than that of HPQ.

Therefore, the bid-ask spread and volume of a particular stock are closely interlinked and play a significant role in the liquidity. As it is known, the bid price is the highest price investors are willing to pay for a stock while the ask price is the lowest price at which investors are willing to sell a stock. Because these two prices must meet in order for a transaction to occur, consistently large bid-ask spreads imply a low volume for the stock while consistently small bid-ask spreads imply high volume. Whenever the bid-ask spread is fairly large (i.e. a percentage spread of around 10%), it means that the buyer and the seller are far apart. In such situations, no transactions can take place until the buyer and the seller agree on price. Should this large bid-ask spread continue, few transactions would occur and volume levels would be low, implying poor liquidity, either the bid or the ask price (or both) would have to move for a transaction to take place. On the other hand, a small bid-ask spread (i.e. a percentage spread of around 0.5%) would imply that the buyer and seller are very close to agreeing on a price. As a result, the transaction is likely to occur sooner and, if these prices continued, the liquidity for the stock would be high.

Moreover, Attig et al. (2006) studied the relation of ultimate control and ownership with the bid-ask spread. The authors explain that an important dimension of stock liquidity is the bid-ask spread. The authors find that stocks with greater deviations between ultimate control and ownership have a larger information asymmetry component of their bid–ask spread and wider bid–ask spread. The authors explain that their results are consistent with the notion that the ultimate owners of these stocks may have selfish agendas. And to increase the probability of the agendas being implemented, the firms may have poor information disclosure, resulting in poor stock liquidity.

Yet, this directly applies to the French family firms. As we will see in the subsequent chapters, through the IPO, French family firms' owners have increased the gap between the cash flow rights and voting rights, thus attempting to expropriate minority shareholders. In addition, we find that family firms have a significantly lower dividend payout ratio compared with nonfamily firms at 1% significance level with an average of 23.19% versus 49.8% respectively.

In addition, family firms' growth potential is lower. The lower level of growth in family firms is explained by the willingness of family members to pursue the stability of the business over rapid growth and risky investment strategies (Harris, Martinez and Ward, 1994; and Tagiuri and Davis, 1992). In addition, Booth et al. (2014) argue that a positive relationship is expected between debt and growth in most countries. Consequently, the lower amount of leverage may be explained by slow growth. Last, we find that performance and asset management are better in French family firms than nonfamily firms. This could also explain the lower level of leverage since, according to Bevan and Danbolt (2002), the more profitable firms are less indebted, because the higher the level of profits, the higher becomes the level of internal fund, which is the most desired type of financing according to the pecking-order theory.

3.4. Regression Variables

The unbalanced panel data is based on the time-series monthly data ranging from 2010 to 2013 (13,452 observations per variable) excluding the years 2008 and 2009 because of the lack of sufficient data. Hence, we will investigate the factors behind the difference in capital structure and debt maturity between French family and nonfamily firms using a time-series data analysis from 2010 to 2013 (inclusive). But before analyzing the findings, we will explain in depth the variables used in the model. Thus, we will describe first the dependent variables related to debt maturity such as short-term borrowings, long-term borrowings, and percentages of both from total liabilities, and the dependent variables related to the debt value such as the total amount of debt to market value of assets, debt-to-equity and total debt.

- *The Dependent Variables*

Similarly to Baker and Wurgler (2002), we will use a model reflecting several variables reflecting capital structure to a wide range of independent variables related to corporate governance mechanisms, firm size, risk level, performance, and information asymmetry. And similarly to Ampenberger et al. (2013), through the variety of leverage proxy variables we aim to test for the robustness of our results. The following are the various variables used to reflect a firm's capital structure components and mainly leverage and their respective maturities.

i. **Short-term borrowings:** Includes bank overdrafts, short-term debts and borrowings, repurchase agreements (repos) and reverse repos, short-term portion of long-term borrowings, current obligations under capital (finance) leases, current portion of hire purchase creditors, trust receipts, bills payable, bills of exchange, bankers acceptances, interest bearing loans, and short-term mandatory redeemable preferred stock. Net with unamortized premium or discount on debt and may include fair value adjustments of embedded derivatives.
ii. **Long-term borrowings:** All interest-bearing financial obligations that are not due within a year.
iii. **Percentage of short-term borrowings in total Liabilities:** Short-term debt divided by total liabilities.
iv. **Percentage of long-term borrowings in total Liabilities:** Long-term debt divided by total liabilities.
v. **Long-term debt to total capital:** Long-term debt divided by total capital. Total capital is the sum of market capitalization of equity, book value of short-term debt and long-term debt, and book value of preferred equity. Book value is used as a proxy for market value.

These variables are used to indicate if French family firms are more oriented towards raising short-term or long-term debt than French nonfamily firms. The remaining variables stated above represent the level of debt. Since capital structure studies focusing on the total level of debt significantly neglect the differences between long-term and short-term debt, we will follow the steps of Michaelas et al. (1999) and Bevan and Danbolt (2002) when testing if the level of debt in family firms is different than that of nonfamily firms, we decompose debt into the variables stated above. According to Rajan and Zingales (1995), the most appropriate definition of leverage after having examined a variety of definitions is the total amount of debt to market value of assets of the firm in question. Hence, we will be using leverage as the most significant indicator of a firm's capital structure. However, we will be using the book value of assets instead of market value due to the difficulty of obtaining such variable. In addition, we will remove all the outliers to smoothen our data. We will also use the variable debt-to-equity and total debt to check for the robustness of our test.

- *The Independent Variables*

According to Harris and Raviv (1990) and Titman and Wessels (1988), the choice of suitable determinants of capital structure is potentially cause for disagreement. Rajan and Zingales (1995), Booth et al. (2014), Bevan and Danbolt (2002), Ampenberger et al. (2013), Mefteh and Oliver (2010) and many researchers have referred to some of these variables in their studies. Consequently, out of the seven main determinants of capital structure we will be using in our study market-to-book ratio as a proxy for the company's growth, firm size as measured by total assets (Al-Sakran, 2001; and Cassar and Holmes, 2003), and dividend payout ratio.

However, we go beyond existing research on French family firms by following a research approach with new explanatory variables and various proxies of capital structure that were not previously combined in the same statistical approach as mine. We will state through the paragraph our choice of variables. Since a firm's governance structure highly affects decisions about a firm's capital structure, we include corporate governance measures in our analysis. Therefore, we include as explanatory variables the percentage insider shareholding as a proxy for managerial entrenchment, the percentage institutional holding representing level of monitoring and control, the percentage average bid-ask spread reflecting information asymmetry, return on equity as an accounting-based measure of financial performance.

Becker (1981) and Casson (1999) imply that family control will exert significant influence on its financing decisions. Thus, managerial entrenchment is expected to increase not only with the level of insider shareholdings, but also with the size of the firm (Gugler et al., 2008). Insider ownership represents managerial entrenchment since based on Morck et al. (1988) the higher the level of insider ownership, the more entrenched managers are. However, insider ownership could help control the problem of agency cost (Ugurlu, 2000). Therefore, insider ownership is a very significant variable in our model mainly since we observed that in most French family firms, as shown in Table 2, the blockholders are present in the board of directors and management team. By definition, blockholders are owners of more than 5% of the company's outstanding shares (Villalonga and Amit, 2006; and Ampenberger et al., 2013). In addition, one mechanism to control agency cost and affect the level of debt positively is institutional holdings. Many studies have noted that usually institutional holdings have a positive effect on the level of monitoring in the firm and level of debt (Cable, 1985; Ugurlu, 2000; and Gugler et al., 2008). For instance, Harris and Raviv

(1988), Israel (1991) and Stulz (1988) suggest that control motives can shape a firm's capital structure decisions. Another explanatory variable of the firm's capital structure is asymmetric information.

Recent work based on asymmetric information gives predictions roughly in line with the pecking-order theory also called information asymmetry theory (Myers and Majluf, 1984), which states that profitable firms rely heavily on internal equity and have a small need for external finance and thus debt (Mefteh and Oliver, 2010) and firms prefer to raise funds through debt rather than new equity (Buferna et al., 2005). We chose as a proxy for information asymmetry the percentage bid-ask spread for the stock prices because if the investor is bidding to pay an amount that is less than what the owner is willing to sell it for, that would be due to fact that the owner and the potential buyer have different information endowments (Maureen O' Hara). Ampenberger et al. (2013) found a negative relationship between debt and performance.

We will also analyze how a company's performance affects a French family firm's capital structure and we will use the return on equity to measure accounting performance (Graves and Waddock, 1994; and Tsoutsoura, 2004). According to Booth et al. (2014) and Buferna et al. (2005), growth is positively related to the level of debt.

4. RESULTS AND INTERPRETATIONS

After conducting the hypothesis testing and having an overview about the main capital structure components of the French family firms, we will attempt to explain via a multiple linear regression the capital structure of the French family firms. Conversely, to test for the relation between various determinants of the level of debt and capital structure, our analysis uses an unbalanced panel data. Our analysis uses an unbalanced panel dataset on 90 French family firms that are listed on the CAC All-Tradable Index. We present three types of regression estimates which are the pooled OLS, "between" estimates also called the random effects model, and "within" estimates also referred to the fixed effects model.

From an econometric point of view, random effects model only employs cross-sectional variation and presents OLS estimates of firm means across time. "Within" estimates are based on the variation of the data within each firm. The fixed effects model includes firm-fixed effects and uses variation over time within each section and hence presents estimates of deviations from the firm means across time. The advantage presented by this model is the possibility of controlling for unobserved, time-invariant firm heterogeneity. According to Lemmon et al. (2009), in models resulting in adjusted R-squared higher than those obtained in traditional leverage regressions, firm fixed effects seem to have a high explanatory power for capital structure decisions. In addition to that, the fixed effect model adjusts for the possibility that firm-specific factors influence the level of leverage in each company, the within estimates are equivalent to estimating OLS models and including indicator variables for each of the firms (Berger et al., 1997).

The biggest advantage of the random model estimates is that it addresses the concerns that the observations drawn repeatedly from the same sample of firms may be independent. The pooled OLS estimator ignores the panel structure of the data but combines both aspects as it is a weighted average of both the fixed and random effect model estimates. In addition, we use the Hausman test to check if the random or fixed model estimates are more representative. Table 5 represents the p-value of the Hausman test corresponding to each of the dependent variables and, accordingly, which model is most appropriate.

Furthermore, and similarly to Michaelas et al. (1999) and Bevan and Danbolt (2002), we will not only consider the overall level of debt, but we will also study the effect of the explanatory variables on long-term and short-term debt. Through the use of three different models and various debt proxies, we aim to test for the robustness of our result against a variety of estimation techniques and a variety of debt definitions and benefit from the advantages of each of the three models. Table 9 represents the regression estimates of models of leverage levels. These results support the hypothesis and the arguments stated above explaining the relationship between size and debt (including short- and long-term debt).

The first two hypotheses, H1 and H2, do not seem to be well verified and confirmed through our results since some of the significant estimates have a negative sign and the others have a positive sign. Insider ownership seems to have a positive weak relation with the level of debt and specifically short-term debt since almost all significant estimates are positive and have the same small magnitude. However, it does not seem to affect the percentage of long-term debt or the percentage of short-term debt since the estimates are close to 0. The positive relation between percentage insider shareholders could be explained by the fact that short-term debt may mitigate the agency problems, as any attempt by shareholders to extract wealth from debtholders is likely to restrict the firms' access to short-term debt in the immediate future (Buferna et al., 2005). This weak relationship may be due to the controversial effects of insider ownership, the negative entrenchment effect and the positive alignment effect. However, the results concerning the effect of institutional ownership on the firm's performance are highly robust and clearly indicate the negative relation between the monitoring and level of debt. This relationship could be explained by the fact that the higher the percentage institutional shares outstanding is, the less needed becomes the monitoring and regulatory role of debt in family firms. This is especially the case since family firms do not suffer heavily from agency cost due to the high levels of insider ownership that distinguishes family firms and hence do not require high level of debt to monitor the actions of the managers.

In line with the trade-off theory and the pecking-order theory, which states that profitable firms have much retained earnings and therefore a smaller need for external finance and thus debt, and the market timing hypothesis, and according to our study, growing French family do not rely heavily on debt to finance their investments. Titman and Wessels (1988) argue this negative relationship by pointing out that the agency cost increases as growth increases. Consistent with these predictions, Titman and Wessels (1988), Chung (1993) and Rajan and Zingales (1995) prove the negative relationship between the level of debt and growth in developed countries such as France. Furthermore, firms with growth options have higher costs of financial distress (Rajan and Zingales, 1995) and consequently are expected to have lower debt. However, it is noticeable that the percentage of short-term borrowings is significantly positively related to growth and percentage of long-term borrowings is significantly negatively related to growth. This is consistent with the notion that greater informational asymmetries are associated with shorter maturity according to Myers (1977). Information asymmetry is positively significantly related to the level of debt with no remarkable effect on their maturity as predicted. According to Gugler et al. (2008), family firms under-invest due to asymmetric information problems and hence will have a low need for external financing.

Through our analysis, the results concerning the effect of performance on the manager's preference for debt are significant and highly robust. The better the performance, the lower the level of debt. The dividend payout ratio appears to have a significant negative effect on the level of debt. However, the coefficients were close to zero hence we do not consider this relationship to be strong. In addition to that, the effect of the dividend payout ratio on the maturity of debt was significant. This could be explained by the variety of well proven hypotheses on the negative and positive effect of dividends on leverage. The results clearly demonstrate a negative relation between dividend payout ratio and long-term debt and a positive one between dividend payout ratio and short-term debt. Below, we present the results of the multiple linear regression, attempting to explain the debt maturity and level through different independent variables. As mentioned, we tried to run different regression models for varying dependent variables related to debt maturity and levels, while keeping the independent variables constant with each different dependent variable.

Table 12: Regression estimates

	Y1: Debt ratio			Y2: log (debt to CE)		
	OLS	Within	Between	OLS	Within	Between
X1: Log of total assets	0.042364***	0.03138**	0.025288***	0.712886***	0.845019***	0.531558
X2: Market capitalization to book value	(0.005793)***	0.007432***	0.007157***	-0.03581	0.033067*	0.035755
X3: Log of institutional percentage shares outstanding	(0.003635)***	-0.000612	-0.000617	(0.102814)***	(0.018847)**	-0.020238
X4: Log of average bid ask spread	0.015139***	0.004406**	0.004413*	0.722954***	0.027848	0.031465
X5: Return on common equity	(0.003063)***	(0.000656)***	(0.000775)***	(0.023688)***	(0.009798)***	-0.010794
X6: Percentage insider shares outstanding	0.000342*	-0.000155	-0.000134	-0.004	(0.006641)**	-0.006781
X7: Dividend payout ratio	-9.65E-05	(0.000372)***	(0.000392)***	(0.003719)**	-0.001786	-0.002311
Adjusted R squared	0.386433	0.954717	0.062496	0.229414	0.960559	0.058376
F statistic		357.1207	9.847089		412.3721	9.227634
P value		0	0		0	0
Hausman’s test p value	0.0045			0.0101		

	Y3: Total debt			Y4: LT debt to tot cap		
	OLS	Within	Between	OLS	Within	Between
X1: Log of total assets	95.10057***	305.836***	307.2102***	6.825919***	303.8145***	5.210607
X2: Market capitalization to book value	-7.002957	2.725806	2.942391	0.992254	-8.970074	0.095652
X3: Log of institutional percentage shares outstanding	(7.09382)*	-0.358496	-0.508675	-1.306992	-1.140656	-1.085335
X4: Log of average bid ask spread	(331.6569)***	-0.703214	-0.961192	(18.60631)**	-5.088317	(9.13119)*
X5: Return on common equity	(1.563494)**	0.012132	-0.017605	(3.458969)***	0.269814	(3.270183)***
X6: Percentage insider shares outstanding	-0.500473	0.824494*	0.81609*	0.572133*	0.233272	0.553783
X7: Dividend payout ratio	(3.510346)***	0.069794	0.02922	-0.051208	0.138914	-0.085661
Adjusted R squared	0.470465	0.993847	0.214663	0.151977	0.183026	0.107479
F statistic		2729.16	37.27594		4.784046	16.98166
P value		0	0		0	0
Hausman’s test p value	0.1109			0.0004		

	Y5: Short-term borrowings			Y6: Long-term borrowings		
	OLS	Within	Between	OLS	Within	Between
X1: Log of total assets	12.90166***	38.24441***	36.18352***	33.76827***	117.7412***	115.268***
X2: Market capitalization to book value	(4.446372)***	-0.196835	-0.071133	(19.23066)***	-0.40298	-0.301807
X3: Log of institutional percentage shares outstanding	(1.106266)**	0.146955	-0.00775	(4.750353)***	-0.23611	-0.363112
X4: Log of average bid ask spread	(35.54052)***	0.515298	0.281943	(139.6813)***	-0.93249	-1.20555
X5: Return on common equity	-0.058175	0.108035	0.073292	(0.779175)**	-0.0061	-0.042265
X6: Percentage insider shares outstanding	(0.365915)***	0.385366**	0.305004*	0.484772	0.3124	0.318177
X7: Dividend payout ratio	(0.21383)***	0.167118**	0.121416	(1.525593)***	-0.07875	-0.117158
Adjusted R squared	0.384821	0.935	0.053253	0.336916	0.980052	0.0655
F statistic		247.873	8.464984		830.8771	10.30213
P value		0	0		0	0
Hausman's test p value	0.2581			0.3263		

	Y7: Percentage short-term borrowings			Y8: Percentage long-term borrowings		
	OLS	Within	Between	OLS	Within	Between
X1: Log of total assets	0.068845***	-0.00364	(0.034993)*	0.096662***	0.619154	0.034993*
X2: Market capitalization to book value	0.036364***	0.023301***	0.023563***	(0.012472)***	0.00364***	(0.023563)***
X3: Log of institutional percentage shares outstanding	(0.007529)***	0.001372	0.001196	(0.007149)***	-0.023301	-0.001196
X4: Log of average bid ask spread	0.097387***	-0.000894	-0.000883	0.039071***	-0.001372	0.000883
X5: Return on common equity	0.000963***	-0.000831	-0.000576	(0.001759)***	0.000894	0.000576
X6: Percentage insider shares outstanding	-9.76E-05	0.001502*	0.000661	0.00222***	0.000831*	-0.000661
X7: Dividend payout ratio	0.001137***	0.001435***	0.001327***	(0.000666)***	(0.001502)***	(0.001327)***
Adjusted R squared	(0.191689)	0.787697	0.033472	0.132048	0.787697	0.033472
F statistic		63.66956	5.596087		63.66956	5.596087
P value		0	0.000002		0	0.000002
Hausman's test p value	0.2909			0.2909		

Table 13: Hausman test

Dependent variable	p-value	Results
Y1: Debt ratio	0.0045	H1 is true
Y2: log (debt to CE)	0.0101	H1 is true
Y3: Total debt	0.1109	H0 is true
Y4: LT debt to total capital	0.0004	H1 is true
Y5: Short-term borrowings	0.2581	H0 is true
Y6: Long-term borrowings	0.3263	H0 is true
Y7: Percentage short-term borrowings	0.2909	H0 is true
Y8: Percentage long-term borrowings	0.2909	H0 is true

H0: random effect model, and H1: fixed effect model

Using the random effect estimator, when H0 is true, b1 is consistent and efficient and when H1 is true, b1 is inconsistent. Using the fixed effect estimator, when H0 is true, b0 is consistent and inefficient and when H0 is true, b0 is consistent.

5. CONCLUSION

The findings of this chapter are a contribution towards a deeper understanding of capital structure decisions in French family firms and in addition examine whether they differ from their counterparts. For that purpose, we present a correlation table to study the relation between all the variables and prepare a comparative table to show the difference between family and nonfamily firms with respect to a variety of variables reflecting the governance mechanisms, information asymmetry, level of debt, maturity, performance and others.

Through these descriptive statistics, we were able to prove that family firms' capital structure is characterized by a lower level of debt and specifically long-term debt than nonfamily firm, so, French family firms seem to rely heavily on short-term debt. However, if we consider Table 4, the low level of debt can be given various explanations. For instance, the lower agency costs due to the high involvement of family firms in the management as proven in this chapter makes the disciplinary role of debt less relevant (Jensen, 1986). Additionally, it could be also a result of the lower size and the lower level of free cash flows. Hence, managers are not left with high levels of free cash flow and thus do not need to increase debt financing for the purpose of having some cash flow disciplinary instrument. Another interpretation of a firm's capital structure through performance is related to the pecking-order theory.

As our study and several different studies indicate (e.g. Anderson and Reeb, 2003a; and Villalonga and Amit, 2006), French family firms demonstrate a better performance than their nonfamily counterparts, which signals their better capabilities to generate internal funds and constant cash-flows. Hence, they depend less on external financing (both debt and equity).

Then, we conducted a regression analysis on the panel data using three regression types (fixed effect, random effect and pooled OLS) and the Hausman test to check which of the within and between estimates is most appropriate. In addition, we conducted the three types of regression models on eight different variables out of which three variables reflect the overall level of debt and five reflect the maturity of debt. Through the variety of testing techniques and variables we aimed to test for the robustness of our results. Through this, we found that French family firms' behavior goes in line with the broad capital structure theories (the market timing hypothesis, the trade-off theory and pecking-order theory). We also proved through Table 3 and Table 9 that almost all French family firms are characterized by insider ownership and that managers are entrenched. Through our research, it was noteworthy that in almost 90 percent of the family firms, the family is a major shareholder, part of the management board and board of directors, which signals the low agency cost. But through the average age of the managers in the board of directors and the management board, we notice that family firms might suffer from managerial entrenchment. Overall, our study suggests a strong, negative and causal relationship between family firm characteristics and the extent to which a company is leveraged.

CHAPTER 2: IPO SHORT-TERM PERFORMANCE

1. INTRODUCTION

An initial public offering (IPO) is a complex and lengthy process involving high uncertainty (Daily et al., 2003) that results in the transformation of a firm from a privately held into a publicly traded one, allowing entrepreneurs, employees, venture capitalists, and other investors to cash out (Yang et al., 2011). As a result of the importance of the IPO in the life of a firm, IPOs have been the focus of management research since the 1960s (Reilly and Hatfield, 1969) and extensively covered by theoretical and empirical literature (Peterle, 2013).

Yet, as we previously mentioned in the preliminary chapter, firms seek multiple benefits in going public, and these motivations are influenced by the firm's ownership structure, size, and age, and by the home country's institutional and regulatory environment (La Porta et al., 1998; Jenkinson and Ljungqvist, 2001; Ritter, 2002; Bancel and Mittoo, 2009; Bouzouita, Gajewski, and Gresse, 2015). For example, several studies highlight the fact that European firms tend to go public at a much later stage in life and are more likely to include secondary shares (shares owned by existing shareholders) in the IPO offering than their US peers (Bancel and Mittoo, 2009). In summary, as we have seen, the benefits of going public are numerous. They include, among many others, realizing growth, solving succession problems, seeking to take advantage of bullish time periods, enhancing external monitoring, strengthening the bargaining power with creditors, increasing share liquidity, increasing reputational and social capital, and sharing investors' risk.

However, regardless of the numerous motives for the firm to go public, and regardless of the firm's size, age, type, industry, and county of origin, the top priority will mostly prevail for both the issuer and the underwriter, which is to maximize the gross proceeds and thus raise the largest amount of cash possible from the IPO. This is why an important success measure of any IPO is the amount of cash raised, which has become a major target of firms going public. Thus, given a constant number of shares, to maximize the gross proceeds, the offering price will be at the highest possible level in relation to the shares' value, which is already challenging to assess. Accordingly, a problem is created for two main reasons. On the one hand, although higher offering prices will lead to higher proceeds, lower subscription and participation from both individuals and institutions will be recorded, which will lead to a higher risk of failure and result in IPO underperformance. This type of underperformance usually occurs when the market closing price on the first day of trade after going public is lower than the offering price. Basically, in such scenarios, the principal shareholders will maintain the majority of the firm's shares and the firm will not achieve its target by raising the required funds. On the other hand, if the issuer wants to ensure the success of the IPO and maintain a sufficient number of subscribers throughout the issuing period, it may purposefully underprice its shares by setting the offering price below, and sometimes way below, the shares' intrinsic value, which is usually referred to as "IPO underpricing." This will usually lead to suboptimal proceeds and more blockholders controlling the issuing firms due to the relatively cheaper share prices.

In a nutshell, setting a firm's offering price and assessing its shares' value have never been an easy task and looks like shaping a two-edged sword. On the first edge, setting a higher offering price aiming for maximum proceeds and risking the success of the IPO and ending up with lower participation but retaining control. And on the second edge, setting a lower offering price to make the IPO succeed but leading to suboptimal proceeds and higher participation and losing control. Therefore, the real challenge is in finding an optimal offering price to make the IPO benefits outweigh their costs mainly for the family firm's owners and main shareholders.

As previously mentioned, IPO underpricing, which measures the IPO performance over the short term, is defined as the difference between the offer price and the market price representing the shares' intrinsic value. Yet, it is worth noting that the financial literature regarding IPO performance has documented two anomalies that many researchers around the world have tried to observe and explain from different perspectives and theories. In the short term, underpricing is observed for most IPOs generating high initial returns after the first trading day (Ibbotson, 1975; Ritter, 1984; Kuklinski, 2003), while in the long term, usually three to five years later, underperformance is observed for most IPOs (Ritter, 1991). In fact, here lies the anomaly in observing two such contradictory performances from IPO firms in different time intervals.

As we mentioned, several empirical studies documented the existence of the initial underpricing phenomenon for newly listed firms during the early days of trading across many countries and capital markets (Welch, 1992; Ritter, 2002; Loughran and Ritter, 2004; Zouari et al., 2011; Bouzouita, Gajewski, and Gresse, 2015). IPO underpricing is a common measure of IPO performance in the finance literature and is generally viewed as the difference between the offer price and the market closing price, usually on the first day of trading after going public. However, it is not uncommon to have research conducted on IPO underpricing by taking the market closing price of the second, third, fifth, tenth, or thirtieth day after the firm goes public. Ljungqvist (2005) documented that information asymmetry between investors and issuers is a key factor contributing to such underpricing. Therefore, the extent of underpricing represents the level of uncertainty associated with the equity (Ritter, 1984; Beatty and Ritter, 1986).

Early studies examined the short-term performance of IPOs on the US market. The first anomaly was initially documented in the late 1960s by Reilly and Hatfield (1969) where they found that from 53 sample firms that went public from 1963 to 1965, the initial first-day return ranged from 18.3% to 20.2%. McDonald and Fisher (1972) investigated 142 IPOs during 1969 and found significantly large returns for the initial subscribers, adjusted for stock market effects, in the first week following the IPO. In addition, Ibbotson (1975) found an average abnormal return of 11.4%. Loughran and Ritter (1995), based on their survey of papers on IPO underpricing, reported average initial returns of 10%. More recently, Ljungqvist et al. (2001) documented an initial return of 56.6% on average in 2000 for US IPOs. Purnanandam and Swaminathan (2004) found returns ranging from 14% to 50% depending on the matching criteria used.

Several other studies have investigated the underpricing phenomenon of IPOs on the main European stock exchanges. More particularly, McDonald and Jacquillat (1974) showed the existence of underpricing of 31 new French IPOs over the period 1968 to 1971 upon their official listing on the secondary market. The market-adjusted return was calculated according to the CAC40 index (by assuming an equal systematic risk) and was equal to 3% on the first day, 4.42% in the first week and 5% in the first month after the IPO date. Additionally, in a study of 131 French IPOs between 1983 and 1986, Husson and Jacquillat (1990) reported that the average (market-adjusted) initial return was 4%. Derrien and Womack (2003) documented a 9.5% underpricing in France from 1992 to 1998. Moreover, Derrien and Degeorges (2001), based on a sample of 243 IPOs over the period 1991–1998, found an average initial return of 17.5%. Similarly, Ginglinger and Faugeron-Crouzet (2001), in a sample of 292 IPOs between 1983 and 1994, found an average return of 18.67%. Ljungqvist and Wilhelm (2002) investigated 516 IPOs during 1990 and May 2000 and found a fifth-day return of 16.5%. In addition, Derrien and Womack (2003) found a first-day return of 13.23% in a sample of 264 IPOs during 1992–1998. Last, but not least, Chahine (2004), using a sample of 172 IPOs over the period 1996–2000, found a first-day return of 22.8%. Bouzouita, Gajewski, and Gresse (2015) found an IPO underpricing on the French market. On the German market, Ljungqvist (1997), using a sample of 189 firms over the period 1970–1993, found an initial underpricing of 9.2%.

But, despite the importance of the IPO event in the life of a firm and the countless studies that have been conducted to date on the performance of IPOs, it is somewhat surprising that the special case of family firms in Europe has not been investigated in depth despite the fact that family firms are the most prevalent form of business throughout the world (McConaughy, Matthews, and Fialko, 2001).

For instance, Ding and Pukthuanthong-Le (2009) stated in their papers that little information is being provided about the performance of family firms in relation to IPOs, although a wide range of research studies has been conducted on this specific topic. However, the authors added that interest in the performance of family firms in the capital market is on the rise due to the importance of family firms in the global economy. They continued by stating that there are numerous scientific research papers that deal with general firm performance in diverse contexts and in dissimilar markets; however, fewer studies have focused on the specificities of family firms in particular and their performance after an IPO date, either in the short term or in the long term. Similarly, Pagano, Panetta, and Zingales (1998) confirmed that due to their distinctive behavioral patterns, family firms should receive unique treatment from researchers and investors, especially now that family firm owners have come to realize that going public is essential for long-term growth and survival. Another reason that makes family firms in particular our subject of interest is the drastic change and trade-off that going public causes specifically in family firms. On the one hand, an IPO could benefit the firm by increasing its life beyond that of the family and boosting significantly its growth and increasing its capital tremendously, but on the other hand, the owning family might be reluctant to undertake the IPO process because of the need to disclose information that is private, and because of the management changes, submission to new regulations and procedures that going public requires, and the complexity that going public adds to the decision-making process. Furthermore, additional procedures in small businesses (which is the case for most French family firms) can sometimes be counterproductive and harmful as the firms become more rigid and lose flexibility (*Tharawat magazine, Issue 17, 2013*).

Ding and Pukthuanthong-Le (2009) found evidence, by examining the Taiwan stock market, that lower underpricing occurs when an outsider such as a CEO manages a family firm. In addition, Anderson and Reeb (2003a) presented another advantage of having owners as managers and explained that family firms outperform nonfamily firms because the controlled family's appointed CEO understands the firm and the business very well and this contributes to the firm's success. They concluded that when the owner both controls and leads the firm, the agency cost will easily be reduced and the firm will perform equally as well as, or even better than, nonfamily-controlled firms.

Likewise, Villalonga and Amit (2006) confirmed that value is added when the founding owner serves as the CEO or as the chairman of the board. They also claimed that in family firms, the agency costs created by the conflict between the family and minority shareholders are smaller than those of the conflict between management and shareholders in a nonfamily-controlled firm. Therefore, it is clear that the ownership structure will have various impacts on the underpricing in different markets.

Hence, numerous researchers have studied and analyzed the performance of firms in relation to their IPO process in different countries and capital markets in the short term and in the long term. As mentioned above, the results of IPO underpricing have been almost homogenous among many researchers in different countries and different markets since the 1960s until today. Thus, the very important question that we raise is not whether IPO underpricing exists or not, but under what circumstances does it exist? Another question that is mostly particular to our scope of study in this chapter is whether the short-term IPO performance differs between family and nonfamily firms as many researchers tried to explore, and what factors contribute mainly to such differences. It is worth noting that more than 60% of all listed French firms are family firms (Faccio and Lang, 2002). These family firms are usually regarded as exempt from agency conflict due to the separation of ownership and control, but subject to corporate control as argued by Zingales (1995). This is the focal point of our study that we aim to investigate given the lack of empirical research on family firms' IPOs (McConaughy, Matthews, and Fialko, 2001), especially in the French market in the context of their unique corporate governance mechanisms.

Therefore, this chapter is an attempt to remedy this deficiency. In a similar vein, we will investigate the particular corporate governance mechanisms of French family firms upon their first introduction into the capital markets and the effects on IPO short-term performance. As well as the governance mechanisms, we will attempt to spot the ownership and control rights on pre- and post-IPO dates and their effects on underpricing as well. As a result, analyzing family firms' performance upon their first introduction into the stock market is of high interest, and more specifically, analyzing the corporate governance mechanisms applied by the French family firms that contribute most to this performance is our objective in this chapter.

Additionally, IPOs have always been seen as the major change in the ownership structure of firms, attracting a limitless number of analysts, investors, and researchers to watch IPO performance closely and understand the drivers of this performance via different theoretical explanations. As discussed above, numerous researchers have measured IPO performance and found underpricing in most countries and through different times. However, our main interest is not simply in examining whether family firms are underpriced or not, but in explaining what factors contribute most to such underpricing, mainly corporate governance factors.

This chapter is organized as follows: Section 2 illustrates the literature review and hypotheses. Section 3 describes the sample, data and methodology. Section 4 illustrates the results and interpretations and Section 5 concludes.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. Sources of IPO Underpricing

As mentioned earlier, underpricing occurs when investors from the public market are willing to pay more, and sometimes much more, than the initial offer price to purchase the issuers' stock after the stock has been listed and traded on a stock exchange. Underpricing has been considered a market anomaly to the principle of efficiency, because the size of underpricing is much higher than the premium offered for equivalent stocks in terms of risk. However, recent theories that consider IPO underpricing as an informational event or a tool for risk management have attempted to reconcile the IPO underpricing puzzle with market efficiency (see Gajewski and Gresse, 2006, for a review of sources of IPO underpricing).

To illustrate, Ibbotson, Sindelar, and Ritter (1988) found an average initial return of 16% for a sample of over 8,000 US IPOs. Loughran et al. (1994) provided a comprehensive survey of the IPO literature for 25 countries that found statistically and economically significant first-day IPO underpricing. As we have realized, there are extensive discussions about the sources of IPO underpricing in the finance literature. In the first part of this chapter we have illustrated many reviews and results presented by different researchers, in different markets and time horizons, concerning IPO underpricing, but here below we will elaborate some sources of underpricing. Thus, in this section we will examine the underpricing phenomenon under different theories in three wide contexts: the information asymmetries first, the capital structure second and the signaling effects third. Yet, since French family firms are the scope of our research, we will attempt to converge as much as possible and whenever applicable the main literature covered on all types of firms to specifically address the family firms. However, as we will see in the subsequent sections, most theories that have been established and expanded to explain the IPO underpricing over the last few decades did not differentiate between family and nonfamily firms in most times for two possible reasons. The first one could be linked to the smaller size of issues in terms of quantity and value of family firms compared to nonfamily firms as we will see below, which deviated the attention of most reputable researchers to focus mainly on family firms. And the second possible reason could be linked to the lack of sufficient evidence in finding substantial differences between the two types of firms concerning the mentioned theories and IPO underpricing since many theories can apply to all types of firms, both family and nonfamily. Last, we subsequently present a section focusing on the uniqueness of family firms' governance and IPO underpricing.

2.1.1. Underpricing and Information Asymmetries

Too many theories have surfaced in response to the underpricing phenomenon. The information asymmetry hypothesis explains that an information imbalance may occur between issuers and underwriters (Baron, 1982), between issuers and investors (Benveniste and Spindt, 1989), and among investors themselves (Rock, 1986). Imperfect information from either party will lead to underpricing of the new issue. As a result, it is indispensable to discuss and scrutinize each theory separately in different subsections, in an attempt to understand the family firm context of the underpricing phenomenon and the sources of the information asymmetries among the three main players: the issuers, the underwriters, and the investors.

- *Information Asymmetry between Issuers and Underwriters*

Baron (1982) noted that IPO underpricing may occur when there is a considerable level of information asymmetry between issuers and underwriters (investment bankers). Specifically, the author argues that if investment bankers take advantage of their superior knowledge of market conditions to underprice offerings, which enables them to expend less marketing effort and to favor themselves with buy-side clients, IPOs will then be underpriced. The author added that when the firm is less informed than its underwriter about investors' intentions to buy the firm's shares, managers have an incentive to allow the bank to fix the offering price. Also, when the firm cannot observe the bank's selling efforts, it has a great incentive to offer the bank a contract that underprices the shares and thus induces the bank to make the best-selling effort. However, Baron's hypothesis is not confirmed by Muscarella and Vetsuypens (1989), who documented underpricing even in the absence of agency costs between the underwriter and the issuing firm.

The great discretion of underwriters in book-building has motivated many researchers to investigate why underwriters underprice their clients' equities. In their papers, Rock (1986) and Beatty and Ritter (1986) explain that an issuing company may be too optimistic when presenting its own operation data and financial outlook to its underwriter. Of course, the underwriter will verify the accuracy of information provided by the issuing firm. The more transparent the latter's operation is, the more the underwriter trusts the reports and assessments from the issuer and the less the underpricing might be.

Therefore, when information asymmetry is not a major concern, underwriters are likely to price the equity offering close to the expected market value.

On the other hand, underwriters will not be able to fully trust the assessment and self-evaluation provided by their IPO clients if the business operation and financial reporting of the latter are less transparent. The underwriter can elect to ignore the problem in light of the quality of data provided by the issuing company and determine the offer price accordingly. However, doing so will increase the underwriter's risk of overpricing an IPO. As a result, lowering the offer price allows underwriters to avoid potential overpricing.

In addition, such information asymmetry motivates underwriters to price the equity below an optimal price to avoid undersubscription, which is a problem they definitely want to prevent. In other words, underwriters discount the offer price to offset risk derived from business (Certo et al., 2001a), and with greater underpricing, underwriters reduce the likelihood of undersubscription, which would force them to purchase the shares of the offering in a firm commitment deal. In addition, underwriters avoid the likelihood that they will need to provide price stabilization in the aftermarket (Logue et al., 2002). Underwriters can also enjoy a significant gain by exercising the overallotment option wherein they buy shares at the original offer price and sell them in the aftermarket at a higher price (Jenkinson and Ljungqvist, 2001).

An IPO underwriter is also an agent to the issuing company. Agency problems occur when an underwriter obtains economic gains by not maximizing its issuing company's gains from the IPO. It is important to note that these underwriters are normally investment banks and besides public offering deals, these banks usually offer different types of banking services. If selling a public offering equity at a low price to selected major clients helps to retain these clients for the investment banks, then the underwriters will have a strong incentive to introduce the IPO deal at a low offer price (Ritter and Welch, 2002; Loughran and Ritter, 2002).

The balance of bargaining power between underwriters and issuing companies also affects underpricing. Underwriters are prone to press the issuing companies to underprice the equity to attract investors (Beatty and Ritter, 1986). Moderately underpriced equities are found to generate more investor interest (Nanda and Yun, 1997). Because of large underwriters' marketing power to reach investors, issuing companies may be willing to accept a low offer price for more investor interest and more aftermarket trading (Ljungqvist, 2005).

Given the underwriter's web of relations in the IPO network, they have an incentive to please their institutional investors by providing a lower stock price in the offering (underpricing) so as to encourage future investment in other IPO deals (Pollock et al., 2004) and other investment opportunities. Institutional investors (as the ultimate agents of individual owner principles) pledge to purchase a certain number of shares of IPO stock from an underwriter at the established offer price on the date of the offering. For instance, by pleasing these institutional investors (for instance, by setting a lower offer price for the IPO stock the institutional investors purchase, thereby allowing them to benefit through the substantial price increase on the open market on the first day of trading), underwriters create loyalty and demand for future deals (Ritter, 1987; Tinic, 1988). As a result, given the potential for repeat business, underpricing helps underwriters to create groups of loyal institutional investors for future new issues (Hanley and Wilhelm, 1995; Pollock et al., 2004).

Underwriters receive underwriting fees from equity offering firms for the service provided in researching, valuing the deal, and finding institutional investors to bid for the equity offering. An underwriter also receives a commission or remaining equity from the sales of the IPO equities. On the other hand, if underwriters are forced to charge a low underwriting fee for their services, they are likely to intentionally price the IPO deal low to attract more buyers to bid for the stocks. In addition, underwriters are required by law to buy unsold equities from an IPO deal. The hypercompetitive underwriting market allows issuing companies to bargain a low underwriting fee against underwriters. As a result, to recover from the cost of underwriting a deal, underwriters often use a low introduction price to attract bidders and to lower the liability in case there is a large quantity of equity remaining unsold (Chen et al., 2006).

Lawsuits can have a negative impact on an investment banker's reputation (Ljungqvist, 2005). In some countries, especially in the US, and particularly since the implosion of the Internet bubble, investors disappointed by their IPO investments sometimes sue issuers to recover financial losses resulting from incorrect, distorted, or omitted information (Gajewski and Gresse, 2006). As a result, intentionally setting the IPO offer price below the fair price is an insurance measure for underwriters to avoid litigation (Tinic, 1988). Lowry and Shu (2002) confirmed the litigation-risk hypothesis. They showed that firms with a higher risk of litigation underprice their IPOs by a greater amount as a form of insurance and that higher underpricing lowers lawsuit probability and expected costs. However, the threat of legal suits cannot be an important motivation for underpricing in European countries, where lawsuits associated with IPOs are extremely rare (Gajewski and Gresse, 2006).

Loughran, Ritter, and Rydqvist's (1994) cross-country survey indicates that underpricing exists in both auction and book-building markets. To give a fair assessment of an IPO, auction bidders need firm-specific information such as business operation, major clients, competition, and management. However, information production is not free. High information production would limit the number of potential bidders and cause IPO undersubscription. If the cost of information production is low, the number of potential bidders increases. Since the equity bidding is expected to be highly competitive, potential investors may decide to withdraw from the bidding, which thus increases the variance of auction participation (Sherman, 2005). The outcome of information production cost is that the auction mechanism can create even higher underpricing than book-building (Sherman, 2005).

- *Information Asymmetry between Issuers/Underwriters and Investors*

Pricing IPOs is a difficult task because the market is not certain about the quality of the IPO firm, while the issuing firm and its underwriter do not know the market demand for IPO shares. The disclosure of information is crucial in order to avoid mispricing. The problem facing an underwriter wanting to collect information useful for pricing an IPO is that investors have no reason to truthfully reveal their private information during the pre-market phase, unless they are rewarded in one way or another.

Many studies revealed that institutional investors may know more than the issuer about the prospects of the company's competitors and sector or the economy as a whole during the pre-offer period (Benveniste and Spindt, 1989; Benveniste and Wilhem, 1990; Spatt and Srivastava, 1991; Sherman and Titman, 2002). Because these investors participate in the IPO market regularly, they may know more about its prospects. More importantly, they know something the issuer does not know: their demand for the company's stocks. Thus, the task for the underwriter is to acquire as many pieces of information as possible from them, during the pre-selling period, before setting the issue price. This structure challenges the underwriter to choose a mechanism that encourages truthful information disclosure to benefit from selling shares at the full information price in the aftermarket. The roadshow or the book-building process can be seen as such a mechanism. Price discovery takes place in the premarket and is then followed by the distribution of securities to investors.

Benveniste and Spindt (1989) showed that, in order to induce investors to truthfully reveal their demand for IPO shares, they must be rewarded with more underpricing on deals for which there is strong demand. At the outset of the book-building process, the underwriter proposes a price range for the shares. Investors express their interest in IPO shares by placing nonbinding orders at different prices within the price range. When investors place their orders, they factor in their expectations about what the market price of the stock will be on the first day of trading. From these indications of interest, the underwriter can therefore learn positive and negative information that can be used when setting the final offer price of the IPO. In order to compensate investors for revealing their private information, the final offer price only partially incorporates collected private information. On average, investors earn a high first-day return by paying a lower price for the stock than the full information price in the secondary trading market. The investment bank solicits nonbinding bids from institutional investors in the premarket. After evaluating investors' demand in the premarket phase, the final offer price is determined. In order to reward investors for their information, underwriters only partially incorporate collected private information in the final offer price. The authors deduce that as investors pay a lower offer price than the full information price in the secondary market, they pocket high first-day returns.

Consistent with the model of Benveniste and Spindt (1989), several US studies report a correlation between the percentage revision of the final offer price from the midpoint of the price range and first-day returns. Hanley (1993), Lowry and Schwert (2001), and Loughran and Ritter (2004) reported that US IPOs where the final offer price is revised upwards display higher first-day returns than those IPOs where the final offer price is revised downwards. If the private information of investors is entirely incorporated into the final offer price, then no relation between the price revision and underpricing should be found. Loughran and Ritter (2004) show that first-day returns on IPOs are also predictable based upon market returns in the three weeks prior to the IPO date. The quantitative effect is large: Each 1% increase in the market during the three weeks before the IPO results in a first-day return that is 1.3% higher.

Lowry and Schwert (2001), on the other hand, showed that public information (proxied by market returns) is fully incorporated into the offer price, whereas private information is only partially incorporated. Their results suggest that negative information learned during the premarket phase is more fully incorporated into the offer price than positive information. The reason is that neither underwriters nor investors want to incur losses on overpriced issues (i.e. IPOs with negative first-day returns). In addition, Lowry and Schwert (2001) found that high-technology firms and riskier firms tend to have higher first-day returns. The higher first-day returns compensate investors for the greater valuation uncertainty associated with these deals.

Another finding is that IPO deal flow has a negative effect on underpricing. A higher (expected) deal flow affords underwriters the opportunity to exclude investors from other, profitable deals in retaliation for distorting their private information. This increases the market power of underwriters and reduces the need to compensate investors for revealing their private information (Benveniste, Busaba, and Wilhelm, 2002). The effect is large in terms of economic magnitude since a one standard deviation increase in IPO deal flow reduces underpricing from 22% to 17.2%.

Cornelli and Goldreich (2001) gained access to the books of one European investment bank participating in 23 international IPOs. They found that the empirical pattern in the underwriter's allocation and pricing decisions is very consistent with Benveniste and Spindt's (1989) model. The underwriter favors both investors who submit limit orders and regular investors with a better probability of allocation. Sherman and Titman (2002) also supported the thesis of information disclosure. They observed that the youngest and riskiest firms are the most underpriced as the institutional investors need more private information to reduce uncertainty about the firm's value.

Hanley (1993), from a sample of 1,430 IPOs on the US market, between 1983 and 1987, provided empirical support for the phenomenon that considers that the underwriter adjusts the price upwards within the price range, but only partially in order to leave enough money on the table to compensate informed investors for their truthful disclosure. In this context, institutional investors are supposed to be informed about and subscribe to underpriced IPOs only. However, the empirical results demonstrate that institutional investors subscribe to underpriced and overpriced IPOs in identical or approximately identical proportions (Hanley and Wilhelm, 1995; Krigman et al., 1999; Aggarwal et al., 2002) and the level of underpricing does not appear to be the sole factor in deciding whether or not to participate in an IPO. Other factors such as size, length of the relationship with the candidate company, and the company's reputation also play a role (Binay and Pirinsky, 2003).

- *Information Asymmetry among Informed and Uninformed Investors*

Saunders (1990) supported the belief that underpricing is a competitive outcome in the IPO market resulting from a small number of informed and large number of uninformed investors. For instance, few investors may have additional information about the market or may generate such information through analysis, which also carries a cost of information. Often large investors generate such information through the help of experts, which leads to information asymmetry. The increase in information asymmetry leads to the issue of rational decisions by informed investors and perceived less rational decisions by uninformed investors, which are more than the informed investors in real economy.

Rock (1986) coined the term the "winner's curse" in his study, which means that since informed investors have more information, they apply only for good issues with larger amounts and withdraw (not invest or even short-sell) all money from bad issues, while retail uninformed investors do not have access to any such information, and they apply for both good and bad issues only on the basis of information available to the whole market. Hence the good issues are oversubscribed as both informed and uninformed investors apply for those, and due to the relatively small investment of uninformed investors, they carry greater risk of rationing (not receiving allotments) than informed investors, and at the same time uninformed investors receive all shares of bad issues (generating low return). Thus, uninformed investors are not able to take advantage of higher underpricing of good issues, but bear both the risk of rationing and uncertainty. As a result, to attract uninformed investors, firms have to compensate them by underpricing IPOs. Further, according to Welch (1992), the uninformed mimic the informed investors' behavior. By underpricing its shares, the firm induces both the informed and the uninformed to submit buy orders in a domino effect.

In fact, Rock's (1986) model leads to several empirical predictions. IPO underpricing increases because IPOs attract the less informed. Moreover, IPO underpricing increases the more investing in a given firm is considered to be risky (Miller and Reilly, 1987). As a result, the more underpriced a firm is, the more costly the search for information (Booth and Chua, 1996). In the case of oversubscription and high underpricing, the rationing of shares favors the less informed, which has been observed in the case of Finland (Keloharju, 1993), the UK (Levis, 1990), and France (Sentis, 2001).

Ellul and Pagano (2006) demonstrated that IPO underpricing is an increasing function of the expected post-listing illiquidity due to asymmetric information. They proposed a model in which investors worry about the aftermarket illiquidity that may result from asymmetric information after the IPO. The less liquid the aftermarket is expected to be, and the less predictable its liquidity, the larger the IPO underpricing, because IPO underpricing compensates uninformed investors who participate in the issue not only for adverse selection costs borne at the IPO stage but also for the expected trading costs that they will bear by liquidating their shares in the aftermarket. Ellul and Pagano (2006), for a sample of 337 IPOs carried out between 1998 and 2000 at the London Stock Exchange (LSE), found a positive relationship between underpricing and post-IPO trading cost level and variability.

2.1.2. Underpricing and Ownership Structure

Having discussed in the previous section the sources of IPO underpricing in the context of information asymmetries among the different groups that are mainly involved in the IPO, below we will examine the IPO underpricing in some contexts of ownership structure.

- *Underpricing Explained by Ownership Dispersion and Liquidity*

Usually, when a firm decides to carry out an IPO, it chooses between two alternatives. On the one hand, it can keep a concentrated ownership by attracting large shareholders possessing superior information about the company's true value. Firms may seek higher institutional ownership because they anticipate benefits from monitoring institutions that are more likely to intervene because the consequence of their actions can be observed by the market (Kahn and Winton, 1998) and they can minimize the agency costs (McConnell and Servaes, 1990).

On the other hand, they can target an ownership structure that consists mainly of small investors. Small and dispersed shareholders are less likely or less able to monitor managers' actions. Additionally, a dispersed ownership structure allows the company to obtain more secondary-market liquidity for its shares and thereby helps increase the firm's value and reduce its capital cost in several ways. For instance, post-IPO liquidity reduces transaction costs in future raising of equity and lowers the gross fees requested by investment banks in subsequent equity offerings (Ibbotson and Ritter, 1995). It also reduces the illiquidity premium and thus the returns required by investors to hold the firm's shares, as shown in Amihud and Mendelson (1986). In addition, promoting trading liquidity through ownership dispersion may be an effective mechanism to impede future hostile takeovers (Shleifer and Vishny, 1986). Also, encouraging analysts to write and talk about the IPO improves the issuing firm's future access to capital markets by attracting investors. These firms that seek secondary-market liquidity will underprice their shares because they need to attract a large number of small shareholders to create a broader ownership structure. Knowing that, small investors will not participate in an IPO unless they are compensated for the adverse selection costs they incur – in other words, unless the IPO is sufficiently underpriced.

Similarly, Brennan and Franks (1997) showed that in order to preserve the private benefits of control, firms may choose to underprice their shares and ration the allocation of shares in favor of small, diffuse investors. Likewise, Michaely and Shaw (1994) found that there is higher underpricing for IPOs that have a more diverse shareholder base. Higher underpricing induces wider investor participation and creates a broader ownership structure. Miller and Reilly (1987), Hanley (1993), and Schultz and Zaman (1994) have all produced evidence showing that underpriced IPOs, on average, exhibit higher aftermarket trading turnover than overpriced IPOs, without clearly explaining why this is so.

Booth and Chua (1996) illustrated in their model that an optimal level of underpricing is reached when the issuer maximizes proceeds. The ownership dispersion at equilibrium is partly determined by the value of secondary-market liquidity. Maximizing proceeds means promoting secondary-market liquidity through initial ownership dispersion and oversubscription, to the point that the rate of increase in total market value equals the rate of increase in total information costs.

Similarly, Hahn and Ligon (2006) found that liquidity and underpricing have a positive relation, i.e. higher underpricing leads to a decrement in the liquidity risk and increases the liquidity of the shares in the secondary market. Additionally, the number of analysts following the firm would also increase the post-IPO market liquidity of shares. Thus, there is a strong correlation between underpricing and higher trading volumes. Ellul and Pagano (2006) highlighted the literature with results obtained by a sample of companies that went public on the London Stock Exchange (LSE) between June 1998 and December 2000. The paper finds that expected aftermarket liquidity and liquidity risk are important determinants of IPO underpricing. Bouzouita, Gajewski, and Gresse (2015) have conducted an empirical study on the liquidity benefits of IPO underpricing. They have shown that public information production can be another channel by which underpricing improves liquidity instead of ownership dispersion.

- *Underpricing Explained by Ownership Dispersion and Offer Price*

Chalk and Peavy (1987) showed that underpricing is inversely related to offer price. They divided their sample of 649 IPOs between 1975 and 1982 into five portfolios based on offer price. Their results indicate that low-priced IPOs exhibit larger underpricing. One explanation that they advance is that the underpricing represents a premium for above-average risk for stocks priced at $1.00 or less. In a similar vein, Ibbotson, Sindelar, and Ritter (1988) showed that IPOs priced at less than $3.00 exhibit much larger underpricing, on average, than higher-priced IPOs. They hypothesized that more speculative issues tend to have offering prices below $3.00. Seguin and Smoller (1997) also showed that low-priced stocks are associated with higher risk and lower returns.

Yet, as we previously mentioned, companies that decide to carry out an IPO may choose either to keep a concentrated ownership by targeting large shareholders or attract small and dispersed ownership. Interestingly, Falkenstein (1996) and Gompers and Metrick (1998) showed that institutional investors tend to avoid investing in low-priced stocks, a fact relevant for IPO placement. Similarly, a low offer price would discourage large investors due to the higher transaction costs associated with low-priced stocks. However, the resultant pooling equilibrium will lead to a winner's curse problem and higher underpricing (Rock, 1986). Similarly, Booth and Chua (1996) argued that firms may choose a lower offer price to promote diffuse ownership. Here, it is argued that the firm benefits as long as the benefit of monitoring is greater than the cost of underpricing.

Stoughton and Zechner (1998) predicted in their model a positive relationship between underpricing and strategic rationing in favor of large investors. As mentioned earlier, firms may seek higher institutional ownership because they anticipate benefits from institutional monitoring (McConnell and Servaes, 1990). Hence, Stoughton and Zechner (1998) explained that underpricing may represent compensation to institutional investors for their future monitoring services. In contrast, Benveniste and Spindt (1989) argued that institutional investors provide valuable information during the IPO marketing process and characterized underpricing as compensation to these investors for their information. Thus, IPOs that are marketed towards large, institutional investors are underpriced more.

- *Underpricing Explained by Ownership Dispersion and Economic Status*

Leland and Pyle (1977) mentioned that the post-IPO ownership structure serves as a signal for future prospects, while Loughran and Ritter (2004) argued that the prospect theory states that high underpricing of IPOs results in an increase in the wealth of the issuers due to their own shareholding. Interestingly, the authors mention that the corruption hypothesis states that management is not concerned about the "money left on the table" while they use it as a mechanism to increase their own wealth. Grinblat and Hwang (1989) also supported the view that underpricing and shareholding by the issuer after the IPO serves as a signal of the quality of the IPO, whereas Leland and Pyle (1977) supported the positive relationship between the original owners' stake after the IPO and the quality of the firm.

Ljungqvist and Wilhelm (2003) investigated the relationship between the post-IPO decrease in shareholding of pre-IPO owners and the DotCom Bubble using the data of 2,178 IPOs between January 1996 and December 2000. They found that extensive use of newly directed share programs, which provided the families, friends, and employees with the opportunity to purchase shares at IPO price, led to a motivation to deliberately underprice IPOs. These were the unique characteristics that were associated with a firm during the boom of the IT industry that led to the DotCom Bubble. The results found that DotCom firms accounted for 21.7% of the total variation in mean revenues and mean book value of assets, which means the specific characteristics of an industry. It was found that in 1999, Internet firms represented 57.4% of all IPOs. The average gross proceeds from IPO transactions increased three times from $57.4 million in 1996 to $164.9 million in 2000. As a repercussion of the event, the proportion of pre-IPO shares outstanding declined from 4.9% in 1996 to 0.7% in 2000. Moreover, there was a sharp decline in the pre-IPO insider ownership stakes from 63.9% in 1996 to 51.8% in 2000. During the same period, CEO stakes also declined from 22.7% to 11.6%. The story was the same for venture capitalists and investment banks as well as other companies. The result was an increasingly fragmented ownership structure.

To complement these changes in ownership structure, the year 1999–-2000 also witnessed a rapid decline in both the frequency and magnitude of secondary sales of existing shares by all categories of pre-IPO owners. Ljungqvist and Wilhelm (2003) found that this unusual pricing behavior experienced during the DotCom Bubble may have partially accounted for the radical changes that took place in the pre-IPO ownership structure and the insider selling behavior of the firms over the same period. Derrien (2005) investigated the reasons for the attachment of inside investors to their share in the IPO and the result in terms of behavior of not selling their share in the market and found that insiders prefer to keep their funds in the form of shares because they expect their shares to increase in value in the long term. The study found that the most important factors that influence an underwriter's determination of an IPO price are the information about the intrinsic value of the issuer and noise trader sentiment. The results provided evidence that noise traders participate in the aftermarket only when they are bullish, otherwise the dominant players in aftermarket trading are the institutional investors. The study also provides evidence that IPO price, initial return, and aftermarket turnover are all positively related to the demands of individual investors.

2.1.3. Underpricing and Underwriters' Reputation and Analysts' Coverage

Below we will address two other probable explanations for IPO underpricing, which are related to the underwriter's reputation and intention first, and the analyst's coverage of the IPO firm second. Therefore, we will review the main literature concerning these two explanations for underpricing.

- *Underpricing Explained by Underwriter's Reputation*

Chemmanur and Fulghieri (1994) suggested that issuers have more information about the future prospects of a firm than investment bankers. Hence the important role of the investment banker in producing more information to decrease information asymmetry. Yet they argued for the key issue of measuring the credibility of such information. The role of the investment banker is that of an information producer in the equity market, and the ordinary investors take the burden of fixing the market value of equities. As a common measure of the credibility of the recommendation given by the investment banks, investors look into the past performance of the investment banks and accordingly set the value of the equity. The consideration of building the reputation of investment banks plays an important role in shaping the way in which investment banks interact with investors. The empirical implications that can be derived from their model are that investment banks, having a better reputation, can be more effective in resolving the informational asymmetry in the equity market. The second implication that can be drawn is that the greater the reputation of the investment bank, the lower the variable of possible firm values of the firms it markets. Baron (1982) suggested that investment bankers have more information about the IPO market than issuers. Due to the reputation of investment banks, the original value of the issue may get hyped more than usual. Hence it can be interpreted that the issuers incentivize the investment bankers by allowing them to underprice the issue rather than bearing high monetary cost (optimal delegation). Tinic (1988) found that underwriters deliberately underprice IPOs due to the risk to the reputation of the underwriter and institutional arrangements.

Marchand and Roufagalas (1996) suggested in their study that underpricing is a better way for the underwriter to gain in any mechanism, such as in a firm commitment offer, the main loss of proceeds is afforded by the issuer while the underwriter gains due to full subscription at a lower price. Under the best effort contract the underwriter is incentivized on the number of shares sold, which can be increased by selling at a lower cost, thus again the issuer suffers from underpricing. But Ritter (1987) found a higher level of underpricing in best effort contracts than in firm commitment offerings. Marchand and Roufagalas (1996) found that underpricing will be minimized in three cases where underwriters are forced to price in line with owners' expectation: a) if demand uncertainty is minimal, b) if full information about future prospects and profitability is available to the market, and c) if the optimal solution is the corner solution. Cliff and Denis (2004) found that underwriters with higher reputations will be compensated for analyst coverage with greater underpricing of IPOs.

- *Underpricing Explained by the Analyst's Coverage*

Analyst's coverage forms a critical factor in underpricing of the IPO process, since the issuers never directly pay for the coverage, and hence would indulge in indirect payment by underpricing the IPO (Loughran and Ritter, 2004). Analyst's coverage is increased by the provision of underpricing (Cliff and Denis, 2004). Aggarwal et al. (2002) also detailed that the intention of managers is to increase analysts' following, resulting in an increase in the number of investors due to positive recommendation by analysts. This increased analyst's coverage of abnormal returns generated by IPO shares in the post-IPO market leads to higher wealth generation at the expiration of the lockup period. Increased analyst's coverage of IPOs under the influence of the lead underwriter will lead to higher performance due to periodic boost by the same analysts (James and Karceski, 2006). For instance, Bouzouita, Gajewski, and Gresse (2015) stated that the vast majority of empirical studies examining the liquidity of recently listed stocks support the notion that IPO underpricing boosts secondary-market liquidity. Specifically, the authors investigate by which channels IPO underpricing impacts post-listing liquidity. Using a sample of IPOs undertaken on Euronext with diverse mechanisms, the authors show that when ownership structure is not influenced by initial underpricing, this underpricing still has a positive impact on aftermarket liquidity through a virtuous cycle related to analyst coverage. The authors argue that analyst coverage reduces information asymmetry costs and illiquidity in the secondary market. Therefore, the higher the number of analysts and the more reputable the analysts covering the IPO, the higher the share liquidity that will be created and the lower the underpricing that will be observed due to more information disclosure and sharing among investors. Thus, according to Bouzouita, Gajewski, and Gresse (2015), analyst coverage further increases share liquidity and lowers information asymmetry, resulting in less underpricing.

2.1.4. Underpricing and the Signaling Theory

In this section, we will examine first the role of signaling in realizing larger proceeds from secondary operations, and second the role of signaling in reducing the IPO underpricing.

- *Role of Signaling in Realizing Larger Proceeds*

Grinblat and Hwang (1989), Allen and Faulhaber (1989), and Welch (1989) developed the signaling theory to explain the underpricing phenomenon. This theory hypothesizes that underpriced IPOs leave investors with a good taste, allowing the firms and insiders to sell shares in future offerings at a higher price than would otherwise be the case. For these authors, underpricing is considered to be a good signal about the firm value and therefore firms intentionally underprice their IPOs. Similarly, a study by Ibbotson (1975) supported the view that IPOs are deliberately underpriced by firms with the expectation of higher gain in future seasoned equity offerings. Relatedly, from a sample of 1,985 IPOs on the US stock market between 1980 and 1986, Jegadeesh et al. (1993b) reported a positive relationship between underpricing and the probability as well as the amount of seasoned equity offering or open-market insider sales. These results confirm Welch's (1992) model. However, Jegadeesh et al. (1993a) offered another explanation. Initial positive returns may convey the information that investors are confident about the firm's growth. As a result, upon receiving this market feedback, the firms may finance more investment opportunities through successive capital increases.

In Chemmanur (1993), and more recently in Aggarwal et al. (2002), the issuer underprices shares to induce financial analysts to produce information about the firm. Underpricing the issue entails high initial returns, which attract the attention of potential analysts and media. For Chemmanur (1993), the information role played by financial analysts favors future reissuing operations. In this case, the owners hope to sell their remaining stake at a higher price than in the absence of underpricing. Moreover, Aggarwal et al. (2002) argued that initial underpricing followed by financial analysts' activity is favorable to the insiders when a lockup period is imposed, as it allows them to sell their shares at a higher price once the lockup period expires. Tests using a sample of 621 IPOs on the US stock market between 1993 and 1999 confirm these predictions. Hence, greater underpricing receives more attention from financial analysts, especially analysts unaffiliated with the underwriter, during the lockup period. Moreover, research coverage is found to be correlated with stock price performance during the lockup period and with the percentage of capital sold by the owner-manager at the end of the lockup period. Underpricing also has an effect on research by analysts affiliated to the underwriting bank (Cliff and Denis, 2004). This could be a compensation for the coverage efforts made by the analysts.

In contrast to other studies, Michaely and Shaw's (1994) evidence does not support the signaling models with a sample of 947 IPOs between 1984 and 1988 on the US market. They found that the less underpriced firms on the date of the IPO generate better earnings and dividends in the aftermarket and tend to reissue more frequently after the IPO. Two years after the IPO, the firm value is not directly linked to initial underpricing and capital retained by the owner. Additionally, Spiess and Pettway (1997), who worked on the US stock market, in a sample of 172 industrial firms introduced between 1987 and 1991 that issued again within the three subsequent years, found that initial underpricing is significantly lower with the present value of initial and subsequent offerings and does not significantly determine the net profit from any of the issues for the existing shareholders.

However, the signaling hypothesis has been more strongly validated on the French market than on other markets. Ginglinger and Faugeron-Crouzet (2001) found that firms going public on the secondary market have higher underpricing when reissuing shares within four years of the IPO.

- *Role of Signaling in Reducing IPO Underpricing*

It has been argued that the information asymmetry between the issuing firm and investors is large. Beatty and Ritter (1986) and Filatotchev and Bishop (2002) argued that as a result of such information asymmetry, pricing the shares of these firms becomes more difficult and investors require underpricing to compensate them for the higher valuation uncertainty. As underpricing transfers issuers' wealth to premarket institutional and retail investors, issuers are motivated to reduce the cost of information gathering for investors by reducing the information asymmetry. Therefore signaling becomes an important measure to close the information gap between issuers and investors. Additionally, Leland and Pyle (1977) stated that signaling allows investors to learn more about their potential investment target and helps them to overcome asymmetric information and thus reduces the underpricing of IPOs. For instance, Marshall (1998) mentioned that the issuing firm has private information about the firm's quality, which is unavailable to the public, and first-day investors have relatively little access to information held by the IPO firm insiders. In other words, signaling provides a much needed means of communication to narrow the gap of information asymmetry between family firms and IPO investors. When investors learn more about an IPO, they can value them more accurately.

Deeds et al. (1997) explained that investors' evaluation of the issuing firm's future value will affect the price they are ready to pay on the day of the IPO. To mitigate the risk of adverse selection, first-day investors use available indicators that are associated with the performance of an IPO. However, Carter and Manaster (1990) said that issuers may use the signaling mechanism by indicating that firm quality reduces *ex ante* uncertainty and the need to discount the shares in order to attract investors. The attributes of a firm include information that reduces uncertainty among investors about the firm's intrinsic value. On the other hand, Sanders and Boivie (2004) argued that particular attributes and characteristics may replace other unavailable objective financial or operating data. For instance, Florin and Simsek (2007) explained that organizational and governance characteristics are proved to be useable as criteria for lowering valuation uncertainty when explicit indicators (e.g. historical accounting data) are deficient or unobservable. Cohen and Dean (2005) suggested that the composition of top management teams could be such an indicator. Investors' ability to evaluate the quality of an IPO strongly influences the extent of IPO underpricing.

Consequently, there are two criteria for signals to be valid. Deeds et al. (1997) argued that signals must be intended, known and observable in advance of the IPO and they must be costly or difficult to imitate. A primary mechanism for managers to send out signals about firm quality is through the prospectus, which provides information about the firm's operations and management. According to Certo et al. (2001b), these send signals to the potential investors who will take them into consideration when determining the price they are willing to pay on the first day of trade and earlier studies have proved the effect of prospectus information on first-day underpricing.

2.1.5. Underpricing and Behavioral Finance

Ritter (1991) and Loughran and Ritter (2002) gave an alternative explanation for underpricing IPOs based on behavioral finance literature. The authors suggested that IPOs are not underpriced but that investors who enter the market on the first day after issuance drive the positive initial returns. The most puzzling aspect of the first-day return phenomenon is that, in many circumstances, issuers do not object to a severe first-day return. Loughran and Ritter (2002) explained this phenomenon by using the prospect theory first developed by Kahneman and Tversky (1979), which argues that investors focus on changes in their wealth rather than on the level of their wealth.

Another explanation in this context is the fact that investors may develop overconfidence in their knowledge of an investment target (Odean, 1998). In addition, self-attribution bias leads investors to believe that an unfavorable investment outcome is bad luck and to attribute a favorable outcome to their knowledge of the market (Daniel et al., 1998). Although underpricing caused by market sentiment inevitably upsets the original shareholders of issuing companies, these shareholders are able to regain their loss from selling their retained shares in the high-price aftermarket (Derrien, 2005).

But sometimes, the equity owners may opt not to sell their shares to the aftermarket investors. This is particularly salient in family business IPOs when family owners intend to retain control of the firm long after the IPO. In addition, overpriced stocks in the early stage of an IPO are likely to underperform in the long term and thus increase the risk for shareholders (Ritter, 1991). Chemmanur (1993) showed that high first-day returns generate publicity for the firm. He argued that this publicity generates additional investor interest and brand awareness. Last but not least, Welch (1992) further illustrated that underpricing can occur when potential investors pay attention not only to their own information about a new issue but also to (1) whether other investors are purchasing, (2) bandwagon effects, and (3) informational cascades that may develop.

2.2. The Uniqueness of Family Firms in an IPO Context

What we have covered so far in the preceding sections is very important to our topic, which we divide into two main research elements. The first element is about the IPO underpricing and the second element is about the unique and different corporate governance mechanisms of family firms. So far, in the above sections we have examined a thorough literature about the IPO underpricing in different markets and contexts, and reviewed diverse theories explaining the sources of IPO underpricing. All these were strictly related to the first element of our research objective. Thus, what remains to cover is the second element of our topic, which follows below in this section. Moreover, after reviewing the different literature regarding corporate governance mechanisms in family firms, we will attempt to examine, test and explain the IPO underpricing in the presence of these unique mechanisms. This is why this section is of extreme importance and considered the most important element of our work in this chapter where we will choose six hypotheses to test.

2.2.1. Family Firms and IPO Pricing

Astrachan and McConaughy (2001) argued that the uniqueness of family firms results in additional sources of uncertainties when investors evaluate the quality of family firms' shares. However, despite the tendency to suppress the stock prices of family firms, investors also reward family firms when these organizations demonstrate attributes reinforcing the positive characteristics of such firms. For example, founders of successful family firms are usually highly competent entrepreneurs and managers. Consequently, Villalonga and Amit (2006) explained that it is not surprising that stock prices of first-generation family firms tend to outperform second-generation family firms or nonfamily firms. Below we will explain in further detail family firms' value in the context of an IPO and the effects of different governance mechanisms on IPO performance.

As we noticed during our research and as previously mentioned in the earlier sections on the review of literature, there is no consensus that a single theory can fully explain the initial performance of newly listed firms during the first days of trading, and that was supported by Jenkinson and Ljungqvist (2001) and Ritter and Welch (2002). That's why we have seen numerous theories trying to fill gaps as much as possible to enable partial understanding of the effects of IPO underpricing in different contexts and environments. We will continue this section below in an attempt to understand the effects of some specific governance mechanisms of family firms on IPOs.

- *IPO Underpricing and Family Ownership*

Family businesses are assumed to be better monitored by family firm owners and thus by family-related managers than their counterparts, suggesting that a lack of alignment between owners (known as principals) and managers (known as agents), in reference to the agency problem, might be less prevalent in family than in nonfamily firms (e.g. Anderson and Reeb, 2003a; Ben-Amar and André, 2006). Furthermore, a recent study suggests that the efficiency-enhancing practices in family firms such as commitment to long-term objectives and human capital development (Bertrand and Schoar, 2006) are stronger than those of nonfamily firms. Also, family ties provide a trust network when the business environment lacks a strong legal structure (Burkart, Panunzi, and Shleifer, 2002). As mentioned in the previous chapter, the principal-agent conflicts and thus the agency costs might take different forms and levels that will affect the overall firm value. Consequently, it is believed that the absence of conflict of interest between the owners and managers in family firms would be highly appreciated by both the underwriter and the investors and therefore might lead to lower underpricing under the assumption that underpricing is somehow the price that firms have to pay to succeed the IPO on the one hand, and on the other hand, is what investors receive by agreeing to take risks and investing in IPOs.

Additionally, Leland and Pyle (1977) argued that insider ownership can be a signal of firm quality. In family firms, family members who own or control the firm are regarded as insiders and are supposed to know the true value of their company. Their willingness to hold more shares of their company indicates their confidence in the future prospects of the firm. Consequently, a higher percentage of insider or family ownership implies that the firm is of higher quality. Family owners will suffer substantial economic losses if the firm's future performance is poor. Thus, in the belief that family owners with high ownership stakes must be confident about business prospects, investors will be prepared to subscribe to the new issue. The authors suggest that a high level of insider ownership will provide a signal of quality and mitigate information asymmetries. They develop a model that shows that outside investors are willing to invest more in a venture when insiders themselves own more. So, here also, we consider the existence of a high IPO pricing phenomenon for newly listed family firms during the early days of trading. By referring to these two theoretical frameworks, we can build this hypothesis.

Hypothesis 1: There is a negative relationship between the level of family ownership and IPO underpricing.

- *A higher IPO Underpricing Due to Targeted Capital Structure*

We previously discussed the existence of a new type of agency problem between minority investors and large controlling shareholders. La Porta et al. (1999), Claessens et al. (2000), and Faccio and Lang (2002) argued that most firms around the world are controlled by large shareholders, typically founders or their families. Villalonga and Amit (2006) suggested that controlling families have greater incentives for both monitoring and expropriation. Nevertheless, many other authors argue that families have a powerful incentive to expropriate wealth from minority shareholders in various ways (Bruton et al., 2003; La Porta et al., 2000), which researchers call a “principal-principal” or “horizontal” agency relationship.

In this context, family firms may be tempted to target an ownership structure that consists mainly of small investors because small and dispersed shareholders are less likely or less able to monitor managers' actions. Moreover, small and dispersed investors may have fewer incentives and less ability to group, meet and vote for a unified decision with the aim of controlling or changing managers' actions in their own interests and as a result they simply remain passive investors and subject to expropriation.

But, as discussed earlier, a dispersed ownership structure allows the company to obtain more secondary-market liquidity for its shares and thereby helps increase the firm's value and reduce its cost of capital in several ways. Brennan and Franks (1997) showed that in order to preserve private benefits of control, firms may choose to underprice their shares and ration the allocation of shares in favor of small and dispersed investors, rather than institutional and large blockholders.

Zingales (1995) opined that a more diffuse ownership helps managers bargain for a higher price when they sell their controlling shares after the IPO. This indicates that underpricing is used by managers to attract excess demand and greater ownership dispersion with the objective of increasing share liquidity for future selling. Similarly, Booth and Chua (1996) documented that the issuer's demand for ownership dispersion creates an incentive to underprice its shares. They argued that promoting oversubscription allows broad initial ownership, which in turn increases secondary-market liquidity. However, broad initial ownership requires an increase in investor-borne information costs, which are offset through initial underpricing. As a result, family firms may seek a diffuse ownership (e.g. Booth and Chua, 1996) and avoid the possible costs of institutional investor myopia (Bushee, 1998) by purposefully deeply underpricing their shares, thus seeking to create bigger demands and larger trade volumes, thereby attracting a wider range of investor types and increasing value.

- *Lower IPO Pricing for Family Firms Due to Family Founders' Altruism*

We have previously examined how family firms may suffer from endogenous problems such as altruism, owner opportunism and self-control (Schulze et al., 2003). Additionally, family firms may be overcommitted to family value (Bertrand and Schoar, 2006). Families have a powerful incentive to expropriate wealth from minority shareholders when their control is greater than their cash flow rights (i.e. through dual-class stock and pyramidal ownership as explained in La Porta et al., 1999) and they may also have an incentive and the ability to extract private benefits at the expense of minority shareholders (e.g. Fama and Jensen, 1983; Shleifer and Vishny, 1997; Bozec and Laurin, 2008). Nonetheless, in the following sections, we will attempt to determine whether the French family firms' owners who belong to our sample have different behaviors to other firms' owners in terms of minority expropriation or not.

2.2.2. Family IPO Underpricing and Governance Mechanisms

Traditionally, studies of the relationship between corporate governance and firm value have considered existing listed firms and utilized accounting measures such as Tobin's Q (Morck et al., 1988) and market-to-book ratios (Chung and Pruitt, 1994). More studies (e.g. Goergen, 1998), however, have seen a shift to the examination of corporate governance in the context of IPOs. For instance, Filatotchev and Bishop (2002) found that premarket investors are likely to pay higher prices for family IPO equities when the issuers adopt good corporate governance practices. The concept of underpricing in the flotation of new stock represents a direct wealth transfer from the founders and initial shareholders to new external investors (Filatotchev and Bishop, 2002) but its extent can be reduced by a number of governance-related signals that may potentially enhance firm value (La Porta et al., 2000). We will mainly examine the impacts of three corporate governance mechanisms on the performances of family firm IPOs: the CEO characteristics, the appointment of outside directors and the dual class. These governance mechanisms concern the protection of outside investors from expropriation by corporate insiders (La Porta et al., 2000). Corporate governance practices are considered to be a signal of the quality of the investment in a given IPO. Hence, IPO firm owners are interested in effectively communicating the potential quality of their firm in order to extract full value at the time of the IPO.

- *CEO Characteristics in Family Firms*

Many researchers indicate that the quality and reputation of a firm's management affects various aspects of its IPO (Chemmanur and Paeglis, 2005) and that the management serves as a protective shield for the firm in a transformational event such as the IPO (Fischer and Pollock, 2004). In this section we will basically examine the relationship between the firm's founder being the firm's CEO at the time of the IPO and the IPO underpricing on the one hand, and the duality of roles of the firm's CEO and its Chair at the time of the IPO on the other.

  - *Founder – CEO at the Time of IPO*

Despite the great impact a founder may actually have on an IPO underpricing, the testing of the effect of founder status as CEO on underpricing is fairly unexplored and shows ambiguous results (e.g. Daily and Dalton, 1992; Willard et al., 1992; Begley, 1995; Certo et al., 2001a). To the best of our knowledge, there is no study for the French market that focuses on the founder's effect on IPO underpricing. Therefore, we are interested in knowing how family firms with founder CEOs are perceived by the market at the time of an IPO. The CEO is considered to be a major determinant of a firm's strategy (Calori, Johnson, and Sarnin, 1994). The personal perceptions of the firm's founder influence the firm's strategy and operations (Baron, Hannan, and Burton, 1999a). The founder's ideas shape the culture of the organization, and his or her personality influences both the organization and its members (Schein, 1983). Yet, Certo et al. (2001a) observed that US founder-managed IPO firms experienced higher underpricing than the control group of professional managers. On the other hand, Arcand et al. (2004) tested the same linkage, also on US firms, but found no significant evidence for such a discount.

Moreover, Villalonga and Amit (2006) provided evidence suggesting that family firms with a founder CEO have less severe agency problems than those with a descendent CEO. When a founder is the CEO (founder-CEO) at the time of the IPO, there are advantages for the firm. These advantages include a reduction in agency problems and in conflicts and political battles within the firm, and a continuation or extension of the firm's existing strategy (Fischer and Pollock, 2004). Relatedly, Nelson (2003) argued that investors value the founder-CEO's vision, experience, leadership, and stability. The author found that the presence of a founder-CEO at the time of an IPO is positively related to the valuation of the firm. A founder-CEO is believed to have greater personal identification with and commitment to the firm, as well as a higher level of trust from the firm's employees than a nonfounder-CEO (Fischer and Pollock, 2004). However, despite the various advantages of a founder-CEO, founders may be considered as lacking experience and organizational skills, opportunistic (Schulze et al., 2003), and overcommitted to family value (Bertrand and Schoar, 2006) rather than firm value. Founders may also have an incentive and the ability to extract private benefits at the expense of minority shareholders (e.g. Fama and Jensen, 1983; Shleifer and Vishny, 1997; Bozec and Laurin, 2008). In this context, in the regression model we will examine how family firms with founder CEOs are perceived by the market at the time of an IPO by explaining the underpricing in the presence of such governance mechanisms in the presence of other variables.

Hypothesis 2: There is a negative relationship between the presence of a founder-CEO and IPO underpricing.

- *The CEO/Chair Duality*

CEO/Chair duality refers to the concurrent holding of both the CEO and the board chair positions, and in this case, the power of the two positions is consolidated in a single person. Finkelstein and D'Aveni (1994) argued that CEO/Chair duality is a double-edged sword. The effectiveness of the CEO duality is still debated in the light of the agency theory and organizational/stewardship theory (Daily and Dalton, 1992; Finkelstein and D'Aveni, 1994; Howton et al., 2001). The mixed findings of CEO duality in IPO firms may be due to the two perspectives of CEO duality: agency theory and organizational/stewardship theory (Daily et al., 2003). The results may also be due to a relatively small number of empirical studies on entrepreneurial firms (Daily et al., 2003).

On the one hand, the CEO/Chair may reduce the effectiveness of the board's monitoring and so provide the CEO with the opportunity to benefit himself or herself more than the company (Salancik and Pfeffer, 1977; Finkelstein and D'Aveni, 1994). If it is argued that firms with a CEO/Chair reduced firms' risk-taking propensity, some studies report that CEO duality may result in the misuse of power by a CEO/Chair (e.g. Daily and Dalton, 1993), and successful firms were not found to have a CEO/Chair position held by one person (Daily and Dalton, 1992; Rechner and Dalton, 1991). However, in a complex environment in which resources are scarce, CEO/Chair duality was found to be positively related to firm performance (Boyd, 1995).

In the context of IPO, the findings have been mixed as well. For instance, Howton et al. (2001) argued that CEO duality concentrates power in the top management, which can exacerbate the potential conflicts of interests between shareholders and managers and limit the effectiveness of board monitoring; however, they found no significant relationship between CEO duality and IPO performance. However, Mak and Roush (2000) found more growth opportunities for IPO firms in which the CEO also chaired the board. Additionally, through our research on this topic, we did not find much material discussing the relation between the CEO/Chair duality and IPO performance of family firms specifically. However, as will see in the subsequent sections, it is very common for family firms' CEO to be at the same time the board's Chair for the strategic decision-making process and for controlling the board's members vote. As a result, we will take the view in our study that the CEO/Chair will reduce the effectiveness of the board's monitoring and so provide the CEO with the opportunity to benefit himself more than the company (Salancik and Pfeffer, 1977; Finkelstein and D'Aveni, 1994).

Hypothesis 3: There is a negative relationship between the duality of the firm's CEO/Chair position and IPO underpricing in family firms.

- <u>*The Board Characteristics in Family Firms*</u>

Here we will look at some of the important board characteristics: the board size, the presence of independent directors on the board, and the board member equity ownership. Then we will test the effects of each of these characteristics on the family firms' IPO underpricing under three separate hypotheses.

  - <u>*The Board Size*</u>

The board size as such has been suggested as an important factor related to corporate control and has been studied in many papers. However, the results of these studies were mixed. Zahra and Pearce (1989) argued that large boards are more able to effectively monitor managers. The larger the board size, the more difficult it is for the CEO to dominate the board. But Mishra et al. (2001) argued that smaller boards help to make decisions more quickly. Yermack (1996), for a sample of 452 large US firms over the period 1984–1991, documented that firms with small board sizes have a higher stock market value. Similarly, Eisenberg et al. (1998) analyzed a sample of small Finnish firms and found a negative relationship between board size and firm value. Interestingly, Lipton and Lorsch (1992) and Jensen (1993) suggested the existence of an optimal board size, and recommended limiting membership to seven or eight people. Both studies argued that as it is easier for a CEO to control large boards, such a board can become less effective. However, John and Senbet (1998) showed that the positive monitoring effect of a large board size may be offset by poorer communication and decision-making processes. Yet, Kathuria and Dash (1999) argued that a firm's performance improves if the board size increases but the contribution of an additional board member decreases as the size of the board increases.

However, in the case of family firms where the majority of a firm's shares are held with the family, it is therefore very common to see board members who are strictly and directly related to the family owners, their descendants and direct relatives. As a result, the monitoring role over the firm's management that any board of directors is required to play and firmly exert does not typically apply in family firms, regardless of the board's size, because the board members tend to serve the family's interests first and above any others' interests, including the dispersed, outside, and other groups of investors, and because most board members in family firms tend to hold managerial positions in the family firm beside their directorship roles. Thus, a crucial question is raised on the effectiveness and the practicality of board monitoring over the firm's management where most board members participate directly or indirectly in the firm's decision-making and management, especially in the absence of large blockholders, investment banks, or independent directors on the board.

- *The Appointment of Independent Directors*

Jensen (1993) suggested that a board can monitor its firm more closely and take appropriate governance actions if it is sufficiently small but with enough independent directors to ensure effective monitoring. The arguments in support of the role of independent directors in corporate governance rely on three theoretical frameworks. First, if we refer to the agency theory, in family firms, minority shareholders potentially rely on their boards to monitor and control the family's opportunism (Westphal, 1998). Similarly, Anderson and Reeb (2004) found that the interests of minority shareholders are best protected when independent directors have greater power relative to family blockholders. Effective monitoring and service roles are usually a function of independent directors on the board (Zahra and Pearce, 1989;

Daily et al., 1999; Young et al., 2001). Additionally, the presence of external managers leads to a need for control mechanisms as the goals of the management may not be in line with family goals (Westhead and Howorth, 2006). Second, if we refer to the resource dependence perspective (Hillman, Cannella, and Paetzold, 2000; Pfeffer and Salancik, 1978), we can understand the benefits of outside directors in terms of advice, social capital, and access to important external resources. And third, if we refer to the signaling theory (Certo et al., 2001b; Certo, 2003; Ndofor and Levitas, 2004; Sanders and Boivie, 2004), we can recognize the value of outside board members who can add prestige and legitimacy that enhance enterprise viability. However, despite all the arguments that support the role of independent directors, the benefits of outsiders have been questioned by many authors. According to Westhead and Howorth (2006), a management board dominated by external managers can create agency problems as the managers act as agents with different objectives to the family as principals.

Arthurs et al. (2008) found greater representation of a firm's top management team among its directors to be beneficial, rather than problematic. They found that insiders, rather than increasing agency costs, could actually reduce agency costs by providing monitoring services. Executive directors protect a firm from those with short-term orientations who may otherwise appropriate value from long-term principals. Kroll et al. (2007) also demonstrated that young, entrepreneurial firms have their post-IPO performance enhanced by boards comprised of a majority of top management team members rather than independent outside directors. Kroll et al. (2007) argued that tacit knowledge, entrepreneurial vision, and personal investment in their firms may put internal directors in a unique position by enabling them to provide oversight and carry out their strategies with fewer constraints. These insiders also tend to be committed to the success of their enterprises and are likely to continue pursuing the best interests of the organization because of their highly concentrated human capital investment (Fama, 1980; Fama and Jensen, 1983). Other studies consider that inside board control may thus improve strategy implementation, which is less encumbered by the control of outsiders (Van de Ven and Walker, 1984; Baker and Gompers, 2003). In addition, Astrachan and Shanker (2003) and Zahra and Sharma (2004) showed that family members often have an important role in the management or supervisory board of the firm.

However, in the context of an IPO, firms going public are generally known to suffer from highly asymmetric information levels between owners and managers (Gompers, 1995). Therefore, we expect that investors will rely on their boards to monitor and control the family's opportunism (Westphal, 1998) and we believe that outside directors offer the benefits of social capital, access to resources, expertise, and prestigious affiliates.

Hypothesis 4: There is a negative relationship between the proportion of independent directors and IPO underpricing in family firms.

- <u>*Board Member Equity Ownership*</u>

Beatty and Zajac (1994) found a negative relationship between board equity ownership and the level of firm monitoring, as represented by a larger percentage of outside directors or a dual leadership structure of the board. They concluded that an increase in board ownership will result in a lower proportion of outside directors and a unitary leadership structure. Both these effects may result from the high concentration of capital for widely held firms led by families managing their own firms and participating in the board of directors. Consequently, an increase in board ownership for firms wherein the main owner is also the manager and controls the board of directors leads to less effective monitoring and is negatively related to firm value. It is thus to be expected that a curvilinear relationship will occur where convergence of interests first increases firm value but is then offset by a board member ownership pattern that decreases firm value. The negative association that may be observed for high board ownership may either result from family interest protection or managerial entrenchment (Chahine, 2004).

However, in the case of a family firm's IPO, when board equity ownership increases, especially when these board members are basically family members, positive signals will be sent to outsiders, and especially to investors, that the board has a strong confidence about the firm's future prospects and thus about the current firm's value, and as a result, this may lead to an IPO underpricing.

Hypothesis 5: There is a negative relationship between board members' ownership and IPO underpricing for family firms.

Hypothesis 6: There is a strong relationship between IPO underpricing and the part of the capital retained by the founder.

- <u>*The Dual Class in Family Firms' Shares*</u>

When founders or their families use control-enhancing mechanisms to create a wedge between their cash flow and control rights, firm value is reduced. For instance, Claessens et al. (2002) and Cronqvist and Nilsson (2003) found positive valuation effects associated with increases in cash flow rights, and negative ones with control rights in excess of cash flow rights. Similarly, Villalonga and Amit (2006) found that the valuation effect in family firms is opposite for two control mechanism categories: negative for dual-class shares, and positive for pyramids and voting agreements. Additionally, Anderson and Reeb (2003a) and Villalonga and Amit (2006) found that freestanding family-owned firms with a single share class have similar market performance to other firms based on Tobin's Q ratios, superior accounting performance based on ROA, and higher financial leverage based on debt-to-total assets. By contrast, family-owned firms with dual-class shares have valuations that are 17% lower on average than other firms, despite having similar ROA and financial leverage.

- <u>*The Capital Retained by the Founder*</u>

Many authors have highlighted the association between the level of the capital retained by insiders and firm value. From the agency theory point of view, due to the expropriation risks, high levels of retained capital may be associated with higher risks of cash flow minority rights expropriation, and in such circumstances, potential investors will buy shares only when they are severely underpriced. Yet, from the signal theory point of view, the more the owners/executives are confident about the future prospects of the IPO firm, the more they will retain a high proportion of capital. Thus, the level of capital retained by existing owners will send a signal to the potential investors about the true value of the firm. So, a higher percentage of insider ownership signals to the market that the firm is of high quality. As insiders are supposed to know the true value of the company, their willingness to retain a large amount of shares after the IPO indicates their confidence in the future prospects of the firm (Leland and Pyle, 1977; Downes and Heinkel, 1982; Clarkson et al., 1991).

In short, insiders' retained stock ex post is an indication of the original shareholders' level of confidence in their own companies. Such confidence helps reduce aftermarket investors' uncertainty (Certo et al., 2001a). An extension of Leland and Pyle's (1977) model is that family insiders may intentionally send a signal of their firm's quality by retaining a high level of pre-IPO ownership. Allen and Faulhaber (1989), Grinblat and Hwang (1989), and Welch (1989) modeled a separating equilibrium where high-quality firms have high underpricing and pre-IPO insider ownership. They explained that good-quality firms are willing to underprice their IPOs because they expect to raise more money after the IPO. Moreover, underpricing is positively related to the probability of issuing seasoned equity offerings (SEOs) and the size of SEOs. Based on a survey of insiders' retained stock one year post-IPO, Habib and Ljungqvist (2001) explained that the underpricing of an IPO is higher for an IPO firm whose owners sell fewer shares at the time of IPO or retain their ownership after the IPO. However, the higher the pre-IPO percentage of insider ownership, the higher the cost imposed on insiders from the decline of firm value (Jensen and Meckling, 1976). Additionally, entrepreneurs will suffer substantial economic losses if the firm's future performance is poor.

3. SAMPLE, DATA AND METHODOLOGY

3.1. Sample

We have extracted all firms from the CAC All-Tradable Index except the financial firms (SIC 6000–6999) that are subject to special legal regulations. Our choice of the CAC All-Tradable Index was made to continue the work done in chapter 1, by using the same sample from the Bloomberg platform and because we needed a broad and representative benchmark to compare our results to such as the CAC All-Tradable Index. This index is a new index replacing the SBF 250 in which the number of values is unlimited and it reflects the evolution of all companies listed on Euronext Paris. It also allows the evolution of the stock market over the long term to be represented and serves as a benchmark for certain mutual funds (FCP) and Sicav as mentioned in chapter 1.

In accordance with the definition of family firm used in chapter 1, we have separated the family firms from the nonfamily ones. Therefore necessary modifications of the selected data were carried out to match our definition criteria. In addition, some data were not found for some firms and therefore we were obliged to unselect or ignore a small number of family firms. In the end, we came up with full data for all needed variables for 86 French family firms out of 107 family firms listed from 1994 to 2013. So our sample consists of around 80% of all listed family firms in that period.

Some variables were extracted directly from the Bloomberg platform such as all firms that were part of the CAC All-Tradable Index from 1994 to 2013. We have also extracted the daily prices of the index and of every firm in our sample by using Thomson Reuters DataStream, as well as the offering prices, dates, and number of shares issued. The rest of the data were hand-collected from the prospectus of each firm, including: the initial public offering date, the firm creation date, the number of shares before and after the IPO date, the percentage of ownership for the family founder before and after the IPO date, the percentage of ownership for other shareholders such as external investors, managers, and employees before and after the IPO date, the percentage of public shareholders before and after the IPO date, and the percentage of voting rights for the three mentioned parties (family founders, other shareholders, and the public) before and after the IPO date. Then we mentioned whether there exists a separation between the cash flow rights and the voting rights for all firms. We also extracted net revenues and net income for all firms in the year of the IPO date and the previous financial year. Total assets, total shareholders' equity, and total debt were also extracted in the IPO year. In addition, the board size, the percentage of independent directors, and the percentage of board member equity ownership were extracted before and after the IPO date. We also identified whether the firm's CEO is the same as the firm's founder or not and the presence of duality of roles between the firm's CEO and the board chair. Yet, some other variables were not found for all firms and therefore were abandoned. The IPO underpricing that was calculated is actually the dependent variable that we will attempt to explain in our models below.

As previously mentioned, in this chapter we aim to examine whether short-run IPO underpricing is higher in family firms than any typical firm due to the interest alignment theory and the signaling theory. To be specific, we would like to observe the effect of ownership and control rights change of family firms' owners and public shareholders on the IPO underpricing. Moreover, we aim to examine main corporate governance mechanisms that can affect the underpricing level as mentioned by numerous researchers in the field.

3.2. IPO Underpricing Measurement

Measures of underpricing differ according to which price is taken as the post-IPO equilibrium price and which return is chosen as a benchmark.

- ***Raw Initial Returns***

Initial performance can be measured by the difference between the post-listing equilibrium price (EP) and the final offering price (OP) divided by the offering price:

$$\mathrm{U} = \frac{\mathrm{EP} - \mathrm{OP}}{\mathrm{OP}} = \frac{\mathrm{EP}}{\mathrm{OP}} - 1 \text{ or } \mathrm{U} = \ln\left(\frac{\mathrm{EP}}{\mathrm{OP}}\right)$$

However, a major problem is the choice of the equilibrium price, EP (i.e. the trading price matching the offer and the demand for the shares after the IPO). When the market is sufficiently liquid, EP generally corresponds to the first-day closing price. In other cases, the equilibrium may be obtained a couple of days after the IPO. For that reason, some authors measure initial returns over a five-day or one-week horizon. The raw initial return U can be considered a measure of underpricing, assuming that the normal return under efficiency would be 0 and that the equity risk is equivalent to the market risk. Other methods relax these assumptions and adjust raw returns.

- ***The Initial Return Adjusted for a Market Index Return***

$$\mathrm{U}\,m = \frac{\mathrm{EP} - \mathrm{OP}}{\mathrm{OP}} - \frac{\mathrm{I1} - \mathrm{I0}}{\mathrm{I0}} = \frac{\mathrm{EP}}{\mathrm{OP}} - \frac{\mathrm{I1}}{\mathrm{I0}} \text{ or } \mathrm{U}\,m = \ln\left(\frac{\mathrm{EP}}{\mathrm{OP}}\right) - \ln\left(\frac{I1}{I0}\right)$$

where I1 designates the market index closing price on the first trading day and I0 designates the market index closing price the day before.

- ***The Initial Return Adjusted for Systematic Risk***

$$\mathrm{U}\,s = \frac{\mathrm{EP} - \mathrm{OP}}{\mathrm{OP}} - \beta\frac{\mathrm{I1} - \mathrm{I0}}{\mathrm{I0}}$$

where β is the systematic risk.

- ***The Raw Initial Return Adjusted for the Return of a Control Portfolio***

$$\mathrm{U}\,p = \frac{\mathrm{EP} - \mathrm{OP}}{\mathrm{OP}} - \mathrm{R}\,p$$

where Rp is the return of a reference portfolio. Some papers (Keloharju, 1993; Husson and Jacquillat, 1990) calculate the return that would be obtained by an uninformed investor participating in all the IPOs. Given that the market movements are too small to affect the initial returns significantly, most studies measure IPO underpricing with raw returns and select the closing price at the end of the first day of quotation as the equilibrium price.

The most widely utilized adjusted measure is Um, which implicitly standardizes systematic risk. As pointed out by Kooli (2000), the limitations of the second model (Us) lie in the difficult and biased estimation of beta and because of the lack of long data series to properly estimate betas because we are interested in calculating the underpricing a few days after issuance. Last, but not least, we will also not rely on a control portfolio due to the bias in choosing a representative portfolio that applies to all firms. Therefore, we will choose to calculate the initial return adjusted for a market index return, which is the CAC All-Tradable Index in our study, especially since all firms in the sample are all part of this index on the day of issuance.

3.3. Descriptive Statistics

The number of total offers for the family firms that belonged to the CAC All-Tradable Index from 1994 to 2013 that meet our criteria set above are 86 firms and these are distributed among seven industries: (1) for Basic Materials; (2) for Communications; (3) for Consumer, Cyclical; (4) for Consumer, Noncyclical; (5) for Energy; (6) for Industrial; and (7) for Technology. These seven classifications were extracted from the Bloomberg platform. The gross proceeds calculations are based upon the number of shares issued on the IPO date times the offering price, which are extracted from Thomson Reuters DataStream. However, the relative gross proceeds take into consideration the opportunity cost over the 20-year period where the French risk-free rate is taken into account to compute the time value of the proceeds from 1994 to 2013, which is considered the base year, referred to below as the 2013 euro value. In the Appendices, we have included the deflator factor for each year that we used in multiplying the gross proceeds to get the relative gross proceeds or the 2013 euro value. Therefore €1 million raised in 2013 as gross proceeds is equivalent to €1 million in a relative proceed measure (i.e. €1 million x 1.0000). But €1 million raised in 2000 is equivalent to €1.3555 million in a relative proceed measure (i.e. €1 million x 1.3555). So in order to compare proceeds over the years, we used the relative gross proceeds as Ritter (1991) did and not the simple gross proceeds.

In Table 14 we present the distribution of the 86 IPOs among the seven industries, the number of IPOs in each industry and their percentage of the total, the average firm age on the day of issuance in each industry, the gross proceeds, the relative gross proceeds and its weight in relation to the total, and the average relative proceeds per firm per industry. All numbers of gross proceeds, relative proceeds, and average relative proceeds are in millions of euros.

Table 14: Distribution of IPOs per industry

Industry	No. of IPOs	% of Total	Average Age	Gross Proceeds	Relative Gross Proceeds	Weight	Average Relative Proceeds per Firm
Basic Materials	1	1%	13.7	8.6	11.6	1%	11.6
Communications	16	19%	9.9	698.4	813.6	35%	50.9
Consumer, Cyclical	15	17%	23.4	169.6	239.0	10%	15.9
Consumer, Noncyclical	17	20%	21.5	211.6	277.9	12%	16.3
Energy	1	1%	3.0	6.8	6.9	0%	6.9
Industrial	17	20%	21.3	224.8	293.1	13%	17.2
Technology	19	22%	10.6	497.6	674.2	29%	35.5
TOTAL	**86**	**100%**	**16.9**	**1,817.4**	**2,316.3**	**100%**	**26.9**

As Table 14 shows, total relative gross proceeds were equal to €2,316.3 million for the 86 French family firms, which makes an average proceeds per firm of €26.9 million. As we will see below, this average proceeds per firm is considered extremely small compared to a typical French corporation, or to any other European corporations, which are averaged at €1,058.2 million and €580.8 million per firm (Torstila, 2001). We also notice that the total proceeds are not evenly distributed among the seven industries; even the average proceeds per firm per industry ranged from a low €6.9 million (energy) to a high €50.9 million (communications) per firm. For instance, we find the communications and the technology industries raising the highest total proceeds among the remaining industries with €813.6 million and €674.2 million, respectively, making a weight of 35% and 29%, respectively. So firms in these two industries, which count 35, representing 40.69% of all IPOs (35/86) have raised total proceeds of €1,487.8 representing 64.23% of total proceeds raised by all the 86 firms. Additionally, not only were the total proceeds related to communications and technology the highest among all the proceeds, but also on average each firm in these two industries raised €50.9 million and €35.5 million, respectively, which are much higher than the average proceeds of €26.9 million. Moreover, all firms in the remaining industries have generated average proceeds that are well below the overall average.

It is also worth noting that on average, the 16 IPOs of the communications firms and the 19 IPOs of the technology firms have average lives of 9.9 years and 10.6 years, respectively, whereas the average life of all firms going public is 16.9 years. This shows that firms in these two industries tend to go public much faster and earlier than any firm belonging to other industries with the exception of the energy firm, which went public after just 3 years of being founded, but this has occurred only with one firm and with very small IPO proceeds that do not exceed €7 million. In another example, firms belonging to the consumer cyclical, the consumer noncyclical and the industrial industries have average firm lives of 23.4 years, 21.5 years, and 21.3 years, respectively, which are almost twice the age of firms among the communications and technology firms.

On the other hand, we also notice that only one IPO was launched for the basic materials and the energy industries each, representing around 2% of all IPOs and accounting for only 1% of the total proceeds of only €18.5 million versus the total of €2,316 million. The remaining three industries, the consumer (cyclical and noncyclical) and the industrial ones, had 49 IPOs, representing 57% of all IPOs and accounting for 35% of the total relative gross proceeds with €810 million versus the total of €2,316 million. These data are also presented in the following two figures for better visualization and differentiation of the proceeds and percentage of proceeds in two separate figures. Therefore in Figure 6 we present total relative proceeds per industry, and in Figure 7 we present the percentage of IPOs in each industry with respect to all 86 IPOs in all the seven industries and the percentage of relative proceeds per industry with respect to the total proceeds raised of €2,316.3 million.

Figure 6: Total relative gross proceeds per industry.

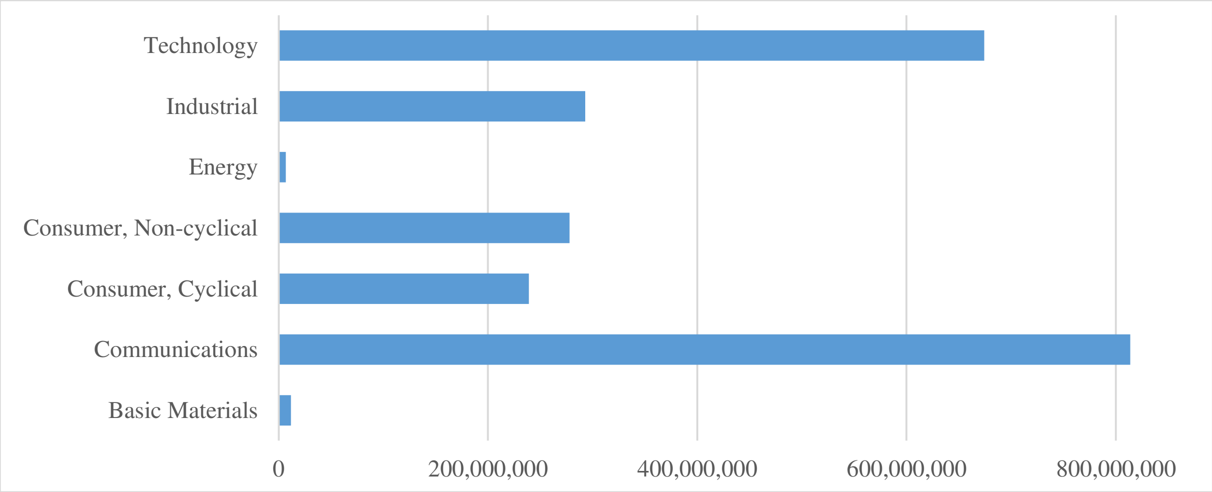
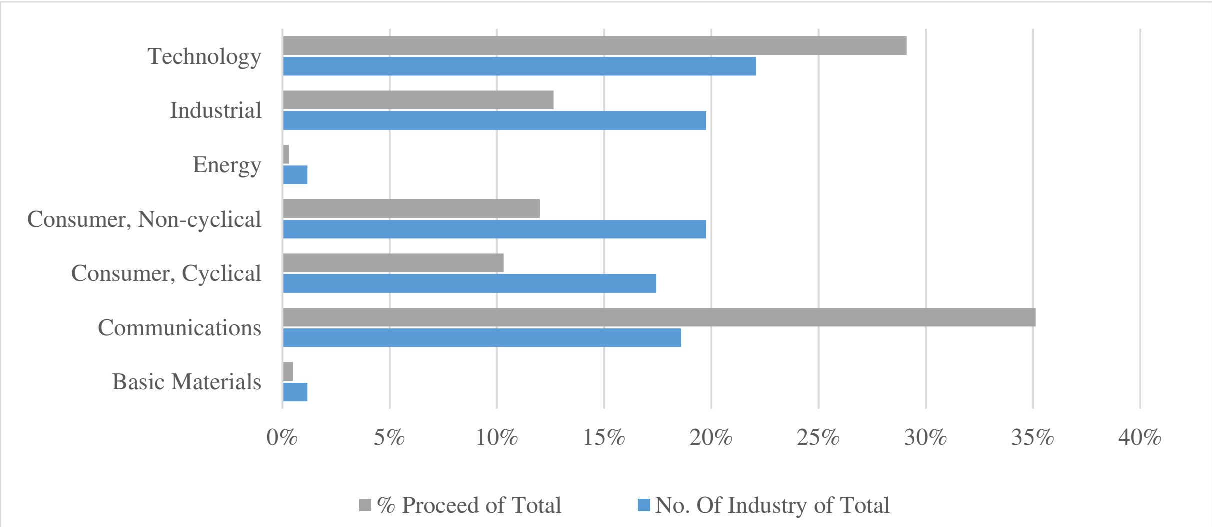


Figure 6 shows that firms belonging to the communications and the technology industries recorded the highest relative proceeds among all the seven industries. We also note from this figure that the three industries related to industrial, consumer noncyclical and consumer cyclical have raised almost equal amounts, unlike the energy and basic materials that raised minimal proceeds.

Figure 7: The percentage of the number of IPOs and proceeds per industry.



From Figure 7 we notice that the communications and the technology industries are the only two that have percentages of the total proceeds that are greater than the percentage of the total IPOs. Therefore comparably speaking, fewer firms in these two industries were capable of raising higher proceeds than the remaining ones. The opposite is observed for the remaining firms where the percentages of total IPOs were larger than the percentages of total proceeds. Similarly we can say that a larger number of firms belonging to these industries were capable of raising lower proceeds than the communications and the technology ones.

With regard to the average gross proceeds per firm in France specifically, and in Europe in general, we present below Table 15, which is partially extracted from a paper produced by Torstila (2001) who worked on the determinants of IPO gross spreads in Europe covering 506 firms issued between 1986 and 1999.

Table 15: Average gross proceeds of main European countries

Country	**Average Gross Proceeds in Q4 1999 USD million**	**Average Gross Proceeds in Q4 1999 EUR million**	**Average Gross Proceeds in Q4 2013 EUR million**
Austria	156.5	150.8	209.8
Belgium	320.9	309.2	430.2
Denmark	303.1	292.0	406.3
Finland	279.4	269.2	374.5
France	789.4	760.5	1,058.2
Germany	462.7	445.8	620.2
Greece	307.6	296.3	412.3
Hungary	121.4	117.0	162.7
Ireland	858.1	826.7	1,150.3
Italy	351.8	338.9	471.6
Netherlands	316.8	305.2	424.7
Norway	176.3	169.8	236.3
Poland	189.5	182.6	254.0
Portugal	407.2	392.3	545.8
Spain	230	221.6	308.3
Switzerland	1,022.6	985.2	1,370.8
UK	1,094.1	1,054.0	1,466.6
Others	368.5	355.0	494.0
AVERAGE	**433.3**	**417.4**	**580.8**
French Family Firms			***26.9***

The author presented the amounts in millions of Q4 1999 USD value, which are presented in the second column next to the country. In the last two columns, we present the average gross proceeds in Q4 1999 EUR value and in Q4 2013 EUR value, respectively, to be able to compare them with the relative gross proceeds calculated and observed in Table 14. It is worth noting that we referred to the average Q4 1999 EUR/USD exchange rate found in the European Central Bank data history, which was equal to USD1.038 per EUR1.000 at that time. Moreover, in calculating the Q4 2013 EUR value, we referred to the deflator factors that were discussed above and are presented in the Appendices.

The deflator factor for converting the 1999 EUR value to the 2013 EUR value as mentioned in the Appendices is equal to 1.3914. As we have previously discussed, the average French family firm's total proceeds in 2013 euro value is equal to €26.9 million, which is much smaller than typical corporations issued in France or even in Europe, which have average proceeds of €1,058.2 million and €580.8 million, respectively.

Moreover, we note that the smallest average IPO proceeds are found in Hungary with €162.7 million, which is also much bigger than the average proceeds of the French family firms. It is also worth noting that by excluding small issues that are less than €5 million from our original sample, we get an average proceeds in 2013 euro value of €33.9 million and a median of €16.3 million, which are also much smaller than the average gross proceeds in either France or Europe as reported by Torstila (2001).

Table 16 below presents the number of IPOs issued by year from 1994 until 2013 in addition to the percentage of issued IPOs per year with respect to total IPOs.

Table 16: Distribution of IPOs per year

YEAR	No. of IPOs per year	% of Total	Average Age	Gross Proceeds	Relative Gross Proceeds	Weight	Average Relative Proceeds per Firm
1994	1	1%	28.5	2.7	4.8	0%	4.8
1995	-	-	-	-	-	-	-
1996	4	5%	20.2	37.8	58.4	3%	14.6
1997	8	9%	22.1	158.5	235.6	10%	29.5
1998	10	12%	15.0	94.0	135.2	6%	13.5
1999	8	9%	36.3	139.5	194.1	8%	24.3
2000	21	24%	10.6	471.6	639.2	28%	30.4
2001	7	8%	14.8	156.9	204.1	9%	29.2
2002	1	1%	12.8	40.0	49.9	2%	49.9
2003	1	1%	18.0	0.6	0.7	0%	0.7
2004	3	3%	12.5	107.7	127.4	6%	42.5
2005	3	3%	22.2	61.8	71.6	3%	23.9
2006	7	8%	12.2	156.2	177.2	8%	25.3
2007	6	7%	21.8	157.6	173.8	8%	29.0
2008	2	2%	7.1	189.8	201.3	9%	100.7
2009	-	-	-	-	-	-	-
2010	1	1%	2.0	15.5	15.8	1%	15.8
2011	2	2%	4.4	9.5	9.7	0%	4.8
2012	-	-	-	-	-	-	-
2013	1	1%	24.5	17.6	17.6	1%	17.6
TOTAL	**86**	**100%**	**16.9**	**1,817.4**	**2,316.3**	**100%**	**26.9**

We have calculated the average age of firms issued in each year, the gross, the relative, and the weight of the relative gross proceeds, in addition to the average proceeds issued per firm per year. All numbers of gross proceeds, relative proceeds, and average relative proceeds are in millions of euros.

Table 16 shows once again that the number and values of IPOs were not evenly distributed over the 20-year period. Additionally, in 3 years (1995, 2009, and 2012) no IPOs for French family firms were issued. Also, the year 2000 was significant in terms of the number of IPOs launched and the relative gross proceeds, which were both the maximum for all years. For instance, 21 out of the 86 IPOs were launched in 2000, representing 24% of all IPOs observed from 1994 until 2013. The total relative gross proceeds recorded in that year were €639.2 million, representing around 28% of the total proceeds of €2,316.3 million. Therefore the proceeds raised in that single year were considered substantial with respect to the total proceeds raised during the 20-year period. Yet, the average proceeds per firm recorded in the year 2000 were €30.4 million, which is slightly higher than the overall average of €26.9 million.

However, it is worth recalling that in 2001, the DotCom Bubble burst affected the world IPO market and its negative impact can be easily seen in this table. Thus, we notice a significant drop in IPOs in terms of numbers and value after that year. For instance, only one IPO was launched in 2002 and another one in 2003, with relative proceeds of €49.9 million and €0.6 million, respectively. Afterwards, a smooth recovery started to take place where from 2004 until 2007 a total of 19 IPOs were issued with total relative proceeds of €550 million, representing around 23.7% of the total.

However, in 2008 another crisis hit the world, which was referred to by many economists as the deepest financial crisis since the Great Depression of 1929. That's why the 2008 financial crisis was usually referred to as the Great Recession, due to its worldwide expansion and its unforeseen depth and length of losses. Therefore it was normal to witness a cut in IPOs not only in family firms, or in French firms, but also worldwide. In their paper, Ritter et al. (2012) explained that the Panic of 2008 and the Eurozone crisis of 2011 temporarily depressed the volume of IPOs, consistent with the market conditions hypothesis. To get an idea of the drop in IPOs in Europe in the subsequent years, only 280 companies went public on the London, Euronext, Frankfurt, and Milan stock exchanges from 2008 to 2011, i.e. over four years, which is fewer than the 353 companies that went public in 2007 alone.

Gao et al. (2012) documented that a similar shortage of IPOs also occurred in the US and they discussed three hypotheses to explain the low volume of IPOs during the period 2001–2011. First, the Sarbanes-Oxley Act of 2002 put on corporations higher pressure, additional time constraints, and greater costs if they chose to go or remain public, without avoiding the large number of compliance requirements and official reports that public corporations have to fill in, submit and disclose by carefully respecting all due dates. Moreover, the reduction in bid-ask spreads from 1994 to 2001 and Regulation FD in 2000 led to a reduction in analyst coverage for smaller firms that decreased the attractiveness of going public. The authors explained that supporters of the "regulatory overreach" hypothesis argue that the combination of these effects significantly lowered the market valuation of small publicly traded firms, discouraging other IPOs.

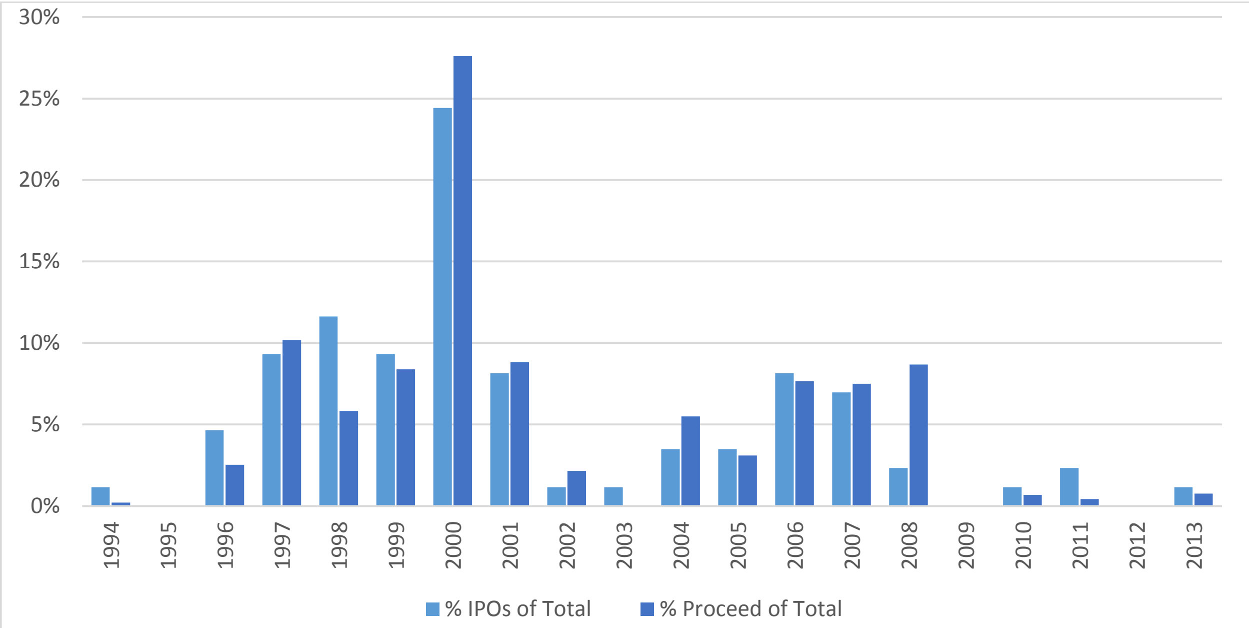
Second, after the DotCom Bubble burst that started in March 2000 and extended until 2001, lower stock market valuations reduced the attractiveness of going public. Yet, supporters of the "market conditions" hypothesis argue that the drop in IPO activity is just temporary and expect that it will recover in the future.

Third, and most importantly, and more related to behavioral and fundamental changes, is the "economies of scope" hypothesis. This states that due to an ongoing change in the economy, small firms are worth more as part of a larger organization that can realize economies of scope and scale. As a result, firms' owners find it more convenient to sell out in a trade sale (merging) rather than going public and remaining independent. This hypothesis is based on the evidence that the major decline in IPOs has been most pronounced among small firms. However, this hypothesis takes the view that the main driver for this decline in IPOs is the attractiveness of being big rather than small, rather than the attractiveness of being private rather than public. Thus, small firms prefer having all the support and experience of big firms and accept being merged, rather than going public and having a higher risk of failure. This is clearly shown in

Table 16, where only two IPOs launched in 2008, none in 2009, one in 2010, two in 2011, none in 2012, and only one in 2013. Thus, from 2008 to 2013, i.e. over 6 years, only six French family firms' IPOs were launched with relative gross proceeds of €244 million compared to the grand total of €2,316 million, with a weight of only around 11%. However, we note that in 2008, one IPO was launched that belongs to the communications industry for total relative gross proceeds of around €200 million, making almost 9% of the total proceeds. This IPO is considered the second largest issue. The largest one belongs to the technology industry with total relative proceeds of €294 million, representing around 13% of the total proceeds raised.

Figure 8 shows the distribution of the number of IPOs per year in percent along with the percentage of relative proceeds. From this figure, we note that IPOs issued before the 2001 DotCom Bubble burst were larger in terms of numbers and proceeds than the IPOs issued after it. Also we can see the significant increase in IPO numbers and values in 2000, which recorded the maximum percentages among all years. Additionally, from Figure 8 we can see the discontinuation and the very small sizes and values of IPOs issued after 2008.

Figure 8: The percentage of IPOs and proceeds per year.



As we see that IPO sizes and values peaked in 2000 and busted in 2001, we will refer in our model that year to the DotCom Bubble burst and will assign a dummy variable to it. Therefore this variable will be equal to 1.00 if the IPO occurred during or before the 2001 DotCom Bubble burst and 0.00 if it occurred after it. For this, we present in Table 17 below a summary of IPOs that occurred pre and post the DotCom Bubble burst.

Table 17: Distribution of IPOs pre and post the DotCom bubble burst

YEAR	No. of Years	No. of IPOs	% of Total	Average Age	Gross Proceeds	Relative Gross Proceeds	Weight in Total Relative Proceeds
1994–2001	8	59	69%	17.8	14.8	24.9	64%
2002–2013	12	27	31%	14.8	27.8	31.3	36%
TOTAL	**20**	**86**	**100%**	**16.9**	21.1	26.9	**100%**

From Table 17 we spot the number of IPOs that were issued before and after the DotCom Bubble burst, which were equal to 59 and 27 IPOs, respectively, representing 69% and 31% of total IPOs issued. So in just 8 years, from 1994 until 2001, 69% of all IPOs under study were issued, and in the 12 remaining years, 31% of all IPOs were issued. Moreover, total weight of the relative gross proceeds of the firms issued pre and post the DotCom Bubble burst was equal to 64% and 36%, respectively. On the other hand, the relative gross proceeds per firm pre- and post-DotCom Bubble were equal to €24.9 million and €31.3 million, respectively. This shows that although the number of IPOs was much larger before the DotCom Bubble than after it, the gross proceeds per firm were lower. Thus, as we mentioned, the purpose of presenting Table 17 is mainly to distinguish between IPOs issued before 2001 and IPOs issued after 2001. After discussing the main IPO factors related to issue size, firm age, proceeds, industry, and year of issuance of the 86 French family firms issued between 1994 and 2013, we present below IPO underpricing descriptive statistics from the first until the 30th day after issuance, along with the firm's ownership and control variables and their governance mechanisms pre and post the IPO date.

Table 18: Descriptive statistics of IPO underpricing

Variable	Mean	Median	Minimum	Maximum	Lower Quartile	Upper Quartile	Range	Std. Dev.	Skew-ness
up_1d	1.92%	0.00%	-12.56%	30.86%	-0.61%	1.11%	43.42%	6.74%	2.59
up_2d	7.30%	1.51%	-16.39%	61.57%	-0.46%	16.38%	77.97%	12.09%	1.43
up_3d	15.00%	5.50%	-17.61%	405.99%	-0.19%	20.06%	423.61%	45.50%	7.65
up_4d	17.94%	6.32%	-16.08%	406.15%	-0.14%	23.46%	422.23%	46.72%	6.96
up_5d	18.96%	10.11%	-18.96%	408.62%	0.51%	24.12%	427.58%	47.41%	6.76
up_10d	26.58%	13.56%	-16.20%	394.34%	1.12%	35.22%	410.54%	50.67%	4.86
up_15d	29.63%	13.35%	-26.27%	381.13%	2.95%	38.81%	407.40%	54.34%	3.68
up_30d	35.16%	13.00%	-28.98%	682.84%	0.00%	37.52%	711.82%	87.29%	5.38

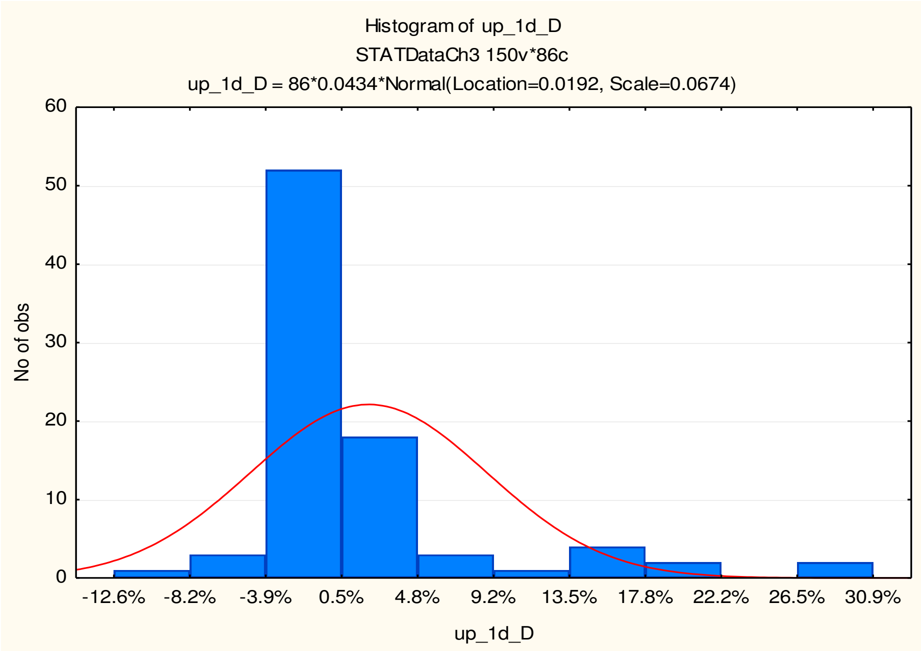
First, we notice that on average, the 86 French family firms were fairly priced since their first-day underpricing (up_1d) averaged only 1.92%, with a median of 0.00%, and a lower and upper quartile of -0.61% and 1.11%, respectively. Overall, these figures lead us to believe that family firms were almost fairly priced on the day of their issuance and therefore there should not be great concern on the part of these firms' principal shareholders over the money left on the table since no great underpricing had occurred on their issuance. Here we can assume that the presence of the family firms' owners on the firms' supervisory and management boards, and being the main shareholders, prevented their firms from deep underpricing, which is usually committed by underwriters to favor their main clients, facilitate the IPO, and lower the risk of the issue, as previously seen. However, we notice that in the subsequent days, and up until the first month of issuance, a quick fads period was created increasing the average underpricing from 1.92% on the first day of issuance to 35.16% on the 30th day of issuance. This fast and sharp increase in IPO returns can be explained by over-optimistic investors and speculators demanding to acquire IPO shares for seeking high short-term returns. Therefore, these continuous actions aimed at acquiring IPO shares have driven them up, reaching an average abnormal return of 35.16% after one month of issuance, with a median of 13%, and a lower and upper quartile of 0% and 37.52%, respectively. We also notice that the median of the underpricing from the first until the 30th day increased from 0% to 13%. However, on the fifth day, the median recorded 10.11%, and on the tenth day 13.56%, which is the highest median. By also looking at the underpricing averages and at the lowest and highest quartiles, we notice that the highest increases occurred in the first ten days of issuance. Afterward and until the 30th day, the increases in returns continued but at lower rates.

This clarifies that a fads period occurred just a few days after issuance, driving abnormal returns high created by over-optimistic investors and speculators and not by issuers in purposefully underpricing their own shares. Therefore IPO returns increased sharply from the first until the 30th day, making 18 times more returns on the 30th day than on the first day, strengthening our belief that this increase is not due to normal underpricing set by issuers but to over-optimistic investors and speculators. Moreover, as we will explain later, we have tried to explain underpricing of the first until the 30th day of issuance via the different models we present. But we did not find any significant result for the days subsequent to the second and up to the 30th day of issuance. For these reasons, we prefer in our models to focus solely on the first-day IPO underpricing rather than on any other subsequent day.

However, we can still deduce that if investors choose to invest in all the 86 family IPOs by buying the firms' shares at the offering price and holding them over the first 30 days of issuance, they can make an average holding periodical abnormal return of 35.16% or an annual abnormal return of around 420%. This clearly shows how attractive investing in IPOs is and why investors strongly believe that they can make high short-term returns, but mostly ignore the very high risks carried through investment in IPOs, and this is shown in the 30-day standard deviation of 87.29% compared to the average return of 35.16%, making a coefficient of variation of 2.48.

In Figure 9 we plot the first-day underpricing of the 86 French family firms grouped in ten categories prepared via STATISTICA software.

Figure 9: Histogram of first-day underpricing.



From this table we also notice that almost 70 firms out of the 86 issues have an average first-day underpricing of between -3.9% and 4.8%, which made us believe that these family firms were almost fairly priced on the day of their IPOs, and the fads period started thereafter. Therefore we did not spot much extreme underpricing other than in a very few cases, and the majority were clustered around the mean. Yet, as we can see from the histogram and as we saw from Table 18, not all firms were underpriced and generated positive first-day returns since some firms were overpriced and generated negative first-day returns. Therefore, to spot the overpriced and underpriced issues separately, we present in Table 19 the first-day and the fifth-day average IPO performance.

Table 19: Descriptive statistics of over- and under-valued IPOs

Under/Over-pricing	N	Mean	Median	Min	Max	Lower Quartile	Upper Quartile	Range	Std. Dev.	Skew-ness
1-D Overpricing	33	-1.58%	-0.68%	-12.56%	-0.08%	-1.34%	-0.46%	12.48%	2.50%	-3.28
1-D Underpricing	42	5.18%	1.12%	0.01%	30.86%	0.42%	5.47%	30.86%	8.21%	1.96
5-D Overpricing	17	-6.11%	-4.38%	-18.96%	-0.09%	-9.02%	-1.99%	18.88%	5.54%	-1.24
5-D Underpricing	66	26.27%	12.86%	0.48%	408.62%	5.18%	28.36%	408.14 %	5.19%	6.37

From Table 19 we notice that after their first day of issuance, 33 IPOs were overpriced, generating negative average market-adjusted returns, while 42 IPOs were underpriced, generating positive average market-adjusted returns. So in total, 75 out of the 86 issues were mispriced (either underpriced or overpriced), which makes 11 IPOs correctly priced, generating 0% market-adjusted returns after the first day of issuance. The overpriced issues reached a low of -12.56% and had an average of -1.58%. Their lower and upper quartiles were equal to -1.34% and -0.46%, respectively. On the other hand, the underpriced issues reached a high of 30.86% and had an average of 5.18%. Their lower and upper quartiles were equal to 0.42% and 5.47%, respectively. So in numbers and in averages, the underpriced securities were greater than the overpriced ones, making the overall average first-day market-adjusted return positive. However, by looking into the fifth-day market-indexed returns, we notice that although the number of overpriced issues dropped by half and reached 17 issues, the percentage of overpricing increased to reach an average of -6.11% and a minimum of -18.96%, which are greater than the first-day adjusted returns. As a result, the number of underpriced securities increased to reach 66 issues, with an average of 26.27%, a maximum of 408.62%, and a median of 12.86%. Hence, this leaves the number of issues that are correctly priced five days after their issuance equal to three.

Below, we present the average IPO underpricing from the first until the 30th day for six different categories or groups according to issue sizes, along with the number of issues in each category. This is a highly informative table since we can spot the highest and lowest underpricing in different size categories and after different days of issuance.

Table 20: Gross proceeds in subgroups and underpricing

Gross Proceeds	N	UP_1d	UP_2d	UP_3d	UP_4d	UP_5d	UP_10d	UP_15d	UP_30d
0–2,999,999	17	2.43%	10.20%	11.39%	14.86%	14.45%	32.78%	37.95%	66.81%
3,000,000–4,999,999	7	0.15%	6.57%	66.92%	67.59%	68.07%	66.09%	75.48%	70.80%
5,000,000–9,999,999	23	3.17%	7.55%	10.72%	16.75%	18.26%	21.63%	19.75%	21.79%
10,000,000–14,999,999	13	2.56%	4.66%	9.68%	12.76%	14.72%	20.66%	21.03%	23.22%
15,000,000–24,999,999	10	0.44%	8.75%	13.74%	12.52%	10.46%	23.19%	29.32%	25.53%
25,000,000<…………	16	0.79%	5.43%	7.36%	8.82%	12.01%	16.77%	22.11%	20.86%

From Table 20 we notice that firms in the largest two brackets, specifically those that raised gross proceeds of between €15 million and €25 million, and those that raised more than €25 million, witnessed on average very smooth underpricing of 0.44% and 0.79%, respectively. Conversely, categories with smaller gross proceeds have on average been further underpriced, reaching 3.17%. Exceptionally, one small-sized category, which includes firms with gross proceeds of between €3 million and €5 million, also witnessed very smooth underpricing of an average of 0.15%, which marked the smallest average among all remaining categories. However, and interestingly, firms belonging to this category generated the highest market-adjusted returns starting on the third day with 66.9% and until the 30th day, reaching

70.8%. Similarly, the smallest-category firms also reached a high of 66.8% thirty days after their issuance, but their increase witnessed a smoother upward trend than the previous category. For the remaining four categories that are greater than €5 million, all witnessed close market-adjusted returns, especially ten days after their issuance and until the 30th day, reaching an approximate 21%. Therefore, it is obvious from the size categorization that firms with the smallest gross proceeds witnessed the largest market-adjusted returns, which are threefold the returns generated in firms with greater proceeds. However, in this analysis we did not include the risk or variance factor to compare the returns that can be achieved with the appropriate risk in each category. Next, we present descriptive statistics on the main ownership and control rights change from pre- to post-IPO date for the three main types of shareholders: (1) family firms' owners, their descendants and direct relatives, (2) others such as investment banks, nonfamily managers and directors and employees, and (3) public shareholders.

Table 21: Descriptive statistics on ownership and control

Variable	Descriptive Statistics (Casewise Deletion of Missing Data)								
	Mean	Median	Min	Max	Lower Quartile	Upper Quartile	Range	Std. Dev.	Skewness
%_CF_FF_Pre-IPO	74.9%	76.3%	12.7%	100.0%	58.4%	96.6%	87.3%	23.0%	-65.3%
%_CF_Others_Pre-IPO	25.1%	23.7%	0.0%	87.3%	3.4%	41.6%	87.3%	23.0%	65.4%
%_CF_Public_Pre-IPO	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.6%	0.1%	927.4%
%_VO_FF_Pre-IPO	76.2%	79.2%	12.7%	100.0%	63.8%	97.4%	87.3%	22.7%	-82.8%
%_VO_Others_Pre-IPO	23.8%	20.8%	0.0%	87.3%	2.6%	36.2%	87.3%	22.7%	82.9%
%_VO_Public_Pre-IPO	0.0%	0.0%	0.0%	0.6%	0.0%	0.0%	0.6%	0.1%	927.4%
%_CF_FF_Post-IPO	62.3%	63.9%	10.3%	98.3%	47.7%	79.1%	88.0%	20.8%	-39.7%
%_CF_Others_Post-IPO	18.2%	17.0%	0.0%	65.4%	3.0%	26.7%	65.4%	16.4%	76.5%
%_CF_Public_Post-IPO	19.6%	18.2%	0.0%	50.6%	10.0%	26.0%	50.6%	11.8%	60.4%
%_VO_FF_Post-IPO	66.9%	68.8%	10.3%	98.3%	50.9%	84.6%	88.0%	21.0%	-61.6%
%_VO_Others_Post-IPO	17.9%	16.5%	0.0%	65.4%	2.6%	26.3%	65.4%	16.8%	86.4%
%_VO_Public_Post-IPO	15.3%	13.5%	0.0%	50.6%	6.7%	21.3%	50.6%	10.8%	110.2%
Chge_Dif_CF_VO_FF	3.3%	2.1%	-6.4%	17.1%	0.0%	5.5%	23.5%	4.1%	106.1%
FF_%_CF_Chge	-16.2%	-16.9%	-51.1%	94.6%	-25.0%	-9.5%	145.7%	17.4%	295.5%
FF_%_VO_Chge	-11.0%	-10.7%	-50.2%	149.1%	-17.7%	-5.1%	199.3%	20.9%	519.1%
Dif_CF_VO_Public	-4.3%	-2.9%	-15.5%	0.0%	-8.5%	0.0%	15.5%	4.5%	-68.1%
CF_Board_Pre-IPO	78.5%	85.5%	0.1%	100.0%	66.8%	97.6%	99.9%	23.4%	-137.9%
CF_Board_Post-IPO	64.4%	66.3%	0.1%	98.3%	53.4%	79.3%	98.2%	21.9%	-78.9%
Board_CF_Change	-18.3%	-17.3%	-47.7%	1.4%	-25.0%	-10.0%	49.1%	11.5%	-56.6%

%_CF_FF_Pre-IPO and %_CF_FF_Post-IPO: Percentage of cash flow rights for the family firms' owners on pre-IPO date and on post-IPO date.

%_CF_Others_Pre-IPO and %_CF_Others_Post-IPO: Percentage of cash flow rights for the others such as investment banks, nonfamily directors and employees on pre-IPO date and on post-IPO date.

%_CF_Public_Pre-IPO and %_CF_Public_Post-IPO: Percentage of cash flow rights for the public shareholders on pre-IPO date and on post-IPO date.

%_VO_FF_Pre-IPO and %_VO_FF_Post-IPO: Percentage of voting rights for the family firms' owners on pre-IPO date and on post-IPO date.

%_VO_Others_Pre-IPO and %_VO_Others_Post-IPO: Percentage of voting rights for the others such as investment banks, nonfamily directors and employees on pre-IPO date and on post-IPO date.

%_VO_Public_Pre-IPO and %_VO_Public_Post-IPO: Percentage of voting rights for the public shareholders on pre-IPO date and on post-IPO date.

Chge_Dif_CF_VO_FF: Change in the difference between cash flow rights and voting rights for the family firms' owners.

FF_%_CF_Chge: Family firms' owners percentage cash flow right change.

FF_%_VO_Chge: Family firms' owners percentage voting right change.

Dif_CF_VO_Public: Difference between cash flow right and voting right for the public shareholders.

CF_Board_Pre-IPO and CF_Board_Post-IPO: Cash flow right ownership for the board members on pre-IPO date and on post-IPO date.

Board_CF_Change: Cash flow right change for the board members from pre- to post-IPO date.

Through our analysis, we have noticed a clear-cut differentiation between the cash flow rights given to holders of the firms' shares and the voting rights. We recall that the cash flow rights are subject to the company's residual claims including all types of dividends (regular dividends, special dividends, extraordinary dividends, and liquidating dividends), profit and losses according to the percentage of cash flow rights each investor holds with respect to the total cash flow rights granted for all shareholders. However, the voting rights granted for family firms' insiders and for public shareholders depend on the firms' internal bylaws decided by the board of directors. These voting rights may then be totally different between these two types of shareholders even in the presence of an equal number of cash flow rights granted for both types. For example, if family firms' owners keep for themselves double voting rights whereas all other shareholders receive single voting rights, with ownership percentage of only one third of a firm's cash flow rights, family firms' owners can still control 50 percent of the firm's voting rights and thus control the firms. As mentioned earlier in the literature review, such behavior spread in most family firms is not appreciated by the minority shareholders. Also, a separation between the cash flow right and voting right is said to occur when the twodo not equally meet.

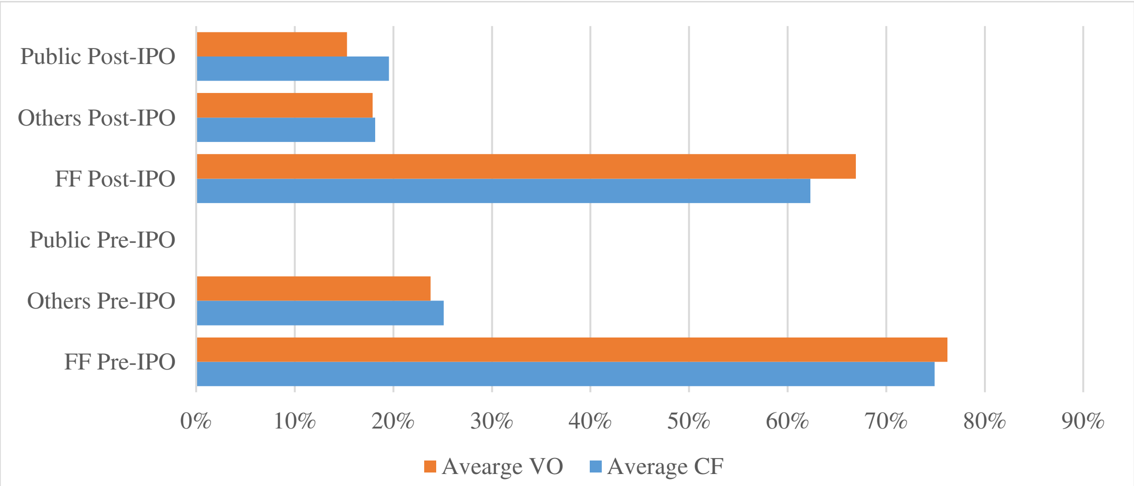
We start first with the percentage of cash flow rights of the family firms' owners before the IPO, which has an average of 74.9% and a median of 76.3%, a lower and an upper quartile of 58.4% and 96.61% and standard deviation of 22.97%. This clearly shows that the family firms' owners and their descendants and direct relatives strictly control the firm by having relatively high cash flow rights. Yet, all these percentages drop after the IPO. For instance, the percentage of the average and the median cash flow rights of the family firms' owners after the IPO recorded 62.3% and 63.9%. So the percentage of cash flow rights of the family firms' owners dropped by an average of 12.6% for the benefit of others and public shareholders through the IPO. As a result, the percentage decreases of the cash flow rights for the family firms' owners are 16.2% and 16.9% for the mean and the median, respectively.

These numbers do not reveal much without comparing them to, and by looking at, the percentage change of the voting rights for the family firms' owners, which drops by 11% and 10.7% for the mean and the median, respectively. So the average percentage decrease in cash flow rights recorded 16.2% while that of the voting rights recorded 11%. Therefore the percentage drop in voting rights was much less than the percentage drop in cash flow rights. Similarly, even though the percentage of cash flow rights dropped for the family firms' owners due to the IPO by some percentage points, their percentage of voting rights did not follow by the same measure. This means that on average, family firms' owners have benefited themselves through the IPO by allocating themselves more voting rights compared to their cash flow rights. As a result, the separation between the cash flow rights and the voting rights has worsened since the IPO.

On the other hand, before going public and when only two types of shareholders existed, we notice that family firms' owners had more voting rights than their cash flow rights by an average of 1.3% (=76.2%-74.9%). Therefore the separation between the two rights already existed even before the presence of public shareholders. However, after going public, the separation between the two rights for the family firms' owners increased by an average of 4.6% (=66.9%-62.3%). Therefore, the difference between the cash flow rights and voting rights increased after the firms went public in the interest of the family firms' owners. This is considered as an expropriation attempt of minority shareholders' rights employed by the IPO by enhancing family firms' control rights relative to their ownership rights. Moreover, when the firms went public, not only did the family firms' percentage of cash flow and voting rights drop to share them with the public, but also the other existing shareholders, such as other directors, employees, and investment banks, dropped their cash flow and voting rights as well. Thus, the percentage of cash flow of others before and after the IPO had an average of 25.1% and 18.2% and a median of 23.7% and 17%, respectively. Therefore, not only were all rights granted and allocated for the public shareholders extracted and taken from the rights of the family firms, but also from the initial other investors whose cash flow and voting rights we see decreasing after the IPO in terms of numbers and percentages. However, the percentage decrease of family firms' cash flow rights due to the IPO is equal to 16.2% whereas the percentage decrease of others' cash flow rights due to the IPO is equal to 27.68%. So relatively speaking, others' cash flow rights decreased by more than the owners' cash flow rights. This means that on average, the new cash flow rights distributed to the public were mostly from the part of the others who diminished their cash flow rights and voting rights more than the family firms' owners. This is also another clear sign of minority expropriation held by the family firms' owners towards other investors and not only public shareholders.

Another sign of such expropriation is shown throughout the difference between the cash flow rights and the voting rights for the public shareholders. As shown, their average and median cash flow rights are 19.6% and 18.2%, respectively, and their average and median voting rights are 15.3% and 13.5%, respectively. Thus the average percentage of voting rights of the public shareholders is lower than the average percentage of cash flow rights by around 4.3% for the interest of the family firms' owners. Last, but not least, the average ownership percentage of the board members drops from 78.5% to 64.4% whereas the median drops from 85.5% to 66.3%. This clearly shows that the board members who are mostly family members and close relatives held and still hold a significant percentage of the firms' cash flow rights, and specifically voting rights. This is because, as we have previously mentioned, most family firms' board members are direct relatives to the firms' founders and owners and the independent directors represent a very small percentage. Also, these numbers show that the average board members' ownership drops by 18.3% whereas the median board members' ownership drops by 17.3%. Figure 10 below sheds more light on the difference between cash flow and voting rights pre- and post-IPO date for the three types of investors.

Figure 10: Ownership and control rights change.



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As we can see, Figure 10 demonstrates clearly the differences in cash flow rights and voting rights for the three types of investors. We notice that after issuance, the difference between the two rights has expanded for the family firms' owners, favoring themselves over others and public shareholders. We also notice that the difference between the two rights for the public shareholders is quite large. Moreover, another thing to notice here is that post-IPO date, the average cash flow rights for other investors is slightly lower than that of public shareholders. However, the voting rights of the others that are close to their cash flow rights are much higher than those of the public shareholders. Specifically, the average cash flow rights for others and public shareholders are equal to 18.2% and 19.6%, respectively, whereas the average voting rights for others and public shareholders are equal to 17.9% and 15.3%, respectively. So the separation between the two rights for others and public shareholders is equal to 0.3% and 4.3%, respectively.

After presenting the main IPO underpricing results and after covering the main ownership and control rights change for the three types of investors, we present below a correlation table for the variables that will be employed in the regression analysis along with the control variables in the ownership and control rights model.

Table 22: Pearson correlation table for the ownership and control rights model

Variable	**Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=86 (Casewise deletion of missing data)**							
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**	**(7)**	**(8)**
up_1d (1)	1.000 p= ---							
Pre-DotCom (2)	-0.193* p=0.075	1.000 p= ---						
H_Tech (3)	-0.141 p=0.196	0.360*** p=0.001	1.000 p= ---					
LN(Proceed) (4)	-0.067 p=0.538	-0.097 p=0.376	-0.015 p=0.895	1.000 p= ---				
LN(Age) (5)	0.091 p=0.404	0.061 p=0.578	-0.184* p=0.091	0.091 p=0.403	1.000 p= ---			
Dif_CF_VO_Public (6)	0.047 p=0.667	-0.075 p=0.491	-0.084 p=0.444	-0.061 p=0.575	-0.259** p=0.016	1.000 p= ---		
FF_%_CF_Chge (7)	0.073 p=0.507	-0.109 p=0.320	-0.112 p=0.306	-0.034 p=0.759	-0.011 p=0.923	0.340*** p=0.001	1.000 p= ---	
%_CF_Public_After (8)	-0.255** p=0.018	-0.073 p=0.505	0.054 p=0.621	0.258** p=0.017	-0.082 p=0.455	-0.392*** p=0.000	-0.706*** p=0.000	1.000 p= ---

We notice first that a negative correlation exists between the first-day underpricing and pre-DotCom Bubble burst. This correlation of -0.193 is significant at only the 10% level. Yet, we can still argue that family firms that were issued before the DotCom Bubble burst tend to be overpriced compared to firms issued after it and thus they generate a negative first-day return. Moreover, there is a negative correlation between the first-day underpricing and the percentage of cash flow rights of the public shareholders post-IPO date of -0.255 and significant at the 5% level. It can be interpreted from this that the percentage of cash flow rights granted for the public shareholders and the first-day underpricing move in the opposite but weak direction. Therefore, the more public shareholders are granted shares on the IPO date, the lower the first-day underpricing will be, which may be due to the high supply of shares in the market for the public. We also notice that a positive correlation exists between the pre-DotCom Bubble burst and the high-tech industry of 0.360 and is statistically significant at the 1% level. Here we note that the 19 high-tech firms were all issued before 2001, which made this correlation positive and statistically significant. Moreover, the correlation between the high-tech industry and age is negative and statistically significant at the 10% level only. Yet, we can say that firms belonging to the high-tech industries tend to be younger in age than firms in other industries.

We also found a positive and statistically significant correlation at the 5% level between the proceeds and the percentage of cash flow allocated to the public of 0.258. This can be viewed as a normal relationship since the more shares that are allocated to the public, the higher the proceeds firms can generate through the IPO. This looks very rational since firms looking for higher gross proceeds have to sell a higher proportion of their shares to the public to raise the required funds, thus they increase the public shareholding. Another correlation to observe is the one between the age and the difference in cash flow and voting rights for the public shareholders. This correlation is negative of 0.259 and statistically significant at the 5% level. It can be interpreted that older firms are less likely to be involved in selling shares to the public with a high difference in cash flow and voting rights. Therefore, family firms that are more apt to breach the basic ownership rule and attempt to expropriate shareholders' wealth are the younger rather than the older firms.

We also found a positive correlation of 0.340 that is statistically significant at the 1% level between the difference in cash flow rights and voting rights and the percentage change of family firms' cash flow rights. It can be interpreted from this that the higher the drop in family firms' cash flow rights change, the smaller the gap between the two rights that will be observed. On the other hand, the more the family firms lose cash flow rights, the smaller the gap between cash flow rights and voting rights that will be observed.

Another interesting correlation is found between the difference in cash flow rights and voting rights of the public shareholders and the percentage of the cash flow rights granted to the public shareholders. This correlation of -0.392 is significant at the 1% level. It can be interpreted that the higher the percentage of cash flow rights granted to the public shareholders, the smaller the gap between the two rights that will be observed. This may be due to the negotiation power public shareholders can have when purchasing a high proportion of the firm's shares which enables them to get voting rights that are close to their cash flow rights. And as the percentage of cash flow rights granted to the public gets smaller, the gap between the two rights widens.

Last, but not least, there is a significant correlation at the 1% level of -0.706 between the percentage change of the family firms' owners' cash flow rights and the percentage of cash flow rights granted to the public shareholders. It can be interpreted from this relatively strong correlation that as the percentage of cash flow rights of the family firms' owners decreases due to the IPO, the percentage of cash flow rights of the public shareholders increases. Yet, as we will see in the subsequent table, after carrying out the test of multicollinearity of the independent variables, we notice that the inclusion of the mentioned two independent variables does not pose any problem of multicollinearity and therefore we will include both of them in the regression analysis. After observing the ownership and control rights change variables, we review below the main corporate governance mechanisms set by the family firms on pre-IPO date. Thus, we will present first the descriptive statistics of these variables and then the correlation matrix along with the control variables mentioned above.

Table 23: Descriptive statistics on governance mechanisms

Variable	Descriptive Statistics – Valid N = 86								
	Mean	**Median**	**Min**	**Max**	**Lower Quartile**	**Upper Quartile**	**Range**	**Std. Dev.**	**Skewness**
Offering_Price	17.23	16.65	1.88	51.83	8.00	24.39	49.95	9.77	0.60
Board_Size	4.67	4.00	3.00	11.00	3.00	6.00	8.00	1.82	1.20
%_Independent	20.5%	16.7%	0.0%	66.7%	0.0%	37.5%	66.7%	22.8%	58.6%
Separation_Shares	0.67	1.00	0.00	1.00	0.00	1.00	1.00	0.47	-0.76
CEO/Chair Duality	0.77	1.00	0.00	1.00	1.00	1.00	1.00	0.42	-1.29
CEO_Founder	0.80	1.00	0.00	1.00	1.00	1.00	1.00	0.40	-1.55
High_Tech	0.22	0.00	0.00	1.00	0.00	0.00	1.00	0.42	1.37
Age	16.9	12.5	0.9	187.0	5.8	20.7	186.1	22.1	5.7

Table 23 shows that the average and median offering prices of the firms going public are €17.23 and €16.65, with a lower and upper quartile of €8 and €24.39, respectively. This shows that the most preferable share price for issuing new equity is between the modest range of €8 and €25 for liquidity preferences. With regard to the board size, we notice that the average and the median family firm's board size is just 4.67 and 4.00, respectively, with a minimum and maximum board size of only three and 11 members, respectively. This tells us that on average, the French family firms in our sample have a smaller board size than their typical French or European counterparts, as we will subsequently observe. This might be due to the refusal of family firms' owners to increase the board size and include outside professional directors who can exert additional monitoring activities over the firms' managers. This is also shown in the percentage of independent directors, who have an average of 20.5% and a median of 16.7% with a lower and upper quartile of 0% and 37.5%, respectively. The percentage of independent directors of the French family firms is also lower than the average for a typical French firm. We will conduct in the subsequent section a comparative analysis of major European corporations' board sizes and independent directors to get a clearer idea of the French family firms' board characteristics.

The separation in shares, the CEO/Chair duality, the CEO founder, and the high-tech industry are all dummy variables with 1.00 if the firm meets these characteristics and 0.00 if not. The separation in shares can be 1.00 if the firm has more than one class of shares such as voting and nonvoting shares, or the presence of some shares with double voting rights that are privileged to existing shareholders or to shareholders holding shares for more than two years, and 0.00 if this criterion does not exist. The CEO/Chair duality can also be equal to 1.00 if the CEO and the Chair positions are held by only one person and 0.00 if they are not. So on issuance day, for each family firm, we observe whether the CEO holds the position of the board's Chair at the same time. Similarly, if the firm's founder is the same as the firm's CEO on the day of issuance, then the CEO founder will be equal to 1.00, otherwise it will be equal to 0.00. The last dummy variable used is the high-tech industry. Thus, if a firm going public belongs to the high-technology industry, then the variable will be equal to 1.00, and otherwise equal to 0.00.

As shown, 67% of French family firms have separation in shares, which is clearly considered an attempt to expropriate shareholders' wealth. Family firms' owners significantly favor their interests throughout the offering by allocating double voting rights to themselves, their descendants, and direct relatives. This will certainly exacerbate the separation between the cash flow rights and the voting rights and destroy the image of the firms' integrity toward the public.

Moreover, around 77% of the French family firms have their CEOs holding the position of the board's Chair on the day of the IPO. This is also another method of control that family firms' owners strongly exert over their firms where a firm's CEO holds a Chair position at the same time. As previously elaborated, this can have both a negative and a positive side. On the one hand, the negative side of it is related to the expropriation of minority shareholders through the direct control and influence of the firm's board decisions and of the firm's management of the daily operation. On the other hand, the positive side of it is the better communication among both the management members and the board members through one person, which may enhance the firm's performance as many researchers agree. However, after the numerous scandals the financial markets have witnessed in recent decades, especially those related to corporate governance mechanisms, and according to the Sarbanes-Oxley Act, it was strongly recommended that firms differentiate clearly between the position of the firm's CEO and that of Chair.

We also found that around 80% of the French family firms were managed on their IPO date by the same person who founded the firm. Equally, founder CEOs were present in almost 80% of family firms. This reveals three important ideas to discuss. The first is that on average, firms are ready to go public even during the time when the CEO of the firm is the same as the firm founder and not his/her descendants, which requires courageous action. The second shows that family firms' founders find that IPOs are means for future growth and possible solutions for passing the firms' wealth and success to their descendants going beyond the founders' lives. And the third shows the robustness and persistence of a firm's founders in managing the firm they have created, and who remained at the top of the firm's management until the issuance day. We recall here that the average life of a family firm going public is around 16.9 years.

Moreover, we notice that around 22% of all family firms belong to the high-technology industry and the remaining 78% belong to the six other industries. For firms' age, we state that the average and median of family firms going public are equal to 16.9 years and 12.5 years, respectively, and with a lower and upper quartile of 5.8 and 20.7 years, respectively. However, we notice here that the standard deviation of the firms' age is equal to 22.1 years. This shows that firms going public are fairly young to mature firms. Below we present the correlation matrix of the variables that will be used in the governance mechanisms model.

Table 24: Pearson correlation table of the governance mechanisms

Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=86 (Casewise deletion of missing data)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
up_1d (1)	1.000									
	p= ---									
Pre-DotCom (2)	-0.193*	1.000								
	p=0.075	p= ---								
H_Tech (3)	-0.141	0.360***	1.000							
	p=0.196	p=0.001	p= ---							
LN(Proceed) (4)	-0.067	-0.097	-0.015	1.000						
	p=0.538	p=0.376	p=0.895	p= ---						
LN(Age) (5)	0.091	0.061	-0.184*	0.091	1.000					
	p=0.404	p=0.578	p=0.091	p=0.403	p= ---					
LN(Board_Size) (6)	-0.193*	0.127	0.002	0.432***	0.132	1.000				
	p=0.075	p=0.243	p=0.989	p=0.000	p=0.227	p= ---				
CEO_Founder (7)	-0.059	0.230**	-0.017	-0.192*	-0.201*	-0.096	1.000			
	p=0.590	p=0.033	p=0.875	p=0.076	p=0.064	p=0.381	p= ---			
CEO/Chair Duality (8)	-0.104	0.161	-0.105	-0.148	-0.058	0.015	0.349***	1.000		
	p=0.343	p=0.138	p=0.336	p=0.175	p=0.599	p=0.893	p=0.001	p= ---		
Separation_Shares (9)	-0.011	0.118	0.071	-0.001	0.204*	0.008	-0.096	-0.089	1.000	
	p=0.919	p=0.279	p=0.516	p=0.993	p=0.059	p=0.943	p=0.381	p=0.416	p= ---	
%_Independent (10)	0.041	0.047	-0.011	0.259**	-0.031	0.212*	-0.027	-0.383***	0.063	1.000
	p=0.710	p=0.670	p=0.924	p=0.016	p=0.777	p=0.050	p=0.803	p=0.000	p=0.564	p= ---

From Table 24 we notice a negative, weak, and statistically significant correlation of 0.193 at the 10% level only between the first-day underpricing and the board size measured by its natural logarithm. It can be interpreted from this that the bigger the board size, the lower the underpricing that will take place. This might be due to the higher degree of control exercised by the board members to generate the highest proceeds out of the IPO and sell the firm's share at, or close to, its intrinsic value and prevent deep underpricing taking place.

We also notice a positive and weak correlation of 0.230 at the 5% level between the DotCom Bubble burst and the presence of a founder CEO. It can be interpreted from this that firms that went public before the bubble burst have more founder CEOs than firms issued after the bubble. This may be explained by the fads period created before the 2001 bubble burst during which the majority of the family firms went public (around 69% of our sample). Thus, founder CEOs were keen to take their firms public during a period of investor overoptimism.

Another relationship to observe is the positive and highly significant correlation between the gross proceeds and the board size of 0.432. It can be interpreted from this that firms with bigger proceeds tend to have bigger board sizes. Bigger proceeds might mean bigger firm value and therefore a bigger board size is required to keep monitoring the firm's operations.

We found a positive and statistically significant correlation between the proceeds and the independent directors of 0.259. This can be partially explained by the positive correlation that exists between the proceeds and board size, and between the board size and independent directors. Thus, firms that are able to raise more funds or bigger-sized firms are not only more able to increase their board's size by increasing the number of directors, but also they tend to increase the percentage of independent directors as well. A negative and statistically significant correlation of 0.201 at the 10% level was found between the firm's age and the presence of a founder CEO. This relationship is normally to be observed since the older the firm, the higher the chance of having the founder's descendants heading the firm rather than the founder himself or herself.

Additionally, we found a positive and statistically significant correlation at the 10% level of 0.204 between the age and the separation in shares. It can be interpreted from this that older firms are more likely to get involved in issuing double voting shares, or multiple share classes for entrenching the firm's insiders over the benefit of the public and minority shareholders. Therefore, if the presence of multiple share classes such as issuing voting and nonvoting shares or double and single voting shares is a form of opacity and information asymmetry employed by family firms' owners, then older firms are more likely to be involved in such behaviors than younger firms. Another point to discuss is the positive and statistically significant correlation at the 1% level between the founder CEO and the CEO/Chair duality of 0.349. This is obvious since on the day of their issuance, the majority of family firms had their CEOs the same persons as the firms' founders, and at the same time, the firms' CEOs hold the same position as the boards' Chairs. Finally, a very interesting correlation found in this table is the one between the CEO/Chair duality and the percentage of independent directors, which is negative by 0.383, and statistically significant at the 1% level.

Therefore, the presence of the CEO/Chair duality in family firms reduces the presence of independent directors. It can be interpreted from this that whenever the CEO controls the board of directors through his/her position as the board's Chair to control all strategic decisions prevents as much as possible the presence of independent directors to monitor the board's and management's actions and behaviors. This is a clear attempt at expropriation employed by the family firm's CEO/Chair to control all the firm's board and deny the presence of independent directors and not allow any external monitoring over their actions. However, a very important point to mention here is that the correlation between the first-day underpricing and each of the main governance mechanisms such as the founder CEO, the CEO/Chair duality, the separation in shares, and the percentage of independent directors is very weak and statistically insignificant. This means that no significant association is found between IPO underpricing and governance mechanisms.

Accordingly, underpricing is to be least affected by the presence or the absence of a founder CEO, the CEO/Chair duality, the separation in shares, and independent directors. Since we are describing the main governance mechanisms in French family firms, we will refer to a research study conducted by Ferreira and Kirchmaier (2013), who worked on European board composition. Below we present a summary of the authors' findings. We also present a comparison of the board composition of French family firms with European and typical French ones.

Table 25: Comparative study of board size in Europe

Country	Mean	SD	Min	Max	Range	N
Austria	14.34	4.99	6	24	18	41
Belgium	9.46	3.57	5	23	18	65
Denmark	11.41	3.43	6	20	14	34
Finland	7.87	1.26	6	12	6	31
France	10.76	4.25	3	27	24	247
Germany	13.99	6.83	3	30	27	183
Greece	9.63	3.52	5	19	14	52
Ireland	8.51	3.37	3	21	18	73
Italy	12.72	5.39	4	34	30	97
Netherlands	8.88	2.96	3	16	13	90
Switzerland	9.12	4.1	4	28	24	101
United Kingdom	6.5	2.56	2	25	23	1,326
French Family Firms	***4.67***	***1.81***	***3***	***11***	***8***	***86***

Table 25 summarizes part of the authors' work by mentioning basic descriptive statistics on major European countries' board size. We have added in the last row the French family firms' board size and other variables found during our analysis in this chapter through our inspection of the firms' IPO prospectuses. As noted earlier, French family firms have an average board size of 4.67, with a standard deviation of 1.81, and a minimum and maximum of three and 11 board members, respectively. On the other hand, the board size on average in French firms is 10.76, with a standard deviation of 4.25, and a minimum and a maximum of three and 27 board members, respectively. So French family firms have on average a much smaller board size than the typical French firm. Moreover, the remaining countries also have bigger board sizes than the French family firms, which ranged from a low of 6.5 board members in the UK to 14.34 board members in Austria. Moreover, Germany, Italy, and Denmark have average board sizes of 13.99, 12.72, and 11.41, respectively. Therefore, the small board sizes proposed by the French family firms' owners can be interpreted as better retaining control over board members. It may also be for better communication among the board members. However, through our inspection of the composition of firms' boards, we noticed that most French family firms' boards are composed solely of family members, with a very low percentage of independent or outside directors, as we will see in the following table. Also, we have noticed that the board's Chair is mostly the same as the firm's CEO, which demonstrates a threat with respect to a proper corporate governance mechanism and management quality control and assurance.

Table 26: Comparative study of independent directors in Europe

Country	Mean	SD	Min	Max	Range	N
Austria	39%	26%	0%	83%	83%	41
Belgium	43%	16%	0%	83%	83%	65
Denmark	29%	23%	0%	89%	89%	34
Finland	78%	19%	38%	100%	62%	31
France	35%	22%	0%	100%	100%	247
Germany	5%	16%	0%	86%	86%	183
Greece	38%	19%	0%	80%	80%	52
Ireland	46%	28%	0%	91%	91%	73
Italy	43%	17%	0%	84%	84%	97
Netherlands	52%	22%	0%	88%	88%	90
Switzerland	42%	38%	0%	100%	100%	101
United Kingdom	34%	25%	0%	100%	100%	1,326
French Family Firms	***20%***	***23%***	***0%***	***67%***	***67%***	***86***

While Table 25 shows the board size, Table 26 shows the percentage of independent directors in most European countries. This is also a part of the work of Ferreira and Kirchmaier (2013). Here we have also added in the last row the French family firms' percentage of independent boards that we found during our analysis of the firms' prospectuses. We note that French family firms have an average independent directors' percentage of 20%, with a standard deviation of 23%, and a minimum and maximum of 0% and 67%, respectively. By comparing the family firms' average percentage of independent directors of 20% with the typical French corporation percentage of 35%, we certainly notice that the difference between the two is substantial. Moreover, as we notice in the correlation analysis below, we find a positive relationship, yet somehow weak and statistically significant at only the 10% level, between the board's size and independent directors. It can be interpreted from this that bigger board sizes attract more independent and outside directors.

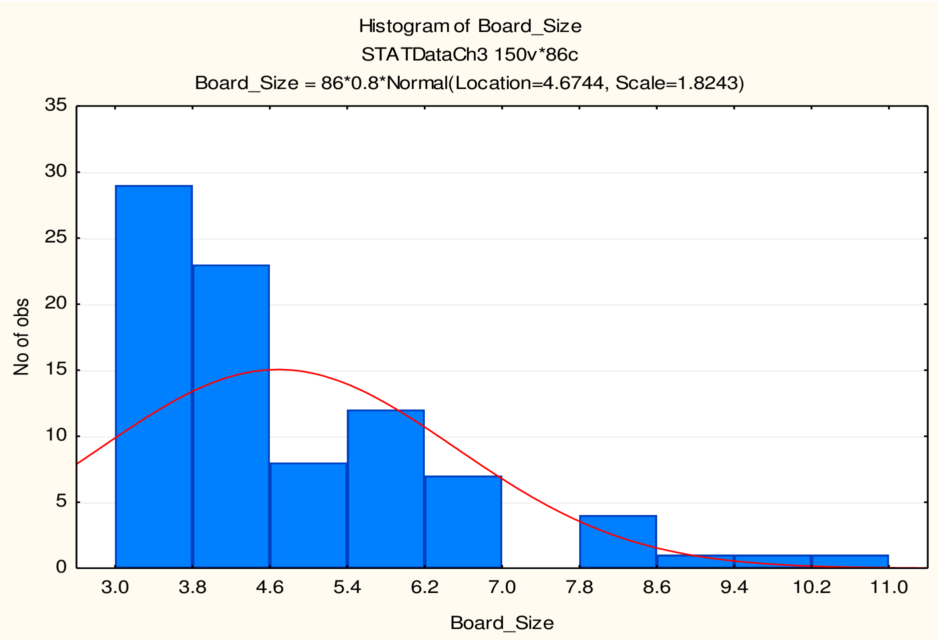
Interestingly, the average percentage of independent directors in Germany is only 5% while the average board size in Germany is 13.99, as we have seen above. However, if we remove Germany's percentage, which is considered an outlier compared to others, and also by excluding our sample of the French family firms, we notice that the average percentage of independent directors is 43.55% in Europe. This is much higher than the average percentage of independent directors of the French family firms of only 20%. Moreover, we notice that Finland, the Netherlands, and Ireland have the highest percentages of independent directors of 78%, 52%, and 46%, respectively. Also, Italy's average percentage of independent directors is 43%, which is very close to that of Switzerland of 42%, but higher than that of the UK of 34%, Austria of 39%, and its neighbor, France, of 35%.

Therefore, generally speaking, it is obvious that French family firms' owners intended to keep their board size small compared to their French and European counterparts, to better monitor and control the boards' members. Moreover, family firms' owners recruit independent directors insufficiently compared to their counterparts, which might be due to the expropriation intention assumed by firms' owners, in particular that most board members are family affiliated. These two compositions of the board of directors (size and independence) of French family firms can be explained from an agency perspective that family firms' owners intend to expropriate outside, dispersed, and minority shareholders. This is so because we have also seen that the founder is mostly the firm's CEO and also holds the position of the board's Chair.

Therefore, a Type 2 agency problem arises here, which is between insider family firms' owners, who are the majority, and outsider dispersed shareholders, who are the minority. Yet, this is still one possible explanation that we found during our analysis of the main governance mechanisms applied by French family firms. However, we noticed from the correlation matrix that a relatively strong, positive, and statistically significant correlation at the 1% level exists between the gross proceeds and firms' board size. Equally, bigger proceeds go along with bigger board sizes. So, since we have previously seen that European firms have raised much bigger gross proceeds than French family firms, this could explain their bigger board sizes and higher percentage of independent directors. From this point of view, we can deduce that the small board size of the French family firms is not strictly intended for expropriation purposes as we suggested earlier, but simply because their firms are much smaller in size than a typical French or European firm, which does not require bigger board sizes and a higher percentage of independent directors. Accordingly, family firms, which are on average very small in size, not only do not require bigger board sizes to manage and control the firm's management but also they probably do not have sufficient funds to increase their board size and remunerate their board members.

In Figure 11 here below, we present in a histogram French family firms' board sizes.

Figure 11: Histogram of French family firms' board size.



We notice that although the average board size of French family firms is only 4.67, as we previously discussed, there are a good number of firms that have even smaller board sizes. For instance, we find that almost 30 out of the 86 firms have board sizes of between 3 and 3.8. Moreover, board sizes bigger than seven are very few and far between and considered exceptions and outliers.

3.4. Hypothesis Testing and Results

As mentioned, we will test six hypotheses related to IPO underpricing from one part and the ownership and control rights and governance mechanisms from the other part. Therefore, we will test and observe the effects of ownership and governance mechanisms set by the French family firms on IPO underpricing, going from the first to the thirtieth day. In the review of literature, we have explained the choice of these hypotheses along with the significance of the relationship between IPO underpricing and ownership and governance mechanisms. Thus, here we will just recall the six hypotheses that we will test:

Hypothesis 1: There is a negative relationship between the level of family ownership and IPO underpricing.

Hypothesis 2: There is a negative relationship between the presence of a founder CEO and IPO underpricing in family firms.

Hypothesis 3: There is a negative relationship between the duality of the firm's CEO/Chair position and IPO underpricing in family firms.

Hypothesis 4: There is a negative relationship between the proportion of independent directors and IPO underpricing in family firms.

Hypothesis 5: There is a negative relationship between board member ownership and IPO underpricing for family firms.

Hypothesis 6: There is a positive relationship between the IPO underpricing and the part of the capital retained by the founder.

Therefore, we will test these hypotheses by using the correlation matrix between the mentioned ownership and governance mechanisms from one part, and the IPO underpricing from the first to the thirtieth day from the other part. The correlation results are presented in Table 27 at the 5% statistical significance level and with the 86 total observations.

Table 27: Pearson correlation table

Variable	**Pearson Correlations Marked correlations are significant at the 10% (*), 5% (**) and 1% (***) level N=86 (Casewise deletion of missing data)**					
	% CF FF Pre-IPO	**CEO Founder**	**CEO/Chair Duality**	**% Indep. Directors**	**CF Board Pre-IPO**	**% CF FF Post-IPO**
up_1d	0.091	-0.059	-0.104	0.041	0.087	0.155
up_2d	0.176	0.139	0.067	-0.040	0.069	0.261**
up_3d	0.093	0.089	0.091	-0.090	-0.131	0.173
up_4d	0.093	0.109	0.081	-0.059	-0.170	0.137
up_5d	0.060	0.106	0.063	-0.021	-0.209	0.093
up_10d	0.072	0.090	0.079	-0.067	-0.143	0.092
up_15d	0.068	0.139	0.111	-0.044	-0.133	0.097
up_30d	0.098	0.136	0.140	-0.090*	0.001	0.113

Before listing our results, it is worth noting that we have conducted another correlation test between the mentioned above variables by using the Spearman's correlation, aiming to spot any nonparametric measure of statistical dependence between any two variables. Interestingly, we got very close results to those of the Pearson correlation with the same level of statistical significance; therefore we will solely employ the latter.

The first hypothesis mentions that the relationship between the level of family ownership pre-IPO date and the underpricing level is negative. However, from the Pearson correlation table, surprisingly, we notice that a positive, very weak and statistically insignificant correlation exists between these two variables. This reveals that IPO underpricing of French family firms is insensitive toward the cash flow rights pre-IPO date held by the family firms' owners. Therefore, the family presence does not play a significant role either in underpricing or in overpricing the issue. This leads to the conclusion to reject the hypothesis that the presence of family firms' owners has a negative impact on underpricing.

The second hypothesis mentions that the relationship between the presence of a founder CEO and underpricing level is negative. From the Pearson correlation table, we also notice that for most underpricing, a positive, very weak and statistically insignificant correlation exists between these two variables, but slightly stronger than that between the two variables mentioned in the first hypothesis. Here, we can also reject the hypothesis stating that the founder CEO has negative effects on underpricing family firms' shares.

The third hypothesis mentions that the relationship between the duality of position of the CEO and the Chair and IPO underpricing in family firms is negative. From the Pearson correlation table, we also notice that for most underpricing, a positive, very weak and statistically insignificant correlation exists between these two variables which resembles the correlation between the family firm ownership and underpricing stated in the first hypothesis. Therefore we reject the hypothesis that suggests a negative relationship exists between the duality of the CEO/Chair position and IPO underpricing.

The fourth hypothesis mentions that the relationship between the presence of independent directors and IPO underpricing in family firms is negative. From the Pearson correlation table, we notice that mostly a negative relationship exists between the two variables but it is still very weak and insignificant. Accordingly, we reject the fourth hypothesis.

The fifth hypothesis mentions that the relationship between board member ownership pre-IPO and IPO underpricing for family firms is negative. From the Pearson correlation table, we notice that mostly a negative relationship exists between the two variables but it is still very weak and insignificant. Therefore, we reject the fifth hypothesis.

The sixth hypothesis mentions that the relationship between IPO underpricing and the part of the capital retained by the founder after the IPO is positive. From the Pearson correlation table, we notice that a positive relationship exists between the two variables but somehow it is weak and insignificant except for the second-day underpricing, which is equal to 0.261. This can be interpreted as meaning that when firms go public and the family firms' owners still hold a significant part of the firms' cash flow rights, shares are further underpriced during the second day. Thus, we cannot reject the sixth hypothesis.

3.5. Regression Analysis

To explain the French family firms' IPO underpricing given different ownership and control rights and some governance mechanism variables, we will employ here below two different multiple linear regression models by changing the predictors that match these variables. Thus, in the first model we will address the ownership and control rights for the family firms' owners and the change between the two rights after issuance; in the second model we will address some specific governance mechanisms set by the family firms on issuance day.

3.5.1. Regression Variables

Before running the regressions, we present a descriptive statistics table for the dependent, independent and control variables in each model. We have prepared the Pearson correlation table to check the correlation sign, strength and significance level between all variables, and another table that includes the tolerance and the variance inflation factor (VIF) to check whether any multicollinearity problem exists between the independent variables. We then present the regression analysis and finally the summary regression results. It is worth noting that all analyses were conducted by including four control variables at the same time which are related to IPO timing, issue size, average firm age, and firm industry, as subsequently mentioned.

The Dependent Variable

As previously discussed, the dependent variable that we are interested to explain is the French family firms' underpricing. As mentioned above, we calculated the underpricing by using the market index return, being the first method of adjusted underpricing. More specifically, the IPO underpricing that we attempt to explain is the first day underpricing to differentiate between the direct IPO effect set by the issuers and the speculative periods created after issuance by the overoptimism of investors who, as previously discussed, drove the share price at very high levels.

The Independent Variables

Below is a brief summary of the independent variables that will be used in both models.

Ownership and Control Rights Model

i. The Dif_CF_VO_Public stands for the difference between cash flow rights and voting rights for the public shareholders. As mentioned above, upon issuance, public shareholders were given some control rights that were lower than their cash flow rights. We calculated the difference between the two public shareholders' rights for each issue and included it in our regression analysis to measure its effect on underpricing.
ii. FF_%_CF_Chge stands for family firms' owners' percentage cash flow rights change from pre- to post-IPO date to measure the degree of ownership disposal and its effect on underpricing.
iii. %_CF_Public_Post-IPO stands for the percentage of cash flow rights for the public shareholders post-IPO date. The purpose of including this variable is to watch the effect of the public shareholding levels on underpricing.

Governance Mechanisms Model

i. Ln(Board_Size) is the natural logarithm of a firm's board size due to the importance of the board members and the board size in the firm's governance.
ii. CEO_Founder defines if the family firm's founder is the same person as the firm's CEO on the day of issuance. This is a dummy variable that will be equal to 1.00 if the firm's founder is the firm's CEO on the day of issuance and 0.00 if not.
iii. Duality defines if the firm's CEO is the same person as the firm's board's Chair on the day of issuance. This is a dummy variable that will be equal to 1.00 if the firm's CEO is the same person as the firm's board's Chair on the day of issuance and 0.00 if not.
iv. Separation_Shares denotes if the firm has already or intends to issue shares with double voting rights or different classes of share to favor the existing shareholders. It also shows if there is a separation between the cash flow rights and the voting rights. This is a dummy variable that will be equal to 1.00 if the separation in shares exists and 0.00 if not.
v. %_Independent means the percentage of independent directors present on the firm's board with respect to the total number of directors.

The Control Variables

We aim to include control variables related to IPO timing, issue size, average firm's age, and firm's industry. As for the firm's age, Reside et al. (1994) found evidence for a negative correlation between firm's age and level of underpricing, which is attributed to the availability of information in the older firm. Thus, according to the authors, older firms shall have less underpricing than young firms. As for the firm's industry, the phenomenon of IPO underpricing is studied across the industries by many researchers to examine the implications of industry classification. The most important difference is considered to be the difference in financial industry versus non-financial industry by researchers (Cagle and Porter, 1996; Tinic, 1988). Since financial institutions are controlled by regulatory bodies, there is less initial uncertainty about the firm value compared to non-regulated industrial firms when they try to launch their IPOs. Even with higher restriction, there is less information asymmetry in the market. Cagle and Porter (1996) support the lower underpricing (4.8% less) of financial institutions (thrifts, commercial banks, utilities, and insurance companies as financial institutions) compared to other industrial institutions, but no significant difference is found between the underpricing of commercial banks and other financial institutions. They also examine the difference between the underpricing levels of these financial institutions individually and other industrial firms, and found the differences to be thrifts (4.2%), commercial banks (5.8%), insurance companies (8.4%), and utilities (2.7%).

In contrast to this, Tinic (1988) found that the underpricing of regulated financial institutions is greater than that of non-regulated firms because underwriters and issuers would tend to underprice the IPOs to avoid future legal liabilities for misrepresenting the firms' true value. Additionally, Ritter (1984) found a significant difference in the US between underpricing levels of the offerings of natural resource firms and non-natural resource firms using data from 1977–1982. The control variables that we will use in our two models are described below.

i. Pre-DotCom is a proxy for the IPO timing which is a dummy variable equal to 1.00 if the IPO occurs before the 2001 IPO bubble burst and 0.00 if after it. We have included this variable because we have seen in the previous analysis the relatively large number of IPOs that occurred just before the 2001 IPO bubble burst and which could have an effect over the IPO underpricing.
ii. H_Tech is a proxy for the firm industry which is a dummy variable equal to 1.00 if the issuing firm belongs to the high-technology industry and 0.00 if it does not.
iii. Ln(Proceed) is the natural logarithm of the firm's gross proceeds measuring the issue size of each firm and can also be a size measurement of equity raised.

iv. Ln(Age) is the natural logarithm of the firm's age at the date of its issuance which counts the years from the date of firm creation to the date of issuance.

Again, our justification for choosing these control variables at pre-IPO date is to observe whether the IPO underpricing for family firms is sensitive in the presence of these variables and to differentiate both firms with similar and dissimilar issue size and age, and those that do or do not belong to the high-tech industry. In addition, the IPO timing was included due to its importance in IPO pricing and returns, as seen in the review of literature. As described above, these control variables will be chosen in two phases. In the first, we will include only the IPO timing, while the second will include all four control variables to observe if collectively they present or offer some enhancement to the model's results and can better explain the return variance than by including these control variables along with the independent variables which are related first to ownership and control rights and second to governance mechanisms. It is worth noting that it has been observed by many researchers that firm size and risk move in opposite directions, meaning that smaller firms are riskier than bigger firms.

Thus, since IPO underpricing implicitly holds numerous risk factors, we assume that small firms have greater underpricing than big firms. As mentioned above, we will mainly focus on the issue size for size proxy. The issue size is equal to IPO share price times the number of shares outstanding. This therefore includes the market capitalization of the firm being subject to IPO and so we would like to observe the effect of issue size on underpricing, which could be more interrelated than the firm's total assets pre-IPO date. Therefore we will calculate the natural logarithm of the gross issue size for each firm and include it in the model. Additionally, as mentioned above, firm age can be considered an important factor of information asymmetry.

As a result, we will assume that younger firms will be more opaque and thus more subject to underpricing. Also, young firms are more susceptible to business risk and their risk of failure is higher: therefore investors underprice these firms more than the older ones. We will also calculate the natural logarithm of firm's age in our model. Last but not least, the firm industry is included to differentiate between different industries and to remove any uncertainty about IPO underpricing due to the industry to which the firm belongs. As we have seen, in firms in high technology and servicing industries or firms in industries where intensive research and development is required, higher underpricing is perceived due to the high risk and uncertainty such firms have, and due to the high volatility to which their future cash flows are subject. For practicality in the regression models, we have included a dummy variable for the industry. We grouped the seven industries into two main groups and observed whether the firm belongs to the high-tech industry or not.

4. REGRESSION RESULTS AND INTERPRETATIONS

As mentioned above, we will run two main regression analyses in an attempt to explain first day IPO underpricing via ownership and control variables first, and governance mechanisms second.

4.1.1. Ownership and Control Rights

Table 28: Regression of the ownership and control rights

N=86	Regression Summary for Dependent Variable: up_1d R=0.4019 R^2=0.1615 Adjusted R^2=0.0862 F(7.78)=2.1461 p<0.04827 Std.Error of estimate: 0.06439						
	VIF	**b***	**Std.Err.**	**b**	**Std.Err.**	**t(78)**	**p-value**
Intercept				0.056	0.088	0.640	0.524
Pre-DotCom	1.232**	-0.246**	0.115	-0.035**	0.017	-2.138	0.036
H_Tech	1.232	-0.057	0.115	-0.009	0.019	-0.495	0.622
LN(Proceed)	1.157	0.022	0.112	0.001	0.006	0.195	0.846
LN(Age)	1.225	0.032	0.115	0.002	0.009	0.281	0.779
Dif_CF_VO_Public	1.353	-0.065	0.121	-0.098	0.182	-0.537	0.592
FF_%_CF_Chge	2.232*	-0.295*	0.155	-0.114*	0.060	-1.905	0.060
%_CF_Public_After	2.611***	-0.506***	0.167	-0.289***	0.096	-3.024	0.003

As explained, we will include in this model four control variables which are the DotCom bubble burst, the high-technology industry, the natural logarithm of gross proceeds, natural logarithm of age and the remaining three independent variables related to ownership and control rights for an attempt to explain the first day underpricing.

We note that all employed variables in the model have highly acceptable variance inflation factor (VIF) levels since they are all less than the threshold value of 4 used and argued by Pan and Jackson (2008). Therefore we can assume that we do not have a multicollinearity problem and we can include all the variables in the multiple linear regression. We note that the model's R-squared is equal to 0.1615, which means that 16.15% of the first day underpricing variance can be explained by this model's variables, which are related to ownership and control rights change. The adjusted R-squared recorded 8.62%. Moreover, the model's p-value is less than 5%. Concerning the control variables, we mention that only the pre-DotCom variable is statistically significant at the 5% level with a coefficient beta of -0.246, while the high-tech, gross proceeds and age variables are all statistically insignificant and their standardized coefficient betas are statistically not different than zero. Concerning the independent variables, we note that the family firms' cash flow rights change and the public shareholders' cash flow rights are both statistically significant at 10% and 1% respectively. Their standardized coefficient betas are equal to -0.295 and -0.506 respectively. However, the difference between the cash flow rights and the voting rights for the public shareholders variable is statistically insignificant. We attribute this result to the possibility of dominance of the short-term envisioned and opportunistic investors who care less about voting rights than about realizing high and prompt returns.

4.1.2. Governance Mechanisms

Table 29: Regression results of the governance mechanisms

N=86	**Regression Summary for Dependent Variable: up_1d R=0.3122 R²=0.0975 Adjusted R²=----- F(9.76)=.91208 p<0.51943 Std.Error of estimate: 0.06767**						
	VIF	**b***	**Std.Err.**	**b**	**Std.Err.**	**t(76)**	**p-value**
Intercept				0.107	0.100	1.073	0.287
Pre-DotCom	1.392	-0.145	0.129	-0.021	0.019	-1.129	0.262
H_Tech	1.299	-0.070	0.124	-0.011	0.020	-0.565	0.573
LN(Proceed)	1.346	-0.043	0.126	-0.002	0.006	-0.338	0.736
LN(Age)	1.195	0.118	0.119	0.009	0.009	0.988	0.326
LN(Board_Size)	1.331	-0.189	0.126	-0.036	0.024	-1.505	0.137
CEO_Founder	1.301	-0.012	0.124	-0.002	0.021	-0.095	0.924
Duality	1.455	-0.050	0.131	-0.008	0.021	-0.381	0.704
Separation_Shares	1.078	-0.022	0.113	-0.003	0.016	-0.197	0.844
%_Independent	1.344	0.083	0.126	0.025	0.037	0.660	0.511

We noticed first that there is no collinearity problem among the variables since all VIFs are much less than the threshold of 4. However, although the R-squared recorded 9.75%, the adjusted R-squared dropped to zero and the p-value is greater than 51%. Moreover, and surprisingly, none of the control and independent variables seems to be statistically significantly different than zero or to present any enhancement in explaining the first day underpricing. As a result, none of the control variables contributes to an explanation of the first day underpricing combined with governance mechanisms. We attribute this result to the possibility that investors in IPOs care more about the ownership and control rights change, as we observe in the first model, than about governance mechanisms. This might occur because investors in family firms' IPOs already know that they are investing in family firms and the set of governance mechanisms favor the family firms' owners; therefore the government mechanisms do not constitute a major variable in explaining the IPO first day abnormal returns.

5. CONCLUSION

In this chapter, we have attempted to explain the IPO underpricing of French family firms departing from firms' ownership and control structure pre- and post-IPO date, and from the corporate governance mechanisms set by the family firms' owners pre-IPO date. Initially, we have reviewed the main motives for family firms in going public, such as to solve succession problems, to finance future company growth, to increase share liquidity, and to diversify family owners' portfolios. Additionally, we have reviewed the main research, theories and literature explaining IPOs' performance in the short term, which is usually referred to as IPO underpricing. We discussed the IPO underpricing from an information asymmetry perspective among the major players in IPOs, who are the issuers, the underwriters and the public investors. Most researchers have found that whenever information asymmetries increase, IPO underpricing increases to compensate investors for the risk they take by investing in IPOs. Thus, information asymmetry from different dimensions was considered by many authors as the main source of IPO underpricing in many markets and countries. Another main source of underpricing is related to ownership structure. Therefore targeted ownership and control structure affect IPO underpricing and investors' perceptions toward firms' value. We have seen that, when going public, the percentage of cash flow rights and voting rights allocated for the public shareholders affects IPO underpricing. Last but not least, signaling also has its part in explaining IPO underpricing. Sometimes, issuers and underwriters have information to share among public shareholders and, through signaling, they circulate such information which will cause underpricing.

During our observation and analysis of the French family firms' IPO underpricing, we have spotted an average of 1.92%, a median of 0.00%, and a lower and upper quartile of -0.61% and 1.11% respectively, compared to higher (and sometimes much higher) underpricing found by many researchers for French IPOs or even for typical IPOs. We attributed this lower average first day underpricing to the alignment of interest between the family firms' principals and agents, leading to lower type 1 agency problems. However, a type 2 agency problem, discussed by Zingales (1995), is clearly present between the majority and the minority shareholders in these family firms. We noticed that, on average, family firms' owners made a clear attempt to increase their control over their firms by assuring higher levels of control rights with respect to their levels of cash flow rights. Thus, the gap between the two rights has been widened via the IPO, which is considered a clear attempt of minority shareholders' expropriation, as described by La Porta et al. (2000). For instance, before the IPO date, the average percentage of cash flow rights of family firms was 74.9% versus an average voting rights percentage of 76.2%, having a gap between the two of 1.3%. After the IPO, the average percentage of cash flow rights of family firms became 62.3%

versus an average voting rights percentage of 66.9%, expanding the gap to 4.6%. Thus, after the IPO, the percentage of cash flow rights of family firms dropped by more than the percentage of voting rights. Also, the average cash flow rights of other shareholders and of the public shareholders post-IPO date were equal to 18.2% and 19.6%, whereas their respective average voting rights at post-IPO date were equal to 17.9% and 15.3%. Thus, expropriation of minority shareholders is clearly conducted by the family firms' owners who used the IPO to attain their financing objectives in raising funds and at the same time enhance their control rights over their firms with respect to their cash flow rights.

We also noticed that 67% of French family firms have a separation in shares, which is considered a clear attempt to expropriate shareholders' wealth. Firms' owners significantly favor their interests throughout the offering by allocating double voting rights for themselves, their descendants and direct relatives. Moreover, around 77% of the French family firms have their CEOs holding the position of the boards' Chair on the day of the IPO. We have discussed that where the firm's CEO holds a Chair position at the same time, this represents another way in which family firms strongly exert control over their firms. We also found that around 80% of the French family firms were managed on their IPO date by the same person who founded the firm. Equally, founder CEOs were present in almost 80% of family firms. This reveals three important ideas to discuss. As mentioned, it shows the robustness and persistence of the firms' founders who remained on the top of the firm's management until the issuance day in managing the firms they created. Also, the average life of a family firm before going public is 16.9 years, which is quite long. In this respect, we can deduce that the French family firms' owners do not much differ from other family firms' owners in other countries in their behavior towards minority shareholders and their different attempts in expropriating them via dual-class stocks and pyramidal ownership, as discussed by La Porta et al. (1999).

Also, we noticed that most board members are strictly and directly affiliated to the firms' owners and they mostly hold key managerial positions in addition to their directorship positions, making their ultimate monitoring role over the firms' management less important, less efficient and, of course, less real. For instance, we have seen that the average family firm boards' size is 4.67 versus 10.76 for a typical French board size, 14.34 for an Austrian, 13.99 for a German, 12.72 for an Italian, and 11.41 for a Danish and 6.5 for an English board. The average percentage of independent directors in French family firms is only 20%, while in Europe as a whole it is 43.6%. Finland, the Netherlands, Ireland and France recorded 78%, 52%, 46%, and 35% respectively. Thus, in family firms, this would make control and influence over the board's decisions by the family firm's Chair easier, faster and stronger. Also, from these facts and figures, we note that family firms' owners do their best to retain control over their firms by granting themselves the majority in control and cash flow rights, the majority on boards' seats, the minimum of independent directors, and effectively present in both, the firm's supervisory and management board. Therefore, for the family firms' owners, relinquishing control via the IPO over the firms they have created is out of the question.

We also note that the 86 French family firms were able to raise total gross proceeds of €2,316 million as per 2013 euro value, making an average of €27 million raised by every firm. These average proceeds of French family firms are well below the average proceeds raised by a typical French or European firm that on average raises €1,058 million and €581 million respectively. This fact helps to explain the high degree of control exercised by the majority of the firms' owners. Therefore, even though their firms are listed on exchanges and public shareholders can subscribe and trade the firms' shares, these firms are still of very small size and are treated by the firms' owners as privately held firms with respect to control and governance.

In an attempt to explain IPO underpricing, we have presented two models. The first includes family firm owners' ownership and control rights change and the percentages allocated for the public shareholders. With a high degree of statistical significance, we can explain around 16.2% of the IPO underpricing variance through ownership and control rights change. The second model includes governance mechanisms applied by the family firms upon their issuance. However, surprisingly, and at a very high statistically insignificant level, we found that around 9.8% of the IPO underpricing can be explained by governance mechanisms. We attribute this result to the possibility of having short-term sighted investors and speculators who are more sensitive toward change in cash flow rights allocated via the IPO rather than toward governance mechanisms set by the family firms. This might also be explained by the very small percentage allocated for the public, which on average did not exceed 20%. Thus, investors with such a small percentage of cash flow and even less in voting rights are less sensitive about firms' governance since they are aware that they cannot exert significant control over the family firms. This can also be shown in the first day and first month abnormal returns that were around 2% and 30% respectively. Therefore, speculative and over-optimistic investors are those who drive the share price upward quickly.

We recall that the sample size we worked on covers only 86 listed family firms. Although other researchers have worked on similar or even smaller sample sizes as we have elaborated, yet, from a statistics viewpoint, it would be desirable to increase the sample size for more reliable and robust results. In the future, we aim to increase the firm sample size by including both types of firms, family and non-family, and making a thorough comparative analysis. Moreover, we aim to conduct another research on family firms in other European countries to spot the main ownership and governance mechanisms and observe their impact on IPO underpricing. We aim to do so because we have thoroughly explained the importance of such mechanisms set by family firms and therefore we would like to test the market perception and response regarding such mechanisms on IPO date using cross-country analysis.

Additionally, our purpose was to explain the IPO underpricing via these two ownership and governance mechanisms and not to explain family firms' underpricing in general, because, as we have seen in the literature, there are limitless variables that can affect underpricing but which were not taken into consideration due to our specific scope of work. In future research, we aim to include other variables, such as independent external auditors, underwriters' reputation, size, historical records and performance, the presence of venture capital and private equity funds among the firms' boards, the main firms' target shareholders, and firm-related risk factors such as business risk and financial risk, country risk, general economic conditions, and general's market trends and conditions pre-IPO date. For instance, Certo et al. (2001a) argue that many factors other than the governance mechanisms may affect the extent of underpricing. However, future research should also attempt to examine the impact of contextual factors on the interaction between corporate governance and performance of the IPO firm by controlling for inter-industry differences, and other extra-organizational factors (Zahra and Pearce, 1989).

Moreover, we have extracted the percentage of cash flow rights allocated to the public shareholders at post-IPO date, but we have not observed the types of public investor. For instance, we have not checked whether they are large institutional shareholders, investment banks or just individual investors. However, as previously mentioned, all these types of investor could affect IPO underpricing differently. Thus, in the future, we will go into further detail about the public shareholders and divide them into institutional and non-institutional shareholders to observe the effect of each on IPO underpricing.

In addition, an extremely important variable that many researchers have observed in IPO underpricing is the time effect. This means that IPO performance is highly influenced by the time during which issuers decide to go public. More specifically, during different times, economic, financial and market conditions change and therefore IPO valuation does too. For instance, as mentioned earlier, the "hot issue markets" theory has been proposed by Ritter (1984 and 1991) to explain firms going public, which states that issuers attempt to benefit from bullish stock markets and investors' over-optimistic behavior to launch their firms. It is so because during such periods, investors, analysts and underwriters tend to overestimate overall economic conditions, firms' future revenues, net earnings, cash flows, and thus firms' intrinsic value. During such bullish periods, investors' appetite to assimilate further risks by investing in IPOs escalates, and therefore creating greater demand for IPO firms. This would therefore justify the higher prices investors are willing to bid to acquire IPO shares, and issuers carefully take advantage of this to maximize their proceeds when going public. So, to return to our delicate variable in better explaining IPO underpricing, the timing effect, we would say that in both our models, this variable has not been precisely considered in all its aspects by differentiating the “hot” from the “cold” issue markets as proposed by Ritter, mainly due to the small sample size we have worked on, compared to Ritter’s sample size of over 1,500 IPOs. Rather, we have taken all the 86 family firms that were issued during 20 years and segregated the ones that were issued pre- and post- the DotCom bubble burst of 2001, using a dummy variable of 1.00 or 0.00 to measure this variable. As a result, although we attempted to measure the time effect on the IPO underpricing and got some results for it, we could not measure the precise effect of time and the precise market pulse, conditions and trends other than using the market-adjusted return. Therefore, to solve this issue in our future research and to better explain IPO underpricing via the time effect, we would aim to increase the sample size by either including more than one country with similar characteristics to the French markets, as previously noted, or by closely observing two different periods that are believed to be “hot” and “cold” issue markets. By this means, we would be creating two sub-samples and better comparisons could be made accordingly.

CHAPTER 3: IPO LONG-TERM PERFORMANCE

1. INTRODUCTION

As we have seen in the previous chapter, the initial public offering (IPO) is a very important and fundamental step in a firm's life and a central issue in corporate finance, as it transforms the firm from privately held to a publicly held firm, changing dramatically its ownership structure, capital structure, growth potential, legislative requirements, reporting standards, public communication, strategic objectives, analysts' inspections and followings, peer competition levels, firm image, human capital, and the overall rules of the business. As a result, IPOs have received widespread attention in literature: limitless research papers, professional articles and analyses have been conducted worldwide attempting to explain IPO behavior, trends, and performance in the short and the long term. However, most researchers in the field have identified conflicting and sometimes unexplained results in IPO performance, which they refer to as 'IPO anomalies'. These are summarized by positive first day returns (so-called underpricing) and negative long-term performance (so-called underperformance). Those two anomalies have been the central points of numerous researches worldwide, attempting to explain their source, magnitude, and effect.

In the previous chapter, we have seen that underpricing is the positive return that a shareholder can achieve when a newly public share is bought at the offering price and sold at the first closing day price. Additionally, there are numerous research papers that document the existence of the initial underpricing phenomenon for newly listed firms during the early days of trading across many countries and capital markets (Ibbotson, 1975; Welch, 1992; Ritter, 2002; Loughran and Ritter, 2004; Zouari et al., 2011), in various periods (Ritter and Welch, 2002), and over various levels over time (Loughran and Ritter, 2002). For example, in the 1980s, the average IPO underpricing hovered around 7%. It increased to 15% during the period 1990–1998, and jumped to 65% during the short period of the DotCom 1999–2000 bubble (Gajewski and Gresse, 2006).

However, although the true reason for underpricing in IPOs is still a mystery (Ritter, 1991), many researchers have tried to explain it via different theories and models. One of the main reasons for such underpricing which has been observed by many authors is the ex-ante uncertainty shareholders face in assessing the quality of the IPO firms (Rock, 1986). Another important reason for underpricing is the information asymmetry problem among participants in the IPO, which adds difficulty in assessing the real value of the shares at introduction. Thus, the issuing firm has to incentivize investors to buy its offering shares by discounting the share price and generating a positive return in the first days after its initial offering. However, many other theories presented by prominent researchers attempting to explain IPO underpricing were observed in the previous chapter. We have focused on the main corporate governance mechanisms applied by owners of French family firms, pre- and post-IPO dates, and tested their effect and significance on IPO underpricing, with the inclusion of some other variables, notably ownership and control related variables, offering price and period, and firm's age.

In a nutshell, we have found that the French family firms are underpriced starting the first day, and the mentioned governance mechanisms with the remaining variables contribute to explain around 25% of the variance of such underpricing. The result is statistically significant.

Conversely, the long-run underperformance describes the observation that IPO firms, over the one to five year period subsequent to the IPO, tend to underperform relative to the market and relative to public firms with similar characteristics, such as size, industry, capital structure, etc. (e.g., Loughran and Ritter, 1995; Ritter, 1991). For instance, numerous studies in different countries have confirmed underperformance one (Aggarwal and Rivoli, 1990), two (Hanley, 1993), three (Loughran et al., 1994; Ritter, 1991), and five years (Loughran and Ritter, 1995) after issuance. Interestingly, the long-term share price performance of IPOs has become the focus of attention more than any time before (Espenlaub et al., 2000) and therefore the field is attracting more research to explain IPO performance from different aspects.

Nonetheless, Chen (2001) argues that it is very confusing as to why IPO initial returns are significantly positive while long-run returns are negative. The author adds that, typically, if all the investors expect that the long-run returns of IPO shares will be negative, through backward induction, no one will invest in IPOs in the initial markets. Therefore the author states that since long-run underperformance of IPOs is an anomaly, it needs further examination and analysis.

In their pan-European study, Gajewski and Gresse (2006) used a sample of 2,026 IPOs when they measured the one-year performance and a sample of 1,846 IPOs when they measured the three-year performance of European firms. The authors document that the long-term abnormal returns are frequently negative, but vary over time and across countries. However, evidence of underperformance at the one-year term is unclear (the average first year CAR equals -21.59%, but the average first year BHAR of -1.52% is not significantly different from zero). The authors also found a significant three-year underperformance with both measures, the CAR (-87.19%) and the BHAR (-32.61%). Below, we will review a summary of the most pertinent IPO long-term performance research conducted in Europe and other countries.

In France, Leleux (1993) studied the long-term performance of 69 IPOs launched between 1985 and 1991 and found a market-adjusted abnormal return of -11.2%. More recently, Boissin and Sentis (2014) examined 207 French IPOs occurring between 1991 and 2005, reporting a three-year excess return of -28.85% against the size-adjusted benchmark portfolio and -68.1% against its book-to-market adjusted version. However, remarkably, by summarizing existent studies, Loughran et al. (1994) showed that the long-term underperformance is only 4.8% for France. Loughran et al. (1994) comment that the French market is reliable for the long-term oriented investors, as they will not lose the invested money during the offer price period, as was documented by Gounopoulos et al. (2007). Additionally, Chahine (2008) also examined IPO long-term performance for French stocks for the period 1996–1998 and found negative cumulative abnormal returns of -9.94%.

Ljungqvist (1997) combined results for the German market and reported long-term returns of -12.1%. Stehle et al. (2000) conducted research based on 187 German IPOs listed from 1960 to 1992 and observed, at the 5% significance level, a negative average buy-and-hold abnormal return (BHAR) of around -6% after three years of listing. Likewise, in the United Kingdom (UK), Levis (1993) examined the long-term performance of 712 firms issued throughout 1980–1988, and found over a three-year period that British IPOs' underperformance is between 8% and 23%, depending on the market benchmark. The three benchmarks used by Levis were the Financial Times Actuaries (FTA) All Share Index, the Hoare Govett Smaller Companies (HGSC) Index and a specially constructed all-share equally-weighted index. Similarly, Espenlaub et al. (2000) re-examined evidence on long-term returns in the UK over the period 1985–1995 and also found significant negative returns of 8.12% with the same index. In Italy, Arosio et al. (2000) conducted IPO research over 108 Italian IPOs from 1985 to 1997 and found that these firms significantly underperform their benchmarks by 11.53%. In Spain, Alvarez and Gonzalez (2001) found that Spanish IPOs underperformed their benchmark by 37% after five years of listing. In Finland, a study was conducted by Keloharju (1993) over 79 Finnish firms that went public between 1984 and 1989 which documented negative long-term market-adjusted cumulative abnormal returns (CAR) of 26.4%. In addition, Jakobsen and Sorensen (2001) studied 76 Danish IPOs from 1984 to 1992 and concluded that the IPO stocks underperformed the Danish Total Stock Index after five years by almost 30%. In Australia, Lee et al. (1996) observed and calculated the 36-month market-adjusted CAR for Australian IPOs for the period 1976–1989 and recorded a negative CAR of 51%. In Japan, Cai and Wei (1997) reported in a study which covers a 19 year period that three years after the IPO is launched, firms generate an average return of -27%.

IPO long-term performance in the United States (US) has been intensively researched and analyzed by Aggarwal and Rivoli (1990), Ritter (1991), Loughran and Ritter (1995), and many others. Starting with Aggarwal and Rivoli (1990), the authors report that the NASDAQ index adjusted return reached -13.73% at the 250th post listing day for a sample of 1,598 US IPOs during 1977–1987. However, the return calculated by Aggarwal and Rivoli stands for only one year after the issuance date, which is actually not so common: when researchers calculate long-term performance, the focus is usually on three to five year periods. For instance, Ritter (1991) used a sample of 1,526 IPOs that went public in the US in the 1975–84 period and found that in the three years after going public, these firms significantly underperformed a set of comparable firms matched by size and industry. Ritter explained that every dollar invested in a portfolio of IPOs purchased at the closing market price on the first day of trading results in a terminal wealth of $1.3447, while every dollar in the matching firms results in $1.6186, a ratio of only 0.831. Moreover, Loughran and Ritter (1995) found the three-year holding period return on a sample of 4,735 IPOs to be -20%. Subsequently, this aftermarket underperformance was confirmed by Ritter and Welch (2002), who indicated in their study that the long-term returns were negative for an investor buying new titles in the offer price period, and that over three years, the average IPO underperforms the CRSP value-weighted index by 23.4%.

However, Lyn and Zychowicz (2003) conducted research on IPOs in Hungary and Poland and found that they overperform in the long term by about 19.59% and 57.17% respectively, whereas Thomadakis et al. (2007) conducted research on IPOs in Greece and found that they overperform by about 92.93%. On the other hand, Loughran et al. (1994) observed Turkish IPOs and found that they underperform by about 84.5%. Thomadakis et al. (2007) documented that most evidence appears to indicate negative long-run IPO performance in developed markets, but with notable exceptions—Greece and Portugal exhibit overperformance. Also, Brounen and Eichholz (2002) conducted research on IPOs issued in Sweden that are related to the property sector and found an overperformance over a period of three years of 18.89%. According to the authors, this was due to the fact that the Swedish property share market had been in a different phase than other more stable and mature markets.

Moreover, Drobetz et al. (2005) conducted research on Swiss IPOs from 1983 to 2000. To examine the long-term performance of Swiss IPOs, Drobetz et al. computed buy-and-hold abnormal returns, skewness-adjusted wealth ratios, and cumulative abnormal returns using 120 months of secondary market returns. In contrast to previous findings, the authors did not find strong evidence for a distinct IPO effect; rather, they attribute long-term underperformance to the fact that IPO firms tend to be small firms. However, it is worth noting that this is not the first result that has documented that IPO firms tend to be small in size and attribute underperformance to this factor (e.g. Brav and Gompers, 1997; Brav et al., 2000; Gompers and Lerner, 2003). Drobetz et al. explain that this underperformance virtually vanishes when they use a small capitalization index as a benchmark. The authors also found that firms underperform their benchmarks only after a long period, which is after 48 months of trading. Furthermore, in spite of distinct economic implications and statistical properties, their basic results are similar for all performance measures applied.

As a result, though there is a virtual consensus by numerous researchers around the world on the presence of IPO underperformance; however, more recently, other research findings have contradicted the IPO underperformance phenomenon (Hoechle and Schmid, 2009). For example, Brav and Gompers (1997), Brav et al. (2000), Gompers and Lerner (2001 and 2003), and Drobetz et al. (2005) show that IPO firms are strongly tilted towards small and high growth companies, which has been the worst performing investment style over the last several decades. Hence, the latter studies conclude that by controlling for size and the book-to-market ratio, IPO firms do not perform worse than similar non-issuing companies. In addition, they mostly explain that the long-term performance of firms is not attributed to the IPO effect, but rather to the performance calculation and the benchmark used. For instance, Alvarez and Gonzalez (2001) contend that the results of their study show that the existence of long-run underperformance for the Spanish IPOs depends on the methodology used. There exists long-run underperformance when buy-and-hold abnormal returns (BHAR) are used and not when mean calendar-time returns (monthly) are employed. They argue that this result is in line with the evidence presented by Brav et al. (2000) in reference to the fact that the use of BHAR tends to magnify the long-run underperformance of IPOs. A similar conclusion was presented by Chen (2001), who measured IPO long-term performance by using both the capital assets pricing model (CAPM) and the Fama and French (1993) three-factor model. Chen concluded that the underperformance of IPOs is attributed to the misspecification of the measurement model, since each model generates different results.

When calculating and analyzing IPO long-term performance, most researchers exclude first day returns, and their choice for the starting price is almost always the closing price of the first trading day. However, Santos (2010) criticizes this methodology in measuring IPO long-term performance and argues that returns might be biased if we exclude first day returns. The author adds that observing long-term underperformance excluding the first day returns is not enough to claim that firms take advantage of excessive optimism. Santos argues that his paper presents an important contribution because he calculated long-term performance by looking at the buy-and-hold returns including and excluding first day returns. The author clarifies that including the first day return means that the long-term performance is measured from the IPO offering price, while excluding the first day return means that performance is measured from the first day closing price. In our calculation of the long-term performance, we will follow Santos' method by both including and excluding first day returns. Santos argues that the long-term underperformance including the first day return implies that IPO prices are above the fundamental value, which would be consistent with the claim that IPO prices include a sentiment premium. However, according to the author, it is still unclear how abnormally poor post-IPO performance is.

Furthermore, many research papers rooted in different countries consider long-term returns up to three years after the IPO (Aggarwal and Rivoli, 1990; Levis, 1993; Loughran et al., 1994; Ritter, 1991), whereas, in our study, we will examine long-term performance over a substantially longer period, as did Loughran and Ritter (1995) and Espenlaub et al. (2000). Specifically, we will measure IPO performance for the first six months, the first year, and the second, third, fourth, fifth, and sixth years.

Fascinatingly, most IPO performance research papers that consider the short-term and the long-term performance are conducted over all types of firm without differentiating between family and non-family ones (Gounopoulos et al., 2007). Accordingly, related theories and empirical results all over the world about family firms' IPO performance are rare, despite the substantial importance such firms bring to the economy as a whole. Last but not least, the effect of firms' ownership structure and the governance mechanisms in forging IPO performance is also not well documented and thus needs more evidence.

Therefore, we will examine the IPO long-term performance of the 86 French family firms that were chosen in the previous chapter in the context of corporate governance mechanisms and ownership structure pre- and post-IPO date, along with other variables. We will also observe the relationship between the IPO underpricing levels of these firms and their long-term performance. This relationship has been observed and discussed by many authors, who found a negative association between the two performance dimensions (Krigman et al., 1999; Ritter, 1991; Santos, 2010). As a result, our research objective in this chapter is to shed more light on French family firms' IPO long-term performance, considering their proper governance mechanisms and ownership structure pre- and post-IPO date, by applying different models and tests, going from six month to five year periods, taking into account all firms launched between 1994 and 2013 (that is, over a 20 year period), and using different calculation methods. Firstly, we will measure long-term performance; secondly, we will explain the sources and reasons for such performances via different mechanisms and variables, aiming to predict and enhance subsequent performance.

2. LITERATURE REVIEW AND HYPOTHESES

2.1. Sources of IPO Underperformance

First of all, it is crucial to note that whichever methodology is adopted and whatever the length of time during which IPO long-term performance is observed and analyzed, we cannot ignore, isolate or separate the reasons behind and the sources of IPO underpricing from IPO underperformance, especially when reviewing the different theories that lie behind underpricing and their magnitude. It is so because IPO underpricing and underperformance are interrelated: they derive from one and only one event, the initial public offering. Therefore, any theory that tries to explain IPO underpricing has necessarily to connect to IPO long-term performance, in one way or another, as we will observe subsequently. Different authors have elaborated different theories and applied varying models, benchmarks, return calculations, sample sizes and time horizons; however, observing varying and sometimes contradictory explanations for IPO long-term performance is uncommon.

Ritter (1991) contends that possible explanations for the observed underperformance of the 1,526 IPOs that went public in the US during the 1975–84 period include (1) risk mismeasurement, (2) bad luck, or (3) fads and overoptimism. Ritter explains that he used alternative benchmark portfolios to ascertain whether risk mismeasurement could account for the poor long-run performance. Also, to distinguish between the bad luck explanation and the fads and overoptimism explanation, various cross-sectional and time-series patterns are documented. The author adds that the pattern that emerges is that underperformance is concentrated among relatively young growth companies, especially those going public in the high volume years of the 1980s. While this pattern does not rule out bad luck being the cause of the underperformance, it is consistent with a scenario of firms going public when investors are irrationally over-optimistic about the future potential of certain industries which, following Shiller (1990), Ritter refers to as the 'fads' explanation. Subsequently, we will discuss these possible reasons, along with others, to better explain IPO long-term performance.

2.1.1. The Relationship between IPO Underpricing and Underperformance

Aggarwal and Rivoli (1990) worked on a sample of 1,598 common stock IPOs during 1977–1987. The returns to investors who purchased the IPO share at the closing price on day 1 in the aftermarket and held it until day 250 are found to be significantly negative (-13.73%) after adjusting for market movements. The authors argue that the poor long-term IPO performance may be due to fads or speculative bubbles in the early aftermarket. However, they do not present performance measurements over an extended period as did Ritter (1991) and Loughran and Ritter (1995), who worked on three-year and five-year periods respectively. However, Aggarwal and Rivoli (1990) indicate that, in general, there are two possible explanations for IPO short-term abnormal returns which we found extremely beneficial and constructive to review because, as previously mentioned, they will have effects on the long-term performance.

The first explanation and the most common view on IPO short-term abnormal returns is that IPOs are actually underpriced at the initial offering, meaning that firms' shares are sold below, and sometimes way below their intrinsic and true fundamental value upon issuance. However, this could happen either when the issuers and the underwriters purposefully and intentionally underprice the firms' shares, or when they unknowingly commit huge valuation and assessment mistakes during the due diligence phase or are misled by the investors, and such underpricing represents an unpleasant surprise for both. Thus, initial first day abnormal returns will take place, exemplified by a very high end-of-day closing price compared to the offering price.

However, this will actually occur in efficient markets where investors react quickly by driving the stock's price upward to its intrinsic value. As a result and according to this explanation, Aggarwal and Rivoli (1990) believe that IPO short-term abnormal returns are fundamentally economically and financially justifiable and normal occurrences. We will see the effects of this underpricing explanation on the subsequent IPO underperformance. For simplicity, we will refer to this explanation as explanation 1.

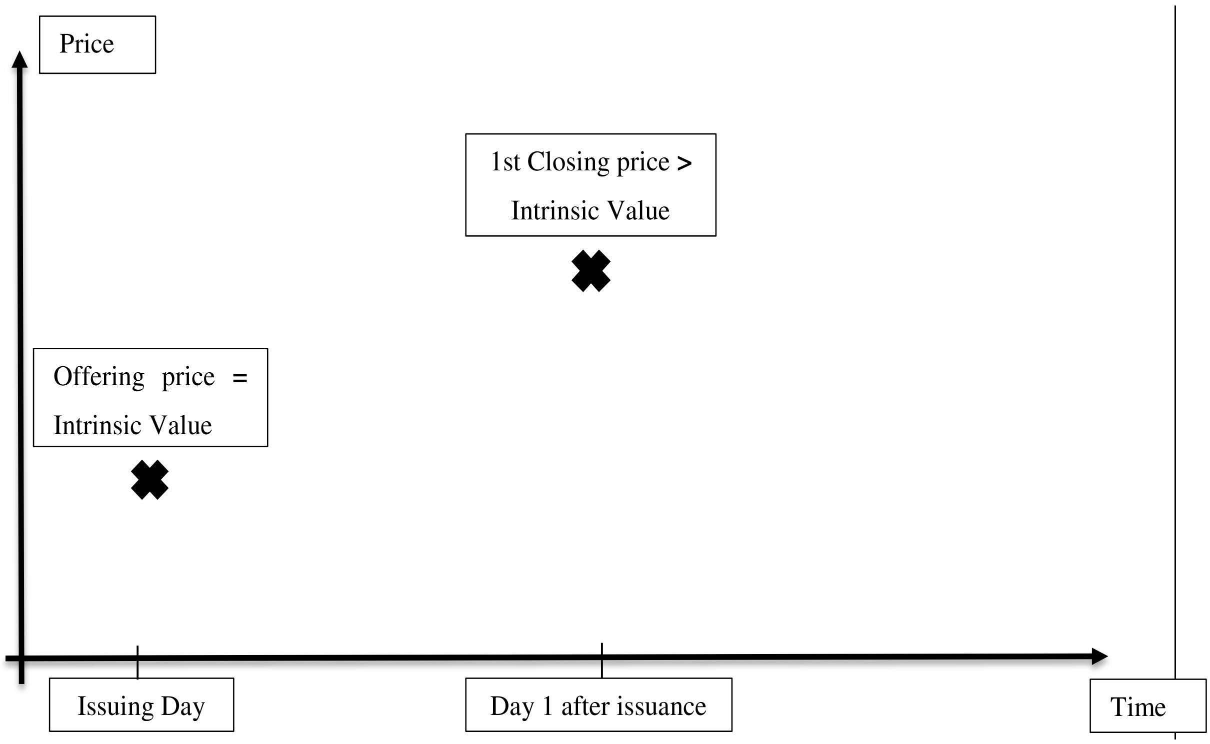
The second possibility for the first day abnormal returns as stated by Aggarwal and Rivoli (1990) is that IPOs are not priced at their intrinsic value in the early aftermarket trading, which means that IPOs are subject to overvaluation or 'fads' in early aftermarket trading. The fads explanation was also mentioned by Shiller (1990) when explaining IPO long-term underperformance, who claimed that firms go public when investors are irrationally over-optimistic about the future potential of certain industries. Hence, according to Aggarwal and Rivoli (1990), IPOs were originally correctly valued and shares were issued at or very close to their intrinsic value, and here no underpricing actually occurs. However, due to market inefficiency, and because empirically most IPOs have generated high first day abnormal returns, investors will speculate on the IPO, creating huge demand for it, driving the share price above its offering price—that is, over its intrinsic value—backed by strong but false belief that the share is underpriced, and thus generating high first day abnormal returns.

In a similar vein, Ritter (1991) presented evidence in his paper that in most IPOs, the offering price is not too low but the first aftermarket price is too high. This conclusion affirms the second explanation for the high first day abnormal returns. However, Ritter adds that if issuers and their investment bankers set the offering price in a manner that reflects the firm's underlying fundamental value, it is still a mystery as to why the first day closing price reaches extremely high levels to generate such high initial returns and such low long-term returns. In this case, IPO short-term abnormal returns are unjustifiable in all aspects and are fundamentally and economically rejected. We will later refer to this explanation as explanation 2.

We will plot explanations 1 and 2 in Figure 12 and in Figure 13 to visualize them and we will compare them to the subsequent figures when including long-term performance.

Figure 12: Explanation 1 for IPO underpricing.

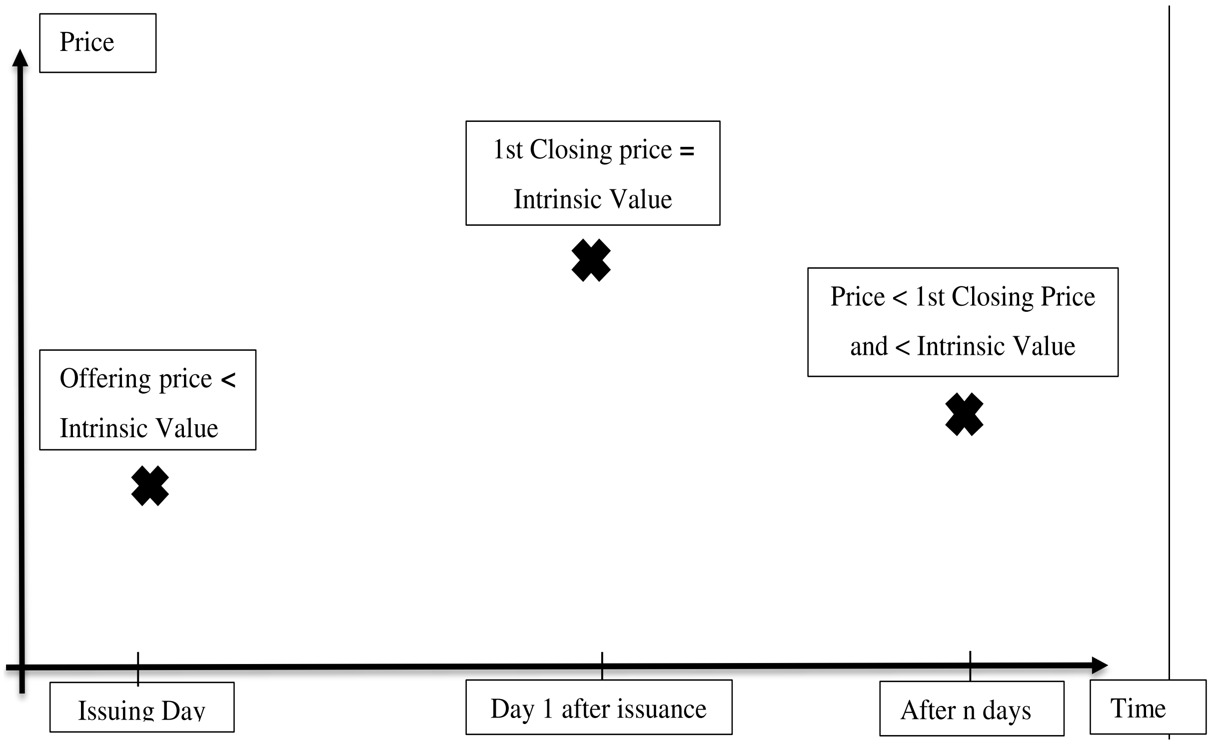
Figure 13: Explanation 2 for IPO underpricing.



Thus, according to Aggarwal and Rivoli's explanations, whether the price is offered at discount (explanation 1) or at intrinsic value (explanation 2), the end-of-day closing price is expected to be higher than the offering price, creating this short-term abnormal return which is known as IPO underpricing for explanation 1 or IPO short-term abnormal return for explanation 2. Accordingly, whenever IPO long-term performance is calculated based upon this 'very high' end-of-day closing price (i.e. very high as compared to the offering price), and compared to the market price after a certain number of days or months, then weaker long-term performance will undoubtedly appear, alternatively known as IPO underperformance.

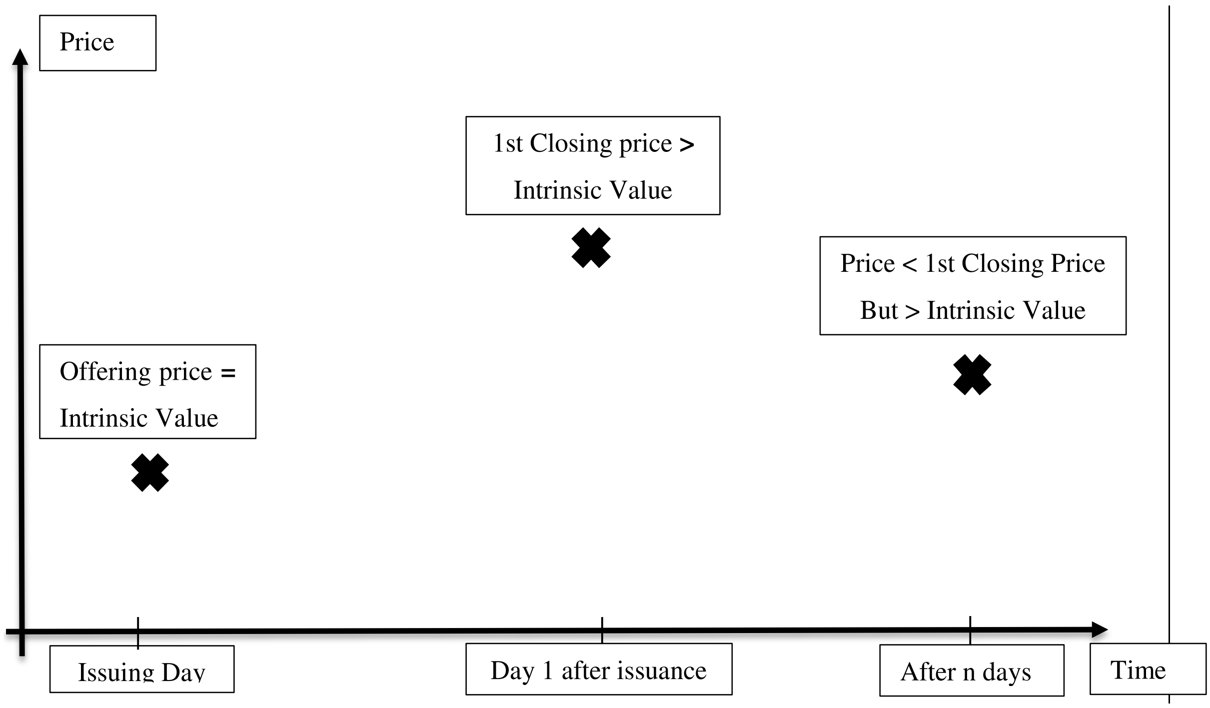
According to explanation 1, the closing price on the first day of issuance is equal to or very close to the share's intrinsic value because markets are believed to be efficient and the IPO share was believed to be issued below its intrinsic value (i.e. underpriced). However, if the share price after n days becomes lower than the first day closing price, which is usually the reference price for most IPO long-term performance calculations, it means that the share price is also lower than the original intrinsic value. This means that, with time, the shares lose value and we can deduce that shareholders' value is being deteriorated and a real underperformance occurs, as is shown in Figure 14.

Figure 14: Explanation 1 with long-term performance.



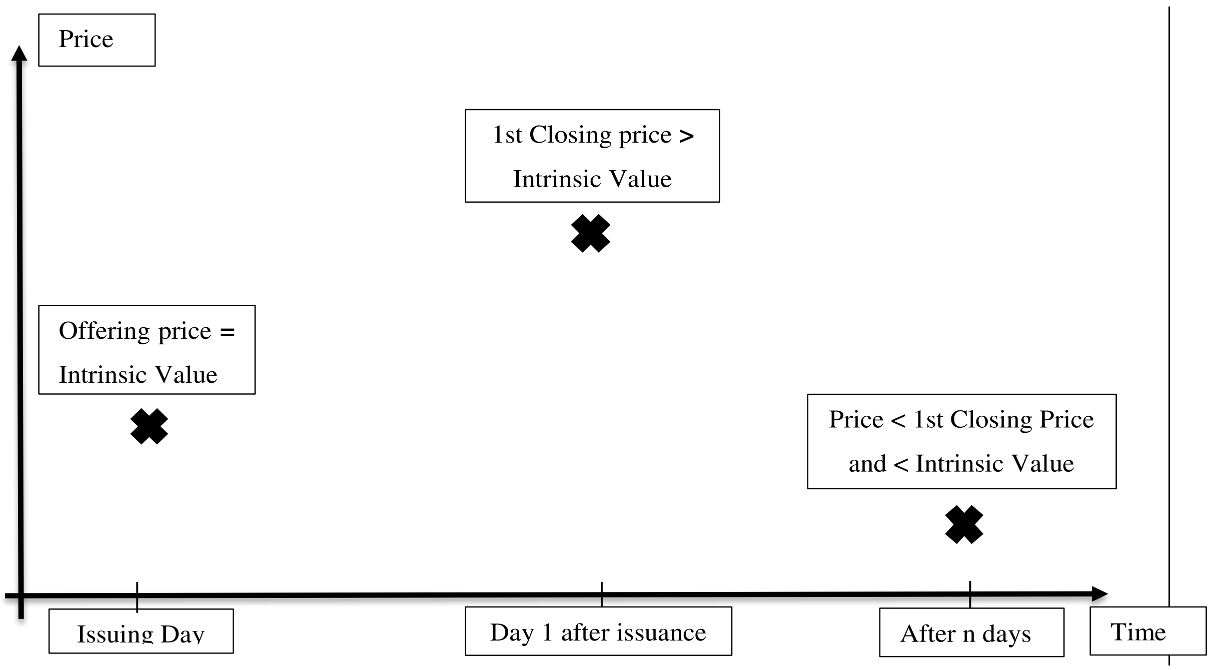
According to explanation 2, the closing price on the first day of issuance is much higher than the shares' intrinsic value due to speculation and investors' overoptimism. However, if the share price after n days becomes lower than the first day closing price, but still higher than the offering price, that is the original intrinsic value; this means that the share gains value throughout time and no underperformance occurs, as shown in Figure 15.

Figure 15: Explanation 2 with long-term performance (1).



However, if the share price after n days becomes lower than the first day closing price and the offering price, which is the intrinsic value, then the share truly loses value over time, and a real, yet unjustifiable underperformance occurs, as shown in Figure 16.

Figure 16: Explanation 2 with long-term performance (2).



However, Aggarwal and Rivoli (1990) assert that returns to investors who purchase the share at the initial offering price (and not at the closing price) and hold it for 250 days are also negative, as in explanation 2. However, they mention neither to what extent they are negative, nor the statistical significance levels of their results. Thus, by referring to Figure 16, we can conclude that such underperformance is real and unjustifiable in the same time.

Lastly, Aggarwal and Rivoli (1990) conclude that their results have important implications for most finance professionals and decision makers. As for investment bankers, the results provide a defense against the charge of systematic underpricing. This means that underwriters should not be liable toward issuers whenever very high returns are generated on the first day of IPOs, because according to the second explanation, underwriters could have done their work perfectly and shares could be correctly priced, but due to market speculations, rumors, overoptimism and investors' greed, and due to market inefficiencies and others, abnormal returns simply occur. As for financial managers and issuers, the results suggest that the abnormal returns accruing to initial investors should not always be interpreted as 'money left on the table' and as an indirect or opportunity cost because differentiation should be made between a true underpricing and an over-optimist market that overprices the issue after launching. Therefore, issuers cannot sue the underwriters and make them liable for what they believe is money left on the table, which is their opportunity cost of not raising extra proceeds by setting a higher offering price. Thus, IPO short-term abnormal returns are quite different from IPO underpricing, even though the terms are used interchangeably by professionals in the field. As for investors, the results show that if they have the chance to subscribe and get some allocations in IPO shares at an offering price that is actually below the intrinsic value, they can make money out of the IPO by selling the shares at the first closing day or just a few days later. However, if investors subscribe and get some allocations in IPO shares at an offering price that is equal to the intrinsic value, this presents a higher risk of achieving first day abnormal returns and, even if they do, it would not be fundamental but speculative, and probably the same losses will occur in the long term if no dramatic change occurs in the share price by driving value upward.

IPOs may, however, present profitable short-selling opportunities in the long term, too. This is a very interesting conclusion for many forthcoming investors who are drawn towards very high returns by investing in IPOs, but, of course, they have to consider carefully the inherited risks which are most of the time substantial and highly unanticipated.

However, Purnanandam and Swaminathan (2004) found IPOs to be overvalued at the offering price. Correspondingly, they argue that the poor long-term performance of IPOs is mainly due to the fact that on average the high growth expectations implicit in the initial valuation fail to materialize. Accordingly, two important notes are worth observing here.

Firstly, authors document that the offer price is already overvalued, meaning that firms issue their shares above their fundamental value and not below it, which is commonly believed by many researchers and is elaborated in the explanations of Aggarwal and Rivoli (1990). Thus, no underpricing occurs according to Purnanandam and Swaminathan (2004), but the opposite. Yet if at the time of issuance the offering price is already above the intrinsic value, then what drives IPO initial abnormal returns is absolutely unjustifiable. The possible reasons for such a phenomenon could be, among others, the investors' overoptimism, speculative rumors and inflated demands by blockholders, the negative influence of underwriters, value manipulation, false and unrealistic promises about the future free cash flows, revenues and earnings the firm expects to generate over the coming periods, or simply the very positive and enthusiastic sentiment in the overall market, without relying on strong fundamentals and sustainable sound economic indicators. As a result, IPO long-term performance (that is calculated based upon the first closing day, which is way above the fundamental value) would be negative since, with time, the share price will move close to its intrinsic value—that is originally too low—compared to the first day closing price.

The second note to observe is that firms usually fail to realize the expected high growth figures, free cash flows, revenues and all the earnings they have promised during the IPO phase. This usually occurs when expectations are set so high that they are almost impossible to achieve or to sustain for a long period. Additionally, many factors could lead to such underperformance, such as rivals' fierce and unforeseen competition, market turndown, industry challenges, political pressure, severe legal and environmental regulations, fast technological changes, worldwide economy slowdown, human resource issues, supply chain and raw materials deficiencies, management financial and strategic mistakes, etc. Maybe one or more of these factors was not properly taken into consideration upon valuing the firm's share before issuance, or maybe the newly listed firm's management is not yet ready to go public, or it lacks the experience and maturity to confront the newer and tougher challenges that public firms usually face. All these factors would definitely make materialization of high and sustainable long-term performance relative to firms' benchmarks difficult, especially given that newly listed firms are under much more pressure from investors, analysts, and regulators than an older firm.

The seminal article by Ibbotson (1975) reported a negative relationship between initial returns on the IPO and long-term share price performance. That was an important finding in IPO research at that time which opened the path for subsequent researchers to study the relationship between IPO underpricing and underperformance. However, they were not so numerous in studying this relationship as Ritter (1991) and Santos (2010) documented. Yet, importantly, Ibbotson found that although initial returns were not erased in the aftermarket, average returns for one month holding periods were positive in the first year after the IPO, negative during the following three years, and again positive in the fifth year (Espenlaub et al., 2000).

As a result, Santos (2010) clearly asserts that although extensive research has been done to try to explain either IPO underpricing or underperformance, the two issues are usually not jointly analyzed, as most papers address one issue without taking the existence of the other into account. Notable exceptions are Ritter (1991), Krigman et al. (1999), and Ljungqvist, Nanda and Singh (2006). Santos (2010) observed US IPOs from 1973 to 2008 with the aim of examining the connection between the two performances. Thus, the author analyzed whether firm-specific underpricing or average underpricing in the market, defined as the average underpricing for all recent offerings, determines the degree of subsequent long-term underperformance. The author's main finding was the existence of a close relationship between periods of high/low first day returns in the market and subsequent long-term performance. Accordingly, investors can have some insights into the firm's expected long-term performance by observing the average IPO underpricing of the market which indicates the average investors' perception and sentiment towards IPOs at the time of issuance of the firm. The author explains that in low-underpricing periods or at the beginning of high-underpricing periods, comparing firms going public with public firms matched on book value, market value, industry and operating performance, the five-year wealth relatives are not significantly different from one another. Here it is worth remembering that a wealth relative ratio above one means that the firm outperformed its benchmark, which is usually the market return, and a ratio below one means that the firm underperformed its benchmark. Therefore these firms perform equally to their benchmarks.

Conversely, wealth relatives for firms going public in the late stages of high-underpricing periods are well below one, which means that these firms underperformed their benchmarks. Additionally, Santos explains that this implies that the long-run underperformance of IPO firms documented by Ritter (1991) and Loughran and Ritter (1995), among others, is caused by firms going public in the late stages of high-underpricing periods. Moreover, assuming that the long-run price proxies the fundamental value, the author finds that firms going public in the late stages of high-underpricing periods underperform even relative to their offer price. This means that the long-term market price becomes lower than the offering price. This result is difficult to reconcile with the view that IPO underpricing is a discount to fundamental value. Instead, it suggests that IPO prices, in these late stages of high-underpricing periods, include a premium over fundamental value.

The author also states that two earlier studies have observed and analyzed the association between firm-particular underpricing and long-term underperformance. Ritter (1991) documented that firm-specific underpricing and long-term performance are negatively correlated. Using a sample of IPOs for the period 1975–1984, Ritter compared aftermarket returns for quintiles of industry adjusted initial returns. The author shows that firms with high underpricing have the worst aftermarket performance. Krigman et al. (1999) also look at the relationship between firm-specific underpricing and long-term underperformance. They partition a sample of IPOs for the period 1988–1995 according to first day returns and show that only the most extreme first day returns predict future performance. They find that IPOs with underpricing above 70% and IPOs with negative first day return both underperform in the long term.

Santos (2010) asserts that the empirical results presented in his paper are in line with the theoretical work of Ljungqvist, Nanda and Singh (2006) who developed a model of IPO pricing that connects underpricing and long-term underperformance, which is different from most of the IPO literature that usually addresses each issue separately. Santos contends that a major assumption of their model is that, on occasion, some investors are 'irrationally exuberant' about IPOs. In a setting where shorting IPO shares is difficult or too costly, the presence of sentiment investors implies that some periods should display long-term underperformance excluding the first day return. Moreover, at times where these sentiment investors are likely to show up, firms raise IPO prices in order to exploit them, according to Santos. This is consistent with the author's finding that in certain periods we observe long-term underperformance even relative to the IPO price. Ljungqvist, Nanda and Singh's (2006) model also tries to explain why, although firms raise IPO prices above their fundamental value, they do not fully exploit sentiment investors. In their model, high underpricing is compensation given by firms to intermediaries for bearing the risk of carrying overvalued IPO shares in inventory.

It is crucial to recall that in the second chapter, we observed and calculated the IPO underpricing of 86 French family firms. Interestingly, the average underpricing was only 1.92%, which was much lower than almost all underpricing calculated for French and European firms. Moreover, the median of underpricing of these French family firms was 0.00%, and the lower and upper quartiles were equal to -0.61% and 1.11% respectively. We attempted to relate such performance to the presence of family firms' owners who, after issuance, still play a substantial part in their firms, and therefore will not agree to deeply discount their shares in the market for the benefit of the public shareholders. Yet on average, family firms still witnessed positive first day abnormal returns which is not dissimilar to most firms' performance. As a result, we will assume that family firms will not behave much differently than other firms in the long term, and the association that Aggarwal and Rivoli (1990) discussed between the underpricing and underperformance will also be tested. Therefore, the hypotheses that will be tested concerning the IPO long-term performance, the relationship between underpricing and underperformance, and the robustness of underperformance measurement will be the following:

Hypothesis 1: French family IPO firms will underperform in the long term.

Hypothesis 2: French family firms' IPO long-term underperformance will vanish when using the issuing price instead of the first day closing price in the return calculation.

Hypothesis 3: For the French family firms, there is a negative relationship between IPO underpricing and underperformance.

2.1.2. The Relationship between the Hot Issue Market Phenomenon and Underperformance

One of the most important explanatory variables for the IPO long-term performance that has been widely argued, tested and ascertained by many researchers over many decades is the 'hot issue' market phenomenon. Its importance lies in the fact that it deeply affects not only firms' short-term but also their long-term performance. However, we will not discuss it in isolation as Yi (2003) did, but we will observe its effect on long-term performance as we did in the second chapter when we observed its effects on underpricing due to the relatively small sample size and the large time period we are working on, which comprises only 86 French family IPOs spread over 20 years.

Yi (2003) argues that over the past 30 to 40 years, numerous researchers have observed the recurring pattern of cycles in both the volume and the average initial returns of IPOs, which is usually referred to as the hot issue market phenomenon. Hot issue markets, which are periods with unusually high initial returns, are found to be associated with increased volume of IPOs. On the other hand, 'cold issue' markets, with relatively low initial returns, tend to occur toward the end of high IPO volume periods.

Ritter (1991) observed and analyzed the IPO long-term performance of 1,526 firms issued during 1975–1984 in the US market and argues that many firms go public near the peak of industry specific fads; however, he argues that alternative interpretations cannot be discounted since the sample involves IPOs going public in only a ten year period. Ritter confirmed the persistence of the pattern for the 1960–1982 period. He found an unusually high 48.4% average initial return during the hot issue market in 1980–1981, while he reported a relatively low figure of 16.3% for the cold issue market in the remaining 1977–1982 period. In summary, Ritter argues that the negative long-term performance of IPOs can be attributed to fads in the IPO market.

Ibbotson, Sindelar and Ritter (1988) extended the sample period to 1960–1987 and reconfirmed the phenomenon. According to this theory, firms intend to time their IPOs to benefit from the presence of a bullish stock market, and an overoptimism of investors' sentiment and expectations about the firm's future performance. During such periods, investors will be willing to pay higher share prices more than any other time, and by this means firms can maximize their proceeds. However, as this behavior results in strong stock demand, a lot of poorly performing or immature companies take advantage of the situation and decide to go public by selling their shares through IPOs. Accordingly, both the well and the badly performing firms will gain the advantage of the prevailing market conditions along with the high investors' expectations and optimistic sentiment to launch their stocks to the public via IPOs. Thus, interestingly, companies carrying out an IPO in hot issue markets often underperform other IPOs significantly in subsequent years. In particular, this occurs in the case of young growth firms (Ritter, 1991).

Similarly, Aggarwal and Rivoli (1990) argue that the poor IPO long-term performance may be due to fads or speculative bubbles in the early aftermarket. The fads or speculative bubbles can be explained in that, when firms are overvalued upon their listing and after a while this overoptimism vanishes, share prices tend to decrease, resulting in noticeable losses. This is also referred to the fads theory.

Ritter (1991) has further advanced the fads theory and shown that IPO firms with a high risk profile (i.e. younger, smaller, and active in certain sectors) are sooner subject to shareholder sentiment—the so-called fads of the stock market. Over time, investors will be better able to assess the firms' value and risk, and therefore will require a higher rate of return on their investments; this results in discounting the firm's shares, leading to underperformance.

Equally, Loughran and Ritter (1995) and Rajan and Servaes (1997) found evidence that underperformance is the result of the utilization of 'windows of opportunity' by the issuer and the lead manager. Companies go public at the moment of relative overvaluation and when investors' sentiment about the future is highly optimistic and positive (i.e. a high market-to-book ratio and high price-to-earnings ratio), and when investors and security analysts tend to be systematically over-optimistic about earnings potential and long-term growth predictions of IPOs. Conversely, the authors have documented that IPOs have better future performance when analysts forecast lower growth prospects. This was documented in Thomadakis et al. (2007), who analyzed long-term Greek IPO performance. Therefore, when there is a 'cold issue' market phenomenon, underwriters are not pressured to launch a big number of firms in a small period of time to compete with the market, are better able to conduct deeper analysis over the firm's future profitability, can perform better judgment over risk factors, and will precisely select their investors. So, during such times, investors are not driven by optimism sentiment, but rather by fundamentals and economic indicators. Therefore when expected cash flows and risks are assumed during 'cold issue' markets, valuations will not be as inflated as during 'hot issue' markets simply because expectations are more rational. This can explain why IPO firms issued in 'cold issue' markets on average outperform IPO firms issued in 'hot issue' markets.

Ritter (1991) also added that, for issuers, it appears that the concentrations in volume in certain years are associated with taking advantage of a 'window of opportunity'. Kim and Stulz (1988) present evidence that issuers take advantage of differences in borrowing costs that periodically arise between the domestic and Eurobond markets. Lee, Shleifer and Thaler (1991) present evidence that closed-end funds are issued more frequently in periods when discounts are unusually small. Thus, evidence exists in several markets that issuers successfully time their offers to lower their cost of capital and/or to maximize proceeds.

Thus, according to this theory, if we assume that firms decisively time their offering to coincide with a fads period and benefit from the available 'window of opportunity', they can overvalue their own shares, raise the needed funds, and benefit themselves, their underwriters and some investors in a very short period of time. However, afterward, firms will be challenged to keep their operations at maximum efficiency, driving revenues to optimal levels, keeping costs to minimum, and generating the highest earnings possible. But the true challenge is to sustain such operating conditions along with an efficient cash flow and debt management over a long period. In brief, they should keep investors' expectations as high as they were upon issuance, therefore leading share value to new, higher levels. However, if this can be internally managed, there is a need also to consider the external factors that affect the firm's operation, profitability and survival—the overall economic fluctuations, the capital market trends and performance, the competitor's pressure and prompt intervention, the ever changing customer's preferences and behaviors, the government monetary and fiscal policies, the technological evolutions, the environmental campaigns and employees' unions, and many others that have a deep and powerful effect on the firm's operation and profitability. That is why the reality of sustaining the very high performance of firms pre-IPO date is much more difficult than this theoretical progression and is why only a few firms can sustain the good performance: otherwise, we would never have witnessed failing companies and investors' losses in billions. Thus, even though all types of firms with different risks, sizes and performances can launch their shares to the public through IPOs and can benefit from the 'windows of opportunity' and benefit from the very high investors' sentiment and positive expectations about future cash flows and performance, very few will actually succeed in keeping their good shape, always beating their benchmarks and satisfying their investors over a long period.

For instance, Lakonishok, Shleifer and Vishny (1994) show that many 'value' strategies also seem to exhibit abnormally high returns. The authors formed portfolios based on earnings-to-price ratios, sales growth, earnings growth, or cash flow-to-price, and found that 'value' stocks outperform 'glamor' stocks without appreciably affecting risk. In this regard, Warren Buffett, who is known as the most successful investor in the twentieth century, an investment guru and one of the richest and most respected businessmen in the world, said: 'It's far better to buy a wonderful company at a fair price than a fair company at a wonderful price.' Similarly, La Porta et al. (1998) show that selling stocks with high forecasted earnings growth and buying low projected earnings growth stocks produces excess returns. This implies that investors are too optimistic about stocks that have had good performance in the recent past, and are too pessimistic about stocks that have performed poorly, leading to surprising performance, which is bad performance for the first category and good performance for the second.

Buffett also said: 'Only when the tide goes out do you discover who's been swimming naked'. This clearly describes what firms and investors examine while investing in general and in IPOs in particular during a fad period and during high IPO volume in the market. Therefore, during the IPO bubble, the rallying among underwriters who are pressured by the market, issuers and shareholders to launch the maximum possible number of IPOs and generate higher revenues, also exacerbated the valuations. Investors are enthusiastic: they want to capture an opportunity to secure the maximum allocations and conquer the market by very high returns. Issuers too are keen to benefit from the IPO wave, trying to get maximum benefit from it. Therefore, during such times, it is likely to be more difficult to know which firm is really worth paying for, to have proper value assessments, accurate estimations of future profitability and risks, and also much more difficult to think critically, above all emotional behaviors driven by the market. However, with time, everything will go back to normal when the IPO wave ends. Investors' overoptimism will calm down and they will be better able to assess and differentiate the 'good' from the 'bad' in terms of firms' performance. As a result, long-term underperformance will appear if more poorly performing firms have taken advantage of the hot issue phenomenon when they issued their shares than those performing well. However, we will almost always find some well performing firms that sustain their performance over a long period.

Similarly, Jenkinson and Ljungqvist (2001) add that investors are only periodically over-optimistic about the prospects of firms entering the market. Thus, IPOs would benefit if issuers could time their flotation to coincide with periods of high expectation among investors, which do not last forever. Conversely, firms can still time their IPOs to coincide with such periods, but never abuse the overoptimism sentiment because, with time, investors will be better able to differentiate the 'good' from the 'bad' in firms' performance, and therefore, they will remunerate or penalize such firms. As a result, firms can issue their shares through IPOs and also benefit from the positive and over-optimistic sentiment in the market, without violating the simple valuation techniques, relying on fair, justifiable, rational, acceptable, prudent, disciplined and clear assumptions. Such behavior will not only be compensated in the short term, but also in the long term. This is because if firms succeed in applying this logic, they will be better able to re-issue additional shares in the future through seasoned equity offerings (SEO) than other firms.

Kooli and Suret (2001) observed and analyzed 445 Canadian IPOs from 1991 to 1998 and found that investors buying IPOs immediately after listing and holding them for five years would make a loss of 24.66% which, according to the authors, is attributed to the hot issue phenomenon. It is clear that the hot issue market phenomenon is not limited to certain markets or countries, but its effects can apply to any IPO markets and timing.

Over again, Loughran, Ritter and Rydqvist (1994) claim that firms time their IPOs to coincide with periods of excessive optimism, consistent with the findings in Lee, Shleifer, and Thaler (1991) that more companies go public when investor sentiment is high. Therefore, firms seek to issue their shares during such moments to ultimately benefit from the offering and to generate the highest possible proceeds; also, investors and underwriters tend to forecast higher revenues for these firms since the overall market is doing well, leading to higher expected cash flows and thus higher valuations. So, when markets are bullish, more IPOs tend to be observed, according to the authors. However, after going public, firms will be pressured to maintain high performance levels and meet investors' expectations as closely as possible, otherwise, they will be considered guilty of window dressing and show more underperformance in the aftermarket (Teoh et al., 1998). Similarly, if the company is not able to fulfill expectations after going public, investors will reevaluate their positions and punish the firm, which will cause the stock price to fall.

Santos (2010) argues that the most common explanations for long-run underperformance rely on some type of overconfidence (Bernardo and Welch, 2001; Daniel et al., 1998; Teoh et al., 1998). The author summarizes that prior literature on underpricing and long-term underperformance suggests that firms go public at a discount to the fundamental value, which leads to positive first day returns. Thus, investors overshoot fundamental value on the first day of trading, and in the long term, prices revert to their original fundamental value or to what Santos describes as the correct level. Santos provides evidence that investor sentiment is stronger in high underpricing periods than in low underpricing periods.

First, Santos found that firms going public in high underpricing periods experience a higher number of stock trades and higher turnover in their first day of trading. This is consistent with the idea that over-optimistic retail investors are driving the stock price above fundamental value on the first day of trading. Accordingly, during periods of high underpricing, investors get much more enthusiastic about a firm's future performance, and will be apt to pay a premium to acquire the firm's shares.

Second, Santos found that three widely-used measures of sentiment—the dividend premium, the percentage of equity issues in total issues, and the University of Michigan Consumer Confidence Index—indicate that investor sentiment is stronger in high underpricing periods. Hence, this may explain the inflated and sometimes over-optimistic expectations about the firm's future cash flows and thus about its shares' value. Also, when investor sentiment is stronger, it would be harder to employ proper critical thinking, or to be rational and use fundamental and analytical judgment in valuing the investments.

Third, Santos showed that investors react more positively to news in periods of high underpricing. Estimating investors' response to earnings announcements, the author found that cumulative abnormal returns on the day of the announcement and the next day are on average fifty basis points higher in periods of high underpricing in the IPO market. This effect is more pronounced for extreme positive news. Here we can also observe the response time and promptness to react upon news announcements, which is also higher during high underpricing.

Santos adds that these results are consistent with a story where some firms go public to take advantage of overvalued equity due to the presence of overly-optimistic investors. In periods of high underpricing in the market, when IPO prices seem to include a premium over fundamental value, firms with and without investment opportunities have an incentive to go public. In low underpricing periods, when IPO prices do not include a premium over fundamental value, only firms that need financing for positive net present value (NPV) projects have an incentive to go public. Hence, post-IPO performance is different for firms going public in high and low underpricing periods. Accordingly, for investors wishing to invest in IPOs, it is suggested that they do not do so during periods of high underpricing in the market, for fear of getting trapped by the over-valuation and the greed of some firms deciding to go public to expropriate shareholders' wealth and not to finance positive NPV projects and grow the firm's value.

Similarly, Miller (1977) attributes IPO underperformance to the divergence of investor opinions and short sale constraints. Miller implies that in early stock-offering periods, stock prices are generally higher, with a greater differentiation of opinions for expected future returns. However, in the long-term, prices decrease as the most optimistic investors lower their appraisals. An investigation into Finnish IPOs conducted by Keloharju (1993) recorded -26.4% long-term cumulated market-adjusted returns for 79 issues that went public between 1984 and 1989. Likewise, Keloharju affirmed the validity of the winner's curse that was developed by Rock (1986). The author claimed the presence of overoptimism by IPO investors, who later on grew disappointed when they discovered the IPO firm's prospects and lower expectations, generating negative return over the long-term.

Schultz (2003) offers a rational explanation for the clustering of IPOs at market peaks and subsequent underperformance, which he calls pseudo market timing. It arises if firms' propensity to go public increases with market price levels. Trauten et al. (2007) found that the IPO activity in Germany can largely be explained by price levels. They apply simulations in order to test the extent to which pseudo market timing can account for the economically significant underperformance of IPOs in Germany. Trauten et al. (2007) found that pseudo market timing can partly explain the performance of IPO investment strategies between 1985 and 2002. Their results indicate that investing in a portfolio of recent IPOs is preferable to investing separately in each firm going public. According to what we have discussed so far, we will attempt to test the following hypothesis related to IPO timing and long-term performance.

Hypothesis 4: French family firms' IPO long-term performance is positively associated with the timing of IPOs during fad periods.

2.1.3. The Relationship between IPO Prospectus Data and Underperformance

Alvarez and Gonzalez (2001) observed 56 Spanish IPOs listed during 1987–1997 and analyzed the influence of the prospectus information on IPO long-term performance. The authors assert that less evidence exists regarding the analysis of characteristics that enable the identification of good or bad long-term performance of IPOs. Consequently, further research should be done into such characteristics to better explain and identify which ones lead to good or bad performance. Bhabra and Pettway (2003) document that underperformance is most severe for the smaller and younger firms. They also contend that prospectus information is more useful to predict survival/failure compared to subsequent equity offerings or acquisitions. However, they mention that despite the widely accepted view that information contained in a prospectus is valuable in assessing the risk of the offering, very little attention has been devoted in finance literature to studying the usefulness of the information contained in the prospectus vis-à-vis the subsequent performance of the issuer.

Concerning the survival and failure of IPO firms, Hensler, Rutherford and Springer (1997) and Jain and Kini (2000) examine the survival of IPOs in the aftermarket using information from the offering prospectus. However, the studies do not track the firms for the same length of time after the IPO. In the Hensler, Rutherford and Springer study, IPOs from 1975 through 1984 are used and survival is determined only as of the end of 1992. In our opinion, some firms may have survived till 1992 and failed thereafter, or some other firms may have been created in 1975 and survived till 1992, having a total life of 18 years; still other firms may have been created in 1984 and survived till 1992, having a total life of only nine years. Likewise, in the Jain and Kini study, IPOs from 1977 through 1990 are used and survival is determined only as of the end of 1996. The same inference applies to Jain and Kini regarding the life of survival and the possibility of failure after the mentioned period. However, Platt (1995) also uses prospectus data to predict the survival of an IPO firm beyond the first three years of its public life and finds that predicting bankruptcies is difficult at best. But several researchers in accounting literature have examined the value of prospectus information in pricing IPOs in relation to the long-term performance of the firm, such as Clarkson et al. (1992), Firth and Smith (1992), Keasey and McGuinness (1991), Kim et al. (1994), and Mak (1994). Additionally, Hensler, Rutherford and Springer (1997) find that the issuer's size, age at the time of the IPO, level of underpricing, insider ownership, industry membership, and the level of IPO activity in the market are significantly positively related to the probability of survival, whereas the number of risk factors listed in the offering prospectus is significantly negatively related to the likelihood of survival.

Nevertheless, Bhabra and Pettway (2003) attempted to determine the usefulness of the IPO prospectus data to a potential investor, not only to predict post-IPO bankruptcy or the IPO value on the offering date, but to predict the IPO long-term performance of the firm by applying different models and over different horizons, to determine how the value of the available information in the prospectus changes over time. The authors found that pre-IPO operating earnings, the relative size of the offering, and the level of underpricing are significantly related to the one year abnormal returns; but they add that there is no evidence to suggest that prospectus information is related to long-term performance over three years. Moreover, the authors add that their results suggest that prospectus information could prove useful to a potential investor at least in the short term, one year after the IPO, in designing investment strategies with IPOs. But firm performance prior to the IPO offers little or no indication of subsequent long-run performance, suggesting that investors should be cautious when using past results in their investment decisions, especially the ones indicated in the IPO prospectus.

2.1.4. The Relationship between Venture Capital-backed IPO and Underperformance

Jain and Kini (2000) show that venture capital backed IPOs are more likely to survive compared to others because they attract prestigious investment bankers, influence managers in strategic resource allocation decisions, influence institutional investors, and attract more analysts in following the firm.

Usually, before investing in any firm, venture capitalists analyze in depth the macro-economic environment and the industry, assessing the firm's growth potential, the risk factors, and all possible pitfalls. Also, venture capitalists invest mostly in fields in which they are specialized and experienced. Such experience is extremely valuable in all aspects: it is fundamentally required in order to have better monitoring and assessment of any potential opportunities, for discovering and growing the firm's competitive advantages and for conducting industry-related risk analysis and management. They also get seats on the firms' boards and they share in building and implementing a firm's strategic decisions, closely monitoring the firm's operating, investing and financing decisions and activities, and thus the firm's cash flows, which are the firm's source of value. Thus, venture capitalists employ critical disciplinary behaviors over the firm's CEO and management actions and performance. Finally, a very important note to consider about venture capitalists is that they mostly have a longer investment horizon, much more rigid and less sensitive to short-term downturns and fluctuations than any other investor who might have shorter insight and less patience.

As a result, when IPOs are backed by venture capitalists, investors feel their investments are safer and adequately monitored from inside the firm by high profile investors who have high interest in growing the firm's value. Similarly, Brav and Gompers (1997) show that underperformance is concentrated in small non-venture capital backed IPOs. They investigate the long-run underperformance of IPO firms in a sample of 934 venture backed IPOs from 1972–1992 and 3,407 non-venture backed IPOs from 1975–1992. Their findings show that venture backed IPOs outperform non-venture backed IPOs using equal weighted returns. Value weighting significantly reduces performance differences and substantially reduces underperformance for non-venture backed IPOs. In tests using several comparable benchmarks and the Fama-French (1993) three factor asset pricing model, venture backed companies do not significantly underperform, while the smallest non-venture backed firms do.

Underperformance, however, is not an IPO effect. Similar sized book-to-market firms that have not issued equity perform as poorly as IPOs. It is worth noting that small sized firms, according to Brav and Gompers (1997), are firms with market capitalization of less than $50 million, whereas Ritter et al.

(2012) define small firms in their European study as firms that generate less than €30 million in pre-IPO annual sales, using 2011 purchasing power.

Van Frederikslust and Van der Geest (2001) investigated both the initial returns and long-run performance of IPOs on the Amsterdam Stock Exchange using a sample of 38 private equity backed IPOs and 68 non-private equity backed IPOs in the period 1985–1998. They found that private equity backed firms outperform non-private equity backed firms. The evidence suggests that private equity backed IPOs do not significantly underperform over a three year period, while non-private equity backed IPOs do. The authors mention that almost all explanations of the influence of private equity funds on the performance of the IPO firm in the short term are derived from the certification hypothesis, which states that the involvement of a private equity fund at a stock introduction has a certification effect concerning the quality of the introduction fund, leading to less underpricing. It is argued, however, that this certification has economic value only if there is a discrepancy between the perceptions of insiders and outsiders of the value of the company. However, as most researchers agree, this discrepancy strongly exists in family firms between the controlling majority—family firms' owners—and the non-controlling minority—dispersed shareholders. Here we see the benefits of successful and reputable private equity funds, which have access to a large investor market and are at the same time attractive to investors in companies that aspire to go public in the future. Thus, it is strongly believed that private equity funds are unlikely to be willing to jeopardize their relationships for a one-time monetary benefit of a false certification. Van Frederikslust and Van der Geest (2001) argue that the presence of private equity and venture capital in the firm will, up to a certain level, assure that all material information needed for decision making is disclosed to the public.

Consequently, this certifying function will reduce the information asymmetry between the insiders and outsiders of the firm, leading to less underpricing. So, since private equity funds have longer investment horizon objectives, in addition to their ultimate goal of increasing shareholders' wealth, their impact does not depend solely on the short-term performance but also on the long-term. This is especially true given that the private equity funds' services may include not only providing the invested amount of money, but also the necessary management and technical expertise, strategic board consulting, international network administration and publicity, improved access to capital markets and a certifying role when going public.

2.1.5. The Relationship between the Underwriters' Reputation and Underperformance

Numerous researchers have been interested in measuring and assessing the sensitivity of IPO short- and long-term performance and their magnitude according to and based upon the underwriters' name, reputation, experience, profile, past records, and professionalism. So, in their models, researchers have included these variables as a way to test the effects of underwriters on IPO performance. Underwriters play an extremely important role and assume huge responsibilities in administering the due diligence over the firm before undertaking the deal and launching a firm's shares to the public.

Carter, Dark and Singh (1998) document that the underperformance of IPO stocks relative to the market over a three year holding period is less severe for IPOs underwritten by more prestigious underwriters. This is in line with what we have explained earlier about the role of underwriters in properly valuing the firm's shares by using the most prevalent, justifiable, rational, and realistic valuation assumptions, and then selling them to the public via a very delicate and long process. Additionally, we can infer that prestigious underwriters are usually attracted by high net worth individuals (HNWI) who have quite a long history in investments, private banking, venture capitals, and also in IPOs. Prestigious underwriters are attracted by the HNWI, known for having both the willingness and ability to invest and take risk, especially when it comes to IPO investment. Investors must have the willingness, which is related to the person's behavior, attitude, experience and readiness to invest and take risks. In addition, they must have the ability, which is related to the financial status, capabilities and sufficiency of resources to invest and take risks. Overall, such investors are extremely successful and wealthy and they will invest with successful, prestigious, experienced, reputable and professional underwriters. Underwriters therefore have a major interest in preserving the reputation that they have built over years and decades and will not easily jeopardize it for the benefit of a single deal or transaction. Thus, reputable underwriters are not as pressured as small and unknown underwriters to please small investors through manipulating fundamental and ethical rules in the due diligence process or misleading the investment community and the issuers.

Using Rock's (1986) framework, Carter and Manaster (1990) model the role of the investment banker's reputation. They show that more prestigious investment bankers are associated with less risky IPOs. To preserve their reputation, the prestigious underwriter screens the firms that go public and selects the less risky ones, using information unavailable to the general public. This, in turn, reduces the uncertainty and information asymmetry between informed and uninformed investors. Now, since investors know that by subscribing to the issues of reputable investment banks they face less risk, consequently, the initial first day return is lower for these issues.

Using investment bankers' capital as a proxy for their reputation (investment bankers with greater capital have more to lose from a loss of reputation), Michaely and Shaw (1994) find that reputation plays an important role in explaining the initial day return. Although the authors' findings indicate that the investment banker's reputation and the issue size are highly correlated (the correlation coefficient is 0.75), controlling for reputation, they find that larger issues experience greater underpricing. They also show that IPOs issued by more reputable investment banks perform significantly better in the long term.

This is in alignment with our earlier discussion concerning the main roles of underwriters and how underwriters' tasks may differ according to a range of factors such as experience, reputation and capital. So, since reputable underwriters carefully select their investors, they do the same for the firms that intend to go public. Those firms have to be deeply analyzed by the reputable underwriters, where most aspects of valuation are taken into consideration and rigorous due diligence is conducted by professional teams. Therefore, such firms as are attracted by reputable underwriters shall have minimum requirements in terms of size, professionalism, profitability and management. As a result, it would be normal to see these firms perform better than their counterparts working with small and unknown underwriters whose standards are usually softer than the reputable ones. Thus, the difference between the two types of firm will appear in the long term through their IPO long-term performance.

In our model, we will not account for the underwriter's name, reputation, history or performance, because this is not the scope of our research in this chapter. Due to the importance of the subject, however, we intend to include them in subsequent research papers.

2.1.6. The Relationship between Pre-IPO Factors and Underperformance

Khurshed, Mudambi and Goergen (1999) suggest that long-term performance of a firm depends on pre-IPO factors, such as management and the firm's performance prior to going public. They found that long-term performance of an IPO stock is inversely related to its profitability before the issue as well as to the degree of change in ownership in the process of IPO. Yet, it was found to be positively related to the size of the firm. On the other hand, Mikkelson et al. (1997) tested the hypothesis of the dependence of long-term stock performance on post-IPO ownership structure of the firm, but found no evidence of the ownership effect.

However, before going public, no information about the firm's share value is available for investors. Therefore, investors have to carefully use, assess and evaluate carefully all available data presented in the prospectus, read and analyze the firms' financial statements, pro-forma statements, major achievements prior to IPO and all available future plans the firm intends to achieve with the raised funds, gather as much information as possible from the investment banker about the firm's valuation, and appraise the overall market and economic conditions to decide whether to invest and by how much. Additionally, investors assess the industry to which the IPO firm belongs, its historical performance and prospects, its major foreseeable threats and opportunities. Again, investors shall assess their investing strategies based upon all these factors and based upon their perception of the overall risk and return they expect to bear during their investment horizon.

Nevertheless, besides all these fundamental and critical aspects that most investors consider before investing in IPOs, they usually also review the details of the firm's pre-IPO ownership structure. This includes reviewing pre-IPO major shareholders, investments by private equity firms, venture capitalists, investment banks, major corporations, and professional blockholders. The review should include the firm's board structure and composition, including size, average age and experience of board members, election style, frequency of meetings, and the presence of major investors, blockholders and independent directors on the board. All these are considered the pre-IPO data which every investor shall assess thoroughly before investing in IPOs.

Alternatively, Thomadakis et al. (2007) mention that others hypothesize that firms manipulate their accounting numbers and financial statements so as to make their offerings much more appealing to the public to entice investors to pay a price higher than the fair one. However, this 'window dressing' technique is not effective in the long term since, with the passage of time, investors eventually learn the true value of the firm and its price will fall to its fundamental value, according to Teoh et al. (1998).

All of this explains why, during IPOs, the roles of underwriters in performing outstanding due diligence about the firm have to be complemented by the roles of the independent external auditors whose responsibility it is to plan and perform an audit to obtain reasonable assurance that the financial statements are free of material misstatement, whether caused by error or fraud. Thus, the independent auditors have to express an opinion on the fairness with which financial statements present, in all material respects, financial position, results of operations, and cash flows, in conformity with the applicable accounting principles and standards. The auditor's report is the medium through which he/she expresses his/her opinion or, if circumstances require, disclaims an opinion. In either case, he/she states whether his/her audit has been made in accordance with applicable auditing rules and standards. Additionally, auditors' responsibilities include assessing firms' reserves and provisions. Thus, in the normal sense, the investment community expects that auditors do their best to catch any inappropriate reporting or to reconcile any major window dressing activity conducted by the firm's management.

However, even though it appears that all auditors perform similar tasks and present similar reports at the end of the auditing process, the auditing procedures differ from one firm to another. These procedures can differ according to the auditors' fees, sampling methodologies, time dedicated for each firm, the industry the firm belongs to, the experience of auditors, the number of visits per year, the reputation, the internationalization and others. Accordingly, many researchers have included in their models variables related to the auditors to test their effects on IPO performance in an attempt to examine the market's reaction toward specific auditors who have audited the financial statement of firms that were about to go public. Therefore, underwriters and auditors together constitute vital cornerstones and the very decisive foundations for every investor considering investing in an IPO, since there is no other information presented in the market to rely on other than the firm's prospectus presented by the underwriter, including the full set of financial statements audited by the external auditor.

Another explanation for IPO underperformance is presented by Eckbo and Norli (2005), who argue that IPO underperformance is mainly due to IPO firms' high stock turnover and low leverage ratios, which is a capital structure related variable. However, once they account for these two factors in their estimations, IPO underperformance disappears (Hoechle and Schmid, 2009).

Interestingly, Santos (2010) found no evidence that IPOs in periods of high underpricing are safer than IPOs in low underpricing periods. In addition, the author did not find that firm risk decreases within high underpricing periods, which would be needed to explain why long-term underperformance is caused by firms going public at the end of high underpricing periods. According to the author, long-term underperformance is not related to the risk inherited by the IPO, since this factor is taken into consideration and no cause-effect was found.

Furthermore, and in contrast to the risk-based theory, Santos found that significant underpricing is correlated with significantly weaker (not stronger) firms. The author showed that firms going public in high underpricing environments exhibit striking differences in terms of operating performance subsequent to the IPO. Specifically, these firms exhibit worse ROA and profitability, invest less, display lower asset growth, and hold more cash than firms that undertake their IPOs in low underpricing periods. We will attempt to observe if pre-IPO ownership and performance measures have some effects on IPO long-term performance as Santos and others did, by testing the following two hypotheses.

Hypothesis 5: There is a positive relationship between owners' cash flow rights after the IPO date and the IPO long-term performance of French family firms.

Hypothesis 6: There is a negative relationship between the IPO long-term performance and return on asset and net profit margin.

2.2. Varying Results on IPO Long-Term Performance

It is worth noting that despite all the results mentioned above and the numerous research papers conducted all over the world that document IPO underperformance, some authors suggest that when properly measuring excess returns, the evidence for long-run underperformance following offerings disappears (Schultz, 2003). For instance, Brav et al. (2000) find that post-issue IPO returns are similar to those of firms with similar size and book-to-market characteristics, and that SEO returns co-vary with similar non-issuing firms.

Additionally, Eckbo et al. (2000) show that leverage and its attendant risk are significantly reduced following equity offerings while liquidity is increased. They claim that as a result of these changes in leverage and liquidity, firms that have recently issued equity are less risky than benchmark firms. Those who favor behavioral explanations for underperformance point out that IPOs have significantly underperformed market indices, however, and few would claim that IPOs are less risky than an average stock, according to Schultz (2003).

Espenlaub et al. (2000) found different results by using different models and time horizons. For instance, they found that, using the event-time approach, there is significant underperformance in the first 18 months after the issue for all benchmarks except the CAPM. However, over the next 24 months, there is even more severe underperformance across all benchmarks. Thus, the authors identify underperformance as a robust feature of these event-time returns over the first 42 months.

However, they argue that over the next 18 months the extent of the underperformance depends on the benchmark portfolio adopted. They found that 60 month long-run excess returns measured relative to the CAPM and Fama-French benchmarks continue to display significant underperformance. Yet, while one of the size-adjusted benchmarks found significant underperformance and demonstrates that the rate of underperformance declines over time, an alternative size-adjustment model reveals abnormal returns which are not statistically significantly different from zero.

Moreover, Hoechle and Schmid (2009) presented mixed results while measuring IPO long-term performance. The authors conducted their research over a sample of 7,378 firms going public in the US from 1975 to 2005 by varying the time horizon in analysis, and have documented a significant underperformance of IPO firms over the first year after going public, but virtually no underperformance thereafter. Hoechle and Schmid argue that this finding regarding IPO underperformance is important as it strongly contradicts prior research exclusively considering longer time horizons of, usually, five years (e.g. Brav et al., 2000; Brav and Gompers, 1997). The authors add that, to their knowledge, there is no other paper investigating the time horizon over which IPO underperformance prevails. It is worth noting that this mixed result is not the sole one observed, since many other researchers have found different results by varying the factors used in their measurement technique, such as the performance measurement, the time horizon of their study, the country or the market, the economic conditions, the benchmark and other factors.

For instance, Hoechle and Schmid (2009) also mention that by decomposing the Carhart-alpha, they found that IPO underperformance is due to fundamental differences in firm characteristics (e.g. market-to-book ratio, leverage, and R&D expenditures scaled by sales) between IPO companies and more seasoned, non-issuing firms. Hoechle and Schmid argue that their results indicate that IPO firms perform neither materially better nor worse than mature companies with similar firm characteristics. This has been observed by some other researchers, who argue that IPO firms perform similarly to their benchmarks. Finally, the authors show that IPO underperformance is partially predictable. IPOs are associated with overly optimistic growth prospects (and correspondingly high valuation levels) and IPOs going public during hot issue periods perform substantially worse than other IPOs. This has also been observed earlier, that whenever share valuations, firms' future prospects and cash flows are based on very optimistic assumptions, expecting very high and sustainable growth rates in sales and totally ignoring any downturns in the economy or slowdowns in the industry, then IPO long-term underperformance will be seen. Additionally, we have elaborated upon the hot issue phenomenon proposed by Ritter (1991) and discussed by many other researchers.

Gompers and Lerner (2001) discuss numerous and different results regarding IPO long-term performance found by prominent researchers around the world and argue that these results are not uncontroversial. The authors also contend that the debate about the underperformance of IPOs may not easily be answered without out-of-sample tests. Additionally, data from non-US markets is not conclusive because of the shorter time periods employed and the cross-sectional correlation between returns of IPOs in the US and the returns of IPOs in other markets. Common economic shocks or common movements in fads and sentiment potentially drive these correlations. However, the authors undertook a large, out-of-sample investigation of IPO underperformance. They gathered information on the universe of firm-commitment IPOs in the United States from 1935 to 1972 and measured their returns for up to five years after listing. Interestingly, and as many authors argued and explained, the results demonstrate that the performance of IPOs from 1935 to 1972 depends upon the method of return measurement used. While the sample shows underperformance when performance is measured using value-weighted event-time buy-and-hold abnormal returns, this underperformance disappears when either equal-weighted buy-and-hold abnormal returns or cumulative abnormal returns are utilized. The calendar-time analysis shows that over the entire sample period, IPOs return as much as the rest of the market. Finally, in simple Capital Asset Pricing Model (CAPM) and Fama-French three-factor regressions, the intercepts are insignificantly different from zero or even significantly positive. The difference between the event-time and calendar-time results stems from the clustering of IPOs in periods immediately preceding poor IPO performance: IPOs and similar size and book-to-market stocks have lower returns after periods with heavy IPO issue volume, though the effects are not statistically significant. Gompers and Lerner (2001) mention that the long-run performance of pre-NASDAQ IPOs depends considerably on the method for calculating returns and performance. While the results do not rule out the possibility of more board-based sentiment-driven mispricing, they provide little support for distinct IPO effect. Therefore, as many prominent authors have argued and demonstrated through their research, IPO long-term performance depends mainly on the benchmark type, size and period, and the measurement models applied, since each model will result in different performance analysis and thus different interpretation.

3. SAMPLE, DATA AND METHODOLOGY

3.1. Sample

Since in this chapter we will highlight French family firms' IPO long-term performance, and since as we have observed the IPO underpricing and underperformance are interrelated in many aspects, we will refer to the same sample of French family firms that we have worked with in the second chapter. However, it is important to recall what our sample consists of and how it has been chosen. We have extracted all firms from the CAC-All Tradable Index except the financial firms (SIC 6000–6999) that are subject to special legal regulations. Our choice of the CAC-All Tradable Index is intended to continue the work done in Chapters 1 and 2, because in this thesis we are interested in studying the French family firms, and because we needed a broad and representative benchmark to which to compare our results, such as the CAC-All Tradable Index. This index is a new index replacing the SBF 250 in which the number of values is unlimited and which reflects the evolution of all companies listed on Euronext Paris. It also allows representation of the evolution of the stock market over the long-term and serves as a benchmark to certain mutual funds (FCP) and Sicav, as mentioned in chapter 1.

According to the definition of family firm used in chapter 1, we have precisely separated family firms from non-family firms. Therefore necessary modifications to the selected data were done to match our definition criteria. In addition, some data were not found for some firms and therefore we were obliged to deselect and ignore a small number of family firms. In the end, we were able to produce full data for all the necessary variables for 86 family firms out of the 107 family firms listed from 1994 to 2013, so our sample consists of around 80% of all family firms listed during that period.

Some variables were extracted directly from the Bloomberg platform such as all firms that are part of the CAC-All Tradable Index from 1994 to 2013 and their IPO dates. We have also extracted the daily prices of the index and of every firm in our sample by using Thomson Reuters Datastream, as well as the offering prices and dates, and number of shares issued. The rest of the data were hand-collected from the prospectus of each firm, such as the initial public offering date, the firm creation date, the number of shares before and after the IPO date, the percentage of cash flow and voting rights for the family founder, other shareholders such as private equity funds, venture capitalists, other partners and the remaining public shareholders, before and after the IPO date.

In addition, the board of directors' data has been extracted, such as board size, the board members equity holding before and after the IPO, and the percentage of independent directors. We also identified whether the firm's CEO is the same as the firm's founder or not, the presence of duality of roles between the firm's CEO and the board chair, and other governance data. We extracted net revenues and net income for all firms in the year of the IPO and the previous financial year. Total assets, total shareholders' equity and total debt were also extracted for the IPO year. However, some other variables were not found for all firms and therefore were abandoned, such as research and development expenditures and direct total issuance costs.

As previously mentioned, we also aim in this chapter to examine whether short-term IPO underpricing is related to long-term IPO underperformance, and whether underperformance persists when different calculations are applied, especially when the IPO offering price is used in the calculation instead of the first day closing price, as Santos (2010) did. Additionally, as discussed in the previous chapter, we aim to observe and measure the effects of some major pre- and post-IPO corporate governance mechanisms on the IPO long-term performance.

It is important to mention that initially we wanted to follow Ritter's (1991) method in selecting the firms that meet certain criteria in terms of size, offering price, and proceeds. However, since our sample consists of only 86 firms—not as big as Ritter's sample of over 1,500 firms—we will not apply such conditions and therefore we will work on the same sample we worked with in the previous chapter without imposing restrictions on size, especially given that most firms are of small and medium sizes.

Additionally, numerous researchers who have studied IPO performance all over the world have used bigger sample sizes, but a sample that is comprised of 86 observations can still be statistically acceptable. Also, as we have previously mentioned, by choosing to work specifically on the listed French family firms that form part of the CAC-All Tradable Index, this has automatically narrowed the selection to this relatively small sample size. However, this will leave us with some drawbacks in the conclusion and inference part, and also in checking the robustness of our results.

For instance, we will not be able to conduct some tests to isolate the effects of size, industry, leverage, market-to-book ratios or others because the sub-samples will become much smaller and this will affect the results' significance and reliability. However, different researchers around the world have also explored IPO long-term performance by using small and medium sample sizes, as shown below.

Table 30: Small IPO sample sizes treating long-term performance

Country	Authors and years of research	Period	Sample Size	Long-Term Returns
Austria	Ausenegg (2000)	1965–2002	83/57	-46.50%
Brazil	Aggarwal et al. (1993)	1979–1990	62	-47.00%
Chile	Aggarwal et al. (1993)	1982–1990	55/28	-23.70%
Finland	Keloharju (1993)	1984–1989	99/79	-21.10%
France	Loughran et al. (1994)	1983–2000	571/87	-4.80%
Hong Kong	McGuinness (1993)	1980–1990	72	-18.30%
Hungary	Lyn and Zychowicz (2003)	1991–1998	33	19.59%
Singapore	Hin and Mahmood (1993)	1976–1984	45	-9.20%
Spain	Alvarez and Gonzalez (2001)	1987–1997	41	-24.19%
Switzerland	Loughran et al. (1994)	1983–2000	120/34	-6.10%

Concerning the benchmark in IPO long-term performance, Espenlaub et al. (2000) claim that an obvious difficulty with an event study research model is the choice of an appropriate benchmark. As we have previously mentioned, there is considerable evidence that benchmark selection can have an important impact on the scale of abnormal returns from event studies (e.g. Dimson and Marsh, 1986; Fama and French, 1996a; Gregory, Matatko, Tonks and Purkis, 1994).

In this chapter, we have used the CAC-All Tradable Index as our sole benchmark in all our models. However, for the robustness of our results, we were unable to include other benchmarks as we wanted to do, especially given that many prominent authors argue that underperformance vanishes when different benchmarks and calculation methods are used and many attribute the poor long-term performance to small firm size and young age. It is worth recalling that Drobetz et al. (2005) attribute long-term underperformance to the fact that IPO firms tend to be small firms. In addition, Brav and Gompers (1997), Brav et al. (2000) and Gompers and Lerner (2001, 2003) document that IPO firms tend to be small in size and they attribute underperformance to this factor. Also, they document that underperformance vanishes when they use a small capitalization index as a benchmark. We wanted to include, in addition to the CAC-All Tradable Index, the France CAC Mid, the France CAC Mid and Small, and the France CAC Small indices, one at a time. However, all three French indices were introduced and put in function in January 2005 according to Thomson Reuters Datastream. We noticed that only 22 French family firms were issued after January 2005 and the remaining 64 firms were issued prior to this date, so we will, of course, not observe the returns of the 22 firms and compare them to the three market benchmarks to calculate their abnormal returns, since the sample size will become very small and statistically unfavorable. As a result, we are left with no option but to employ only one benchmark which is the CAC-All Tradable Index that started in January 1990 and to work with the whole sample of 86 firms. Unfortunately, we will be unable to refer to any of the three indices to capture the returns of the small, small and mid, and mid firms.

3.2. Models of Long-Term Performance

Alvarez and Gonzalez (2001) mention in their paper that there is considerable variation in the measures of abnormal returns and the statistical tests that empirical researchers used to detect long-run abnormal stock returns. Alvarez and Gonzalez mention that several works, such as those by Barber and Lyon (1997) and Lyon et al. (1999), have revealed that the method for calculating returns influences both the magnitude of the measured abnormal return as well as the size and power of the statistical tests. Thus, we will follow prominent authors in calculating long-term performance by using different methods in order to examine the robustness of the performance of the IPOs regarding various specifications of the model. Therefore, we will use the following four measures, inspired by Ritter (1991): (1) average holding period returns of the portfolio that contains all the family firms in the sample from month 1 to month 72 and the same holding period returns as calculated for the CAC-All Tradable Index; (2) cumulative average adjusted returns calculated with monthly portfolio rebalancing, where the adjusted returns are computed using the CAC-All Tradable Index as the market benchmark; (3) buy-and-hold abnormal returns (BHAR); (4) Capital Asset Pricing Model (CAPM); (5) the Fama and French (1993) three-factor model; and (6) two multiple linear regression models.

Therefore, based on the hypothesis testing and all the literature covered in the review, we will try to explain IPO long-term performance via two multiple linear regression models. In Model 1, we will attempt to explain IPO long-term performance taking ownership and control rights change from pre- to post-IPO date as our starting point. In Model 2, we will instead consider governance mechanisms set by the family firms on the day of their issuance. In both models, we will employ the fifth day underpricing as a control variable for considering IPO short-term performance for all firms, besides their ownership and governance mechanisms.

We followed Ritter's (1991) method in calculating the IPO performance, with two intervals: the initial return period (normally one day), defined as the offering date to the first closing price listed on the CAC-All Tradable Index daily return tapes; and the aftermarket period, defined as six months, one year, two, three, four, five, and six years after the IPO, exclusive of the initial return period. Therefore, the first day closing price will be taken as the benchmark in calculating IPO long-term performance, as per Ritter (1991). Also, the initial return period is defined as being month 0, and the aftermarket period includes the following respective months where months are defined as successive 21-trading day periods relative to the IPO date. Thus month 1 consists of event days 2–22, month 2 consists of event days 23–43, etc. Additionally, as previously mentioned, we will follow Santos' (2010) method in including the first day return by taking the offering price as the benchmark in the long-term performance calculation; by doing this, we will be attempting to observe whether the shares were initially issued above or below their intrinsic value and so explain long-term performance as Aggarwal and Rivoli (1990) did. Additionally, monthly benchmark-adjusted returns are calculated as monthly raw return on a stock minus the monthly benchmark return for the corresponding 21-trading day period.

It is worth recalling that all prices were extracted from Thomson Reuters Datastream, with total returns criteria taking into consideration all price appreciation/depreciation through the years, and all dividends paid by the firm to each share. The same applies to the index return calculation when observing total returns, not only the gross returns, which takes into account all reinvested dividends in all the shares composing the index.

All data extracted from Thomson Reuters Datastream for the IPO shares have a starting price of 100 at the time of issuance and are calculated on daily basis according to the value appreciation and depreciation of the share price (capital gains or losses) that are considered a main source of return for shareholders, in addition to all dividends (current income) paid that are considered the second source of returns. Thus, on day 1, the portfolio that contains the 86 family firms has a value of 86*100 = 8,600. This is not a euro or any other currency price, but is a form of performance indicator for each and every firm from the day of issuance to the end of the holding period. It is treated like an index regardless of the individual share price on day 1. For instance, according to Datastream total returns, a share that is actually offered at €5 is given the same value as a share that is offered at €200, which is 100. However, this posed a very serious problem in calculating the portfolio value-weighted returns, since this method assumes the same market value of all shares of 100 on day 1, regardless of their actual market price. Therefore the value-weight is absolutely biased and irrelevant in this specific case: although all calculations using the value-weighted method were done for all return methods, the data were irrelevant and so totally ignored. However, this issue does not pose any problem in the equally-weighted method because it is simply an arithmetic average taking into account the number of shares in a certain month regardless of the shares' value. Thus, all the return methods that will be discussed below are calculated using the equally-weighted or the arithmetic average.

Additionally, we assumed three different entry strategies in building the IPO portfolio, in that all shares are assumed to be purchased and included in the portfolio one, six and twelve months after issuance instead of on the first day. Thus, we would be able to separate the returns that are generated in the short period from the long period, as Santos (2010) did for the first day by both including and excluding the first day returns, though we went a step further in our performance measurement by excluding not only the first day, but also the first month, and then the first six and twelve months. However, according to the results we have obtained which we will discuss subsequently, we believe it was crucial to exclude those months to check the persistence and the robustness of the long-term returns. Additionally, when assuming that the shares were purchased a while after issuance as discussed above, we would be trying to get as far as possible from the issuance shock effect, that period of overoptimism of investors—the fads period which is believed to coincide with the issuance period and that is usually clustered around the IPO date. So, observing long-term performance starting a few days to a few months after issuance is necessary in such situations to reveal more information about the shares' performance which is due more to firms' long-term performance and not to temporary IPO effects. As a result, we will measure portfolios' long-term return differently and show our results in the subsequent section.

3.2.1. The Benchmark-Adjusted Abnormal Return

The benchmark-adjusted abnormal return (ar) for stock i in event month t is calculated as the difference between the monthly return on stock i and the monthly return on a selected benchmark. However, due to the constraints we faced in selecting different benchmarks as mentioned earlier, we will use the CAC-All Tradable Index when referring to the benchmark, especially the market benchmark. Then the benchmark-adjusted abnormal returns will be calculated as follows:

$$ar_{i,t} = r_{i,t} - r_{m,t}$$

3.2.2. The Average Benchmark-Adjusted Return

The average benchmark-adjusted return (AR) on a portfolio of *n* stocks for event month *t* is the simple average of all benchmark-adjusted abnormal returns and is calculated as follows:

$$AR_t = \frac{1}{\mathrm{n}} \sum_{\mathrm{i=1}}^{\mathrm{n}} ar_i$$

3.2.3. The Cumulative Benchmark-Adjusted Abnormal Return

The cumulative benchmark-adjusted abnormal return (CAR) from event month *q* to event month *s* is the summation of the average benchmark-adjusted abnormal returns and is calculated as follows:

$$CAR_{q,s} = \sum_{\mathrm{t=q}}^{\mathrm{s}} AR_t$$

3.2.4. The Buy-and-Hold Abnormal Return

Following Drobetz et al. (2005), we will calculate and use the buy-and-hold abnormal returns (BHAR) as follows:

$$BHAR_{i,T} = \prod_{t=1}^{T} (1 + R_{i,t}) - \prod_{t=1}^{T} (1 + R_{m,t})$$

where $R_{i,t}$ denotes the rate of return (including dividends and all other financial benefits stockholders receive) on stock *i* in month *t* after its IPO, and $R_{m,t}$ is the corresponding benchmark return.

We interpret a positive buy-and-hold abnormal return as a better performance of the respective IPO compared to the benchmark, which is in this case the market return proxied by the CAC-All Tradable Index. The mean buy-and-hold abnormal return is computed as the arithmetic average of abnormal returns on all IPOs in the sample of size *N*:

$$BHAR_{IPO,T} = \frac{1}{N} \sum_{i=1}^{N} BHAR$$

In recent years, following the works of Ikenberry et al. (1995), Barber and Lyon (1997), and Lyon et al. (1999), the characteristics-based matching approach (also known as BHAR, the buy-and-hold abnormal return) has been widely used. Mitchell and Stafford (2000) describe BHAR as 'the average multiyear return from a strategy of investing in all firms that complete an event and selling at the end of a pre-specified holding period versus a comparable strategy using otherwise similar nonevent firms'. An appealing feature of using BHAR is that buy-and-hold returns better resemble investors' actual investment experience than the periodic (monthly) rebalancing entailed in other approaches to measuring risk-adjusted performance. The joint-test problem remains in that any inference on the basis of BHAR hinges on the validity of the assumption that event firms differ from the 'otherwise similar non-event firms' only in that they experience the event. The researcher implicitly assumes an expected return model in which the matched characteristics (e.g., size and book-to-market) perfectly proxy for the expected return on a security. Since corporate events themselves are unlikely to be random occurrences, i.e., they are unlikely to be exogenous with respect to past performance and expected returns, there is a danger that the event and non-event samples differ systematically in their expected returns notwithstanding the matching on certain firm characteristics. As a result, from a comparison standpoint, we cannot compare one method with the other because each has a different methodology of calculation and will certainly yield different and sometimes contradicting results and this will be seen when comparing the CAR with the BHAR methods.

Moreover, Barber and Lyon (1997), Kothari and Warner (1997), and Lyon et al. (1999) provide thorough evidence about various methods of measuring abnormal performance. However, these papers do not find that one method is always preferred. Brav et al. (2000) point out that the choice of CAR or BHAR largely depends upon the implicit trading strategy that is being assumed. It has also been discussed by many authors that BHAR can magnify underperformance, even if it occurs in only a single period, as a consequence of compounding single-period returns. Additionally, distributional properties and test statistics for CAR are better understood.

Yet, from a practical side, we would like to mention that someone would still be able to generate a return that is somehow close to the BHAR while ignoring to some extent the trading transaction costs. It is assumed that if investors purchase shares and hold them over a long period, the trading costs effects will not be deep on the portfolio performance in the long term because we expect that total returns will beat the transaction costs. For that reason, the trading transaction costs can be, up to a certain point, ignored since they will not have a great effect on the overall portfolio performance and they have to be incurred only twice—that is, once at the purchase of each stock and once at the sale of each stock in the portfolio. For instance, if we assume a portfolio that consists of 100 stocks and intend to hold it over 72 months, then the transaction costs are incurred 200 times (100 stocks times 1 purchase transaction + 100 stocks times 1 selling transaction).

On the other hand, since the CAR is assumed to be rebalanced every month, it means that at the end of each month the whole portfolio is being sold and then repurchased at the market closing price. Therefore, from a practical side, this would be extremely costly, because the trading transaction costs have to recur at the end of each month at the sale and purchase of each stock in the portfolio. For instance, if we assume a portfolio that consists of 100 stocks and intend to hold it over 72 months with monthly rebalancing, then the transaction costs are incurred 14,400 times (100 shares times 72 months times 1 purchase transaction + 100 shares times 72 months times 1 selling transaction), which is 72 times more than the transaction costs incurred in the BHAR methodology.

Therefore, from an economic and practical side, it would be almost impossible to purchase that big number of shares and resell them at the end of each month and keep rebalancing the portfolio for a long period as in the CAR methodology without considering that their transaction costs can reach huge amounts. This means that even though many researchers argued that the BHAR methodology is negatively weighted and thus not highly desired, the CAR is absolutely not the perfect methodology to adopt, since it is very far from how a portfolio would in reality perform.

Last but not least, as mentioned above, returns were calculated by using Santos' (2010) method, but both including and excluding the first day return. We also decided to do the same with the first month, and the first six and twelve months, attempting to measure IPO long-term performance beyond the direct and immediate effect of IPO shock when the stocks are newly introduced to the market. The same was applied in all returns calculations which are basically the AR, CAR, BHAR, HPR, and WR. Thus, in these returns, a cross-sectional data analysis will be adopted, regardless of differences in time of issuance and time when the portfolio was constructed. Thus, the abnormal returns take into consideration the difference in returns between the stock and the benchmark, and then all abnormal returns are treated collectively as if they occur during the same period. However, in the CAPM and the Fama and French three-factor model, a time-series data analysis will be adopted and will be discussed in more detail below.

3.2.5. The Holding Period Return

As an alternative to the use of cumulative average benchmark-adjusted returns which implicitly assumes monthly portfolio rebalancing, we computed the holding period returns (HPR) from month 1 to month 72, defined as:

$$R_i = \prod_{t=1}^{T}(1 + r_t) - 1$$

where *r* it is the raw return on firm *i* in event month *t*. This measures the total return from a buy-and-hold strategy where a stock is purchased at the first closing market price after going public and held until the earlier of its 72nd month or its delisting. Additionally, we have calculated the holding period return of the market benchmark in order to compare both returns from month 1 to month 72.

3.2.6. The Wealth Relative Ratio

To interpret these returns, we computed wealth relatives (WR) as a performance measure as Drobetz et al. (2005) did, defined as:

$$WR = \frac{\prod_{t=1}^{T}(1 + R_{i,t})}{\prod_{t=1}^{T}(1 + R_{m,t})}$$

A wealth relative of greater than 1.00 can be interpreted as IPOs outperforming a portfolio of matching firms, whereas a wealth relative of less than 1.00 indicates that IPOs underperformed.

3.2.7. The Capital Asset Pricing Model

When we employ the market return as the benchmark, we assume that the systematic risks of IPOs are similar to those of the market as a whole. However, Ibbotson (1975) and Cotter (1996) argue that the IPO firms tend to be risky at issuance and to be less risky long after issuance. Therefore, it is not reasonable to assume that the beta risks of IPOs are always close to one. Thus, based on the CAPM, we would like to estimate the systematic risks of IPOs and then measure the expected returns of IPOs with the estimated beta risks. Typically, the beta risks of assets are estimated by the market model with returns prior to a certain event time.

However, for IPO firms, the returns data prior to the issuance are not available. Hence, the conventional market model will not be able to measure the expected return of IPO firms in the early aftermarket. To deal with the beta risk problem in the early aftermarket for IPO firms, we employ Jensen's alpha to measure the performance of IPOs in the aftermarket. The market model is defined as follows:

$$R_{(q,s)} - R_f = \alpha_{(q,s)} + \beta_{(q,s)} [R_{m(q,s)} - R_f] + \varepsilon_{(q,s)}$$

where α is the intercept term of the regression, also known as Jensen's alpha, for IPOs over the time period from q to s. It is the measurement of the average performance of IPOs from time q to time s based on the market model.

3.2.8. The Fama and French Three-Factor Model

The CAPM model proposed by both Sharpe (1964) and Lintner (1965) argues that the market is the only common factor for asset returns. Nevertheless, Fama and French (1993, 1995, 1996a, 1996b, 1997) show that the market factor, the size related factor and the book-to-market related factor are the common factors underlying the stock returns. We argue that the expected returns or the abnormal returns of IPOs measured by the Fama and French three-factor model should be more appropriate than those measured by the market model. With the Fama and French three-factor model, we investigate the performance of IPOs in the aftermarket considering the contributions of market factor, size-related factor and the book-to-market factor. The performance of IPOs is measured on the Jensen's alpha of the following regression:

$$R_{(q,s)} - R_f = \alpha_{(q,s)} + \beta_{(q,s)}[R_{m,(q,s)} - R_f] + s_{(q,s)}SMB_{(q,s)} + h_{(q,s)}HML_{(q,s)} + \varepsilon_{(q,s)}$$

where alpha is the intercept term of the regression, which is also known as the Jensen's alpha under Fama and French's three-factor model; *SMB (q,s)* is the size-related risk premium over the period from *q* to *s*; and *HML (q,s)* is the book-to-market related risk premium from *q* to *s*. Basically, the measurement of the Fama and French three-factor model is similar to that of the market model. Both apply Jensen's alpha as the performance measure for IPOs. Further, the designs of the regression models measure the Jensen's alpha as the average performance of all the IPOs and allow the coefficients of *b (q,s)*, *s (q,s)*, and *h (q,s)* to change over time from *q* to *s*. Therefore, besides measuring the performance of IPOs, we can still observe the patterns of factor loadings of *b*, *s* and *h* of IPO firms.

It is important to mention that the Fama and French three-factor model data were found, obtained and used from the data library of a prominent researcher,, Professor Stefano Marmi, in collaboration with

Flavia Poma Database and the computational platform FactSet. Professor Marmi constructed the database for the Fama and French model via many developed countries such as Australia, Canada, France, Germany, Hong Kong, Japan, Singapore, Sweden, Switzerland, the United Kingdom and the United States, as well as in some emerging countries such as Brazil, China, India and South Korea. Data were calculated on a monthly basis starting in 1988 and ending in 2013. Therefore, we totally recognize the work done by Professor Marmi in providing such valuable data to all researchers and all interested people in the field on a public website, and we thank him for all his efforts and his contribution to the research field.

As previously mentioned, in the calculation of the monthly portfolio return, we have used only the equally-weighted method, where at the end of each month, a portfolio rebalancing was done according to the remaining number of surviving firms in the portfolio. Therefore the CAPM and the Fama and French three-factor regressions were also constructed for each of the three, four, five, and six year periods by using the equally-weighted returns. However, we could not construct any of the two models for the six month, the one year or the two year periods due to the spread of some shares that exists in the IPOs. For instance, the first IPO took place in October 20, 1994, whereas the second one occurred in May 21, 1996, which is more than 19 months later. Therefore, if any of the two models is used for a portfolio over a six month or one year period, its return would start with the first stock then cut for a few months to continue with the second stock, because there is a spread or a lag between the two stocks that is more than 19 months. As a result, we had no option but to construct the CAPM and the Fama and French three-factor regressions exclusively for the three, four, five, and six year periods by using the equally-weighted returns method. Thus, in total, eight time-series regressions were constructed, four for the CAPM and four for the Fama and French three-factor model.

We also note that the market returns were calculated according to the total return of the CAC-All Tradable Index, meaning that all reinvestments of dividends were taken into account in the prices and returns of the portfolio. Then, the market return was used to calculate the market risk premium (Rm-Rf) by using the French 90-day risk free rate of return taken from the data library of Professor Marmi. So by using the CAC-All Tradable Index and the risk free rate of return, the monthly market risk premium was calculated. Then, a comparison was made between the calculated market risk premium and the one extracted from the data library of Professor Marmi to check the consistency of the two returns. We noticed that the two risk premiums are almost equal with very few and small differences. We believe that these differences exist because Professor Marmi may have used another or a much wider market benchmark than the CAC-All Tradable Index, or because of a very few, small and acceptable calculation differences between the two premiums.

It is worth noting that in the CAPM and the Fama and French three-factor model regressions, the portfolios were assumed to start with the first IPO that occurred in 1994 and continue by including each subsequent IPO to the portfolio going from 1994 till 2013 to include all firms. It is therefore assumed that investors start investing in each and every IPO, going from the first one in 1994 to the last one in 2013, by holding each share in the portfolio over different periods. These periods were discussed as being equal to three, four, five, and six years. So every share in the portfolio will be purchased upon its IPO for three, four, five and six consecutive years corresponding to 36, 48, 60 and 72 months after issuance and inclusion in the portfolio. Therefore, as mentioned earlier, in the CAPM and the Fama and French models, a time-series data analysis was necessary to perform the regression analysis: we wanted to match the portfolio built by all the mentioned IPOs from day one to the end of our analysis, by observing the portfolio return with respect to the market in the CAPM regression, and with respect to the market and two other factors in the Fama and French model, using time-series data analysis. Therefore, the time effect is important here since the portfolio raw return is calculated at the end of each month and compared to some market related, size related and book-to-market related factors from the first till the 221st month, which is from the first some time during 1994 till the last IPO some time during 2013.

3.2.9. Multiple Linear Regressions

As stated, we attempt to explain IPO long-term performance via two models. Model 1 includes ownership and control rights, while Model 2 includes governance mechanisms. Both models will include the fifth day underpricing as a control variable. Nonetheless, we will measure long-term performance using the CAR and the BHAR for four different holding periods of three, four, five, and six years after issuance.

3.3. Descriptive Statistics

In the tables shown below, T stands for the observed month from the IPO date for all the firms in the portfolio, from month 1 to month 72, using cross-sectional data analysis. N stands for the number of remaining family firms in the sample, starting with 86 family firms in the first month and decreasing with time, since some firms were delisted, merged with other firms, privatized, or bankrupted.

OP stands for the offering price, meaning that all the returns were calculated on the assumption that all the shares in the IPO portfolio were purchased at the offering price on the day of issuance, as argued by Santos (2010) and as previously discussed. With the OP we intend to observe the long-term performance with the inclusion of the first-day return. CP stands for the share first-day closing price, which most researchers use when calculating IPO long-term performance and assuming that the IPO shares were purchased at the first-day closing price, excluding IPO first-day underpricing.

1M, 6M, and 12M refer to the purchase and inclusion of all the IPO shares in the portfolio after 1, 6, and 12 months of their issuance. The 1M, 6M, and 12M results are all presented in the Appendices. Here, it is assumed that no shares were purchased on the first day, as the OP and CP assume, but that the portfolio was built after a while of issuance, after 1, 6, and 12 months. Later on, we will refer to OP, CP, 1M, 6M, and 12M as the five different entry dates, since they refer to the prices and performance on the five different entry dates. It is also worth noting that the statistics software used in all our regression analyses and hypothesis testing is STATISTICA.

As mentioned in the previous chapter, Bloomberg Platform identified seven industries to which the 86 French family firms belong. These industries are (1) basic materials; (2) communications; (3) consumer, cyclical; (4) consumer, non-cyclical; (5) energy; (6) industrial; and (7) technology. These seven classifications were extracted from the Bloomberg platform. The gross proceeds calculations are based on the number of shares issued on the IPO date times the offering price, which are extracted from Thomson Reuters DataStream and ascertained from the firms' prospectuses.

The relative gross proceeds take into consideration the opportunity cost over the 20-year period; the French risk-free rate is taken into account to compute the time value of money of the proceeds from 1994 to 2013, which is considered the base year. We followed Ritter's (1991) method to calculate the relative gross proceeds to be able to compare the numbers through time by calculating the deflator factors of each year with 2013 as the starting point.

In the Appendices, we include the deflator factor of each year that we used in multiplying the gross proceeds to obtain the relative gross proceeds. Therefore, €1 million raised in 2013 as gross proceeds is equivalent to €1 million in a relative proceeds measure because the deflator factor in 2013 is equal to 1.0000 (i.e. €1 million × 1.0000). However, €1 million raised in 2000 is equivalent to €1.3555 million in a relative proceeds measure (i.e. €1 million × 1.3555). Thus, to compare proceeds throughout the years, we used the relative gross proceeds, like Ritter (1991), and not the simple gross proceeds. In Table 31 below, we present the distribution of all the IPOs per year and per industry.

Table 31: Distribution of IPOs per year and per industry

	INDUSTRY							
Year of IPO	**Basic Materials**	**Communi-cations**	**Consumer, Cyclical**	**Consumer, Non-cyclical**	**Energy**	**Industrial**	**Technology**	**TOTAL**
1994				1				1
1995								-
1996			1			1	2	4
1997		1	1			4	2	8
1998		1	5	1		2	1	10
1999				4		1	3	8
2000	1	4	4	3		1	8	21
2001		2		1		1	3	7
2002				1				1
2003				1				1
2004		1		2				3
2005			1			2		3
2006		3	2			2		7
2007		3	1	1		1		6
2008		1				1		2
2009								-
2010				1				1
2011				1	1			2
2012								-
2013						1		1
TOTAL	**1**	**16**	**15**	**17**	**1**	**17**	**19**	**86**

First, we notice that in 1994, only 1 IPO was issued, which belongs to the consumer non-cyclical industry, and in 1995, none were issued. Then, an IPO rally started in 1996, with 4 IPOs issued during the year, and accelerated until 2001, the year of the DotCom bubble burst. Specifically, from 1996 to 2001, that is, during only 6 years, a total of 58 family IPOs were issued, which is approximately equivalent to 67% of all the family IPOs issued from 1994 to 2013. Here it is obvious that IPOs were clustering around the DotCom bubble, which peaked in 2000 with 21 family IPOs and busted in 2001 with only 7 IPOs. Only 1 IPO was issued in each of the years 2002 and 2003, and a very shy and slow recovery was witnessed in 2004 with 3 IPOs. Moreover, 3 IPOs were issued in 2005, 7 IPOs in 2006, 6 IPOs in 2007, and only 2 IPOs in 2008. We note that the 2 IPOs issued in 2008 occurred in the first half of the year, just prior to the big financial crisis that hit the whole world.

The first IPO occurred at the end of April 2008 for an industrial firm with gross proceeds of around €2.5 million (€2.63 million as the 2013 euro value), which is considered a very small offering compared with other offerings, and the second IPO occurred at the end of June 2008 for a communications firms with gross proceeds of around €187 million (€198.7 million as the 2013 euro value), which are considered the second-largest proceeds, just behind €217 million issued for a technology firm in the year 2000. Then, no IPO was observed in the second half of 2008 or in 2009. Only 1 IPO was issued in 2010, 2 IPOs in 2011, again none in 2012, and only 1 IPO in 2013. Thus, it is obvious that the number of IPOs has dropped dramatically in the last 6 years, with only 6 family firm IPOs issued, or around 7% of all the IPOs issued in the last 6 years.

We also note that the highest number of issues belongs to the technology industry, which accounts for 19 IPOs, all of which went public from 1996 to 2001, that is, during the rally of the DotCom bubble, with a peak in the year 2000 with 8 IPOs. Unfortunately, after 2001, no IPOs were issued related to the technology industry. The second-highest number of IPOs belongs to both the consumer non-cyclical industry and the industrial industry, with a total of 17 IPOs for each industry, which is very close to the technology industry with 19 IPOs. The highest third and fourth numbers relate to the communications and consumer cyclical industries, with a total number of 16 and 15 IPOs, respectively. The basic materials and energy industries had the lowest number of IPOs, that is, only 1 IPO each.

However, what is important to consider about the consumer non-cyclical and the industrial industries is that their IPOs were issued over a spread of 11 years, which is the longest among all the IPOs. The communications industry had its IPOs spread over 8 years, the consumer cyclical had its IPOs spread over 7 years, and, last, technology, as mentioned above, had its IPOs spread over 6 years. This is important for risk measurement and for gaining insights into the clustering of certain IPOs related to different industries. Specifically, we notice that there was a fad period, during which technology IPOs were issued, which lasted for 6 years.

Additionally, such an industry is known for its relatively high business risk and market volatility. However, the consumer non-cyclical industry and the industrial industry are usually less affected by market risk and are also known to have relatively lower business risk compared with the technology industry. That is why the IPOs related to these two industries were spread over a longer period than the technology industry, showing that firms belonging to these two industries were much less susceptible to market downturns, such as technology, and more apt to go public at different times and not only during fad periods, such as the DotCom bubble.

Table 32 below shows the distribution of IPOs per year and per industry according to their relative gross proceeds, meaning that the amounts are in millions of 2013 euros.

Table 32: Distribution of IPO proceeds per year and per industry

	INDUSTRY							
Year of IPO	**Basic Materials**	**Communi-cations**	**Consumer, Cyclical**	**Consumer, Non-cyclical**	**Energy**	**Industrial**	**Technology**	**TOTAL**
1994				4.77				4.77
1995								-
1996			20.67			19.77	17.95	58.39
1997		9.03	93.94			98.13	34.53	235.62
1998		14.06	83.97	7.24		26.52	3.44	135.23
1999				153.39		9.57	31.12	194.07
2000	11.62	161.23	6.08	19.80		10.84	429.63	639.21
2001		24.21		7.29		15.10	157.52	204.11
2002				49.94				49.94
2003				0.73				0.73
2004		123.35		4.04				127.39
2005			16.29			55.30		71.59
2006		134.13	10.33			32.73		177.20
2007		148.89	7.72	12.25		4.91		173.77
2008		198.70				2.63		201.33
2009								-
2010				15.76				15.76
2011				2.73	6.93			9.67
2012								-
2013						17.57		17.57
TOTAL	**11.62**	**813.61**	**239.00**	**277.93**	**6.93**	**293.05**	**674.18**	**2,316.32**

First, we note that the total relative gross proceeds were equal to €2,316.32 million raised from 1994 to 2013 and obviously were not evenly distributed among the 7 industries. Since these proceeds were derived from the issuance of 86 family firms, this makes the average proceeds per family firm around €26.93 million, which is relatively small compared with IPOs in other markets, such as the Anglo-American ones. From 1996 to 2001, the 58 IPOs launched had total relative proceeds of €1,466.63 million, which is equal to 63.32% of the total proceeds raised in the whole period. The peak was in the year 2000, with total proceeds of €639.21 million, which alone is equal to 27.6% of the total proceeds, followed in 2001 with only 7 IPOs with proceeds equal to €204.11 million, which come third in terms of value because the proceeds in 1997 are second, with €235.62 million raised from 8 IPOs. Furthermore, from 2009 to 2013, only 4 IPOs were issued, with total gross proceeds of €43 million, which is equal to 1.86% of the total proceeds, that is, on average €10.75 million of proceeds per firm, which is far below the overall average of each firm of €26.93 million. We also note that the communications and technology industries together had the biggest number of IPOs and total relative proceeds. They totaled 35 IPOs, which is 40.70% of all the IPOs, and €1,487.80, which is 64.23% of the total relative proceeds. This shows that family firms were successful in these 2 industries, which require very high levels of know-how and expertise. Additionally, the consumer cyclical and non-cyclical industries accounted for a total of 32 IPOs, which is 37.21% of all the IPOs, and total relative proceeds of €516.93 million, which is 22.32% of the total gross proceeds. Thus, the family firms that belong to these 2 industries are numerous but smaller in size. Moreover, the firms that belong to the industrial industry had total proceeds of €293 million, which is equal to 12.65% of the total proceeds. Last, but not least, the family firms that belong to the basic materials and energy industries are relatively very small, with total relative proceeds of €11.62 million and €6.93 million, respectively, which are equal to 0.50% and 0.30% of the total gross proceeds.

Regarding the decreasing number and value of IPOs in the last few years, it is worth recalling Ritter et al.'s (2012) argument about the amount of European IPO activity, which has fallen in the last decade, whereas the number of merger and acquisition (M&A) deals has risen, suggesting an increased preference for external growth by means of trade sales rather than internal growth financed by equity issues. However, we observed neither the number nor the values of the M&As in France for any firm as the authors suggested. Nevertheless, we can still have some ideas about the decline in the number of IPOs that were observed for the mentioned time horizon, which is worth researching in subsequent papers.

However, what we mostly believe is that the decrease in the number and value of IPOs in the last decade was mainly due to the DotCom bubble burst, which decelerated IPOs afterwards until 2004–2005, with 3 IPOs in each year. Later on, a recovery was evident in 2006 and 2007 with 7 and 6 IPOs, respectively, but only 2 until mid-2008 because, at that time, the deep financial crisis hit the whole world, which was considered by many economists as the deepest and the most severe crisis since the 1929 Great Depression.

Table 33 shows the total IPOs, total gross proceeds, and average gross proceeds per industry, always with the amounts in millions of 2013 euros.

Table 33: IPO summary per industry

	INDUSTRY							
	Basic Materials	**Communi-cations**	**Consumer Cyclical**	**Consumer Non-cyclical**	**Energy**	**Industrial**	**Technology**	**TOTAL**
No. of IPOs	1	16	15	17	1	17	19	**86**
Total Proceeds	11.62	813.61	239.00	277.93	6.93	293.05	674.18	**2,316.32**
Average Proceeds	11.62	50.85	15.93	16.35	6.93	17.24	35.48	**26.93**

As shown, the communications industry had the highest total proceeds of €813.61 million as well as the highest average proceeds per firm of €50.85 million, which is much higher than the average proceeds per family firm of €26.93 million. The second-highest total proceeds were raised in the technology industry, with average proceeds of €35.48 million per firm, which is 30% smaller than the average of the communications firms. The average gross proceeds per firm of the consumer cyclical and non-cyclical and industrial industries were very close to each other, with €15.93 million, €16.35 million, and €17.24 million, respectively. Last, the basic material and energy industries, represented by only 1 IPO each, achieved total proceeds of €11.62 and €6.93 million.

Table 34 below shows the IPOs' weight per year and per industry according to their relative gross proceeds with the 2013 euro value. The table shows that almost 35% of the total gross proceeds were related to the communications industry and almost 29% were related to the technology industry. These two industries constitute the highest portion of all the IPOs, as previously discussed. The consumer cyclical (10.32%) and non-cyclical (12%) industries together account for around 22.32% of the total proceeds, and the industrial industry accounts for 12.65% of the total. Last, the basic materials and energy industries have negligible values, with no more than 0.80% of the total proceeds.

Once again, the ridiculous value of IPOs in the last 5 years with respect to the total IPO proceeds is becoming clearer. Therefore, as mentioned earlier, from mid-2008 until 2013, firms' proceeds raised by 4 IPOs with a total of only €43 million did not exceed 1.86% of the total proceeds raised by all the firms. This shows that the 2008 financial crisis had much heavier implications than the DotCom bubble burst, because 5 years after the latter, which lasted from 2001 to 2005, 15 IPOs were observed with a total value of €453.76 million, making 19.6% of the total proceeds versus 1.86% after the 2008 crisis. Thus, in addition to the numerous catastrophic indicators associated with the 2008 financial crisis, it is not surprising that it was called the Great Recession.

Table 34: The IPO weight of proceeds per year and per industry

	INDUSTRY							
Year of IPO	**Basic Materials**	**Communi-cations**	**Consumer, Cyclical**	**Consumer, Non-cyclical**	**Energy**	**Industrial**	**Technology**	**TOTAL**
1994				0.21%				0.21%
1995								-
1996			0.89%			0.85%	0.77%	2.52%
1997		0.39%	4.06%			4.24%	1.49%	10.17%
1998		0.61%	3.63%	0.31%		1.15%	0.15%	5.84%
1999				6.62%		0.41%	1.34%	8.38%
2000	0.50%	6.96%	0.26%	0.85%		0.47%	18.55%	27.60%
2001		1.05%		0.31%		0.65%	6.80%	8.81%
2002				2.16%				2.16%
2003				0.03%				0.03%
2004		5.33%		0.17%				5.50%
2005			0.70%			2.39%		3.09%
2006		5.79%	0.45%			1.41%		7.65%
2007		6.43%	0.33%	0.53%		0.21%		7.50%
2008		8.58%				0.11%		8.69%
2009								-
2010				0.68%				0.68%
2011				0.12%	0.30%			0.42%
2012								-
2013						0.76%		0.76%
TOTAL	**0.50%**	**35.12%**	**10.32%**	**12.00%**	**0.30%**	**12.65%**	**29.11%**	**100.00%**

We ran a correlation analysis for the dependent and independent variables with their appropriate p-values. However, we did not include either descriptive statistics or a VIF test, because the CAR and the BHAR long-term performance descriptive statistics were included above and the independent variables' descriptive statistics for both models were included in the previous chapter. Next, we present a correlation matrix for the multiple linear regression model to explain IPO long-term performance via ownership and control rights' change.

Table 35: Correlation matrix for 'Model 1'

Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=75 (casewise deletion of missing data)			
	up_5d	**Dif_CF_VO_Public**	**FF_%_CF_Chge**	**%_CF_Public_After**
36M_CAR_CP	0.3336*** p=.003	0.2818** p=.014	0.1803 p=.122	-0.1864 p=.109
48M_CAR_CP	0.3118*** p=.006	0.2894** p=.012	0.2525** p=.029	-0.2900** p=.012
60M_CAR_CP	0.3249*** p=.004	0.3210*** p=.005	0.2959** p=.010	-0.3393*** p=.003
72M_CAR_CP	0.2850** p=.013	0.3497*** p=.002	0.2872** p=.012	-0.2984*** p=.009
36M_BHAR_CP	0.0306 p=.795	0.0383 p=.744	0.1692 p=.147	-0.1331 p=.255
48M_BHAR_CP	0.0607 p=.605	0.0921 p=.432	0.2044 p=.078	-0.2073 p=.074
60M_BHAR_CP	0.0429 p=.715	0.2309** p=.046	0.2620** p=.023	-0.2797** p=.015
72M_BHAR_CP	0.0275 p=.815	0.2069 p=.075	0.2634** p=.022	-0.2483** p=.032

In the correlation table, we find a positive and statistically significant correlation between the fifth-day IPO underpricing and the long-term performance for the CAR but not for the BHAR. However, this correlation becomes weaker the longer the holding period of the IPO shares in the portfolio. For instance, it starts with 0.3336 and is statistically significant at the 1% level for the 3-year holding period and falls to 0.2850, which is statistically significant at the 5% level for the 6-year holding period.

As mentioned before, this is due to the fad period created after the first day of issuance, which lasted for almost one month. We also notice that the IPO performance in the first two years in certain measurements and in the first three years in some other measurements is negative. However, from the third to the sixth year, the IPO long-term performance starts to be positive. This is a good reason for finding this positive correlation between the positive fifth-day underpricing and the 3-, 4-, 5-, and 6-year holding period portfolios for the CAR measures. We also find a positive correlation that is statistically significant at the 5% and 1% levels between the long-term performance measured by the CAR and the difference in cash flow and voting rights for the public shareholders on the day of issuance. Additionally, a positive and statistically significant correlation is found between the long-term performance measured by the CAR for the 4-, 5-, and 6-year holding periods and the BHAR for the 5- and 6-year holding periods. Last, we note a negative and statistically significant correlation between the long-term performance and the percentage of cash flow rights for the public shareholders. Below we present a correlation matrix for the multiple linear regression model to explain the IPO long-term performance via governance mechanisms.

Table 36: Correlation matrix for 'Model 2'

Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=75 (casewise deletion of missing data)					
	up_5d	LN(Board _Size)	CEO_ Founder	Duality	Separation_ Shares	%_Inde-pendent
36M_CAR_CP	0.3336*** p=.003	-0.1435 p=.219	0.0440 p=.708	0.1538 p=.188	-0.2221 p=.056	-0.1863 p=.110
48M_CAR_CP	0.3118*** p=.006	-0.1869 p=.108	0.1031 p=.379	0.1922 p=.099	-0.2104 p=.070	-0.2048 p=.078
60M_CAR_CP	0.3249*** p=.004	-0.1740 p=.135	0.1138 p=.331	0.2045 p=.078	-0.2112 p=.069	-0.2372** p=.040
72M_CAR_CP	0.2850** p=.013	-0.1501 p=.199	0.1056 p=.367	0.2172 p=.061	-0.2218 p=.056	-0.1926 p=.098
36M_BHAR_CP	0.0306 p=.795	-0.0866 p=.460	-0.0011 p=.993	0.0682 p=.561	0.0022 p=.985	-0.0835 p=.476
48M_BHAR_CP	0.0607 p=.605	-0.1634 p=.161	-0.0008 p=.994	0.1133 p=.333	-0.0581 p=.621	-0.0851 p=.468
60M_BHAR_CP	0.0429 p=.715	-0.1465 p=.210	-0.0026 p=.982	0.1162 p=.321	-0.2045 p=.078	-0.1475 p=.207
72M_BHAR_CP	0.0275 p=.815	-0.1640 p=.160	-0.0461 p=.695	0.0966 p=.410	-0.1730 p=.138	-0.1439 p=.218

Interestingly, we do not find any statistically significant correlation between the IPO long-term performance measured by the CAR and the BHAR in the four different holding periods and the corporate governance mechanisms set by the family firms on the day of their issuance, except for one correlation that is negative and statistically different from zero at the 5% level, which is between the five-year holding period return measured by the CAR and the percentage of independent directors.

4. RESULTS OF THE LONG-TERM PERFORMANCE MODELS

After discussing the main models of the IPO long-term performance and examining and reviewing the main descriptive statistics, we present below the results of the models used.

4.1. Results of the Benchmark-Adjusted Abnormal Returns

Table 37 and Table 38 below plot the benchmark-adjusted abnormal returns (AR).

Table 37: Monthly benchmark-adjusted abnormal returns (CP)

T	CP					
	N	Mean	Med.	Min.	Max.	Std Dev.
1	86	28.8%	4.2%	-23.5%	413.2%	72.0%

Table 38: Monthly benchmark-adjusted abnormal returns (OP)

T	OP (T from 1 to 36)						T	OP (T from 37 to 72)					
	N	Mean	Med.	Min.	Max.	Std Dev.		N	Mean	Med.	Min.	Max.	Std Dev.
1	86	31.0%	6.4%	-23.0%	457.6%	75.1%	37	82	0.4%	-2.0%	-26.5%	41.4%	13.2%
2	86	0.1%	-1.3%	-51.8%	76.7%	16.8%	38	82	0.3%	-1.0%	-23.2%	39.5%	12.6%
3	86	1.9%	0.1%	-53.7%	124.6%	20.6%	39	82	2.9%	-1.8%	-46.5%	136.5%	23.1%
4	86	-0.2%	-0.8%	-44.5%	62.4%	17.1%	40	82	-1.1%	-1.8%	-31.8%	53.6%	14.2%
5	86	-1.7%	-0.4%	-46.3%	36.3%	14.3%	41	82	-1.5%	-3.9%	-28.4%	62.8%	15.0%
6	86	-1.5%	-0.1%	-52.5%	57.6%	15.3%	42	82	1.6%	1.7%	-38.5%	34.0%	13.3%
7	85	-2.8%	-2.4%	-39.9%	75.3%	14.4%	43	82	5.1%	1.0%	-35.8%	108.5%	20.6%
8	85	-0.2%	-0.6%	-31.8%	142.1%	19.9%	44	82	0.7%	0.3%	-34.5%	53.4%	14.9%
9	85	-4.0%	-3.9%	-42.9%	95.5%	17.2%	45	81	4.0%	-1.0%	-61.5%	270.6%	34.5%
10	84	-1.2%	-0.6%	-44.1%	38.4%	16.3%	46	81	5.3%	1.4%	-33.7%	79.1%	18.6%
11	84	3.7%	0.2%	-33.3%	125.9%	25.0%	47	81	0.1%	-1.2%	-31.7%	53.2%	14.8%
12	84	2.8%	-0.4%	-43.6%	342.4%	40.4%	48	80	10.0%	0.8%	-30.1%	477.6%	59.6%
13	84	-1.8%	-2.3%	-71.5%	87.2%	18.7%	49	80	-3.4%	-3.7%	-51.3%	34.1%	13.3%
14	84	-3.1%	-2.1%	-44.1%	34.6%	13.3%	50	80	0.8%	-0.5%	-73.2%	123.0%	20.6%
15	83	-2.6%	-2.1%	-46.6%	28.1%	13.9%	51	79	4.8%	2.0%	-39.3%	98.8%	18.8%
16	83	2.7%	0.9%	-39.0%	98.5%	18.6%	52	79	-0.1%	-0.1%	-21.4%	32.0%	10.9%
17	83	-1.5%	-3.5%	-49.2%	62.1%	17.7%	53	79	1.2%	0.2%	-56.5%	29.3%	12.8%
18	83	1.1%	0.5%	-49.4%	41.3%	14.2%	54	79	3.6%	2.6%	-42.4%	49.7%	14.4%
19	83	0.0%	-0.4%	-50.1%	110.2%	20.1%	55	79	0.4%	-0.5%	-54.9%	39.3%	14.0%
20	83	2.1%	0.8%	-72.6%	78.4%	17.5%	56	78	-0.5%	-1.3%	-37.0%	26.9%	11.6%
21	83	2.1%	-2.6%	-35.3%	217.7%	30.9%	57	77	0.5%	0.3%	-37.2%	55.6%	14.5%
22	83	2.1%	-0.3%	-43.0%	115.2%	20.6%	58	77	2.9%	0.9%	-39.1%	96.4%	19.5%
23	83	-0.7%	-1.5%	-46.1%	139.7%	21.3%	59	77	1.7%	1.3%	-39.5%	44.0%	14.9%
24	83	2.5%	-0.4%	-39.6%	97.1%	20.3%	60	77	-0.5%	-0.9%	-43.2%	40.4%	13.8%
25	83	1.5%	-0.6%	-34.4%	54.0%	14.7%	61	77	1.9%	1.5%	-29.5%	56.2%	11.9%
26	82	4.1%	2.2%	-40.1%	129.6%	19.9%	62	77	-0.2%	0.3%	-41.4%	64.7%	15.5%
27	82	1.2%	-1.1%	-31.0%	41.0%	13.3%	63	77	0.1%	-0.4%	-44.6%	63.8%	15.2%
28	82	-1.7%	-2.3%	-51.5%	58.0%	15.5%	64	77	0.4%	-0.6%	-35.6%	91.3%	15.8%
29	82	-1.5%	-1.2%	-53.7%	39.6%	14.2%	65	77	1.3%	-1.7%	-28.4%	53.8%	13.9%

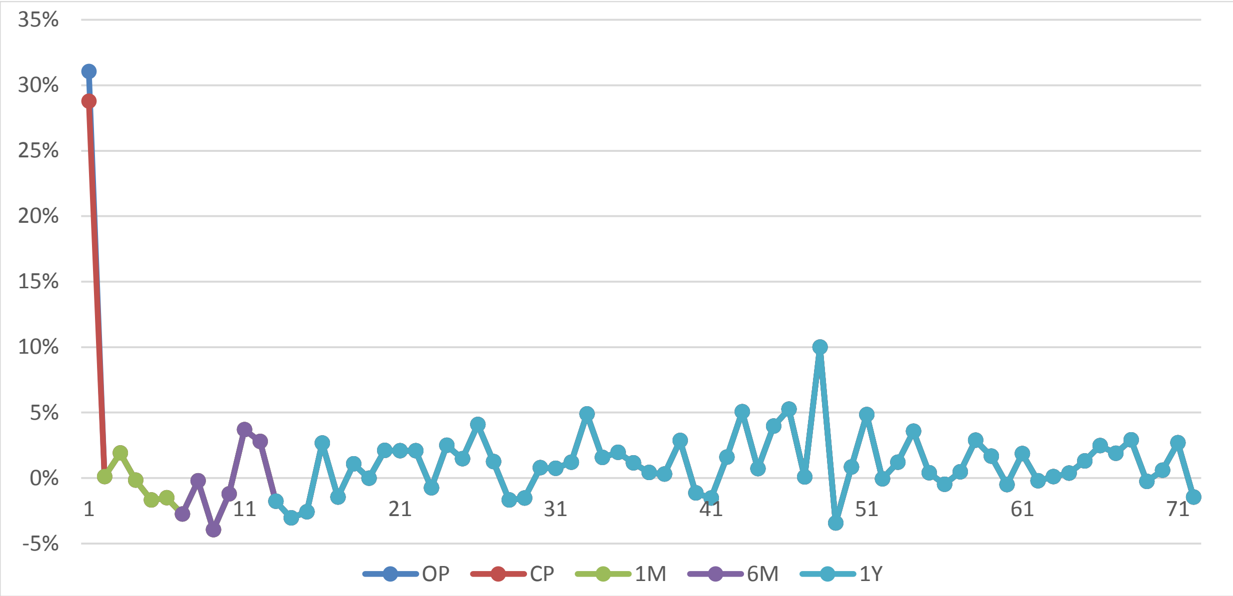
30	82	0.8%	-3.5%	-39.5%	152.8%	22.1%	66	77	2.5%	2.1%	-35.1%	35.0%	12.0%
31	82	0.7%	-0.9%	-40.0%	76.1%	18.7%	67	77	1.9%	-0.6%	-56.2%	73.9%	19.7%
32	82	1.2%	1.3%	-43.4%	46.4%	17.0%	68	77	2.9%	1.3%	-31.5%	50.6%	14.6%
33	82	4.9%	0.5%	-40.2%	312.1%	39.5%	69	77	-0.3%	-0.3%	-59.9%	80.1%	18.6%
34	82	1.6%	-0.7%	-38.3%	45.3%	15.0%	70	76	0.6%	-0.5%	-30.2%	61.4%	13.0%
35	82	2.0%	1.9%	-45.9%	52.6%	17.8%	71	76	2.7%	1.4%	-36.3%	85.4%	17.2%
36	82	1.1%	0.1%	-54.6%	77.4%	20.2%	72	75	-1.5%	-1.4%	-55.4%	25.3%	10.8%

The AR results show that following issuance and until the seventy-second month, the first month generated the highest one-month abnormal return ever, whether the shares were purchased at the OP or at the CP. The first-month return was equal to 31% if the shares were purchased at the OP and 28.8% if the shares were purchased at the CP. However, the returns based on the CP were lower, since the shares on average generated a positive first-day abnormal return, as we have seen and discussed in the previous chapter. This explains why the shares' first-day closing price was higher than the offering price, therefore leading to a lower one-month abnormal return based on the CP calculation.

However, only in the first month, a difference is observed in the monthly average abnormal return between the OP and the CP. Since the average abnormal return is calculated month by month and it represents the monthly average abnormal performance of the IPO shares over their benchmark, all the returns after the first month will be the same. Thus, for example, the abnormal return in the eighteenth month represents the price appreciation/depreciation of the IPO portfolio over its benchmark from the seventeenth until the eighteenth month, which is certainly the same for the OP, CP, 1M, 6M, and 12M.

The average benchmark-adjusted abnormal return from the second until the seventy-second month is +0.95% per month and the median is equal to -0.50% per month. That was a good enough reason for deciding both to include and to exclude the first-month abnormal return when observing the IPO long-term performance, since this extremely high one-month abnormal return clearly represents an outlier and is worthy of further observation. Moreover, we excluded and included the first 6 and 12 months to observe firms' performance better after a while of issuance, which is after entering a somehow more stable phase.

Figure 17: AR trend from the first to the seventy-second month.



As previously discussed in the section on testing the hypotheses, and as we see from the monthly abnormal returns, whether including or excluding the first-month returns, the IPO long-term performance generated positive returns. Figure 17 shows the average abnormal return trends from the first to the seventy-second month for the five different entry dates. We notice that the number of positive monthly abnormal returns is higher than the number of negative ones and that the positive monthly abnormal returns are on average higher in value, making these positive overall abnormal returns for the whole period, as we will see in the subsequent results.

4.2. Results of the Cumulative Benchmark-Adjusted Abnormal Returns

Below we present the descriptive statistics for the CAR results for the CP and OP and in the Appendices we present the CAR results of the 1M, 6M, and 12M from the first to the seventy-second month.

Table 39: Cumulative benchmark-adjusted abnormal returns (CP)

T	CAR_CP (T from 1 to 36)						T	CAR_CP (T from 37 to 72)					
	N	Mean	Median	Min.	Max.	Std Dev.		N	Mean	Median	Min.	Max.	Std Dev.
1	86	28.8%	4.2%	-23.5%	413.2%	72.0%	37	82	46.8%	38.0%	-212.9%	344.1%	114.6%
2	86	28.9%	7.8%	-45.9%	370.6%	68.6%	38	82	47.1%	29.7%	-226.3%	339.8%	111.9%
3	86	30.8%	8.7%	-59.1%	363.7%	73.4%	39	82	49.9%	38.5%	-211.3%	321.1%	115.3%
4	86	30.6%	9.2%	-82.1%	350.5%	79.1%	40	82	48.8%	34.6%	-235.1%	333.5%	115.6%
5	86	28.9%	8.6%	-105.4%	357.0%	80.0%	41	82	47.2%	33.5%	-244.8%	316.1%	116.6%
6	86	27.4%	11.0%	-107.0%	345.3%	78.8%	42	82	48.8%	38.1%	-221.0%	333.4%	116.6%
7	85	25.1%	8.4%	-114.5%	365.7%	81.6%	43	82	53.9%	33.5%	-196.8%	328.2%	115.3%
8	85	24.8%	11.8%	-122.6%	359.8%	83.7%	44	82	54.6%	34.9%	-208.8%	325.5%	118.0%
9	85	20.9%	6.6%	-136.0%	352.8%	86.7%	45	81	58.9%	33.1%	-207.9%	347.8%	120.3%
10	84	19.9%	5.6%	-151.4%	335.0%	88.6%	46	81	64.2%	33.8%	-195.4%	386.3%	123.6%
11	84	23.6%	7.9%	-146.6%	325.7%	94.1%	47	81	64.2%	37.8%	-183.0%	387.1%	123.1%
12	**84**	**26.4%**	**12.1%**	**-151.4%**	**367.6%**	**97.3%**	**48**	**80**	**75.0%**	**41.6%**	**-173.0%**	**693.7%**	**140.3%**
13	84	24.6%	5.7%	-137.9%	363.7%	95.1%	49	80	71.5%	34.2%	-178.2%	642.3%	136.7%
14	84	21.5%	2.2%	-150.4%	360.1%	97.4%	50	80	72.4%	42.1%	-185.8%	765.4%	146.2%
15	83	18.8%	3.4%	-191.1%	363.7%	103.2%	51	79	76.7%	47.2%	-180.8%	726.1%	145.8%
16	83	21.5%	2.0%	-152.0%	372.3%	100.9%	52	79	76.7%	44.4%	-181.0%	740.3%	144.3%
17	83	20.0%	1.7%	-155.5%	354.5%	99.9%	53	79	77.9%	57.8%	-183.1%	683.8%	140.5%
18	83	21.1%	1.5%	-164.9%	355.5%	100.5%	54	79	81.4%	56.7%	-190.9%	692.3%	143.0%
19	83	21.0%	7.1%	-162.9%	343.0%	101.2%	55	79	81.8%	61.5%	-198.3%	731.6%	146.6%
20	83	23.1%	4.0%	-148.8%	357.2%	100.8%	56	78	79.4%	63.5%	-199.2%	717.1%	147.1%
21	83	25.2%	10.4%	-151.9%	360.3%	102.9%	57	77	79.9%	50.9%	-204.6%	704.7%	147.6%
22	83	27.3%	9.1%	-178.9%	342.1%	104.3%	58	77	82.7%	70.1%	-202.7%	703.6%	144.5%
23	83	26.5%	13.6%	-175.3%	331.2%	104.4%	59	77	84.4%	80.1%	-208.1%	699.0%	148.1%
24	**83**	**29.0%**	**13.7%**	**-162.5%**	**322.1%**	**105.2%**	**60**	**77**	**83.9%**	**63.1%**	**-204.8%**	**682.3%**	**147.4%**
25	83	30.5%	20.1%	-165.9%	316.0%	100.5%	61	77	85.7%	75.1%	-207.9%	677.9%	149.5%
26	82	36.1%	21.4%	-151.3%	315.4%	100.3%	62	77	85.5%	71.1%	-211.4%	673.4%	149.8%
27	82	37.3%	22.6%	-172.2%	318.7%	101.8%	63	77	85.6%	69.2%	-216.6%	674.4%	152.9%
28	82	35.6%	21.0%	-160.6%	328.7%	100.8%	64	77	86.0%	65.8%	-218.2%	675.6%	158.2%
29	82	34.1%	18.1%	-165.7%	334.5%	102.3%	65	77	87.3%	60.3%	-223.3%	675.1%	157.8%
30	82	34.9%	26.1%	-180.9%	329.6%	103.9%	66	77	89.8%	65.3%	-222.2%	710.0%	159.4%
31	82	35.6%	25.0%	-187.7%	332.0%	104.1%	67	77	91.7%	70.5%	-223.1%	653.8%	156.4%
32	82	36.8%	29.7%	-190.6%	335.8%	106.1%	68	77	94.6%	76.2%	-232.8%	704.4%	159.2%

33	82	41.7%	33.5%	-195.3%	392.6%	110.6%	69	77	94.3%	73.8%	-259.2%	757.3%	166.2%
34	82	43.3%	29.2%	-196.7%	390.1%	110.1%	70	76	98.6%	74.3%	-260.1%	752.5%	163.1%
35	82	45.2%	30.9%	-178.2%	344.1%	108.4%	71	76	101.3%	74.2%	-292.2%	774.2%	163.1%
36	**82**	**46.4%**	**34.7%**	**-198.7%**	**342.7%**	**113.1%**	**72**	**75**	**104.2%**	**74.7%**	**-347.5%**	**774.9%**	**162.6%**

Table 40: Cumulative benchmark-adjusted abnormal returns (OP)

T	CAR_OP (T from 1 to 36)						T	CAR_OP (T from 37 to 72)					
	N	**Mean**	**Median**	**Min.**	**Max.**	**Std Dev.**		**N**	**Mean**	**Median**	**Min.**	**Max.**	**Std Dev.**
1	86	31.0%	6.4%	-23.0%	457.6%	75.1%	37	82	49.2%	38.9%	-211.4%	343.7%	116.6%
2	86	31.1%	8.7%	-47.1%	405.8%	71.4%	38	82	49.5%	32.1%	-226.3%	339.4%	113.9%
3	86	33.1%	10.4%	-60.3%	362.2%	75.6%	39	82	52.3%	40.9%	-211.2%	327.4%	117.6%
4	86	32.9%	11.9%	-84.4%	349.0%	81.1%	40	82	51.2%	36.9%	-235.1%	333.1%	117.8%
5	86	31.2%	7.7%	-106.6%	356.1%	81.9%	41	82	49.6%	32.8%	-244.7%	322.2%	118.8%
6	86	29.7%	9.7%	-108.2%	352.0%	80.9%	42	82	51.2%	38.9%	-220.9%	333.0%	118.7%
7	85	27.3%	9.0%	-115.1%	364.2%	83.6%	43	82	56.3%	38.2%	-198.1%	327.8%	117.5%
8	85	27.1%	12.3%	-123.1%	358.3%	85.5%	44	82	57.0%	39.0%	-207.4%	325.1%	120.1%
9	85	23.2%	8.2%	-135.9%	351.3%	88.3%	45	81	61.3%	38.3%	-206.4%	346.3%	121.7%
10	84	22.2%	5.2%	-151.3%	333.5%	90.3%	46	81	66.6%	33.4%	-194.0%	384.8%	125.0%
11	84	25.9%	11.0%	-146.5%	324.2%	95.5%	47	81	66.7%	39.9%	-185.0%	385.6%	124.6%
12	**84**	**28.7%**	**14.9%**	**-151.4%**	**366.2%**	**98.6%**	**48**	**80**	**77.4%**	**44.5%**	**-175.0%**	**744.1%**	**143.5%**
13	84	26.9%	6.6%	-138.5%	362.2%	96.5%	49	80	74.0%	35.5%	-180.1%	692.8%	139.7%
14	84	23.8%	1.8%	-151.0%	358.6%	98.8%	50	80	74.8%	43.2%	-186.8%	815.8%	149.5%
15	83	21.2%	3.2%	-189.8%	362.2%	104.8%	51	79	79.2%	50.2%	-182.5%	776.5%	149.0%
16	83	23.8%	3.1%	-152.5%	370.9%	102.6%	52	79	79.1%	50.4%	-182.1%	790.7%	147.6%
17	83	22.4%	1.6%	-156.0%	353.0%	101.5%	53	79	80.3%	61.7%	-184.2%	734.2%	143.6%
18	83	23.4%	-1.2%	-165.5%	354.0%	102.2%	54	79	83.9%	56.2%	-188.6%	742.7%	146.2%
19	83	23.4%	6.8%	-163.4%	341.5%	102.9%	55	79	84.3%	61.0%	-198.2%	782.0%	149.9%
20	83	25.5%	2.0%	-149.3%	355.7%	102.5%	56	78	82.0%	65.8%	-197.3%	767.5%	150.4%
21	83	27.6%	10.9%	-152.5%	358.8%	104.7%	57	77	82.4%	61.0%	-202.3%	755.1%	150.9%
22	83	29.7%	8.4%	-177.4%	340.6%	106.2%	58	77	85.3%	70.7%	-200.4%	754.0%	148.0%
23	83	28.9%	13.0%	-173.8%	329.7%	106.2%	59	77	87.0%	79.3%	-205.8%	749.4%	151.6%
24	**83**	**31.4%**	**14.4%**	**-161.0%**	**320.6%**	**107.0%**	**60**	**77**	**86.5%**	**72.6%**	**-202.5%**	**732.7%**	**150.9%**
25	83	32.9%	18.7%	-165.8%	316.8%	102.1%	61	77	88.3%	82.5%	-205.6%	728.3%	152.9%
26	82	38.5%	22.0%	-149.9%	323.0%	102.1%	62	77	88.1%	73.8%	-209.0%	723.9%	153.2%
27	82	39.7%	24.4%	-170.7%	319.4%	103.7%	63	77	88.2%	72.6%	-214.3%	724.9%	156.3%
28	82	38.0%	20.4%	-159.2%	329.5%	102.8%	64	77	88.6%	64.2%	-215.9%	726.1%	161.6%
29	82	36.5%	17.6%	-164.2%	335.3%	104.4%	65	77	89.9%	64.5%	-221.0%	725.5%	161.3%
30	82	37.3%	38.1%	-181.5%	330.4%	106.2%	66	77	92.4%	67.6%	-219.9%	760.5%	162.8%
31	82	38.0%	29.0%	-186.2%	337.4%	106.4%	67	77	94.2%	70.6%	-223.2%	704.3%	159.5%
32	82	39.2%	35.1%	-189.1%	336.6%	108.1%	68	77	97.2%	77.3%	-233.0%	754.8%	162.5%

33	82	44.1%	35.6%	-193.8%	392.2%	112.7%	69	77	96.9%	75.9%	-259.4%	807.7%	169.5%
34	82	45.7%	37.6%	-195.2%	389.7%	112.1%	70	76	101.2%	74.1%	-260.3%	802.9%	166.3%
35	82	47.6%	32.4%	-176.7%	343.7%	110.5%	71	76	103.9%	76.4%	-292.3%	824.7%	166.5%
36	**82**	**48.8%**	**36.3%**	**-197.4%**	**342.3%**	**115.2%**	**72**	**75**	**106.8%**	**75.8%**	**-347.7%**	**825.4%**	**166.0%**

As previously discussed, among all the five different entry dates, the IPO shares purchased at the CP and at the OP generated on average the highest first-month abnormal returns ever of 28.8% and 31%, respectively, compared with an average abnormal monthly return of around only 0.95%. Accordingly, this has definitely had a considerable effect on the long-run CAR results from the first to the seventy-second month and generated the highest CAR for the investment started on the first day of issuance, whether at the offering price or at the first-day closing price, rather than entering 1, 6, or 12 months after issuance, as we will see in the subsequent tables. As we observe from the two tables above, on average, investors entering the IPO portfolio at the CP or the OP can generate a cumulative benchmark-adjusted abnormal return of 104.2% and 106.8%, respectively, at the end of the seventy-second month, which recorded the highest CARs for both during the 6-year period. As we see in the Appendices, IPO shares purchased at 1M, 6M, and 12M generated a CAR in the seventy-second month of 74.8%, 73.9%, and 78.5%, respectively. Thus, late investors who miss the opportunity to invest in the IPO on the first day of issuance are better off waiting 12 months before entering the IPO portfolio than entering just 1 or 6 months later. However, investing somewhere else should generate over a 1-year period a return that is at least equal to or greater than the return generated if the IPO shares were to be invested after 1 or 6 months, representing the opportunity cost.

However, what is important to note in this result is that even when excluding the very high first-month abnormal returns of 28.8% and 31% by either entering the IPO portfolio at the CP or at the OP, family firms still generate positive CARs in the long term. These positive long-term returns start to appear at the end of the second year after issuance for the three entry dates, which are 1M, 6M, and 12M. This means that late investment in the IPO portfolio, albeit generating negative abnormal returns in the first few months, will achieve positive abnormal returns in the long term, reaching more than the 70% level. Moreover, this shows that the positive long-term returns of these family firms observed for the portfolios do not derive solely from the very high first-month abnormal returns, which are directly associated with the IPO effect, but that additionally these family firms seem to outperform their market benchmark in the long term, month after month, to reach levels well above 70%.

However, it is worth noting that the IPO performance for all the 5 different entry dates shows decreasing abnormal returns in the first few months of issuance, just after the fifth month until the end of the second year. Additionally, the CARs for 1M, 6M, and 12M reach a record low of -10.8%, -9.9%, and -7.7%, respectively, after 15 months of issuance. During this month too, IPO portfolios purchased at the CP and the OP generate a CAR of 18.8% and 21.2%, decreasing from the first-month CAR of 28.8% and 31%, which is a loss of around 10% for both CARs.

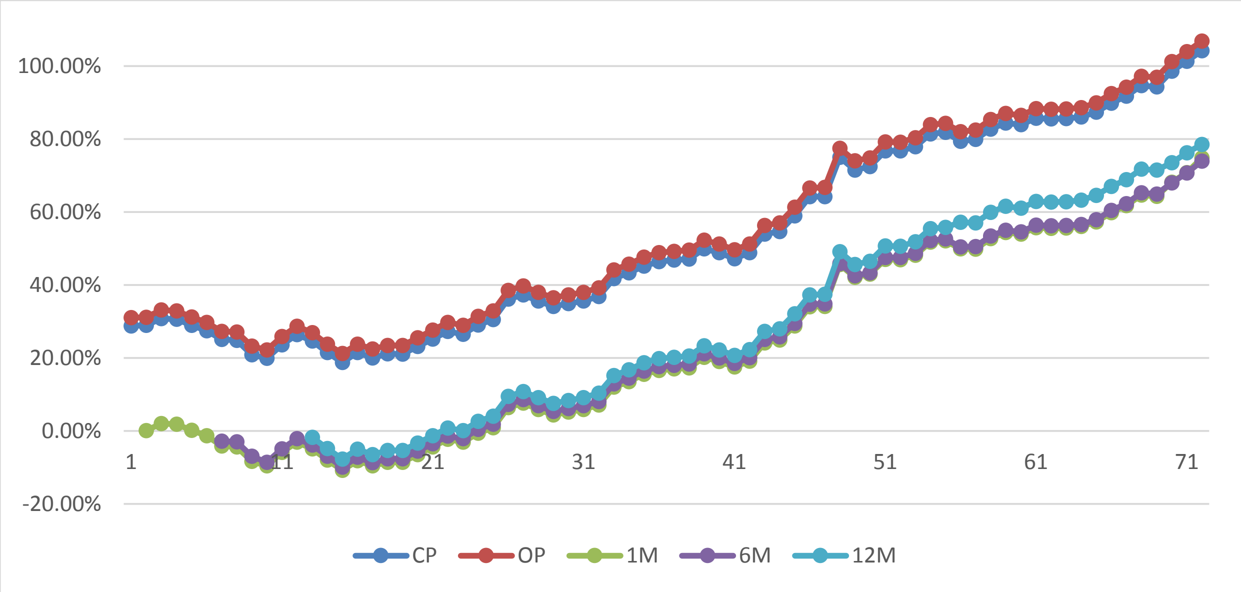
Therefore, it is very important to observe these results thoroughly for the following reasons. First, we notice that the French family firms were somehow correctly priced on the day of issuance, generating first-day underpricing of only around 2%, which is considered to be low compared with other firms, which usually generate double-digit IPO first-day abnormal returns, as described by numerous authors around the world. Additionally, this is apparent from observing the first-month abnormal returns calculated at the CP and the OP, making a difference between the two of around 2%, which is associated with the first-day abnormal returns. Therefore, on average, there was no serious problem in pricing these family firms' shares upon issuance.

However, compared with the 2% first-day abnormal returns, the very high first-month abnormal returns of around 30%, followed by steady returns for around three months and then continually decreasing abnormal returns for the next twelve months, reveal important implications. First, and as we argued, family firms could be fairly priced on the day of their issuance, generating moderate first-day underpricing of around 2%. Second, investors' overoptimism about IPO short-term and prompt returns along with the market speculators and opportunists who seek any IPO to invest in drove the first-month abnormal returns as high as 30%, created by the very high demand for the IPO shares, though it was sometimes irrational and fundamentally weak. Third, after this fast trend that accelerated in the first month of issuance and stabilized for around three months, diminishing continuously over twelve consecutive months to record the lowest abnormal returns ever and then starting to recover all the losses until the end of the second year, were CARs that are shown to be higher than the first-month abnormal returns. However, these family firms maintained their good performance throughout the remaining months to reach more than 100% in the seventy-second month for the portfolios purchased at the CP and the OP and more than 70% for the portfolios purchased at 1M, 6M, and 12M.

Thus, after the first month of issuance, these continuously decreasing CARs for almost two years for the portfolios purchased on the five different entry dates infer that IPO shares were traded much above their intrinsic values after the first day of issuance until almost the first three months had passed, due to the fad periods created by over-optimistic investors. That is why IPO portfolios generated very high first-month abnormal returns then retreated until the end of the second year of issuance, when the recovery of all the losses started and continued to generate positive long-term returns.

Consequently, all the portfolios purchased 1, 6, and even 12 months after issuance experienced a negative CAR until the end of the second year of issuance, which shows that all the IPO shares were overvalued after one month of issuance too, until the end of the second year, when the CAR started to be positive. However, IPO portfolios purchased after 1 and 6 months of issuance generated a longer negative CAR than portfolios purchased after 12 months of issuance, which started to recover much sooner. Below we will see the CAR trend for the five different entry dates from the first to the seventy-second month.

Figure 18: CAR trend from the first to the seventy-second month.



4.3. Results of the Buy-and-Hold Abnormal Returns

In this section, we will present the BHAR results for the CP and OP from the first to the seventy-second month. The 1M, 6M, and 12M results will be presented in the Appendices as well.

Table 41: Buy-and-hold abnormal returns (CP)

T	BHAR_CP (T from 1 to 36)						T	BHAR_CP (T from 37 to 72)					
	N	Mean	Median	Min.	Max.	Std Dev.		N	Mean	Median	Min.	Max.	Std Dev.
1	86	28.8%	4.2%	-23.5%	413.2%	72.0%	37	82	26.5%	-20.9%	-196.6%	704.1%	170.1%
2	86	26.1%	8.0%	-42.1%	377.2%	60.0%	38	82	23.8%	-17.0%	-211.4%	678.7%	159.5%
3	86	31.2%	8.7%	-51.6%	630.2%	89.2%	39	82	33.7%	-18.2%	-212.1%	1447.6%	211.8%
4	86	37.8%	7.4%	-65.5%	1155.0%	140.3%	40	82	23.5%	-14.9%	-231.6%	1067.4%	171.7%
5	86	37.9%	6.6%	-76.8%	1327.7%	158.6%	41	82	20.9%	-18.3%	-232.8%	731.6%	156.5%
6	86	28.4%	9.4%	-76.6%	956.0%	117.7%	42	82	20.7%	-20.8%	-231.9%	640.4%	150.8%
7	85	21.6%	4.8%	-80.2%	514.2%	81.6%	43	82	26.1%	-17.4%	-227.0%	757.1%	164.8%
8	85	22.7%	3.0%	-87.8%	607.7%	90.9%	44	82	31.3%	-19.5%	-242.7%	904.1%	179.1%
9	85	19.4%	3.0%	-91.6%	562.8%	91.6%	45	81	34.8%	-19.8%	-240.2%	832.8%	180.8%
10	84	20.8%	0.1%	-98.7%	725.3%	107.3%	46	81	37.1%	-23.1%	-246.5%	771.2%	179.1%
11	84	29.6%	-1.3%	-110.0%	866.7%	136.3%	47	81	37.7%	-21.3%	-241.3%	838.5%	188.2%
12	**84**	**28.2%**	**-1.1%**	**-100.5%**	**858.2%**	**130.0%**	**48**	**80**	**42.3%**	**-18.0%**	**-235.2%**	**890.3%**	**184.5%**
13	84	15.9%	-0.2%	-113.1%	412.5%	89.9%	49	80	35.6%	-21.3%	-234.4%	800.2%	180.6%
14	84	12.0%	-6.5%	-125.0%	409.7%	88.4%	50	80	38.1%	-14.6%	-242.8%	781.9%	174.3%
15	83	12.7%	-10.0%	-116.7%	460.4%	98.4%	51	79	39.8%	-12.7%	-235.0%	823.5%	182.1%
16	83	12.6%	-12.1%	-113.8%	443.2%	94.6%	52	79	34.1%	-16.9%	-214.9%	750.2%	163.1%
17	83	9.4%	-12.3%	-118.9%	386.0%	90.4%	53	79	38.5%	-16.0%	-221.3%	738.4%	173.0%
18	83	12.0%	-11.1%	-117.2%	480.3%	100.2%	54	79	42.6%	-14.3%	-215.7%	813.2%	181.7%
19	83	11.9%	-14.3%	-120.5%	444.2%	97.2%	55	79	40.5%	-8.3%	-211.3%	787.8%	179.1%
20	83	14.5%	-11.9%	-117.9%	546.3%	103.7%	56	78	39.6%	-10.9%	-204.3%	891.8%	188.6%
21	83	15.9%	-15.8%	-126.7%	784.0%	125.7%	57	77	35.2%	-16.3%	-180.2%	939.8%	180.8%
22	83	15.7%	-11.0%	-141.7%	565.4%	114.0%	58	77	31.9%	-20.0%	-187.5%	1004.3%	169.5%
23	83	13.9%	-11.2%	-138.5%	498.8%	113.7%	59	77	37.5%	-15.8%	-185.4%	1265.0%	189.0%
24	**83**	**10.6%**	**-11.4%**	**-149.0%**	**486.5%**	**102.0%**	**60**	**77**	**40.0%**	**-18.0%**	**-177.6%**	**1482.1%**	**207.6%**
25	83	11.1%	-10.0%	-151.1%	410.5%	101.1%	61	77	44.8%	-11.9%	-173.7%	1574.4%	220.0%
26	82	16.0%	-9.9%	-144.8%	556.2%	111.5%	62	77	46.4%	-13.3%	-190.1%	1611.0%	226.7%
27	82	19.1%	-11.2%	-152.9%	538.8%	119.2%	63	77	47.9%	-18.8%	-185.7%	1534.7%	219.5%
28	82	17.9%	-14.5%	-153.9%	608.5%	125.3%	64	77	52.7%	-19.3%	-196.7%	1578.8%	235.7%
29	82	17.0%	-16.1%	-156.3%	640.5%	131.4%	65	77	54.9%	-13.6%	-200.1%	1806.0%	253.8%
30	82	16.0%	-15.2%	-164.0%	702.3%	135.4%	66	77	59.7%	-10.9%	-190.8%	2000.6%	267.5%
31	82	14.4%	-16.3%	-172.1%	740.7%	135.3%	67	77	59.7%	-7.4%	-182.4%	2072.6%	272.3%
32	82	18.4%	-15.2%	-183.1%	869.9%	148.2%	68	77	68.4%	-9.4%	-165.7%	2333.9%	306.0%

33	82	17.2%	-16.3%	-172.6%	842.7%	142.6%	69	77	70.6%	-7.2%	-174.6%	2571.4%	326.7%
34	82	18.7%	-16.9%	-172.5%	667.3%	145.4%	70	76	66.4%	-5.6%	-179.3%	2158.2%	285.0%
35	82	21.9%	-17.6%	-179.9%	752.7%	157.5%	71	76	67.0%	3.3%	-173.7%	2073.8%	276.1%
36	**82**	**22.8%**	**-17.2%**	**-185.5%**	**707.3%**	**155.6%**	**72**	**75**	**66.8%**	**5.5%**	**-149.4%**	**1820.8%**	**255.7%**

Table 42: Buy-and-hold abnormal returns (OP)

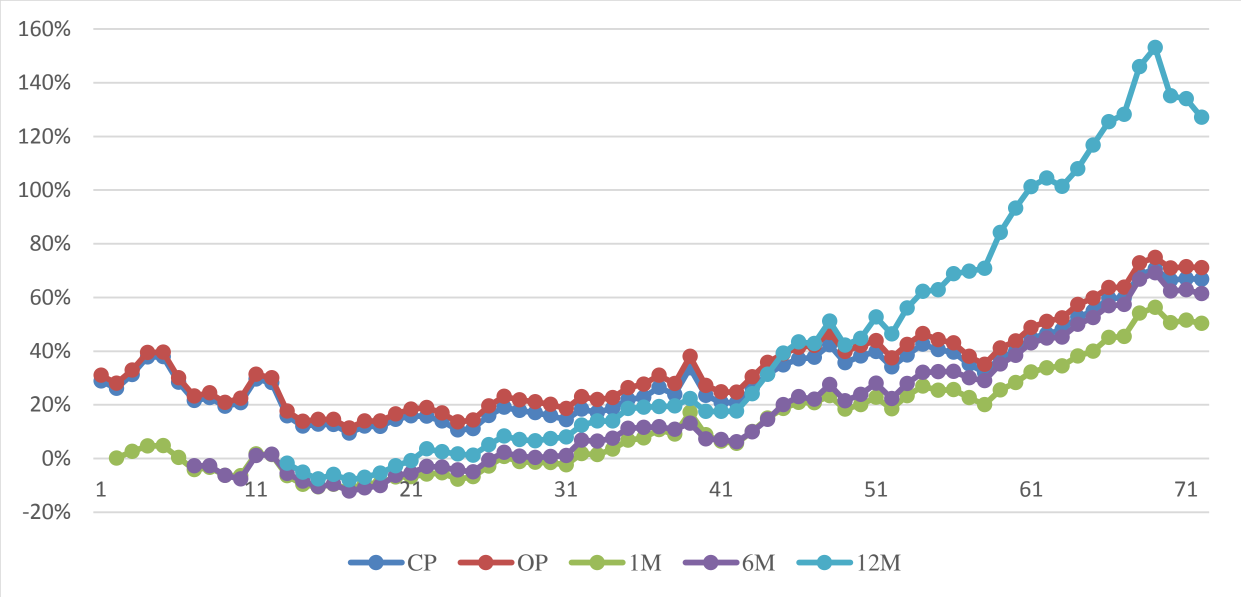
T	BHAR_OP (T from 1 to 36)						T	BHAR_OP (T from 37 to 72)					
	N	Mean	Median	Min.	Max.	Std Dev.		N	Mean	Median	Min.	Max.	Std Dev.
1	86	31.0%	6.4%	-23.0%	457.6%	75.1%	37	82	31.0%	-19.5%	-195.8%	880.4%	181.4%
2	86	28.0%	8.7%	-43.3%	376.2%	60.6%	38	82	27.9%	-16.2%	-210.6%	723.0%	168.5%
3	86	32.9%	10.5%	-52.9%	629.2%	89.0%	39	82	38.0%	-17.7%	-211.3%	1445.7%	219.1%
4	86	39.5%	9.8%	-66.8%	1153.9%	140.1%	40	82	27.2%	-14.9%	-230.6%	1065.5%	177.2%
5	86	39.6%	6.8%	-78.1%	1326.5%	158.4%	41	82	24.8%	-20.0%	-231.9%	729.9%	165.0%
6	86	30.1%	8.9%	-77.9%	954.9%	117.5%	42	82	24.7%	-20.1%	-230.9%	809.0%	161.3%
7	85	23.3%	5.1%	-80.8%	513.1%	81.7%	43	82	30.4%	-16.3%	-226.1%	952.6%	177.4%
8	85	24.4%	5.7%	-88.4%	606.5%	90.8%	44	82	35.8%	-17.5%	-241.7%	998.3%	192.0%
9	85	20.9%	0.8%	-91.5%	561.6%	91.5%	45	81	39.0%	-20.7%	-239.2%	1005.8%	193.5%
10	84	22.4%	0.4%	-100.2%	724.2%	107.2%	46	81	41.4%	-20.5%	-245.5%	956.3%	191.3%
11	84	31.3%	2.5%	-111.8%	863.7%	136.1%	47	81	42.1%	-21.0%	-240.4%	1051.8%	201.6%
12	**84**	**30.0%**	**2.6%**	**-102.1%**	**855.3%**	**129.9%**	**48**	**80**	**46.9%**	**-17.9%**	**-234.3%**	**1113.8%**	**199.7%**
13	84	17.7%	-1.4%	-114.9%	410.1%	90.3%	49	80	39.8%	-19.9%	-233.5%	1002.0%	193.3%
14	84	13.8%	-9.0%	-126.9%	407.4%	88.8%	50	80	42.1%	-15.2%	-244.4%	801.4%	183.8%
15	83	14.5%	-10.3%	-118.6%	457.9%	98.7%	51	79	43.9%	-12.6%	-234.1%	930.6%	193.4%
16	83	14.5%	-12.4%	-115.6%	440.8%	94.9%	52	79	37.4%	-16.1%	-216.3%	752.3%	169.6%
17	83	11.3%	-12.0%	-120.9%	383.6%	90.7%	53	79	42.4%	-16.1%	-222.8%	829.4%	183.2%
18	83	13.9%	-11.0%	-119.1%	479.1%	100.7%	54	79	46.5%	-15.0%	-217.1%	815.4%	191.2%
19	83	13.9%	-10.0%	-122.5%	441.6%	98.1%	55	79	44.2%	-8.3%	-212.7%	790.1%	187.3%
20	83	16.6%	-8.4%	-118.6%	543.5%	104.9%	56	78	43.0%	-11.3%	-205.7%	894.1%	194.4%
21	83	18.4%	-18.3%	-127.5%	784.5%	127.5%	57	77	38.0%	-15.8%	-179.5%	939.6%	183.5%
22	83	18.9%	-13.2%	-142.7%	565.9%	120.1%	58	77	35.0%	-16.8%	-188.8%	1004.0%	173.2%
23	83	16.9%	-11.7%	-139.4%	496.5%	119.3%	59	77	41.1%	-15.3%	-186.7%	1264.7%	194.8%
24	**83**	**13.6%**	**-11.0%**	**-150.0%**	**484.0%**	**108.4%**	**60**	**77**	**43.7%**	**-14.5%**	**-178.8%**	**1481.7%**	**213.5%**
25	83	14.3%	-9.8%	-152.2%	483.6%	108.2%	61	77	48.8%	-12.4%	-173.0%	1574.1%	227.0%
26	82	19.6%	-9.9%	-144.9%	553.5%	120.0%	62	77	51.0%	-13.4%	-189.3%	1610.7%	235.6%
27	82	23.1%	-10.9%	-152.9%	604.4%	129.6%	63	77	52.4%	-18.6%	-184.9%	1534.3%	227.9%
28	82	21.8%	-14.3%	-154.0%	779.5%	137.2%	64	77	57.4%	-14.1%	-195.9%	1578.4%	245.4%
29	82	21.1%	-15.4%	-156.3%	818.3%	144.3%	65	77	59.7%	-12.7%	-199.3%	1805.7%	262.8%
30	82	20.2%	-15.5%	-164.0%	893.0%	149.3%	66	77	63.7%	-9.3%	-190.0%	2000.2%	272.2%
31	82	18.6%	-15.2%	-173.8%	939.3%	150.4%	67	77	63.8%	-7.2%	-181.6%	2072.3%	277.2%
32	82	23.0%	-14.2%	-184.9%	1097.5%	166.4%	68	77	72.8%	-9.1%	-165.0%	2333.5%	311.1%

33	82	21.9%	-14.8%	-174.4%	1061.7%	160.7%	69	77	74.9%	-2.5%	-175.7%	2571.0%	330.8%
34	82	22.7%	-16.5%	-174.4%	803.0%	156.2%	70	76	70.9%	-6.3%	-180.4%	2157.8%	290.5%
35	82	26.4%	-16.7%	-181.8%	941.9%	171.0%	71	76	71.4%	5.8%	-174.7%	2073.5%	281.0%
36	**82**	**27.6%**	**-16.2%**	**-187.3%**	**855.1%**	**168.3%**	**72**	**75**	**71.1%**	**9.0%**	**-149.9%**	**1820.4%**	**261.0%**

In the tables shown above, we notice that the IPO portfolios purchased at the CP and the OP generate a BHAR at the end of the seventy-second month of 66.8% and 71.1%, respectively, compared with the CAR for the mentioned period of 104.2% and 106.8%. However, interestingly, portfolios purchased after 1, 6, and 12 months generated a BHAR equal to 50.3%, 61.4%, and 127.1%. This shows that by following the BHAR method, entering into IPO portfolios after 12 months of issuance will generate the highest abnormal returns in the seventy-second month than entering on any date beforehand. This explains why the IPO shares were traded well above their intrinsic values in the first year of issuance, generating such a very high BHAR for the shares purchased at 12M and held until the seventy-second month of their IPO date, rather than shares purchased at their CP, OP, 1M, or 6M. However, we will see that shares were traded above their intrinsic values during the second year as well. For instance, the BHAR of the portfolios purchased at 12M shows an average of -1.8% after 13 months of their IPO date, passing through a record low of -8.0% 17 months after the IPO date then generating only 1.7% 24 months after the IPO date. Thus, the long-term performance in the seventy-second month from the portfolio IPO date can be even higher if the shares were purchased 17 months after their IPO date rather than at any time beforehand. Therefore, IPO shares underperformed the market just after the first month of issuance and until the middle of the second year, but then they started to outperform their benchmark for a long time.

More specifically, IPO portfolios entered at the CP and the OP generated first-month abnormal returns of 28.8% and 31%, respectively. However, 17 months after their IPO date, they both generated BHARs of only 9.4% and 11.3%, respectively, which represented a drop in the BHARs of 19.4% and 19.7% from their first month. Thus, as we discussed earlier in the interpretation of the CAR results, the first-day IPO underpricing of these French family firms of only 2% shows that on average the IPO shares were fairly priced at their issuance. Nevertheless, just after issuance, a fad period quickly arose, accompanied by investors' overoptimism, and drove the first-month abnormal returns of around 30%, which tumbled afterwards but closed at the same level after 12 months of issuance. Then, in the second year, around 65% of these abnormal returns vanished, falling from around 30% in the first month to around 10% a year and a half later. That was sufficient to realize that the shares were traded well above their intrinsic values after issuance, leading to those high first-month abnormal returns and then decreasing to around 10% after a while. We also see that IPO shares purchased after 12 months could have realized a higher BHAR at the end of the seventy-second month. This trend is better observed in the figure plotted below, which shows the BHAR trend on different entry dates from the first to the seventy-second month.

Figure 19: BHAR trend for the five different entry dates.



Nevertheless, it is crucial to remember that the BHARs generated at the end of the seventy-second month for the portfolios entered on different dates have definitely different holding periods. For instance, the BHAR generated for the portfolio purchased 12 months after issuance and held until the seventy-second month has a holding period of 60 months, whereas the portfolio purchased at the first-day closing price and held until the seventy-second month has a holding period of 72 months, which is a year longer. Thus, the BHAR has to be turned into an average effective annual rate of return when comparing two portfolios with different investment holding periods. However, the opportunity cost from investing in the second-best alternative will be taken into consideration when comparing different returns with different holding periods, to avoid over- or underestimating a certain investment rate of return. It is also worth noting that such a high first-month abnormal return is what generally entices successive investors to enter into forthcoming IPOs, seeking to replicate the same high return over the very short period and then to abandon their position. In return, such a fundamentally fictitious and temporary demand will drive IPO shares up for only a short period of time, before pulling them down to their lower values, generating a negative abnormal return. Nevertheless, as we have seen in the long-term performance of the French family firms by the two different measurements, IPO shares underperformed their market benchmark just after a few months of issuance, but in the long term they outperformed it by far, which is different from the commonly viewed example of IPO long-term performance.

4.4. Results of the Holding Period Returns

The first two tables below report the basic descriptive statistics of the holding period returns for the IPO portfolios purchased at the CP and the OP, while the second two tables represent the test of the means of the holding period returns against 0.00% at the 5% level of statistical significance. We notice that the average holding period returns of the IPO portfolios purchased at the CP and at the OP are positive, with the lowest return after 18 months of issuance and the highest after 72 months. However, we also observe that their standard deviations increase with time to record the highest with respect to the average return measured by the coefficient of variation between the second and the third year.

Table 43: Holding period returns (CP)

T	HPR_CP					
	N	Mean	Median	Min.	Max.	Std Dev.
1	86	30.0%	4.9%	-25.8%	416.4%	72.5%
6	86	30.7%	3.9%	-67.8%	985.7%	121.7%
12	84	33.0%	0.4%	-84.8%	871.7%	135.7%
18	83	16.0%	-9.1%	-89.1%	551.5%	107.1%
24	83	15.2%	-12.4%	-93.9%	482.7%	108.5%
30	82	21.4%	-28.3%	-94.5%	751.9%	146.4%
36	82	28.9%	-23.9%	-96.5%	748.3%	167.3%
42	82	25.3%	-34.3%	-97.5%	807.6%	163.2%
48	80	44.5%	-30.1%	-96.0%	896.2%	188.9%
54	79	40.1%	-34.7%	-99.2%	817.4%	178.8%
60	77	37.0%	-22.9%	-99.2%	1455.7%	203.3%
66	77	58.9%	-14.2%	-99.2%	1981.3%	266.7%
72	75	70.1%	5.3%	-98.9%	1804.0%	255.7%

Table 44: Holding period returns (OP)

T	HPR_OP					
	N	Mean	Median	Min.	Max.	Std Dev.
1	86	32.4%	5.7%	-27.7%	455.5%	75.6%
6	86	32.5%	5.8%	-70.7%	985.7%	121.6%
12	84	34.8%	0.4%	-86.4%	871.7%	135.7%
18	83	18.0%	-7.5%	-89.1%	551.5%	107.8%
24	83	18.4%	-12.1%	-93.9%	504.7%	115.4%
30	82	25.7%	-28.3%	-94.5%	943.5%	160.3%
36	82	33.7%	-23.9%	-96.5%	892.5%	180.4%
42	82	29.4%	-34.3%	-97.5%	821.7%	173.5%
48	80	49.2%	-30.1%	-96.0%	1120.4%	204.0%
54	79	44.1%	-32.9%	-99.2%	817.4%	188.3%
60	77	40.8%	-22.9%	-99.2%	1455.7%	209.0%
66	77	62.9%	-12.1%	-99.2%	1981.3%	271.2%
72	75	74.5%	6.4%	-99.0%	1804.0%	261.0%

The two tables below show that the holding period returns for portfolios purchased at the CP and the OP are not statistically significantly different from 0.00% for all the months, just for a few. The detailed results table, which includes all the months from the first to the seventy-second month, shows that during 19 different months, portfolios purchased at the CP are statistically significantly different from 0.00%, and during 27 different months, portfolios purchased at the OP are statistically significantly different from 0.00%. Therefore, portfolios purchased at the OP rather than at the CP not only generate higher holding period returns and higher abnormal returns calculated by the CAR and the BHAR, but also show more returns that are statistically significantly different from 0.00% throughout the entire investment period.

4.5. Results of the Wealth Relative Ratio

The wealth relative (WR) ratio, which takes into consideration the holding period returns of the IPO portfolios over the holding period returns of the benchmark, represents another facet of the buy-and-hold abnormal returns measure. Below, a summary table showing the WR for IPO portfolios purchased on the five different dates is presented.

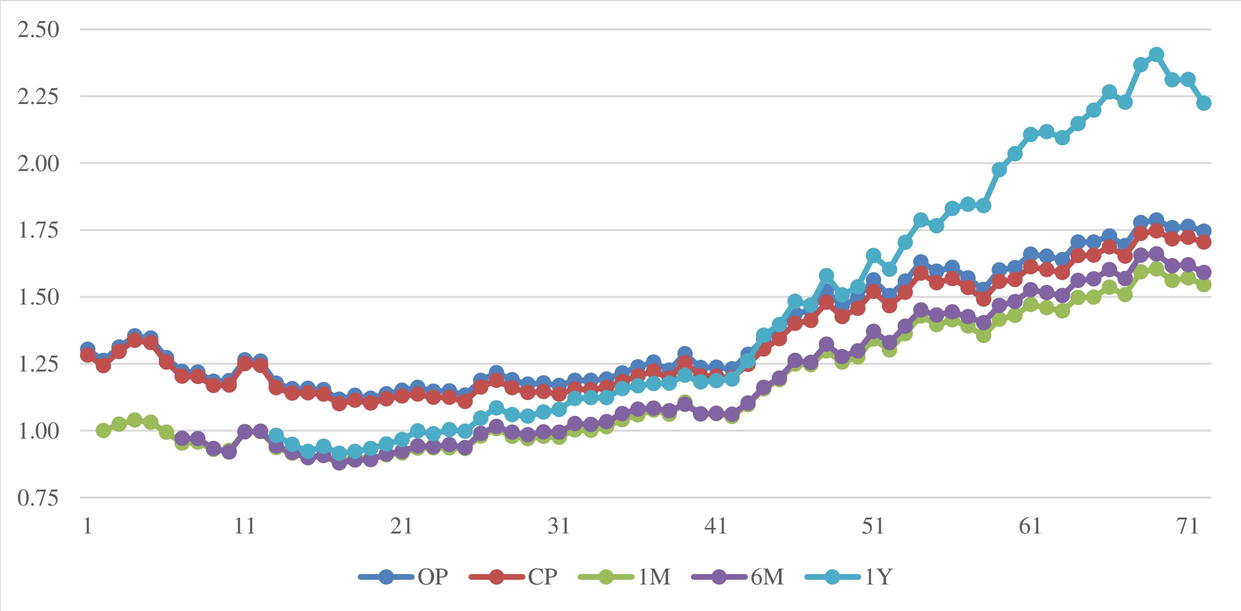
Table 45: Wealth relative ratios

T	N	OP	CP	1M	6M	12M
1	86	1.304	1.282			
2	86	1.262	1.244	1.000		
3	86	1.313	1.296	1.024		
4	86	1.355	1.338	1.040		
5	86	1.346	1.330	1.032		
6	86	1.273	1.256	0.994		
7	85	1.221	1.204	0.954	0.971	
8	85	1.219	1.202	0.957	0.971	
9	85	1.185	1.169	0.929	0.934	
10	84	1.187	1.170	0.927	0.920	
11	84	1.265	1.250	0.997	0.996	
12	84	1.260	1.244	0.997	0.998	
13	84	1.177	1.160	0.938	0.943	0.983
14	84	1.157	1.141	0.915	0.919	0.949
15	83	1.158	1.141	0.904	0.899	0.923
16	83	1.154	1.136	0.907	0.907	0.941
17	83	1.118	1.101	0.887	0.880	0.916
18	83	1.132	1.114	0.899	0.891	0.923
19	83	1.122	1.103	0.896	0.892	0.933
37	82	1.256	1.223	1.076	1.084	1.176
38	82	1.227	1.196	1.061	1.074	1.177
39	82	1.288	1.254	1.107	1.098	1.208
40	82	1.236	1.205	1.063	1.062	1.182
41	82	1.237	1.204	1.063	1.065	1.187
42	82	1.231	1.197	1.053	1.062	1.193
43	82	1.284	1.248	1.097	1.103	1.261
44	82	1.343	1.306	1.156	1.162	1.357
45	81	1.379	1.344	1.191	1.196	1.397
46	81	1.437	1.401	1.249	1.262	1.483
47	81	1.450	1.412	1.247	1.255	1.470
48	80	1.522	1.480	1.298	1.323	1.580
49	80	1.465	1.426	1.256	1.276	1.507
50	80	1.498	1.457	1.275	1.298	1.537
51	79	1.563	1.520	1.342	1.371	1.654
52	79	1.505	1.466	1.302	1.330	1.603
53	79	1.559	1.517	1.362	1.391	1.704
54	79	1.631	1.588	1.429	1.451	1.788
55	79	1.595	1.553	1.397	1.432	1.766

20	83	1.138	1.118	0.910	0.914	0.951	56	78	1.610	1.568	1.414	1.444	1.831
21	83	1.151	1.130	0.917	0.922	0.966	57	77	1.571	1.535	1.392	1.427	1.846
22	83	1.162	1.137	0.934	0.943	1.000	58	77	1.528	1.492	1.355	1.404	1.841
23	83	1.148	1.124	0.936	0.940	0.989	59	77	1.601	1.558	1.416	1.468	1.975
24	83	1.149	1.125	0.936	0.948	1.004	60	77	1.609	1.565	1.431	1.482	2.035
25	83	1.133	1.110	0.933	0.937	0.998	61	77	1.660	1.613	1.471	1.527	2.107
26	82	1.188	1.163	0.980	0.989	1.047	62	77	1.652	1.602	1.459	1.516	2.118
27	82	1.216	1.188	1.007	1.016	1.085	63	77	1.639	1.591	1.447	1.505	2.095
28	82	1.191	1.161	0.979	0.994	1.060	64	77	1.705	1.655	1.498	1.561	2.147
29	82	1.174	1.143	0.971	0.984	1.054	65	77	1.705	1.656	1.499	1.567	2.197
30	82	1.178	1.146	0.979	0.995	1.069	66	77	1.727	1.687	1.537	1.602	2.266
31	82	1.169	1.137	0.976	0.995	1.079	67	77	1.692	1.652	1.509	1.568	2.227
32	82	1.188	1.155	1.003	1.026	1.120	68	77	1.778	1.738	1.594	1.656	2.368
33	82	1.189	1.153	1.001	1.023	1.124	69	77	1.787	1.747	1.604	1.660	2.406
34	82	1.192	1.162	1.014	1.034	1.124	70	76	1.758	1.717	1.562	1.616	2.311
35	82	1.216	1.184	1.041	1.064	1.157	71	76	1.764	1.722	1.570	1.620	2.312
36	82	1.238	1.205	1.059	1.081	1.168	72	75	1.746	1.705	1.545	1.591	2.225

Thus, since the WR results do not present dramatically newer outcomes than the ones presented by the BHAR, it is sufficient just to present a summary WR table, such as the one above, instead of presenting five different descriptive tables, one for each entry date. Additionally, the same interpretation discussed in the BHAR section can be repeated here. That is why we will refer to the BHAR results instead of duplicating the same explanations and interpretations for each result. In addition, when it comes to the WR trend, we notice from the figure below that the WR trends for the five different entry dates are very similar to the BHAR trends from the first to the seventy-second month, showing that the WR of the portfolios entered at 12M generated the highest WR, while the ones entered at 1M generated the lowest WR, but all of them were higher than 1.00.

Figure 20: Wealth relative ratio from the first to the seventy-second month.



Last, the test of means for the WR is performed against a reference variable of 1.00 and not 0.00% as in the BHAR tests, since 1.00 is the reference or the benchmark to determine whether the portfolios have overperformed (above 1.00) or underperformed (below 1.00) the market benchmark. Once more, the same results for the test of the means of the BHAR are duplicated here, with the same matching months that are statistically significantly different from 1.00 in the WR test of means and different from 0.00% in the BHAR test of means. The test of means for the portfolios entered at 1M and 6M presents the smallest WR, which is statistically significantly different from 1.00 amongst all the other entry dates. Additionally, the portfolios entered at 12M do not present better results by far, since the WR seems to be different from 1.00 with acceptable statistically significant levels in only two months. We note that similar results were previously observed.

4.6. Results of the Capital Asset-Pricing Model

As mentioned earlier, four regressions will be constructed for the capital asset-pricing model (CAPM) using a time-series analysis for an equally weighted return for the four different holding periods of three years (Table 46), 4 years (Table 47), 5 years (Table 48), and 6 years (Table 49).

Table 46: CAPM results for the three-year holding period

N=229	Regression Summary for the Dependent Variable: 3 Years Equally Weighted $R=0.4353$; $R^2=0.1895$; Adjusted $R^2=0.1859$ $F(1,227)=53.073$; $p<0.00000$; Std Error of the Estimate: 0.09207					
	b*	**Std Err.**	**b**	**Std Err.**	**t(227)**	**p-value**
Intercept			0.012**	0.006	2.028	0.044
MRP	0.435***	0.060	0.844***	0.116	7.285	0.000

Table 47: CAPM results for the four-year holding period

N=229	Regression Summary for the Dependent Variable: 4 Years Equally Weighted $R=0.4854$; $R^2=0.2357$; Adjusted $R^2=0.2323$ $F(1,227)=69.986$; $p<0.00000$; Std Error of the Estimate: 0.07693					
	b*	**Std Err.**	**B**	**Std Err.**	**t(227)**	**p-value**
Intercept			0.012**	0.005	2.321	0.021
MRP	0.485***	0.058	0.809***	0.097	8.366	0.000

Table 48: CAPM results for the five-year holding period

N=229	Regression Summary for the Dependent Variable: 5 Years Equally Weighted $R=0.5220$; $R^2=0.2725$; Adjusted $R^2=0.2693$ $F(1,227)=85.019$; $p<0.00000$; Std Error of the Estimate: 0.07062					
	b*	**Std Err.**	**b**	**Std Err.**	**t(227)**	**p-value**
Intercept			0.011**	0.005	2.389	0.018
MRP	0.522***	0.057	0.819***	0.089	9.221	0.000

Table 49: CAPM results for the six-year holding period

N=229	Regression Summary for the Dependent Variable: 6 Years Equally Weighted $R=0.5179$; $R^2=0.2683$; Adjusted $R^2=0.2650$ $F(1,227)=83.222$; $p<0.00000$; Std Error of the Estimate: 0.06939					
	b*	**Std Err.**	**b**	**Std Err.**	**t(227)**	**p-value**
Intercept			0.012**	0.005	2.536	0.012
MRP	0.518***	0.057	0.796***	0.087	9.123	0.000

First, we notice that the 3-, 4-, 5-, and 6-year equally weighted portfolio returns have a positive Jensen's alpha of around 1.2% per month with statistical significance at the 5% level. These portfolios were constructed over 229 months, which are equivalent to 19 years. Therefore, according to the CAPM model and by using the time-series data analysis for the IPO portfolios constructed by holding each and every IPO share for 3 to 6 consecutive years, they generated statistically significant positive abnormal returns measured by Jensen's alpha.

Hence, the attractiveness of such a type of data analysis is associated with the monthly matching of the IPO portfolio risk premium with the market risk premium. For example, we observe many months during which the IPO portfolio consisted of only one or very few firms, whereas in other months, the IPO portfolios could include concurrently twenty shares, depending on the timing of each IPO and the holding period.

Therefore, in such a type of data analysis, no enforcement is made to group all the portfolios into a single raw date, as the CAR and BHAR methods do in a typical cross-sectional data analysis. Thus, while the latter methods give average figures of the abnormal returns above certain chosen benchmarks (such as a market-, industry-, or firm-specific benchmark), with descriptive statistics (i.e. a minimum, a maximum, a lower quartile, an upper quartile, a standard deviation, etc.), the CAPM models perform a regression analysis for estimating future performance via the market risk premium (and not via any other benchmark), with some significance levels, R-squared, adjusted R-squared, F-statistics, and estimation of the abnormal returns using time-series analysis. Therefore, there is no contradiction between the two methods since each uses different techniques and there is no preference of one method over the other because each gives different results and interpretations.

Additionally, the p-values of the four regressions are statistically significant at the 0.01‰ level. We also note that the R-squared of the portfolio increases from 18.95% for the 3-year portfolio return to 23.57% for the 4-year portfolio return, 27.25% for the 5-year portfolio return, and 26.83% for the 6-year portfolio return. This clearly shows that the longer the length of time that the IPO shares are held in the portfolio, the more their returns' variance can be explained by the market risk premium moving from the 3-year to the 5-year portfolio return.

For instance, the R-squared of the 3-year portfolio risk premium of around 19% means that around 19% of the IPO portfolio risk premium's variance can be explained by the market risk premium illustrated in the CAPM model, and around 81% can be explained by other variables that are unexplored in the CAPM. In addition, for the IPO portfolio that is held for the 5- and the 6-year period, around 27% of the portfolio's risk premium can be explained by the CAPM and 73% remains unexplained. Moreover, the 4 models' adjusted R-squared figures are very close to the models' R-squared figure. It is also worth noting that the standard error of the regressions decreases when moving from the 3-year to the 6-year portfolio return.

On the other hand, the standardized coefficient betas for the 4 different holding periods are statistically significant at the 0.01% level and range from 0.435 for the 3-year holding period to 0.518 for the 6-year holding period, which are less than the average market risk with a beta of 1.00. This shows that the IPO portfolio systematic risk decreases when the holding period increases from 3 to 6 years.

Additionally, these results reveal that the IPO portfolios that include family firms are less risky than the average market portfolio. Thus, the IPO portfolios' market risk or systematic risk seems to be lower than the average market risk illustrated by the CAPM model. This risk is the relevant risk to consider, since, through diversification, the non-systematic or firm-specific risk can ultimately be minimized by increasing the number of securities in the portfolio to a large number. As a result, family firm IPOs' total risk seems to be lower than the average market risk, using the 4 different holding periods of 3, 4, 5, and 6 years, as illustrated by the CAPM model.

4.7. Results of the Fama and French Three-Factor Model

As we performed four regressions representing the four different holding periods in the CAPM model, we will run four regressions in the Fama and French three-factor model as well for the same four holding periods of 3, 4, 5, and 6 years using the equally weighted returns.

Table 50: Fama and French model results for the three-year holding period

N=221	Regression Summary for the Dependent Variable: 3 Years Equally Weighted $R=0.6559$; $R^2=0.4302$; Adjusted $R^2=0.4223$ $F(3,217)=54.601$; $p<0.0000$; Std Error of the Estimate: 0.07859					
	b*	**Std Err.**	**b**	**Std Err.**	**t(217)**	**p-value**
Intercept			0.011**	0.005	1.976	0.049
Rm-Rf	0.776***	0.063	1.474***	0.119	12.394	0.000
SMB	0.602***	0.064	1.720***	0.184	9.330	0.000
HML	0.052	0.053	0.154	0.158	0.973	0.332

Table 51: Fama and French model results for the four-year holding period

N=221	Regression Summary for the Dependent Variable: 4 Years Equally Weighted $R=0.74714$; $R^2=0.5582$; Adjusted $R^2=0.5521$ $F(3,217)=91.400$; $p<0.0000$; Std Error of the Estimate: 0.05942					
	b*	**Std Err.**	**b**	**Std Err.**	**t(217)**	**p-value**
Intercept			0.010**	0.004	2.536	0.012
Rm-Rf	0.881***	0.055	1.437***	0.090	15.980	0.000
SMB	0.689***	0.057	1.691***	0.139	12.127	0.000
HML	0.050	0.047	0.128	0.120	1.068	0.286

Table 52: Fama and French model results for the five-year holding period

N=221	Regression Summary for the Dependent Variable: 5 Years Equally Weighted R=0.7646; R^2=0.5846; Adjusted R^2=0.5789 F(3,217)=101.78; p<0.0000; Std Error of the Estimate: 0.05433					
	b*	**Std Err.**	**b**	**St Err.**	**t(217)**	**p-value**
Intercept			0.010***	0.004	2.660	0.008
Rm-Rf	0.907***	0.053	1.395***	0.082	16.966	0.000
SMB	0.668***	0.055	1.546***	0.127	12.126	0.000
HML	0.023	0.046	0.055	0.109	0.501	0.617

Table 53: Fama and French model results for the six-year holding period

N=221	Regression Summary for the Dependent Variable: 6 Years Equally Weighted R=0.7515; R^2=0.5647; Adjusted R^2=0.5587 F(3,217)=93.841; p<0.0000; Std Error of the Estimate: 0.05465					
	b*	**Std Err.**	**b**	**Std Err.**	**t(217)**	**p-value**
Intercept			0.010***	0.004	2.784	0.006
Rm-Rf	0.890***	0.055	1.345***	0.083	16.263	0.000
SMB	0.646***	0.056	1.470***	0.128	11.465	0.000
HML	0.005	0.047	0.013	0.110	0.117	0.907

Interestingly, we notice that by employing the Fama and French three-factor model, which adds the size-related factor (SMB) and the book-to-market-related factor (HML) to our family firms' IPO portfolio, the R-squared dramatically increases from around 19% to 43% for the 3-year portfolio holding period and from around 27% to 56% for the 6-year portfolio holding period. This can be interpreted as 56% of the return variance of the family firms' IPO portfolios that are acquired and held over 6 years can be explained by the three-factor model constructed above. This means that less than 44% of the portfolio's variance remains unexplained by these variables. It is also worth noting that the 4 models' adjusted R-squared figures are very close to the models' R-squared figure, rising from 42% for the 3-year portfolio holding period to 56% for the 6-year portfolio period. In addition, the p-values of the 4 regressions are statistically significant at the 0.01‰ level, with higher F-statistics than the CAPM model as well.

We notice that the Jensen's alphas for the four different holding periods are all positive and statistically significant at the 5% level for the 3-year and 4-year portfolio holding periods and at the 1% level for the 5-year and 6-year holding periods. Therefore, in this case, investors buying every family firm's IPO shares and holding them for 3-, 4-, 5-, and 6-year periods can generate abnormal returns of around 1% per month, which is statistically significant at the 5% and 1% levels.

For the standardized coefficient betas, we notice that the book-to-market-related factor (HML) for the four different holding periods is not statistically significantly different from zero. The market risk premium (Rm-Rf) and the size-related factor (SMB) are highly statistically significantly different from zero at the 1‰ level and they are all positive and range for the 3-year holding period to the 6-year holding period from 0.776 to 0.890 for the Rm-Rf and from 0.602 to 0.646 for the SMB, respectively. The positive and statistically significant coefficient beta for the SMB can be attributed to the fact that most French family firms are of a small size, as we have seen in the previous chapter. For instance, the average issue size of the French family firms is around €27 million, whereas the average issue size of typical French firms is €1,058 million and for a European firm it is €581 million. Therefore, by comparing the results provided by both the CAPM and the Fama and French model, we notice that the latter presents a much higher degree of explanation of the family firms' IPO portfolio returns' variance, which reaches 56% for the 6-year holding period compared with 27% in the CAPM model. Thus, the size-related factor and the book-to-market-related factor greatly enhance the overall model's explanatory variable.

4.8. Results of the Multiple Linear Regressions

As previously discussed, we will employ two models in an attempt to explain long-term performance. As mentioned, the fifth-day IPO underpricing will be used as a control variable in both models. 'Model 1' includes the ownership and control rights' change, whereas 'Model 2' includes the corporate governance mechanisms.

Below, we will plot the eight regression results for 'Model 1' using the CAR and the BHAR abnormal returns calculation methods at the first-day closing price and with 3, 4, 5, and 6 year holding periods. We will run these regressions in an attempt to explain IPO long-term performance through ownership and control rights' change.

Table 54: 'Model 1' regression for a three-year holding period using CAR (CP)

N=82	Regression Summary for the Dependent Variable: 36M_CAR_CP $R=0.4355$; $R^2=0.1897$; Adjusted $R^2=0.1476$ $F(4,77)=4.5056$ $p<.00253$ Std Error of the Estimate: 1.0446					
	b*	**Std Err.**	**b**	**Std Err.**	**t(77)**	**p-value**
Intercept			0.6266**	0.2435	2.5729	0.0120
up_5d	0.2919***	0.1039	0.6844***	0.2435	2.8106	0.0063
Dif_CF_VO_Public	0.1659	0.1130	4.1787	2.8474	1.4675	0.1463
FF_%_CF_Chge	0.2941**	0.1467	1.8905**	0.9431	2.0044	0.0485
%_CF_Public_After	0.1005	0.1499	0.9533	1.4225	0.6702	0.5047

Table 55: 'Model 1' regression for a four-year holding period using CAR (CP)

N=80	Regression Summary for the Dependent Variable: 48M_CAR_CP R=0.4315; R²=0.1862; Adjusted R²=0.1427 F(4,75)=4.2889 p<.00353 Std Error of the Estimate: 1.2987					
	b*	Std Err.	b	Std Err.	t(75)	p-value
Intercept			1.2575***	0.3085	4.0764	0.0001
up_5d	0.2587**	0.1053	0.7447**	0.3032	2.4564	0.0163
Dif_CF_VO_Public	0.1513	0.1166	4.7237	3.6402	1.2976	0.1984
FF_%_CF_Chge	0.1373	0.1488	1.0950	1.1865	0.9228	0.3591
%_CF_Public_After	-0.1162	0.1519	-1.3891	1.8163	-0.7648	0.4468

Table 56: 'Model 1' regression for a five-year holding period using CAR (CP)

N=77	Regression Summary for the Dependent Variable: 60M_CAR_CP R=0.4614 R²=0.2128 Adjusted R²=0.1691 F(4,72)=4.8672 p<.00157 Std Error of the Estimate: 1.3440					
	b*	Std Err.	b	Std Err.	t(72)	p-value
Intercept			1.6235***	0.3296	4.9254	0.0000
up_5d	0.247**	0.1055	0.7356**	0.3141	2.3422	0.0219
Dif_CF_VO_Public	0.1087	0.1208	3.5706	3.9682	0.8998	0.3712
FF_%_CF_Chge	0.0937	0.1834	1.189	2.3274	0.5109	0.611
%_CF_Public_After	-0.2166	0.1828	-2.8842	2.4337	-1.1851	0.2399

Table 57: 'Model 1' regression for a six-year holding period using CAR (CP)

N=75	Regression Summary for the Dependent Variable: 72M_CAR_CP R=0.4507 R²=0.2031 Adjusted R²=0.1576 F(4,70)=4.4610 p<.00287 Std Error of the Estimate: 1.4923					
	b*	Std Err.	b	Std Err.	t(70)	p-value
Intercept			1.7189***	0.367	4.6837	0.0000
up_5d	0.2463**	0.1077	0.8052**	0.3521	2.2868	0.0252
Dif_CF_VO_Public	0.2461	0.1263	8.8591	4.5469	1.9484	0.0554
FF_%_CF_Chge	0.0718	0.1853	1.012	2.6122	0.3874	0.6996
%_CF_Public_After	-0.088	0.1839	-1.2954	2.7077	-0.4784	0.6338

By looking at the regression results of 'Model 1' for the long-term abnormal returns calculated following the CAR method, we notice that the R-squared ranges from the lowest figure of 18.62% for the 4-year holding period to the highest figure of 21.28% for the 5-year holding period with a p-value less than 1% for all the holding periods. We also notice a positive and statistically significant alpha at the 1% level for all the holding periods too, ranging from 62.66% for the 3-year holding period to 171.89% for the 6-year holding period. In addition, 'Model 1' for the CAR method shows that the fifth-day IPO underpricing is positive and statistically significant at the 1% and 5% levels. Furthermore, the family firms' percentage cash flow rights change is positive and statistically significant at the 5% level only for the 3-year holding period and not for the remaining ones. The difference between cash flow and voting rights for the public shareholders and the percentage of cash flow rights after issuance for the public shareholders are both statistically insignificantly different from zero. Overall, we note that this model shows that around 20% of the abnormal returns' variance calculated by the CAR can be explained by ownership and control rights' change on the IPO date with very high statistical significance. Below we present the regression results of 'Model 1' using the BHAR calculation method instead.

Table 58: 'Model 1' regression for a three-year holding period using BHAR (CP)

N=82	Regression Summary for the Dependent Variable: 36M_BHAR_CP R=0.3719 R^2=0.1383 Adjusted R^2=0.0935 F(4,77)=3.0894 p<.02053 Std Error of the Estimate: 1.4818					
	b*	**Std Err.**	**b**	**Std Err.**	**t(77)**	**p-value**
Intercept			0.4433	0.3455	1.2832	0.2033
up_5d	0.0232	0.1071	0.0747	0.3454	0.2163	0.8293
Dif_CF_VO_Public	-0.0485	0.1166	-1.6796	4.039	-0.4158	0.6787
FF_%_CF_Chge	0.4703***	0.1513	4.1583***	1.3378	3.1083	0.0026
%_CF_Public_After	0.1416	0.1546	1.8475	2.0177	0.9156	0.3627

We ran the regressions for Model 1 using the BHAR for the 48, 60, and 72 holding months, but we find insignificant results for the independent and control variables with adjusted R-squared figures of 1.7%, 4.5%, and 2.6%, respectively, and with models' p-values of less than 25%, 12%, and 21%, respectively. Therefore, we will ignore all the results of Model 1 using the BHAR calculation with a holding period longer than 36 months.

By looking at the regression results of 'Model 1' for the long-term abnormal returns calculated using the BHAR method, we notice that the R-squared drops well below the one seen using the CAR of around 20% to 13.8% for the 3-year holding period with the model's statistical significance at the 5% level. Then the R-squared drops to around 8% on average for the 3 remaining holding periods with high insignificance levels (p-values less than 25%, 12%, and 21%) and with insignificant coefficient betas for the 3 remaining holding periods (4, 5, and 6 years). However, the intercepts of 'Model 1' using the BHAR method are positive and statistically significantly different from zero at the 5% and the 1% level, except for the 3-year holding period.

Therefore, we can deduce that approximately 14% of the IPO long-term performance variance measured by the BHAR for the 3-year holding period can be explained by ownership and control rights' change on the IPO date with an acceptable statistical significance level and it cannot explained by this model for the 4-, 5-, and 6-year holding periods.

Table 59: 'Model 2' regression for a three-year holding period using CAR (CP)

N=82	Regression Summary for the Dependent Variable: 36M_CAR_CP $R=0.3738$ $R^2=0.1398$ Adjusted $R^2=0.0710$ $F(6,75)=2.0312$ $p<.07183$ Std Error of the Estimate: 1.0906					
	b*	**Std Err.**	**B**	**Std Err.**	**t(75)**	**p-value**
Intercept			0.917	0.6448	1.4222	0.1591
up_5d	0.3083***	0.1087	0.7227***	0.2549	2.8353	0.0059
LN(Board_Size)	-0.0349	0.1113	-0.1105	0.3528	-0.3133	0.755
CEO_Founder	-0.0532	0.1178	-0.151	0.3343	-0.4517	0.6528
Duality	0.042	0.1274	0.1101	0.3337	0.3299	0.7424
Separation_Shares	-0.1482	0.1086	-0.3621	0.2653	-1.3648	0.1764
%_Independent	-0.1411	0.1205	-0.6963	0.5946	-1.1711	0.2453

Table 60: 'Model 2' regression for a four-year holding period using CAR (CP)

N=80	Regression Summary for the Dependent Variable: 48M_CAR_CP $R=0.40279$ $R^2=0.1622$ Adjusted $R^2=0.0934$ $F(6,73)=2.3562$ $p<.03896$ Std Error of the Estimate: 1.3356					
	b*	**Std Err.**	**b**	**Std Err.**	**t(73)**	**p-value**
Intercept			1.5584	0.8055	1.9348	0.0569
up_5d	0.2884***	0.1088	0.8302***	0.3131	2.6514	0.0098
LN(Board_Size)	-0.0955	0.1116	-0.3764	0.4396	-0.8562	0.3947
CEO_Founder	-0.0084	0.1175	-0.0294	0.4096	-0.0717	0.943
Duality	0.0787	0.1276	0.2534	0.4108	0.6168	0.5393
Separation_Shares	-0.1848	0.1086	-0.5692	0.3346	-1.7011	0.0932
%_Independent	-0.138	0.1209	-0.8393	0.7357	-1.1408	0.2577

Table 61: 'Model 2' regression for a five-year holding period using CAR (CP)

N=77	Regression Summary for the Dependent Variable: 60M_CAR_CP $R=0.4542$ $R^2=0.2063$ Adjusted $R^2=0.1383$ $F(6,70)=3.0325$ $p<.01077$ Std Error of the Estimate: 1.3687					
	b*	**Std Err.**	**b**	**Std Err.**	**t(70)**	**p-value**
Intercept			1.3076	0.8269	1.5814	0.1183
up_5d	0.2901***	0.1079	0.8637***	0.3213	2.6881	0.009
LN(Board_Size)	-0.0809	0.1111	-0.3355	0.4608	-0.728	0.4691
CEO_Founder	0.0728	0.1132	0.2766	0.4301	0.6432	0.5222
Duality	0.1184	0.1245	0.4099	0.4308	0.9515	0.3446
Separation_Shares	-0.2032	0.1077	-0.6591	0.3492	-1.8874	0.0633
%_Independent	-0.1681	0.1204	-1.0665	0.7635	-1.3969	0.1669

Table 62: 'Model 2' regression for a six-year holding period using CAR (CP)

N=75	Regression Summary for the Dependent Variable: 72M_CAR_CP R=0.4629 R²=0.2143 Adjusted R²=0.1450 F(6,68)=3.0905 p<.00979 Std Error of the Estimate: 1.5035					
	b*	**Std Err.**	**b**	**Std Err.**	**t(68)**	**p-value**
Intercept			2.0843**	0.9585	2.1747	0.0331
up_5d	0.2978***	0.1087	0.9733***	0.3552	2.7402	0.0078
LN(Board_Size)	-0.1541	0.1129	-0.7062	0.5175	-1.3644	0.1769
CEO_Founder	0.0109	0.1134	0.0463	0.4838	0.0958	0.924
Duality	0.1714	0.1241	0.6611	0.4785	1.3816	0.1716
Separation_Shares	-0.2487**	0.1089	-0.8945**	0.3918	-2.2833	0.0255
%_Independent	-0.0662	0.1222	-0.4584	0.8464	-0.5416	0.5899

In 'Model 2', in which we attempt to explain long-term performance calculated by the CAR for different portfolio holding periods via governance mechanisms, we notice that the R-squared increases from around 14% for the 3-year holding period to 21% for the 6-year holding period with acceptable statistical significance levels. We also notice that the fifth-day IPO underpricing is statistically significantly different from zero at the 1% level for the 4 different holding periods. The model's results also show that for all the governance mechanisms the coefficient betas are statistically insignificantly different from zero except for the separation in shares for the 6-year holding period, which shows a negative beta at the 5% statistical significance level. Overall, we can deduce that the governance mechanisms presented in our model do not present a good level of explanation of IPO long-term performance measured by the CAR and these significance levels of the models result mainly from the significant fifth-day underpricing.

We note here that the governance mechanisms presented in 'Model 2' do not present any level of explanation of the BHAR long-term performance for all the holding periods. Therefore, neither the R-squared nor the adjusted R-squared are statistically significant, nor are the coefficient betas of each model statistically significantly different from zero. Therefore, we cannot explain BHAR long-term performance by relying on the corporate governance mechanisms set by the family firms on the IPO date.

However, both Model 1 and Model 2 seem not to be highly reliable in explaining long-term performance measured by both the CAR and the BHAR for the 4 different holding periods. Although the R-squared for some regressions is around 20%, it changes throughout different holding periods and when shifting from the CAR to the BHAR method. Therefore, we can reject the hypothesis that ownership and control rights' change from the pre- to the post-IPO date along with the governance mechanisms set by the family firms on the issuance day present reliable and robust levels in explaining both the CAR and the BHAR abnormal returns from the 3-year holding period to the 6-year holding period.

4.9. Hypothesis Testing

We will present below the results of the hypothesis testing along with our comments and explanation.

Hypothesis 1: French family firms' IPO long-term performance will be as negative as other firms' long-term performance.

Hypothesis 2: French family firms' underperformance will vanish once calculated based on the offering price instead of the first-day closing price, revealing that no true underperformance exists.

Below we will present a summary of the two different long-term performance calculations using the cumulative abnormal returns (CAR) and the buy-and-hold abnormal returns (BHAR) by assuming that the IPO shares were purchased at only the OP and the CP, which are sufficient for testing these two hypotheses.

Table 63: Test of means for long-term performance

T	Test of means against the reference constant (0.00%)							
	CAR_CP Mean and p-value		BHAR_CP Mean and p-value		CAR_OP Mean and p-value		BHAR_OP Mean and p-value	
1	28.8%***	0.000	28.8%***	0.000	31.0%***	0.000	31.0%***	0.000
6	27.4%***	0.002	28.4%**	0.028	29.7%***	0.001	30.1%**	0.020
12	26.4%**	0.015	28.2%**	0.049	28.7%***	0.009	30.0%**	0.037
18	21.1%*	0.060	12.0%	0.279	23.4%**	0.040	13.9%	0.212
24	29.0%**	0.014	10.6%	0.348	31.4%***	0.009	13.6%	0.255
30	34.9%***	0.003	16.0%	0.286	37.3%***	0.002	20.2%	0.224
36	46.4%***	0.000	22.8%	0.188	48.8%***	0.000	27.6%	0.142
42	48.8%***	0.000	20.7%	0.218	51.2%***	0.000	24.7%	0.170
48	75.0%***	0.000	42.3%**	0.044	77.4%***	0.000	46.9%**	0.039
54	81.4%***	0.000	42.6%**	0.040	83.9%***	0.000	46.5%**	0.034
60	83.9%***	0.000	40.0%*	0.095	86.5%***	0.000	43.7%*	0.077
66	89.8%***	0.000	59.7%*	0.054	92.4%***	0.000	63.7%**	0.043
72	104.2%***	0.000	66.8%**	0.027	106.8%***	0.000	71.1%**	0.021

The summary results presented in Table 63 come to reject the first hypothesis by clearly showing that, on average, IPO long-term performance is positive with sufficient statistical significance, calculated based upon either the IPO offering price (OP) or the first-day closing price (CP). However, abnormal returns calculated using the CAR seem to be more statistically significant than the BHAR returns, but they both still generated positive long-term returns and are statistically significant. For instance, we can see that in the first, sixth, twelfth, forty-eighth, and seventy-second months, the CAR and the BHAR for the shares purchased at either the OP or the CP generated positive long-term performance and are statistically significant at the 5% level. This leads us to reject the first hypothesis, which states that family firms generate poorer performance than their market benchmark than any other firms do. However, the factors that explain such good performance will be discussed in further detail in the subsequent section under the regression analysis.

In addition, we also observe in Table 63 that the IPO long-term performance calculated by either the OP or the CP does not change by much, and nor do the significance levels. This is mainly due to the very modest first-day IPO performance that these French family firms generate, which is almost 2%. This modest underpricing was thoroughly observed and discussed in the previous chapter, and it also appears in the difference of the first-month abnormal returns calculated using the OP and the CP. Thus, in the French family firms' case, no important change in the long-term performance was observed by using either calculation, which rejects the hypothesis that long-term returns change when considering the first-day returns. This is a very important implication, because it affects not only the firms' long-term returns but also their short-term ones. Therefore, we reject the hypothesis that states that the French family firms will underperform their market benchmark as well as the hypothesis that states that long-term underperformance, if it were to exist, vanishes when including the first-day return, because we have seen that the difference between the two calculated returns, either at the OP or at the CP, is not significant.

Hypothesis 3: For the French family firms, there is a negative relationship between IPO underpricing and underperformance.

We present next the correlation between the long-term performance calculated by the CAR and BHAR at the OP and CP and the IPO short-term performance calculated from the first to the fifth day. The first two tables include the results of the CAR, while the last two include the results of the BHAR. We notice that the correlation between the long-term performance calculated by the CAR at both the OP and the CP (Table 64) and the IPO first-day underpricing seem to be very weak and insignificant for all the months. Nevertheless, some positive and statistically significant correlations exist between the long-term performance and the second-day underpricing. However, positive and statistically significant correlations were observed between the long-term performances during all the months and the third, the fourth and the fifth day underpricing. This correlation, though, starts to be quite strong in the first month, at around 0.66, and weakens thereafter to reach around 0.30 in the sixth month.

Table 64: Correlation for short- and long-term IPO performance calculated using the CAR

T	Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=75 (casewise deletion of missing data)				
		up_1 d	**up_2 d**	**up_3 d**	**up_4 d**	**up_5 d**
1	CAR_OP	-0.0636 p=.588	0.1143 p=.329	0.6212*** p=.000	0.6386*** p=.000	0.6611*** p=.000
6	CAR_OP	-0.1524 p=.192	0.1946* p=.094	0.5096*** p=.000	0.5012*** p=.000	0.5291*** p=.000
12	CAR_OP	-0.1441 p=.217	0.1821 p=.118	0.4882*** p=.000	0.4815*** p=.000	0.4937*** p=.000
24	CAR_OP	-0.0042 p=.971	0.2233* p=.054	0.4027*** p=.000	0.3954*** p=.000	0.4153*** p=.000
36	CAR_OP	-0.0445 p=.705	0.2379** p=.040	0.3331*** p=.004	0.3334*** p=.003	0.334*** p=.003
48	CAR_OP	-0.0392 p=.739	0.1747 p=.134	0.3273*** p=.004	0.3112*** p=.007	0.3101*** p=.007
60	CAR_OP	0.0355 p=.763	0.2533** p=.028	0.3488*** p=.002	0.3273*** p=.004	0.3226*** p=.005
72	CAR_OP	0.0207 p=.860	0.2828** p=.014	0.3168*** p=.006	0.3*** p=.009	0.2842** p=.013
1	CAR_CP	-0.1188 p=.310	0.0662 p=.573	0.6407*** p=.000	0.656*** p=.000	0.6794*** p=.000
6	CAR_CP	-0.2041* p=.079	0.1512 p=.195	0.5153*** p=.000	0.5042*** p=.000	0.5327*** p=.000
12	CAR_CP	-0.1887 p=.105	0.1427 p=.222	0.4903*** p=.000	0.4813*** p=.000	0.4935*** p=.000
24	CAR_CP	-0.0431 p=.713	0.1885 p=.105	0.4049*** p=.000	0.3954*** p=.000	0.4156*** p=.000
36	CAR_CP	-0.0815 p=.487	0.2065* p=.076	0.3346*** p=.003	0.3331*** p=.003	0.3336*** p=.003
48	CAR_CP	-0.0684 p=.560	0.1503 p=.198	0.331*** p=.004	0.313*** p=.006	0.3118*** p=.006
60	CAR_CP	0.0085 p=.942	0.2314** p=.046	0.3533*** p=.002	0.3298*** p=.004	0.3249*** p=.004
72	CAR_CP	-0.0032 p=.978	0.264** p=.022	0.3196*** p=.005	0.3012*** p=.009	0.285** p=.013

N.B. Correlation matrix of short-term and long-term returns calculated by the CAR at the OP and the CP.

However, as Table 65 shows, long-term performance measured by the BHAR method mostly seems to be correlated with the first-day underpricing with a positive sign and statistically significant levels.

Table 65: Correlation for short- and long-term IPO performance calculated using the BHAR

T	Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=75 (casewise deletion of missing data)				
		up_1 d	**up_2 d**	**up_3 d**	**up_4 d**	**up_5 d**
1	BHAR_OP	-0.0636 p=.588	0.1143 p=.329	0.6212*** p=.000	0.6386*** p=.000	0.6611*** p=.000
6	BHAR_OP	-0.2526** p=.029	0.2773** p=.016	0.156 p=.181	0.1387 p=.235	0.1665 p=.153
12	BHAR_OP	-0.1662 p=.154	0.1974* p=.090	0.1883 p=.106	0.1713 p=.142	0.1897 p=.103
24	BHAR_OP	0.3415*** p=.003	0.2378** p=.040	0.1011 p=.388	0.0787 p=.502	0.0973 p=.406
36	BHAR_OP	0.3424*** p=.003	0.1838 p=.114	0.063 p=.591	0.0421 p=.720	0.0446 p=.704
48	BHAR_OP	0.2755** p=.017	0.1608 p=.168	0.0851 p=.468	0.0539 p=.646	0.0703 p=.549
60	BHAR_OP	0.2176* p=.061	0.1785 p=.125	0.0657 p=.575	0.035 p=.766	0.0501 p=.670
72	BHAR_OP	0.1788 p=.125	0.1365 p=.243	0.0594 p=.613	0.0283 p=.810	0.0339 p=.773
1	BHAR_CP	-0.1188 p=.310	0.0662 p=.573	0.6407*** p=.000	0.656*** p=.000	0.6794*** p=.000
6	BHAR_CP	-0.2825** p=.014	0.2491** p=.031	0.1524 p=.192	0.1337 p=.253	0.1615 p=.166
12	BHAR_CP	-0.2192* p=.059	0.1561 p=.181	0.1841 p=.114	0.1652 p=.157	0.184 p=.114
24	BHAR_CP	0.2482** p=.032	0.185 p=.112	0.0948 p=.419	0.0692 p=.555	0.0884 p=.451
36	BHAR_CP	0.2678** p=.020	0.1392 p=.234	0.0529 p=.652	0.0282 p=.810	0.0306 p=.795
48	BHAR_CP	0.214* p=.065	0.1287 p=.271	0.079 p=.501	0.0443 p=.706	0.0607 p=.605
60	BHAR_CP	0.166 p=.155	0.1502 p=.198	0.0598 p=.610	0.0277 p=.813	0.0429 p=.715
72	BHAR_CP	0.1279 p=.274	0.1077 p=.358	0.054 p=.645	0.022 p=.851	0.0275 p=.815

N.B. Correlation matrix of short-term and long-term returns calculated by the BHAR at the OP and the CP.

As a result, the IPO long-term returns of shares purchased only in their first day of issuance, whether at their offering price or at their first-day closing price, seem to be positively correlated with the first five days' underpricing, excluding the first day based upon the CAR calculations. In addition, the IPO long-term returns of shares purchased in any period of time seem to be positively correlated with the first-day underpricing, except the six-month BHAR, which is negatively correlated with the first-day underpricing. For the remaining underpricing days, it seems that the correlation is very weak and statistically insignificant. However, these two deductions differ from each other, since the CAR and the BHAR are originally different and may give mixed and sometimes contradictory results.

Hypothesis 4: French family firms' IPO long-term performance is positively associated with the timing of IPOs during fad periods.

As previously discussed, 59 out of the 86 family firms' IPOs were issued before the 2001 DotCom bubble burst, representing 68.6% of all the IPOs in our sample. However, as in the previous chapter, we will take that year as a cut-off period and test the IPO short-term performance by considering the pre- and post-2001 effect when testing the relation between the IPO long-term performance and determining whether the timing of issuance occurs before or after that year. Basically, the DotCom bubble period was remarkable in both the quantity and the size of IPOs issued and that is why it is considered as a fad period. Thus, we recall that we used the dummy variable 1 if the IPO occurred pre-2001 and 0 otherwise.

In Table 66, we present the correlation matrices for the IPO timing and long-term performance measured by the CAR and the BHAR at the OP and CP. However, remarkably, we did not find any correlation, with any sign, during any period and at any significance level between the long-term performance and the pre-DotCom bubble period, although most IPOs were issued before that date, including all 19 of the technology firms.

Therefore, even though it was very clear that a fad period existed before the DotCom bubble, no correlation was observed between the family firms' long-term performance and the timing of their issues, leading us to reject the fourth hypothesis, which states that IPO long-term performance is positively associated with the timing of IPOs during fad periods.

Table 66: Correlation of IPO timing and long-term performance calculated using the CAR

Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=75 (casewise deletion of missing data) Pre-DotCom bubble				
T	**Variable**	**Pre-DotCom**	**Variable**	**Pre-DotCom**
1	CAR_OP	0.0025 p=.983	BHAR_OP	0.0025 p=.983
6	CAR_OP	0.0301 p=.798	BHAR_OP	0.1158 p=.323
12	CAR_OP	0.0604 p=.607	BHAR_OP	0.1273 p=.276
24	CAR_OP	0.0233 p=.843	BHAR_OP	0.0202 p=.863
36	CAR_OP	0.0395 p=.736	BHAR_OP	-0.0124 p=.916
48	CAR_OP	0.0791 p=.500	BHAR_OP	0.0201 p=.864
60	CAR_OP	0.0715 p=.542	BHAR_OP	0.007 p=.952
72	CAR_OP	0.0565 p=.630	BHAR_OP	-0.0194 p=.869
1	CAR_CP	0.0242 p=.837	BHAR_CP	0.0242 p=.837
6	CAR_CP	0.0504 p=.667	BHAR_CP	0.1218 p=.298
12	CAR_CP	0.0787 p=.502	BHAR_CP	0.1395 p=.232
24	CAR_CP	0.0397 p=.735	BHAR_CP	0.0406 p=.729
36	CAR_CP	0.0552 p=.638	BHAR_CP	-0.0016 p=.989
48	CAR_CP	0.0927 p=.429	BHAR_CP	0.0274 p=.816
60	CAR_CP	0.0847 p=.470	BHAR_CP	0.0141 p=.904
72	CAR_CP	0.0677 p=.564	BHAR_CP	-0.0111 p=.925

N.B. Correlation matrix of the IPO timing and the long-term performance calculated by the CAR and the BHAR at the OP and the CP.

Hypothesis 5: There is a positive relationship between the owners' cash flow rights after the IPO date and the IPO long-term performance of French family firms.

Table 67, Table 68, Table 69, and Table 70 below present the correlation measures between family firms' long-term performance measured by the CAR and the BHAR at both the OP and the CP only and the ownership structure, cash flow right, and voting right changes pre- and post-IPO date for the family firms and the public, the percentage of independent directors, board member equity holding, and board member equity holding change.

It is shown in both tables that the correlation between the long-term performance and the percentage of cash flow rights of the family firms' owners on the post-IPO date is mostly weak and statistically insignificant, except for the sixtieth-month CAR and BHAR at both the OP and the CP. However, although this correlation seems to be positive and statistically significant, it is weak. Therefore, we reject the hypothesis that states that the IPO long-term performance is positively associated with the owners' cash flow rights after the IPO date.

However, what we notice from the table below is that the CAR and the BHAR seem to be negatively correlated with the percentage of cash flow of the public shareholders after the IPO date. The higher this cash flow is, the worse the firms' long-term performance is, and this result seems to be statistically significant. We also notice that a negative correlation exists between the CAR and the BHAR as well as a change in the difference of cash flow rights and voting rights pre- and post-IPO date. To recall from the previous chapter, mainly for family firms, a separation exists between the cash flow rights and the voting rights.

However, we observe carefully the gap between the two rights pre- and post-IPO date to determine whether the family firms' owners used the IPO as a means to increase their voting rights with respect to their cash flow rights, differently speaking to increase their minority expropriation by raising funds from them and not giving them sufficient voting rights. Surprisingly, we find a negative correlation between the long-term performance and the change in the difference between the two rights with high statistical significance. This shows that family firms engaging in increasing the gap between the two rights post-IPO date are more likely to observe lower performance with respect to the benchmark.

Table 67: Correlation of ownership and long-term performance calculated using the CAR

T	Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=67 (casewise deletion of missing data)				
		%_CF_FF_After	%_CF_Public_After	Chge_Dif_CF_VO_FF	FF_%_CF_Chge	FF_%_VO_Chge
1	CAR_OP	0.1767 p=.153	-0.3194** p=.008	-0.2517** p=.040	0.2741** p=.025	0.1697 p=.170
6	CAR_OP	0.0764 p=.539	-0.2404* p=.050	-0.319*** p=.009	0.2343* p=.056	0.1126 p=.364
12	CAR_OP	0.0686 p=.581	-0.2811** p=.021	-0.4129*** p=.001	0.2555** p=.037	0.0808 p=.516
24	CAR_OP	0.0637 p=.609	-0.3318*** p=.006	-0.3982*** p=.001	0.2638** p=.031	0.1186 p=.339
36	CAR_OP	0.1165 p=.348	-0.3215*** p=.008	-0.3555*** p=.003	0.2873** p=.018	0.1568 p=.205
48	CAR_OP	0.1453 p=.241	-0.3668*** p=.002	-0.3158*** p=.009	0.3175*** p=.009	0.2058* p=.095
60	CAR_OP	0.2416** p=.049	-0.4449*** p=.000	-0.3221*** p=.008	0.3848*** p=.001	0.2647** p=.030
72	CAR_OP	0.1776 p=.150	-0.394*** p=.001	-0.3646*** p=.002	0.3663*** p=.002	0.2176* p=.077
1	CAR_CP	0.1683 p=.173	-0.2984** p=.014	-0.2495** p=.042	0.2607** p=.033	0.1555 p=.209
6	CAR_CP	0.0631 p=.612	-0.2139* p=.082	-0.315*** p=.009	0.2167* p=.078	0.0954 p=.443
12	CAR_CP	0.0562 p=.651	-0.2573** p=.036	-0.41*** p=.001	0.2391* p=.051	0.0642 p=.606
24	CAR_CP	0.0524 p=.674	-0.3124** p=.010	-0.3973*** p=.001	0.2501** p=.041	0.1045 p=.400
36	CAR_CP	0.1073 p=.388	-0.303** p=.013	-0.353*** p=.003	0.2749** p=.024	0.1446 p=.243
48	CAR_CP	0.1401 p=.258	-0.357*** p=.003	-0.3166*** p=.009	0.3117** p=.010	0.1993 p=.106
60	CAR_CP	0.2392* p=.051	-0.4375*** p=.000	-0.3231*** p=.008	0.3811*** p=.001	0.2599** p=.034
72	CAR_CP	0.1738 p=.160	-0.3859*** p=.001	-0.3659*** p=.002	0.3621*** p=.003	0.2121* p=.085

N.B. Correlation matrix of ownership structure and long-term performance calculated using the CAR at the OP and the CP.

- %_CF_FF_After refers to the percentage of cash flow rights for the family firms' owners after going public.
- %_CF_Public_After refers to the percentage of cash flow rights for the public shareholders after going public.
- Chge_Dif_CF_VO_FF refers to the change in the difference between cash flow rights and voting rights from pre- to post-IPO date.

– FF_%_CF_Chge refers to the percentage change of cash flow rights for the family firms' owners.
– FF_%_VO_Chge refers to the percentage change of voting rights for the family firms' owners.

Table 68: Correlation of governance and long-term performance calculated by CAR

T	Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=67 (casewise deletion of missing data)			
		Dif_CF_VO_Public	**%_Independent**	**CF_Board_After**	**Board_CF_Chge**
1	CAR_OP	0.224* p=.068	-0.0423 p=.734	0.0483 p=.698	0.2338* p=.057
6	CAR_OP	0.2649** p=.030	-0.0419 p=.737	0.0631 p=.612	0.1842 p=.136
12	CAR_OP	0.371*** p=.002	-0.0387 p=.756	-0.0208 p=.868	0.2171* p=.078
24	CAR_OP	0.3141** p=.010	-0.1328 p=.284	0.0144 p=.908	0.3147*** p=.009
36	CAR_OP	0.3057** p=.012	-0.1892 p=.125	0.1276 p=.303	0.2852** p=.019
48	CAR_OP	0.2836** p=.020	-0.2317* p=.059	0.1621 p=.190	0.291** p=.017
60	CAR_OP	0.3268*** p=.007	-0.2494** p=.042	0.2152* p=.080	0.3651*** p=.002
72	CAR_OP	0.374*** p=.002	-0.1931 p=.117	0.1881 p=.127	0.2943** p=.016
1	CAR_CP	0.2153* p=.080	-0.0443 p=.722	0.0293 p=.814	0.2134* p=.083
6	CAR_CP	0.2547** p=.038	-0.043 p=.729	0.0452 p=.716	0.1604 p=.195
12	CAR_CP	0.3629*** p=.003	-0.0395 p=.751	-0.0388 p=.756	0.1957 p=.112
24	CAR_CP	0.3072** p=.011	-0.1362 p=.272	-0.0016 p=.990	0.2984** p=.014
36	CAR_CP	0.2986** p=.014	-0.1931 p=.117	0.1155 p=.352	0.2692** p=.028
48	CAR_CP	0.2807** p=.021	-0.2378** p=.053	0.155 p=.210	0.2818** p=.021
60	CAR_CP	0.3252*** p=.007	-0.256** p=.037	0.2096* p=.089	0.3581*** p=.003
72	CAR_CP	0.3731*** p=.002	-0.1972 p=.110	0.1824 p=.140	0.2861** p=.019

N.B. Correlation matrix of ownership structure and long-term returns calculated using the CAR at the OP and the CP.

– Dif_CF_VO_Public refers to the difference between cash flow rights and voting rights for the public shareholders.
– %_Independent refers to the percentage of independent directors on the firms' boards.
– CF_Board_After refers to the cash flow rights allocated to the board members after going public.

– Board_CF_Chge refers to the cash flow rights change for the board members from pre- to post-IPO date.

Table 69: Correlation of ownership and long-term performance calculated using the BHAR

T	Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=67 (casewise deletion of missing data)				
		%_CF_FF_After	**%_CF_Public_After**	**Chge_Dif_CF_VO_FF**	**FF_%_CF_Chge**	**FF_%_VO_Chge**
1	BHAR_OP	0.1767 p=.153	-0.3194*** p=.008	-0.2517** p=.040	0.2741 p=.025	0.1697 p=.170
6	BHAR_OP	-0.0502 p=.687	-0.0173 p=.889	-0.2379* p=.053	0.0379 p=.761	-0.072 p=.563
12	BHAR_OP	-0.1759 p=.155	-0.0549 p=.659	-0.3625*** p=.003	0.0663 p=.594	-0.0955 p=.442
24	BHAR_OP	-0.0403 p=.746	-0.1992 p=.106	-0.229* p=.062	0.1849 p=.134	0.1375 p=.267
36	BHAR_OP	0.007 p=.955	-0.1498 p=.226	-0.0974 p=.433	0.1701 p=.169	0.1797 p=.146
48	BHAR_OP	0.0693 p=.577	-0.1862 p=.131	-0.1005 p=.418	0.1732 p=.161	0.1835 p=.137
60	BHAR_OP	0.2382* p=.052	-0.297** p=.015	-0.1692 p=.171	0.2645** p=.031	0.2095* p=.089
72	BHAR_OP	0.1775 p=.151	-0.2793** p=.022	-0.1993 p=.106	0.2813** p=.021	0.2146* p=.081
1	BHAR_CP	0.1683 p=.173	-0.2984** p=.014	-0.2495** p=.042	0.2607** p=.033	0.1555 p=.209
6	BHAR_CP	-0.0559 p=.653	-0.0028 p=.982	-0.232* p=.059	0.0271 p=.827	-0.0809 p=.515
12	BHAR_CP	-0.1822 p=.140	-0.0355 p=.775	-0.3545*** p=.003	0.052 p=.676	-0.107 p=.389
24	BHAR_CP	-0.0715 p=.566	-0.1835 p=.137	-0.241** p=.049	0.177 p=.152	0.1295 p=.296
36	BHAR_CP	-0.0192 p=.878	-0.139 p=.262	-0.1015 p=.414	0.1683 p=.173	0.182 p=.140
48	BHAR_CP	0.0503 p=.686	-0.1806 p=.144	-0.1082 p=.383	0.173 p=.162	0.1854 p=.133
60	BHAR_CP	0.2305* p=.061	-0.2919** p=.017	-0.1723 p=.163	0.2623** p=.032	0.2069* p=.093
72	BHAR_CP	0.1685 p=.173	-0.2718** p=.026	-0.2002 p=.104	0.2775** p=.023	0.2111* p=.086

N.B. Correlation matrix of governance mechanisms and long-term performance calculated using the BHAR at the OP and the CP.

Table 70: Correlation of governance and long-term performance calculated using BHAR

T	Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=67 (casewise deletion of missing data)			
		Dif_CF_VO_Public	**%_Independent**	**CF_Board_After**	**Board_CF_Chge**
1	BHAR_OP	0.224* p=.068	-0.0423 p=.734	0.0483 p=.698	0.2338* p=.057
6	BHAR_OP	0.2005 p=.104	0.1187 p=.339	0.0109 p=.930	0.0183 p=.883
12	BHAR_OP	0.2999** p=.014	0.1401 p=.258	-0.1531 p=.216	0.0327 p=.793
24	BHAR_OP	0.117 p=.346	-0.0631 p=.612	0.0281 p=.821	0.2486* p=.042
36	BHAR_OP	0.0476 p=.702	-0.0939 p=.450	0.0955 p=.442	0.1899 p=.124
48	BHAR_OP	0.0636 p=.609	-0.1347 p=.277	0.1518 p=.220	0.1889 p=.126
60	BHAR_OP	0.2285* p=.063	-0.1821 p=.140	0.2082* p=.091	0.2854** p=.019
72	BHAR_OP	0.2277* p=.064	-0.1657 p=.180	0.1637 p=.186	0.2869** p=.019
1	BHAR_CP	0.2153* p=.080	-0.0443 p=.722	0.0293 p=.814	0.2134* p=.083
6	BHAR_CP	0.1926 p=.118	0.1156 p=.352	0.0049 p=.968	0.0059 p=.962
12	BHAR_CP	0.2887** p=.018	0.1362 p=.272	-0.1593 p=.198	0.0169 p=.892
24	BHAR_CP	0.1091 p=.380	-0.073 p=.557	0.001 p=.993	0.2439** p=.047
36	BHAR_CP	0.0383 p=.759	-0.1042 p=.401	0.0738 p=.553	0.1873 p=.129
48	BHAR_CP	0.0601 p=.629	-0.1495 p=.227	0.1382 p=.265	0.1872 p=.129
60	BHAR_CP	0.228* p=.064	-0.1899 p=.124	0.1982 p=.108	0.2823** p=.021
72	BHAR_CP	0.2246* p=.068	-0.1709 p=.167	0.1525 p=.218	0.2821** p=.021

N.B. Correlation matrix of governance mechanisms and long-term returns calculated by the BHAR at the OP and the CP.

Hypothesis 6: There is a negative relationship between the IPO long-term performance and the ROA and net profit margin.

From Table 71 we notice that the correlations between the long-term performance measured by the CAR and the BHAR at the CP and the net profit margin and return on assets seem to be very weak and statistically insignificant for most months, except the sixth year with the CAR and net profit margin and the second and fourth year with the BHAR and net profit margin (NPM) with relatively low values of around -0.20. As a result, we cannot either reject or fail to reject hypothesis 6, which states that a negative relationship exists between the IPO long-term performance and the return on assets (ROA) and net profit margin. However, it is worth noting that a negative and statistically significant correlation exists between the firm's size and its long-term performance measured by both the CAR and the BHAR at the CP. This can be interpreted as the bigger the firm's size measured by the firm's total assets (LN(Assets)) in the year of the IPO date and the firm's total gross proceeds (LN(Proceeds)), the worse its long-term performance will be throughout the years.

Table 71: Correlation of returns and long-term performance calculated using the CAR

T	Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=67 (casewise deletion of missing data)			
		NPM	**ROA**	**LN(Proceed)**	**LN(Assets)**
1	CAR_CP	0.0042 p=.973	0.013 p=.917	-0.1588 p=.199	-0.2923** p=.016
6	CAR_CP	0.0297 p=.811	0.0351 p=.778	-0.139 p=.262	-0.3219*** p=.008
12	CAR_CP	0.0263 p=.833	0.1115 p=.369	-0.2483** p=.043	-0.3217*** p=.008
24	CAR_CP	-0.1672 p=.176	0.0874 p=.482	-0.3808*** p=.001	-0.2804** p=.022
36	CAR_CP	-0.0932 p=.453	0.094 p=.449	-0.2464** p=.044	-0.1826 p=.139
48	CAR_CP	-0.1909 p=.122	0.0586 p=.638	-0.3218*** p=.008	-0.2908** p=.017
60	CAR_CP	-0.1572 p=.204	0.0352 p=.778	-0.3067** p=.012	-0.2667** p=.029
72	CAR_CP	-0.2618** p=.032	0.0046 p=.970	-0.3037** p=.012	-0.2482** p=.043

N.B. Correlation matrix of return and size variables and long-term performance calculated by the CAR at the CP.

Table 72: Correlation of returns and long-term performance calculated using the BHAR

T	Variable	Correlations Marked correlations are significant at the 10% (*), 5% (**), and 1% (***) level N=67 (casewise deletion of missing data)			
		NPM	ROA	LN(Proceed)	LN(Assets)
1	BHAR_CP	0.0042 p=.973	0.013 p=.917	-0.1588 p=.199	-0.2923** p=.016
6	BHAR_CP	0.0221 p=.859	0.0302 p=.809	0.0169 p=.892	-0.1939 p=.116
12	BHAR_CP	0.0348 p=.780	0.1454 p=.240	-0.107 p=.389	-0.2902** p=.017
24	BHAR_CP	-0.2129* p=.084	0.0779 p=.531	-0.2556** p=.037	-0.0888 p=.475
36	BHAR_CP	-0.1854 p=.133	0.031 p=.803	-0.1312 p=.290	0.0253 p=.839
48	BHAR_CP	-0.2105* p=.087	0.047 p=.706	-0.2341* p=.057	-0.1059 p=.394
60	BHAR_CP	-0.0923 p=.458	0.0596 p=.632	-0.2758** p=.024	-0.0556 p=.655
72	BHAR_CP	-0.1234 p=.320	0.0381 p=.760	-0.284** p=.020	-0.0691 p=.578

N.B. Correlation matrix of return and size variables and long-term performance calculated using the BHAR at the CP.

4.10. Robustness Check

As we have seen, the IPO long-term performance was calculated and observed by applying different models and by assuming different entry dates for the IPO shares. Thus, we did not just assume that IPO shares were purchased at the first-day closing prices as most researchers do, but we also followed Santos (2010) by including and excluding the first-day abnormal returns by assuming that all IPO shares were purchased at the offering price once and at the first-day closing price another time. Moreover, for robustness, we took a step further by also assuming that all IPO shares were purchased after one month of issuance and after six and twelve months to observe better the portfolios' trends and performance and compare them with the portfolios purchased just on the first day of issuance. However, we observed that long-term returns calculated by the cumulative abnormal returns method and by assuming different entry dates seem to be positive with a statistical significance level of 5%. However, such results were not confirmed with the buy-and-hold abnormal returns methods, which even showed positive long-term returns but they were statistically insignificant at the 5% level for the shares purchased after one month, six months, and twelve months of issuance.

5. CONCLUSION

In this chapter, we have attempted to observe, analyze, and explain the long-term performance of French family firms' IPOs issued from 1994 to 2013 by using different return measurements and models and by assuming different entry dates. We have also tried to run different regression models including the CAPM, the Fama and French three-factor model, and some other models based on ownership and control rights' change from pre- to post-IPO date and some governance mechanisms set by the family firms on the issuance date. As we have seen, by using different abnormal returns calculations and different entry dates, French family firms tend to outperform the broad market index three years after issuance. However, the statistical significance of this positive abnormal return depends on the model used. For instance, while the cumulative abnormal return (CAR) presents a significantly positive performance, the buy-and-hold abnormal return (BHAR) just presents an average positive performance with low significance levels.

The different entry dates that we assumed in our IPO long-term performance calculations are the date at the offering price period, the first-day closing price period, one month, six months, and twelve months after the issuance period. Thus, by assuming these five different entry dates, the long-term performance was calculated each time using the CAR, BHAR, wealth relatives (WR), and raw returns. In this regard, Santos (2010) argued that long-term performance is better off not being solely calculated using the first-day closing price as a starting point, as performed by most researchers, but also using the offering price to include the first-day abnormal returns in the long-term returns calculations. Therefore, we followed Santos in calculating the long-term performance by starting with both the first-day closing price and the IPO offering price. Additionally, we assumed a starting point in the family firms' IPO portfolio after one month, six months, and twelve months of issuance to allow a better assessment of overvalued securities and long-term performance.

However, regarding the outperformance of the French family IPO firms in the long term, we associated it not with the subsequent months' superior returns but with only the first-month abnormal returns, which seem to be the highest one-month abnormal return ever observed. We related this performance to the fad periods that were just followed by the IPO date during which investors' overoptimism increases immensely, pushing the demand for IPO shares tremendously and forcing abnormal returns to be generated in the first month of issuance. This actually leads to positive long-term performance calculated using the CAR method that is statistically significantly different from zero, which was not found using the BHAR. Many authors have discussed and found evidence on the fad periods and the overoptimism of investors, especially Aggarwal and Rivoli (1990) and Ritter (1991). The authors mentioned that the poor long-term IPO performance may be due to fads or speculative bubbles in the early aftermarket. These fad periods were excessive after the first day of issuance until the first month of issuance, and sometimes a few months later as well. Thus, family firms' IPO shares were traded much above their intrinsic value during the first two to three years of their issuance. This is what we actually found when we measured abnormal returns using the CAR method in the first two years and the BHAR method in the first three years. That is why we saw that IPO portfolios entered after one month of issuance generate the worst performance, rather than entering after six or twelve months of issuance up to the end of the second year of issuance, because thereafter family firms tend to recover all their losses and outperform their market benchmark in the very long term.

Similarly, Ritter (1991) presented evidence in his paper that in most IPOs, the offering price is not too low, but the first aftermarket price is too high. This was also observed in the French family firms' performance, which shows very moderate first-day underpricing of only around 2%, which led us to believe that the French family firms were fairly priced on their IPO date. However, these firms generated very high first-month abnormal returns created by the overoptimism of investors, speculators, and opportunists in the markets, who above all seek very prompt and high short-term returns, a fact that was also discussed and found by Ritter. That is why we observed negative abnormal returns after a short period of issuance until the end of the second year using the CAR method and until the end of the third year using the BHAR method.

However, in contrast to many researchers, we did not find evidence of negative long-term performance for these family firms after the third year, especially for the IPO shares purchased at the offering price or at the first-day closing price according to the CAR method. Thus, as mentioned earlier, these returns were shown to be statistically significantly different from zero. Hence, we also found evidence that IPO shares were traded above their intrinsic value just after the first month of issuance and until the end of the second year and sometimes until the end of the third year, depending on the return method used. Therefore, throughout this period, IPO shares did not add any value to their shareholders above the value created in the first month after issuance. In addition, as we mentioned, this shows a relatively negative performance for the French family firms after issuance and until the end of the second year, as mentioned by some authors who measured IPO long-term performance after a while of issuance, such as Aggarwal and Rivoli (1990), who worked on an IPO return over just 250 trading days, representing 1 calendar year. We recall that the authors argued that poor IPO long-term performance is possible due to fads or speculative bubbles in the early aftermarket, which can be seen similarly in the French IPO family firms.

We also recall that numerous studies in different countries have confirmed underperformance after one (Aggarwal and Rivoli, 1990), two (Hanley, 1993), three (Ritter, 1991; Loughran et al., 1994), and five years (Loughran and Ritter, 1995) after issuance. Therefore, if we were to measure IPO long-term performance just in the first one, two, or three years, and not in the first six years as we did, and by using different entry dates, we would definitely find some negative underperformance during these smaller periods with high statistical significance. That was the main conclusion of the returns calculated using the cross-sectional data analysis by just looking at the firms' return differences and excluding the time effect from the first to the last issuance.

However, when the time-series data analysis was conducted using the capital asset-pricing model (CAPM) and the Fama and French three-factor model, long-term abnormal returns were observed with high statistical significance for portfolios held for 3, 4, 5, and 6 full years. Our time analysis was extended to cover 229 months in the CAPM model and 221 months in the Fama and French model, which are around 19 years. We observed that the Fama and French model presents a superior performance explanation to the CAPM model with an R-squared that reached 58% in the Fama and French model versus 27% in the CAPM model. Therefore, finding a time-series analysis model, such as the Fama and French model, that can explain around 60% of IPO portfolios' variance through its three factors is substantial and important. We observed in these models that the French family firms have lower systematic risk than the average market risk. Moreover, the higher explanatory factor presented in the Fama and French model is the addition of the size-related factor (SMB), which is absent from the CAPM model. We attributed this to the fact that most French family firms are of small sizes, issuing around €27 million, whereas a typical French firm issues around €1,058 million in its IPO. Thus, the Fama and French model captures the premium generated by small-sized firms over large-sized firms. We also saw that the book-to-market-related factor (HML) in the Fama and French model is statistically insignificant and totally ignored.

Last, by applying some other models attempting to explain IPO long-term performance using the CAR and the BHAR via the ownership and control rights' change from pre- to post-IPO date and the corporate governance mechanisms set by the French family firms, we did not find significant and robust results for them. Thus, the R-squared changed dramatically from one holding period to another and from one return method to another. Furthermore, some variables had a significant effect over some longer periods and not over shorter periods and vice versa. Therefore, we could not rely on the ownership and governance mechanisms to explain IPO long-term performance and therefore we need some additional variables that were not observed in our model and that can be observed in subsequent research.

However, as we discussed earlier, one of the main limitations that we faced in this research is the lack of benchmarks other than the board market benchmark, such as the CAC All-Tradable Index, with which to compare our results, especially considering that many authors attributed IPOs' poor performance to small capitalization and riskier firms than any other types of firms and when using different benchmarks, the underperformance vanishes. We have explained that since our sample dates back to 1994 and since most of the IPOs were issued before 2001, we could not compare our results with the CAC small and mid-cap indices. In subsequent research, we would choose a newer sample that starts, for example, after the year 2005, when at least four different market benchmarks existed, such as the CAC small, CAC small and mid, CAC mid, and CAC All-Tradable Index. We have also mentioned that one of the main limitations that we faced is the relatively small number of firms in our sample, which did not exceed 86 firms. However, even though we attributed this small number to the fact that only French listed family firms were chosen to be tested, we will attempt in the future to conduct wider research by comparing family firms from different nearby countries, such as Germany, Italy, Spain, and the UK. However, such types of studies require a thorough analysis of different legal, social, economic, and financial aspects, which differ from one country to another and which can also affect family firms' long-term performance. Another limitation of our results is that we solely used the equally weighted method in all the models; although we initially intended to use the value-weighted method as well, due to data constraints we did not. In future research projects, we intend to use more than one price database to make sure that all the necessary data and prices are available to enable us to use different techniques and methods.

We also intend in subsequent research projects to examine the quarterly financial reports disclosed by the public firms to assess their long-term performance better with the availability of ongoing fundamental analysis and not just by relying on IPO prospectus data, which turned out to have very low reliability for performance explanations in the long term. Therefore, better assessment of firms' profitability should be performed throughout the years after issuance, firms' solvency and liquidity problems, and credit risk and turnover measures, in addition to working capital management, cash flow management, investment appraisals, and others. Thus, for the performance analysis to be well covered, all the financial aspects of firms will be observed, assessed, and analyzed, which we intend to conduct in future research projects on a larger scale and for a further extended period.

Last, three important factors that seem to affect IPO long-term performance, which have been covered by numerous authors but could not be tested or integrated into our data analysis and results, are the firms' independent auditors on the IPO date and thereafter, the issuing firms' underwriters, and the presence of venture capitalists and private equity funds in the IPO firms. All three of these parties can largely and deeply affect firms' performance in the short as well as the long term, as argued by many authors. Therefore, in future research projects, we also intend to observe these three important players, who contribute to determining and creating value for shareholders; thus, we will identify their effects on the IPO performance in the short and in the long term.

THESIS CONCLUSION

Throughout this thesis, we have aimed to shed more light on French family firms' capital structure by departing from the agency theory and the information asymmetry theory, which are fundamental theories in corporate finance. For this purpose, we conducted several comparative analyses between French family and nonfamily firms and we also tried to explain capital structure via different models. We also observed each family firm's IPO prospectus and recorded the ownership and control rights change and the main governance mechanisms. We also calculated IPO performance in the short and the long term by employing different methods and models, and by using cross-sectional and time-series data analysis, we observed whether the ownership and control rights change and the different governance mechanisms affect performance, and if so, to what extent.

Our sample consists of 90 family and 203 nonfamily firms that were part of the CAC All-Tradable Index from 2010 until 2013, excluding banking and finance firms. Throughout the descriptive statistics, we were able to prove that family firms' capital structure is characterized by a lower level of debt than nonfamily firms. Moreover, family firms seem to rely less on long-term borrowing than on short-term borrowing, which means they prefer rolling over their short-term leverage more often and have no serious concern about approaching creditors every time they need additional financing. We also mentioned that family firms' cost of debt is lower than that of nonfamily firms. With regard to the debt maturity of family firms, we mention that our results are in line with Flannery's model (1986), who argued that the debt maturity of a required loan is predicted to be positively related to risk ratings and that low-debt maturity financing denotes low-risk ratings while high-debt maturity financing denotes high-risk ratings. Similarly, our results were also consistent with Diamond's model (1991), who argued that firms with favorable private information and with sufficiently low risk ratings may choose short-term debt at relatively low interest rates because of a high likelihood of being able to roll over their debt after one period. This might also be due to the good performance and future prospects family firms present at the end of the rollover period, and to the high comfort level family firms feel in sharing private information with their creditors when rolling over their short-term debt. With regard to the lower debt level of family firms, we can explain this based on Jensen (1986), who argued that the presence of firms' owners inside firms increases their ability to closely monitor firms' managers and thus decrease Type 1 agency costs, making the disciplinary role of debt less relevant and necessary. As we mentioned, another explanation for the lower debt level of family firms is the lower firm size and lower level of free cash flows. Hence, managers are not left with high levels of free cash flow and thus do not need to increase debt financing for the purpose of adopting some cash flow disciplinary instruments through debt. Another interpretation of firms' capital structure through performance is related to pecking order theory. Moreover, as our study and several different studies indicate (e.g. Anderson and Reeb, 2003a; Villalonga and Amit, 2006), French family firms demonstrate a better performance than their nonfamily counterparts, which signals their better capabilities to generate internal funds and constant cash flows. Hence, they depend less on external financing (both debt and equity). Through this, we found that French family firms' behavior is in line with the broad capital structure theories (the market timing hypothesis, the trade-off theory and pecking order theory). We also proved that almost all French family firms are characterized by insider ownership and that managers are entrenched. Through our research, it was noteworthy that in almost 90% of family firms, the family is a major shareholder, part of the management board and board of directors, which signals low agency cost. But through the average age of the managers on the board of directors and the management board, we notice that family firms might suffer from managerial entrenchment. Overall, our study suggests a strong, negative, and causal relationship between family firm characteristics and the extent to which a company is leveraged.

In chapter 2 we reviewed most theories explaining IPO underpricing, emphasizing the information asymmetry theory, which was thoroughly researched. Thus, whenever information asymmetries increase, IPO underpricing increases as a means to compensate investors for the risk they are taking in the absence of full information about the IPO. As we observed, the French family firms were almost fairly priced with an average first-day IPO underpricing of only 1.92%, a median of 0.00%, and a lower and upper quartile of -0.61% and 1.11%, respectively. Accordingly we have deduced that the French family firms are almost fairly priced on the day of IPOs with very smooth underpricing. Yet, many prominent authors found significant underpricing of IPO firms reaching sometimes double-digit underpricing, which contradicts our findings in this chapter. However, we have clearly stated that most IPO underpricing empirical studies do not differentiate between family and nonfamily firms, which are already distinctly different. However, going back to our results, we attributed this lower average first-day IPO underpricing to the alignment of interest between the family firms' principals and agents, in other words to the lower Type 1 agency costs. Moreover, family firms' owners, who control around 80% of the firms' cash flow rights after the IPO, not only do not seem to easily relinquish control but also do not accept deeply underpricing their firms' shares in order to benefit the public shareholders. On the other hand, the Type 2 agency problem discussed by Zingales (1995) is clearly present between the majority and the minority shareholders in these family firms. So we noticed that on average, family firms' owners clearly tried to increase their control over their firms by assuring higher levels of control rights with respect to their levels of cash flow rights. Therefore, the minority shareholders' expropriation described by La Porta et al. (2000) seems to be very present in French family firms. Throughout our inspection of the firms' IPO prospectuses we found that the gap between the cash flow rights and the voting rights has increased from 1.3% on the pre-IPO date to 4.6% on the post-IPO date, revealing the clear intention of the family firms' owners to expropriate minority shareholders. Furthermore, 67% of French family firms either have double voting rights allocated to the family firms' members while leaving the public shareholders with single voting rights, or allocate to themselves voting shares and leave the public shareholders with nonvoting shares. Also, in around 77% of French family firms, the CEOs hold the position of the boards' Chair on the day of the IPO. Likewise, around 80% of the French family firms were managed on their IPO date by the same person who founded the firm. So as we mentioned, the majority of the family firms went public when they were managed by the founders themselves. Among the numerous benefits and reasons for going public, these founder CEOs might decide to go public to solve succession problems, as the average firm's age is around 17 years. So in general, we found that family firms' founders show a high level of persistence in managing and controlling their firms even after going public since the majority of them are present on the firms' management board and supervisory board. We also found that the average board size of French family firms is only 4.7 members versus 10.8 for a typical French firm and 10.3 for an average board size in 12 developed European countries (Ferreira and Kirchmaier, 2013). As we mentioned, this might be due to the small family firm size compared to nonfamily firms, or to the intention of family firms' owners to dominate the board members by purposefully making a small board size composed mostly of family members. Also, the percentage of independent directors was around 20% in French family firms compared to 35% in a typical French firm, and 43.6% in 12 developed European countries (Ferreira and Kirchmaier, 2013). Here also, the domination by the French family firms' owners over the board of directors is clear and substantial. In an attempt to explain IPO underpricing through ownership and control rights change first and through governance mechanisms second, we have employed two separate models including each criterion separately. In the first model, we can explain around 16.2% of the IPO underpricing variance through ownership and control rights change with a high statistical significance level. Conversely, in the second model, we can only explain around 9.8% of the IPO underpricing variance through governance mechanisms but with a high statistically insignificant level. We deduced that IPO underpricing is much more sensitive toward changes in firms' ownership and control rights change rather than governance mechanisms. Yet, by looking at the IPO abnormal returns after one month of issuance that reach 35%, we notice that speculators and over-optimistic investors were very eager to acquire IPO shares and seeking high short-term returns. Thus, as ascertained in chapter 3, for these investors who do not seek to hold IPO shares for long, the percentage of ownership and control rights change seems to be more important than the governance mechanisms.

Likewise, in chapter 3 we have measured IPO long-term performance and tried to explain it through two models, one through the ownership and control rights change and the other through the governance mechanisms. Quite similar results of short-term performance were found for the three-year holding portfolio with significant statistical results for the ownership and control rights change model and insignificant results for the governance mechanisms model. However, both models seem to present poor explanatory results for the four-, five-, and six-year holding portfolios. We have also tried to employ the CAPM and the Fama and French Three-Factor model by assuming different entry dates in the IPO shares. Additionally, we have seen that French family firms tend to outperform the broad market index three years after issuance, while presenting poor performance from one to three months after issuance and until the third year. We have attributed this to the fads period created just after issuance, which led the IPO abnormal returns to record around 35% one month after issuance. Long-term abnormal returns became stagnated for almost three years in which not only were no values added for the IPO investors, but also losses were observed during this period. After the third year, family firms seemed to recover all the losses and start generating positive abnormal returns, reaching 100% with the CAR method and 67% with the BHAR method. However, the CAR results seem to be statistically significantly different to zero while the BHAR results did not. We also recall that Aggarwal and Rivoli (1990) worked on IPO returns over just 250 trading days, and found evidence of poor performance. The authors argued that such poor performance is possibly due to fads or speculative bubbles in the early aftermarket, which is similarly seen in the French IPO family firms. We also recall that beside Aggarwal and Rivoli (1990), who worked on one-year IPO performance and found negative results, Hanley (1993), who worked on two-year IPO performance, and Ritter (1991) and Loughran et al. (1994), who worked on three-year IPO performance, also found negative results. As a result, we mentioned that if we were to measure IPO long-term performance using one, two, or three years after issuance, we would definitely find underperformance with high statistical significance levels. However, when measuring IPO long-term performance using four, five, and six years after issuance, we find positive abnormal returns.

Hence, as we mentioned, we aim in future research projects to enlarge our sample size by including more than just French family firms and thus we seek to conduct a thorough comparative analysis between family and nonfamily firms on a bigger scale by including firms from other countries. Moreover, we seek to inspect the governance mechanisms extended over the sample period and not only taken on the IPO date to observe their effects on long-term performance. We also mentioned that it is preferable to work on newer sample periods to be able to find different indices to the CAC All-Tradable Index for considering small and middle-sized capitalization indices that started in 2005.

Last, we aim to include in our future projects variables other than the ownership and control rights change and the governance mechanisms, such as independent auditors' reports, underwriters' reputation, and the presence of venture capital and private equity funds on the firms' boards and ownership throughout the sample period to gain a broader vision of IPO performance in the short and in the long term of family firms and to be able to conduct a comparative analysis between family and nonfamily firms. Moreover, if the ownership and control rights change can predict and explain around 15% of the variance of the first-day underpricing, we would like to know and understand which factors contribute most to explaining the first-day IPO underpricing and to what extent. Last, it would be interesting to thoroughly observe and analyze the long-term performance of family firms after going public since, as we see, these firms outperform their market benchmark, contradicting most research papers that confirm an underperformance of firms going public in the long run. Therefore, understanding such performance is of great interest and a high priority for researchers in family firms.

Appendices:

Table 73: The Deflator Factors

Year	Deflator Factor
1994	1.7366
1995	1.6438
1996	1.5437
1997	1.4865
1998	1.4382
1999	1.3914
2000	1.3555
2001	1.3010
2002	1.2486
2003	1.2094
2004	1.1824
2005	1.1588
2006	1.1343
2007	1.1025
2008	1.0606
2009	1.0226
2010	1.0163
2011	1.0126
2012	1.0054
2013	1.0000

Table 74: Cumulative benchmark-adjusted abnormal returns (1M)

T	CAR_1M (T from 1 to 36)						T	CAR_1M (T from 37 to 72)					
	N	Mean	Median	Min	Max	Std.Dev		N	Mean	Median	Min	Max	Std.Dev
1	0						37	82	17.0%	23.0%	-199.0%	287.2%	101.7%
2	86	0.1%	-1.3%	-51.8%	76.7%	16.8%	38	82	17.3%	14.3%	-216.1%	272.7%	100.4%
3	86	2.0%	-1.0%	-105.6%	129.1%	28.3%	39	82	20.2%	11.6%	-201.0%	309.4%	104.5%
4	86	1.8%	0.0%	-108.9%	191.5%	37.7%	40	82	19.0%	13.3%	-224.9%	285.8%	104.2%
5	86	0.2%	-1.3%	-117.8%	200.9%	42.8%	41	82	17.5%	15.3%	-234.5%	305.7%	106.3%
6	86	-1.3%	-3.8%	-105.6%	180.0%	40.4%	42	82	19.1%	22.4%	-210.8%	309.8%	106.8%
7	85	-4.1%	-5.7%	-117.1%	140.1%	41.2%	43	82	24.1%	24.3%	-203.5%	301.6%	105.3%
8	85	-4.4%	-5.5%	-119.7%	149.7%	47.0%	44	82	24.9%	22.3%	-209.9%	309.9%	109.2%
9	85	-8.3%	-5.7%	-132.2%	145.4%	52.1%	45	81	28.8%	24.9%	-206.1%	307.2%	112.6%
10	84	-9.6%	-8.7%	-152.1%	165.5%	56.9%	46	81	34.0%	27.3%	-207.6%	314.8%	114.3%
11	84	-5.9%	-1.8%	-182.9%	275.8%	67.9%	47	81	34.1%	30.1%	-209.5%	314.0%	113.5%
12	**84**	**-3.1%**	**-7.7%**	**-165.7%**	**276.5%**	**72.3%**	**48**	**80**	**45.6%**	**28.9%**	**-208.4%**	**324.6%**	**113.2%**
13	84	-4.9%	-10.2%	-161.6%	261.5%	69.7%	49	80	42.1%	27.8%	-213.1%	320.3%	111.6%
14	84	-8.0%	-13.7%	-169.0%	262.3%	72.0%	50	80	43.0%	35.0%	-286.4%	358.2%	119.4%
15	83	-10.8%	-13.4%	-194.0%	259.4%	75.7%	51	79	47.0%	31.4%	-261.1%	336.4%	120.6%
16	83	-8.2%	-14.8%	-155.8%	275.2%	74.1%	52	79	46.9%	36.7%	-265.3%	333.1%	118.8%
17	83	-9.6%	-15.6%	-172.0%	274.6%	75.7%	53	79	48.1%	41.1%	-266.2%	346.4%	118.1%
18	83	-8.6%	-13.5%	-155.5%	276.9%	75.9%	54	79	51.7%	44.2%	-308.7%	355.0%	121.1%
19	83	-8.6%	-8.6%	-151.5%	274.7%	78.3%	55	79	52.1%	48.4%	-314.3%	349.7%	122.7%
20	83	-6.5%	-9.6%	-157.5%	281.1%	78.5%	56	78	49.9%	41.6%	-317.0%	368.5%	123.6%
21	83	-4.4%	-12.7%	-191.2%	286.6%	81.4%	57	77	49.8%	39.6%	-322.3%	384.8%	123.7%
22	83	-2.3%	-5.9%	-182.0%	299.6%	84.0%	58	77	52.7%	44.7%	-320.5%	388.4%	120.1%
23	83	-3.1%	-6.2%	-223.1%	294.7%	86.9%	59	77	54.4%	45.8%	-325.9%	409.8%	123.5%
24	**83**	**-0.6%**	**-5.0%**	**-171.6%**	**309.9%**	**86.6%**	**60**	**77**	**53.9%**	**35.5%**	**-322.5%**	**421.2%**	**123.8%**
25	83	0.9%	1.6%	-179.6%	314.9%	84.6%	61	77	55.7%	40.0%	-325.7%	425.5%	126.0%
26	82	6.4%	4.3%	-140.3%	296.2%	83.9%	62	77	55.5%	48.0%	-329.1%	426.2%	126.5%
27	82	7.6%	3.5%	-154.1%	317.5%	86.8%	63	77	55.6%	48.2%	-334.4%	424.8%	128.8%
28	82	5.9%	5.6%	-148.7%	327.6%	86.0%	64	77	56.0%	43.9%	-336.0%	423.4%	134.2%
29	82	4.4%	-3.3%	-148.2%	333.3%	87.5%	65	77	57.3%	49.0%	-341.1%	433.5%	133.1%
30	82	5.2%	-2.8%	-163.3%	328.5%	91.6%	66	77	59.8%	58.2%	-340.0%	442.6%	133.8%
31	82	5.9%	6.7%	-164.2%	330.8%	91.6%	67	77	61.7%	58.6%	-335.3%	441.7%	131.8%
32	82	7.1%	-1.8%	-167.1%	334.7%	96.1%	68	77	64.6%	68.1%	-335.7%	449.7%	133.9%
33	82	12.0%	5.2%	-171.8%	320.1%	97.9%	69	77	64.3%	60.1%	-335.4%	458.6%	139.9%
34	82	13.5%	0.8%	-173.2%	317.7%	97.3%	70	76	68.1%	62.0%	-339.9%	450.3%	136.2%
35	82	15.5%	8.7%	-162.5%	317.2%	97.6%	71	76	70.8%	63.1%	-341.0%	447.3%	137.1%
36	**82**	**16.6%**	**23.9%**	**-187.3%**	**313.8%**	**100.5%**	**72**	**75**	**74.8%**	**68.6%**	**-354.5%**	**433.6%**	**132.1%**

Table 75: Cumulative benchmark-adjusted abnormal returns (6M)

T	CAR_6M (T from 1 to 36)						T	CAR_6M (T from 37 to 72)					
	N	**Mean**	**Median**	**Min**	**Max**	**Std.Dev**		**N**	**Mean**	**Median**	**Min**	**Max**	**Std.Dev**
1	0						37	82	18.0%	15.6%	-182.1%	276.7%	94.1%
2	0						38	82	18.3%	13.1%	-182.4%	262.2%	93.9%
3	0						39	82	21.1%	16.3%	-184.5%	298.9%	97.0%
4	0						40	82	20.0%	18.1%	-175.4%	275.3%	97.2%
5	0						41	82	18.5%	17.5%	-179.7%	295.2%	99.4%
6	0						42	82	20.1%	23.9%	-177.4%	299.3%	99.4%
7	85	-2.8%	-2.4%	-39.9%	75.3%	14.4%	43	82	25.1%	23.4%	-178.2%	291.1%	98.7%
8	85	-3.0%	-3.8%	-46.8%	146.5%	25.2%	44	82	25.8%	21.8%	-178.0%	299.4%	102.5%
9	85	-6.9%	-9.4%	-72.6%	151.0%	30.4%	45	81	29.5%	23.8%	-179.4%	296.7%	107.6%
10	84	-8.6%	-8.2%	-96.7%	156.0%	34.6%	46	81	34.7%	24.8%	-194.7%	318.6%	109.3%
11	84	-4.9%	-7.4%	-127.5%	281.9%	51.0%	47	81	34.8%	20.7%	-174.3%	303.9%	108.4%
12	84	-2.1%	-5.7%	-107.7%	282.7%	57.3%	48	80	45.9%	28.5%	-171.5%	392.1%	113.7%
13	84	-3.9%	-7.6%	-114.6%	254.7%	56.7%	49	80	42.5%	23.3%	-171.8%	340.8%	112.1%
14	84	-6.9%	-8.0%	-128.2%	254.3%	59.0%	50	80	43.3%	24.5%	-231.0%	463.8%	119.9%
15	83	-9.9%	-11.3%	-174.8%	260.7%	62.1%	51	79	47.5%	32.3%	-205.7%	424.5%	121.6%
16	83	-7.2%	-16.1%	-124.6%	264.7%	60.8%	52	79	47.5%	32.8%	-209.9%	438.7%	119.6%
17	83	-8.7%	-17.3%	-140.8%	264.1%	61.4%	53	79	48.7%	33.2%	-210.8%	382.2%	118.2%
18	83	-7.6%	-20.3%	-124.3%	266.4%	62.0%	54	79	52.2%	35.1%	-253.3%	390.7%	119.9%
19	83	-7.6%	-10.6%	-117.2%	264.2%	65.1%	55	79	52.6%	35.1%	-258.9%	430.0%	122.1%
20	83	-5.5%	-9.9%	-123.6%	270.6%	67.4%	56	78	50.4%	35.6%	-261.6%	415.5%	123.1%
21	83	-3.5%	-10.9%	-135.8%	276.1%	72.8%	57	77	50.5%	31.9%	-267.0%	403.1%	123.5%
22	83	-1.4%	-6.4%	-148.1%	289.1%	77.3%	58	77	53.4%	36.7%	-265.1%	402.0%	120.8%
23	83	-2.1%	-7.9%	-167.7%	284.2%	80.1%	59	77	55.0%	45.9%	-270.5%	407.0%	123.8%
24	**83**	**0.4%**	**-10.2%**	**-131.7%**	**299.4%**	**79.3%**	**60**	**77**	**54.5%**	**35.6%**	**-267.2%**	**418.3%**	**124.0%**
25	83	1.8%	-2.3%	-134.7%	304.4%	75.5%	61	77	56.4%	42.2%	-270.3%	422.7%	126.1%
26	82	7.3%	3.0%	-125.6%	285.7%	75.9%	62	77	56.2%	51.7%	-273.7%	423.3%	126.6%
27	82	8.6%	2.7%	-141.4%	307.0%	79.5%	63	77	56.3%	46.1%	-279.0%	421.9%	128.2%
28	82	6.9%	0.8%	-129.8%	317.1%	79.3%	64	77	56.6%	50.1%	-280.6%	420.5%	133.8%
29	82	5.3%	-3.0%	-140.3%	322.8%	80.9%	65	77	57.9%	48.0%	-285.7%	430.6%	132.8%
30	82	6.1%	-4.2%	-179.8%	318.0%	86.5%	66	77	60.4%	56.9%	-284.6%	439.8%	133.3%
31	82	6.9%	-2.3%	-182.6%	320.3%	88.2%	67	77	62.3%	51.8%	-279.9%	438.9%	130.4%
32	82	8.1%	-8.3%	-190.4%	324.2%	92.8%	68	77	65.2%	52.2%	-280.3%	446.8%	133.1%
33	82	12.9%	-1.2%	-164.5%	309.6%	90.9%	69	77	64.9%	51.0%	-302.8%	455.7%	138.8%
34	82	14.5%	-2.6%	-185.2%	307.2%	91.3%	70	76	68.0%	55.2%	-303.7%	450.9%	135.1%
35	82	16.4%	5.1%	-222.8%	306.7%	93.9%	71	76	70.7%	55.3%	-335.7%	472.7%	136.5%
36	**82**	**17.6%**	**15.0%**	**-167.9%**	**303.3%**	**94.4%**	**72**	**75**	**73.9%**	**59.4%**	**-391.1%**	**473.4%**	**133.5%**

Table 76: Cumulative benchmark-adjusted abnormal returns (12M)

T	CAR_12M (T from 1 to 36)						T	CAR_12M (T from 37 to 72)					
	N	**Mean**	**Median**	**Min**	**Max**	**Std.Dev**		**N**	**Mean**	**Median**	**Min**	**Max**	**Std.Dev**
1	0						37	82	20.2%	26.5%	-155.2%	249.5%	85.5%
2	0						38	82	20.5%	29.5%	-132.2%	258.1%	86.5%
3	0						39	82	23.3%	28.4%	-160.0%	259.3%	88.8%
4	0						40	82	22.2%	32.3%	-168.9%	302.1%	90.8%
5	0						41	82	20.7%	29.1%	-172.7%	281.6%	92.3%
6	0						42	82	22.3%	28.0%	-181.6%	281.2%	93.1%
7	0						43	82	27.3%	31.2%	-182.5%	286.7%	93.0%
8	0						44	82	28.0%	25.3%	-175.1%	326.2%	98.5%
9	0						45	81	32.1%	29.4%	-183.6%	322.7%	103.9%
10	0						46	81	37.3%	33.6%	-178.2%	338.1%	106.1%
11	0						47	81	37.4%	25.7%	-169.3%	335.6%	104.7%
12	**0**						**48**	**80**	**49.1%**	**46.2%**	**-159.3%**	**452.2%**	**113.9%**
13	84	-1.8%	-2.3%	-71.5%	87.2%	18.7%	49	80	45.6%	40.8%	-164.5%	400.8%	112.2%
14	84	-4.8%	-3.4%	-61.8%	79.1%	21.5%	50	80	46.5%	38.6%	-166.3%	523.9%	119.7%
15	83	-7.7%	-2.9%	-73.2%	63.6%	25.8%	51	79	50.7%	42.9%	-169.0%	484.6%	121.0%
16	83	-5.0%	-3.1%	-83.5%	135.8%	29.7%	52	79	50.6%	43.1%	-163.4%	498.8%	119.9%
17	83	-6.5%	-6.0%	-97.9%	125.7%	29.8%	53	79	51.8%	45.0%	-157.9%	442.3%	118.7%
18	83	-5.4%	-2.1%	-88.9%	126.2%	31.8%	54	79	55.4%	47.8%	-174.2%	450.8%	120.2%
19	83	-5.4%	-4.8%	-85.6%	155.8%	39.3%	55	79	55.8%	51.3%	-179.8%	490.1%	123.2%
20	83	-3.3%	-5.8%	-121.3%	148.3%	41.8%	56	78	57.2%	50.5%	-182.6%	475.6%	123.1%
21	83	-1.3%	-5.0%	-106.9%	196.6%	48.8%	57	77	57.0%	53.5%	-187.9%	463.2%	123.5%
22	83	0.8%	3.2%	-119.6%	185.7%	56.6%	58	77	59.9%	54.7%	-186.1%	462.1%	121.2%
23	83	0.1%	-2.3%	-127.9%	175.6%	59.3%	59	77	61.6%	59.4%	-191.4%	472.3%	123.9%
24	**83**	**2.6%**	**1.6%**	**-115.0%**	**189.6%**	**58.9%**	**60**	**77**	**61.0%**	**58.3%**	**-188.1%**	**483.6%**	**123.7%**
25	83	4.0%	3.0%	-112.6%	176.6%	55.6%	61	77	62.9%	59.4%	-191.2%	488.0%	126.0%
26	82	9.5%	5.4%	-92.5%	201.8%	56.1%	62	77	62.7%	62.8%	-194.7%	488.6%	127.1%
27	82	10.8%	13.0%	-103.4%	229.5%	60.7%	63	77	62.8%	55.3%	-199.9%	487.2%	128.4%
28	82	9.1%	9.8%	-131.5%	198.6%	62.4%	64	77	63.2%	55.2%	-201.5%	485.8%	133.2%
29	82	7.5%	5.7%	-158.4%	215.2%	65.3%	65	77	64.5%	58.7%	-206.6%	495.9%	132.3%
30	82	8.3%	6.6%	-142.0%	223.5%	72.8%	66	77	67.0%	61.2%	-212.5%	505.1%	133.0%
31	82	9.1%	12.6%	-144.8%	227.8%	75.7%	67	77	68.8%	60.2%	-239.7%	504.2%	129.7%
32	82	10.3%	8.2%	-152.6%	237.5%	80.9%	68	77	71.7%	59.8%	-249.5%	512.2%	133.6%
33	82	15.2%	11.0%	-143.3%	232.2%	81.9%	69	77	71.5%	58.6%	-275.9%	521.0%	138.5%
34	82	16.7%	14.2%	-156.3%	229.9%	81.6%	70	76	73.5%	58.7%	-276.8%	512.8%	135.5%
35	82	18.7%	18.3%	-189.7%	274.7%	84.5%	71	76	76.2%	60.9%	-308.8%	532.7%	137.2%
36	**82**	**19.8%**	**20.0%**	**-140.9%**	**261.9%**	**85.1%**	**72**	**75**	**78.5%**	**61.2%**	**-364.2%**	**533.4%**	**137.1%**

Table 77: Test of means of CAR (1M)

T	Test of means against reference constant (value) CAR_1M							
	Mean	Std.Dv.	N	Std.Err.	Reference	t-value	df	p
6	-1.30%	40.40%	86	4.40%	0.00%	-0.307	85	0.76
12	-3.10%	72.30%	84	7.90%	0.00%	-0.395	83	0.694
18	-8.60%	75.90%	83	8.30%	0.00%	-1.027	82	0.307
24	-0.60%	86.60%	83	9.50%	0.00%	-0.062	82	0.951
30	5.20%	91.60%	82	10.10%	0.00%	0.51	81	0.611
36	16.60%	100.50%	82	11.10%	0.00%	1.497	81	0.138
42	19.10%	106.80%	82	11.80%	0.00%	1.619	81	0.109
48	45.60%***	113.20%	80	12.70%	0.00%	3.599	79	0.001
54	51.70%***	121.10%	79	13.60%	0.00%	3.792	78	0.000
60	53.90%***	123.80%	77	14.10%	0.00%	3.818	76	0.000
66	59.80%***	133.80%	77	15.20%	0.00%	3.922	76	0.000
72	74.80%***	132.10%	75	15.30%	0.00%	4.904	74	0.000

Table 78: Test of means of CAR (6M)

T	Test of means against reference constant (value) CAR_6M							
	Mean	Std.Dv.	N	Std.Err.	Reference	t-value	df	p
1			0					
6			0					
12	-2.10%	57.30%	84	6.30%	0.00%	-0.337	83	0.737
18	-7.60%	62.00%	83	6.80%	0.00%	-1.1163	82	0.2676
24	0.40%	79.30%	83	8.70%	0.00%	0.0425	82	0.9662
30	6.10%	86.50%	82	9.60%	0.00%	0.6417	81	0.5229
36	17.60%	94.40%	82	10.40%	0.00%	1.6871	81	0.0954
42	20.10%	99.40%	82	11.00%	0.00%	1.8261	81	0.0715
48	45.90%***	113.70%	80	12.70%	0.00%	3.6106	79	0.0005
54	52.20%***	119.90%	79	13.50%	0.00%	3.8719	78	0.0002
60	54.50%***	124.00%	77	14.10%	0.00%	3.8579	76	0.0002
66	60.40%***	133.30%	77	15.20%	0.00%	3.9765	76	0.0002
72	73.90%***	133.50%	75	15.40%	0.00%	4.7963	74	0.0000

Table 79: Test of means of CAR (12M)

T	Test of means against reference constant (value) CAR_12M							
	Mean	Std.Dv.	N	Std.Err.	Reference	t-value	df	p
1			0		0.00%			
6			0		0.00%			
12			0		0.00%			
18	-5.40%	31.80%	83	3.50%	0.00%	-1.549	82	0.125
24	2.60%	58.90%	83	6.50%	0.00%	0.397	82	0.692
30	8.30%	72.80%	82	8.00%	0.00%	1.037	81	0.303
36	19.80%**	85.10%	82	9.40%	0.00%	2.108	81	0.038
42	22.30%**	93.10%	82	10.30%	0.00%	2.164	81	0.033
48	49.10%***	113.90%	80	12.70%	0.00%	3.852	79	0.000
54	55.40%***	120.20%	79	13.50%	0.00%	4.097	78	0.000
60	61.00%***	123.70%	77	14.10%	0.00%	4.33	76	0.000
66	67.00%***	133.00%	77	15.20%	0.00%	4.417	76	0.000
72	78.50%***	137.10%	75	15.80%	0.00%	4.958	74	0.000

Table 80: Buy-and-hold abnormal returns (1M)

T	BHAR_1M (T from 1 to 36)					
	N	Mean	Median	Min	Max	Std.Dev
1	0					
2	86	0.1%	-1.3%	-51.8%	76.7%	16.8%
3	86	2.6%	-1.1%	-79.8%	172.7%	30.1%
4	86	4.6%	0.0%	-84.2%	363.0%	50.6%
5	86	4.8%	-1.9%	-85.1%	424.3%	59.3%
6	86	0.4%	-5.4%	-85.5%	289.2%	47.9%
7	85	-4.2%	-7.0%	-91.7%	154.8%	38.7%
8	85	-3.3%	-7.3%	-92.7%	155.5%	45.0%
9	85	-6.3%	-12.2%	-93.8%	162.2%	48.3%
10	84	-6.4%	-13.1%	-98.5%	198.2%	51.9%
11	84	1.7%	-9.4%	-108.0%	529.5%	82.3%
12	**84**	**1.4%**	**-14.9%**	**-111.6%**	**524.5%**	**83.3%**
13	84	-6.5%	-17.7%	-112.7%	242.5%	62.5%
14	84	-9.7%	-20.6%	-123.2%	240.7%	60.5%
15	83	-10.6%	-19.0%	-114.3%	272.4%	64.7%
16	83	-9.7%	-24.9%	-112.7%	262.0%	65.5%
17	83	-11.3%	-23.0%	-118.7%	302.4%	66.6%
18	83	-9.4%	-21.7%	-116.0%	401.2%	74.9%
19	83	-9.1%	-23.2%	-122.4%	351.6%	72.7%
20	83	-6.9%	-22.7%	-131.4%	324.6%	75.4%
21	83	-6.8%	-28.7%	-132.6%	378.2%	84.5%
22	83	-5.9%	-25.9%	-136.0%	278.7%	81.9%
23	83	-5.4%	-26.0%	-131.8%	343.4%	87.7%
24	**83**	**-7.8%**	**-23.6%**	**-142.5%**	**288.8%**	**79.8%**
25	83	-6.8%	-22.1%	-144.2%	302.4%	81.4%
26	82	-2.9%	-20.2%	-139.4%	331.4%	88.6%
27	82	0.7%	-18.5%	-147.3%	343.0%	97.4%
28	82	-1.2%	-23.7%	-148.4%	399.7%	98.2%
29	82	-1.4%	-23.3%	-150.6%	423.4%	104.7%
30	82	-1.6%	-29.0%	-158.1%	469.2%	106.9%
31	82	-2.4%	-29.7%	-165.9%	497.8%	108.4%
32	82	1.8%	-25.9%	-176.4%	591.3%	122.2%
33	82	1.4%	-23.6%	-166.5%	574.4%	118.2%
34	82	3.4%	-25.5%	-167.9%	675.6%	126.0%
35	82	6.8%	-26.0%	-173.5%	760.4%	136.8%
36	**82**	**7.6%**	**-25.1%**	**-178.6%**	**714.7%**	**136.4%**

T	BHAR_1M (T from 37 to 72)					
	N	Mean	Median	Min	Max	Std.Dev
37	82	10.7%	-30.1%	-192.7%	712.1%	149.4%
38	82	9.1%	-26.7%	-207.8%	686.5%	142.2%
39	82	17.2%	-26.4%	-208.4%	1232.7%	184.3%
40	82	8.8%	-22.4%	-226.9%	902.9%	150.4%
41	82	6.4%	-26.6%	-228.8%	612.2%	136.3%
42	82	5.6%	-26.3%	-227.7%	527.3%	127.3%
43	82	10.0%	-24.6%	-222.8%	610.2%	139.4%
44	82	15.0%	-26.9%	-238.2%	760.0%	152.3%
45	81	18.6%	-29.8%	-235.8%	698.5%	154.1%
46	81	20.9%	-26.1%	-241.9%	645.4%	157.4%
47	81	20.7%	-27.2%	-236.4%	650.0%	160.4%
48	**80**	**23.4%**	**-22.7%**	**-230.5%**	**616.3%**	**157.4%**
49	80	18.3%	-26.8%	-229.7%	607.4%	152.4%
50	80	20.0%	-28.2%	-235.5%	606.0%	148.1%
51	79	22.8%	-23.2%	-229.7%	638.5%	155.3%
52	79	18.5%	-27.3%	-206.4%	500.7%	141.6%
53	79	23.4%	-27.5%	-212.2%	670.9%	151.9%
54	79	27.0%	-24.0%	-209.5%	749.8%	159.8%
55	79	25.4%	-21.4%	-204.7%	734.8%	160.3%
56	78	25.6%	-25.1%	-196.2%	892.6%	169.6%
57	77	22.6%	-29.6%	-177.6%	1029.8%	168.2%
58	77	20.0%	-27.4%	-177.9%	1100.2%	165.9%
59	77	25.5%	-29.3%	-173.7%	1384.7%	191.3%
60	**77**	**28.2%**	**-29.8%**	**-168.2%**	**1621.8%**	**214.9%**
61	77	32.2%	-29.5%	-170.2%	1722.6%	226.4%
62	77	33.7%	-30.7%	-185.5%	1762.6%	232.7%
63	77	34.4%	-35.0%	-181.2%	1679.2%	225.3%
64	77	38.1%	-34.0%	-191.6%	1727.5%	238.9%
65	77	40.0%	-35.6%	-194.9%	1975.6%	260.6%
66	77	45.1%	-29.3%	-185.7%	2187.9%	280.6%
67	77	45.4%	-29.8%	-177.3%	2266.8%	287.3%
68	77	54.1%	-29.1%	-161.1%	2552.0%	323.7%
69	77	56.3%	-26.1%	-169.2%	2811.2%	349.1%
70	76	50.5%	-22.7%	-175.2%	2360.0%	301.5%
71	76	51.5%	-18.2%	-170.2%	2267.9%	291.7%
72	**75**	**50.3%**	**-15.6%**	**-146.1%**	**1992.0%**	**267.7%**

Table 81: Buy-and-hold abnormal returns (6M)

T	BHAR_6M (T from 1 to 36)						T	BHAR_6M (T from 37 to 72)					
	N	**Mean**	**Median**	**Min**	**Max**	**Std.Dev**		**N**	**Mean**	**Median**	**Min**	**Max**	**Std.Dev**
1	0						37	82	11.8%	-26.1%	-183.0%	748.7%	136.7%
2	0						38	82	10.8%	-19.6%	-186.4%	721.7%	130.0%
3	0						39	82	13.1%	-20.3%	-186.9%	634.4%	127.8%
4	0						40	82	7.3%	-19.4%	-201.6%	506.5%	111.7%
5	0						41	82	7.0%	-23.2%	-205.4%	444.1%	114.2%
6	0						42	82	6.2%	-23.5%	-203.8%	502.7%	110.0%
7	85	-2.8%	-2.4%	-39.9%	75.3%	14.4%	43	82	9.9%	-21.7%	-199.1%	598.9%	119.3%
8	85	-2.7%	-5.2%	-43.1%	158.5%	25.8%	44	82	14.5%	-27.4%	-213.0%	630.7%	127.8%
9	85	-6.3%	-10.5%	-58.8%	172.9%	29.7%	45	81	20.0%	-23.8%	-211.1%	634.4%	135.0%
10	84	-7.6%	-10.4%	-66.6%	187.0%	34.0%	46	81	23.0%	-23.3%	-216.1%	617.8%	144.0%
11	84	1.1%	-12.7%	-70.0%	546.5%	75.5%	47	81	22.1%	-20.7%	-209.6%	667.1%	145.2%
12	**84**	**1.5%**	**-8.3%**	**-70.2%**	**541.3%**	**77.6%**	**48**	**80**	**27.5%**	**-17.6%**	**-204.7%**	**711.8%**	**150.4%**
13	84	-5.6%	-10.5%	-82.1%	252.7%	53.0%	49	80	21.5%	-18.8%	-203.9%	639.1%	144.4%
14	84	-8.5%	-12.5%	-82.8%	250.9%	50.8%	50	80	23.9%	-18.3%	-198.6%	637.9%	141.2%
15	83	-10.5%	-18.4%	-92.7%	283.4%	53.1%	51	79	28.0%	-17.5%	-201.8%	672.9%	154.0%
16	83	-9.6%	-18.6%	-82.4%	272.7%	52.9%	52	79	22.3%	-18.2%	-183.0%	564.8%	135.6%
17	83	-12.2%	-19.5%	-106.2%	234.9%	48.5%	53	79	27.9%	-20.8%	-171.1%	755.9%	153.1%
18	83	-11.0%	-21.2%	-109.3%	282.1%	54.1%	54	79	32.1%	-15.2%	-182.4%	844.4%	163.8%
19	83	-10.2%	-17.8%	-119.3%	271.3%	56.6%	55	79	32.3%	-14.7%	-175.1%	827.7%	166.6%
20	83	-6.3%	-20.8%	-111.4%	337.4%	64.4%	56	78	32.4%	-17.5%	-168.5%	1004.8%	175.2%
21	83	-5.5%	-24.2%	-92.2%	445.6%	78.3%	57	77	30.0%	-20.7%	-161.5%	1158.8%	175.3%
22	83	-3.0%	-19.6%	-101.5%	299.4%	75.4%	58	77	29.0%	-19.3%	-148.4%	1237.9%	176.4%
23	83	-3.2%	-23.6%	-98.6%	309.3%	77.9%	59	77	35.2%	-19.7%	-129.2%	1557.4%	207.3%
24	**83**	**-4.3%**	**-18.2%**	**-108.1%**	**300.3%**	**74.7%**	**60**	**77**	**38.4%**	**-19.3%**	**-139.3%**	**1823.6%**	**234.8%**
25	83	-5.0%	-14.1%	-106.1%	267.0%	72.4%	61	77	43.0%	-21.8%	-151.1%	1936.8%	248.1%
26	82	-0.6%	-13.3%	-108.3%	344.2%	82.7%	62	77	44.8%	-18.6%	-161.9%	1981.8%	255.5%
27	82	2.3%	-14.9%	-125.0%	354.9%	90.9%	63	77	45.2%	-21.5%	-158.1%	1888.0%	246.6%
28	82	0.8%	-20.9%	-129.4%	464.7%	95.5%	64	77	49.9%	-27.8%	-166.1%	1942.4%	261.6%
29	82	0.4%	-23.1%	-130.1%	491.9%	101.9%	65	77	52.5%	-20.1%	-168.7%	2221.1%	287.5%
30	82	0.7%	-24.0%	-136.2%	544.4%	105.0%	66	77	56.9%	-16.4%	-160.5%	2459.4%	308.7%
31	82	1.1%	-25.8%	-162.5%	577.2%	107.3%	67	77	57.3%	-16.5%	-152.7%	2548.0%	316.5%
32	82	6.8%	-24.0%	-174.2%	684.5%	127.0%	68	77	66.8%	-20.6%	-138.6%	2868.4%	355.5%
33	82	6.4%	-23.8%	-162.7%	664.8%	121.6%	69	77	69.1%	-23.0%	-120.5%	3159.3%	383.9%
34	82	7.5%	-21.1%	-162.1%	709.5%	125.6%	70	76	62.4%	-18.8%	-121.6%	2652.5%	332.4%
35	82	11.2%	-25.5%	-170.1%	800.4%	136.8%	71	76	62.8%	-9.5%	-120.6%	2549.1%	320.1%
36	**82**	**11.6%**	**-23.6%**	**-177.0%**	**752.1%**	**135.6%**	**72**	**75**	**61.4%**	**-7.1%**	**-124.0%**	**2239.5%**	**291.3%**

Table 82: Buy-and-hold abnormal returns (12M)

T	BHAR_12M (T from 1 to 36)					
	N	Mean	Median	Min	Max	Std.Dev
1	0					
2	0					
3	0					
4	0					
5	0					
6	0					
7	0					
8	0					
9	0					
10	0					
11	0					
12	**0**					
13	84	-1.8%	-2.3%	-71.5%	87.2%	18.7%
14	84	-5.1%	-3.8%	-66.7%	71.0%	20.9%
15	83	-7.6%	-4.4%	-65.7%	61.4%	23.4%
16	83	-6.0%	-3.8%	-61.7%	155.1%	28.3%
17	83	-8.0%	-8.5%	-66.0%	138.2%	28.3%
18	83	-7.1%	-8.2%	-62.6%	143.8%	31.3%
19	83	-5.5%	-8.7%	-64.4%	206.3%	39.7%
20	83	-2.8%	-12.2%	-63.1%	193.6%	44.6%
21	83	-0.9%	-14.3%	-65.2%	444.7%	69.1%
22	83	3.6%	-10.8%	-69.6%	345.5%	73.6%
23	83	2.5%	-14.2%	-79.0%	312.5%	70.5%
24	**83**	**1.7%**	**-12.7%**	**-89.7%**	**320.6%**	**68.1%**
25	83	1.2%	-7.3%	-87.5%	341.8%	65.2%
26	82	5.1%	-8.8%	-94.7%	376.9%	72.6%
27	82	8.3%	-6.7%	-101.6%	432.8%	81.9%
28	82	7.0%	-10.8%	-104.6%	566.6%	88.6%
29	82	6.5%	-11.0%	-105.0%	596.3%	94.2%
30	82	7.4%	-9.1%	-112.8%	653.6%	98.4%
31	82	8.0%	-13.1%	-119.4%	689.2%	102.9%
32	82	12.4%	-11.5%	-121.2%	809.0%	121.2%
33	82	13.9%	-10.6%	-113.1%	783.6%	118.8%
34	82	14.0%	-10.3%	-112.7%	624.6%	115.1%
35	82	18.6%	-7.9%	-118.3%	704.0%	127.9%
36	**82**	**19.1%**	**-7.4%**	**-129.6%**	**661.6%**	**125.8%**

T	BHAR_12M (T from 37 to 72)					
	N	Mean	Median	Min	Max	Std.Dev
37	82	19.3%	-8.8%	-147.0%	658.9%	127.6%
38	82	19.6%	-3.6%	-158.6%	635.1%	122.3%
39	82	22.3%	-3.5%	-159.0%	580.7%	122.5%
40	82	17.5%	-3.3%	-173.1%	446.4%	106.0%
41	82	17.5%	-2.5%	-174.6%	529.0%	113.4%
42	82	17.7%	-13.4%	-173.8%	595.7%	114.7%
43	82	24.1%	-9.0%	-170.0%	704.0%	136.0%
44	82	31.3%	-8.2%	-181.8%	941.2%	158.7%
45	81	39.2%	-14.2%	-180.0%	944.8%	169.3%
46	81	43.4%	-2.1%	-184.6%	1063.0%	180.5%
47	81	42.8%	-8.9%	-180.3%	1061.2%	182.2%
48	**80**	**51.1%**	**-7.1%**	**-175.8%**	**1319.3%**	**203.4%**
49	80	42.2%	-5.2%	-175.2%	1091.3%	181.9%
50	80	44.7%	-7.4%	-172.2%	1239.9%	188.1%
51	79	52.7%	-7.4%	-175.1%	1615.6%	226.6%
52	79	46.4%	-12.0%	-157.1%	1609.9%	214.2%
53	79	56.0%	-12.4%	-146.5%	2119.8%	267.8%
54	79	62.2%	-8.2%	-154.8%	2358.1%	293.7%
55	79	62.8%	-2.4%	-147.6%	2317.8%	291.7%
56	78	68.8%	-3.4%	-155.0%	2790.6%	338.4%
57	77	69.7%	-8.9%	-158.0%	3198.2%	378.5%
58	77	70.8%	-2.2%	-143.1%	3412.3%	400.0%
59	77	84.2%	7.0%	-146.2%	4266.8%	495.4%
60	**77**	**93.2%**	**1.3%**	**-168.8%**	**4982.2%**	**575.9%**
61	77	101.2%	-3.2%	-178.3%	5285.8%	610.9%
62	77	104.4%	0.5%	-192.2%	5407.7%	625.9%
63	77	101.4%	-0.5%	-138.1%	5153.7%	597.7%
64	77	107.9%	-7.4%	-186.1%	5304.0%	618.5%
65	77	116.7%	2.4%	-160.4%	6051.2%	701.2%
66	77	125.4%	7.2%	-141.4%	6687.6%	770.5%
67	77	128.2%	9.1%	-135.0%	6930.0%	797.3%
68	77	146.0%	6.0%	-158.1%	7789.4%	896.0%
69	77	153.1%	-2.1%	-153.0%	8565.9%	981.9%
70	76	135.1%	6.5%	-131.4%	7204.6%	833.8%
71	76	134.0%	2.5%	-130.1%	6928.0%	801.6%
72	**75**	**127.1%**	**6.7%**	**-110.4%**	**6106.2%**	**713.7%**

Table 83: Test of means of BHAR (1M)

T	Test of means against reference constant (value) BHAR_1M							
	Mean	**Std.Dv.**	**N**	**Std.Err.**	**Reference**	**t-value**	**df**	**p**
1			0					
6	0.4%	47.9%	86	5.2%	0.0%	0.069	85	0.945
12	1.4%	83.3%	84	9.1%	0.0%	0.153	83	0.879
18	-9.4%	74.9%	83	8.2%	0.0%	-1.148	82	0.254
24	-7.8%	79.8%	83	8.8%	0.0%	-0.896	82	0.373
30	-1.6%	106.9%	82	11.8%	0.0%	-0.136	81	0.892
36	7.6%	136.4%	82	15.1%	0.0%	0.503	81	0.616
42	5.6%	127.3%	82	14.1%	0.0%	0.399	81	0.691
48	23.4%	157.4%	80	17.6%	0.0%	1.332	79	0.187
54	27.0%	159.8%	79	18.0%	0.0%	1.500	78	0.138
60	28.2%	214.9%	77	24.5%	0.0%	1.153	76	0.252
66	45.1%	280.6%	77	32.0%	0.0%	1.410	76	0.163
72	50.3%	267.7%	75	30.9%	0.0%	1.626	74	0.108

Table 84: Test of means of BHAR (6M)

T	Test of means against reference constant (value) BHAR_6M							
	Mean	**Std.Dv.**	**N**	**Std.Err.**	**Reference**	**t-value**	**df**	**p**
1			0					
6			0					
12	1.5%	77.7%	84	8.5%	0.0%	0.176	83	0.861
18	-11.0%	54.1%	83	5.9%	0.0%	-1.855	82	0.067
24	-4.3%	74.7%	83	8.2%	0.0%	-0.527	82	0.600
30	0.7%	105.0%	82	11.6%	0.0%	0.058	81	0.954
36	11.6%	135.6%	82	15.0%	0.0%	0.777	81	0.440
42	6.2%	110.0%	82	12.2%	0.0%	0.506	81	0.614
48	27.5%	150.4%	80	16.8%	0.0%	1.636	79	0.106
54	32.1%	163.8%	79	18.4%	0.0%	1.741	78	0.086
60	38.4%	234.8%	77	26.8%	0.0%	1.435	76	0.155
66	56.9%	308.7%	77	35.2%	0.0%	1.617	76	0.110
72	61.4%	291.3%	75	33.6%	0.0%	1.824	74	0.072

Table 85: Test of means of BHAR (12M)

T	Test of means against reference constant (value) BHAR_12M							
	Mean	**Std.Dv.**	**N**	**Std.Err.**	**Reference**	**t-value**	**df**	**p**
1			0					
6			0					
12			0					
18	-7.1%**	31.3%	83	3.4%	0.0%	-2.068	82	0.042
24	1.7%	68.1%	83	7.5%	0.0%	0.229	82	0.819
30	7.4%	98.4%	82	10.9%	0.0%	0.679	81	0.499
36	19.1%	125.8%	82	13.9%	0.0%	1.373	81	0.174
42	17.7%	114.7%	82	12.7%	0.0%	1.395	81	0.167
48	51.1%**	203.4%	80	22.7%	0.0%	2.247	79	0.027
54	62.2%	293.7%	79	33.0%	0.0%	1.883	78	0.063
60	93.2%	575.9%	77	65.6%	0.0%	1.421	76	0.160
66	125.4%	770.5%	77	87.8%	0.0%	1.428	76	0.157
72	127.1%	713.7%	75	82.4%	0.0%	1.542	74	0.127

Table 86: Test of means of WR (1M)

T	Test of means against reference constant (value) WR_1M							
	Mean	Std.Dv.	N	Std.Err.	Reference	t-value	df	p
1								
6	0.9940	0.4368	86	0.0471	1.00	- 0.1270	85	0.8990
12	0.9968	0.7639	84	0.0833	1.00	- 0.0390	83	0.9690
18	0.8986	0.6750	83	0.0741	1.00	- 1.3690	82	0.1750
24	0.9363	0.7951	83	0.0873	1.00	- 0.7300	82	0.4670
30	0.9788	0.9535	82	0.1053	1.00	- 0.2020	81	0.8410
36	1.0594	1.2319	82	0.136	1.00	0.4370	81	0.6630
42	1.0529	1.1330	82	0.1251	1.00	0.4230	81	0.6730
48	1.2983	1.6222	80	0.1814	1.00	1.6450	79	0.1040
54	1.4290	2.0734	79	0.2333	1.00	1.8390	78	0.0700
60	1.4311	2.7443	77	0.3127	1.00	1.3790	76	0.1720
66	1.5365	3.2974	77	0.3758	1.00	1.4280	76	0.1570
72	1.5453	3.0105	75	0.3476	1.00	1.5690	74	0.1210

Table 87: Test of means of WR (6M)

T	Test of means against reference constant (value) WR_6M							
	Mean	Std.Dv.	N	Std.Err.	Reference	t-value	df	p
6								
12	0.9978	0.7418	84	0.0809	1.00	- 0.0270	83	0.9780
18	0.8906	0.5765	83	0.0633	1.00	- 1.7290	82	0.0880
24	0.9481	0.7490	83	0.0822	1.00	- 0.6310	82	0.5300
30	0.9952	0.9200	82	0.1016	1.00	- 0.0480	81	0.9620
36	1.0806	1.1625	82	0.1284	1.00	0.6280	81	0.5320
42	1.0616	1.0373	82	0.1145	1.00	0.5380	81	0.5920
48	1.3235	1.5881	80	0.1776	1.00	1.8220	79	0.0720
54	1.4509	2.0428	79	0.2298	1.00	1.9620	78	0.0530
60	1.4823	2.8202	77	0.3214	1.00	1.5010	76	0.1380
66	1.6025	3.4019	77	0.3877	1.00	1.5540	76	0.1240
72	1.5912	3.0683	75	0.3543	1.00	1.6690	74	0.0990

Table 88: Test of means of WR (12M)

T	Test of means against reference constant (value) WR_12M							
	Mean	Std.Dv.	N	Std.Err.	Reference	t-value	df	p
12								
18	0.9231**	0.3283	83	0.036	1.00	- 2.1350	82	0.0360
24	1.0039	0.7059	83	0.0775	1.00	0.0500	82	0.9600
30	1.0693	0.9457	82	0.1044	1.00	0.6640	81	0.5090
36	1.1679	1.1454	82	0.1265	1.00	1.3270	81	0.1880
42	1.1926	1.2064	82	0.1332	1.00	1.4460	81	0.1520
48	1.5796**	2.4536	80	0.2743	1.00	2.1130	79	0.0380
54	1.7877	3.6176	79	0.407	1.00	1.9350	78	0.0570
60	2.0350	6.2686	77	0.7144	1.00	1.4490	76	0.1520
66	2.2662	7.6567	77	0.8726	1.00	1.4510	76	0.1510
72	2.2245	6.8808	75	0.7945	1.00	1.5410	74	0.1280

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