Management earnings forecasts and long run performance of IPOs♣

Sabri Boubaker
Champagne School of Management, Groupe ESC Troyes, Troyes, France
&
IRG, Université Paris Est, Créteil, France
Email : sabri.boubaker@get-mail.fr

Dimitrios Gounopoulos*
School of Business Management and Economics
University of Sussex, UK
Email : D.Gounopoulos@sussex.ac.uk

Antonis Kallias
School of Business Management and Economics
University of Sussex, UK
Email : A.Kallias@sussex.ac.uk

Konstantinos Kallias
School of Business Management and Economics
University of Sussex, UK
Email : K.Kallias@sussex.ac.uk

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* Corresponding author. Tel.: +44-798-015-8254. Address: University of Sussex, School of Business, Management and Economics, Falmer, Brighton, Sussex, BN1 9SL, UK. E-mail address: D.Gounopoulos@sussex.ac.uk (D. Gounopoulos).

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Abstract

Companies making initial public offerings (IPOs) in Greece were obliged to include next-year profit forecast in their prospectuses until the regulation changed in 2001 to voluntary disclosure. This research takes advantage of these two regulatory regimes to study the long-term performance of 303 IPOs issued during January 1993– December 2014. Findings indicate behavioral change, as positive long term (three-year) return during the mandatory era turned negative in the voluntary period. Comparison of these two regimes suggest that a mandatory regulatory environment in which firms are forced to provide earnings forecasts delivers better investor returns. On the contrary, the results reveal that a regulation that penalizes IPO firms for providing highly inaccurate earnings forecasts affects long-term returns because it creates an insecure investment environment. Additional analysis shows that long-term performance is higher for IPOs under a mandatory earnings regime during a "cold" period with low given ownership and high oversubscription. It is noteworthy that lack of experience and high associated costs prevent a number of IPO firms from providing earnings forecasts under the voluntary regime.

Keywords: Management earnings forecasts; Mandatory disclosure; Voluntary disclosure; Forecast accuracy; IPOs; Greece

JEL classification: G22; G30; M41

1. Introduction

Initial public offerings (IPOs) bring a firm's shares to the public for the first time and they anticipate mass participation during the subscription period. Public interest is highly dependent on evaluation of available information from the newly issued prospectus, since this information is often the first window on the firm's past and its projected future performance. Few investors have the luxury of time to read the entirety of this official document, but many especially experienced investors focus on key points disclosed in the prospectus. One figure that attracts special attention is the management earnings forecast.[1] Investors attempt to determine the accuracy of the forecast, as it can serve as a performance indicator of the newly-listed firm.

Accuracy in future earnings forecasts is difficult to achieve, as there are many unpredictable events that can take place between the forecast day and the day of the official announcement of actual earnings. Such events can include market instability, unforeseen political incidents, exchange rate fluctuations s, liquidity problems, and misunderstanding of market trends. Despite time and money spent by senior management of newly-listed IPOs to provide accurate earnings forecasts, few firms have succeeded. Many firms end up with a large difference between forecast and actual results. The forecast error is dualistic in nature. It can be optimistic if the earning forecast in the prospectus is superior to the actual earning presented in the first company annual report, or pessimistic if the earning forecast appears to be less than the actual earning. This difference in earnings visibility may lead to entirely different results in the long term; this is one of the issues to be analytically explored and presented in this study.

Motivated by the importance of earnings forecasts with respect to managerial decisions and their tendency to signal future performance, the aim of this study is to evaluate the usefulness of earnings forecast disclosures to investors. Specific literature on the effect of earnings management preceding public equity offerings on the long-run performance of these offerings has focused on discretionary current accruals (DCA), that is, unusually high earnings reported after adopting discretionary accounting accruals (Teoh et al. 1998), among other factors, and whether forecast error in optimistic forecasts is reduced by manipulating reported earnings (Jaggi et al. 2006). Further, the literature has concentrated on the impact of managerial decisions on long-term stock price performance (Mitchell and Stafford 2000), that is, the effect of positive

[1]International evidence covering management earnings forecast around IPOs includes Lee et al. (1993) and Hartnett and Romcke (2000) for Australia; Li and McConomy (2004) for Canada; Chen and Firth (1999) for China; Cormier and Martinez (2006) for France; Gounopoulos et al. (2015) for Greece; Jaggi (1997), Cheng and Firth (2000), and Chen et al. (2001) for Hong Kong; Jelic et al. (2001) for Malaysia; Firth and Smith (1992) for New Zealand; Firth et al. (1995) for Singapore; Firth and Lonkani (2005) for Thailand; Jelic (2011) for the UK; and Drobetz et al. (2014) for the maritime industry.

or negative earnings forecast prior to going public compared to the long term (Yi 2001), the influence of financial, operational, and issuing characteristics post IPO in the future (Bhabra 2003), and whether earnings management applies to private placements of equity (Chou et al. 2010).

This paper builds on the earnings management literature, in that it takes advantage of the informational context of the earnings forecast to evaluate the quality of newly-listed firms. It makes use of the forecast error already used in discretionary accounting accruals (DUCs) and explores forecast error in the context of IPOs. This paper is motivated by the strong market faith in initial forecasts (Dechow 2000). If this will ends up too optimistic, realized earnings will be lower, and the market will correct earlier overvaluations (hence, lower long-run performance). Basic questions this paper attempts to address are as follows: How do IPO firms with accurate forecasts in their prospectuses perform in the long-run? Does regulatory change (mandatory to voluntary) contributes to higher disclosure transparency and better long-term returns? Under a voluntary regime, how do IPO firms that do not provide earnings forecast perform? Do investors penalize inaccurate forecasts by IPO firms with strong negative returns?

This study differs from existing literature on the effect of earnings forecasts on long-run performance of IPOs in several points. First, it concentrates on management error with respect to forecast earnings in the prospectus versus actual earnings as reported in the first annual report. The difference between the two figures constitutes forecast error; this is the central point of this study. The previous studies do not explore this error, but compare earnings published before going public with earnings presented in annual reports up to three years after going public. In our case, once the error is reported, two samples are created: the optimistic sample (management earnings forecasts higher than actual earnings) and the pessimistic sample (management earnings forecasts lower than actual earnings).

Second, this study analyzes earnings management forecasts under two different regulatory regimes (mandatory and voluntary) in the same market. This creates the opportunity to conduct an experiment providing direct comparison between two samples, one that obliges management to provide earnings forecasts in the prospectus (mandatory disclosure), and a second in which management has the choice of providing earnings forecasts (voluntary disclosure). The results shed light on which disclosure mechanism better serves the interests of long-term investors, and will assist capital market regulators in formulating decisions that serve the common interests of the market. Further, the findings have major implications on how financial markets create managerial incentives to reduce forecast error and to avoid costs associated with potential legal actions by shareholders when reported earnings deviate

considerably from forecast earnings (e.g., Skinner 1994 ; Frankel et al. 1995; Teoh et al. 1998; Frankel et al. 2002 ; Baginski et al. 2002; Karamanou and Vafeas 2005; Jaggi et al. 2006).

More importantly, this study contributes to the existing literature by examining in-depth the information content that market makers and investors can extract from earnings forecast direction (optimistic or pessimistic) and regulatory change (mandatory to voluntary) to accurately evaluate IPOs' long-run performance. The natural experiment of the regime change provides the arena for policy makers to observe the reaction of the market and to intervene, ensuring its smooth operation. Researchers have the space to explore the change in regulatory regime in great depth and will be able to produce empirical studies that will shed more light on the main idea (i.e., in the new regime, firms may signal their quality through earnings forecasts).

The findings have important policy implications, since this is, to the best of our knowledge, the first study to analyze the relation between the effectiveness of a change in regulatory regime and earnings forecast accuracy. As to policy implications, we document how, when a country (in this case Greece) implements controls aimed at reducing asymmetry among market players, strengthening the rule of law, or improving the effectiveness of governmental authorities, leads to a reduction in firm earnings forecast error.

The results indicate that positive three-year returns during the mandatory period (starting with the end of the first day of trading) become negative in the voluntary period. IPOs that do not disclose earnings forecasts experience extremely negative long-term returns. Market conditions during the IPO period prove to be an important determinant of the long-term performance trends, since firms going public during a cold period experience better long-term returns. Moreover, IPO firms with low forecast errors are associated with better returns.[2] Overall, there is evidence that well informed investors may be in a position to predict the direction of future returns based on announcement of management earnings forecasts and proceeding with the appropriate investment decisions.

The remainder of this paper proceeds as follows. Section 2 presents a literature review and develops the research hypotheses. Section 3 overviews the institutional background. Section 4 describes the data and presents the methodology. Section 5 presents the descriptive statistics and interprets the empirical results. We test the robustness of our results in Section 6. Finally, Section 7 sets forth the conclusions.

[2] We follow Ritter's (1984) definition and cold periods are those with low average initial return.

2. Related literature review

2.1. Theoretical framework

Numerous studies examine post-issue market performance of IPOs (e.g., Ritter 1991; Chen et al. 2000; Dimovski and Brooks 2004). Gajewski and Gresse (2006), in their survey of European IPO markets, report significant underperformance at the 3-year horizon in all countries, except Greece and Portugal. Thomadakis et al. (2012) confirm earlier results by reporting that the Greek case differs from international evidence, and they reveal long-term outperformance that continues for a substantial interval after listing. Greece's reported behavioral differentiation represents a strong incentive to explore its case in more depth and in light of management earnings forecasts.

Before proceeding to the literature, it would be useful to refer to explanations proposed and tested regarding long-run underperformance. Theories such as window-dressing, IPO timing,[3] market optimism,[4] price support,[5]and investor sentiment are claimed to explain long-term underperformance of firms going public. These explanations are not mutually exclusive and can occur simultaneously.

Some of these hypotheses, like window dressing, may explain both IPO long-run underperformance and management earnings forecasts. According to Teoh et al. (1998), the window dressing theory supports that managers are ready to manipulate reported earnings around IPOs, to give the stock market a false signal on the future profitability of the candidate firm, and thus reduce the cost of capital. The authors observe that the more earnings management there is, the more stock price performance decreases after three years.[6] Behavioral finance is interested in the effect on stock prices of "irrational" or "sentiment" investors. The potential for such an effect appears strong in the case of IPOs, since IPO firms are relatively informationally opaque and hence hard to value (Ljungqvist 2007). The first study to model an IPO company's optimal

[3] 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 and market conditions. Generally, managers prefer to take their firms public when they have performed well earlier, and probably the IPO date is conditional on the firm's cycle of activity and operational performance. Further, the window of opportunity for an IPO may be determined by market conditions. In a bullish market, the number of IPOs tends to increase because the placement of stocks is easier, the risk of failure of an IPO is lower, and securities are priced higher.

[4] Market optimism theory states that active buy and sells trades in the aftermarket during the first day of trading, so-called "flipping activity" is a good indication of future stock price performance. The theory suggests that there are periods when investors are particularly confident about firms' future projects and profits, and that managers are induced to make offerings in these periods.

[5] The price support hypothesis indicates that underwriters stabilize stock prices during a short period of time after the IPO so as to avoid failure of the issue. Prices are artificially supported at a high level in the short run, but at the end of the stabilization period, performance decreases.

[6] This hypothesis assumes lack of investor ability to correctly estimate firm value at the time of the offering. After a mean three-year delay, investors would be able to identify the accounting adjustments and would reallocate their portfolios.

response to the presence of sentiment investors is Ljungqvist, Nanda, and Singh (2006). These authors assume that some sentiment investors hold optimistic beliefs about the future prospects for the IPO firm. The issuer's objective is to capture as much of the "surplus" under the sentiment investors' to maximize excess valuation over the fundamental value of the stock. It is regulatory enforcement that sometimes prevents the issuer from implementing a strategy of earnings forecast disclosure avoidance.

2.2. The literature on management earnings forecasts and long-run performance

The accuracy of earnings forecasts has received research attention, because under specific circumstances, this information can signal the direction of long-term performance of IPOs. In support of such studies, which will be analyzed below, there are a number of theories that shed light on the inefficiencies in the IPO market. These theories are highlighted by Hughes (1986) and Li and McConomy (2004). Specifically, Hughes (1986) and Guo (2005) report on informational asymmetry between investors and the issuer of an IPO.[7] Further, on the theoretical framework, Li and McConomy (2004) empirically test the substitution effect hypothesis and show that retained ownership and the provision of management earnings forecasts are credible value-relevant signals.

The first study to attract research interest on the relation between earnings management and long-run performance of IPOs is Teoh et al. (1998). These authors document that earnings management prior to going public is related to long-run underperformance. Such an event could further erode investor confidence in the value of the information contained in the prospectus, because it shows that firms could resort to window dressing prior to going public. Nevertheless, information contained in a prospectus is often the first insight for a potential investor about the firm's past and its projected future performance.

Jelic et al. (2001) are the first authors to explore the link between management forecast errors and long-term performance. Their results suggest positive and statistically significant long-term returns up to three years after listing. The finding for long-term returns contradicts the consensus of the IPO literature for a significant negative long-term performance. Further, the evidence shows a negative association between upward bias in management earnings forecasts and IPO performance in the first 12 months after the IPO.

[7] Hughes (1986) highlights that, for market failure to be avoided, the issuer should make a disclosure about firm value that will be verified by the investment banker.

Bhabra and Pettway (2003), in line with Platt (1995), Hensler et al. (1997) and Jain and Kini (2000), attempt to explain IPO prospectus data usefulness to a potential investor. Their results indicate that prospectus information is useful in the aftermarket over a short window of one year, although the value of this information declines rapidly with time. IPOs that reissue equity or merge appear to outperform their matched-firm benchmark over three years. On the other hand, failing firms show no underperformance in the first year as listed firms. Bhabra and Pettway (2003) determine that the reason for the lack of underperformance in the first year is the price support provided by underwriters in the immediate aftermarket.

Jaggi et al. (2006) examine whether the Taiwanese regulation requiring mandatory disclosure of earnings forecasts in IPOs results in disclosure of more optimistic earnings forecasts and whether forecast error is reduced more by manipulating reported earnings rather than revising earnings forecasts to meet the forecast error threshold. Their results reveal that mandatory disclosure results in more optimistic forecasts than pessimistic forecasts, especially for firms expecting better performance in the forecast year compared to the previous year.

Summarizing the findings in the literature, findings from Malaysia (Jelic et al. 1998) and Singapore (Firth et al. 1995) suggest that managers tend to be pessimistic forecasters. Findings from Canada (Pedwell et al. 1994), New Zealand (Mak 1989 and Firth and Smith 1992) and Australia (Lee et al. 1993) and Firth et al. (2012)) suggest that managers tend to overestimate future earnings in their forecasts. Evidence for Hong Kong is inconclusive. Selva et al. (1994) report optimistic forecasts, while Chan et al. (1996) report that management forecasts are conservative and pessimistic.

A recent study by Gong et al. (2009) investigates the link between management earnings forecasts and long-term performance as part of their framework on the association between management earnings forecasts and accruals. Their evidence on positive association is stronger for firms operating in a more uncertain business environment. This motivates us to explore such an uncertain business environment, in this case, Greece. The regulatory change that took place at the beginning of the century provides the unique setting we need to examine the link between management earnings forecasts and long-term performance.

2.3 Hypotheses Development

Greece is the first in the world country to experience regulatory alteration as its mandatory regime was replaced by a voluntary one.[8] These two disclosure mechanisms embody entirely different philosophies and follow distinct principles, which affect the mentality and behavior of management during the decision making process. The whole framework offers a unique opportunity to explore the level of earnings forecasts prior to and after the regulatory change.

The literature shows a mandatory disclosure environment for earnings forecasts in Singapore, Malaysia, and New Zealand, and a voluntarily one in other Commonwealth countries. The results on earnings forecast error reveal higher levels of accuracy in countries with voluntary disclosure (Australia: 34.49%, Hong Kong: 12.79%, UK: 11%) compared with countries disclosing mandatory earnings forecasts (Singapore: 10%, Malaysia: 54.1% and New Zealand: 111%). This initial observation provides an initial indication that moving from mandatory disclosure environment to voluntary will contribute on improving the accuracy of earnings forecast.

Hutton et al. (2003) find that bad news earnings forecasts are always informative but that good news forecasts are informative only when supplemented by verifiable forward-looking statement. Huang et al. (2014) examine the efficacy of a forecast regulation in the emerging market of China and document that mandatory forecasts are less timely and less precise than voluntary forecasts, suggesting that mandatory forecasts are of lower quality than voluntary forecasts. Horton et al (2013) report that only after mandatory IFRS adoption, forecast accuracy and other measures of the quality of the information environment increase significantly.

H1: *Regulatory change from mandatory to voluntary earnings forecasts affects the accuracy of IPO earnings forecasts*.

Hribar and McInnis (2012) document that sentiment tends to be high (low) in good (bad) economic times. The questions that arise here are the following: Do management earnings forecasts become more optimistic for all IPOs when sentiment is high? Do earnings forecasts become more optimistic for "uncertain" firms relative to other firms when sentiment is high, and less optimistic when sentiment is low?

[8] The regulatory switch from mandatory to voluntary management earnings forecasts was motivated by its expected contribution to the efficient and cost-effective functioning of the capital markets. The protection of investors and the maintenance of confidence in the Greek financial market were also important issues. This regulatory change was also intended to reinforce the freedom of movement of capital in the internal market and to help small family companies to go public. The change involved the forecast for the next year end.

Earlier Baker and Wurgler (2006) reported that sentiment increases demand for stocks whose earnings forecasts are subjective and whose contemporaneous returns are higher than is justifiable. Specifically, small stocks, extreme growth stocks, distressed stocks, young stocks, and non-dividend-paying stocks should be the most difficult to provide accurate earnings forecasts, and therefore, the most vulnerable to investor sentiment. When sentiment is high, uncertain firms tend to earn lower future returns. When sentiment is low, the reverse tends to be true. Sentiment expressed as a result of optimism or pessimism in forecast earnings will be uniform and therefore independent of the disclosure regime. Thus, our second hypothesis is as follows:

H2: *Optimistic/pessimistic earnings forecasts during the mandatory disclosure era do not change after the switch to the voluntary disclosure era.*

Our focus during the post-issue period is also on firms that include a forecast in their prospectus and fail to meet earnings expectations. Such firms, by intentionally inflating their earnings forecasts, may be able to obtain a higher share price on the IPO date. If there were no subsequent costs to managers of such firms, then the firms would prefer to issue optimistic earnings forecasts. However, we provide evidence that forecaster that fail to meet earnings expectations pay a price in the form of significantly worse post-issue performance than forecasters that meet their earnings forecasts (Jog and McConomy (2003)). Supplemental analysis generates evidence that forecasters with poor ex post actual earnings would likely have been better off not issuing a forecast.

Degeorge and Zeckhauser (1993) argue that companies will choose to go public after unusually high earnings performance. They believe that superior earnings will reduce the risk (Brav and Gompers (1997) faced by investors and will secure wide participation. Degeorge and Derrien (2001) look at earnings forecasts published in IPO prospectuses and report that forecast errors are the main driver of IPOs stock price performance as they embody investors expectations at the time of the IPO. Gounopoulos et al (2015) document that IPOs with accurate forecasts experience lower levels of underpricing as those firms that are unable to provide accurate earnings forecast underprice their issue in order to attract investors.

H3a: *Companies that fail to provide an accurate earnings forecast experience significantly worse post-issue performance.*

H3b: *IPO companies that provide earnings forecasts mandatorily experience lower long-term returns.*

3 Institutional Background

3.1 Institutional Background of the Regulatory Environment in Greece

Over the years, both the supervisory authorities and the Greek State enhanced the regulatory framework and the infrastructure for supervision of the capital markets with new measures that protect the market from systemic risks and phenomena of extreme speculative behavior. The measures include improvements and extensions of the existing regulatory framework, on the basis of the new demands of the market and the substantial experience accumulated. In 2005, capital market supervision measures included reinforcement of the regulatory and supervisory capabilities of the capital markets and the regulatory authorities, enhancement of market effectiveness and liquidity, improvements in efficient operations of investment firms, continuation of the program for certification of market agents, modernization of the framework governing the listing of companies on the stock exchange and their oversight, as well as a series of ameliorating interventions in market operations and trading and clearing systems.

The enactment of new laws reinforced the institutional framework for the operation of the Greek capital market and accelerated its convergence with the corresponding European framework. Law 3340/2005 established provisions for the prevention of market abuse (insider dealing and market manipulation). The new framework provides a generic and flexible definition of "market abuse," establishes strict terms and conditions for the adoption of trading practices, and introduces a common European regime for the supervision, prevention, and investigation of market abuse cases, and the imposition of sanctions.

Law 3371/2005 has been a key instrument toward improvement of the institutional framework governing the Greek capital markets. The law establishes modern and competitive terms and conditions for the listing of securities for trading in regulated markets in Greece, along with new obligations for issuers of securities, which concern equitable treatment of shareholders and provision of information to investors; it revises the framework for the suspension, trading and delisting of securities from the stock exchange, updates the framework for the operation of portfolio investment companies and firms for reception and transmission of orders, introduces regulations concerning transaction clearing and investor insurance schemes, and upgrades the overall operations of the market. The establishment of these provisions is a major step toward

improvement of the flexibility and development of the capital markets, as well as the effective supervision of its operations. To improve transparency and investor protection at the European level, Law 3401/2005 established provisions on the content of the prospectuses of companies wishing to list their securities for trading on an exchange.

Investor protection was significantly improved through the establishment of regulations against all types of market abuse and the establishment of the obligation of mutual funds to disclose new investment and financial information, cost and portfolio adjustment ratios, and to inform investors about their advertisements in a manner that prevents dissemination of misleading information.

Transparency in the market was improved through establishment of a new framework governing information disclosure and record-keeping obligations of investment firms in the context of their operations, as well as modernization of the asset valuation methods of mutual funds and portfolios of investment firms and real estate investment companies not listed in regulated markets. Moreover, the Athens Stock Exchange is now obliged to prepare, issue, and publish daily bulletins in due time.

3.2. Regulatory switch

By 2000, it was obvious that Greece would abandon the drachma and join the Euro along with many other countries of the European Union. This provided an opportunity for the Hellenic Capital Market Commission to harmonize their regulations with other countries joining the new currency. One of those regulations was the mandatory versus voluntary disclosure basis for prospectus forecasts. In contrast to other countries in the Eurozone, Greece required disclosure of earnings forecasts in IPO prospectus. Newly-listed firms complained about compliance costs and about their inability to provide accurate management earnings forecasts.

The regulatory switch from mandatory to voluntary management earnings forecasts was motivated by its supposed contribution to efficient and cost-effective functioning of the capital markets. Protection of investors and maintenance of confidence in the Greek financial markets were also important issues. This regulatory change was also intended to reinforce the freedom of movement of capital in the internal market and to help small family companies to go public.

It is clear that the regulatory switch from mandatory to voluntary disclosure of management earnings forecasts was inspired by and looked forward to the introduction of the more strict International Accounting Standards (IAS). IAS requires three tests of any regulation: first, that it meets the basic requirement of the Council Directives, that is to say, that its

application results in a true and fair view of the financial position and performance of an enterprise; second, that, in accordance with the conclusions of the Council of 17 July 2000, it is conducive to the European public good; and third, that it meets basic criteria as to the quality of information required for financial statements, specifically that it is useful to users. It became apparent that inaccurate forecasts under the mandatory forecast regime would be a major problem for the trustworthiness of Greek IPOs.

3.3. Development of the IPO market in Greece

The IPO market in Greece has experienced three historical periods of major development. The first is the period 1925–1926 with 9 IPOs, the second includes 1972–1974 with 32 IPOs, and the third is the period 1995–2001 with 208 IPOs. Each of those periods has unique characteristics and is associated with growth in the Greek economy. Specifically Thomadakis et al. (2015) show that after 1924 and until 1940, the Athens Stock Exchange experienced a boom and an unprecedented record in new listings. In total, 71 companies were admitted to trading in this period,[9] as a result of the increasing public spending (including foreign aid) on refugee assistance from Asia Minor, which created large domestic demand for food, clothing, and housing. The pace of growth picked up; 1924–28 was a distinct period of rapid economic development in modern Greek history. Inflation was also high, but was on the whole much lower than the preceding decade, averaging an annual rate of 13% in the period 1924–27.

The second IPO wave resulted from development in the Greek market in the 1972–1974 period. This was an era of GNP growth at an average annual rate of 6.2% within an environment of monetary stability, while maintaining improved national production, employment, and exports, whose composition shifted to manufacturing, brought major increases in financial saving, and low inflation. This period of growth was interrupted by the first energy crisis and the simultaneous political (and geopolitical) crisis that led to the Turkish invasion of Cyprus and the collapse of the Greek Junta in 1974.

The third period is the most prominent and played a critical role in the rapid growth of the IPO market in Greece. In particular, 1997 was a very significant year, a “landmark” in the history of the Greek economy and in the history of the Athens Stock Exchange (ASE). In the 1997–1999 period, the ASE witnessed its greatest phase of growth. The period 1993-2001 is characterized by readjustment of macroeconomic indicators, with the main goal being reduction

[9] Among the 71 listings, the most prominent were banking firms with 15 listings, textiles with 12, construction with 8, chemicals and food, each with 7 new listings.

of the inflation rate to under 3% and reduction of the fiscal deficit. By the end of 2000, the Greek economy had transformed into a "modern" economy, with an updated structure and strong dynamism. Healthy conditions were present in the economy in the 1997-1999 period, as economic growth, monetary stability, investment in infrastructure, growth in exports, and reform of the business sector motivated many companies to seek higher growth rates through IPOs. A record 31.68 billion Euros were raised through new public offerings.

4. Data, methodology and hypothesis development

4.1. Sample and summary statistics

The sample covers the period January 1993 to December 2014 and consists of 303 IPOs. Insurance and investment companies are excluded from the sample because of their unique characteristics that would cause bias problems in the results. A large effort was undertaken to collect the data for all remaining firms listed on the ASE. Toward that end, a variety of sources were used to ensure that we considered the maximum amount of information. These sources include Compustat, Datastream, and Thomson Financial Securities Data Corporation. Stock prices, market returns, and the ASE General Index (ASEGI) were retrieved from the ASE database. Appropriate adjustments were made for stock splits and stock dividends. For firms to be included in the sample, the following items are prerequisite: a prospectus, financial statements for the year prior to the offering, forecast profits before tax, and stock prices for at least 36 months or 756 trading days following the IPO for all years.

Forecast earnings for one year after going public are also retrieved from the IPO prospectus and crosschecked with the official statistical Bulletin of the ASE. Actual earnings for years t+1, t+2, and t+3 are collected from the respective annual reports and crosschecked with data provided by the Capital Market Commission. Information regarding variables affecting earnings forecasts comes from IPO prospectuses.

The great majority of information used in this study is hand-collected from the above-mentioned resources. Market returns and stock prices are collected from Datastream, while ASEGI is retrieved from the ASE database. Stock prices are collected for the first three years of trading following the IPO. Necessary adjustments are made for stock dividends and stock splits. Further historical accounting information is derived from published financial statements at the end of fiscal year t–1. The institutional framework is well described in Greek Presidential Decree No. 348 of 1985.

Panel A of Table 1 provides an annualized listing of the sample's 303 IPOs, including the mandatory and voluntary disclosure classification of the corresponding earnings forecast. Among the 85 listed IPOs during the voluntary disclosure period, 22 did not include earnings forecasts in their prospectuses. Overall, the sample of IPOs listed under the voluntary disclosure environment is restrained, because the mortgage-backed securities crisis of 2008 and the Greek debt crisis of 2009 to the present affects the number of new listings. It is noteworthy that there have been no IPOs over the last three years of this study. The last time the ASE experienced three consecutive years without an IPO was in the 1980s.

Table 1, Panel B reports market capitalization, age of firm, oversubscription and given ownership for each year of the sample period. The optimistic earnings forecasts groups represent 50.5% of all firms in the final sample. Firms with pessimistic earnings constitute 49.5% of the sample. Both earnings groups have higher numbers of firms in years 1994 and 2000 (19 and 22 for the optimistic group, and 23 and 26 for the pessimistic group, respectively).

[Insert Table 1 about here]

Finally, the last column of Table 1 compares the percentage of given ownership by pre-IPO shareholders during the IPO procedure. The results indicate that IPOs with optimistic earnings forecasts chose to offer 19.74% of their shares in the stock market, while IPOs with pessimistic earnings forecasts offered 20.67% of their shares. The results are relatively stable over the period, with a few exceptions (e.g., in 2007, the optimistic group of IPOs sold 33.16% of shares and the pessimistic group sold 22.92%).

4.2. Methodology

The forecast error measure reflects the difference between the actual and predicted figures for the same time period. Forecast error measures can be calculated with or without the error sign (*absolute forecast error (AFE*)). Jaggi (1997), Chan (1996), Chen et al. (2001), Cheng and Firth (2000), and more recently, McGuinness (2005) report that the forecast error measure (*FE*) evaluates the *bias* in the forecasts, which mainly shows whether managers have been optimistic or pessimistic in their forecasts. Self-selection theory addresses this issue and partially explains why earnings forecasts are generally overoptimistic. McNichols et al. (1997) investigate the relation between analyst recommendations and earnings forecasts, and find that there is selectivity in analyst recommendations depending on whether information about a firm is

favorable or unfavorable. A positive value for the mean forecast error (MFE) implies that, on average, IPO companies have a pessimistic bias (IPOs under-forecast), while a negative value for MFE represents an optimistic bias (IPOs over-forecast).

Management forecast error for an IPO is calculated as follows:

$$FE_{it} = (AP_{it} - FP_{it}) / |FP_{it}| \quad (1)$$

where FE_{it}, is the forecast error for company i at date t, AP stands for actual profit, and FP is forecast profit.

MFE examines whether the company's management systematically overestimates or underestimates earnings for IPOs. The average forecast error based on the negative/positive measure of error does not provide credible information on the average size of the error, because negative and positive errors cancel each other out. Therefore, in order to determine the accuracy of forecasts, the AFE measure is appropriate.

AFE is taken using the absolute value of the MFE for each IPO. AFE provides an indication of how close forecasts are to actual profits in absolute terms. Earnings are before tax and extraordinary items. AFE is measured as follows:

$$AFE_{it} = | (AP_{it} - FP_{it}) | / | FP_{it} | \quad (2)$$

where AFE is absolute forecast error and all other terms are as defined previously.

We consider two measures of long-run stock performance: cumulative abnormal returns *(CAR*) from the end of the first day of trading until the earlier of the stock's delisting date or its third anniversary, and buy-and-hold returns (BHR) starting four months after the first fiscal year-end, to allow for reporting lag. The former measure follows the method of Ritter (1991) and the latter that of Teoh et al. (1998).

We use the general market index to adjust stock returns on a monthly basis. Both calendar time and event time are used to measure the length of periods. The calendar time method defines every month as 21 successive trading days except that month 0 comprises only the first day of public trading. Thus, the 2–22nd event days make up month 1, the 23–43rd event days make up month 2, etc.

Monthly market-adjusted returns are calculated as monthly raw return on a stock over the monthly market return for the corresponding period. The market adjusted return for stock i in month t is given as:

$$Adjusted\ Return_{it}\ (ar_{it}) = Raw\ Return_{it}\ (r_{it}) - \ Market\ Return_{it}\ (r_{mt}) \qquad (3)$$

The average adjusted return on a portfolio of n stocks for event month t is the equally weighted arithmetic average of the adjusted returns:

$$AR_t = \frac{1}{n}\sum_{i=1}^{n} ar_{it} \qquad (4)$$

The cumulative market-adjusted aftermarket performance (CAR) from event month q to event month s is the summation of the average benchmark-adjusted returns over this period:

$$CAR_{q,s} = \sum_{t=q}^{s} AR_t \qquad (5)$$

Fama and French (1993)[10] show that when the standard three-factor model (without the momentum factor) is estimated in randomly chosen sample firms with small size and low book-to-market ratio, the null hypothesis of zero abnormal performance is over-rejected. The majority of our sample consists of small and growth firms, thus this potential problem can be particularly severe. Mitchell and Stafford (2000) also raise the possibility that the intercept under the null hypothesis may be biased under the standard calendar-time approach. To solve this problem, following Loughran and Ritter (1995), Brav and Gompers (1997), Ikenberry and Ramnath (2001) and Boehme and Sorescu (2002), we construct a zero-investment calendar-time portfolio consisting of long positions on firms that change their trading locations, and short positions on matched control firms that do not change locations. This approach mainly involves calculating average returns or rolling calendar-time of stocks. We examine the performance of these monthly portfolios by calculating the subsequent excess return and running the following calendar-time regression. Under this model, abnormal returns are calculated as follows:

Model 1: Fama and French (1996) value-weighted three-factor model (FF3F).

$$(R_{pt} - R_{ft}) = a + \beta(R_{mt} - R_{ft}) + \gamma SMB_t + \delta HML_t + \varepsilon_{pt} \qquad (6)$$

where R_{pt} is the calendar time portfolio return, R_{ft} is the return on a one-month T-bill during month t, R_{mt} is the value-weighted market index return, SMB_t is the difference in returns of value-weighted portfolios of small firms and big firms during month t, HML_t is the return differential of value-weighted portfolios of high and low book to-market firms in month t, β, γ

[10] Fama and French (1996) find that many efficient market "anomalies" can be explained by taking into account size and book-to-market effects through the use of a three factor benchmark.

and δ are regression parameters specific to the portfolio, and ε_{pt} is the error term. We construct the *SMB* and *HML* factors as in Fama and French (1993).

4.3 Additional factors determining earnings forecasts

There has been some evidence on factors that influence the selection of a particular type of earnings management in the short-run, but there is no study that investigates the relation between accuracy of earnings forecasts, use of control variables, and long-term performance of IPOs.

Size: Size has been extensively researched in the long-run, as it is a factor of the Fama and French (1993) three-factor model, but the earnings management literature has neglected to investigate this as a control variable measured by market capitalization. Because larger firms tend to spend more money to acquire information, we expect larger IPOs to perform better in the long-run.

Age: The operating history of a firm prior to going public plays a significant role in its long-run stock price performance. Firm age has been suggested as a proxy for the risk level (i.e., quality) of the IPO firm (Ritter 1984; Carter et al. 1998; Khurshed et al. 2006). Companies with a long history are shown to provide more detailed management earnings forecast disclosure and more accurate forecasts about their future performance, as they are likely to have better control over their operations and a better feeling for the market environment (e.g., Firth and Smith 1992, Cazavan-Jeny and Jeanjean 2007). This is expected to affect their future performance and to offer better returns to their long-term investors.

Time Lag: Time lag, or the number of days from prospectus registration to listing date, in many countries is assumed to be short; however, it generally ranges from 5 to 70 days. During this period, changes in market conditions may affect the price performance of IPOs, as well as aftermarket returns. Many studies (e.g., Lee et al. 1993; Firth, et al. 1995; Jelic et al. 1998; Hartnett and Romcke 2000; Firth and Lonkhani 2005) support the notion that the length of the forecasting period influences the degree of forecast accuracy. Forecasts with a shorter time horizon are expected to be more accurate and will be accompanied by better performance in the long term, while those with longer time horizons are associated with greater uncertainty (Jaggi 1997) and less satisfactory returns in the long term.

Privatization: Megginson et al. (2000) examine long-run (1981–1997) aftermarket performance for a 36-country sample of 264 privatization IPOs. Regardless of which benchmarks are used, the performance for all holding periods (one, three, and five years) is significantly positive. Brav and Gompers (1997) show empirically decreasing long-term underperformance of privatized IPOs. We expect that these firms are publicly recognizable and that any government, as the principal shareholder, would like to see a successful issue and, at the same time, secure positive comments from the markets and the media. Because of the expected high public participation, management makes an effort to provide an accurate earnings forecast, which enhances the reputation of the firm and helps secure good long-term returns.

Oversubscription: We hypothesize an inverse relationship between the level of oversubscription and the degree of forecast accuracy. We expect that uninformed investors create high demand for highly underpriced, low-quality IPOs associated with high forecast error. These IPOs become part of the speculative attitude by well informed investors in the aftermarket and experience amplified flipping activity. This behavior is well explained by the speculative bubble hypothesis, which is an alternative approach toward explaining the post-listing return behavior of IPOs. When investors do not behave rationally, they may over- or under-react to information about IPO prospects and they may temporarily over- or undervalue the price of the initial offerings. As a result, investor demand will be high in the short-run, leading to poor long-term performance.

Underwriter Reputation:[11] Most theoretical studies, with regard to long-term performance of IPOs and the role of underwriters' during the going-public period, concentrate on asymmetric information and their effects on stock-price performance. Baron (1982) and Dimovski et al. (2011) argue that asymmetric information exists between the better-informed underwriters and the less informed issuers; therefore, underwriters are able to price new issues below the market equilibrium to reduce the probability that they will absorb losses due to unsold shares.

Chen and Firth (1999), on earnings forecasts, report a positive relation between underwriter reputation and accuracy of earnings forecasts. Ghikas et al. (2008) find that underwriters align their interests to the pre-IPO stockholders, affecting the quality of the earnings forecast by not incorporating adverse information provided by auditing of qualified reports. Overall, the aim of reputable underwriters is to maintain their reputation by associating

[11] Underwriters in the Greek stock market are either large banks (e.g., the National Bank of Greece, EFG Eurobank, Alpha Bank, Piraeus Bank) or major securities firms.

themselves with more accurate disclosure information and better long-term returns to their loyal customers and retail investors.

Change in Capital Market Conditions (Hot/Cold): Since this study explores 21 years of empirical evidence, a period between 1993-2014 in which the economy experienced many changes and alterations, we employ a dummy variable (measured in quarterly terms) to account for market conditions effects over time. At first glance, the economy appears much worse during the voluntary years, so the dummy will help us reliably measure the changes over time.

Our rationale on this control variable is that if an earnings forecast takes place during a hot period (i.e. the periods with large number of listings in the ASE) and the actual earnings forecast appears in the cold period, then the results can be lower than expected (optimistic forecast) and a high forecast error may appear. Conversely, if announcement of an earnings forecast occurs during a cold period and the actual earnings are announced during a hot period, then the actual figure can be much higher than expected (pessimistic forecast) and a high forecast error can appear.

When the market conditions of the forecast and announcement periods are the same, we expect a higher level of market fluctuation during the hot period compared with the cold period. We expect that cold periods encompass a prevailing period of stability, so earnings forecasts may be accurate. In contrast, hot periods can be associated with the release of new information, leading to higher risk forecasts. Hence, there can be differences between forecast and actual earnings during hot-period conditions, which we presume to be lower during cold-period conditions.

Searching for evidence on the effect of hot or cold market conditions in the long-term performance of newly-listed firms, we refer to Thomadakis et al. (2012), who reveal a strong relation between cold IPO periods and long-term performance. These authors point out that some IPOs are issued in hot markets, when long-term expectations are low and the general level of the stock market is decreasing, while other IPOs are issued in cold markets, when long-term returns are better and the general stock market level is stable.

Given Ownership: Ownership structure influences the monitoring mechanism a company uses, including monitoring of earnings-management activity. The literature indicates (e.g., Li and

McConomy 2004)[12] that a low percentage of sold ownership signals high quality of a firm. Managements of such IPOs believe in the strengths and potential of their companies and have a strong motivation to provide accurate earnings forecasts. Accuracy is appreciated by long-term investors and it will cause them to keep their position in the firm, supporting its investment plans. This creates better conditions for good long-term returns.

Evidence from Hansen and Torregrosa (1992) indicates a direct relationship between the proportion of shares retained by owners and long-term returns. Jain and Kini (1994) argue that long-run underperformance can be partly explained by worsening managerial incentives following an IPO. In addition, if investor sentiment is an important factor in the long-term underperformance of IPOs, small IPOs may be more affected.

AFE and FE vary across companies and we construct cross-sectional models to help explain these variations. We regress AFE and FE on macroeconomic and firm-specific factors as follows. The model is:

$$AFE \text{ or } FE = a_0 + a_1 SIZE + a_2 AGE + a_3 TLAG + a_4 PRIV + a_5 OVER + a_6 UND + a_7 H/C + a_8 OWN + a_9 IND + a_{10} ER1Y1D \{\text{or} + a_{11} ER2Y1D\} \{\text{or} + a_{12} ER3Y1D\} \{\text{or} + a_{13} ER1Y1M\} \{\text{or} + a_{14} ER2Y1M\} \{\text{or} + a_{15} ER3Y1M\} + \varepsilon_i \quad (5)$$

Positive signs are expected on size (*SIZE*), age (*AGE*), privatized firms (*PRIV*), level of oversubscription (*OVER*), and underwriter quality (*UND*). Negative signs with AFE are expected for length of listing period (*TLAG*), market conditions (*H/C*), given ownership (*OWN*), and industrial classification (*IND*).

Further, we test for long-term performance using

$$FF3F \text{ or } (FF3F\text{-}CAR) = a_0 + a_1 SIZE + a_2 AGE + a_3 TLAG + a_4 PRIV + a_5 OVER + a_6 UND + a_7 H/C + a_8 OWN + a_9 IND + a_{10} MAN \{\text{or} + a_{11} AFE\} \{\text{or} + a_{12} FE\} \quad (6)$$

[Insert Appendix A about here]

[12] Li and McConomy (2004) indicate that managers' choices of the earnings forecast and retained ownership signals are jointly determined after controlling for other factors that affect each decision independently, and that a substitution effect exists among managers' choices.

5. Empirical results on profit forecasts in Greek IPO prospectuses

5.1 Descriptive statistics

The summary statistics of AFEs, forecast errors, and adjusted returns for one, two, and three years after going public are shown in Table 2. The means, medians, and standard deviations of errors are broken down by mandatory and voluntary disclosure environment. The mean (median) forecast error for the total sample is 3.66% (-0.38%). The positive sign reveals that, on average, the forecast profits are less than the actual profits, so the forecasts are pessimistic. Breaking down the forecast error by mandatory and voluntary environment, the results reveal a positive mean of 8.65% for IPOs providing an earnings forecast in their prospectuses during the mandatory period, and a negative mean of -9.58% for IPOs providing a forecast of earnings during the voluntary period. This tells us that firms are very conservative when compelled to provide a forecast in their prospectuses, and therefore, actual profit is typically higher than forecast. Once the disclosure environment turns voluntary, Greek IPOs behave more liberally, and the forecast error sign changes, typically indicating more optimistic forecasts than the actual earnings. This lends great support to the self-selection theory, which, in part, states that earnings forecasts during voluntary periods are generally over-optimistic.

Long-term performance based on the two disclosure environments presents several interesting findings. Initially, IPOs which present mandatory earnings forecasts with pessimistic trends present positive long-term returns at 16.34% after three years. When disclosure regime changes to voluntary and the forecast trend swings to optimistic, three-year, long-term returns become negative, -34.68%. This result indicates that investors appreciate and reward a pessimistic earnings approach by management, as they prefer to see better actual earnings than forecast in the first published annual report. Such a finding could be valuable in the hands of any IPO investor, as it would help them apply the right strategy and make relevant decisions.

Calculation of long-term returns from the end of the first month of trading shows negative returns for all IPOs. Specifically, firms going public under a mandatory disclosure environment experience negative returns after 1, 2, and 3 years from going public of 16.41%, 27.64%, and 8.88%. Those firms that voluntarily provide earnings forecasts offer negative returns of 10.09%, 31.79%, and 32.53% over the same periods. The only occasions in which the voluntary sample of IPOs provides better long-term returns compared with the mandatory firms is one year after going public. Still, returns are negative overall, so this cannot constitute a good investment option. In all other cases, firms with mandatory earnings disclosure provide considerably better returns.

The cumulative returns four months after year-end are comparable up to two years later, but then become higher in the third year in the mandatory regime. It appears strange that an earnings forecast that was realized two years ago would affect later returns in such a significant way. Broadly, it is ambiguous why long-run abnormal returns post-IPO would exist. If the mandatory regime is really better and the voluntary regime is really worse, investors could price this in the first place, making the long-run performance disappear. If we do not know the level of long-run performance, predicting how a factor would affect long-run performance or how long-run performance would differ across regimes is quite difficult. On the other hand, predicting forecast bias in different forecasting regimes is possible.

In summary, Table 2 indicates that if returns are cumulative from the end of first trading day, the mandatory regime seems to have higher long-run performance. But if returns are cumulative from four months after year-end, the long-run performance difference is not clear or is even opposite. This suggests that better performance is achieved in the relatively short period from the first trading day to four months after year-end. This is reasonable, since the forecast earnings are now realized within this time frame and actual realizations tend to be better than the forecasts in the mandatory regime (hence good news, better returns), but lower than the forecasts in the voluntary regime (hence bad news, worse returns).

[Insert Table 2 about here]

Table 3 reviews three potential determinants of profit forecast accuracy. Age, oversubscription, and given ownership are analytically examined, and their relation with AFE and long-term returns under mandatory and voluntary earnings forecast disclosure is presented. Panel A categorizes IPOs by age at the time of going public, computed as the year of the IPO minus the year of founding. There is strong evidence that firms with a longer pre-IPO history have lower AFEs. Specifically, IPOs with more than three decades of business experience have an AFE of 31.00% under mandatory and 30.06% under voluntary earnings disclosure. Long-term returns are good for IPOs with long pre-IPO history, since, with the exception of the first year (marginally negative returns), there are positive returns in the second and even more positive returns in the third year after going public. Once we focus on the IPOs listed under the voluntary disclosure regime, we see positive long-term returns for firms with an average age of 23–29 years.

[Insert Table 3 about here]

To gain better insight into the structure of forecast errors, the frequency distribution of forecast errors is provided in Table 4. Since the frequency distribution shows that most forecasts have positive errors, the actual results for most companies are higher than forecast. It appears that most Greek companies providing mandatory forecast earnings have been underestimating rather than overestimating forecast profits, and are generally conservative during mandatory disclosure environments.

The mean AFE for Greek companies is 40.32%, 36.83%, and 39.72% for mandatory, voluntary, and combined samples, respectively. The majority of IPOs in the mandatory and voluntary samples experience an AFE of less than 25% (93 IPOs listed under the mandatory and 30 IPOs listed under the voluntary regime). Since the regulation changed, giving the choice to IPO firms to provide an earnings forecast only if they feel confident that they will provide an accurate forecast, 19 out of 61 IPOs (31.14%) announced AFE higher than 75%. The Capital Market Commission should involve itself and establish high penalties for such inaccurate forecasts.

[Insert Table 4 about here]

Panel B of Table 4 reveals the long-term performance based on year of issuance and disclosure mechanism of earnings announcement. There is clear evidence that IPOs that mandatorily disclose earnings experience much better long-term returns. Individual-year cases are sometimes surprising, as even during the hot period of 1999, newly-listed firms enjoyed good long-term returns of 22.98%, 4.19%, and 10.09%, one, two, and three years after going public, respectively. It is notable that the second year of a buy-and-hold period turns negative but between the second and third years, the returns dramatically improve in favor of investors. Further, IPOs with voluntary earnings disclosure do not prove to be good long-term investments, because of the severe negative returns. Indicative IPOs listed in 2002 present positive one-year return, 1.36%, but extremely large second- and third-year negative returns of 46.42% and 92.04%, respectively.

[Insert Table 5 about here]

To provide more insight into inaccurate forecasts, Table 5 presents the frequency distribution of these errors in relation to long-term performance. Initially, mandatory earnings disclosure IPOs with low forecast error are rewarded with positive long-term returns, while newly-listed firms with forecast error above 60% have strongly negative returns. Similar IPOs with AFE below 10% offer positive long-term returns of 42.33%, 36.38%, and 25.22%, respectively, while those with entirely inaccurate forecasts (AFE above 100%) have negative returns of 38.53%, 15.92%, and 42.55% respectively.

The results do not change when we examine the voluntary sample. Only IPOs with low forecast error offer positive three-year long-term returns, with a return of 16.14%. New issues with AFE lower than 10% offer marginally positive returns to their investors. As expected, when management is unable to offer accurate absolute forecasts, the returns are strongly negative. Additionally there is evidence that investors punish IPOs that do not provide earnings forecasts in their prospectuses during the voluntary period. The 22 IPOs that elected to avoid announcing this information experienced severe negative long-term returns of 20.38%, 40.20%, and 50.35% one, two, and three years after going public.

In summary, the findings in Table 5 indicate that post-IPO long-run performance is highest for IPOs during the mandatory period (16.64%), followed by IPOs with voluntary management forecasts during the voluntary period (-38.40%), and finally by those without management forecasts (-50.35%). Such differences in long-run performance are attributable to different market sentiments and poorer quality of IPOs in the voluntary period. The latter result supports the view that it is a mistaken strategy to ignore disclosing earnings forecasts in the prospectus.

Further, Table 5 indicates that in the mandatory regime, when FE < -0.6, that is, actual earnings realization is far below expectations, returns would be 6.86% given such bad news. In conjunction with findings by Jain (1992) and Dechow et al. (2000), the idea is that the market believes an initial forecast. If it is too optimistic, earnings realizations will be lower and the market corrects earlier overvaluations, hence the long-run lower performance.

5.2 Regression analysis

Table 6 shows the regression results for the 281 firms that provide a forecast during either the mandatory (Panel A) or the voluntary regime (Panel B), using a number of alternative control variables related to the long-term performance of IPOs. All 12 regressions (6 for the mandatory and 6 for the voluntary samples of IPOs) are well specified and statistically significant at conventional levels. Adjusted R^2s are sometimes poor (as expected from similar studies) for the mandatory sample of IPOs and somewhat higher for IPOs with voluntary earnings forecast disclosure.[13] The models are estimated using robust regressions.

In panel A, there is strong evidence that during the mandatory disclosure period, forecast errors by managers are associated with negative investor return in the two- and three-year time periods. It becomes clear that sophisticated and well informed investors will be able to predict

[13] The voluntary sample is small and there are not enough degrees of freedom. We decided to reduce the variables down to four.

the direction of future returns based on the announcement of management earnings and will proceed with the correct investment decisions. Further, the results indicate that younger firms experience greater uncertainty, because they are typically not in traditional industries and face different growth and investment conditions. Additionally, young firms have difficulty providing accurate earnings forecasts. Our results suggest that risk plays an important part in determining the accuracy of forecasts. Younger firms face greater uncertainty, because they are typically not in traditional industries and face different growth and investment opportunities. Surprisingly, large firms appear to present actual earnings of great variance to those forecast in the prospectus. This earnings variation reveals that operational bureaucracy create difficulties in the efforts of large IPOs in making accurate forecasts.

Panel B concentrates on the AFE during the voluntary disclosure period. Initially, we should mention the considerably strong explanatory power of the employed models. Opposite from mandatory sample, large firms are highly associated with accurate earnings forecasts. This is an outcome of the fear of penalty, which creates pressure around the management team to disclose more reliable and accurate forecasts. Additionally there is evidence that a high percentage of given ownership is a signal for high AFE. One more variable significantly related to AFE is oversubscription during the IPO procedure. Firms with high oversubscription ignore putting extra effort into providing accurate earnings forecasts.

[Insert Table 6 about here]

Table 7 explores the link between FE and long-term returns. The results are contradictory, since once the returns are calculated from the end of the first day of trading, we observe high forecast error with negative investor returns. When returns are calculated from the end of first month of trading, positive investor returns are associated with high forecast error. This latter finding comes as a surprise, since accuracy should positively relate to good investor returns. Moreover, firms that decide to go public with only a few years of operating history are not in a position to provide accurate earnings forecasts.

[Insert Table 7 about here]

Table 8 explores how a number of employed control variables (including AFE and FE) affect the long-term performance of IPOs using FF3F-CARs as dependent variables. Initially, there is further strong evidence of the close inter-relatedness between AFE and FE and returns in the three-year period after going public. The results confirm that IPOs with low AFE are

associated with better long-term returns. This finding boosts the rationale of this study that management earnings forecasts can be a strong tool in the hands of investors and can drive them toward their future investment decisions.

[Insert Table 8 about here]

Our examination of individual independent variables begins with size. The results reveal a positive relation between large IPOs and good long-term performance. Therefore, there is strong support for H1, that is, the larger the company, the lower the forecast error and the better the long-term returns. Changing the earnings management regime to voluntary is expected to improve information quality and the level of accuracy. Overall, the significant size variable can be a result of greater control as to when Greek firms provide an earnings forecast, since Greece switched from a mandatory to a voluntary earnings forecast regime.

The coefficient for company age is negative only when returns are calculated from the end of the first month of trading and only for one year. This indicates that investors in companies with short operational history before listing enjoy better one-year returns. The sign of the coefficient is inconsistent with the hypothesis for greater forecast accuracy of IPOs with long histories before going public. Moreover the privatization variable is in the expected direction, since the positive coefficient indicates that privatized firms experience better one-year returns. Our finding indicate that state owned firms going public have greater earnings forecast accuracy and better returns in the long-run. Thus, investors should take advantage of similar opportunities and participate in privatized company issues.

The coefficient for market condition *H/C* provides very challenging results. It shows that firms going public during hot periods offer better returns up to the one-year period. Everything appears to change in cold periods, since IPOs provide better returns to their investors after two and three listing years. This suggests that the "hot-market effect" continues its influence on good IPO returns from issuance day and until one year after going public. This effect weakens between the first and second year, and it is cold IPOs that expect better returns in the 22-month post-IPO period. Overall, these results suggest that there is more space for underperformance among cold IPO issues, since their share price remains at a low level in the immediate aftermarket. The price adjustment to new information becomes rapid, as earnings announcement is the reason behind better long-term returns to investors.

The mandatory control coefficients reveal several sets of regressions with the expected sign. The positive and significant coefficient suggests that IPOs going public in a mandatory disclosure environment experience better long-term returns compared with IPOs going public

after the regulatory change to voluntary disclosure. Moreover, we find that investors appreciate and trust the regulatory environment more when all IPOs are obliged to provide this piece of information. Thus, in this case the IPOs enjoy much better second- and third- year long-term returns.

Table 9 splits long-term performance results by mandatory and voluntary disclosure regime. The results reveal, for the mandatory sample, that up to one year post-IPO, small firms generate excess returns, while high oversubscription during the offer price period is a signal for good long-term returns. As expected, IPOs listed during a cold period are associated with better returns over a three-year period, highlighting the significance of market conditions during the public offering period. Once the regime changes to voluntary earnings forecasts, firm size becomes significant at all levels, indicating that there is a strong correlation between large firms and long-term returns. It is clear that when the penalty fear appears large, firms become serious in their earnings forecasts. Additionally, young growth companies offer better returns to their investors. Finally, in contrast to the mandatory sample, a high percentage of given ownership is rewarded with good investor returns.

[Insert Table 9 about here]

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6. Additional robustness checks

The main conclusion of this study is that mandatory disclosure of earnings forecast in the prospectus of IPOs is associated with better returns over the long terms. In this section, we address the robustness of our novel evidence and we explore why mandatory forecast holds this advantage and motivates investors on holding their positions.

6.1 Mandatory versus voluntary sample

There are two ways in which regulation changes might operate. One is the indirect effect that it may affect the way specific variables influence forecast errors and long-run performance. Our study has already empirically tested this route by extensively examining these factors' roles separately in two regimes. Another way is that regulation changes are about management forecasts and thus may have direct impact on management forecast properties. The focus here is directly on regulation changes (as captured by a dummy variable), and we attempt to understand how forecast accuracy and bias change across regimes.

The results presented in Table 10 show that regulatory change is associated with a number of changes in the characteristics of the sample. IPO firms going public during the voluntary period appear to be less experienced in terms of operational history; this may be an initial explanation as to their choice to avoid providing an earnings forecast and their weak returns in the long-term. In addition, since we control for the waiting period (defined as time lag) between prospectus issuance and listing, results reveal that voluntary period–listed IPOs are less confident in going public. Further, we examine the level of oversubscription during the offer price period. Findings indicate heavy pre-IPO subscription for the mandatory period sample, which contributes to a strong buy-and-hold position over the long-term. We thus conclude that mandatory disclosure of earnings forecasts contributes to better returns over the long term.

[Insert Table 10 about here]

6.2. Mandatory versus voluntary sample: Matched sample approach

We investigate further the negative association of long-term returns with forecast accuracy in the mandatory disclosure environment. To ensure that results are not mainly driven by size or other features remaining idiosyncratic to the old regime, we employ a matched-sample approach. Specifically, for each of the 61 IPOs in the voluntary regime, we select and assign a closest-neighbor from the 220 IPOs available in the mandatory era. In Panel A of Table 11 the matching principle is based on proximity in assets that we take as a proxy for size. In Panel B of Table 11, matching is attained using firm age by the time of IPO. For enhanced robustness, in the upper parts of Panel A and B we measure long-term returns from the first-day onwards, while in the lower parts we allow for the first month to elapse. All control variables used in Tables 6-10 retain their position in these new set of regressions and we suppress their coefficients for simplicity. Overall, irrespective of the matching criterion employed, findings confirm the monotonic relation; long-term returns relate inversely to absolute forecast error as well as forecast error and this is proven as a distinct characteristic of the mandatory environment. In passing, we observe that sub-sampling, whether this is conducted on size or age, boosts the statistical significance of the resulting coefficients and, thus, appears conducive to highlighting the postulated effect.

[Insert Table 11 about here]

6.3 IPO firms that did not provide a forecast

A further robustness question concerns the 27% of IPO firms that did not provide an earnings forecast under the voluntary regime. The main research question here is whether there is a reason behind this. The explanation that we develop relates to identification of the characteristics of the companies that did or did not provide a forecast. The results indicate that small firms with low operational history do not feel comfortable providing earnings forecasts after liberalization of the regime. These firms tend to list during the upwards phase of the economy to take advantage of market euphoria.

As a further check, we rerun our analysis using a probit model to control for the "year" effect. The dependent variable takes the value 1 if IPOs do provide earnings forecasts, and zero otherwise. Year 2002 is selected since it appears to have more balanced samples for both regimes. We find that IPOs without earnings forecasts are associated with a lower percentage of given ownership. Our results for young IPOs hold, echoing our main results. Summarizing, and addressing our research question, lack of experience and the high associated cost prevent IPO firms from providing earnings forecasts during the voluntary period.

6.4 Interaction variable control

To examine the extent to which management forecast errors explain the time series differences in post-IPO performance, we considered adding, in Table 9, interaction terms between mandatory and other variables (i.e.., *AFE*, *FE*, *SIZE*, *OVER*, *UND*, *H/C*) in the regression to test whether time series differences disappear after altering control- variables. Our results strongly indicate that adding variables does not dissolve the time series differences.

7. Conclusion

The main purpose of this study is to provide, for the first time, evidence on long-term performance between IPOs that were obliged to provide earnings forecasts in their prospectuses and those that were allowed to voluntarily disclose earnings forecasts. The results indicate that positive three-year returns during the mandatory period (excluding the first day of trading) change to negative in the voluntary period. This behavioral change implies a penalty scare under the voluntary regime, for providing inaccurate earnings forecasts in the prospectus, de-motivating investors from holding their positions in IPOs for a long period, and affecting long-term returns, driving them toward a negative sign. It appears that post-IPO long-run performance is highest for IPOs during the mandatory period, followed by IPOs with voluntary management

forecasts and those without management forecasts. This difference in long-run performance is attributable to the poorer quality of some IPOs in the voluntary period. This study verifies increased earnings forecast accuracy following introduction of voluntary disclosure, but only marginally, an outcome not associated with positive long-term returns.

IPOs that avoid disclosing earnings forecasts in their prospectuses, for reasons such as a lack of confidence in their ability to forecast, poor income expectations, prohibitively high proprietary costs, and high costs of acquiring information during the voluntary period, experience extremely negative long-term returns. It is clear that this is a wrong strategy to follow, and every IPO should make a best effort to include accurate earnings forecasts. On the other hand, firms with low forecast error during the mandatory period offer brilliant long-term returns. This signals that management's best effort is rewarded by the market and appreciated by shareholders.

A close look at AFE shows positive long-term returns in cases of error below 50% for the mandatory sample, while when AFE is higher than 50%, long-term returns turn negative. Similar results emerge for the voluntary sample, with only firms presenting AFE below 10% associated with positive long-term returns over a three-year period. It appears that investors are one step ahead of regulators and penalize even before the authorities, with strong negative returns, those firms that are unable to provide reliable earnings forecasts.

Cross-sectional regressions are used to explore the factors that affect long-term performance and to identify the differences between mandatory and voluntary earnings forecast regimes. For firms that must provide earnings forecasts, long-term performance improves during a cold period with low given ownership and high level of oversubscription. In contrast, IPOs with voluntary earnings forecast disclosure see larger companies and state-owned firms (privatizations) with positive long-term returns. We interpret this to mean that, under the voluntary regime, larger firms that report accurate forecasts are rewarded with strong positive long-term returns. Moreover, the age variable, in line with Ritter (1991), indicates that young, growing companies are able to produce positive future returns.

Market conditions during the IPO period prove to be an important factor regarding trends in long-term performance. This relates mainly to pricing during the "cold IPO period." In our opinion, during cold periods, there are no tendencies toward overpricing due to investor sentiment, but only weak counter-tendencies of underpricing due to weak issuer competition. This allows a window of opportunity for better long-term returns, which is well demonstrated by regression results for IPOs listed under the mandatory earnings forecast regime.

In summary, we observe that under the voluntary regime, when earnings forecast error increases, long-term performance deteriorates. This conclusion strengthens the recognition that IPO pricing is not efficient in the long-term, despite evidence of impressive short- or even medium-term gains. This anomaly should be corrected by the market. A step in this direction would be improving the ability of newly-listed firms to provide accurate earnings figures. As a result, investors' fear of penalties by regulators would evaporate, their confidence would rise, and long-term performance would improve.

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Appendix A: Variable Definition

Variable	Definition
	Panel A: Measures of Forecast Errors
AFE	Absolute Forecast Error. Measures the relative deviation of actual earnings (published in the Annual Report) from forecast earnings (announced in the prospectus of the firm). It is based on forecast of the next annual earnings.
FE[1]	Forecast Error is calculated as the difference between the forecast earnings (FE) and actual earnings (AE) deflated by the absolute value of FE.
	Panel B: IPO Characteristics
SIZE	Market capitalization measured by the log of the total number of outstanding shares after the IPO multiplied by price per share.
AGE	Age of the firm starting from the year of its establishment until the year it goes public.
TLAG	Period in days between the announcement of the prospectus and first day of the stocks' listing.
PRIV	Companies partially or fully owned by the Greek State before going public. Dummy variable: 1 for Privatized IPOs, 0 otherwise.
OVER	Oversubscription is a demand multiple estimated as demand for IPO shares over shares offered.
UND	Dummy variable: 1 for reputable underwriters (major banks), 0 otherwise. Reputable underwriters are classified based on three criteria (i) The number of IPOs they advised as lead underwriters (ii) the fee requested for the offered services. (iii) Capital raised for the public offering.
Hot/Cold	Dummy Variable: 1 for IPOs listed during the Hot Period, 0 for IPOs listed during the cold period. Hot market is classified based on the intense IPO listing activity and high initial returns. This is a control variable for the state of the economy. Economy was much worse during the voluntary years so we control
OWN	Proportion of given ownership by the pre-IPO shareholders.
IND	Separates industrial based companies from all other sectors. Dummy variable: 1 for industrial classified IPOs, 0 otherwise.
	Panel C: Other Variables
Optimistic Group	In any case that Forecast Earnings appear to be higher than the Actual Earnings we report that IPO has made an 'Optimistic' Forecast.
Pessimistic Group	In the case that Forecast Earnings appear to be lower than the Actual Earnings we report that IPO has made a 'Pessimistic' Forecast.
FF3F	Fama and French (FF) three-factor model $R_{pt} - R_{ft} = a_p + b_p (R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + e_{pt}$.
SMB	Spread in returns between small- and large-sized firms, based on the company's market capitalization. Small minus Big
HML	HML accounts for the spread in returns between value and growth stocks. HML argues that companies with high book-to-market ratios (value stocks) outperform those with low ones (growth stocks).

Positive mean value for FE implies a pessimistic bias where forecasts earnings are less than actual earnings. Conversely, a negative mean value for FE indicates optimistic biases as forecast are higher than actual profits. The selection of 'hot period' is an important issue. Following methodologies by Yung et al. (2008), Boehme and Colak (2012), and Thomadakis et al. (2015) market conditions per calendar quarter have a double criterion: on one hand, the number of IPOs performed during the quarter, on the other hand, ex-post market returns of the quarter. Summarizing the classifications of periods are, Hot Periods: 1993-1994, 1997-2000, 2004-2006. Cold Periods: 1995-1996, 2001-2003, 2007-2014.

Table 1: Greek IPO sample description

Panel A: Number of observations in Greece and control sample by forecasted profits

Year	IPO firms full sample	Forecasted Profits		
		Mandatory	Voluntary	
			Provide Forecast	No Forecast
1993	10	10		
1994	45	45		
1995	19	19		
1996	20	20		
1997	14	14		
1998	23	23		
1999	38	38		
2000	51	51		
2001	23		19	4
2002	21		15	6
2003	16		11	5
2004	11		8	3
2005	6		2	4
2006	2		2	
2007	3		3	
2008 (No IPO Listed)	0		0	
2009	1		1	
2010-2014 (No IPO Listed)	0		0	
Total	303	220	61	22

Panel B: Descriptive statistics of the positive and the negative IPO earnings group (mean)

	Market Cap (million Euros)		Age (years)		Oversubscription (times)		Given ownership (%)	
Year	Optimistic	Pessimistic	Optimistic	Pessimistic	Optimistic	Pessimistic	Optimistic	Pessimistic
1993	22.32	9.802	19.5	12	13.8	17.5	23.27	22.3
1994	5.976	6.630	19.36	16.21	95.41	123.27	21.64	22.09
1995	3.338	4.021	15.84	19	26.79	6.56	20.21	29.96
1996	36.80	3.921	17.25	19	38.69	32.59	14.88	20.78
1997	3.669	2.332	13.12	12.8	39.19	36.70	16.97	19.62
1998	63.03	19.38	19.53	22.5	201.55	122.85	19.88	16.11
1999	28.29	35.15	17.33	25.81	279.81	215.46	16.33	21.12
2000	72.54	43.79	16.66	25.32	169.29	87.69	16.73	16.77
2001	123.2	63.03	26.13	21.13	2.66	7.23	31.13	20.45
2002	4.729	6.805	11.83	12.88	40.21	22.83	20.83	19.33
2003	7.568	3.385	12.60	11.66	3.30	12.07	19.6	20.83
2004	11.82	9.814	23.00	16.00	6.86	6.86	20.31	20.31
2005	-	7.365	-	4	-	3.67	-	15.33
2006	238.34	-	20.66	-	7.47	-	27.77	-
2007	1085.70	330.63	45.66	13	4.53	6.13	33.16	22.92
2008-14	74.13	-	10	-	2.13	-	29.13	-
Total	**62.06**	**26.05**	**18.20**	**19.55**	**110.50**	**79.80**	**19.74**	**20.67**

This table provides descriptive statistics for the Greek IPOs in the sample. Panel A presents the number of firms listed in a mandatory disclosure environment, voluntary earnings forecast regime and IPOs that were not able to provide any forecast. Panel B divides the sample based on earnings forecast trend (Optimistic –Pessimistic). Optimistic group includes those firms with higher earnings forecast compared with the actual before IPO and the pessimistic group includes those firms with lower earnings than the actual before IPO. 'Market capitalization' is offering price times the number of shares outstanding at the first day of public trading. 'Age' of the firm is the year of offering minus the year of foundation or original incorporation. 'Oversubscription' is how many times more investors requested the offered by the firm shares during the IPO. 'Given ownership' is the percentage of ownership the pre-IPO shareholders decide to offer during the public offering process.

Table 2: Summary Statistics of Forecast Errors and Superiority Measures

	AFE	FE	ER1Y1D	ER2Y1D	ER3Y1D	ER1Y1M	ER2Y1M	ER3Y1M
Panel A: Total Sample								
Mean	39.72	3.66	3.94	-14.42	4.45	-15.09	-28.90	-16.26
t-value	(5.680)***	(-**1.464**)	(0.783)	(-2.38)**	(0.450)	(-4.17)***	(-6.12)***	(-1.76)*
Median	31.03	-0.38	-19.69	-26.43	-23.66	-23.57	-30.40	-23.87
z-value	(8.66)***	(8.05)***	(3.35)***	(2.95)***	(3.65)***	(2.46)***	(2.10)***	(3.04)***
St-dev	34.52	52.81	84.23	101.13	165.68	60.25	78.01	146.92
Max	234.82	234.82	556.95	559.61	746.86	329.41	306.83	728.83
Min	0.38	**-132.32**	-152.52	-366.11	-454.20	-155.47	-310.84	-504.85
No	303	303	303	303	303	303	303	303
Panel B: Mandatory Disclosure Environment (1993-2000)								
Mean	40.32	8.65	7.25	-7.86	16.34	-16.41	-27.64	-8.88
t-value	(18.01)***	(2.268)	(0.914)	(-1.290)	(1.290)	(-3.94)***	(-4.92)***	(-0.822)
Median	31.65	2.96	-19.85	-25.58	2.16	-25.22	-30.40	-23.53
z-value	(1.703)***	(1.057)	(3.23)***	(3.08)***	(3.23)***	(2.38)***	(2.22)***	(2.50)***
St-dev	34.38	52.35	89.80	109.59	176.37	62.71	83.81	157.14
Max	234.82	234.82	556.95	559.61	746.86	329.41	306.83	728.83
Min	0.38	-84.82	-152.52	-366.11	-454.20	-155.47	-310.84	-504.85
No	220	220	220	220	220	220	220	220
Panel C: Voluntary Disclosure Environment (2001-2014)								
Mean	36.83	-9.58	-2.63	-32.26	-34.68	-10.09	-31.79	-32.53
t-value	(9.29)***	(-1.692)*	(-0.225)	(-4.08)***	(-2.36)***	(-1.400)	(-4.52)***	(-2.357)*
Median	26.40	-9.11	-18.59	-38.01	-52.26	-19.69	-26.17	-27.47
z-value	(1.436)*	(0.994)	(1.35)*	(0.535)	(1.478)**	(0.913)	(0.902)	(1.76)***
St-dev	32.96	48.72	60.98	60.65	113.81	50.66	53.30	102.50
Max	163.30	163.30	223.23	115.84	567.76	159.59	59.80	593.05
Min	0.57	-90.30	-96.96	-149.65	-207.83	-90.79	-143.25	-191.77
No	61	61	61	61	61	61	61	61
Panel D: Test of difference between Mandatory and Voluntary mean and medians.								
Mean	(-0.125)	(1.814)*	(0.222)	(2.69)***	(3.89)***	(0.129)	(1.921)*	(3.22)***
Median	(-0.287)	(1.887)*	(0.835)	(2.50)**	(3.62)***	(0.486)	(1.462)	(3.19)***

FE = forecast error; FE = (Actual Profit (AP) – Forecast Profit (FP)) $\left|\right.$ /Actual Profit (AP), AFE = absolute forecast error; AFE= $\left|\right.$ FE $\left|\right.$, SUP= Brown et al. (1987) measure of superiority SUP = log $[((AP_t - AP_{t-1})/(AP_t - FP_t))^2]$, ER1Y1D, Adjusted returns from first day price to first year after going public, ER2Y1D - Adjusted returns from first day price to two years after going public, ER3Y1D - Adjusted returns from first day price to three years after going public, ER1Y1M - Adjusted returns from first month price to one year after going public, ER2Y1M - Adjusted returns from first month price to two years after going public, ER3Y1M - Adjusted returns from first month price to three years after going public. The reason that the sample sizes from Panel A do not sum to the sample sizes of panels B and C is that we have 22 IPOs which decided not to provide earnings forecasts during the voluntary disclosure period. The symbols *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3: Distribution of Initial Public Offerings Sample by Offer Size, Age and Time lag

Panel A: Absolute Forecast Error (AFE) Categorized by Age

Age	Sample Size	Mandatory					Sample Size	Voluntary				
(Years) €		AFE	ER1Y1D	ER2Y1D	ER3Y1D	ER3Y1M		AFE	ER1Y1D	ER2Y1D	ER3Y1D	ER3Y1M
0-7	44	45.79	10.0	-25.2	12.7	-7.3	12	46.08	36.22	-5.23	-4.84	-1.06
8-14	55	42.22	23.63	1.26	31.98	0.297	15	37.57	-15.02	-45.98	-69.80	-54.04
15-22	53	45.22	-10.32	-21.88	4.82	-18.44	14	44.67	-32.12	-58.99	-45.66	-45.38
23-29	36	34.47	1.53	4.21	2.79	-12.83	9	22.62	34.81	7.49	28.61	20.49
>30	32	31.00	-3.75	1.06	20.02	-7.25	11	30.06	11.43	-13.60	-11.69	-22.05

Panel B: Absolute Forecast Error (AFE) Categorized by Oversubscription

DM	Sample Size	Mandatory					Sample Size	Voluntary				
		AFE	ER1Y1D	ER2Y1D	ER3Y1D	ER3Y1M		AFE	ER1Y1D	ER2Y1D	ER3Y1D	ER3Y1M
0-4.9	34	48.14	-3.90	-10.81	15.37	-2.09	28	35.84	-2.46	-26.54	-9.17	-22.97
5-14.9	27	32.58	-2.04	-3.22	62.74	29.77	17	28.30	0.27	-27.74	-35.20	-23.97
15-29.9	23	31.06	-16.22	-18.75	-63.56	-113.62	9	39.27	32.62	-33.76	-71.29	-51.40
30-69.9	36	44.62	2.16	-32.86	-11.28	-23.43	6	77.26	-34.78	-32.32	-67.41	-30.75
70-99.9	17	51.76	10.15	-15.19	-6.75	-14.33	1	70.99	-64.26	-118.96	-106.74	-102.33
100-199.9	31	43.06	34.35	0.78	69.34	23.22	0	-	-	-	-	-
200-399.9	37	31.13	16.62	2.68	14.41	1.75	0	-	-	-	-	-
>400	15	55.30	12.79	31.74	49.72	10.75	0	-	-	-	-	-

Panel C: Absolute Forecast Error (AFE) Categorized by Given Ownership

Own	Sample Size	Mandatory					Sample Size	Voluntary				
		AFE	ER1Y1D	ER2Y1D	ER3Y1D	ER3Y1M		AFE	ER1Y1D	ER2Y1D	ER3Y1D	ER3Y1M
0-13.5	30	47.33	39.30	-39.38	-62.49	-63.90	5	46.63	-2.31	-38.61	9.91	3.47
13.51-14.9	41	44.27	1.62	9.30	-3.13	-12.12	4	48.22	-10.95	33.60	-40.45	-22.90
15-19.9	30	37.63	13.69	-18.06	3.86	-18.33	4	35.92	-5.54	-20.48	-23.13	-5.78
20-21.9	49	20.65	1.43	6.32	49.29	-8.02	28	40.92	2.00	-52.99	-69.74	-55.01
22-22.9	28	23.29	-2.19	-3.92	96.00	56.59	5	52.77	11.29	-15.48	2.52	-17.11
>25	41	29.94	-11.68	-25.22	0.28	-7.20	17	29.02	-12.33	-16.03	-1.32	-11.05

Size is computed as the number of shares outstanding after the offering times the offer price. The age has been calculated as the number of years that each listing firm is in operation since its constitution before the year of listing. The time lag is the period between the announcement of the prospectus and first day of stocks' listing in the stock market.

Table 4: Statistics on Long term performance

Panel A: Summary of FE and AFE by year of listing and by status of Management Earnings Forecast

Mandatory (1993-2000)								
Listing Year	**AFE (%)**	<25%	25% to 50%	>75%	FE (%)	<-20%	-20% to 20%	>20%
1993	21.56	5	5	0	-4.12	4	4	2
1994	37.22	18	14	13	-0.02	16	13	16
1995	48.86	7	5	7	33.36	4	5	10
1996	47.17	10	4	6	11.28	7	8	5
1997	32.58	6	4	4	3.77	5	4	5
1998	35.75	11	4	8	15.98	4	10	9
1999	50.70	14	7	17	10.09	14	9	15
2000	38.18	21	15	15	4.90	18	18	15
1993-2000	**40.32**	**92**	**58**	**70**	**8.65**	**72**	**71**	**77**
Voluntary (2001-2014)								
2001	37.37	8	6	5	-26.61	9	8	2
2002	50.60	6	3	6	-4.05	7	6	2
2003	39.62	5	3	3	-4.32	5	4	2
2004	25.81	6	0	2	-7.10	2	4	2
2005	46.63	1	0	1	-31.41	1	1	0
2006	8.62	2	0	0	8.62	0	1	1
2007	19.81	2	0	1	-0.55	1	1	1
2009		0	1	0		0	1	0
2001-2014	**36.83**	**30**	**13**	**18**	**-9.58**	**25**	**26**	**10**
Total	**39.72**	**122**	**71**	**88**	**3.98**	**97**	**97**	**87**

Panel B: Long term performance classified by mandatory and voluntary disclosure regulation

Mandatory (1993-2000)												
Listing Year	ER1Y1D	No	ER2Y1D	No	ER3Y1D	No	ER1Y1M	No	ER2Y1M	No	ER3Y1M	No
1993	-13.45	10	2.32	10	90.01	10	-19.59	10	-13.88	10	53.05	10
1994	-1.04	45	29.61	45	137.50	45	-8.08	45	20.12	45	85.56	45
1995	-0.75	19	-54.07	19	-49.97	19	4.87	19	-51.21	19	-62.60	19
1996	-42.00	20	-71.89	20	-136.35	20	-57.17	20	-134.48	20	-159.26	20
1997	51.01	14	-32.22	14	-62.25	14	9.26	14	-104.10	14	-123.98	14
1998	69.45	23	7.80	23	11.43	23	-45.57	23	-35.09	23	-34.23	23
1999	22.98	38	4.19	38	10.09	38	-13.25	38	-14.50	38	-5.10	38
2000	-9.63	51	-10.59	51	4.34	51	-11.10	51	-11.34	51	8.81	51
1993-2000	**7.25**		**-7.86**		**16.34**		**-16.41**		**-27.64**		**-8.88**	
Voluntary (2001-2014)												
2001	15.47	19	29.91	19	19.66	19	11.39	19	23.93	19	19.47	19
2002	1.36	15	-46.42	15	-92.04	15	-17.60	15	-28.59	15	-57.32	15
2003	-9.84	11	-78.93	11	-58.30	11	-18.76	11	-87.14	11	-67.21	11
2004	-49.44	8	-85.50	8	-63.30	8	-49.98	8	-89.89	8	-71.93	8
2005	6.33	2	-23.41	2	3.88	2	9.43	2	-16.45	2	26.42	2
2006	-11.76	2	-38.35	2	-20.39	2	-22.23	2	-41.91	2	-22.82	2
2007	4.44	3	-27.15	3	30.34	3	13.45	3	-29.46	3	-34.03	3
2009	-2.54	1	-23.71	1	-	0	7.83	1	-12.02	1	-	0
2001-2014	**-2.63**		**-32.26**		**-34.68**		**-10.09**		**-31.79**		**-32.53**	

Table 5: Frequency Distribution for Forecast Error and Absolute Forecast Error of Buy-And-Hold Long term Adjusted Returns by Mandatory and Voluntary provision of Management earnings

Distribution of FE	No of IPOs	Year 1 (%)	Year 2 (%)	Year 3 (%)	Distribution of AFE	No of IPOs	Year 1 (%)	Year 2 (%)	Year 3 (%)
Panel A: Mandatory (1993-2000)									
FE≤-0.6	14	6.86	-5.61	22.12	0<AFE≤0.1	29	42.33	36.38	25.22
-0.6<FE≤0.4	21	-7.25	-6.96	-2.59	0.1<AFE≤0.2	37	-1.64	1.39	58.79
-0.4<FE≤-0.2	33	-11.32	-15.09	65.96	0.2<AFE≤0.3	32	18.06	23.54	49.10
-0.2<FE≤-0.1	19	-15.56	-14.98	-33.60	0.3<AFE≤0.4	28	-6.98	-29.94	10.02
-0.1<FE≤0	12	66.33	15.63	10.09	0.4<AFE≤0.5	20	-10.53	-11.05	19.03
0<FE≤0.1	17	12.86	38.93	30.15	0.5<AFE≤0.6	22	-10.09	3.42	-4.68
0.1<FE≤0.2	19	-23.76	-13.60	82.13	0.6<AFE≤0.7	17	61.14	-25.41	6.53
0.2<FE≤0.4	21	-20.12	-44.84	-11.34	0.7<AFE≤0.8	12	20.98	-57.76	-84.03
0.4<FE≤0.6	18	-15.93	6.56	18.62	0.8<AFE≤0.9	8	-22.64	-59.83	-15.97
0.6<FE≤0.8	15	35.72	-51.34	-33.00	0.9<AFE≤1.00	6	-17.39	-21.31	-75.70
FE≥0.8	18	-13.54	-35.38	-69.81	AFE≥100	9	-38.53	-15.92	-42.55
						220	**7.09**	**-7.85**	**16.64**
Panel B: Voluntary (2001-2014)									
FE≤-0.6	9	-27.05	-36.00	-51.75	0<AFE≤0.1	10	16.20	-0.66	0.67
-0.6<FE≤0.4	11	-8.08	-70.48	-94.89	0.1<AFE≤0.2	15	5.69	-27.14	-38.49
-0.4<FE≤-0.2	5	-9.04	-27.45	-41.82	0.2<AFE≤0.3	4	-38.10	-75.55	-67.86
-0.2<FE≤-0.1	5	-26.29	-42.13	-26.46	0.3<AFE≤0.4	6	6.87	-1.99	-28.35
-0.1<FE≤0	5	44.15	15.88	-10.76	0.4<AFE≤0.5	7	16.22	-56.07	-60.18
0<FE≤0.1	6	-7.50	-10.60	16.14	0.5<AFE≤0.6	8	-28.26	-69.16	-90.57
0.1<FE≤0.2	11	18.12	-13.95	-44.20	0.6<AFE≤0.8	5	-28.29	-4.32	-48.67
FE≥0.2	9	7.27	-53.51	-29.82	AFE≥0.8	7	1.37	-36.46	-46.89
						61	**-7.13**	**-33.64**	**-38.40**
Panel C: No Forecast									
						22	**-20.38**	**-40.20**	**-50.35**

Market Adjusted Initial Returns (Underpricing) is defined as the percentage difference between the closing price on the first day of trading and the offer price for the IPO minus the closing price of the Athens Stock Exchange General Index on the first day of trading and the price of the General index in the end of the offer price day. Sample: 281 IPOs (disclosing earnings forecast) listed in the Greek Stock Exchange between January 1993 and December 2014

Table 6: Cross Sectional Regression results explaining Absolute Forecast Error,
Panel A: Greek IPOs listed under Mandatory Disclosure Environment

Specifications	(1) AFE (ER1Y1D) Mandatory	(2) AFE (ER2Y1D) Mandatory	(3) AFE (ER3Y1D) Mandatory	(4) AFE (ER1Y1M) Mandatory	(5) AFE (ER2Y1M) Mandatory	(6) AFE (ER3Y1M) Mandatory
Constant	-23.46	-32.33	-35.14	-27.67	-47.96	-35.95
	(0.499)	(0.344)	(0.290)	(0.432)	(0.170)	(0.276)
SIZE	3.273*	3.658**	3.834**	3.493*	4.411**	3.879**
	(0.073)	(0.040)	(0.028)	(0.058)	(0.014)	(0.026)
AGE	-0.361***	-0.335**	-0.360***	-0.346**	-0.342**	-0.355***
	(0.008)	(0.014)	(0.008)	(0.012)	(0.012)	(0.008)
Time Lag	0.450	0.476	0.460	0.440	0.485	0.454
	(0.144)	(0.122)	(0.121)	(0.150)	(0.115)	(0.150)
PRIV	19.59*	18.96*	19.55*	18.41	18.62*	19.53*
	(0.088)	(0.088)	(0.071)	(0.121)	(0.088)	(0.072)
OVER	0.0167	0.0200	0.0222	0.0181	0.0222	0.0227
	(0.467)	(0.387)	(0.330)	(0.438)	(0.306)	(0.330)
UND	1.942	2.831	3.784	2.079	2.541	2.835
	(0.658)	(0.521)	(0.376)	(0.634)	(0.559)	(0.519)
HC	-0.992	-2.284	-3.778	-2.028	-3.990	-3.796
	(0.863)	(0.674)	(0.490)	(0.709)	(0.464)	(0.485)
OWN	-0.299	-0.296	-0.222	-0.263	-0.250	-0.233
	(0.318)	(0.327)	(0.455)	(0.395)	(0.410)	(0.451)
IND	10.56*	11.29*	11.22*	10.29*	12.19**	9.912*
	(0.076)	(0.057)	(0.056)	(0.083)	(0.040)	(0.088)
ER1Y1D	-1.910					
	(0.423)					
ER2Y1D		-3.854**				
		(0.035)				
ER3Y1D			-3.759***			
			(0.003)			
ER1Y1M				0.933		
				(0.781)		
ER2Y1M					-6.308**	
					(0.012)	
ER3Y1M						-3.168**
						(0.014)
Adjusted R^2	0.096	0.109	0.137	0.094	0.116	0.115
F Stats	2.30	2.93	3.48	2.27	3.11	3.35
No. of IPOs	220	220	220	220	220	220

Multivariate regression analysis of cross-sectional variation in earnings management subsequent to listing for 220 Greek initial public offers listed under mandatory disclosure environment between January 1993 and December 2000. The dependent variable is absolute forecast error AFE. Independent variables are, SIZE - the logarithm of the total market capitalisation of an IPO, AGE - the number of years that each listing firm is in operation since its inception before the year of listing, TLAG - time lag is the period between the announcement of the prospectus and first day of the stocks' listing, PRIV - companies partially or fully owned by the Greek state before going public have the value'1' and fully private companies have the value'0', OVER - Oversubscription on the number of shares issued, UND - underwriters reputation: '1' for reputable underwriters defined as one of the five older and more experienced underwriting banks and '0' for non-reputable underwriters, H/C - IPOs listed under hot market conditions have the value '1' and IPOs listed under cold market conditions have the value '0', OWN - proportion of given ownership by the pre-IPO shareholders, IND - dummy variable taking the value of one if the company is industrial otherwise IND zero. ER1Y1D, Adjusted returns from first day price to first year after going public, ER2Y1D - Adjusted returns from first day price to two years after going public, ER3Y1D - Adjusted returns from first day price to three years after going public, ER1Y1M - Adjusted returns from first month price to one year after going public, ER2Y1M - Adjusted returns from first month price to two years after going public, ER3Y1M - Adjusted returns from first month price to three years after going public. Long term performance is calculated using the three-factor model of Fama and French (1993) $R_{pt} - R_{ft} = a_p + b_p (R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + e_{pt}$. The symbols *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively, t-statistics are robust for heteroskedasticity using the Newey-West HAC Standard Errors & Covariance process.

Panel B: Greek IPOs listed under Voluntary Disclosure Environment

Variables	(1) AFE (ER1Y1D) Voluntary	(2) AFE (ER2Y1D) Voluntary	(3) AFE (ER3Y1D) Voluntary	(4) AFE (ER1Y1M) Voluntary	(5) AFE (ER2Y1M) Voluntary	(6) AFE (ER3Y1M) Voluntary
Constant	146.7**	141.6**	172.3***	190.3***	176.7***	179.9***
	(0.022)	(0.030)	(0.009)	(0.007)	(0.004)	(0.002)
SIZE	-5.800*	-5.544	-6.960**	-8.045**	-7.228**	-7.156**
	(0.096)	(0.106)	(0.045)	(0.035)	(0.025)	(0.022)
OVER	0.714**	0.716**	0.725**	0.718**	0.675**	0.700**
	(0.011)	(0.011)	(0.012)	(0.010)	(0.020)	(0.016)
HC	22.39	21.99	22.82	23.30*	23.90*	23.35*
	(0.118)	(0.129)	(0.118)	(0.092)	(0.088)	(0.096)
OWN	-0.600*	-0.583	-0.738***	-0.696**	-0.619*	-0.840***
	(0.054)	(0.102)	(0.005)	(0.012)	(0.066)	(0.001)
ER1Y1D	1.556					
	(0.839)					
ER2Y1D		-0.461				
		(0.936)				
ER3Y1D			5.387			
			(0.281)			
ER1Y1M				15.92*		
				(0.097)		
ER2Y1M					11.22	
					(0.129)	
ER3Y1M						10.67***
						(0.001)
Adjusted R^2	0.259	0.259	0.285	0.301	0.284	0.350
F stats	3.49	3.88	4.57	5.01	3.30	6.42
Observations	61	61	61	61	61	61

Multivariate regression analysis of cross-sectional variation in earnings management subsequent to listing for 61 Greek initial public offers going public under voluntary disclosure environment between January 2001 and December 2014. The dependent variable is absolute forecast error AFE. Independent variables are, SIZE - the logarithm of the total market capitalisation of an IPO, OVER - Oversubscription on the number of shares issued, H/C - IPOs listed under hot market conditions have the value '1' and IPOs listed under cold market conditions have the value '0', OWN - proportion of given ownership by the pre-IPO shareholders, ER1Y1D, Adjusted returns from first day price to first year after going public, ER2Y1D - Adjusted returns from first day price to two years after going public, ER3Y1D - Adjusted returns from first day price to three years after going public, ER1Y1M - Adjusted returns from first month price to one year after going public, ER2Y1M - Adjusted returns from first month price to two years after going public, ER3Y1M - Adjusted returns from first month price to three years after going public. . Long term performance is calculated using the three-factor model of Fama and French (1993) $R_{pt} - R_{ft} = a_p + b_p (R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + e_{pt}$ The symbols *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively, t-statistics are robust for heteroskedasticity using the Newey-West HAC Standard Errors & Covariance process,

Table 7 Cross Sectional Regression results explaining FE, for Greek IPOs listed under Mandatory & Voluntary Disclosure Environment

Specifications	(1) FE (ER1Y1D) Mandatory	(2) FE (ER2Y1D) Mandatory	(3) FE (ER3Y1D) Mandatory	(1) FE (ER1Y1D) Voluntary	(2) FE (ER2Y1D) Voluntary	(3) FE (ER3Y1D) Voluntary
Constant	-36.31	-56.75	-59.09	162.0	97.78	186.8
	(0.533)	(0.321)	(0.295)	(0.180)	(0.487)	(0.132)
SIZE	2.421	3.327	3.508	-12.19*	-8.608	-12.76**
	(0.427)	(0.266)	(0.234)	(0.057)	(0.227)	(0.047)
AGE	-0.432*	-0.366	-0.400*	0.506	0.257	0.460
	(0.063)	(0.121)	(0.085)	(0.160)	(0.492)	(0.205)
Time Lag	0.600	0.630	0.605	-0.038	0.199	-0.058
	(0.163)	(0.144)	(0.144)	(0.952)	(0.771)	(0.929)
PRIV	7.921	6.157	6.852	6.036	8.603	9.036
	(0.733)	(0.790)	(0.761)	(0.786)	(0.729)	(0.675)
OVER	0.0260	0.0343	0.0358	0.009	0.054	0.115
	(0.425)	(0.298)	(0.270)	(0.985)	(0.921)	(0.832)
UND	5.384	6.960	8.088	4.731	1.267	-2.211
	(0.459)	(0.339)	(0.263)	(0.676)	(0.916)	(0.852)
HC	3.098	-1.258	-2.672	37.55	39.14*	37.46*
	(0.723)	(0.880)	(0.750)	(0.109)	(0.096)	(0.097)
OWN	-0.832*	-0.754	-0.671	0.758	0.943	0.574
	(0.077)	(0.110)	(0.150)	(0.219)	(0.171)	(0.309)
IND	9.826	10.76	10.47	20.09	16.89	15.83
	(0.348)	(0.303)	(0.319)	(0.174)	(0.221)	(0.253)
ER1Y1D	-7.169*			21.47**		
	(0.089)			(0.030)		
ER2Y1D		-5.481*			9.574	
		(0.080)			(0.389)	
ER3Y1D			-4.273**			13.69***
			(0.017)			(0.001)
Adjusted R^2	0.064	0.065	0.073	0.196	0.224	0.303
F Stats	1.76	1.65	1.65	2.42	3.03	3.46
No. of IPOs	220	220	220	61	61	61

Multivariate regression analysis of cross-sectional variation in earnings management subsequent to listing for 220 Greek initial public offers listed under mandatory disclosure environment between January 1993 and December 2000. The dependent variable is forecast error FE. The symbols *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively, t-statistics are robust for heteroskedasticity using the Newey-West HAC Standard Errors & Covariance process,

Table 8: Results of multiple regressions using one-, two- and three-year FF3F-CARs

Specifications	ER1Y1D 1993-2014	ER2Y1D 1993 - 2014	ER3Y1D 1993 - 2014	ER1Y1M 1993 - 2014	ER2Y1M 1993 - 2014	ER3Y1M 1993 - 2014	ER3Y1D 1993 - 2014	ER3Y1M 1993 - 2014	ER3Y1D 1993 - 2014	ER3Y1M 1993 - 2014
Constant	1.087	-1.276	-2.832*	-0.070	-2.636***	-2.748**	-2.857*	-2.798**	-2.614*	-2.576*
	(0.146)	(0.261)	(0.011)	(0.912)	(0.000440)	(0.0276)	(0.0601)	(0.0448)	(0.0938)	(0.0738)
SIZE	-0.063	0.042	0.094	0.006	0.123***	0.115*	0.136*	0.131*	0.0952	0.102
	(0.118)	(0.479)	(0.217)	(0.852)	(0.001)	(0.0690)	(0.0732)	(0.0562)	(0.214)	(0.143)
AGE	-0.003	0.003	0.002	-0.004**	-0.0003	-0.002	-0.006	-0.005	-0.002	-0.002
	(0.365)	(0.493)	(0.965)	(0.0337)	(0.880)	(0.599)	(0.291)	(0.360)	(0.675)	(0.697)
Time Lag	0.004	0.004	0.006	0.002	0.003	0.002	0.0150*	0.006	0.013	0.005
	(0.226)	(0.453)	(0.461)	(0.547)	(0.389)	(0.723)	(0.0738)	(0.336)	(0.144)	(0.438)
PRIV	0.526***	0.212	0.311	0.431**	0.116	0.266	0.372	0.309	0.347	0.304
	(0.002)	(0.352)	(0.589)	(0.0183)	(0.579)	(0.640)	(0.538)	(0.607)	(0.588)	(0.632)
OVER	-1.44e-05	0.0009**	0.001*	-0.0004**	0.0009***	0.001***	0.001***	0.001***	0.001***	0.001***
	(0.970)	(0.021)	(0.065)	(0.010)	(0.006)	(0.0007)	(0.004)	(0.0006)	(0.007)	(0.001)
UND	-0.003	0.128	0.316	-0.0864	0.0718	0.115	0.336	0.169	0.329	0.196
	(0.975)	(0.320)	(0.146)	(0.222)	(0.463)	(0.519)	(0.113)	(0.362)	(0.133)	(0.299)
HC	0.462***	-0.0508	-0.283*	0.0123	-0.225**	-0.462***	-0.350*	-0.475***	-0.298	-0.441***
	(0.000)	(0.748)	(0.167)	(0.876)	(0.042)	(0.004)	(0.095)	(0.002)	(0.159)	(0.003)
OWN	-0.008	-0.003	0.016	-0.005	0.001	0.016	0.012	0.015	0.017	0.017
	(0.113)	(0.586)	(0.190)	(0.169)	(0.786)	(0.135)	(0.368)	(0.224)	(0.227)	(0.175)
IND	-0.001	0.0277	0.082	0.0956	0.0641	-0.105	0.123	-0.082	0.126	-0.078
	(0.993)	(0.819)	(0.753)	(0.255)	(0.591)	(0.648)	(0.654)	(0.729)	(0.665)	(0.758)
Mandatory	0.280	0.355*	0.588**	-0.0504	0.0284	0.334*				
	(0.770)	(0.086)	(0.011)	(0.442)	(0.754)	(0.070)				
AFE							-0.008***	-0.007*		
							(0.003)	(0.067)		
FE									-0.006*	-0.0008
									(0.086)	(0.629)
Adjusted R^2	0.088	0.081	0.055	0.068	0.075	0.052	0.082	0.057	0.051	0.043
F-Stats	2.14	2.95	3.27	2.50	2.41	2.11	2.63	1.92	1.37	1.08
No. of IPOs	281	281	281	281	281	281	281	281	281	281

Multivariate regression analysis of cross-sectional variation in long-run market index-adjusted (excess) returns subsequent to listing for 281 Greek initial public offers of ordinary equity made between January 1993 and December 2014. Long term performance is calculated using the Fama and French (FF) three-factor model $R_{pt} - R_{ft} = a_p + b_p (R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + e_{pt}$. The dependent variables ER1Y1D, Adjusted returns from first day price to first year after going public, ER2Y1D - Adjusted returns from first day price to two years after going public, ER3Y1D - Adjusted returns from first day price to three years after going public, ER1Y1M - Adjusted returns from first month price to one year after going public, ER2Y1M - Adjusted returns from first month price to two years after going public, ER3Y1M - Adjusted returns from first month price to three years after going public. We introduce the dummy variable 'Mandatory' which takes the value '1' if the IPO was forced to provide earnings forecast and '0' if it voluntarily had to provide this figure in the prospectus. AFE is the absolute forecast error and FE is the forecast error. The symbols *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively, t-statistics are robust for heteroskedasticity using the Newey-West HAC Standard Errors & Covariance process.

Table 9: Results of multiple regressions divided by disclosure mechanism (mandatory – voluntary) using one-, two- and three-year FF3F-CARs

Specification	ER1Y1D 1993-2000	ER1Y1M 1993-2000	ER2Y1M 1993-2000	ER3Y1M 1993-2000	ER1Y1D 2001-2014	ER2Y1D 2001-2014	ER3Y1D 2001-2014	ER1Y1M 2001-2014	ER2Y1M 2001-2014	ER3Y1M 2001-2014
Constant	2.153**	0.666	-3.215***	-2.635	-3.862***	-2.872**	-6.850***	-4.029***	-2.749***	-4.335**
	(0.026)	(0.442)	(0.002)	(0.133)	(0.003)	(0.011)	(0.00174)	(0.00220)	(0.00751)	(0.0225)
SIZE	-0.118**	-0.032	0.145***	0.123	0.210***	0.157***	0.340***	0.221***	0.138***	0.200**
	(0.022)	(0.442)	(0.008)	(0.157)	(0.004)	(0.005)	(0.00238)	(0.00236)	(0.00754)	(0.0349)
AGE	-0.0019	-0.0049*	0.002	-0.0007	-0.011***	-0.011***	-0.0156**	-0.010***	-0.007**	-0.0106*
	(0.693)	(0.067)	(0.586)	(0.918)	(0.003)	(0.0009)	(0.0268)	(0.002)	(0.0227)	(0.079)
TLAG	0.0040	0.00303	0.006	0.0028	0.005	-0.0091	0.0032	0.0031	0.0012	0.0050
	(0.334)	(0.420)	(0.128)	(0.746)	(0.497)	(0.275)	(0.821)	(0.582)	(0.876)	(0.675)
PRIV	0.440*	0.393*	-0.017	0.250	0.168	0.354**	0.162	0.0710	0.356**	0.0495
	(0.055)	(0.095)	(0.956)	(0.757)	(0.368)	(0.0448)	(0.690)	(0.703)	(0.021)	(0.855)
OVER	-0.0002	-0.0004**	0.001**	0.001***	0.0014	0.0005	-0.0043	-0.0013	0.0008	-0.0015
	(0.469)	(0.014)	(0.011)	(0.009)	(0.716)	(0.917)	(0.317)	(0.628)	(0.855)	(0.776)
UND	-0.0319	-0.163*	0.079	0.228	-0.069	0.0228	0.119	0.016	0.081	0.0722
	(0.832)	(0.098)	(0.569)	(0.322)	(0.656)	(0.885)	(0.583)	(0.860)	(0.514)	(0.750)
HC	0.580***	-0.019	-0.295**	-0.530***	-0.115	-0.141	0.008	-0.003	-0.005	-0.0197
	(0.0004)	(0.837)	(0.0367)	(0.002)	(0.420)	(0.229)	(0.976)	(0.979)	(0.967)	(0.937)
OWN	-0.0149**	-0.009**	0.0027	0.0112	0.0106*	0.0094*	0.0252	0.00632	0.00141	0.0210
	(0.043)	(0.025)	(0.674)	(0.410)	(0.083)	(0.0872)	(0.142)	(0.277)	(0.804)	(0.233)
IND	0.048	0.155	0.279*	-0.158	-0.194	-0.184	-0.0497	-0.0703	-0.125	0.0323
	(0.755)	(0.147)	(0.099)	(0.557)	(0.197)	(0.189)	(0.858)	(0.553)	(0.360)	(0.907)
Adjusted R^2	0.091	0.047	0.051	0.052	0.089	0.086	0.107	0.209	0.060	0.045
F Stats	2.53	1.87	2.05	2.21	2.87	2.79	3.02	3.89	2.26	2.13
N	220	220	220	220	61	61	61	61	61	61

Multivariate regression analysis of cross-sectional variation in long-run market index-adjusted (excess) returns subsequent to listing for 281 Greek initial public offers of ordinary equity made between January 1993 and December 2014. Long term performance is calculated using the Fama and French (FF) three-factor model $R_{pt} - R_{ft} = a_p + b_p (R_{mt} - R_{ft}) + s_p SMB_t + h_p HML_t + e_{pt}$. The dependent variables ER1Y1D, Adjusted returns from first day price to first year after going public, ER2Y1D - Adjusted returns from first day price to two years after going public, ER3Y1D - Adjusted returns from first day price to three years after going public, ER1Y1M - Adjusted returns from first month price to one year after going public, ER2Y1M - Adjusted returns from first month price to two years after going public, ER3Y1M - Adjusted returns from first month price to three years after going public. We introduce the dummy variable 'Mandatory' which takes the value '1' if the IPO was forced to provide earnings forecast and '0' if it voluntarily had to provide this figure in the prospectus. AFE is the absolute forecast error and FE is the forecast error. The symbols *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively, t-statistics are robust for heteroskedasticity using the Newey-West HAC Standard Errors & Covariance pro

Table 10: Cross sectional regression analysis of IPOs without earnings forecasts announcement vs IPOs with earnings forecasts disclosure

Specifications	Earnings vs Non earnings	Year Fixed Effect (2002)	Mandatory vs Voluntary	Mandatory vs Voluntary (2)	Mandatory vs Voluntary (3)
Constant	-1.782**	-3.641*	0.279	-0.475	-0.646
	(0.013)	(0.0561)	1.08	0.638	0.521
SIZE	0.0901**	0.170	0.398	0.116	0.139
	(0.0193)	(0.106)	0.85	1.58	1.48
AGE	0.213***	0.139**	0.032**	-0.18	-0.03
	(0.0002)	(0.0416)	-2.15	0.856	0.974
TLAG	0.00661	0.00716	0.0002***	0.0003***	0.0003***
	(0.234)	(0.187)	-5.04	-4.14	-3.64
PRIV	-0.243		0.721	0.753	0.701
	(0.184)		0.36	0.32	0.38
OVER	0.005***	0.00189	0.0001***	0.0001***	0.0007***
	(0.002)	(0.293)	-6.78	-5.84	-5.61
UND	0.029	0.00585	0.0005***	0.0004***	0.0002***
	(0.751)	(0.950)	4.46	4.32	4.40
HC	-0.505***		0.899	0.098*	0.125
	(0.0025)		-0.13	-1.69	-1.54
OWN	0.0120***	0.0556***	0.380	0.070*	0.053*
	(0.009)	(0.00024)	0.88	1.82	1.94
IND	0.048	0.0382	0.426	0.283	0.212
	(0.665)	(0.617)	0.80	1.08	1.25
AFE				0.673	(0.205)
				0.42	1.27
FE					0.019**
					-2.35
AdjustedR^2	0.484	0.520	0.236	0.240	0.257
N	83	21	303	303	303

The table presents results of the probit regression analysis of earnings forecast announcement decision on underwriter reputation and other specific characteristics for a sample of Greek Initial Public Offerings. The dependent variable is a binary variable taking the value of one for IPOs which decide to provide earnings forecasts and zero for IPOs which select not to provide an earnings forecast. Variables are defined in Appendix A. Regression (1) indicates the characteristics of companies that did not provide an earnings forecast. Regression (2) controls for year fixed effects. Regression (3) compares the mandatory sample with the voluntary sample. The symbols *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11: Behaviour of matched samples of IPOs under mandatory disclosure

	AFE			FE		
Panel A: Matching *by size (assets)*						
ER1Y1D	-7.991*			-14.217*		
	0.100			0.053		
ER2Y1D		-8.558***			-8.248*	
		0.005			0.055	
ER3Y1D			-4.558**			-4.570*
			0.012			0.059
ER1Y1M	-13.561			-26.324**		
	0.214			0.035		
ER2Y1M		-11.644***			-9.443	
		0.003			0.141	
ER3Y1M			-5.852***			-7.048**
			0.007			0.016
N	61	61	61	61	61	61
Panel B: Matching *by age*						
ER1Y1D	-4.544			-25.886***		
	0.347			0.000		
ER2Y1D		-7.737*			-15.981***	
		0.052			0.000	
ER3Y1D			-6.747***			-11.771***
			0.006			0.003
ER1Y1M	-7.149			-25.041***		
	0.279			0.010		
ER2Y1M		-8.578*			-18.629**	
		0.095			0.018	
ER3Y1M			-10.247***			-11.397**
			0.000			0.029
N	61	61	61	61	61	61

Multivariate regression analysis of cross-sectional variation in absolute forecast error (AFE) and forecast error (FE) for matched samples of IPOs from the mandatory disclosure environment. These IPOs are matched to their 61 counterparts from the voluntary disclosure environment on the criteria of proximity in assets (Panel A) and proximity in age (Panel B). The variables in interest include in the upper parts of Panel A and B: ER1Y1D - Adjusted returns from first day price to first year after going public, ER2Y1D - Adjusted returns from first day price to two years after going public and ER3Y1D - Adjusted returns from first day price to three years after going public, while in the lower parts of Panel A and B: ER1Y1M - Adjusted returns from first month price to one year after going public, ER2Y1M - Adjusted returns from first month price to two years after going public and ER3Y1M - Adjusted returns from first month price to three years after going public. In all regressions, the control variables of Tables 6-10 retain their position and are suppressed for simplicity. The symbols *, **, and *** denote statistical significance at the 1%, 5%, and 10% levels, respectively.