Essays in Accounting and Finance

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Abstract

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In this thesis, I examine why there are distortions in investor portfolio selection, and show the consequence of these distortions on firms' investment decisions. The thesis consists of three essays.

In the first essay, I examine the economic consequences of the mandatory adoption of IFRS in EU countries by showing which types of economies have the largest reduction in investment-cash flow sensitivity post-IFRS. I also examine whether the reduction in investment-cash flow sensitivity depends on firm size as well as economy type. I find that the investment-cash flow sensitivity of insider economies is higher than that of outsider economies pre-IFRS and that IFRS reduces the investment-cash flow sensitivity of insider economies more than that of outsider economies. Also, I find that small firms in insider economies have the highest sensitivity of investment to lagged cash flow pre-IFRS, and that they are no longer sensitive to lagged cash flow post-IFRS. Overall, my results suggest that IFRS adoption might have improved the functioning of capital markets in relation to small firms in insider economies.

In the second essay, I show that the level of conditional accounting conservatism of foreign markets significantly influences decisions to diversify portfolios internationally. This could be either because conditional conservatism *per se* is attractive to international investors, or because the unmodelled factors that attract foreign investors to a country also cause these countries to adopt conditionally conservative accounting practices. We also find that the positive association between investor diversification decision and conditional conservatism is sensitive to the level of conditional conservatism of investors' home markets. If conditional conservatism serves to alleviate foreign investors' concerns related to insiders have asymmetric access to information then one would expect the chosen mode of entry into a foreign market (as foreign portfolio or direct investor) to be sensitive to the level of conditional conservatism. I find evidence supportive of this expectation.

In the third and final essay, I document pieces of evidence suggesting that the stock ownership of politicians is a mechanism to establish mutual relations with firms. There is a positive association between the ownership of politicians and the contribution they receive from firms during the elections. This association is a function of how valuable it is to establish a mutual relation between politicians and firms. Politicians invest more in firms that favor their party and less in firms that oppose their party. The strength of the ownership-based relation with contributing firms is positively associated with the amount as well as the number of government contracts awarded to firms. When politicians divest the stock, the established relation with contributing firms breaks down. Such break-down, however, only exist when there are no other mechanisms enforcing politician-firm relation.

Declaration

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To my family, to the martyrs of the Egyptian revolution, and to everyone who loves me

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Chapter 1
Introduction

Despite the elegant mathematical representation offered in the Markowitz model of portfolio selection, a growing empirical literature shows that investor preferences cannot simply be reduced to a two dimensional risk-return space. Compared to the predictions of this model, investors appear to "over" or "underweight" assets; for example, because they are more familiar with certain stocks (Merton 1987), have emotional ties or feelings of loyalty to a firm (Cohen 2009), or prefer to invest in firms that are located in the same geographical area (Coval and Moskowitz 1999). In addition to these investor preferences, market frictions (such as governance and information problems) also lead investors to over or underweight assets. This is because investors respond to these kinds of problems by readjusting their portfolios in the direction of markets where they are more protected, thereby leaving some assets being over-weighted while others being under-weighted. The cumulative effect of these distortions in individual portfolio selection (either due to market frictions and/or their own preferences) can cause capital rationing at an aggregate level, which in turn can affect the investment behavior of firms.

My thesis is structured around three essays containing original research in Chapters 2, 3, and 4, respectively. The essays are self-contained, i.e., they have separate literature reviews, exploit different datasets, and answer distinct research questions. Each of the three essays addresses an individual aspect of the above-mentioned scenario. While I recommend reading each chapter independent of the others, there is a link between the chapters as follows. Chapters 2 and 3 focus on the effect of accounting quality (as a mechanism that can alleviate market frictions) on investment decisions. Chapters 3 and 4 introduce examples for each of the two main reasons (i.e., market frictions and investors preferences) behind investors' over or underweighting of assets. I briefly explain these links below.

Chapters 2 and 3 examine the impact of accounting quality improvement on investment decisions. The former focuses on the investment decisions of firms, while the latter focuses on those of investors. The idea rests on the following. If enhancing accounting quality can mitigate information and governance problems that cause investors to misallocate and ration their capital, firms will invest more efficiently. In chapter 2, I capture the increase in the accounting quality using the event of mandatory adoption of the International Financial Reporting Standards (IFRS) in the European Union. I directly test whether firms have lower investment efficiency in the pre-IFRS adoption period (i.e., a time period where funds may have been withheld from the market due to severe governance and information problems). I use investment-cash flow sensitivities as a proxy for investment efficiency, i.e. lower investment-cash flow sensitivity means higher investment efficiency. I indeed find that pre-IFRS adoption firms (in particular the small firms) in economies with severe information and governance problems have higher investment cash flow sensitivity. I then show that when the accounting quality is increased exogenously by the adoption of IFRS, the investment efficiency of these firms increases (as proxied by lower investment-cash flow sensitivity in the post-IFRS period).

The findings of chapter 2 suggest that when investors perceive severe information and governance problems (i.e., when accounting quality is low), firms under-invest; and when investors start to feel protected (i.e., when accounting quality improves), firms invest efficiently. Thus, chapter 2 predicts that accounting quality should play a role with regard to investors' decisions to allocate their funds. Therefore, I directly examine, in chapter 3, whether accounting quality indeed plays such a role. Specifically, I test whether the quality of accounting information (as a proxy for governance and information problems) in both domestic and international markets matters in explaining investors' portfolio allocation decisions. In this chapter, I use the degree of conditional accounting conservatism, measured using the Basu (1997) model, in the market to capture the quality of accounting information in that market. A low degree of accounting conservatism in a market can leave investor wealth exposed to expropriation risk (Ball 2001). Investors, accordingly, respond to these kinds of problems in two ways. They will either (1) not invest in countries where these problems are severe or (2) conditional upon investing, choose a type of investment that mitigates the

severity of these countries' problems. Consistent with this, I show that the degree of domestic and international portfolio allocation and the forms of international allocation (portfolio *versus* direct investment) are strongly influenced by the degree of conditional accounting conservatism.

The findings of chapter 3 suggest that information and governance problems (as examples of market frictions) can explain why investors appear to over or underweight assets. Market frictions, such as governance and information problems, cause investors to misallocate their funds. Prior studies, however, suggest that market frictions is not the full story behind the misallocation of investors' funds, and investors are not always compelled to misallocate their funds (Merton 1987, Coval and Moskowitz 1999, Cohen 2009). These studies suggest that investors could have preferences to overweight certain assets due to, for example, geographical proximity, familiarity, or loyalty. That is investors could choose to misallocate their funds without being compelled to do so. Therefore, chapter 4 offers a novel example of investor preferences that could explain why some investors under or overweight certain assets. Specifically, I examine a setting in which investor preferences for stocks are determined by "personal ties" with the firm. In this chapter, I focus on politicians because they represent a class of investors who could have a personal relation with firms during election times. Thus, the relation between politicians and firms during the election period provide an *a priori* promising setting to test the "personal ties" hypothesis. I show that politicians tend to invest their personal wealth in companies that support them during elections. Further, I find that politicians overweight (underweight) the stocks of firms that favor (oppose) their party. I discriminate between "personal ties" as a determinant for investment behavior and closely related determinants, such as investor recognition and proximity. While politicians comprise a relatively small class of investors, their dealings have a significant impact on society. Indeed, I document that the investment behavior of politicians is associated with government redistributive actions via the award of federal contracts to firms with personal ties to these politicians.

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Chapter 2

IFRS Adoption in Europe and Investment-Cash Flow Sensitivity:

Outsider versus Insider Economies[*]

2.1. Introduction

Starting from 2005 listed firms in the European Union (EU) countries were required to prepare their consolidated financial statements according to the International Financial Reporting Standards (IFRS). Several studies document anticipated as well as actual economic consequences of IFRS adoption.[1] None of these studies, however, focus on investment efficiency, defined as the extent to which managers under- or over-invest and proxied by the absence of sensitivity of investment to cash flows (see e.g. Hubbard 1998). Thus, we ask, with regard to investment efficiency, which types of economies benefited most from IFRS adoption? Also we examine if the benefits of IFRS adoption applied equally to small and large firms.

Several studies examine the association between information quality and investment efficiency. The results of these studies show that investment efficiency is positively associated with accounting quality (Biddle and Hilary 2006; Biddle et al. 2009), disclosure level (Khurana et al. 2006), and stock price efficiency (Durnev et al. 2004). When combined with the evidence that IFRS adoption is associated with higher quality accounting (Barth et al.

[1] Armstrong et al. (2010); Comprix et al. (2003); Daske et al. (2007a); Pae et al. (2006): Prather-Kinsey et al. (2008).

2008) and with the evidence that mandatory disclosure improves stock price efficiency (Ferrell 2007) these results suggest that the mandatory adoption of IFRS should improve investment efficiency in the EU countries.

Furthermore, the effects of IFRS adoption are likely to vary across economies and firms. For example, firms operating in countries with higher quality accounting systems (i.e. accounting systems characterized by high quality domestic accounting standards and which promote extensive disclosure) prior to the adoption of IFRS should have less to gain from IFRS implementation. This line of thinking leads us to consider the following two research questions:

(1) Does IFRS adoption improve the investment efficiency of some types of economy more than other types?

(2) Controlling for economy type, does IFRS adoption improve the investment efficiency of certain types of firms more than other types of firms?

In order to answer these questions we follow Leuz et al. (2003) who classify economies, based upon several institutional features, into two types as follows. *Outsider economies*, which are economies with large stock markets, dispersed ownership, strong outside investor rights, high disclosure levels and strong legal enforcement. *Insider economies*, which are economies with small stock markets, highly concentrated ownership, weak outside investor rights, poor disclosure levels and weak legal enforcement.[2] Insider economies provide less protection for ordinary external investors giving rise to significant costs due to moral hazard and adverse selection (see e.g. Dyck and Zingales 2004). Furthermore, Leuz et al. (2003) show that the accounting and disclosure quality of insider economies is lower than that of outsider economies. Thus, investors in insider economies lack the information they need to mitigate any agency and adverse selection problems that arise in such economies as a result of their weak institutional features.

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[2] In fact, Leuz et al. (2003) classify economies into three groups. The third one is insider economies with medium stock markets, concentrated ownership, weak outside investor rights, average disclosure level but with strong legal enforcement. We exclude this group for reasons explained in footnote no. 7.

If it is true that insider economies suffer from greater costs of moral hazard and adverse selection (Leuz et al. 2003), then it seems reasonable to predict that a major change in accounting and disclosure, such as the implementation of IFRS throughout the EU, might affect outsider EU economies differently from insider EU economies. For this reason we test to see whether the implementation of IFRS has a differential impact on our measure of investment efficiency, as proxied by investment-cash flow sensitivity, for insider and outsider EU economies.

Firstly, we compare the pre-IFRS investment-cash flow sensitivity of insider and outsider economies. The literature on investment cash-flow sensitivity predicts and finds that firms for which the perceived adverse selection and agency problems are severe face tighter financing constraints, i.e. a larger cost differential between internal and external funds (e.g. Fazzari et al. 1988).[3] Consequently, such firms have to rely more on internally generated cash flows to finance their investment due to their cost advantage over external funds. Moreover any shortage in such firms' internal cash flows leads to an underinvestment problem, i.e. lower investment efficiency.[4]

Combining the insight that investment-cash flow sensitivity is greater for firms with severe adverse selection and agency problems with the insight that insider economies exhibit generally higher levels of adverse selection and moral hazard than outsider economies leads us to predict that insider economies should have higher investment-cash flow sensitivity than outsider economies before the mandatory adoption of IFRS. Our results are consistent with this prediction.

Secondly, we compare the post-IFRS investment-cash flow sensitivities of insider and outsider economies. The results of prior studies show that higher quality accounting enhances investment efficiency by mitigating agency problems and adverse selection (Biddle and Hilary

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[3] See Hubbard (1998) for a comprehensive review of this literature.
[4] In fact, investment can be sensitive to internally generated cash flows not only because firms are financially constrained but also because firms might have excess cash that managers do not want to distribute to investors, thereby leading to an overinvestment problem, i.e. lower investment efficiency. This is explained in Section 3.2.

16

2006, Biddle et al. 2009). When combined with the empirical evidence that IFRS is associated with higher quality accounting (Barth et al. 2008), these results suggest that the mandatory adoption of IFRS might play a role in enhancing investment efficiency by improving accounting quality that, in turn, mitigates agency problems and adverse selection. This role is expected to be more important in settings where there is a higher likelihood of agency problems and adverse selection and where there are lower quality accounting and poor disclosure levels before the mandatory adoption of IFRS. Since this is the case with insider economies, we expect a stronger effect of IFRS on reducing investment-cash flow sensitivity for those economies. Thus, we predict that IFRS reduces investment-cash flow sensitivity more in insider than in outsider economies. Our results support this prediction.

Subsequently, we extend our analysis by considering whether our results are sensitive to firm size (in addition to economy type). Firstly, combining our prediction that insider economies have the highest investment-cash flow sensitivity pre-IFRS with the evidence that small firms face liquidity constraints and have higher investment-cash flow sensitivity (Gilchrist and Himmelberg 1995; Himmelberg and Petersen 1994) leads us to predict that the small firms in insider economies should have the highest investment-cash flow sensitivity pre-IFRS adoption. Secondly, we predict that IFRS adoption will have a stronger effect on reducing the investment-cash flow sensitivity of small firms operating within insider economies than the large firms operating in such economies. Consistent with these predictions, we find that (1) the small firms have the highest sensitivity of investment to lagged cash flow pre-IFRS adoption, and (2) they have the largest reduction in the sensitivity to lagged cash flow post-IFRS adoption.

Our results suggest that IFRS adoption might have relaxed financing constraints and that IFRS standards help to take us back to a neoclassical setting in which Tobin's *Q*, as a proxy for investment opportunities, is the only determinant of investment (Tobin 1969; Hayashi 1982, Bond et al. 2003; Hovakimian and Hovakimian 2009). Thus, our results suggest that accounting standard setters can contribute to efficient corporate investment activity by improving the quality of countries' accounting systems and this applies especially to countries with poor prior accounting.

The remainder of the paper is organised as follows. Section 2 explains how our study relates to prior literature. Section 3 develops the hypotheses. Section 4 presents the empirical models and describes the sample and the data. Section 5 provides the empirical results and robustness tests. Finally, Section 6 concludes the paper.

2.2. Related Research

Our paper relates to three streams of prior research, namely the literature on economic consequences of the mandatory adoption of IFRS, the literature on finance and economic growth, and the literature on financing constraints and investment-cash flow sensitivity. The paragraphs below briefly review these three streams and clarify our contribution.

2.2.1. Economic consequences of the mandatory adoption of IFRS

Our research is related to the literature on the economic consequences of mandated changes of accounting standards generally, and in particular to the stream of research that examines the economic consequences of the mandatory adoption of IFRS.[5] For example, Armstrong et al. (2010); Comprix et al. (2003); Pae et al. (2006) attempt to model the anticipated economic consequences of IFRS adoption prior to their actual adoption. Their results suggest that capital markets expected net benefits to flow from IFRS adoption. The evidence in Christensen et al. (2007) suggests, however, that not all firms expect the same benefits from mandatory IFRS adoption. Unlike these studies, other studies examine the economic consequences of mandatory IFRS after its actual adoption. For example, Daske et al. (2008) examine the impact of IFRS adoption in 26 countries on market liquidity, equity valuations, and cost of equity capital. They find an increase in market liquidity, an increase in equity valuations, and a decrease in cost of capital around the mandatory adoption of IFRS. They find that these capital market effects (1) are stronger in countries that have larger differences between local GAAP and IFRS and (2) exist only in countries with strong legal enforcement and reporting incentives. Prather-Kinsey et al. (2008) also document that European firms have lower cost of

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[5] See Leuz and Wysocki (2007) for a review of this literature.

equity capital post-IFRS adoption. We complement this stream of the literature by focusing on investment efficiency, thereby demonstrating another benefit that is likely to flow from the adoption of IFRS standards.

2.2.2. Finance and economic growth

Our study is also related to the stream of research that examines the association between financial market development (and the associated institutions) and economic growth. Several studies, for example King and Levine (1993) and Levine and Zervos (1998), show that developed financial markets facilitate economic growth. Subsequent studies attempt to examine the rationale behind such a relationship. For example, Rajan and Zingales (1998) show that industries that rely more on external financing grow faster in countries with more developed financial markets (as measured by the quality of accounting standards). Demirgüç-Kunt and Maksimovic (1998) find that the proportion of firms growing at rates exceeding the maximum growth rate that can be attained using only internal finance is higher in countries with strong legal enforcement and more developed financial markets. Both Demirgüç-Kunt and Maksimovic and Rajan and Zingales (1998) interpret their results as financial development reduces the cost of external finance to firms, and accordingly it is predicted that, as Rajan and Zingales (1998, 561) put it, "financial development liberates firms from the drudgery of generating funds internally" and, as Demirgüç-Kunt and Maksimovic (1998, 2108) put it, "as financial markets develop, the role of established firms' internal capital diminishes." Our results that outsider economies have lower investment-cash flow sensitivity than insider economies provide empirical support for this prediction, since outsider (insider) economies are the economies with more (less) developed financial markets, strong (weak) legal enforcement and higher (lower) quality accounting.

2.2.3. Financing constraints and investment-cash flow sensitivity

Finally, our study is related to the stream of research that examines the relation between financing constraints and investment-cash flow sensitivity. In their seminal paper, Fazzari et al. (1988) find that firms facing tighter financing constraints, i.e. a larger cost differential

between internal and external financing as proxied by dividend payout ratio, have higher investment–cash flow sensitivities after controlling for their growth opportunities. A large body of subsequent empirical studies finds results consistent with those of Fazzari et al. (1988) using other proxies for being financially constrained, such as the existence of bond or commercial paper ratings and access to public debt markets (Calomiris et al. 1995; Gilchrist and Himmelberg 1995), membership in industrial groups (Hoshi et al. 1991), banking relationships (Houston and James 2001), firm size (Gilchrist and Himmelberg 1995), and firm age and ownership dispersion (Schaller 1993).[6] We complement those studies in two ways. Firstly, unlike prior studies that allow the specification of their models to vary among firms within the same economy, we show a role for liquidity, as measured by internally generated cash flows, to influence investment by allowing the specification of the model to vary among economies. Secondly, we suggest a new proxy for financing constraints which is the type of the economy to which a firm belongs, i.e. insider versus outsider economies. Consistent with the validity of this proxy our results indicate that pre-IFRS adoption insider economies have higher investment-cash flow sensitivity than outsider economies.

2.3. Hypothesis Development

2.3.1. Investment-cash flow sensitivity of insider versus outsider economies: Pre-IFRS

Leuz et al. (2003) group 31 countries into three groups according to institutional characteristics drawn from La Porta et al. (1997, 1998). Those groups and their related features are as follows: (1) outsider economies with large stock markets, dispersed ownership, strong outside investor rights, high disclosure level and strong legal enforcement; (2) insider economies with medium stock markets, concentrated ownership, weak outside investor rights, average disclosure level but with strong legal enforcement;[7] and, (3) insider economies with

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[6] See Hubbard (1998) for a review of this literature.

[7] We exclude the insider economies with strong legal enforcement for three reasons as follows. First, it includes two countries that might lead to misleading inferences which are Germany, in which several companies have already adopted IFRS voluntarily before the mandatory adoption of IFRS, and Switzerland, which is not committed to follow the EU Directives (Armstrong et al. 2010). Second, it includes three countries (which are Belgium, France, and Germany) that have been shown by Bond et al. (2003) to have lower sensitivity of investment to internal liquidity than the UK (one of our two outsider economies) since these three countries have more bank-oriented financial systems whereas the UK has a more market-oriented financial system. Third, this

small stock markets, highly concentrated ownership, weak outside investor rights, poor disclosure level and weak legal enforcement.[8]

Since Dyck and Zingales (2004) find that private benefits of control – i.e., benefits that can be extracted by corporate insiders – are negatively associated with investor protection and legal enforcement and they are observed in countries with small capital markets and concentrated ownership, one would expect that there are greater private control benefits acquired by managers (or controlling owners) in insider economies (in particular the last group with weak legal enforcement), as opposed to outsider economies. Accordingly, there is a higher likelihood of the funds of non-controlling investors being expropriated in insider economies. In addition, as a consequence of the poor disclosure level in insider economies, there is also a higher likelihood that corporate insiders have more information about the value of the firm and its investment opportunities than outside investors.

Moreover, the finding of Leuz et al. (2003) that outsider economies have the lowest level of earnings management and insider economies with weak enforcement, on the other hand, have the highest level of earnings management, suggests that the accounting quality of insider economies is lower than that of outsider economies. In addition, they also show that the disclosure level of insider economies is lower than that of outsider economies. Taken together, investors in insider economies lack the mechanisms (i.e. accounting and disclosure) for monitoring managers and reducing information asymmetry problems that might arise in those economies as a result of their weak institutional features.[9]

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group can be considered as a semi-insider (or a semi-outsider) economy. Thus, we can achieve a better comparison between pure insider economies and pure outsider economies by excluding this middle group.

[8] The present paper has made no attempt at identifying which of these underlying factors is the main driver of our results. We believe this is an interesting line for further research. In particular, it would be interesting to know which underlying characteristic has lead to the higher investment-cash flow sensitivity in the pre-IFRS period and whose influence on investment-cash flow sensitivities has subsequently been mitigated by the introduction of IFRS.

[9] Prior literature shows how disclosure and accounting are important tools for mitigating information asymmetry and monitoring managers. One stream of research suggests that commitments to higher disclosure level mitigate adverse selection costs by reducing information asymmetry between managers and investors and between informed and uninformed investors (Diamond and Verrecchia 1991). Several studies support this empirically. For instance, Leuz and Verrecchia (2000) show that a commitment to increased levels of disclosure reduces information asymmetry. See Healy and Palepu (2001) for a review of this literature. Another stream of research suggests that financial accounting information can mitigate agency problems since it can be used as a direct input into compensation contracts and can be used by investors as a monitoring mechanism (Lambert 2001; Bushman

Thus, rational investors in insider economies are expected to withhold their capital or increase their required rate of return (i.e. the cost of external finance) as a result of (1) the greater likelihood of facing severe information asymmetry problems arising from the weak institutional features of insider economies; and (2) the lack of effective tools to mitigate those information asymmetry problems.

Theoretical models explain how information asymmetry problems might lead to capital rationing or higher cost of external finance. For example, as far as adverse selection is concerned, Myers and Majluf (1984) demonstrate a case in which a company has a new investment opportunity with a positive NPV for which it is seeking external finance. The managers of the firm have access to information about the profitability of existing projects that is not available to potential equity investors. The insider information about the existing projects is either Good or Bad. If the managers could pre-commit not to exploit their information advantage then the new equity would be fairly priced on the basis of the market's more limited information set. However if the price is set at this level, managers will have a strong incentive to issue equity when the news they have about existing assets is Bad, and to fall back on other forms of finance when the news they have is Good. Thus the pricing of the equity on the basis of the market's information set would only be an equilibrium if managers could pre-commit not to exploit potential investors. Myers and Majluf show that if the probability of the managers having Bad news is sufficiently high, the only possible equilibrium is one in which the firm issues equity in the Bad news state (priced as if the news is Bad), whilst the firm finances the project from retained earnings or new debt issues in the good news state. Thus adverse selection problems potentially reduce the ability of firms to finance new projects by issuing new equity.

Regarding agency problems, Jensen and Meckling (1976) suggest that external financing reduces the amount of equity held by managers, and accordingly, those managers have more incentives to reallocate wealth from outside investors to themselves. "This *ex post* incentive

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and Smith 2001). Recently, both Bens and Monahan (2004) and Hope and Thomas (2008) show empirically that disclosure plays a crucial role in monitoring managers.

problem reduces the amount of capital supplied *ex ante*" (Biddle and Hilary 2006, 967). Stated differently, investors require a higher return by adjusting the risk premium upward to compensate them for the costly monitoring of managerial actions.

Therefore, in both cases there will be a gap between the cost of external financing – which contains a premium for either adverse selection or agency problems – and internally generated funds. In an extreme case there is even the possibility that external funds are withheld.[10] Accordingly, managers find it more attractive to finance their investment with their internally generated cash flows due to their cost advantage over external financing, and any shortage in internal funds will, consequently, lead to an underinvestment problem (Hubbard 1998).

Hence, it is predicted that if the cost differential between internal and external funds is significant, capital investment will be highly correlated with internally generated cash flows (Hubbard 1998). In an attempt to investigate this hypothesis, Fazzari et al (1988) test whether the determinants of investment differ between firms for which the gap between the cost of internal financing and external financing differ, i.e. is there a difference in the investment behaviors of firms that are not financially constrained, and firms for which the cost of external financing exceeds the cost of internal financing, i.e. firms that are financially constrained. They show that the capital investment of the most constrained firms is more sensitive to their internally generated cash flows than that of the least constrained firms. A subsequent stream of studies provides results consistent with Fazzari et al (1988).[11] However, both Kaplan and Zingales (1997) and Cleary (1999) provide opposing evidence showing that the least constrained firms have the highest investment-cash flow sensitivity. That led to an ongoing debate as to whether investment-cash flow sensitivity provides useful evidence about the presence of financing constraints (Fazzari et al. 2000; Kaplan and Zingales 2000).

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[10] In his analysis to show the link between internally generated cash flows and capital investment, Hubbard (1998) illustrates that the firm perceives the opportunity cost of internal funds to be the market interest rate, and the firm can borrow and lend at that interest rate in the capital market. Thus, without the lemons premium, the cost of both internal and external financing will be the same. In other words, internal and external funds are perfect substitutes in prefect capital markets.

[11] See Hubbard (1998) for a review of this literature.

To provide an explanation for this puzzle, Allayannis and Mozumdar (2004) show that the findings of both Kaplan and Zingales (1997) and Cleary (1999) are driven by the impact of including negative cash flow observations (as a proxy for financially distressed firms) in their samples.[12] They show that the inclusion of negative cash flow observations biases the results of both Kaplan and Zingales (1997) and Cleary (1999) due to the fact that when a firm is in a financially distressed situation, investment cannot respond to cash flow. They explain this result as follows: When firms' cash shortfall is severe, they are pushed into financial distress. Accordingly, they are able to make only the minimum essential investments. Any further reduction in their investments in response to further declines in their internally generated cash flows is no longer possible. Therefore, such firms' investment–cash flow sensitivities are very low. Since the incidence of the negative cash flow observations is higher in the most financially constrained firms than in the least financially constrained firms, the estimated investment-cash flow sensitivity is lower for the most constrained firms as documented by Kaplan and Zingales (1997) and Cleary (1999).

Indeed, when Allayannis and Mozumdar (2004) exclude the negative cash flows observations from the sample of Kaplan and Zingales (1997) and Cleary (1999), they find that the estimated investment-cash flow sensitivities for the most financially constrained firms are much higher, and the results are much closer to those in Fazzari et al (1988) and other subsequent studies that document a higher investment cash flow sensitivity for the most financially constrained firms. A similar point to that of Allayannis and Mozumdar (2004) has been made by Fazzari et al (2000) who argue that the financially constrained firms in the sample of Kaplan and Zingales (1997) include some years of financial distress. Thus, ignoring these causes a downward bias in the cash flow coefficient.

In summary, the likely private control benefits enjoyed by managers in insider economies coupled with the lack of adequate mechanisms for monitoring those managers and mitigating information asymmetry by investors increase the likelihood of having severe adverse selection and agency problems in those economies. Consequently, managers in insider economies will

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[12] Allayannis and Mozumdar (2004) present evidence on firm characteristics such as growth rates, debt ratings, debt ratios and dividend changes that confirm the validity of negative cash flow observations as a proxy for weak financial health.

face a high cost of external finance or perhaps even capital rationing, and in turn they will find it more attractive to finance their investment with their internally generated cash flow due to its cost advantage over external financing. This leads to our first hypothesis:

H1: Before the mandatory adoption of IFRS, firms in insider economies have higher investment cash flow-sensitivity than firms in outsider economies.

2.3.2. Investment-cash flow sensitivity of insider versus outsider economies: Post-IFRS

Biddle and Hilary (2006) examine the association between accounting quality and investment efficiency as proxied by investment-cash flow sensitivity. They argue that if managers could commit to reveal all of their private information, investors would not ration capital for fear of purchasing overpriced securities and if higher accounting quality permitted perfect monitoring by outsider investors, there would be no agency problem. Their arguments suggest that higher accounting quality overcomes the capital rationing or the high cost of external finance problem by mitigating either the adverse selection or the moral hazard problem, and accordingly, higher accounting quality may serve to reduce investment-cash flow sensitivity. Consistent with this, Biddle and Hilary (2006) find that higher accounting quality reduces the investment-cash flow sensitivity both across and within countries.

However, Biddle and Hilary (2006) do not address whether high quality accounting mitigates the under-investment or over-investment problem. In fact, investment can be associated with internally generated cash flows not only because firms are financially constrained but also because firms might have excess cash that managers do not want to distribute to investors.[13]

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[13] Jensen (1986) presents a free cash flow theory that suggests an explanation behind such overinvestment as follows. His theory suggests that managers 'with free cash flow' grow their firms beyond their optimal size since returning such excess cash to investors reduces the resources under managers' control, thereby reducing their power. In addition, reducing the available internal cash exposes managers to several problems, such as the monitoring of outside capital suppliers that occurs when managers must raise new capital; the probability that external capital will be unavailable; or available only at a high cost. By growing the firm using internal funds rather than external financing, managers can avoid all of these problems. Consistent with Jensen's (1986) theory, Blanchard et al. (1994) show empirically that managers, who receive a cash windfall that does not change the investment opportunity set, choose to keep such cash windfall inside the firm rather than return it to investors, and more surprisingly, they then use it to acquire other firms in unrelated lines of business that often fail. They point out that their evidence is inconsistent with the 'perfect capital market model', which predicts that the cash

Unlike Biddle and Hilary (2006), Biddle et al. (2009) address the under-investment or over-investment problem, and find that accounting quality is negatively associated with both underinvestment and overinvestment.

Taken together the results of Biddle and Hilary (2006) and Biddle et al. (2009) provide strong evidence that accounting quality plays a crucial role in enhancing investment efficiency by mitigating adverse selection and agency problems. In addition, other studies show that disclosure level (Khurana et al. 2006) and stock price efficiency (Durnev et al. 2004) also enhance investment efficiency.[14] Combining the results of these studies with both the evidence that IFRS adoption appears to improve accounting quality (Barth et al. 2008) and the evidence that mandatory disclosure improves stock price efficiency (Ferrell 2007) suggests an important role for IFRS adoption in enhancing investment efficiency. This role should be more important in economies where there is a higher likelihood of adverse selection and agency problems. Since there is higher likelihood of adverse selection and agency problems in insider economies compared to outsider economies as explained in section 3.1, we expect a stronger effect of IFRS adoption on investment-cash flow sensitivity in insider economies. Thus, we hypothesise:

H2: IFRS adoption reduces the investment-cash flow sensitivity more for firms in insider economies than for firms in outsider economies.

2.3.3. Investment-cash flow sensitivity of small firms in insider economies: pre-IFRS versus post-IFRS evidence

We extend our set of hypotheses to consider the differential impact of IFRS on small versus large firms. Firstly, since small firms are more likely to be young firms, less well-known, less followed by financial analysts, with more concentrated ownership, with lower quality

windfalls should be returned to investors when investment opportunities inside the firm are not attractive. There are other models that provide other explanations behind such overinvestment behavior, for a review of those models see Hope and Thomas (2008).

[14] Durnev et al. (2004) show that investment efficiency, as measured by the deviation in Tobin's marginal *q*, is positively associated with the informativeness of stock prices, as measured by the magnitude of firm specific variation in stock returns. Khurana et al. (2006) find that a firm's externally financed growth rate is positively associated with AIMR disclosure scores, suggesting that disclosure improves investment efficiency.

accounting and disclosure levels and hence more vulnerable to capital market imperfections induced by adverse selection and moral hazard problems, they are more likely to be financially constrained.[15] Consistent with this expectation, a vast number of studies find that small firms face liquidity constraints and have higher investment-cash flow sensitivity (Gilchrist and Himmelberg 1995; Himmelberg and Petersen 1994). Combining this with our prediction that insider economies have a higher investment-cash flow sensitivity pre-IFRS adoption leads to the following hypothesis:

H3: Prior to the introduction of IFRS small firms in insider economies have a higher investment-cash flow sensitivity than firms in outsider economies.

Secondly, we predict that the mandatory adoption of IFRS plays a crucial role in reducing investment-cash flow sensitivity by improving accounting quality which, in turn, mitigates agency problems and adverse selection. This role is expected to be more important in settings where there is a higher likelihood of agency problems and adverse selection. Since this is the case with insider economies and in particular with the small firms which are more likely to benefit from the ease of benchmarking themselves against firms in other countries as a result of IFRS, we expect a stronger effect of IFRS on reducing investment-cash flow sensitivity of these firms. Thus, it can be hypothesised that:

H4: IFRS adoption reduces the investment-cash flow sensitivity more for small firms in insider economies than for firms in outsider economies.

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[15] In the present paper we split the sample along size and not along firm age because the data source we use includes variables that allow us to proxy for size, but does not include a variable that would allow us to proxy for age. It is very likely that size and age are highly correlated and thus it is quite possible that any splits along age are likely to produce results that are not too different from those presented below. However, future research would clearly benefit from splitting the samples along other dimension such as firm age.

2.4. Empirical Setting

2.4.1. Investment-Cash Flow Sensitivity Model

Following Fazzari et al. (1988) and Hovakimian and Hovakimian (2009), we estimate the following investment-cash flow sensitivity model using firm-fixed effects to test our hypotheses:[16]

$$\frac{I_{it}}{TA_{it-1}} = \beta^i_o + \beta_1 \frac{CF_{it}}{TA_{it-1}} + \beta_2 \frac{CF_{it-1}}{TA_{it-1}} + \beta_3 MTB_{it} + \varepsilon_{it} \qquad (1)$$

where, I_{it} is the gross capital expenditures for firm i in year t, TA_{it-1} is the total assets for firm i in year t–1, CF_{it} and CF_{it-1} represent cash flow to firm i in years t and t–1, respectively, and are measured by the sum of income before extraordinary items and before depreciation and amortization, MTB_{it} is the market-to-book ratio of assets for firm i at the beginning of period t as a proxy for Tobin's Q and equals [(total assets in year t–1 minus book value of equity in year t–1 minus deferred taxes in year t–1 plus market value of equity in year t–1) divided by total assets in year t–1]. We follow the prior literature on investment-cash flow sensitivity in defining the above variables (e.g. Hovakimian and Hovakimian 2009).

In testing our hypotheses we focus on the one-year lagged cash flow term, CF_{it-1}/TA_{it-1}, since we believe that the use of a one-year lagged cash flow term is more appropriate than the use of current cash flow. The argument behind this is as follows: Investment is added to the balance sheet in the period it is completed. However, investment models are trying to model investment decisions, not additions to the balance sheet which are used only because they are observable, while investment decisions are unobservable. Empirical evidence suggests that the average time between the investment decision and the completion of the investment project is around one year (Mayer 1958). Thus, a one-year lagged cash flow term seems the most appropriate specification and any changes in completed investments are expected to be more

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[16] We deflate all the variables with *Total Assets,* which is the same scalar used for computing the *MTB* because estimating a model with variables deflated by different scalars might cause spurious significance. We thank the editor and one of the referees for pointing this out to us. We do not deflate the intercept as the fixed effect model effectively removes the intercept.

correlated with changes in lagged rather than current cash flow.[17] Fazzari et al. (1988) also argue that a lagged cash flow term is likely to have explanatory power for investment in a time-to-build context.

In order to test *H1* and *H2* we estimate regression model (2) below, and we do this separately for pre- and post-IFRS periods.[18]

$$\frac{I_{it}}{TA_{it-1}} = \beta^i_o + \beta_1 \frac{CF_{it}}{TA_{it-1}} + \beta_2 \frac{CF_{it}}{TA_{it-1}} * INSIDERS + \beta_3 \frac{CF_{it-1}}{TA_{it-1}} + \beta_4 \frac{CF_{it-1}}{TA_{it-1}} * INSIDERS + \quad (2)$$
$$\beta_5 MTB_{it} + \beta_6 MTB_{it} * INSIDERS + \varepsilon_{it}$$

Note that in model (2) every regressor from (1) is included twice, once on its own and once interacted with an *INSIDERS* dummy variable which takes on the value of 1 if the observation belongs to an insider economy and zero otherwise. We control for year effects by including a full set of *YEAR* dummies.[19]

In order to test the third and fourth hypotheses, we re-estimate the above model pre-and post-IFRS after partitioning the *INSIDER* sample by firm size. Specifically, instead of interacting each of the main variables with an *INSIDER* dummy, we interact them with (1) a *LARGEINSIDERS* dummy that takes the value 1 if the observation belongs to an insider country and is greater than (or equal to) the median value of the market capitalization and zero otherwise; and (2) a *SMALLINSIDERS* dummy that takes the value 1 if the observation belongs to an insider country and is less than the median value of the market capitalization and zero otherwise.

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[17] For example, if a company reported a new fixed asset in the balance sheet at Year 2006, this fixed asset is more likely to be the outcome of an investment decision that has been taken in Year 2005 based upon the availability of the cash flow that was internally generated during 2005. Thus, this new fixed asset (which is a 2006 figure) is correlated with the cash flow generated during Year 2005 (i.e. the one year lagged cash flow for Year 2006).

[18] Since our models are estimated with firm-fixed effect; and the economy type to which a firm belongs does not change over time, we can not include an insider dummy in our models.

[19] Since our models are estimated with firm-fixed effect; and the industry to which a firm belongs to do not change over time, we can not include industry dummies in our models. Industry dummies drop from the model and, accordingly, their effect can not be estimated. However, estimating a firm-fixed effect model likely to effectively control for industry effect as well since the firm effect is determined jointly by firm-specific effects as well as industry effects.

2.4.2. Sample and Data

Since our objective is to assess the economic consequences of the mandatory adoption of IFRS in Europe, we focus on those European countries which are classified by Leuz et al. (2003) as outsider economies and insider economies with weak legal enforcement. Thus, our sample includes 'United Kingdom' and 'Norway' as outsider economies and 'Italy', 'Greece', 'Portugal' and 'Spain' as insider economies.

Our data are obtained from Thomson ONE Banker and are from the years 2000 to 2007. Following prior studies, we focus on publicly traded non-financial firms and we exclude those firms issuing American Depository Receipts. We also exclude all cross-listed firms, regardless of whether they are cross-listed in the U.S. or in another country. Thus, our sample includes only domestically listed firms. We define the pre-IFRS period as the years 2000 to 2004, while the post-IFRS period comprises the years 2005 to 2007. Following Daske et al. (2007), we define firm-years as post-IFRS if they report that they are applying (a) International standards (Code 02), (b) International standards and some EU guidelines (Code 06), (c) Local standards with EU and IASC guidelines (Code 08), (d) International standards – inconsistency problems (Code 12), (e) International standards and some EU guidelines – inconsistency problems (Code 16), (f) Local standards with some IASC guidelines (Code 18), (g) Local standards with OECD and IASC guidelines (Code 19), and (h) IFRS (Code 23).

Following Allayannis and Mozumdar (2004), we exclude negative cash flow observations. This is an attempt to minimise any possible bias in the cash flow coefficient as a result of financial distress. Allayannis and Mozumdar (2004) do not exclude observations for all years for a firm with negative cash flows in some years, but instead they exclude only those firm-years with negative cash flows. We follow the same approach here. This gives us a sample of 5655 observations. Table 1 shows the distribution of those observations pre- and post-IFRS among economies (Panel A), countries (Panel B), and industries (Panel C). Our industry classifications follow the industry classification of Campbell (1996). As shown in Panel C-Table 1, the observations are well distributed across industries in the pre- and post-IFRS periods.

<INSERT TABLE 1 HERE>

Table 2 provides the descriptive statistics for the main variables used in our econometric analysis. The descriptive statistics show that the pre- and the post-IFRS median values for insiders are relatively close. This suggests that any differences in the investment-cash flow sensitivities between pre- and post-IFRS periods are unlikely to be explained simply by changes in the distribution of the underlying regression variables over time. The heterogeneity of our cross-country sample might induce non-linear relations. Thus, in order to mitigate this problem we take the log of all the variables in the model following Biddle and Hilary (2006). In order to mitigate the influence of outliers we winsorize all variables at the 1% and 99% levels.

<INSERT TABLE 2 HERE>

Table 3 provides the correlations among the independent variables. The correlation between the current and lagged cash flow variables is quite high, although less than 50% of the variation in one of theses variables is explained by the other. Similarly less than 10% of the variation in MTB is explained by each of the cash flow variables. Thus there is no serious multicollinearity problem with the data.

<INSERT TABLE 3 HERE>

2.5. Empirical Results

The regression results of the first and second hypotheses are presented in Tables 4 and 5, respectively, while the regression results for the third and fourth hypotheses are presented in Tables 6 and 7, respectively. Recall that in testing our hypotheses we focus on the coefficients on the one-year lagged cash flow term.

2.5.1. Hypothesis One

Table 4 reports regression results for outsider and insider economies pre-IFRS. We report p-values in brackets. These p-values are computed from two-tailed t-test and use standard errors corrected for heteroskedasticity.

<center><INSERT TABLE 4 HERE></center>

The regression results in Table 4 show that the coefficient on the one-year lagged cash flow, CF_{it-1}/TA_{it-1}, of 0.043 is statistically insignificant, suggesting that the investment of firms in outsider economies is not sensitive to lagged cash flow before the mandatory adoption of IFRS. However, the coefficient of 0.204 on the interaction term, $(CF_{it-1}/TA_{it-1})*INSIDERS$, is statistically significant at the 5% level, suggesting that before the adoption of IFRS the investment of firms in insider economies is more sensitive to lagged cash flow than those in outsider economies.

As an additional test we assess the significance level of the overall sensitivity of investments by firms operating in insider economies to lagged cash flow, i.e. the **sum** of the coefficients on CF_{it-1}/TA_{it-1} and $(CF_{it-1}/TA_{it-1})*INSIDERS$. We find that the sum is statistically significant at the 1% level, suggesting that the investment of firms in insider economies is highly sensitive to lagged cash flow before the mandatory adoption of IFRS. Overall, the results in Table 4 support our first hypothesis that, before the mandatory adoption of IFRS, firms in insider economies have a higher investment-cash flow sensitivity than firms in outsider economies.

2.5.2. Hypothesis Two

The regression results in Table 5 report the investment-cash flow sensitivity for outsider and insider economies post-IFRS.

<center><INSERT TABLE 5 HERE></center>

For firms in outsider economies the results show that investment is still not sensitive to lagged cash flow: the coefficient of 0.069 on the one-year lagged cash flow term, CF_{it-1}/TA_{it-1}, is still insignificant. This suggests that IFRS adoption has little impact on the cash flow sensitivity of firms operating in outsider economies. In addition, Table 5 shows that the coefficient on the interaction term, $(CF_{it-1}/TA_{it-1})*INSIDERS$, of 0.124 is no longer significant. This suggests that in post-IFRS periods insider firms no longer have higher investment-cash flow sensitivities.

Once again we assess the significance level of the overall sensitivity of investments by firms operating in insider economies to lagged cash flow. We find that the sum of the coefficients on CF_{it-1}/TA_{it-1} and $(CF_{it-1}/TA_{it-1})*INSIDERS$ is marginally significant at the 10% level, suggesting that post-IFRS the investment of firms operating in insider economies is not highly sensitive to lagged cash flow. Overall, the results in Table 5 support our second hypothesis that IFRS adoption reduces the investment-cash flow sensitivity more for firms in insider economies than for firms in outsider economies.

2.5.3. Hypothesis Three

We also examine the differential investment-cash flow sensitivity of small and large firms. Table 6 reports the pre-IFRS results.

<center><INSERT TABLE 6 HERE></center>

We make the following observations in Table 6. First, the investment of firms in outsider economies continues not to be sensitive to lagged cash flow before the mandatory adoption of IFRS: the coefficient of 0.041 on the one-year lagged cash flow term, CF_{it-1}/TA_{it-1}, is statistically insignificant. Second, the sensitivity of investment of large insider firms to lagged cash flow is not statistically different from that of outsider firms: the coefficient of 0.165 on $(CF_{it-1}/TA_{it-1})*LARGEINSIDERS$ is statistically insignificant. Third, the investment of small firms in insider economies is more sensitive to lagged cash flow than the investment of outsider firms:

the coefficient of 0.236 on $(CF_{it-1}/TA_{it-1})*SMALLINSIDERS$ is statistically significant at the 5% level.

As before we compute the significance level of the overall sensitivity of investments by small firms in insider economies to lagged cash flow, i.e. the **sum** of the coefficients on CF_{it-1}/TA_{it-1} and $(CF_{it-1}/TA_{it-1})*SMALLINSIDERS$. We find that the sum of 0.041 and 0.236 is statistically significant at the 5% level. This suggests that the investment of small firms in insider economies is sensitive to lagged cash flow before the mandatory adoption of IFRS. Taken together, the results in Table 6 support our third hypothesis that small firms in insider economies have the highest investment-cash flow sensitivity pre-IFRS.

2.5.4. Hypothesis Four

This section examines the differential impact of IFRS adoption on small versus large insider firms. The associated results are reported in Table 7.

<INSERT TABLE 7 HERE>

We make the following observations with respect to Table 7. First, similar to the pre-IFRS period the investment of firms in outsider economies is not sensitive to lagged cash flow: the coefficient of 0.069 on the one-year lagged cash flow term, CF_{it-1}/TA_{it-1}, is statistically insignificant. Second, similar to the pre-IFRS period the sensitivity of large insider firms' investment to lagged cash flow is still not statistically different from that of outsider firms: the coefficient of 0.169 on $(CF_{it-1}/TA_{it-1})*LARGEINSIDERS$ is statistically insignificant. Third, the sensitivity of small insider firms' investment to lagged cash flow is no longer significantly different from that of outsider firms since the coefficient of 0.043 on $(CF_{it-1}/TA_{it-1})*SMALLINSIDERS$ is statistically insignificant.

In addition, in Table 7 we fail to reject the null hypothesis that the sum of the coefficients of 0.069 on CF_{it-1}/TA_{it-1} and 0.043 on $(CF_{it-1}/TA_{it-1})*SMALLINSIDERS$ is equal to zero. This

suggests that post-IFRS the investment of small firms in insider economies is no longer sensitive to lagged cash flow. Thus, the results in Table 7 support our fourth hypothesis that IFRS adoption reduces the investment-cash flow sensitivity of small firms in insider economies more than for other groups in the sample.

2.5.5. Robustness Tests

We perform some robustness and sensitivity tests as follows. First, we considered the use of the governance indicators constructed by Kaufmann et al. (2008) to define an alternative classification of economies, namely high versus poor governance economies. Kaufmann et al (2008) provide an assessment of each country's governance level based upon six dimensions of governance (voice & accountability, political stability & absence of violence/terrorism, government effectiveness, regulatory quality, rule of law, and control of corruption). We identify the Kaufmann et al.'s governance indicators for the 16 European Countries that have an insider or outsider classification. We rank each of their governance indicators at the beginning of our sample period. Then, we compute the average of these ranks to construct an average governance level for each country. We estimate a logistic regression, with a dependent variable that is a binary indicator that takes the value 1 if the country is a pure insider economy and zero otherwise, and its independent variable is the computed average governance level based upon the Kaufmann et al.'s indicators. The result of this regression (not tabulated) shows that if a country has a higher average governance level, then it is less likely to be a pure insider economy and the coefficient on the average governance level was negative and significant at the 1% level. We also examine whether the model correctly predicts whether the country is an insider or outsider economy. We find that the percentage of the correctly predicted countries' classification is 93.75%. In addition, the results (not tabulated) show that the two outsider economies in our sample, Norway and the UK, have much higher average governance ranks relative to the four pure insider economies in our sample, Spain, Greece, Portugal, and Italy. Thus, classifying our sample into high versus poor governance economies using the Kaufmann et al.'s indicators will be similar to classifying it using the outsider versus pure insider economies classification of Leuz et al (2003). Therefore, we continue using the Leuz et al.'s classification of economies in conducting our tests.

Second, we perform some robustness tests to examine whether the reduction in investment-cash flow sensitivity was due not to IFRS adoption, but to the availability of more external capital. The motivation for this test is as follows: For a sample of manufacturing firms, Allayannis and Mozumdar (2004) find that the investment-cash flow sensitivities are lower for all firms in 1987-1996, compared to 1977-1986, and the decline in sensitivities is the strongest for the most financially constrained firms. They argue that this might be due to either an improved informational efficiency of capital markets or an increased supply of funds to capital markets resulting in easier access to external capital.

Thus, in order to enhance the confidence in our results, we perform additional tests that control for the availability of external capital. Specifically, we re-estimate our models after including an additional variable that captures the availability of external capital, which is the ratio of the stock market capitalization held by minorities to gross national product. This variable is introduced by La Porta et al. (1997) as the main determinant of firms' ability to raise external finance. The stock market capitalization held by minorities is the product of the aggregate stock market capitalization and the average percentage of common shares not owned by the top three shareholders in the ten largest non-financial, privately-owned domestic firms in a given country. We collect the data required for computing this variable from Thomson ONE Banker and the Global Market Information Database (Euromonitor). We compute this variable per year for each country in the sample.

We include the ratio of the stock market capitalization held by minorities to gross national product as an additional regressor in our regression models, and we include this ratio both on its own and interacted with CF_{it}/TA_{it-1} and $(CF_{it}/TA_{it-1})*INSIDERS$. We also interact this ratio with $(CF_{it}/TA_{it-1})*LARGEINSIDERS$ and $(CF_{it}/TA_{it-1})*SMALLINSIDERS$ when partitioning our insider economy sample in Tables 6 and 7.

By including the ratio of the stock market capitalization held by minorities to GNP in our model we assume that that there is no change in the supply of funds to capital markets post-IFRS that is a consequence of the IFRS adoption. We note that including this variable in our

model might underestimate the effect of IFRS adoption given that IFRS adoption might induce some investors, who withhold their capital pre-IFRS, to provide their capital to the market post-IFRS, since they perceive IFRS as a protection device for them. Regardless of this logical possibility, the results (not tabulated) of these tests still support our predictions and our inferences remain unchanged.

The third set of robustness tests examines whether our results are sensitive to the elimination of one of the two countries from the sample of outsider economies. First, we re-estimate our models after dropping Norway and the results (not tabulated) are similar to those reported in the paper. Dropping Norway, for example, shows that in the pre-IFRS period the small insider firms' sensitivity to lagged cash flow is 0.29, and this is statistically different from zero, with a *p*-value of 0.011. At the same time the sensitivity of investment to lagged cash flow is much lower at 0.102 in the post-IFRS period, and with a *p*-value of 0.294 it is no longer statistically significant. Similarly, dropping UK observations shows that the sensitivity of the investment of small insider firms to lagged cash flow is 0.26 with a *p*-value of 0.028 in the pre-IFRS period and 0.13 with a *p*-value of 0.1604 in the post-IFRS period.

The fourth set of robustness tests examines whether the results are sensitive to dropping any one country from the sample of insider economies. The results of these tests (not tabulated) are similar to those reported in the paper. Dropping Spain, for example, shows that pre-IFRS the investment of small insider firms is highly sensitive to lagged cash flow as the sum of the coefficients on CF_{it-1}/TA_{it-1} and $(CF_{it-1}/TA_{it-1})*SMALLINSIDERS$ is 0.294 with a *p*-value of 0.015, while post-IFRS the sensitivity of their investment to lagged cash flow is lower and no longer statistically significant as the sum of the coefficients on CF_{it-1}/TA_{it-1} and $(CF_{it-1}/TA_{it-1})*SMALLINSIDERS$ is 0.118 with a *p*-value of 0.227.

The final set of robustness tests examines whether the results are sensitive to the exclusion of individual years. For example, the year 2001 was bad in terms of capital market performance, so its inclusion in the pre-IFRS period might unduly influence the results.[20] Thus, we re-estimate our model without this year. The results of this test (not tabulated) continue to show

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[20] We thank one of the referees for pointing this out to us.

that small insider firms have the highest sensitivity to lagged cash flow before the mandatory adoption of IFRS. We also check whether any of the other pre-IFRS years has an undue influence on our findings. The overall picture that emerges from these additional tests is generally quite consistent with our above findings and thus our inferences remain generally unchanged.

2.6. Conclusion

This study examines the economic consequences of the mandatory adoption of IFRS in the EU. Specifically, it examines whether the mandatory adoption of IFRS enhances the investment efficiency more for insider firms than for outsider firms and more for small firms than for large firms.

In order to examine the differential effect of IFRS adoption across economy type we follow Leuz et al. (2003) and classify economies according to their institutional features into insider and outsider economies. We then use investment-cash flow sensitivities as a proxy for investment efficiency, i.e. lower investment-cash flow sensitivity means higher investment efficiency.

Following prior studies, we estimate our investment-cash flow sensitivity model using firm fixed effects. Pre-IFRS adoption, we find that (1) the investment of firms operating in insider economies is highly sensitive to lagged cash flow, whereas the investment of those operating in outsider economies is insensitive to lagged cash flow. Post-IFRS adoption, we find that the investment of insider firms is no longer sensitive to lagged cash flow. These results support our prediction that IFRS adoption reduces investment-cash flow sensitivity more for insider economies.

Furthermore, when we partition the insider economies sample by firm size, the results show that (1) the small firms operating in insider economies have the highest sensitivity of investment to lagged cash flow pre-IFRS adoption; and (2) their investment is no longer sensitive to lagged cash flow post-IFRS adoption. These results support our prediction that

IFRS adoption reduces investment-cash flow sensitivity most for small firms operating in insider economies.

It may seem surprising that the investment efficiency benefits of IFRS show up so quickly in the data. One might have expected the market to take several years to adjust to the new accounting and disclosure standards. Whilst we are inclined to agree that the full consequences of IFRS adoption may take several years to emerge, we note that the prolonged prior notice given to IFRS adoption, along with the level of pre-commitment it entailed may explain why observable benefits may have followed so soon after the actual implementation. In particular an important feature of the adoption of IFRS is that it pre-committed firms to improving their accounting and disclosure quality through IFRS several years prior to the actual implementation of the standards. Specifically, even though EU firms were not required to implement IFRS until 2005, the commitment to implement by 2005 was actually confirmed by the EU in late 2001. Thus by 2002 all firms and investors would have known that all listed EU firms were committed to IFRS from 2005 onwards.

In order to reduce the doubt that the observed reduction in sensitivities is not due to IFRS adoption but due to the availability of external capital post-IFRS, we perform robustness tests that controls for the availability of external capital. Conducting these robustness tests (and some other sensitivity tests) provides results similar to those reported in the paper.

A number of caveats apply to our study. First, the reduction in sensitivity might not be attributed solely to IFRS adoption as there were simultaneous institutional and enforcement improvements in the EU suggesting that the reductions observed might be the outcome of IFRS or these improvements or the joint effects of both sets of changes working together. Second, our proxy for investment opportunities, i.e. the market-to-book ratio, might be affected by differences in accounting standards among insider and outsider economies that existed before the IFRS adoption. Third, the short time periods that we study and the small sample sizes in some of our insider economies limit our ability to draw stronger conclusions.

The documented reduction in sensitivity might also not be the direct outcome of IFRS but rather an indirect outcome. For example, IFRS adoption might have changed the proportion of firms being audited by the Big 4 auditors. Observing big auditing firms in the market might have subsequently affected the trust of both current and potential investors in the stock market. Any increase in investors' trust in the stock market is likely to imply higher flow of external capital to firms, and, accordingly, lower investment-cash flow sensitivity. Examining this line of argument empirically is an important topic for future research.

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Table 1: Distribution of Sample Observations

This table provides distribution of sample observations for the pre-IFRS (2000-2004) and post-IFRS (2005-2007) periods. The table shows the distribution by economy, country, and industry groups (based on the industry classification of Campbell (1996)). The sample includes only domestically listed firms.

	Pre-IFRS (2000-2004)	*Post-IFRS* (2005-2007)	Total
Panel A: *Economies*			
Outsider Economies	2351	1289	3640
Insider Economies	1036	979	2015
Total	3387	2268	5655
Panel B: *Countries*			
UK	2115	1057	3172
NORWAY	236	232	468
SPAIN	293	184	477
GREECE	236	445	681
PORTUGAL	115	61	176
ITALY	392	289	681
Total	3387	2268	5655
Panel C: *Industries*			
Petroleum	83	71	154
Consumer Durables	514	329	843
Construction	327	205	532
Real Estate	36	24	60
Basic	296	216	512
Food/Tobacco	178	139	317
Capital Goods	292	185	477
Transportation	209	137	346
Utilities	183	155	338
Textiles/Trade	313	187	500
Services	389	293	682
Leisure	313	179	492
Others	254	148	402
Total	3387	2268	5655

Table 2: Descriptive Statistics

This table provides summary statistics for the full sample in Panel A, the Outsider Economies sample in Panel B, and the Insider Economies sample in Panel C. I_{it} is the capital expenditures for firm i in year t. TA_{it-1} is the total assets for firm i in year t-1. CF_{it} represents cash flow to firm i in year t as measured by the sum of income before extraordinary items and depreciation and amortization expense. CF_{it-1} is the cash flow for firm i in year t-1. MTB_{it} is the log of the market to book ratio of assets for firm i at the beginning of year t as a proxy for its Tobin's Q, and equals to [(total assets – book value of equity – deferred taxes + market value of equity) / total assets].

	$\dfrac{I_{it}}{TA_{it-1}}$					$\dfrac{CF_{it}}{TA_{it-1}}$					$\dfrac{CF_{it-1}}{TA_{it-1}}$					MTB_{it}				
	Mean	P25	Median	P75	Std. Dev.	Mean	P25	Median	P75	Std. Dev.	Mean	P25	Median	P75	Std. Dev.	Mean	P25	Median	P75	Std. Dev.
Panel A: Full Sample																				
Pre-IFRS: (2000-2004) N= 3387	.069	.023	.044	.081	.087	.116	.063	.100	.148	.076	.103	.059	.092	.133	.062	2.84	.324	3.72	4.58	2.12
Post-IFRS: (2005-2007) N= 2268	.068	.020	.043	.079	.094	.117	.060	.097	.148	.087	.099	.054	.083	.127	.064	2.34	.239	1.07	4.54	2.21
Panel B: Outsider Economies																				
Pre-IFRS: (2000-2004) N=2351	.071	.025	.045	.083	.091	.126	.072	.110	.162	.079	.111	.065	.101	.143	.065	3.99	3.62	4.28	4.83	1.46
	.074	.020	.044	.084	.104	.139	.079	.119	.172	.089	.115	.067	.101	.147	.067	3.89	3.68	4.41	4.96	1.71

Post-IFRS: (2005-2007) N=1289																				

Panel C:
Insider Economies

Pre-IFRS: (2000-2004) N= 1036	.064	.020	.043	.077	.079	.093	.054	.078	.116	.063	.085	.051	.073	.107	.051	.246	.020	.162	.438	.458
Post-IFRS: (2005-2007) N=979	.06	.020	.040	.075	.078	.089	.045	.073	.109	.074	.078	.045	.066	.095	.053	.297	.014	.232	.462	.457

Table 3: Correlation among Independent Variables

This table provides the correlation among the independent variables for the whole sample period (2000-2007). CF_{it} represents cash flow to firm i in year t as measured by the sum of income before extraordinary items and depreciation and amortization expense. CF_{it-1} is the cash flow for firm i in year t-1. TA_{it-1} is the net property, plant, and equipment for firm i in year t-1. MTB_{it} is the log of the market to book ratio of assets for firm i at the beginning pf year t as a proxy for its Tobin's Q, and equals to [(total assets – book value of equity – deferred taxes + market value of equity) / total assets]. The p-values are reported in brackets.

	$\dfrac{CF_{it}}{TA_{it-1}}$	MTB_{it}
MTB_{it}	0.32 [0.000]	
$\dfrac{CF_{it-1}}{TA_{it-1}}$	0.66 [0.000]	0.31 [0.000]

Table 4: Regression Results for the First Hypothesis (Pre-IFRS: 2000-2004)

This table reports the results of the following firm-fixed effect model:

$$\frac{I_{it}}{TA_{it-1}} = \beta^i_o + \beta_1 \frac{CF_{it}}{TA_{it-1}} + \beta_2 \frac{CF_{it}}{TA_{it-1}} * INSIDERS + \beta_3 \frac{CF_{it-1}}{TA_{it-1}} + \beta_4 \frac{CF_{it-1}}{TA_{it-1}} * INSIDERS +$$

$$\beta_5 MTB_{it} + \beta_6 MTB_{it} * INSIDERS + \varepsilon_{it}$$

I_{it} is the capital expenditures for firm i in year t. TA_{it-1} is the total assets for firm i in year t-1. CF_{it} represents cash flow to firm i in year t as measured by the sum of income before extraordinary items and depreciation and amortization expense. CF_{it-1} is the cash flow for firm i in year t-1. MTB_{it} is the market to book ratio of assets for firm i at the beginning of year t as a proxy for its Tobin's Q, and equals to [(total assets – book value of equity – deferred taxes + market value of equity) / total assets]. The above regression is estimated after taking the log of all the variables. $INSIDERS$ is a dummy variable that takes the value 1 if the observation belongs to an insider economy and zero otherwise. The model includes a full set of $YEAR$ dummies. The p-values (computed using two-tailed t-test and using standard errors corrected for heteroskedasticity) are reported in brackets.

$\dfrac{CF_{it}}{TA_{it-1}}$		0.127 [0.000]
$\dfrac{CF_{it}}{TA_{it-1}} * INSIDERS$		0.160 [0.050]
$\dfrac{CF_{it-1}}{TA_{it-1}}$	**(1)**	**0.043** **[0.219]**
$\dfrac{CF_{it-1}}{TA_{it-1}} * INSIDERS$	**(2)**	**0.204** **[0.017]**
Test of (1) + (2)=0 [p-value 0.001]		
MTB_{it}		0.292 [0.000]
$MTB_{it} * INSIDERS$		0.258 [0.066]
Year Dummies Included		Yes
R^2		0.125
N		3387

Table 5: Regression Results for the Second Hypothesis (Post-IFRS: 2005-2007)

This table reports the results of the following firm-fixed effect model:

$$\frac{I_{it}}{TA_{it-1}} = \beta^i{}_o + \beta_1 \frac{CF_{it}}{TA_{it-1}} + \beta_2 \frac{CF_{it}}{TA_{it-1}} * INSIDERS + \beta_3 \frac{CF_{it-1}}{TA_{it-1}} + \beta_4 \frac{CF_{it-1}}{TA_{it-1}} * INSIDERS +$$

$$\beta_5 MTB_{it} + \beta_6 MTB_{it} * INSIDERS + \varepsilon_{it}$$

I_{it} is the capital expenditures for firm i in year t. TA_{it-1} is the total assets for firm i in year t-1. CF_{it} represents cash flow to firm i in year t as measured by the sum of income before extraordinary items and depreciation and amortization expense. CF_{it-1} is the cash flow for firm i in year t-1. MTB_{it} is the market to book ratio of assets for firm i at the beginning of year t as a proxy for its Tobin's Q, and equals to [(total assets – book value of equity – deferred taxes + market value of equity) / total assets]. The above regression is estimated after taking the log of all the variables. *INSIDERS* is a dummy variable that takes the value 1 if the observation belongs to an insider economy and zero otherwise. The model includes a full set of *YEAR* dummies. The *p*-values (computed using two-tailed t-test and using standard errors corrected for heteroskedasticity) are reported in brackets.

$\dfrac{CF_{it}}{TA_{it-1}}$		0.222 [0.003]
$\dfrac{CF_{it}}{TA_{it-1}} * INSIDERS$		0.072 [0.575]
$\dfrac{CF_{it-1}}{TA_{it-1}}$ **(1)**		**0.069 [0.154]**
$\dfrac{CF_{it-1}}{TA_{it-1}} * INSIDERS$ **(2)**		**0.124 [0.329]**
Test of (1) + (2)=0 [p-value 0.10]		
MTB_{it}		0.380 [0.000]
$MTB_{it} * INSIDERS$		0.063 [0.796]
Year Dummies Included		Yes
R^2		0.084
N		2268

Table 6: Regression Results for the Third Hypothesis (Pre-IFRS: 2000-2004)

$\dfrac{CF_{it}}{TA_{it-1}}$		0.127 [0.000]
$\dfrac{CF_{it}}{TA_{it-1}} * LARGEINSIDERS$		0.251 [0.029]
$\dfrac{CF_{it}}{TA_{it-1}} * SMALLINSIDERS$		0.105 [0.315]
$\dfrac{CF_{it-1}}{TA_{it-1}}$	(1)	**0.041** **[0.236]**
$\dfrac{CF_{it-1}}{TA_{it-1}} * LARGEINSIDERS$		**0.165** **[0.115]**
$\dfrac{CF_{it-1}}{TA_{it-1}} * SMALLINSIDERS$	(2)	**0.236** **[0.045]**
Test of (1) + (2)=0 [p-value 0.014]		
MTB_{it}		0.294 [0.000]
$MTB_{it} * LARGEINSIDERS$		0.349 [0.035]
$MTB_{it} * SMALLINSIDERS$		0.148 [0.389]
Year Dummies Included		Yes
R^2		0.127
N		3376

This table reports the results of the following firm-fixed effect model:

$$\frac{I_{it}}{TA_{it-1}} = \beta^i{}_o + \beta_1 \frac{CF_{it}}{TA_{it-1}} + \beta_2 \frac{CF_{it}}{TA_{it-1}} * LARGEINSID\ ERS + \beta_3 \frac{CF_{it}}{TA_{it-1}} * SMALLINSID\ ERS + \beta_4 \frac{CF_{it-1}}{TA_{it-1}} +$$

$$\beta_5 \frac{CF_{it-1}}{TA_{it-1}} * LARGEINSID\ ERS + \beta_6 \frac{CF_{it-1}}{TA_{it-1}} * SMALLINSID\ ERS + \beta_7 MTB_{it} + \beta_8 MTB_{it} * LARGEINSID\ ERS$$

$$+ \beta_9\ MTB_{it} * SMALLINSID\ ERS + \varepsilon_{it}$$

I_{it} is the capital expenditures for firm i in year t. TA_{it-1} is the total assets for firm i in year t-1. CF_{it} represents cash flow to firm i in year t as measured by the sum of income before extraordinary items and depreciation and amortization expense. CF_{it-1} is the cash flow for firm i in year t-1. MTB_{it} is the market to book ratio of assets for firm i at the beginning of year t as a proxy for its Tobin's Q, and equals to [(total assets – book value of equity – deferred taxes + market value of equity) / total assets]. The above regression is estimated after taking the log of all the variables. *LARGEINSIDERS* is a dummy variable that takes the value 1 if the observation belongs to an insider country and is greater than (or equal to) the median value of the market capitalization and zero otherwise. *SMALLINSIDERS* is a dummy variable that takes the value 1 if the observation belongs to an insider country and is less than the median value of the market capitalization and zero otherwise. The model includes a full set of *YEAR* dummies. The *p*-values (computed using two-tailed t-test and using standard errors corrected for heteroskedasticity) are reported in brackets.

Table 7: Regression Results for the Fourth Hypothesis (Post-IFRS: 2005-2007)

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$\dfrac{CF_{it}}{TA_{it-1}}$		0.221 [0.004]
$\dfrac{CF_{it}}{TA_{it-1}} * LARGEINSIDERS$		0.217 [0.206]
$\dfrac{CF_{it}}{TA_{it-1}} * SMALLINSIDERS$		-0.064 [0.630]
$\dfrac{CF_{it-1}}{TA_{it-1}}$ **(1)**		**0.069 [0.156]**
$\dfrac{CF_{it-1}}{TA_{it-1}} * LARGEINSIDERS$		**0.169 [0.409]**
$\dfrac{CF_{it-1}}{TA_{it-1}} * SMALLINSIDERS$ **(2)**		**0.043 [0.691]**
Test of (1) + (2)=0 [p-value 0.244]		
MTB_{it}		0.380 [0.000]
$MTB_{it} * LARGEINSIDERS$		0.134 [0.625]
$MTB_{it} * SMALLINSIDERS$		-0.214 [0.552]
R^2		0.094
N		2261

This table reports the results of the following firm-fixed effect model:

$$\frac{I_{it}}{TA_{it-1}} = \beta^i{}_o + \beta_1 \frac{CF_{it}}{TA_{it-1}} + \beta_2 \frac{CF_{it}}{TA_{it-1}} * LARGEINSID\ ERS + \beta_3 \frac{CF_{it}}{TA_{it-1}} * SMALLINSID\ ERS + \beta_4 \frac{CF_{it-1}}{TA_{it-1}} +$$

$$\beta_5 \frac{CF_{it-1}}{TA_{it-1}} * LARGEINSID\ ERS + \beta_6 \frac{CF_{it-1}}{TA_{it-1}} * SMALLINSID\ ERS + \beta_7 MTB_{it} + \beta_8 MTB_{it} * LARGEINSID\ ERS$$

$$+ \beta_9\ MTB_{it} * SMALLINSID\ ERS + \varepsilon_{it}$$

I_{it} is the capital expenditures for firm i in year t. TA_{it-1} is the total assets for firm i in year t-1. CF_{it} represents cash flow to firm i in year t as measured by the sum of income before extraordinary items and depreciation and amortization expense. CF_{it-1} is the cash flow for firm i in year t-1. MTB_{it} is the market to book ratio of assets for firm i at the beginning of year t as a proxy for its Tobin's Q, and equals to [(total assets – book value of equity – deferred taxes + market value of equity) / total assets]. The above regression is estimated after taking the log of all the variables. *LARGEINSIDERS* is a dummy variable that takes the value 1 if the observation belongs to an insider country and is greater than (or equal to) the median value of the market capitalization and zero otherwise. *SMALLINSIDERS* is a dummy variable that takes the value 1 if the observation belongs to an insider country and is less than the median value of the market capitalization and zero otherwise. The model includes a full set of *YEAR* dummies. The *p*-values (computed using two-tailed t-test and using standard errors corrected for heteroskedasticity) are reported in brackets

Chapter 3

Do Cross-Country Differences in Accounting Conservatism Explain Variations in the Degree of Investor Diversification?[*]

3.1. Introduction

In view of the mounting evidence on the pivotal role of a country's institutions for the orderly functioning of securities markets, it is not surprising that several recent studies document that country-level characteristics explain a significant proportion of the variation in the behavior of market participants.[21]

Somewhat more surprising is that cross country differences in accounting systems, while a major part of the infrastructure needed for well functioning security markets (Ball 2001; Black 2001), have been largely overlooked as an explanation for the portfolio choices of investors. Our investigation highlights the role of accounting systems as part of the institutions that shape security markets at the country level (Ball 2001; Black 2001, and Leuz 2001). This level of analysis is motivated by the fact that investors diversify internationally primarily to mitigate country-specific risks holding expected return constant.

Under-diversification is a possible equilibrium outcome when investors are faced with severe governance and informational problems. Such problems expose investors to the risk of being

[21] For example, Ball, Kothari, and Robin (2000) suggest that country-level institutions shape firm-reporting choices. Doidge, Karolyi, and Stulz (2007) document that country-level characteristics explain most of the variations in firm-level governance scores.

expropriated or to unfair trades with better-informed counterparties. The accounting system of a country forms part of the institutional responses that develop to reduce these problems (Black 2001). Strong institutions allow investors to take advantage of the risk sharing potential offered by a foreign market without exposure to undue threat of being cheated out of their money (Black 2001; Bushman and Smith 2001; 2003).

Although financial reporting characteristics such as extensive disclosures, a high quality audit profession, and robust standards all shape the effectiveness of a country's accounting system in supporting security markets, prior literature has identified the verification standards used for recognizing news in earnings as a central feature of an accounting system with respect to its suitability for addressing information and governance problems (Ball 2001). In particular, the timeliness of economic loss recognition relative to economic gain recognition (i.e., the conditional conservatism of the accounting system), is argued to be a measure both of the constraints put on managers not to transfer wealth from outside investors to themselves and of information differences among investors (Ball 2001; Watts 2003; LaFond and Watts 2008).

We document that variations in conditional accounting conservatism across countries explain the diversification choices of foreign investors. The precise reasons for this finding are not resolved in this paper. This could be either because conditional conservatism *per se* is attractive to international investors, or because the unmodelled factors that attract foreign investors to a country also cause these countries to adopt conditionally conservative accounting practices. Either way, however, our results indicate that conditional conservatism seems to be one of the conditions that make investors more willing to hold non-block shareholdings in foreign countries.

We obtain data on the average mutual fund equity allocations of a sample of 26 countries across 48 countries between 1999 and 2000. We expect that these average mutual fund allocations reflect both the desire of investors to diversify country-risks and to avoid governance and information problems.[22] Nevertheless, the same countries that offer

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[22] It is plausible that mutual fund managers' incentives are not aligned with their investors' interests. For example, mutual funds managers may choose to invest in some countries and not in others because they

diversification opportunities are those that are also likely to suffer severely from exactly these problems (Harvey 1995; Bekaert and Urias 1996; Bekaert and Harvey 1997). Accordingly, international investors will forego the diversification opportunities offered by these markets unless institutions are present that mitigate the expropriation and information risks foreign investors face. Our first test, therefore, addresses whether there is an association between accounting conservatism in foreign markets and investors' decisions to invest in these markets.

Investors do not necessarily withdraw from a market if governance and information problems are excessive. Indeed, one alternative is to use a mode of entry to a market that provides better possibilities for safeguarding against opportunistic behavior. We use the choice between entering a market as *foreign portfolio investor* or as *foreign direct investor* (i.e., blockholder) to explore further the tradeoff investors make between having greater diversification benefits (as portfolio investors) and less exposure to information and governance problems (as blockholders) (see, Kho, Stulz and Warnock 2008). As before, we expect that the accounting system affects this entry choice because it can reduce some of the problems that cause investors to forego the benefits of entering as portfolio investors. We use a sample of foreign security ownership by U.S. residents collected from surveys conducted under the aegis of the U.S. Treasury Department and of U.S. foreign direct investments available from the Department of Commerce to test whether, conditional upon entry, there is an association between the accounting conservatism in foreign markets and the chosen mode of entering a foreign market.

We complete the description of the role of conservative accounting systems by exploring how the degree of domestic ownership concentration varies with both the available domestic diversification opportunities (as measured by the extent to which domestic stocks move together) and the conditional conservatism of home markets. We expect that even if domestic diversification opportunities are high, investors may still choose not to diversify if they reside in countries where there are severe information asymmetry problems. To the extent that the

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personally like the former but not the latter independent of the risk-return considerations. It is hard to argue, however, that unlike their investors, mutual fund managers would prefer to invest more in markets with high information and governance problems.

domestic accounting system can mitigate these problems, however, ownership in these countries should be more dispersed. We use a sample of the ownership concentration in 34 countries constructed by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) to conduct our test.

The evidence in this paper is consistent with the proposed role of (conservative) country-level accounting systems in mitigating governance and information problems. We document that accounting systems of foreign markets matter in the portfolio allocation decisions of mutual funds and we show that the accounting system of the mutual fund home market can reduce or enhance the role of foreign market accounting systems. What's more, we find that the mode of entry into a foreign market (as portfolio or foreign direct investor) is a function of this market's accounting system. Finally, we provide direct evidence that ownership is more dispersed in those countries that have more conservative accounting systems holding constant the domestic diversification opportunities.

Our study is related, in general, to the substantial stream of research examining the impact of information-asymmetry problems on holdings by foreign investors[23], and in particular to the subset of this stream that examines the impact of accounting quality on foreign investment. For example, Bradshaw, Bushee, and Miller (2004) find increased levels of U.S. institutional ownership in non-U.S. firms that use a greater number of accounting methods conforming to U.S. GAAP. Aggarwal, Klapper, and Wysocki (2005) find that U.S. mutual funds invest more in markets that have higher proportion of firms using either US GAAP or IAS. Covrig, Defond, and Hung (2007) find that firms using IAS have higher foreign ownership than those using local standards. Unlike these studies, that link accounting standards to foreign investment, we use country-level accounting conservatism measures. Since these conservatism measures are estimated using observable accounting realizations, they are likely to reflect, as Bushman, Piotroski, and Smith (2011, 14) put it, "…realized accounting practices in a country, not strictly the effect of accounting standards *per se*." In addition, none of these

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[23] For example, Chan, Covrig and Ng (2005); Dahlquist, Pinkowitz, Stulz, and Williamson (2003); Edison and Warnock (2004); Kang and Stulz (1997) and Kho, Stulz, and Warnock (2008); Leuz, Lins, and Warnock (2009).

studies examines the effect of accounting quality on the mode of entering foreign markets. Finally, these studies also do not take diversification opportunities into account.

We now turn to the development of our hypotheses and the empirical setting.

3.2. Prior Literature and Hypothesis Development

While conventional portfolio theory recommends investors to diversify their portfolios, some empirical studies suggest that investors choose to forego diversification opportunities (e.g. French and Poterba 1991). In relation to investment in corporate securities, two main explanations are offered for under-diversification; governance and information problems. First, agency theory predicts that one way to alleviate governance problems is to concentrate ownership. By holding a block of shares, investors can exercise control over the firm to protect their interests against expropriation by managers. This benefit occurs mainly because ownership concentration reduces the costs of monitoring managers.[24] As a consequence, not only are these blockholders less than fully diversified, but because they hold a disproportionate stake in the company, other investors are likely to be under-diversified as well (Dahlquist, Pinkowitz, Stulz, and Williamson 2003; Kho, Stulz, and Warnock 2008).

Second, when informational asymmetry between informed and uninformed equity investors is severe, corporate securities can become highly illiquid. For the uninformed investor the rational response to high levels of information asymmetry is either to avoid investing in such companies altogether, or to buy and hold securities for the long term in order to avoid trading with informed investors. Either way the outcome is reduced liquidity for the securities in question and a reduction in the average level of diversification into such securities.

In the absence of effective institutional factors that mitigate informational disadvantages and/or minimize the risk of expropriation, investors are likely to be under-diversified. On the other hand, if these problems can be reduced via some mechanism, one would expect investors' degree of diversification to be higher. Prior studies have argued that the accounting system can play a role to alleviate both governance and information problems (e.g. Bushman

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[24] See Shleifer and Vishny (1997) for a review of this literature.

and Smith 2001; 2003). The main arguments of these studies focus on one particular accounting property: *conditional conservatism.*

First, Ball (2001) and Watts (2003) argue that conditional conservatism reduces the likelihood that managers (a) pursue negative NPV projects, (b) continue operating loss making investments, and (c) forego positive NPV projects. All of these activities are likely to arise when governance is weak and the incentives of managers and investors are not well aligned. Conditional conservatism provides early warning signals about potential problems to boards of directors, shareholders, security analysts, and other stakeholders, who can in turn investigate these problems in a timely manner and thereby minimize any potential losses due to opportunistic managerial decisions. In sum, conditional conservatism can reduce governance problems.

Second, LaFond and Watts (2008) highlight the informational role of conditional conservatism. Their argument rests on the idea that managers have incentives to use their information advantage over investors to buttress their own position by overstating the financial performance of the firm. Conditional conservatism is a mechanism that restrains managers from using their private information against investors. Indeed, conditional conservatism requires managers to recognize economic losses as they occur. Since managers generally derive no benefits from timely loss recognition and will not do so unless compelled, the (private) information revealed in this way is credible to investors and information asymmetry between equity investors is reduced.[25]

At the same time, conservative accounting systems only allow managers to recognize economic gains in earnings when they become verifiable. While this practice ensures that investors receive only credible information, it also means that the accounting system is a poor source for softer news about hard-to-verify gains. This deficit, in turn, creates a demand for alternative sources of information whether provided by the firm or by outsiders (e.g., analysts or the financial press). These alternative sources yield potentially helpful information to

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[25] Instead of being compelled to provide conservatism, managers, however, could also choose to commit themselves to do so, i.e., they use conditional conservatism as a bonding device (Basu 1997).

investors but need to build credibility and reputation. Here again, conservative accounting information is useful. Accounting earnings function as a yardstick against which to compare information provided by alternative sources (Ball and Shivakumar 2008). Conditionally conservative accounting disciplines these alternative sources not to manipulate or overstate predictions of financial performance by enabling investors to compare these predictions against accounting numbers as they are eventually realized. The more conservative the "hard" information provided by the accounting system is, the higher the demand for other information sources is expected to be. In sum, increased conditional conservatism improves the information environment and mitigates the informational disadvantages of uninformed investors.

Empirical studies provide evidence that support both the governance and informational roles of conditional conservatism. At least two studies document how conditional conservatism addresses governance problems. Bushman, Piotroski, and Smith (2011) find that managers in countries with high conditional conservatism reduce investment spending more in response to a decline in investment opportunities than managers in countries with low conditional conservatism. Overspending on investments is usually interpreted as opportunistic behavior of management with potentially value-reducing consequences for investors. This evidence suggests that conditional conservatism can mitigate these governance problems. LaFond and Roychowdhury (2008) show a negative association between managerial ownership and conditional conservatism. Since prior studies suggest that managerial ownership is an effective way to alleviate governance problems (Shleifer and Vishny 1997), the substitution effect documented by LaFond and Roychowdhury (2008) supports the governance role of conditional conservatism.

Empirical evidence supporting the informational role of conservatism is found in LaFond and Watts (2008) who suggest that equity investors demand conditional conservatism to mitigate information asymmetry. In addition, García Lara, Garcia Osma, and Penalva (2010) document a negative association between conditional conservatism and the cost of equity capital, which is likely to occur through a reduction of information asymmetry among investors (Diamond and Verrecchia 1991; O'Hara 2003).

In summary, theory as well as prior evidence justifies the use of conditional conservatism as a proxy for the extent to which the accounting system of a country is likely to mitigate governance and informational problems. We expect differences in conditional conservatism across countries to explain variations in the degree of investor diversification. In testing this hypothesis, we take into account international as well as domestic diversification. We now turn to a detailed development of this hypothesis.

3.2.1. Conservative Accounting Systems and International Diversification

Local investors are known to have better information than foreign investors, which creates an information asymmetry problem between locals and foreigners[26]. As a result of such informational disadvantages, foreign investors are more likely than locals both to purchase 'lemons', and to incur greater monitoring costs (to mitigate any potential governance problems). Thus, foreign investors face the information and governance problems described earlier. As a response to these problems, foreign investors are more likely to take one of two decisions. They will either (1) not invest in countries where these problems are severe or (2) conditional upon entry choose a type of investment that mitigates the severity of these countries' problems. We next consider each of these decisions.

3.2.1.1. Entering Foreign Markets for Diversification Purposes

Portfolio investors diversify internationally primarily to reduce country-specific risks. The countries where they can effectively do so are likely to be those that are less correlated with the rest of the world (Chan, Covrig and Ng 2005; Karolyi and Stulz 1996). Despite the potential diversification benefits of foreign markets, which are not highly correlated with the rest of the world, investors will only choose to use these opportunities if (1) they can enter these foreign markets (i.e. when there are available shares to be purchased), (2) they feel that their investment is well protected, and (3) they are able to engage in a fair trading with local investors. In short, they will enter foreign markets if the governance and information problems

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[26] See, e.g., Brennan and Cao (1997) and Kang and Stulz (1997).

of these markets are not so severe as to cancel out the potential diversification benefits. Conditional conservatism can reduce the adverse effect of governance and information problems. Therefore, we expect that:

H1: The effect of accounting conservatism on the sensitivity of investor allocations to diversification opportunities is positive.

3.2.1.2. The Choice of Foreign Investment Mode

Foreign investors can enter foreign markets either as *Foreign Portfolio Investors* (FPI) or as *Foreign Direct Investors* (FDI) (Kho, Stulz, and Warnock 2008). While entering as an FPI has the advantage of greater potential diversification, the disadvantage is that FPIs are more exposed to information and governance problems.

Foreign investors can overcome the deficiencies of FPI by alternatively entering as an FDI, i.e. owning a large block of shares for the purpose of participating in or influencing firm management, (Kho, Stulz, and Warnock 2008). By entering as FDI, investors can reduce the likelihood of being expropriated by the managers of a firm. FDI, however, does not provide investors with the same degree of diversification as FPI as they have to hold a substantial stake in the firm in order to have an effective role in decision making. We expect the tradeoff between both entry modes to be decided in favor of FPI in countries in which the accounting system reduces governance and information problems.

Indeed, as conditional conservatism increases, there are fewer benefits to direct monitoring by blockholders and foreign investors are less at risk to be taken advantage of by locals with superior information. Thus, we hypothesize that:

H2: There is a positive (negative) association between the fraction of FPI (FDI) in total foreign investment and conditional conservatism.

3.2.2. Conservative Accounting Systems and Domestic Diversification

It is likely that investors are more diversified within their home markets when there are sufficient diversification opportunities (i.e. when the stocks within home markets do not move together (Morck, Yeung, and Yu 2000). However, even if domestic diversification opportunities are high, investors may still choose not to diversify if they reside in countries where there are severe governance problems. In fact, prior theoretical studies argue that investors tradeoff the costs of diversification (i.e. the benefits from ownership concentration) against the benefits (Admati, Pfleiderer, and Zechner 1994; DeMarzo and Urosevic 2006). Since higher conditional conservatism in home markets implies less severe governance problems and lower benefits from ownership concentration at home; we hypothesize that:

H3: Higher levels of conditional conservatism combined with higher domestic diversification opportunities leads to higher levels of domestic diversification.

3.3. Empirical Setting: Data, Models, and Results

3.3.1. Tests of Hypothesis 1

Our first prediction is that the effect of accounting conservatism on the sensitivity of investor allocations to diversification opportunities is positive.

3.3.1.1. Data
The data set used for examining this hypothesis consists of the average mutual fund equity allocations (in percent) of 26 countries across 48 countries for the period 1999 and 2000. The 26 allocator countries are US, UK, Canada, Germany, Italy, Sweden, France, Switzerland, Austria, Belgium, Denmark, Ireland, Finland, Greece, Luxembourg, Norway, Portugal, Spain, the Netherlands, Japan, Australia, Singapore, Hong Kong, New Zealand, Taiwan, and South Africa. The number of mutual funds in these 26 countries is 20,821 and 24,589 in 1999 and

2000, respectively. We obtain this data set from Chan, Covrig, and Ng (2005), who construct it based on the TFS database.[27]

Although the data set provides data on mutual fund equity allocations of 26 countries across 48 countries, only 25 out of the 26 and 36 out of the 48 countries have non-missing data on all variables included in our model. Thus, the actual data that we use for estimating our regressions is the allocations of 25 countries across 36 countries. So the number of allocations is 900 (25×36). In addition, since we model the choice among foreign markets and following Chan, Covrig and Ng (2005), we exclude observations where the allocator country is the same as the country to which investment is allocated. This leaves us with 875 observations (900-25).

3.3.1.2. Model

In the data set, the allocator countries do not invest in all possible countries. Approximately 20% of the mutual fund allocations are zero. Accordingly, our dependent variable has a nontrivial fraction of zero observations and at the same time covers a wide range of positive values. Thus, our dependent variable is a continuous variable that is truncated at zero. Therefore, we use a Tobit model to estimate our models (Wooldridge 2002).[28]

Our Tobit model is as follows,

$$(w_{ij}/w_j)^* = x^{'}\beta + \varepsilon \qquad \varepsilon \sim N(0, \sigma^2) \qquad (1)$$

$$w_{ij}/w_j = \quad (w_{ij}/w_j)^* \text{ , if } (w_{ij}/w_j)^* \geq 0$$
$$\text{or} \quad 0 \quad \text{ , if } (w_{ij}/w_j)^* < 0$$

w_{ij} is the weight of country j in the portfolio of the mutual funds from country i ($i \neq j$). w_j is the weight of country j in the world float portfolio. The world float portfolio is the world

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[27] See Chan, Covrig, and Ng (2005) for both the full data set and a detailed explanation of how they constructed it.
[28] Leuz, Lins, and Warnock (2009) also use Tobit model as their sample contains approximately 25% of foreign firms with zero U.S. holdings.

market portfolio adjusted to reflect that not all shares are available to be held by portfolio investors. w_j is the fraction of the available shares in country j in the total available shares in the world. We compute w_j using the closely held shares figures constructed by Dahlquist, Pinkowitz, Stulz, and Williamson (2003) for all countries.

Our vector of explanatory variables, x, contains proxies for the quality of the accounting system, proxies for international diversification opportunities, and a set of controls. A description of each of these variables is provided below.

a) Proxies for the Quality of Accounting Systems:

We use two country level proxies for the quality of the accounting system, timely economic loss recognition (*TLR_BP_BKR*) and the incremental timeliness of economic losses (*INCR_BP_BKR*), as reported in Bushman and Piotroski (2006) who follow the methodology in Ball, Kothari, and Robin (2000). Using ten annual cross-sectional estimations of the Basu (1997) model over the period 1992-2001, Bushman and Piotroski compute for each country (1) the average timeliness with which economic gains are recognized in earnings and (2) the average incremental timeliness of economic losses. The sum of these two averages is the average timely economic loss recognition measure. As a robustness test, we also use an alternative measure of timely loss recognition (*TLR_BP_BS*) over the same time period measured by Bushman and Piotroski (2006) based on the accruals-cash flow model of Ball and Shivakumar (2005).[29]

Bushman, Piotroski, and Smith (2011) argue that although these cross-country conservatism proxies are computed using firm-level data, they capture the accounting system differences across countries rather than across firms. Their argument is summarized as follows. The conservatism practice of a firm is determined by three components; firm-specific characteristics, industry-specific characteristics and country-specific characteristics. If the firm- and industry- specific components are not perfectly correlated across firms and industries within the same country, they will cancel out by measuring conservatism using data

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[29] We obtain the *TLR_BP_BS* from the 2005 version of Bushman, Piotroski, and Smith (2011).

on all firms in all industries within the same country. This procedure, thus, yields an estimate of the country component of conditional conservatism only.

    b) Proxies for International Diversification Opportunities:

We use three proxies for international diversification opportunities; *Stock Market Segmentation*, *Emerging Market*, and *Stock Market Correlation*. These three measures capture international diversification opportunities as they reflect the degree of correlation of a certain country with the rest of the world. A detailed explanation of each of these proxies is provided below.

    1. *Stock Market Segmentation*:

When a stock market is highly integrated into the world capital market, the degree of its correlation with the rest of the world is also very high (Bekaert and Harvey 1997). Accordingly, international investors can obtain more diversification benefits in less integrated markets (Arshanapalli and Doukas 1993; Chan, Gup, and Pan 1992, 1997). Despite these diversification benefits, foreign investors underweight segmented markets (e.g. Chan, Covrig and Ng 2005; Edison and Warnock 2002). We argue that this underweighting of segmented markets can be attributed to two causes. First, local information determines the expected return in segmented markets but not in integrated markets (Harvey 1995; Bekaert and Harvey 1997). Thus, the fact that local investors possess an information advantage over foreign investors about their local markets matters in segmented market but not in integrated markets (there are no incentives to invest in these markets). Second, segmented markets impose restrictions on their locals' ability to invest abroad, which leads to increased domestic ownership concentration in these markets. Such domestic ownership concentration can be perceived as a possible mechanism to expropriate foreign investors, who will, in turn, be less likely to enter these markets. In short, segmented markets provide a setting with diversification opportunities; in addition, these markets suffer from information as well as governance problems. Thus, segmented markets provide an *a priori* promising testing ground for our first hypothesis.

We measure stock market segmentation using an index constructed by The Economic Freedom Network. This index captures the restrictions both on access by foreigners to local markets and on access by locals to foreign markets. It provides lower (higher) ratings to countries with more (less) restrictions on foreign capital transactions. We multiply the index score by minus one so that this variable becomes increasing in stock market segmentation. We predict that foreign investors are more likely to enter segmented markets if the governance and information problems of these markets are sufficiently mitigated by the accounting system to be not so severe that they cancel their potential diversification benefits. Therefore, under H1 we expect the coefficient on the interaction of *Stock Market Segmentation* and conditional conservatism to be positive.

2. *Emerging Markets*:

Investors can also obtain diversification benefits from investing in emerging markets since (1) the correlations of their returns with those of developed countries' returns are low, and (2) the cross correlations among emerging markets are small (Harvey 1995; Bekaert and Harvey 1997). Indeed, Bekaert and Urias (1996) document diversification benefits accruing from investing in emerging markets. Despite these benefits, foreign investors under-weight emerging markets (Chan, Covrig and Ng 2005; Edison and Warnock 2002). Two possible explanations might explain this under-weighting of emerging markets. First, local information plays a more important role in predicting emerging market returns than in predicting developed market returns (Harvey 1995). Thus, one would expect foreigners to be worried that local investors in emerging markets possess more information than they do. Second, emerging markets provide poor investor protection and have special ownership structures that are vulnerable to agency problems (La Porta, Lopez-de-Silanes, Shleifer, and Vishny 1998, 1999; Bebchuk, Kraakman, and Triantis 2000; Lins 2003). As a result, investors might perceive a higher likelihood of being expropriated in emerging markets. Taken together, emerging markets, as segmented markets before, offer diversification opportunities but suffer from information as well as governance problems.

We measure *Emerging Markets* as an indicator variable (1 for an emerging market and 0 otherwise). Under H1, we predict that foreign investors are more likely to diversify in

emerging markets if the governance and information problems of these markets are alleviated by the accounting system to be not so severe that they outweigh their potential diversification benefits. Accordingly, we expect the coefficient on the interaction of *Emerging Markets* with conditional conservatism to be positive.

3. *Stock Market Correlations*:

Investors also obtain more international diversification benefits when there are lower stock market correlations (Chan, Covrig and Ng 2005; Karolyi and Stulz 1996). Our measure of stock market correlations is the average correlation coefficient for each country, *j*, with the rest of world. This measure is drawn from Chan, Covrig and Ng (2005) who compute it using country returns in U.S. dollars from Datastream over the period 1995 to 1999. We multiply stock market correlation by minus one so that a higher value of this variable means lower stock market correlation. Since a low correlation between country *j* and the rest of the world provides higher diversification benefits, investors are likely to invest more in country *j*. We predict that this effect is likely to be observed when information and governance problems are less severe. We therefore expect the coefficients on the interaction between *Stock Market Correlations* and measures of conditional conservatism to be positive.

c) Control Variables:

We also include a set of control variables that captures stock market development, economic development (*GDP per Capita*, *Trading Volume*), financial development (*Stock Market Capitalization*, *Turnover*), investor protection and legal system (*Rule of Law*, *Minority Investor Protection*, *Legal Tradition*, *Efficiency of Judicial System*, *Expropriation Risk*), information environment (*CIFAR Disclosure Index*, *Analysts*, *Insider Trading*), investor familiarity with foreign markets (*Language*, *Distance*), and other aspects that affect the flow of international investment (*Tax*, *Lagged Returns*). Details on each of these variables and their sources can be found in the appendix.

We also include a full set of allocator country indicator variables to control for allocator countries-specific characteristics.

Table 1 provides the descriptive statistics for the variables of interest.

3.3.1.3. Results

Our first prediction that the effect of accounting conservatism on the sensitivity of investor allocations to diversification opportunities is positive is supported when the coefficients on interacting international diversification opportunities proxies (*Stock Market Segmentation*, *Emerging Markets*, and *Stock Market Correlations*) with conditional conservatism is positive. Tables 2, 3, and 4 provide the empirical results for each diversification opportunity proxy respectively using two-tailed t-test. The standard errors reported in these tables (and subsequent tables) are corrected for heteroskedasticity and clustered at the allocator country level.

Table 2 presents the full results for both the variables of interest and the set of controls. First, columns 1, 2 and 3 in Table 2 show that the coefficients on the interaction term of *Stock Market Segmentation* with each of the three measures of conditional conservatism (*INCR_BP_BKR*, *TLR_BP_BKR*, and *TLR_BP_BS*) are positive and statistically significant at the 1% level. Second, Columns 1 & 2 in Table 3 shows that the coefficients on the interaction of *Emerging* with *INCR_BP_BKR*, *TLR_BP_BKR*, or *TLR_BP_BS* are positive and statistically significant at the 1%, 1%, and 10% level, respectively. Third, Table 4 shows the results of using *Stock Market Correlation* as the proxy for international diversification opportunities. Recall that *Stock Market Correlation* is multiplied by negative one so that a higher value of this variable means lower stock market correlation. Columns 1-3 in Table 4 show that the coefficients on the interaction of *Stock Market Correlation* with *INCR_BP_BKR*, *TLR_BP_BKR*, or *TLR_BP_BS* is positive and statistically significant at the 10%, 10%, and 5% level, respectively.

Taken together, these results support our first hypothesis that the effect of accounting conservatism on the sensitivity of investor allocations to diversification opportunities is positive.

3.3.1.4. Additional Tests: The Role of the Home Market's Accounting Conservatism

In the previous section we find that conservatism increases the willingness of international investors to diversify into foreign markets that have effective diversification opportunities. In this section, we test whether the willingness of international investors to diversify into foreign markets is a function of the conditional conservatism of these investors' home markets. There are two explanations for why one would expect this to be the case. First, holding the international diversification opportunities of foreign markets constant, one would expect investors who are used to a higher quality accounting systems at home to be more averse to poor accounting systems in foreign markets. In other words, investors are expected to invest more in a foreign country whose accounting system's structure and language are familiar to them. For example, investors who are used to have an accounting system at home that promotes more timely loss recognition are likely to prefer a foreign market accounting system that provides the same.

Second, despite both the availability of foreign markets that offer diversification opportunities and higher quality accounting systems, international investors might still be constrained by the institutional features of their home markets when constructing their portfolios. Investors residing in home markets with severe governance problems might perceive benefits from concentrating their ownership at home in order to alleviate their home market's governance problems. This in turn implies that they will forego diversification opportunities offered by foreign markets. In contrast, those residing in home markets with fewer governance problems do not perceive benefits from concentrating ownership at home and, consequently, they are more likely to diversify internationally. For the second explanation to hold, we assume that the investment decision process of international investors follows the following sequence. First, investors put more weight on distance (i.e. proximity) in allocating their investment as suggested by prior studies.[30] Thus, investors will give more priority to investment at home due to its geographical proximity. Second, investors assess the severity of governance problem at home and, accordingly, decide whether to concentrate their ownership at home. Third, what

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[30] Prior studies suggest that geographical proximity is a main determinant of investment (Coval and Moskowitz 1999; Chan, Covrig and Ng 2005; Grinblatt and Keloharju 2001; Sarkissian and Schill 2004).

remains will be diversified across foreign markets. Given that the amount of funds to be invested is limited, concentrating ownership in home markets implies underweighting foreign markets. Since higher conditional conservatism in home markets implies less severe governance problems and lower benefits from ownership concentration at home, one would expect international investors based in home markets with higher conditional conservatism to invest more abroad.

To sum up, both of the two explanations above lead us to expect that the willingness of an international investor to diversify into foreign markets that have higher international diversification opportunities and higher conditional conservatism depends positively on the degree of conditional conservatism in the home market. To test this prediction we re-estimate model (1) after partitioning the allocator countries by the degree of their conditional conservatism. Specifically, an allocator is based in a high (low) conditional conservatism regime when its home market's conditional conservatism is greater than or equal to (less than) the median of the conditional conservatism computed across the 25 home markets of mutual funds. We expect the interaction between diversification opportunities offered by foreign markets and the quality of their conditional conservatism to be stronger in the sub-sample of international investors coming from high conditional conservatism markets.

Tables 5, 6 and 7 provide the results for this prediction. Columns 1 and 2 (Columns 3 and 4) in Table 5 show that the interaction between *Stock Market Segmentation* and *INCR _BP_BKR* (*TLR _BP_BKR*) is stronger for the sub-sample of investors coming from high conditional conservatism markets, as measured by the *INCR_BP_BKR* (*TLR _BP_BKR*) of the home markets, than the one for the sub-sample of investors coming from low conditional conservatism markets. We formally test this prediction by conducting cross-equations restriction tests which show that the difference between these two interactions is statistically significant as reported in Table 5. Table 6 and 7, using *Emerging Market* and *Stock Market Correlation* as proxies for international diversification opportunities, provide similar results. Thus, these findings support our prediction that the effect of conservatism on the willingness of international investors to diversify into foreign markets offering diversification opportunities depends positively on the degree of conditional conservatism in the home

markets. However, when we conduct the cross-equations restriction tests using the *TLR_BP_BS* [i.e. the timely loss recognition estimated based on the methodology of Ball and Shivakumar (2005)] as the proxy for conditional conservatism, we find that the difference among the two sub-samples is statistically insignificant.

3.3.2. Tests of Hypothesis 2

Our second prediction is that there is a positive (negative) association between the fraction of FPI (FDI) in total foreign investment and conditional conservatism.

3.3.2.1. Data

To test this prediction, we focus on U.S. investors due to data availability. We collect the U.S. FPI data from comprehensive benchmark surveys of foreign securities ownership by U.S. residents that are conducted by the U.S. Treasury Department, the Federal Reserve Bank of New York, and the Board of Governors of the Federal Reserve System.[31] We use the U.S. FPI data for the years 1994 and 1997 since (1) the first survey is conducted in year 1994; (2) there were no surveys in years 1995, 1998, 1999, and 2000; and (3) the structure of the surveys changed for the years after 2000.[32] More importantly, the years 1994 and 1997 are within the period "1992-2001" for which Bushman and Piotroski (2006) report country-level conditional conservatism proxies.

We collect U.S. foreign direct investment (FDI) data from the Department of Commerce-Bureau of Economic Analysis (BEA).[33] U.S. FDI is defined as the "Ownership or control, directly or indirectly, by one U.S. person, or entity, of 10 percent or more of the voting securities of an incorporated foreign business enterprise or an equivalent interest in an unincorporated foreign business enterprise."[34] U.S. FDI investors intend to participate in firm

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[31] See Ahearne, Griever, and Warnock (2004) and Kho, Stulz, and Warnock (2008) for more information about these surveys.
[32] The U.S. FPI data are as of March 31, 1994 and December 31, 1997, as reported in Table 18 of the Report on U.S. Portfolio Holdings of Foreign Securities as of December 31, 2006 (Department of the Treasury-November 2007).
[33] We collect the data from this website: http://www.bea.gov/
[34] This definition is from http://www.bea.gov/glossary/glossary.cfm

management (Kho, Stulz, and Warnock 2008). In order to match the time period for the U.S. FPI data we use the U.S. FDI data for years 1994 and 1997 also.

3.3.2.2. Model

We estimate the following country-level model using standard OLS:

$$\log(FPI/(FPI+FDI))_i = \beta_0 + \beta_1 Conditional\ Conservatism_i + \beta_2 Controls_i + \varepsilon_i \quad (2)$$

Where $FPI/(FPI+FDI)_i$ is the arithmetic mean of the $FPI/(FPI+FDI)$ in 1994 and 1997 for country *i*. This variable captures for country *i* the importance of U.S. investors' FPI relative to their FDI. We take the natural log of $FPI/(FPI+FDI)_i$. *Conditional conservatism* for country *i* is either its timely loss recognition measure or its incremental timeliness of bad news measure as reported in Bushman and Piotroski (2006).

The set of control variables comprises the following. *Liberalization Intensity* is a proxy for the degree of equity market liberalization. *Rule of Law* is a proxy variable for the quality of legal enforcement. *Antidirector Rights* captures the degree of minority investor protection. *Common Law* reflects legal origin and tradition and is measured by an indicator variable that takes the value of unity if the country is a common-law country and zero otherwise. *Liquidity* is a proxy for equity market liquidity as measured by the total value of stocks traded as a fraction of the shares outstanding. We also control for country's *Weight in World Market Portfolio* and disclosure quality as proxied by its *CIFAR* Disclosure scores. In order to control for stock market performance we include a measure of stock returns over the period 1994-1998 (*Returns*). We also control for the fraction of a country available in the U.S. by including a variable that captures the share of a country's stock market that is listed on US exchanges in 1997 or has issued public debt in the United States (*Cross-Listing*). Finally, we include a measure of *Closely Held Shares* as Dahlquist, Pinkowitz, Stulz, and Williamson (2003) and

Kho, Stulz, and Warnock (2008) argue that higher insider ownership reduces the number of shares that can be held by FPI investors.

The descriptive statistics of the variables of interest are reported in Table 1.

3.3.2.3. Results

Table 8 presents the results for our prediction that conditional conservatism is positively (negatively) associated with the fraction of FPI (FDI) in total foreign investment. Column 1 indicates that the coefficient on the first proxy for conditional conservatism, *INCR_BP_BKR*, is positive and significant at the 1% level. Even controlling for (1) *Returns*, the proxy for stock market performance (as shown in Column 2), (2) *Cross-Listing* (as shown in Column 3), and (3) *Closely Held Shares* (as shown in Column 4), the coefficient on *INCR_BP_BKR* is still significant. Columns 6-10 report similar results using *TLR_BP_BKR* as the proxy for conditional conservatism. Column 11 provides the results of the specification using *TLR_BP_BS*.[35]

Overall, the results in Table 8 show that the proxies for conditional conservatism are positive and significant, suggesting that higher conditional conservatism is associated with higher FPI relative to FDI, whereas lower conditional conservatism is associated with higher FDI relative to FPI.

3.3.3. Tests of Hypothesis 3

Our final hypothesis is that ownership is more (less) dispersed in home markets that have higher domestic diversification opportunities and higher (lower) conditional conservatism

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[35] For brevity, we only report the results of the specification using the full set of controls. However, depending on the set of controls included the *p-value* for the coefficient on *TLR_BP_BS* varies from 0.00 to 0.16.

3.3.4.1. Data

To test the final hypothesis we use the country-level data set constructed by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).[36] This data set provides data on ownership concentration across countries and its main determinants.

3.3.4.2. Model

We estimate the following country-level OLS regression:

$$Ownership\ Concentration_i = \beta_0 + \beta_1\ Inverse\ of\ Stock\ Market\ Synchronocity_i$$
$$+ \beta_2\ Accounting\ Conservatism_i * Inverse\ of\ Stock\ Market\ Synchronocity_i \qquad (3)$$
$$+ \beta_3\ Accounting\ Conservatism_i + \beta_4\ Controls_i + \varepsilon_i$$

where, *Ownership concentration* for country i is the average ownership stake of the largest three shareholders in the ten largest privately owned non-financial firms in country i.[37] This measure is constructed by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). Higher ownership concentration in country i implies less dispersed ownership in this country.

The *Inverse of Stock Market Synchronicity* is our proxy for domestic diversification opportunities. The rationale behind choosing this proxy is as follows. Portfolio diversification cannot play its predicted role (i.e., to diversify firm-specific risk) if stock prices move in the same direction. Morck, Yeung, and Yu (2000) show that stocks move together since their return variations are mainly explained by market wide movements rather than firm-specific variations. They refer to this phenomenon as *Stock Market Synchronicity*. We invert synchronicity so that it will be increasing in diversification opportunities.[38]

Lower synchronicity implies higher diversification benefits, and consequently one would expect more dispersed ownership in markets with low synchronicity. Even if synchronicity is

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[36] We obtain the data from http://mba.tuck.dartmouth.edu/pages/faculty/rafael.laporta/publications.html
[37] A firm is considered privately owned if the state is not a known shareholder in it.
[38] Morck, Yeung, and Yu (2000) apply the logistic transformation to the synchronicity measure before estimating their regressions [(log (Synchronocity/1-synchronocity)]. Thus, we apply the same logistic transformation to the synchronicity before inversing it. As a robustness test, we estimate our regressions using the raw synchronicity measure without either transforming or inversing it.

low, investors, however, may still choose not to diversify if they perceive high governance and information problems. Low synchronicity is a necessary condition for diversification benefits, but before such benefits can be obtained investors would need to be assured that they will not face information or governance problems. It is here that conditional conservatism can make a difference. We expect that higher levels of conditional conservatism combined with higher domestic diversification opportunities leads to higher levels of dispersed ownership. Accordingly, we expect the sign on the interaction term between *Inverse of Stock Market Synchronicity* and conditional conservatism to be negative.

We include in our regressions the full set of ownership concentration determinants identified by La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) as control variables. These variables are the *log of GDP per capita*, *log of GDP*, *Gini Coefficient*, *Anti-director rights*, *Creditor Rights*, *Mandatory Dividends*, *Legal Reserve Required*, *One share-one vote*, *Code Law*, *Rule of Law*, *CIFAR*.[39] In additional tests, we also include a proxy for the benefits that can be extracted by being a large shareholder (*Private Benefits of Control*).[40] Full details about these controls are provided in the Appendix.

The descriptive statistics of the variables of interest are provided in Table 1.

3.3.4.3. Results

Column 1 in Table 9 shows that the inverse of stock market synchronicity is negatively associated with ownership concentration (as shown in Column 2). This result suggests that *ceteris paribus*, investors diversify domestically when there are benefits to be gained from diversification in their home markets.

Column 3 (column 4) shows that the coefficient on the interaction between the inverse of synchronicity and *TLR_BP_BKR* (*INCR_BP_BKR*) is negative and significant at the 1% level.

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[39] See La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998) for the rationale behind including each of these variables. The only two items that were not reported in their paper: Gini coefficient and the log of GDP. We obtain GDP for the year 1994 from the World Bank Indicators, while we obtain the Gini Coefficient for the year 1990 from the Euro Monitor Database.
[40] Since this measure reduces the number of observations we include it in additional tests.

Similar results, reported in column 7, obtain when using *TLR_BP_BS* as a proxy for conditional conservatism. These results support our third hypothesis that higher levels of conditional conservatism combined with higher domestic diversification opportunities leads to higher levels of domestic diversification.

3.4. Conclusion

Investors are more willing to diversify their portfolios when the benefits of diversification outweigh its costs. Investors are more likely to diversify if the governance and information problems are not so severe that they cancel the potential diversification benefits. Thus, we examine whether a 'conservative' accounting system, as a mechanism to alleviate governance and information problems, is positively associated with investors' decision to diversify internationally as well as domestically. Such a positive association could indicate either that the degree of accounting conservatism directly affects diversification choices, or that increased conservatism is one of the consequences of the unmodeled factors that influence diversification choice. Either way it would appear that investors, especially foreign investors, exhibit an implicit demand for conditional conservatism.

With regard to international diversification, we report two strong and mutually supportive pieces of evidence. First, international investors are more likely to diversify into foreign countries that have both higher international diversification opportunities and higher accounting conservatism, and this effect is more pronounced when these investors come from home markets with higher accounting conservatism. Second, international investors enter as portfolio investors in foreign markets with higher accounting conservatism, and as blockholders in foreign markets with lower accounting conservatism. Concerning domestic diversification, we find that that higher levels of conditional conservatism combined with higher domestic diversification opportunities leads to higher levels of domestic diversification.

Taken together our results strongly indicate that the degree of domestic and international portfolio diversification and the forms of international diversification are strongly linked to the degree of conditional accounting conservatism.

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Table 1: Descriptive Statistics for the variables of interest used for testing Hypotheses 1, 2, and 3

	Number of Observations	Mean	Median	Standard Deviation	Min.	Max
w_{ij}/w_j	875	1.147	0.385	3.44	0	56.51
INCR _BP_BKR	36	.250	.265	.178	-.145	.618
TLR _BP_BKR	36	.276	.288	.182	-.042	.687
TLR_BP_BS	36	-.314	-.317	.391	-1.214	.5
Stock Market Segmentation	36	-7.11	-8	3.08	-10	0
Emerging Market	36	.417	0	.5	0	1
Stock Market Correlation	36	-.427	-.435	.086	-.55	-.17
$FPI/(FPI+FDI)$	33	.894	.904	.074	.70	1
Ownership Concentration	34	.446	.48	.142	.18	.67
Stock Market Synchronicity	34	.173	.163	.101	.021	.429

w_{ij} is the weight of country j in the portfolio of the mutual funds from country i ($i \neq j$)). w_j is the weight of country j in the world float portfolio. *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball, Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). *Stock Market segmentation* is an index that captures the restrictions on access by foreigners to local markets and on access by locals to foreign markets. *Stock Market Segmentation* is multiplied with -1 so that this variable becomes increasing in stock market segmentation. *Emerging* is an indicator variable (1 for an emerging market and 0 otherwise). *Stock Market Correlation* is the average correlation coefficient for each country's stock market with the rest of the world. *Stock Market Correlation* is multiplied with -1 so that a higher value of this variable means lower stock market correlation. $FPI/(FPI+FDI)$ is the arithmetic mean of the fraction of foreign portfolio investment (FPI) in total foreign investment (FPI + FDI) in 1994 and 1997 for each country. *Ownership Concentration* is the average ownership stake of the largest three shareholders in the ten largest privately owned non-financial firms in each country. *Stock Market Synchronicity* is the average R^2 of firm-level regressions of bi-weekly stock returns on local and U.S. market indexes in each country in year 1995. The synchronicity measure summarized in this table is the raw measure without being transformed or inverted.

Table 2: Tests of Hypothesis 1 using Stock Market Segmentation as a proxy for International Diversification Opportunities

Independent Variables	Dependent Variable: w_{ij}/w_j		
	(1)	(2)	(3)
Test Variables:			
INCR_BP_BKR	11.764***		
	[2.973]		
TLR_BP_BKR		9.569***	
		[2.526]	
TLR_BP_BS			6.720***
			[1.870]
Stock Market Segmentation	-0.310***	-0.2587***	0.1217**
	[0.102]	[0.087]	[.0517]
Stock Market Segmentation*INCR_BP_BKR	**1.459*****		
	[0.408]		
Stock Market Segmentation*TLR_BP_BKR		**1.121*****	
		[0.330]	
Stock Market Segmentation*TLR_BP_BS			**0.685*****
			[0.214]
Controls:			
Log Distance	-1.209***	-1.199***	-1.268***
	[0.442]	[0.441]	[0.450]
Language	0.730**	0.719**	0.776**
	[0.328]	[0.327]	[0.317]
Rule of Law	0.501**	0.517**	0.679**
	[0.242]	[0.247]	[0.271]
Minority Investor Protection	0.207**	0.201**	-0.029
	[0.083]	[0.084]	[0.090]
Common Law	1.076	1.002	1.214
	[0.770]	[0.742]	[0.806]
Efficiency	-0.314**	-0.342**	-0.554***
	[0.157]	[0.167]	[0.210]
Expropriation Risk	0.198	0.19	-0.13
	[0.161]	[0.151]	[0.211]
Insider Trading	-0.359	-0.292	0.063
	[0.259]	[0.238]	[0.162]
CIFAR	0.008	0.007	-0.005
	[0.013]	[0.013]	[0.014]
Analyst	-0.009	-0.011	-0.01
	[0.009]	[0.009]	[0.009]

Log GDP Per Capita	-0.867***	-0.774***	-0.564***
	[0.287]	[0.271]	[0.218]
Trade	0.009	0.011	0.009
	[0.006]	[0.007]	[0.006]
Stock Market Capitalization	-0.099	-0.119	-0.337*
	[0.119]	[0.129]	[0.185]
Log Turnover	-0.035	0.071	0.405**
	[0.117]	[0.123]	[0.177]
Tax	-0.144*	-0.137*	-0.128
	[0.079]	[0.080]	[0.079]
Lagged Return	0.020***	0.020***	0.039***
	[0.007]	[0.007]	[0.012]
Constant	16.6757**	15.257**	18.5318***
	[6.595]	[6.222]	[6.9929]
Allocator Countries Dummies?	Yes	Yes	Yes
Number of Observations	875	875	875
Pseudo R-squared	0.068	0.0674	0.0694

The table presents Tobit regression estimates of w_{ij} (i.e., the weight of country j in the portfolio of the mutual funds from country i ($i \neq j$)) scaled by w_j (i.e., the weight of country j in the world float portfolio). *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball, Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). The rest of the variables are described in the Appendix. The standard errors reported in brackets are corrected for heteroskedasticity and clustered at the allocator countries level. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively, using two-tailed t-test.

Table 3: Tests of Hypothesis 1 using Emerging Market as a proxy for International Diversification Opportunities

Independent Variables	Dependent Variable: w_{ij}/w_j		
	(1)	(2)	(3)
INCR_BP_BKR	-1.690*		
	[0.93]		
TLR_BP_BKR		-1.223	
		[0.86]	
TLR_BP_BS			0.431
			[0.58]
Emerging Markets	-1.922***	-1.604***	-0.220
	[0.57]	[0.46]	[0.45]
*Emerging Markets *INCR_BP_BKR*	**7.421***		
	[2.01]		
*Emerging Markets *TLR_BP_BKR*		**5.743***	
		[1.82]	
*Emerging Markets *TLR_BP_BS*			**1.420***
			[0.86]
Constant	13.929**	15.944***	15.785***
	[5.50]	[6.01]	[5.76]
Controls Included	Yes	Yes	Yes
Allocator Countries Dummies?	Yes	Yes	Yes
Number of Observations	875	875	875
Pseudo R-squared	0.0668	0.0667	0.0659

The table presents Tobit regression estimates of w_{ij} (i.e., the weight of country j in the portfolio of the mutual funds from country i ($i \neq j$)) scaled by w_j (i.e., the weight of country j in the world float portfolio). *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball, Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). The controls in this table are the full set of controls reported in Table 2. The rest of the variables are described in the Appendix. The standard errors reported in brackets are corrected for heteroskedasticity and clustered at the allocator countries level. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively, using two-tailed t-test.

Table 4: Tests of Hypothesis 1 using Stock Market Correlation as a proxy for International Diversification Opportunities

Independent Variables	Dependent Variable: w_{ij}/w_j		
	(1)	(2)	(3)
INCR_BP_BKR	7.2766**		
	[3.274]		
TLR_BP_BKR		9.724**	
		[4.35]	
TLR_BP_BS			5.141***
			[1.727]
Stock Market Correlation	1.226	0.9206	8.6777***
	[3.107]	[2.31]	[3.37]
Stock Market Correlation *INCR_BP_BKR	**15.231***		
	[7.836]		
Stock Market Correlation *TLR_BP_BKR		**18.562***	
		[9.646]	
Stock Market Correlation *TLR_BP_BS			**9.674****
			[4.419]
Constant	14.227**	14.6067**	20.561***
	[6.750]	[5.941]	[7.773]
Controls Included	Yes	Yes	Yes
Allocator Countries Dummies?	Yes	Yes	Yes
Number of Observations	875	875	875
Pseudo R-squared	0.0662	0.0668	0.0677

The table presents Tobit regression estimates of w_{ij} (i.e., the weight of country j in the portfolio of the mutual funds from country i ($i \neq j$)) scaled by w_j (i.e., the weight of country j in the world float portfolio). *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball, Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). *Stock Market Correlation* is multiplied with **-1**. The controls in this table are the full set of controls reported in Table 2. The rest of the variables are described in the Appendix. The standard errors reported in brackets are corrected for heteroskedasticity and clustered at the allocator countries level. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively, using two-tailed t-test.

Table 5: Extending Hypothesis 1 using Stock Market Segmentation as the proxy for International Diversification Opportunities

Dependent Variable: w_{ij} / w_j

Independent Variables	Partitioning Allocator Countries by their *INCR_BP_BKR*		Partitioning Allocator Countries by their *TLR_BP_BKR*	
	(1)	(2)	(3)	(4)
	Allocator Countries with High Conservatism	**Allocator Countries with Low Conservatism**	**Allocator Countries with High Conservatism**	**Allocator Countries with Low Conservatism**
INCR_BP_BKR	13.326***	7.541***		
	[3.522]	[1.514]		
TLR_BP_BKR	.		12.061***	5.175***
			[3.08]	[1.38]
Stock Market Segmentation	-.415***	-.165***	-.329***	-.136***
	[.1429]	[.0511]	[.125]	[.047]
Stock Market Segmentation *INCR_BP_BKR	**1.797*****	**.85469*****		
	[.491]	**[.185]**		
Stock Market Segmentation *TLR_BP_BKR			**1.441*****	**.582*****
			[.409]	**[.163]**
(cross-equations restriction tests to test whether the interaction of *Stock Market Segmentation* with conditional conservatism is the same across groups)	**(0.067)**		**(0.051)**	
Constant	24.1267**	4.845***	21.56864**	4.05385**
	[9.9436]	[1.861]	[9.254]	[1.911]
Controls Included	Yes	Yes	Yes	Yes
Allocator Countries Dummies?	Yes	Yes	Yes	Yes
Number of Observations	455	420	455	420
No of Allocator Countries	13	12	13	12
Pseudo R-squared	0.0769	0.1306	0.0700	0.1713

The table presents Tobit regression estimates of w_{ij} (i.e., the weight of country *j* in the portfolio of the mutual funds from country *i* $(i \neq j)$) scaled by w_j (i.e., the weight of country *j* in the world float portfolio). *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball,

Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). The rest of the variables are described in the Appendix. The standard errors reported in brackets are corrected for heteroskedasticity and clustered at the allocator countries level. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively, using two-tailed t-test. The p-value of the difference in coefficients on the interaction of *Stock Market Segmentation* with conditional conservatism in the low and high conservatism allocator countries subsamples is reported in parentheses.

Table 6: Extending Hypothesis 1 using Emerging Market as the proxy for International Diversification Opportunities

	Dependent Variable: w_{ij}/w_j			
	Partitioning Allocator Countries by their *INCR_BP_BKR*		Partitioning Allocator Countries by their *TLR_BP_BKR*	
	(1)	(2)	(1)	(2)
Independent Variables	**Allocator Countries with High Conservatism**	**Allocator Countries with Low Conservatism**	**Allocator Countries with High Conservatism**	**Allocator Countries with Low Conservatism**
INCR_BP_BKR	-3.2606***	-.271		
	[1.171]	[.4687]		
TLR_BP_BKR			-1.678	-.249
			[1.224]	[.482]
Emerging Market	-2.5405***	-1.2888***	-2.225***	-.739***
	[.857]	[.333]	[.691]	[.256]
Emerging Market *INCR_BP_BKR	**9.537*** [1.9738]**	**4.172*** [1.0057]**		
Emerging Market *TLR_BP_BKR			**7.130*** [2.159]**	**2.496*** [.917]**
(cross-equations restriction tests to test whether the interaction of *Emerging Market* with conditional conservatism is the same across groups)	**(0.0154)**		**(0.0439)**	
Constant	20.911**	3.596**	26.5766***	4.3828**
	8.6185	1.487	10.154	1.9385
Controls Included	Yes	Yes	Yes	Yes
Allocator Countries Dummies?	Yes	Yes	Yes	Yes
Number of Observations	455	420	455	420
No of Allocator Countries	13	12	13	12
Pseudo R-squared	0.0760	0.1257	0.0693	0.1653

The table presents Tobit regression estimates of w_{ij} (i.e., the weight of country *j* in the portfolio of the mutual funds from country *i* ($i \neq j$)) scaled by w_j (i.e., the weight of country *j* in the world float portfolio). *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball,

Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). The rest of the variables are described in the Appendix. The standard errors reported in brackets are corrected for heteroskedasticity and clustered at the allocator countries level. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively, using two-tailed t-test. The p-value of the difference in coefficients on the interaction of *Emerging Market* with conditional conservatism in the low and high conservatism allocator countries subsamples is reported in parentheses.

Table 7: Extending Hypothesis 1 using Stock Market Correlation as the proxy for International Diversification Opportunities

Dependent Variable: w_{ij}/w_j

Independent Variables	Partitioning Allocator Countries by their *INCR_BP_BKR*		Partitioning Allocator Countries by their *TLR_BP_BKR*	
	(1)	(2)	(1)	(2)
	Allocator Countries with High Conservatism	**Allocator Countries with Low Conservatism**	**Allocator Countries with High Conservatism**	**Allocator Countries with Low Conservatism**
INCR_BP_BKR	12.577** [4.919]	3.8102** [1.881]		
TLR_BP_BKR			18.17831** [7.093]	.235188 [1.875]
Stock Market Correlation	-.30946 [4.466]	.422039 [1.709]	-1.260 [4.354]	2.209* [1.248]
Stock Market Correlation *INCR_BP_BKR	**29.622***** **[11.335]**	**6.536** **[4.556]**		
Stock Market Correlation *TLR_BP_BKR			**37.0279**** **[16.467]**	**-1.4269** **[4.229]**
(cross-equations restriction tests to test whether the interaction of *Stock Market Correlation* with conditional conservatism is the same across groups)	**(0.0539)**		**(0.0210)**	
Constant	19.977* [10.510]	3.4378* [1.804]	23.4105** [9.776]	4.7405** [2.006]
Controls Included	Yes	Yes	Yes	Yes
Allocator Countries Dummies?	Yes	Yes	Yes	Yes
Number of Observations	455	420	455	420
No of Allocator Countries	13	12	13	12
Pseudo R-squared	0.0759	0.1205	0.0702	0.1620

The table presents Tobit regression estimates of w_{ij} (i.e., the weight of country j in the portfolio of the mutual funds from country i ($i \neq j$)) scaled by w_j (i.e., the weight of country j in the world float portfolio). *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic

loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball, Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). The rest of the variables are described in the Appendix. The standard errors reported in brackets are corrected for heteroskedasticity and clustered at the allocator countries level. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively, using two-tailed t-test. The p-value of the difference in coefficients on the interaction of *Stock Market Correlation* with conditional conservatism in the low and high conservatism allocator countries subsamples is reported in parentheses.

Table 8: Tests of Hypothesis 2

Dependent Variable: $\log(FPI/(FPI+FDI))$											

Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
INCR_BP_BKR	0.200***	0.151**	0.207***	0.163***	0.149**						
	[0.051]	[0.057]	[0.057]	[0.057]	[0.055]						
TLR_BP_BKR						0.204***	0.168**	0.209***	0.140*	0.129*	
						[0.065]	[0.067]	[0.071]	[0.070]	[0.073]	
TLR_BP_BS											0.110***
											[0.036]
Weight in World Market Portfolio	0.672***	0.722***	0.666***	0.581***	0.579***	0.667***	0.750***	0.661***	0.557**	0.597**	0.651***
	[0.171]	[0.187]	[0.179]	[0.194]	[0.204]	[0.188]	[0.202]	[0.196]	[0.200]	[0.214]	[0.211]
Liquidity	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***
	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]	[0.000]
Liberalization Intensity	0.164**	0.108	0.167**	0.123	0.093	0.180**	0.111	0.184**	0.138	0.093	0.058
	[0.071]	[0.082]	[0.077]	[0.082]	[0.090]	[0.071]	[0.081]	[0.077]	[0.084]	[0.091]	[0.082]
Common Law	0.07	0.078*	0.069	0.069*	0.070*	0.066	0.079*	0.065	0.063	0.070*	0.064*
	[0.041]	[0.040]	[0.042]	[0.036]	[0.036]	[0.042]	[0.039]	[0.042]	[0.039]	[0.038]	[0.031]
CIFAR	-0.002	-0.001	-0.002	-0.002	-0.002*	-0.002	-0.001	-0.002	-0.002	-0.002	-0.001
	[0.002]	[0.001]	[0.002]	[0.001]	[0.001]	[0.002]	[0.001]	[0.002]	[0.001]	[0.001]	[0.001]
Rule of Law	-0.019**	-0.017*	-0.019**	-0.018*	-0.014	-0.022**	-0.020**	-0.022**	-0.019*	-0.016	-0.014*
	[0.009]	[0.009]	[0.009]	[0.009]	[0.009]	[0.008]	[0.009]	[0.008]	[0.010]	[0.010]	[0.008]
Antidirector Rights	-0.008	-0.014	-0.006	-0.009	-0.007	-0.006	-0.013	-0.004	-0.007	-0.008	-0.026*
	[0.008]	[0.009]	[0.010]	[0.009]	[0.010]	[0.009]	[0.009]	[0.010]	[0.009]	[0.011]	[0.013]
Returns		0.001			0.001		0.002*			0.001	0.002**
		[0.001]			[0.001]		[0.001]			[0.001]	[0.001]
Cross-Listing			-0.028		-0.091*			-0.023		-0.079	-0.126**
			[0.072]		[0.052]			[0.074]		[0.055]	[0.046]
Closely Held Shares				-0.181*	-0.204**				-0.168	-0.173*	-0.152*
				[0.097]	[0.090]				[0.106]	[0.098]	[0.082]
Constant	-0.106	-0.108	-0.1	0.034	0.069	-0.084	-0.082	-0.078	0.03	0.053	0.099

95

	[0.067]	[0.064]	[0.067]	[0.095]	[0.100]	[0.078]	[0.075]	[0.079]	[0.100]	[0.106]	[0.107]
Observations	33	33	33	33	33	33	33	33	33	33	33
Adjusted R-squared	0.329	0.358	0.305	0.426	0.446	0.315	0.375	0.289	0.384	0.419	0.507

The table presents OLS regression estimates of the natural log of the fraction of foreign portfolio investment (FPI) in total foreign investment (FPI + FDI). *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball, Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). The rest of the variables are described in the Appendix. The standard errors reported in brackets are corrected for heteroskedasticity. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively, using two-tailed t-test.

Table 9: **Tests of Hypothesis 3**

	Dependent Variable: *Ownership Concentration*							
Independent Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Inverse of Synchronicity	-0.061***	-0.066**	-0.007	-0.015	-0.008	-0.016	-0.116***	-0.134***
	[0.021]	[0.028]	[0.018]	[0.024]	[0.017]	[0.023]	[0.035]	[0.030]
Inverse of Synchronicity *INCR_BP_BKR			**-0.529***	**-0.495***				
			[0.135]	**[0.140]**				
Inverse of Synchronicity *TLR_BP_BKR					**-0.465***	**-0.433***		
					[0.111]	**[0.135]**		
Inverse of Synchronicity *TLR_BP_BS							**-0.083***	**-0.094***
							[0.047]	**[0.048]**
INCR_BP_BKR			-0.373***	-0.326**				
			[0.124]	[0.142]				
TLR_BP_BKR					-0.304**	-0.269*		
					[0.133]	[0.142]		
TLR_BP_BS							-0.034	-0.009
							[0.085]	[0.092]
Log of GNP per Capita	0.075**	0.124***	0.132***	0.170***	0.133***	0.170***	0.132***	0.204***
	[0.030]	[0.034]	[0.027]	[0.051]	[0.027]	[0.050]	[0.031]	[0.050]
Log of GNP	-0.042***	-0.056***	-0.050***	-0.062***	-0.050***	-0.062***	-0.049***	-0.066***
	[0.009]	[0.015]	[0.011]	[0.020]	[0.010]	[0.020]	[0.010]	[0.017]
Legal reserve Required	-0.445***	-0.392***	-0.574***	-0.531***	-0.560***	-0.515***	-0.485***	-0.456***
	[0.077]	[0.076]	[0.083]	[0.095]	[0.081]	[0.095]	[0.073]	[0.065]
CIFAR	-0.005***	-0.003**	-0.007***	-0.005**	-0.008***	-0.006**	-0.007***	-0.006*
	[0.001]	[0.001]	[0.001]	[0.002]	[0.002]	[0.002]	[0.002]	[0.003]
Gini Coefficient	0.000	0.004	-0.002	0.002	-0.002	0.002	-0.002	0.003

	[0.002]	[0.003]	[0.002]	[0.003]	[0.001]	[0.003]	[0.002]	[0.003]
Rule of Law	-0.036**	-0.041***	-0.066***	-0.063***	-0.066***	-0.062***	-0.069***	-0.075***
	[0.015]	[0.010]	[0.014]	[0.020]	[0.015]	[0.019]	[0.017]	[0.018]
Antidirector Rights	-0.039**	-0.025	-0.030**	-0.025	-0.029**	-0.023	-0.037**	-0.035
	[0.015]	[0.023]	[0.013]	[0.027]	[0.013]	[0.027]	[0.015]	[0.029]
One Share One Vote	-0.083*	-0.091**	-0.127**	-0.106**	-0.130**	-0.107**	-0.133*	-0.110**
	[0.042]	[0.040]	[0.051]	[0.040]	[0.053]	[0.043]	[0.063]	[0.046]
Mandatory Dividends	0.445***	0.165	0.668***	0.386	0.675***	0.373	0.669***	0.368
	[0.146]	[0.108]	[0.161]	[0.324]	[0.168]	[0.319]	[0.204]	[0.262]
Creditor Rights	0.007	-0.003	-0.004	-0.013	0	-0.01	0	-0.014
	[0.016]	[0.021]	[0.020]	[0.031]	[0.017]	[0.029]	[0.017]	[0.025]
Civil Law	-0.019	0.009	-0.051	-0.02	-0.047	-0.015	-0.059	-0.025
	[0.055]	[0.062]	[0.054]	[0.086]	[0.048]	[0.082]	[0.049]	[0.086]
Private Benefits of Control		0.305**		0.203		0.215		0.248
		[0.126]		[0.210]		[0.203]		[0.160]
Constant	1.019***	0.42	1.142***	0.579	1.130***	0.552	1.083***	0.34
	[0.246]	[0.295]	[0.278]	[0.344]	[0.274]	[0.347]	[0.303]	[0.395]
Observations	34	31	32	29	32	29	32	29
R-squared	0.6933	0.7323	0.7505	0.7378	0.7472	0.7379	0.7115	0.7371

The table presents OLS regression estimates of *Ownership Concentration* (i.e., the average ownership stake of the largest three shareholders in the ten largest privately owned non-financial firms in each country). *INCR_BP_BKR* and *TLR_BP_BKR* are the incremental timeliness of economic losses and the timely economic loss recognition, respectively, as reported in Bushman and Piotroski (2006) who follow the methodology in Ball, Kothari and Robin (2000). *TLR_BP_BS* is the timely loss recognition as measured by Bushman and Piotroski (2006) based on the methodology of Ball and Shivakumar (2005). The rest of the variables are described in the Appendix. The standard errors reported in brackets are corrected for heteroskedasticity. ***, **, and * indicate significance at the 1, 5, and 10% levels, respectively, using two-tailed t-test.

Appendix

Variables	Description
Variables used for testing Hypothesis 1	
Stock Market Segmentation	An index constructed by The Economic Freedom Network. This index captures the restrictions both on access by foreigners to local markets and on access by locals to foreign markets. It provides lower (higher) ratings to countries with more (less) restrictions on foreign capital transactions. We multiply the index score with negative one so that this variable becomes increasing in stock market segmentation. Source: Chan, Covrig and Ng (2005).
Emerging Market	An indicator variable that takes the value unity for an emerging market and zero otherwise. Source: Chan, Covrig and Ng (2005).
Stock Market Correlation	The average correlation coefficient for each country's stock market with the rest of world. It is computed using country returns in U.S. dollars from Datastream over the period 1995 to 1999. We multiply stock market correlation with negative one so that a higher value of this variable means lower stock market correlation. Source: Chan, Covrig and Ng (2005).
Distance	The bilateral distance between mutual funds' home country *i* and foreign country *j*. This variable is used in Frankel and Wei (1998). Source: http://www.nber.org/~wei/
Language	An indicator variable that takes the value unity if mutual funds' home country *i* and the foreign country *j* share a major language and zero otherwise. We construct this variable using data on the languages reported in the World Factbook 1999.
Rule of Law	An index that assesses the law and order tradition in the country. The index has a scale of 0–10, with lower scores for countries without tradition for law and order. It is produced by the risk-rating agency, International Country Risk. Source: Chan, Covrig and Ng (2005).
Minority Investor Protection	A measure indicating the degree of minority investor protection. The value varies from 0 to 5, with 0 indicating the lowest degree of protection and 5 the highest. Source: Chan, Covrig and Ng (2005).
Common Law	An indicator variable that takes the value unity if the country is a common-law country and zero otherwise. Source: Chan, Covrig and Ng (2005).
Efficiency	A measure of the efficiency of the judicial system. It provides an assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms." It is constructed by Business International Corporation. Source: Chan, Covrig and Ng (2005).
Expropriation Risk	An assessment of the risk of "outright confiscation" or "forced nationalization." The index has a scale from 0 to 10, with lower scores for greater risks. It is constructed by the International Country Risk agency. Source: Chan, Covrig and Ng (2005).
Insider Trading	The prevalence of insider trading in the country. A low value means it is

	pervasive, while a high value means it is extremely rare. Source: La Porta, Lopez-de-Silanes, and Shleifer (2006).
CIFAR	A disclosure index that measures the inclusion or omission of 90 items in the 1990 annual reports. Source: Chan, Covrig and Ng (2005).
Analyst	The number of analysts following the largest 30 firms in each country in year 1996. Source: Bushman, Piotroski, and Smith (2004).
GDP Per Capita	Gross domestic product per capita in U.S. dollars that is obtained from the World Competitiveness Report 2000. Source: Chan, Covrig and Ng (2005)
Trade	The average of exports and imports scaled by GDP. Source: Chan, Covrig and Ng (2005)
Stock Market Capitalization	The relative size of the stock market of each country, measured by the stock market capitalization as a percentage of the country's GDP. Source: Chan, Covrig and Ng (2005)
Turnover	The ratio of the total value of stocks traded to the average market capitalization in a given country. Source: Chan, Covrig and Ng (2005)
Tax	The average withholding tax percentage per country obtained it from Corporate Taxes: Price Waterhouse, 1996. Source: Chan, Covrig and Ng (2005)
Lagged Return	A one-year lagged stock return for each country. Source: Chan, Covrig and Ng (2005).

Variables used for testing Hypothesis 2	
Weight in World Market Portfolio	The weight of each country in the world market capitalization in Year 1994. Source: Kho, Stulz and Warnock (2008).
Liquidity	The total value of stocks traded as a fraction of the shares outstanding. Source: La Porta, Lopez-de-Silanes, and Shleifer (2004).
Liberalization Intensity	The degree of equity market liberalization. It takes values between zero and one. A fully liberalized country has an intensity measure of one, while a fully segmented country has an intensity measure of zero. Source: Bekaert, Harvey, and Lundblad (2005).
Common Law	An indicator variable that takes the value unity if the country is a common-law country and zero otherwise. Source: Chan, Covrig and Ng (2005).
CIFAR	An index that measure the inclusion or omission of 90 items in the 1990 annual reports. Source: Chan, Covrig, and Ng (2005).
Rule of Law	Assessment of the law and order tradition in the country. Scale from 0 to 6, with lower scores for less tradition for law and order. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
Antidirector Rights	An index aggregating shareholder rights. It ranges from 0 to 6. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
Returns	Stock returns for each country over the period 1994-1998. Source: Chan,

Covrig, and Ng (2005).

Cross-Listing	The share of a country's stock market that is listed on US exchanges in Year 1997 (either directly or as a Level II or III ADR) or has issued public debt in the United States. Source: Ahearne, Griever, and Warnock (2004).
Closely Held Shares	The percentage of shares in a country that is unavailable for purchase by the portfolio investors. Source: Dahlquist, Pinkowitz, Stulz, and Williamson (2003).

Variables used for testing
Hypothesis 3

Stock Market Synchronicity	The systematic market-wide stock return variation as a percent of the total variation (i.e., the sum of market-wide stock return variation and firm-specific stock return variation). It is measured as the average R^2 of firm-level regressions of bi-weekly stock returns on local and U.S. market indexes in each country in year 1995. Source: Morck, Yeung, and Yu (2000)
GNP per Capita	Gross National Product per capita in constant dollars of year 1994. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
GNP	Gross National Product for each county for the year 1994. Source: World Bank Indicators.
Legal reserve Required	It is the minimum percentage of total share capital mandated by Corporate Law to avoid the dissolution of an existing firm. It takes a value of zero for countries without such restriction. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
CIFAR	An index that measure the inclusion or omission of 90 items in the 1990 annual reports. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
Gini Coefficient	Gini coefficient for income inequality in each country for the year 1990. Source: the Euro Monitor Database.
Rule of Law	Assessment of the law and order tradition in the country. Scale from 0 to 6, with lower scores for less tradition for law and order. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
Antidirector Rights	An index aggregating shareholder rights. It ranges from 0 to 6. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
One Share One Vote	Equals one if the Company Law or Commercial Code of the country requires that ordinary shares carry one vote per share, and zero otherwise. Equivalently, this variable equals one when the law prohibits the existence of both multiple-voting and non-voting ordinary shares and does not allow firms to set a maximum number of votes per shareholder irrespective of the number of shares she owns, and zero otherwise. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
Mandatory Dividends	Equals the percentage of net income that the Company Law or Commercial Code requires firms to distribute as dividends among ordinary stockholders. It takes a value of zero for countries without such restriction. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).

Creditor Rights	An index aggregating different creditor rights. It ranges from 0 to 4. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
Civil Law	An indicator variable that takes the value unity if the country is a civil-law country and zero otherwise. Source: La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998).
Private Benefits of Control	The country's average block premium based on transfers of controlling blocks of shares. Source: Dyck and Zingales (2004).

Chapter 4

The role of stock ownership by US members of Congress on the market for political favors[*]

4.1. Introduction

A growing empirical literature suggests that politicians and firms exchange benefits with each other.[41] This literature, however, is virtually silent on the mechanism for establishing a "politician-firm exchange market". I examine whether a politician's stock ownership in a firm can be a possible mechanism to establish mutual relations with this firm. I define a "mutual relation" as an agreement in which firms support politicians during the election and politicians, in turn, provide private benefits to these firms. Specifically, I investigate *whether the stock ownership of politicians is a mechanism to establish mutual relations with contributing firms.* In the United States, the mandated disclosure requirements of the Ethics in Government Act of 1978 as well as the Federal Election Committee Act enable me to obtain the data required for investigating this question. My question is motivated in part by anecdotal evidence which cites 'ownership by politicians' as a main element in cases where there are allusions toward politicians exchanging benefits with firms.[42] Procon.org, for example, reports: "Less than two months after ascending to the United States Senate, Barack Obama bought more than $50,000 worth of stock in two speculative companies whose major investors included some of his biggest political donors. One of the companies was a biotech concern that was starting to develop a drug to treat avian flu. In March 2005, two weeks after buying about $5,000 of its shares, Mr. Obama took the lead in a legislative push for more federal

[41] See Section 2 for a review of this literature.
[42] See http://insidertrading.procon.org/viewresource.asp?resourceID=1580

spending to battle the disease. The most recent financial disclosure form for Mr. Obama . . . also shows that he bought more than $50,000 in stock in a satellite communications business whose principal backers include four friends and donors who had raised more than $150,000 for his political committees."[43]

Politicians seek re-election and campaign contributions and support by firms are helpful to enhance the likelihood of their winning (Snyder 191). Firms need politicians' help in getting benefits, such as securing favorable legislation, special tax exemptions, contracts to provide goods or services to government, help in dealing with regulatory agencies, or to avoid being investigated by governing bodies for fraud detection (e.g., the SEC). Writing direct fee-for-service contracts, however, between these two parties in order to exchange benefits are considered bribery (Krozner and Stratmann 1998). In addition, either party to this contract might renege on its promise and the other party cannot resort to the courts to enforce the contract. If the uncertainty about how the other party is going to behave becomes too high, the politician-firm exchange market will break down. Krozner and Stratmann (1998) argue that certain institutional features of the US Congress are conducive to politicians and firms engaging in repeated interaction, credible reputation building, and establishing long term relations. These institutional features allow for a better enforcement of the relationship between politicians and firms not by enforcement by court but by the threat of stopping all future exchanges. These authors suggest that the formation of specialized standing committees is one important example of such an institutional feature that fosters reputation building and enable long-term relations specifically between firms belonging to industries influenced by the relevant committee and members of the relevant committee. [44]

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[43] See http://insidertrading.procon.org/viewresource.asp?resourceID=1580#obamaa. I cite two more examples from the Citizens for Responsibility and Ethics in Washington (CREW) report (2009) in Appendix II. The first concerns Representative Jerry Lewis (R-CA). He allegedly misused his position on the Appropriations Committee to steer hundreds of millions of dollars in earmarks to family, friends, former employees, and corporations—all of which were linked to Security Bank of California in which he owns shares—in exchange for contributions to his campaign committee. The second concerns the case of Representative Maxine Waters (D-CA), a senior member of the House Financial Services Committee, who arranged a meeting between the Department of Treasury and OneUnited Bank, a company with which she has mutually supportive financial ties. Thus, it seems from these anecdotes, that the ownership of politicians is likely to be a mechanism that facilitate their interactions with firms.

[44] This is because these committees have three main features: a) they are specialized, b) politicians have the choice to continue in the same committees as long as they want, and c) there is a limit on the number of those committees that politicians can join, thereby limiting politicians' relation to a subset of firms.

I argue that in the absence of strong mechanisms such as these specialized committee assignments the ownership of these politicians could be the alternative mechanism that can avoid the breakdown of their relationships with these firms. As investors in firms, politicians tie their own interests to those of the firm. In other words, by owning a firm's stock, politicians commit their personal wealth to the firm. This will, in turn, enhance the firm's incentive to support these politicians during elections and prolong their incumbency period for as long as possible. In addition, investment can be a long term relationship that allows repeated interaction between firms and politicians. Politicians have the choice not to divest their share, and accordingly, can be in a relationship with firms for as long as they want. By not divesting, a politician reduces a firm's uncertainty with regard to his/her action toward the firm. Taken together, ownership of stocks by politicians acts as an alternative mechanism that fosters repeated interactions, reputation building, and long-term relationships of politicians that invest *with* firms in which they invest.

I examine the main prediction that the ownership of politicians is a mechanism to establish mutual relations with firms in five closely related tests. In the first test I investigate whether the ownership of politicians is negatively associated with the availability of other mechanisms for firm-politician exchanges of benefits. In particular, I consider the investments of politicians seated in committees that regulate industries and the investments of those who do not hold such an assignment. I link the share ownership that members of Congress held in 642 firms between 2004–2007 to both the industry membership of these firms and the committee assignments of politicians. I find that politicians invest higher amounts in firms not belonging to industries under the influence of the committee in which they are seated than in those under their influence.[45]

In a second set of tests, I examine whether the ownership of politicians in firms is positively associated with the contribution they receive from these firms. A primary objective of politicians from forging a relation with firms is to obtain these firms' contributions and

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[45] This result could also suggest that politicians are not investing in these firms in order to avoid being in conflict of interest situations. However, I am not relying only on this result to support my arguments. All the results in the paper taken together support the use of ownership as a mechanism to establish a relation with firms.

support. Thus, if politicians indeed use their ownership as a mechanism to establish a relation with contributing firms, this should be manifested in a positive association between the ownership of these politicians and contributions. I find a positive association between the share ownership that members of Congress held in firms between 2004–2007 and the Political Action Committee (PAC) contributions they received from these firms. Not only that, but also I find that Republican politicians invest less (more) in a firm that favors (i.e., contribute more to) the Democratic (Republican) Party over the Republican (Democratic) Party, while Democratic politicians own fewer (more) shares in a firm that favors the Republican (Democratic) Party over the Democratic (Republican) Party. Because these results suggest a partisan component to politicians' investment decisions, it seems that ownership of politicians is a mechanism to establish relations with the contributing firms.

In the third set of tests, I examine whether the strength of the mutual relation established through the ownership mechanism is stronger in situations where it is expected, *a priori*, that either or both firms and politicians benefit more from having a relation. I use the magnitude of the documented positive association between ownership and contribution as a proxy for the strength of the mutual relation between firms and politicians. I find that the positive association between ownership and contributions is 'stronger' when firms are 'not' linked to politicians via their committee assignments. These results suggest that the mutual relation between politicians and firms via ownership is established to overcome the absence of a mechanism linking politicians and firms. More importantly, consistent with my prediction, I find that the positive association between ownership and contributions is increasing in politicians' power (as defined by having membership in a powerful Congressional committee, seats in several powerful committees, or seniority). In addition, I find politicians who are under investigation for ethics issues (and accordingly their ability to help firms is constrained) invest more in contributing firms than in non-contributing firms in the time periods before, but not in the time periods after, the investigation took place.

In the fourth test I examine whether there are actual private benefits to firms out of a mutual relation established based on the ownership mechanism. Here I shift my analysis to the firm level. I predict that as the strength of the association between ownership and contributions

estimated at the firm level increases so too will the provision of benefits from politicians to firms. Specifically, I compute for each firm a measure of the association between politicians' share ownership in this firm and the contributions the firm makes to their election campaigns (i.e., *Ownership-Contribution Association*). To measure the benefits provided to firms, I obtain data on both the size and number of government contracts awarded to these firms over the same period. I document a positive association between firm-level *Ownership-Contribution Association* and both the size and number of government contracts awarded to these firms.

I conduct a final test to investigate whether the relation between firms and politicians is terminated when the latter divest their stocks in the firm. As I argue that ownership is the mechanism that underlies the relation between politicians and firms, divesting the stock should immediately terminate the relation. Of course, for this to happen, firms should be able to know that politicians divested their stocks. This is indeed the case in the United States as politicians are required to disclose their investments to the public. I find that politicians who divest their ownership in firms are less likely to receive contributions from these firms in the future conditional upon having received contributions in the past. I find, however, this termination of the relation does not happen when politicians are, at the time of the liquidation of their stock holding, serving in a committee assignment affecting the firm. These results suggest that divesting the stocks is less likely to terminate the relation if there is a mechanism in place that is already protecting the relation.

My results contribute both to the stream of research that examines whether politically connected firms receive benefits as a result of their connections (e.g., Roberts 1990; Fisman 2001; Johnson and Mitton 2003; Ansolabehere, Snyder, and Ueda 2004; Faccio 2006, 2009; Faccio, Masulis, and McConnell 2006; Jayachandran 2006; Claessens, Feijen, Laeven 2008; Goldman, Rocholl, and So 2008, 2009; Cooper, Gulen, and Ovtchinnikov 2009) *and* to the stream of research that examines whether politicians benefit from politically connected firms (e.g., Bertrand, Kramarz, Schoar, and Thesmar 2006; Dinç 2005). None of these studies investigate how the stock ownership of politicians can be a mechanism to avoid the

breakdown of politicians-firm exchange markets.[46] My study shows that in the absence of formal mechanisms avoiding the break down of politicians-firms exchange market, such as the committee assignments as suggested by Krozner and Stratmann (1998), market forces provide an alternative solution. My results are consistent with ownership of politicians acting as the alternative mechanism to mitigate the consequences of a lack of such formal mechanisms, enabling firms and politicians to continue providing each other with support.

My results also contribute to the stream of research examining determinants of investor decisions to hold firms' stocks apart from risk-return portfolio considerations. This literature shows that investors have preferences to invest more in some stocks; for example, because they are more familiar with these stocks (Merton 1987), prefer to invest in firms that are located in the same geographical area (Coval and Moskowitz 1999), or have emotional ties or feelings of loyalty to a firm (Cohen 2009). In addition to familiarity, geographical proximity, and loyalty, I show that investor preferences for stocks are determined by "personal ties" with the firm. To what extent this evidence that I document using a sample of politicians can be generalized to other regular investors is an empirical question for future research.

4.2. Prior Literature and Hypothesis Development

In Section 2.1 I first review the prior literature documenting benefits being exchanged between firms and politicians. In Sections 2.2 I develop the hypotheses to test my main prediction that *ownership of politicians is a mechanism for establishing relationships with firms to exchange benefits.* Each sub-section of Section 2.2 develops different hypothesis to test this same prediction.

4.2.1. Prior literature

Prior studies argue that politicians make decisions in response to the interests of their voters and pressure groups in an effort to win (re)election (Barro 1973; Levitt 1996; Mian, Sufi and

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[46] It is important to note that Ziobrowski, Cheng, Boyd, and Ziobrowski (2004) is the only study that examines the investments of politicians; by examining whether the investments of U.S. senators outperform the market, they test the hypothesis that, relative to other investors, senators have an informational advantage. My objective, however, is different from theirs, as I am not interested in examining whether politicians are informed traders. That said, my results could partially explain why these senators' investments outperform the market: the senators may simply have access to firm-specific information via the ties they established with the firms themselves.

Trebbi 2010). The premise in this line of work is that politicians are motivated by the desire to increase their net wealth and that obtaining, or remaining in, political office allows them to do so. Thus, politicians want to win the (re)election and enhance the likelihood of being re-elected in the future. The literature suggests that firms' support and contributions can help in achieving this objective. For example, Bertrand, Kramarz, Schoar, and Thesmar (2006) show that politically connected firms will both vary the number of people they employ and coordinate the opening and closing of plants in order to help incumbent politicians get re-elected. Dinç (2005) finds that government-owned banks increase their lending activity in election years. Firms benefit politicians by offering political campaign contributions as well as the votes of their employees. Contributions indeed help in winning elections (Snyder, 1990). Thus, supporting firms can enhance the welfare of politicians.

Politicians, in turn, can augment the performance of their business sponsors. The evidence provided by Fisman (2001), Johnson and Mitton (2003), Sapienza (2004), Faccio, Masulis and McConnell (2006), Benmelech and Moskowitz (2010) and others suggests that politically connected firms can obtain economic favors. For example, Fisman (2001) finds that, relative to less-connected firms, firms connected to the Indonesian President Suharto lost value in response to adverse rumors about his health. Roberts (1990) finds that the death of Senator Jackson negatively affected the value of firms connected to him and positively affected the value of firms connected to his successor. Jayachandran (2006) examines the announcement effects of Senator Jim Jefford's decision to leave the Republican Party in 2001—an event that transferred control of the U.S. Senate from Republicans to Democrats—and finds that this event produced a decrease in the value of firms contributing to Republicans and an increase in the value of firms contributing to Democrats. Firms benefit from supporting politicians by enjoying more frequent and better-quality access to them (i.e., Kroszner and Stratmann 1998; Langbein and Lotwis 1990; Durden et al 1991; Stratmann 1991, 1995, and 1998). Firms whose board members are connected to the winning (losing) party are more likely to experience an increase (decrease) in procurement contracts (Goldman, Rocholl, and So 2008). Faccio and Parsley (2009) demonstrate that the sudden deaths of politicians in several countries reduced the value of companies geographically connected to these politicians (by, for example, being headquartered in the politician's hometown). Goldman, Rocholl, and So

(2009) examine stock-price reactions to the Republican win of the 2000 U.S. election and show that firms whose board members were connected to the Republican (Democratic) Party experienced an increase (decrease) in value. Ramanna (2008) shows that congressmen who opposed the Financial Accounting Standards Board's (FASB) original proposal to abolish pooling accounting are linked, via political contributions, to firms similarly opposed. Politically connected firms also undergo less scrutiny by regulatory bodies and can thereby delay the detection of accounting fraud (Correia 2009; Yu and Yu 2008). Such firms gain a competitive advantage over other less well-connected firms in the industry. In general, politically connected firms enjoy easier access to domestic finance, debt financing, lower taxation, and stronger market power (Faccio 2009; Claessens, Feijen, Laeven 2008; Leuz and Oberholzer-Gee 2006). Cooper, Gulen, and Ovtchinnikov (2009) suggest that making contributions to U.S. political campaigns is likely to increase the contributor's value.

4.2.2. Hypothesis development

The literature review in the previous section suggests that supporting firms can enhance the welfare of politicians in various ways. Likewise, politicians, in turn, can augment the performance of their business sponsors. Fee-for-service contracts, however, between politicians and firms in order to accomplish these exchanged-benefits are considered bribery (Krozner and Stratmann 1998). In addition, if one party to this contract were to renege on its promise, the other party could not resort to the courts to enforce it. For example, politicians might not provide the promised benefits to the firm after they receive the contribution. Similarly, firms might not continue to support the politician in the future after they receive the benefit. If the uncertainty about how the other party is going to behave becomes too high, the politician-firm exchange market will break down. Krozner and Stratmann (1998) suggest that the formation of specialized standing committees is a strong mechanism that can avoid such breakdown for three reasons. We discuss these reasons in some detail because they enable us to understand the conditions needed for an efficient mechanism to underpin politician-firm relations. First, standing committees allow repeated interaction and a long term relationship between firms and politicians who are members of these committees. This will, accordingly, provide politicians in those committees more opportunities to reduce uncertainty about where they stand by producing more observations of their actions for the firms. Similarly, the firms

can more easily develop their reputations for reliability by having frequent interactions with a subset of politicians. Second, politicians have the ability to stay on the same committee for as long as they are re-elected. Third, the committees have specialized jurisdictions and politicians can join a limited number of committees. These constraints preclude politicians from opportunistically joining committees handling hotly contested issues and, accordingly, compete with other politicians for firms' contributions. These three features of the committee system allows for repeated interaction, credible reputation building, and a long term relationship which benefit both firms and politicians relative to a situation without standing committees. Compliance in implicit agreements between firms and politicians will, accordingly, be achieved through the threat of stopping all future exchanges between the two parties but not through the courts (Krozner and Stratmann 1998).

Politicians, however, are not always in committee assignments that have jurisdictions over all firms. Stock ownership can provide politicians with an alternative mechanism that can avoid the breakdown of the relationship between firms and politicians who do not have access to committees that influence those firms. By owning firms' stocks, politicians tie their own interests to those of the firm. This will, in turn, enhance the firm's incentive to support these politicians during elections and prolong their incumbency period for as long as possible. In addition, investing in the stock market possesses features that are to some extent similar to those of the committee assignments mentioned above. First, investment can be a long term relationship that allows repeated interaction between firms and politicians. Second, politicians have the choice not to divest their shares, and accordingly, can be in a relationship with firms for as long as they want. By not divesting, a politician reduces the firm's uncertainty with regard to his/her action toward the firm. Third, as with standing committees, firm-politician relations need to be to some extent exclusive. In committees, this is achieved by specialization (i.e., a committee's work pertains to a limited number of industries). Typically, political activity involves a redistribution of wealth from one party to the other. If a politician forges relations with too many firms, it is unclear whether this redistribution remains feasible. Similarly, if a firm supports not only one politician, but also his opponent, then it is unclear how either of the two politicians benefits from the support. By restricting the set of firms in which a politician invests, such exclusivity in the relation is achieved.

Thus, I predict that share ownership by politicians is a mechanism for establishing a relationship with firms. I examine this prediction in the following sub-sections using five tests. An outline of each of these tests is as follows. First, if ownership is a mechanism being used to overcome the absence of stronger mechanism linking politicians and firms, it should be negatively associated with the availability of other mechanisms. Second, for ownership to be a mechanism for establishing relation with firms to obtain their contributions, it should be positively associated with contributions. Third, for the ownership to be a mechanism for establishing 'mutual' relations with contributing firms, the strength of these relations should be stronger in situations where it is expected, *a priori*, that having these relations is more valuable. Fourth, if ownership is a mechanism for establishing mutual relations so that firms contribute to politicians, and so that politicians provide benefits to firms, we should indeed observe the provision of private benefits to these firms. Fifth, for stock ownership to be a mechanism for establishing relations with contributing firms, divesting these stocks should terminate the relation.

4.2.2.1. Is ownership by politicians negatively associated with their committee assignments?

Since I argue that stock ownership of politicians is an alternative mechanism to avoid the breakdown of the relationship between firms and politicians, the demand on this mechanism should be, accordingly, lower when there is another stronger mechanism already in place, such as the committee assignments as suggested by Krozner and Stratmann (1998). Stated differently, we should observe politicians investing less in firms belonging to industries under the influence of their committee assignments, and more in other firms. If there is a component of politicians' investment that is primarily for establishing a relationship with firms rather than for regular portfolio considerations, this should be manifested in differences in the amount of investment between committee and non-committee members. Therefore, I test my prediction that ownership of politicians is a mechanism for establishing a relationship with firms with the following hypothesis,

H1: *Politicians invest lower amounts in firms belonging to industries under the influence of their committee assignments than in firms that do not belong to industries under their influence.*

4.2.2.2. Is the stock ownership of politicians positively associated with firm contributions?

The main objective of politicians in establishing a relation with firms is to obtain these firms' contributions and support. Thus, if politicians indeed use their ownership as a mechanism to establish a relation with contributing firms, one would expect a positive association between the ownership of these politicians and contributions (i.e., a mutually supportive relation). Therefore, I test my prediction that ownership is a mechanism for establishing a relationship with firms with the following hypothesis,

H2: *There is a positive association between the ownership of politicians in firms and contributions they receive from these firms.*

It should be noted that a positive association between politicians' ownership and firms' campaign donations can be explained by other factors than the cementing of mutually supportive relations. I outline those explanations in some detail because not only do they suggest important controls for the empirical design, but they also motivate a different test of the same hypothesis.

Familiarity and *geographical proximity*, is supported by several prior studies on investment allocation decisions, which demonstrate that both variables serve as significant determinants of investment behavior (see, e.g., Coval and Moskowitz 1999). Investors prefer to include in their portfolios firms they are familiar with, either because the firm is geographically proximate or the investor has personally consumed the firm's products. If firms tend to support politicians who represent the district in which they are headquartered and if politicians tend to invest in firms close to home, then a positive correlation between ownership and contributions would follow. The second theory is Merton's (1987) *investor recognition hypothesis*. Merton argues that investors focus on stocks they recognize to construct their portfolios. Politicians, like other investors, are likely to invest in large firms because investors tend to know more about large firms. These large firms, in turn, are more likely to be politically active and to establish a political action committee that makes campaign

contributions.[47] Taken together, failure to control for firm size can drive a positive association between investment and contribution.

Politicians' committee assignments may also make them more aware of a particular firm. Much of the Congress's legislative process is prepared via sub-committees. Politicians are more likely to be aware of firms belonging to industries under the aegis of committees on which they serve, particularly the largest of these firms. Furthermore, the familiarity and investor recognition hypotheses would predict that politicians will not only recognize but invest in these firms. At the same time, firms are likely to curry favor with politicians who stand on committees able to affect their competitive position by contributing to these politicians' election campaigns.[48] Again, the positive association between ownership and contribution might stem from the effect Committee membership has on both ownership and contribution. Bear in mind that that the familiarity and investor recognition effect due to committee membership (which would predict that politicians invest more in firms belonging to industries under the influence of their committee assignments) biases against me finding results supporting **H1** above. In short, it is imperative to account for familiarity, geographical proximity, and investor recognition before concluding that the positive association between ownership and contribution is an evidence of mutual relation between firms and politicians.

An alternative way to rule out the familiarity and investor recognition hypotheses is by examining party-level contributions. Politicians scan the market for firms and other sponsors to support their election campaigns. Through this scanning process, politicians are likely to become aware of most of the firms participating in the political process. Some of these firms will support the party to which the politician belongs while others will support the opposing party; either way, politicians are likely to be aware of all politically active firms. Thus, if investor recognition alone caused politicians to invest in firms, we should find that politicians

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[47] Cooper, Gulen, and Ovtchinnikov (2009) demonstrate that firms that participate in the contribution process tend to be very large. They find that approximately 7.2% of publicly traded firms participate in the contribution process. They also find that these firms tend to be the largest firms on the market. Specifically, the average market capitalization of these firms places them in the top 8% of NYSE market capitalization.

[48] There is evidence that influential legislators, such as party leaders, committee chairs, and members of powerful committees, raise substantially more funds than other legislators (Grier and Munger 1991, Romer and Snyder 1994, and Ansolabehere and Snyder 1999).

invest in any firm participating in the political process, regardless of the firm's political leanings. However, should we find instead that politicians invest more in firms that favor their party and less in firms that oppose their party, we can conclude that investor recognition is not the full story. Indeed, we would not then observe partisan behavior driving investment decisions. Conversely, should partisan behavior inform politicians' investment decisions, I can conclude that the association between ownership and contribution captures a mutually supportive relation. Therefore, I alternatively test whether there is a partisan component in politicians' investment decisions.

4.2.2.3. Is the association between ownership and contribution a function of the size of potential benefit to the firm?

For the association between ownership and contribution to capture the relationship between politicians and firms, the strength of that association should reflect the degree of its usefulness. In other words, if we observe this association to be a function of measures capturing the value of the relation, one would confidently believe that there is a relation established by politicians with contributing firms using their ownership. Therefore, I hypothesize that,

H3: *The association between ownership and contribution is a function of how valuable it is to establish a mutual relation between politicians and firms.*

Specifically, I examine **H3** in three situations where *a priori* it is expected that the value of the relation varies. The first situation focuses on the absence/availability of other mechanisms linking politicians and firms, and the other two address situations involving politicians who have varying degrees of ability to provide benefits to firms.

First, since the relationship is more valuable with politicians who do not have a mechanism enabling them to establish a relation with firms, and is less valuable for politicians who already possess such a mechanism, I predict that the association between ownership and contribution is higher for the former than the latter. Since Krozner and Stratmann (1998) show that the committee assignment is a strong mechanism, I predict that the association between ownership and contribution is higher for politicians who are not seated in committee

assignments affecting the firm than for those who are seated in committee assignments affecting the firm.

Second, the mutual relations between politicians and firms are established with the understanding that politicians will grant benefits to the firms and that, in turn, the firms will increase their contributions to and support for the politicians. Then, it stands to reason that these mutual relations will be more valuable when they involve powerful politicians. This is because a powerful politician can award more benefits to firms than a non-powerful one. For example, from his or her seat on an appropriate Congressional committee, a politician can influence government policy in a desired direction. The literature demonstrates that not all committee assignments are capable of generating maximum benefits to firms (Edwards and Stewart 2006). The literature also suggests that a politician's seniority affects the distribution of government benefits (Roberts 1990). Because powerful politicians can provide firms with more benefits than non-powerful ones, firms have greater incentives to contribute to powerful politicians than non-powerful ones (Grier and Munger 1991; Romer and Snyder 1994; and Ansolabehere and Snyder 1999). These incentives will be even greater if the powerful politicians own shares in the firms because, being owners, the politicians will align their interests with those of the firms. Thus, the value of the mutual relation increases with the powerfulness of the politician. Therefore, I predict that the positive association between ownership of politicians and the contributions is increasing in politicians' power.

Third, official authorities (such as the Office of Congressional Ethics), nonpartisan public interest organizations (such as Judicial Watch), and public watchdogs (such as the Citizens for Responsibility and Ethics in Washington) that monitor politicians' behavior question some politicians about providing benefits to firms with which they have personal ties. The investigations and monitoring of these institutions put these politicians under heavy scrutiny and exposes them to the risk of being forced to leave office. This will, accordingly, constrain the ability of these politicians to help firms, and increase firms' uncertainty with regard to what these politicians can still provide them. Since the relationships with the politicians when they are 'under investigation' are no longer valuable, there will be a lower demand for creating a relationship with these politicians during these periods compared to the time periods

where they were not yet under investigation. Such differences in the value of creating the relation in the two periods should be reflected in how politicians invest in the contributing firms in these two periods relative to how they generally invest in the non-contributors. Therefore, I predict that politicians invest more in the contributing firms during the time periods where they are 'not' yet under investigation than in the non-contributing firms, but not during the time periods where they are under investigation.[49]

4.2.2.4. Do firms obtain actual private benefits from a mutual relation with politicians?

To the extent the association between politicians' share ownership and firms' contributions captures the relation between firms and politicians, I predict that as the strength of this association increases so too will the provision of benefits from politicians to firms. In other words, the association between politicians' share ownership and firms' contributions should explain a given firm's likelihood of receiving government benefits. To test this prediction, I focus on the one clear benefit that can accrue to firms at the behest of a politician, that is, the awarding of government contracts. To capture the mutually supportive relation between a firm and group of politicians, I compute for each firm a measure of the association between politicians' share ownership in this firm and the contributions the firm makes to their election campaigns (i.e., Ownership-Contribution Association). I then use this firm-specific measure to test my prediction that mutually supportive financial ties between politicians and firms increase the likelihood that the government will provide benefits to these firms, as the following hypotheses reflects:

H4: *There is a positive association between government contracts awarded to firms and the Ownership-Contribution Association.*

4.2.2.5. Does divesting the stock terminate the mutual relation between politician and firm?

Krozner and Stratmann (1998) argue that since the committee assignment is the mechanism that avoids the breakdown of the contributor-politician relationship, we should indeed observe the breakdown of this relation if the politicians switch their committees. Consistent with their theory, they find that contributions to those politicians who switch their committee

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[49] In the empirical analyses, I use two benchmarks for ownership in non-contributing firms. The first is the ownership by only those politicians who are under investigations, and the second is the ownership by all politicians whether they are under investigations or are not under investigation.

assignments fall. Romer and Snyder (1994) also find that politicians who switch committees initially tend to lose more in total contributions than they gain. If the ownership of politicians, as I argue in the paper, is indeed a mechanism for avoiding the breakdown of the relation, we should observe politicians who choose to terminate the relations by divesting their stocks in firms to receive 'no' contributions from these firms in the future conditional upon receiving contributions in the past. However, this breakdown in the relation should not occur if there is already a mechanism in place that is protecting the relationship from such breakdown (such as the committee assignments). Therefore, I hypothesize that,

H5a: *Divesting the stocks by politicians who do not serve in a committee assignment affecting the firm reduces the likelihood of receiving future contribution from the firm conditional upon receiving contributions in the past.*

H5b: *Divesting the stocks by politicians who serve in a committee assignment affecting the firm does not affect the likelihood of receiving future contribution.*

4.3. Empirical Setting

4.3.1. Data

4.3.1.1. *Stock Ownership data*

Members of Congress, candidates for federal office, senior congressional staff, nominees for executive branch positions, Cabinet members, the President and Vice President, and Supreme Court justices are required by the Ethics in Government Act of 1978 to file annual reports disclosing their income, assets, liabilities, and other relevant details about their personal finances. Personal financial disclosure forms are filed annually by May 15 and cover the preceding calendar year. The Center for Responsive Politics (CRP) collected the 2004–2007 reports both for Congress members from the Senate Office of Public Records and the Office of the Clerk of the House and for the executive branch members (i.e., the President, Vice President, presidential Cabinet, and other select officials) from the U.S. Office of Government Ethics. The Center then scanned the reports as digital images, classified the politicians' investments into categories including stocks, bonds, and mutual funds, and built a database accessible via a web query.

Using CRP's website, I collect the shares in S&P 500 firms held by members of Congress between 2004 and 2007. I collect the stock ownership data for every firm that joined the S&P 500 Index any time between 2004 and 2008; regardless of when it joined the index, I obtained all the available stock ownership data for that firm between 2004 and 2007. Likewise, if a firm dropped out of the index at any time during 2004–2008, I nevertheless retain the firm in my sample for the target period. As such, my sample includes stocks in 642 unique firms owned by politicians between 2004 and 2007.

Politicians are required to report only those stocks whose value exceeds $1,000 at the end of the calendar year or that produce more than $200 in income. They are not required to report the exact value of the holding, but instead must simply check a box corresponding to the value range into which the asset falls. The CRP then undertakes additional research to determine the exact values of these stocks. When the Center makes these determinations, it reports them instead of the ranges and I use these values in my study. When only the range is available, I use its midpoint as the holding's value. I have data on the stock holdings of 709 politicians.

4.3.1.2 Political Action Committee (PAC) Contributions

The Federal Election Campaign Act (FECA) sets limits on the amount PACs can contribute to candidates. Specifically, PACs are allowed to contribute up to $10,000 to a candidate per two-year election cycle (i.e., $5,000 during a primary election and $5,000 during a general election). Using the CRP's website, I searched for all Political Action Committees (PACs) associated with my sample firms. I then collected data on each contribution these PACs made to candidates (both the winners and losers) running for the Senate and House elections. Some firms establish several PACs, each in a different location, and each of these PACs can contribute to the same candidate.[50] In such cases, I total for each candidate every contribution he or she received from PACs affiliated with the same firm. To parallel the investment data sample period, I collect every contribution made from the 2003–2004 cycle up to and

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[50] According to the FECA, "Two or more *affiliated* committees are treated as a single committee for the purposes of the *contribution* limits. This means that all contributions made or received by several *affiliated* committees count against the same limits."

including the 2007–2008 cycle. Nevertheless, despite the fact that my sample contains the largest firms on the market, approximately 37% of my sample firms did not make contributions to politicians during my sample period.

4.3.1.3. Government Contracts

I collected my government contract data from Eagle Eye Publishers, Inc., one of the leading commercial providers of Federal procurement and grant business intelligence.[51] Eagle Eye collects its contract data from Federal Procurement Data System–Next Generation (FPDS-NG), the contract data collection and dissemination system administered by the U.S. General Services Administration (GSA). FPDS-NG provides data on procurement contracts awarded by the U.S. Government. If these contracts are awarded to company subsidiaries, Eagle Eye searches for the names of their parent companies and assigns each subsidiary to its appropriate parent. To facilitate the use of its contract data for academic research, Eagle Eye aggregates the procurement contracts for subsidiaries of companies at the parent-company level. Eagle Eye enables searching for contract data by subsidiary as well as by parent company.[52] If a subsidiary's ownership changes during the fiscal year, then Eagle Eye adjusts the parent company to reflect the change in subsidiary ownership as close as possible to the date the merger or acquisition was finalized. Eagle Eye continuously updates the parent companies to reflect the majority owners of each company in the current fiscal year.

I collected both the number and aggregate value of government contracts that were awarded to my sample firms between 2004 and 2007.[53] Approximately 22% of my sample firms did not

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[51] I collect the data from this website: http://www.usaspending.org

[52] The Parent Company Name is the unique name of the parent organization that owns at least 51% of the recipient of a contract (e.g., a subsidiary or a division) at any point during the fiscal period.

[53] For the federal government, a fiscal year is the 12-month period beginning on October 1 and ending on September 30. A fiscal year is defined by the last two digits of the calendar year in which the bulk of the fiscal year falls. For example, the period spanning October 1, 2007 through September 30, 2008 is called FY 2008. Each individual contract obligation is assigned a fiscal year in *USASpending.org* based on the sign date of the obligation, that is, the date a government agency committed to making the contract obligation. Fiscal year dollar totals—of agency spending, of company revenue, etc.—are aggregations of every obligation amount reported as being made during the indicated fiscal year.

receive contracts during my sample period. Table 1, Panel B presents the descriptive statistics for the number and size of the contracts.[54]

4.3.2. Empirical Models

I estimate three empirical models. Several specifications of the first model are for examining hypotheses one, two, and three, while the second and third models are for testing hypotheses four and five, *respectively*.

4.3.2.1. The Empirical model and results for Hypotheses One, Two, and Three:

Not every politician invests in my sample firms. Even when they do invest, politicians do not invest every year or in all firms.[55] Of a total number of 1,309,727 politician-firm year observations, only 17,872 correspond to positive investments. In other words, politicians' share ownership, our dependent variable, is continuous and truncated at zero. Therefore, consistent with prior studies on household finance, I use a Tobit model to explain a given politician's decision to invest or not to invest in a firm, as well as the amount invested (Wooldridge 2002).[56] The ownership, y_{ijt}, of politician i in firm j at time t is explained by the following model,

$$ y_{ijt}^{*} = x_{ijt}^{'} \kappa + z_{jt}^{'} \lambda + v_{it}^{'} \delta + \alpha_{j} + \gamma_{i} + \varepsilon_{ijt} \qquad (1), $$

$$ y_{ijt} = y_{ijt}^{*} \text{ , if } y_{ijt}^{*} \geq 0 $$
$$ \text{or} \qquad 0 \text{ , if } y_{ijt}^{*} < 0 $$

wherein y_{ijt}^{*} is the desired amount of ownership in the firm, while y_{ijt} is the actual amount of ownership. If the desired amount of ownership is positive, then the actual ownership equals

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[54] My sample includes 16 firm-year observations that are de-obligations, which "means the government has either reduced the authorized value of the contract, or has cancelled the contract outright." (See the definition of de-obligations at http://www.usaspending.org). These de-obligations have negative dollar amounts. In my empirical analyses, I replace the negative values of these cases with zero.

[55] If we observe no investment by a politician in a firm at time t, it is nevertheless incorrect to automatically assign a zero to this observation. It might, for example be the case that: 1) the firm did not exist at time t, 2) the firm was not a publicly traded firm in year t, or 3) the firm was once publicly traded but went private in year t. In all of these cases, the investment variable at time t should have missing values rather than zeros. To ensure that I do not mistakenly assign zeros to these firm-year observations, I record zeros only when at least one trading day is reported that year in CRSP.

[56] For example, van Soest and Kapetyn (2006).

the desired ownership. If the desired amount of ownership is negative, then the actual ownership is zero. I measure the actual ownership as the natural logarithm of the dollar amount of shares owned if the politician invests, and zero if he or she does not invest ($Ownership_{ijt}$).

The desired amount of ownership is modelled as a function of the following explanatory variables. Please note that complete definitions of the variables and their data sources are provided in Appendix 1 and their descriptive statistics are presented in Table 1. First, the vector x_{ijt} includes politician-firm–specific characteristics, specifically, three measures. The first, PAC_{jit} , is an indicator variable that equals 1 if politician i receives a campaign contribution from firm j in year t, and zero otherwise. The second, $Com\_Firm\_Match_{ijt}$, is an indicator variable that takes a value of 1 when the industry to which firm j belongs is under the influence of politician i's Congressional committee at time t, and zero otherwise. I obtain my data on Congressional committee assignments from the website of Charles Stewart III (MIT).[57] The third is $State\_Firm\_Match_{ij}$. I measure this variable for Representatives as an indicator variable that takes a value of 1 if both the headquarter of firm j and the Congressional district of politicians i belong to the same state, and zero otherwise, I measure $State\_Firm\_Match_{ij}$ for Senators as an indicator variable that takes a value of 1 if the headquarter of firm j are in the same state as politician i, and zero otherwise. $State\_Firm\_Match_{ij}$ captures geographical proximity between politician i and firm j. In addition, this indicator variable can capture a politician's degree of familiarity with and recognition of a certain firm. It can also capture politicians' political motivations for establishing ownership in a particular firm as politicians may invest in firms located in their congressional districts in order to attract these firms' contributions and support during elections.[58] I obtain my data on the location of firm headquarters from Compustat and on the

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[57] Charles Stewart III and Jonathan Woon. Congressional Committee Assignments, 103rd to 110th Congresses, 1993--2007: [House and Senate], [updated to 01/03/2009]. These databases are available at http://web.mit.edu/17.251/www/data_page.html

[58] The following quote from one of the media's reports in 2006 highlights this point: "only one member of Michigan's congressional delegation owned stock in troubled Ford Motor Co. last year: Republican Rep. Dave Camp. Is it just a coincidence he's headed for an easy victory on Tuesday?" (See http://www.slate.com/id/2152887).

location of both Congressional districts of Representatives and States of Senators from the Center for Responsive Politics.

Second, the vector z_{jt} includes the following firm-specific characteristics: $Size_{jt-1}$, which is the log of the market capitalization for firm j at the end of year t-1 (i.e., at the beginning of year t); BM_{jt-1}, which is the book-to-market ratio for firm j at the beginning of year t; $Momentum_{jt}$, which is the twelve-month buy-and-hold stock return; Re$turn\ Volatility_{jt}$, which is measured as the standard deviation of daily returns; $Dividends_{jt}$, which is the dividends per share divided by the year-end share price; $Leverage_{jt}$, which is the ratio of total debt to total assets for firm j at time t; and ROA_{jt}, which is the income before extraordinary items available to common divided by total assets. I choose these firm-specific characteristics to maintain consistency with prior studies' determinants of investors' investment decisions (e.g., Leuz, Lins, and Warnock 2009). I delete all firm-year observations that have a negative book-to-market ratio (BM_{jt-1}). To mitigate the influence of outliers, I winsorize the firm-specific characteristics at the 1% and 99% levels.

Third, the vector v_{it} includes the following politician-specific characteristics: Net_Wealth_{it}, which is the difference between $Assets_{it}$ (i.e., the amount of assets owned by politician i at time t) and $Liabilities_{it}$ (i.e., the amount of liabilities owed by politician i at time t); Age_{it}, which is defined as the age of politician i at time t; and $Gender_i$, which is an indicator variable taking a value of 1 if politician i is male, and zero otherwise.

The panel structure of my data allows me to control for the unobserved time-invariant politician-specific characteristics as well as unobserved time-invariant firm-specific characteristics that might be correlated with the variables of interest. Specifically, I include α_j and γ_i to capture the unobserved time-invariant characteristics of firms and politicians, respectively. Following Chamberlain (1984), I model the firm effects α_j as a sum

of the linear combination of the means of the time-varying regressors z_{jt} and an error term that is independent of the regressors:

$$\alpha_j = \sum_k \overline{z}_{jk} \lambda_k + \eta_j \qquad (2)$$

Similarly, I model the politician effects γ_i as a sum of the linear combination of the means of the time-varying regressors v_{it} and an error term that is independent of the regressors:

$$\gamma_i = \sum_l \overline{v}_{il} \delta_l + \xi_i \qquad (3)$$

4.3.2.1.1. Hypothesis One: *Ownership of politicians and Committee Assignments*

Table 2 provides the results of my first hypothesis. $Com\_Firm\_Match_{ijt}$ is my variable of interest for testing **H1.** If the ownership of politicians is an alternative mechanism to establish mutual relation with firms to substitute the absence of formal mechanisms linking firms and politicians, **H1** predicts the coefficient on $Com\_Firm\_Match_{ijt}$ to be negative. If the latter captures, instead, a politician's degree of familiarity with and recognition of a certain firm, one would expect the coefficient to be positive.

As Table 2 shows, the coefficients on $Com\_Firm\_Match_{ijt}$ is negative and significant, which suggests that politicians own smaller amounts in firms belonging to industries controlled by their committee assignment. While the latter finding is inconsistent with the familiarity and investor recognition hypotheses, it is consistent with my prediction that the ownership of politicians act as the alternative mechanism to mitigate the lack of formal mechanisms (such as the committee assignments), thereby avoiding the breakdown of politicians-firms exchange market.

4.3.2.1.2. Hypothesis Two: *Ownership of politicians and firms' contributions*

My second hypothesis is that there is a positive association between the ownership of politicians in firms and contributions they receive from these firms. To test this hypothesis I conduct two tests below, the first focuses on the contribution that a firm pays directly to the

politician and the second focuses on the contribution a firm pays to the political party of the politician.

4.3.2.1.2.1. Ownership of politicians and contributions of firms to the politician

Table 2 provides the results of my second hypothesis. PAC_{jit} is my variable of interest for testing **H2. H2** predicts a positive coefficient on PAC_{jit}. As Table 2 shows, the coefficient on PAC_{jit} is positive and significant controlling for politician-firm–specific characteristics, politician-specific characteristics, and firm-specific characteristics. These results suggest that the association between ownership and contributions is less likely to be driven by either intervening politician-firm–specific characteristics or firm-specific characteristics driving both ownership and contribution in the same direction. That said, I cannot confidently conclude that the association supports **H2** until I take into consideration the results of the second test discussed below.

4.3.2.1.2.2. Ownership of politicians and firms' contributions to political parties

I further test **H2** by examining whether the contributions firm j pays to the party of politician i also affect said politician's investment decision. I focus here on the two main political parties in the United States, namely the Republican Party and Democratic Party. I replace PAC_{jit} with the variable $PACdem_{jt} - PACrep_{jt}$, which is the difference between the sum of all contributions paid to Democratic candidates by firm j in year t and the sum of all contributions paid to Republican candidates by firm j in year t. The higher (lower) the value of the variable $PACdem_{jt} - PACrep_{jt}$, the greater is a company's connection to the Democratic (Republican) Party relative to the Republican (Democratic) Party. When the variable $PACdem_{jt} - PACrep_{jt}$ equals zero, this means that a firm either supports both parties equally or it does not support either of them. I interact the variable $PACdem_{jt} - PACrep_{jt}$ with the indicator variable *republican*, which takes a value of 1 if the politician is Republican, and zero if the politician is Democratic.

As Table 3 shows, the coefficient on the variable $PACdem_{jt} - PACrep_{jt}$ is positive and significant, which suggests that Democratic politicians own larger amounts in firms that favor Democratic candidates relative to Republicans. In addition, it shows that (1) the coefficient on the interaction of $PACdem_{jt} - PACrep_{jt}$ with *Republican* is negative and (2) the sum of the coefficients on $PACdem_{jt} - PACrep_{jt}$ *and* its interaction with *Republican* is negative and significant. These results suggest that Republican politicians own less shares in a firm that favors the Democratic Party over the Republican Party. In other words, Republicans (Democrats) invest more (less) in a firm that favors Republicans over Democrats. These results suggest that some degree of partisanship drives politicians' investment decisions.

In addition, the results in table 3 show a significant positive coefficient on the variable *Republican*. Since the latter is interacted with $PACdem_{jt} - PACrep_{jt}$, the positive coefficient on *Republican* suggests that Republicans invest more than Democrats in firms that are either connected to both parties equally or connected to neither (i.e., firms whose $PACdem_{jt} - PACrep_{jt}$ equals zero). Further, the results show that this incremental difference in the amounts allocated by Republicans relative to those by Democrats decreases (increases) when the firm is connected more to Democrats (republicans).

Collectively, the results of the two tests presented in Tables 2 and 3 suggest that the association between ownership and contributions captures motivations other than familiarity, geographic proximity, and investor recognition. I can therefore conclude that this association suggests the use of ownership by politicians as a mechanism to establish relations with contributing firms.

4.3.2.1.3. Hypothesis Three: *The association between ownership and contribution and potential benefits to firms*

In this section, I examine my prediction that share ownership by politicians is a mechanism to establish relations with contributing firms by examining whether the association between ownership and contribution is stronger in situations where it is expected, *a priori*, that

establishing a relation between firms and politicians is valuable for either or both firms and politicians. Specifically, I examine three situations below.

4.3.2.1.3.1. Committee Assignments of Politicians

This test focuses on the availability of other mechanisms linking politicians and firms. I predict that the use of ownership to establish a relation with contributing firms is more valuable when politicians do not have an alternative mechanism that enables them to do so. Specifically, I test the prediction that the association between ownership and contribution is higher for politicians who are not seated in committee assignments affecting the firm than for those who are seated in committee assignments affecting the firm. Consistent with this prediction, Table 4, column 1 shows that the coefficient on PAC_{jit} is positive and significant, while the coefficient on the interaction term $PAC_{jit} * Com\_Firm\_Match_{ijt}$ is negative and significant.

4.3.2.1.3.2. Powerful Politicians

Since establishing a relation will be more valuable when they involve powerful politicians, I predict that the association between ownership and contribution is increasing in politicians' power. I use three measures of politicians' power. The first, $Powerful\_Committee_{it}$, is an indicator variable that takes a value of 1 if politician i is a member of an influential and powerful committee at time t, and zero otherwise. To compute my first measure of power, I follow Cohen, Coval, and Malloy (2009) and use the ten most powerful committees, as determined by Edwards and Stewart (2006), on both the U.S. Senate and the House: the Finance, Veterans Affairs, Appropriations, Rules, Armed Services, Foreign Relations, Intelligence, Judiciary, Budget, and Commerce committees on the U.S. Senate and the Ways and Means, Appropriations, Energy and Commerce, Rules, International Relations, Armed Services, Intelligence, Judiciary, Homeland Security, and Transportation and Infrastructure committees on the House. Because a politician can serve on more than one committee, my second measure of power counts the number of influential committee seats politician i holds at time t (i.e., $No\_Powerful\_Committees_{it}$). Similarly, because seniority has been proven to be an important measure of power (Roberts 1990), my third measure captures the seniority level

of politician i at time t (i.e., $Seniority_{it}$). I measure seniority as the log of 1 plus the number of years since the date a politician was first elected to Congress. I collect from CRP the first year a politician is elected and then subtract this year from year t.

I include these three measures of power independently in equation 1, along with their interaction terms with PAC_{jit}. **H3** predicts a positive coefficient on each of the coefficients on the interaction terms. Table 4 presents the results for **H3**. Columns 2, 3, and 4 report the respective results of using $Powerful\_Committee_{it}$, $No\_Powerful\_Committees_{it}$, and $Seniority_{it}$ as my measure of power. As shown in Columns 2–4, the coefficients on the interaction terms are all positive as well as significant. Thus, my results support my prediction that the association between ownership and contribution is increasing in politicians' power.

4.3.2.1.3.3. Monitored Politicians

The final test focuses on those politicians who are under investigation for ethics issues. I predict that politicians invest more in contributing firms during the time periods when they are 'not' yet under investigation than in the non-contributing firms, but not during the time periods when they are under investigation. To test this prediction I replace PAC_{jit} with two indicator variables. The first is $PAC\_Non-Invesigation_{jit}$, which is defined as an indicator variable that equals unity if politician i receives a campaign contribution from firm j *and* is 'not' under investigation in year t, and zero otherwise. The second is $PAC\_Invesigation_{jit}$, which is defined as an indicator variable that equals unity if politician i receives a campaign contribution from firm j *and* is under investigation in year t, and zero otherwise. Table 5 reports the results of these predictions. Column 1 reports the results of restricting the sample to only those politicians who are under-investigation, while column 2 reports the results of estimating the model with the full sample of politicians. Consistent with my prediction, the results in Column 1 shows a significant positive coefficient on $PAC\_Non-Investigation_{jit}$, and an insignificant negative coefficient on $PAC\_Investigation_{jit}$. The results of Column 2 are consistent with those in Column 1 with the exception that the negative coefficient on $PAC\_Investigation_{jit}$ is significant. The latter result suggests that when politicians are

being more closely monitored, they shy away from firms that contribute to their election campaigns.

4.3.2.2. Hypothesis Four: *Ownership-contribution association and actual benefits to firms*

If the association between ownership of politicians and firms' contributions to those politicians captures the relation between them, I hypothesize that the strength of this association explains the provision of private benefits from politicians to firms. I focus on the award of government contracts as the measure of private benefits to firms. To test this hypothesis, I first estimate the following Tobit model annually for each firm,

$$y_i^* = \beta \, PAC_i + \varepsilon_i \qquad (4),$$

$$
\begin{aligned}
y_i &= y_i^* \text{ , if } y_i^* \geq 0 \\
\text{or} &\quad 0 \text{ , if } y_i^* < 0
\end{aligned}
$$

where y_i^* is politician i's desired amount of ownership in the firm, while y_i is the actual amount of ownership. If the desired amount of ownership is positive, then the actual ownership equals the desired ownership. If the desired amount of ownership is negative, then the actual ownership ($Ownership_i$) is zero. I measure the actual ownership as the natural logarithm of the dollar amount of shares owned if politician i invests, and zero if he or she does not invest. PAC_i is an indicator variable that equals unity if politician i receives a campaign contribution from the firm, and zero otherwise. β, which I refer to as *Ownership-Contribution Association*, in equation (4) is my measure of the mutual relation between a firm and the politicians who invest in this firm.

When there is a positive association between politicians' share ownership in these firms and the firms' election contributions (i.e., when β in equation 4 is positive), a mutual relation between politicians and firms is likely to exist. In contrast, when there is a zero (or a negative) association between politicians' share ownership and firms' election contributions (i.e., when β is zero or negative), it is less likely that a mutual tie between politicians and firms

exists. This is because not every politician invests for the purpose of establishing a close relationship with the firm, and firms may contribute to politicians during elections solely to support their government of choice, rather than to establish mutual connections with politicians. In addition, some politicians may even shy away from firms that contribute to their election campaigns in order to avoid conflicts of interest. Therefore, my measure of a mutual relation, i.e., *Ownership-Contribution Association*, takes the value of β when it is positive, and zero when β is either zero or negative. After estimating equation 4, I find that β is positive for 490 firm-year observations (belonging to 222 firms). Table 1, Panel B presents the descriptive statistics for β. I include my measure *Ownership-Contribution Association* in equation (5) below to test my hypothesis that there is a positive association between government contracts awarded to firms and the Ownership-Contribution Association:

$$Government\_Contracts_{jt} = \beta_0 + \beta_1\ Ownership\_Contribution\_Association_{jt} + \beta_2\ Controls_{jt} + \xi_{jt}$$
(5)

I use two measures of government contracts. The first, $Contract\_Amounts_{jt}$, is defined as the log of 1 plus the aggregate values of procurement contracts awarded to firm j at time t. The second measure is $Contract\_numbers_{jt}$, which is defined as the log of 1 plus the aggregate number of contracts. Because 757 of the 2,398 firm-year observations in my sample (i.e., approximately 32%) have no contracts, I estimate equation (5) using a Tobit model.

There is a concern that variations in *Ownership-Contribution Association* across firms actually capture differences in firm-specific characteristics that also drive government contracts. To mitigate this concern, I control for determinants of contracts, such as firm size, that can also drive ownership-contribution association. I also control for other determinants of government contracts following Goldman, Rocholl, and So (2008). Specifically, my controls include: $Size_{jt}$, which is the log of the market capitalization for firm j at the end of year t; BM_{jt}, which is the book-to-market ratio for firm j at the end of year t; $Herfindahl\_Index_{jt}$, which is the Herfindahl sales concentration index that controls for the intensity of competition for government contracts between firm j and its competitors and is based on the total sales of

all firms with the same two-digit SIC code; $CAPX/Sales_{jt}$, which is defined as the ratio of capital expenditure to sales for firm j in year t and controls for the possibility that a company expanded its facilities to increase future production; ROA_{jt}, which is the income before extraordinary items available to common divided by total assets and captures firms' long-term profitability and viability; and $COGS/Sales_{jt}$, which is defined as the ratio of the cost of goods sold to sales of firm j at time t and captures the firm's cost-efficiency and attendant likelihood of being awarded government contracts. I delete all firm-year observations that have a negative book-to-market ratio (BM_{jt}). To mitigate the influence of outliers, I winsorize these determinants at the 1% and 99% levels. Using the two-digit SIC Industry Classifications, I include a full set of industry dummies. I also include a full set of year dummies.

Table 6 presents the results of my fourth hypothesis. Columns 1 and 2 (3 and 4) present the results of using the aggregate size (number) of the procurement contracts as the measure of government benefits. Specifically, Column 1 presents a significant positive association between the aggregate size of the contracts awarded to firms and the firm-level Ownership-Contribution Sensitivity and Column 2 shows that this positive association remains significant at the 5% level, even after controlling for other contract determinants. Columns 3 and 4 report similar results using the aggregate number of contracts as the measure of government benefits. Overall, my findings support my fourth hypothesis that there is a positive association between government contracts awarded to firms and the Ownership-Contribution Association.

4.3.2.3. Hypothesis Five: *Divesting the stocks and the termination of politician-firm relation*
In this section I examine my final predictions that divesting the stocks by politicians who do not serve in a committee assignment affecting the firm reduces the likelihood of receiving future contribution from the firm conditional upon receiving contributions in the past; while divesting the stocks by politicians who serve in a committee assignment affecting the firm does not affect the likelihood of receiving future contributions. To test these predictions, I estimate the following logit model:

$$PAC\_Discontinuation_{ijt} = \beta_0 + \beta_1\ Divest_{ijt-1} + \beta_2\ Divest_{ijt-1} * Com\_Firm\_Match_{ijt-1} +$$

$$\beta_3 Com\_Firm\_Match_{ijt-1} + \beta_4\ Controls + u_{ijt}$$

(6)

where $PAC\_Discontinuation_{jit}$ is an indicator variable that takes the value 1 if politician i does 'not' receive a contribution from firm j at time t conditional upon receiving a contribution at time t-1, and zero when politician i receives a contribution from firm j at time t conditional upon receiving a contribution at time t-1.[59] Every politician i in my sample is running for (re)election at time t.[60] $Divest_{ijt-1}$ is defined as an indicator variable that takes a value of 1 when politician i is 'not' an investor in firm j at time t conditional upon being an investor at time t-1, and zero when politician i is an investor in firm j at time t conditional upon being an investor at time t-1. The variable $Divest_{ijt-1}$ has a one year lag because politicians disclose their investments of year t-1 at year t. Thus, firms know about the divestment decisions of politicians, that occurred in year t-1, at year t. $Com\_Firm\_Match_{ijt-1}$, is an indicator variable that takes a value of 1 when the industry to which firm j belongs is under the influence of politician i's Congressional committee at time $t-1$, and zero otherwise. The set of controls includes the following. $State\_Firm\_Match_{ij}$, which is defined, for Representatives, as an indicator variable that takes a value of 1 if both the headquarter of firm j and the Congressional district of politicians i belong to the same state, and zero otherwise., while defined, for Senators, as an indicator variable that takes a value of 1 if the headquarter of firm j are in the same state of politicians i, and zero otherwise. This variable is to account for the possibility that firms are less likely to terminate a relation with politician representing the state or district in which they are headquartered. $Seniority_{it}$, is defined as the log of 1 plus the number of years since the date a politician was first elected to Congress. Age_{it} is defined as the age of politician i at time t. I include $Seniority_{it}$ and Age_{it} to account for the possibility that firms are more likely 1) to continue the relation with senior politicians holding their age

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[59] There is the concern that the non-payment of contribution at time t is due to paying the allowable maximum amount of contributions at time t-1, and not due to firms stopped supporting politicians. This situation can only happen when both years t and t-1 belong to the same election cycle since the limit on contributions is per election cycle. In order to mitigate this concern, if politicians indeed received the maximum contribution in year t-1, I do consider that they also received contribution at time t.

[60] I exclude from my analysis the politicians that retired, resigned or died at time t.

constant, and 2) to terminate the relation with politicians that are about to retire holding their seniority constant. In order to account for party affiliations of politicians, I include the variable *Republican*, defined as an indicator that takes a value of 1 if the politician is Republican, and zero if the politician is Democratic.

There is a possibility that some changes in firm characteristics drive both the divestment decision of politicians and the discontinuation of firms' contributions. Failure to account for these changes might lead to an omitted variable bias. For example, a reduction in firm size might lead to divesting the stocks, and at the same time reduces firms' ability to continue supporting the candidates in the future. To account for this possibility, I include the variable $\Delta Size_{jt-1}$ which measures the change in firm size during the divest year. Higher (lower) values of $\Delta Size_{jt-1}$ means size increased (decreased) during the divest year.

Table 7 report the results of estimating equation (5). Column 1 reports the logit model estimates when I only include the variable of interest $Divest_{ijt-1}$. The sign is positive and significant at the 5% level, suggesting that if politicians divested their stocks, they are less likely to receive future contributions from the firm conditional upon being supported by the same firm in the past. Column 1 reports the logit model estimates when I interact $Divest_{ijt-1}$ with $Com\_Firm\_Match_{ijt-1}$. The coefficient on the interaction term is negative and significant. The sum of the coefficients on $Divest_{ijt-1}$ and the coefficient on $Divest_{ijt-1} * Com\_Firm\_Match_{ijt-1}$ is insignificant. The latter results suggest the termination of the relation due to divesting the stocks does not happen when politicians are, at the time of the liquidation of their stock holding, serving in a committee assignment affecting the firm. Columns 3-6 report the results of estimating equation (5) with a conditional fixed effect logit model. Columns 3 and 4 (Columns 5 and 6) fix the effect at the politician (firm) level. Regardless of the specification, the results in Table 7 support my prediction that divesting stocks by politicians terminate their relation with contributing firms in the absence of other mechanism protecting the relation from termination.

4.4. Concluding Remarks

Writing a fee-for-service contract, in which firms support politicians during the election and politicians, in turn, provide private benefits to these firms, is considered bribery and cannot be enforced by courts. Politicians can renege on their promises and firms have no recourse. Higher uncertainty with regard to how these politicians will act towards firms will lead to a breakdown in the firm-politician exchange market. If politicians, however, tie their own interests to those of firms by owning their stocks, politicians commit not to renege on their promises. In addition, by not divesting politicians reduce firms' uncertainty with regard to their actions toward the firms, and prolong their relationship with these firms. Taken together, share ownership by politicians acts as a mechanism that fosters repeated interactions, reputation building, and long-term relationships of politicians that invest *with* firms in which they invest.

Politicians in the United States are required to disclose their financial dealings, as are U.S. firms that contribute to these politicians during elections. Collectively, these requirements allow me to examine whether the stock ownership of politicians is indeed an effective mechanism to establish mutual relations with contributing firms. I provide pieces of evidence suggesting that in the absence of institutional features of US Congress avoiding the break down of politicians-firms exchange market, such as the committee assignments (Krozner and Stratmann 1998), ownership of politicians provide an alternative solution.

Without the mandated disclosure requirements to which firms and politicians in the United States are subject, I would not have been able to examine the mutual relation between firms and politicians, and, accordingly, understand the consequences of such relationships. In other words, these mandated disclosures might be generally useful for monitoring the actions of politicians and making them accountable for their actions. The same mandated disclosure, however, is what makes the use of ownership an 'effective' mechanism to establish relation with firms. By these mandated disclosure politicians can signal to firms their intentions to establish a relation with them, and, similarly, can signal their intention of terminating such relation. Through these disclosures firms can also know whether politicians are indeed holding

their stocks, and are still tying their own interests to those of the firms. In addition, to be elected, politicians must garner support for their policy platforms across broad-based constituencies. A priori it is, therefore, plausible that politicians make investment decisions mindful, at least in part, of the potential effects these investments might have on their election outcomes. For example, investing in firms that use child labor in developing countries might alienate supporters of a progressive candidate. On the other hand, investing in a major employer in the politician's district might convince voters that their representative cares about their community. Taken together, politicians could be benefiting personally from these mandated disclosures by enabling them to convey signals to their constituencies via their buy and sell decisions of firms' stocks. Thus, the results of my study raises the need to re-ask the question raised by Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2009), that is, should politicians be required to disclose their personal finance and business connections to the public?

Politicians' investment decisions reflect the subtle interplay between political and financial motives, and understanding these motives enables us to better understand the relations between firms and politicians. My study also contributes to a broader literature that seeks to improve understanding of the interplays between decision making in markets and decision making in the political domain (the market for votes). This literature is still a long way away from being able to simultaneously model market equilibria and political equilibria. The ultimate prize, however, would be the creation of a model of general economic and political equilibrium that included the "market" for votes as well markets for goods, services, employment, and capital.

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Table 1

Table 1 provides descriptive statistics for all variables. See Appendix 1 for variable definitions.

Panel A: Variables used for testing hypotheses one, two and three

Variable	Mean	Std. Dev.	Min.	Median	Max.	N
Politician-firm–specific characteristics						
$Ownership_{ijt}$ ($)	1706.87	284182.06	0	0	167875004	1309727
$Ownership_{ijt}$ [If > 0] ($)	125036.75	2429185.4	1	8000.50	167875004	17879
PAC_{jit}	0.052	0.222	0	0	1	1309727
$State\_Firm\_Match_{ij}$	0.043	0.203	0	0	1	1309727
$Com\_Firm\_Match_{ijt}$	0.15	0.355	0	0	1	1309727
$PAC\_Non-Investigation_{jit}$ [when restricted to monitored politicians]	0.039	0.193	0	0	1	107314
$PAC\_Investigation_{jit}$ [when restricted to monitored politicians]	0.0303	0.1715	0	0	1	107314
$PAC\_Non-Investigation_{jit}$	0.0496	0.2171	0	0	1	1309727
$PAC\_Investigation_{jit}$	0.0025	0.0498	0	0	1	1309727
Politician-specific characteristics						
Net_Wealth_{t} (Millions)	6.586	28.572	–9.500	0.773	406.546	2307
Age_{it}	56.855	10.070	26	57	90	2307
$Gender_{i}$	0.839	0.368	0	1	1	709
$republican_{i}$	0.488	0.5	0	0	1	709
$Powerful\_Committee_{it}$	0.821	0.383	0	1	1	2307
$No\_Powerful\_Committee_{it}$	1.164	0.83	0	1	5	2307
$Seniority_{it}$ (Years)	10.759	8.835	0	9	52	2307

Firm-specific characteristics

$Size_{jt-1}$	23.013	1.091	20.712	22.905	26.007	2273
BM_{jt-1}	0.399	0.221	0.032	0.361	1.230	2273
$Return\ Volatility_{jt}$	0.017	0.006	0.007	0.015	0.077	2273
$Momentum_{jt}$	0.143	0.304	–0.789	0.117	1.194	2273
$Dividends_{jt}$	9.078	22.396	0	2.217	161.816	2273
$Leverage_{jt}$	0.591	0.210	0.118	0.590	0.981	2273
ROA_{jt}	0.061	0.061	–0.161	0.054	0.243	2273
$PAC\ dem_{jt}$ (Millions)	0.026	0.056	0	0.002	0.510	2273
$PAC\ rep_{jt}$ (Millions)	0.045	0.090	0	0.005	0.904	2273
$PAC\ dem_{jt} -\ PAC\ rep_{jt}$ (Millions)	-0.019	0.051	-0.575	0	0.169	2273

Panel B: Variables used for testing hypothesis four

Variable	Mean	Std. Dev.	Min.	Median	Max.	N
$Contracts\ Amounts_{jt}$	249860042	1854358235	0	241242	34965437979	2398
$Contracts\ Numbers_{jt}$	188.5	835	0	4	17625	2398
$Ownership\_Contribution\_Association_{jt}$	2.35	6.54	0	0	62.85	2398
$Ownership\_Contribution\_Association_{jt}$ [If >0]	11.208	10.056	0.008	7.679	62.85	490
$Size_{jt}$	23.117	1.068	20.921	23.022	25.997	2315
BM_{jt}	0.397	0.229	0.029	0.354	1.215	2315
ROA_{jt}	0.062	0.067	–0.566	0.054	0.503	2315

	Mean	Std. Dev.	Min.	Median	Max.	N
$Herfindahl\_Index_{jt}$	0.061	0.061	0.01	0.037	0.343	2315
$CAPX/Sales_{jt}$	0.068	0.098	0	0.037	0.629	2315
$COGS/Sales_{jt}$	0.577	0.217	0.094	0.613	0.945	2315

Panel C: Variables used for testing hypothesis five

Variable	Mean	Std. Dev.	Min.	Median	Max.	N
Politician-firm–specific characteristics						
$PAC\_Discontinuation_{ijt}$	0.411	0.492	0	0	1	1939
$Divest_{it-1}$	0.215	0.411	0	0	1	1939
$Com\_Firm\_Match_{ijt-1}$	0.171	0.377	0	0	1	1939
$State\_Firm\_Match_{ij}$	0.165	0.371	0	0	1	1939
Politician-specific characteristics						
$Seniority_{it}$ (Years)	12.827	8.239	1	12	53	450
Age_{it}	59.66	8.949	36	60	84	450
$republican_i$	0.584	0.494	0	1	1	214
Firm-specific characteristics						
$\Delta Size_{jt-1}$	0.127	0.243	–0.723	0.110	1.186	444

Table 2

Table 2 presents Tobit model estimates of $Ownership_{ijt}$, which is defined as the natural logarithm of the dollar amount of shares owned if politician i invests in firm j at time t, and zero if he or she does not invest. PAC_{jit} is an indicator variable that equals unity if politician i receives a campaign contribution from firm j in year t, and zero otherwise. $Com\_Firm\_Match_{ijt}$, is an indicator variable that takes a value of 1 when the industry to which firm j belongs is under the influence of politician i's Congressional committee at time t, and zero otherwise. All other variables are defined in Appendix 1. The sample includes politicians from every party (i.e., Democratic, Republican, Independent, and Third-party). Standard errors corrected for clustering at the politician-firm level are reported in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed test).

	(1) $Ownership_{ijt}$
PAC_{jit}	2.906***
	(0.290)
$Com\_Firm\_Match_{ijt}$	-0.509*
	(0.295)
$State\_Firm\_Match_{ij}$	4.514***
	(0.458)
Net_Wealth_{it}	0.010***
	(0.004)
Age_{it}	1.997***
	(0.224)
$Gender_i$	-1.876***
	(0.270)
$Size_{jt-1}$	4.327***
	(0.374)
BM_{jt-1}	1.729*
	(1.003)
$Momentum_{jt}$	2.665***
	(0.309)

Re*turn Volatility*$_{jt}$	182.274***
	(22.207)
Dividends$_{jt}$	-0.014**
	(0.006)
Leverage$_{jt}$	-6.564***
	(1.271)
ROA$_{jt}$	1.077
	(2.185)
Year Indicators?	Yes
Politician Effect?	Yes
Firm Effect?	Yes
Intercept	-243.060***
	(3.224)
Ln_sigma	21.630***
	(0.075)
N	1309727
pseudo R^2	0.088

Table 3

Table 3 presents the Tobit model estimates of $Ownership_{ijt}$, which is defined as the natural logarithm of the dollar amount of shares owned if politician i invests in firm j at time t, and zero if he or she does not invest. $PAC\ dem_{jt} - PAC\ rep_{jt}$ is the difference between the sum of contributions paid to all Democratic candidates (regardless of whether the candidate is elected) by firm j in year t and the sum of contributions paid to all Republican candidates (regardless of whether the candidate is elected) by firm j in year t. $republican$ is an indicator variable equal to 1 if a politician i is republican at time t, and zero otherwise. All other variables are defined in Appendix 1. The sample includes only those politicians belonging to either the Democratic or Republican Party. Standard errors corrected for clustering at the politician-firm level are reported in parentheses. * $p < .10$, ** $p < .05$, *** $p < .01$ (two-tailed test).

		(1) $Ownership_{ijt}$
$PAC\ dem_{jt} - PAC\ rep_{jt}$	(1)	6.908***
		(2.206)
$(PAC\ dem_{jt} - PAC\ rep_{jt})* republican_i$	(2)	-10.601***
		(2.569)
Test 1 + 2 = 0 [p-value 0.0354]		
$republican_i$		4.687***
		(0.239)
$Com\_Firm\_Match_{ijt}$		-0.389
		(0.293)
$State\_Firm\_Match_{ij}$		5.173***
		(0.458)
Net_Wealth_{it}		0.010***
		(0.004)
Age_{it}		1.197***
		(0.228)
$Gender_i$		-2.757***
		(0.273)
$Size_{jt-1}$		4.334***
		(0.375)

BM_{jt-1}	1.765*
	(1.002)
$Momentum_{jt}$	2.697***
	(0.309)
$Return\ Volatility_{jt}$	187.904***
	(22.122)
$Dividends_{jt}$	-0.015**
	(0.006)
$Leverage_{jt}$	-6.675***
	(1.270)
ROA_{jt}	1.298
	(2.176)
Year Indicators?	Yes
Politician Effect?	Yes
Firm Effect?	Yes
Intercept	-247.081***
	(3.217)
Ln_sigma	21.487***
	(0.075)
N	1304008
pseudo R^2	0.092

Table 4

Table 4 presents Tobit model estimates of $Ownership_{ijt}$, which is defined as the natural logarithm of the dollar amount of shares owned if politician i invests in firm j at time t, and zero if he or she does not invest. PAC_{jit} is an indicator variable that equals unity if politician i receives a campaign contribution from firm j in year t, and zero otherwise. $Com\_Firm\_Match_{ijt}$, is an indicator variable that takes a value of 1 when the industry to which firm j belongs is under the influence of politician i's Congressional committee at time t, and zero otherwise. $Powerful\_Committee_{it}$ is an indicator variable that takes a value of 1 if $politician\ i$ is a member of an influential and powerful committee at time t, and zero otherwise. $No\_Powerful\_Committees_{it}$ is the number of seats on influential committees politician i occupies in year t. $Seniority_{it}$ is the log of 1 plus the number of years since the date a politician was first elected to Congress. All other variables are defined in Appendix 1. The sample includes politicians from every party (Democratic, Republican, Independent, and Third-party). Standard errors corrected for clustering at the politician-firm level are reported in parentheses. * p < .10, ** p < .05, *** p < .01 (two-tailed test).

	(1) $Ownership_{ijt}$	(2) $Ownership_{ijt}$	(3) $Ownership_{ijt}$	(4) $Ownership_{ijt}$
PAC_{jit}	3.363***	-0.115	1.619***	1.221
	(0.318)	(0.784)	(0.489)	(0.789)
$PAC_{jit} * Com\_Firm\_Match_{ijt}$	-2.462***			
	(0.724)			
$Com\_Firm\_Match_{ijt}$	-0.150	-0.513*	-0.478	-0.522*
	(0.304)	(0.297)	(0.297)	(0.295)
$PAC_{jit} * Powerful\_Committee_{it}$		3.479***		
		(0.830)		
$Powerful\_Committee_{it}$		-0.495*		
		(0.276)		

147

$PAC_{jit} * No\_Powerful\_Committees_{it}$			1.027***	
			(0.293)	
$No\_Powerful\_Committees_{it}$			-0.285**	
			(0.133)	
$PAC_{jit} * Seniority_{it}$				0.766**
				(0.320)
$Seniority_{it}$				-0.677***
				(0.152)
$State\_Firm\_Match_{ij}$	4.497***	4.532***	4.514***	4.528***
	(0.458)	(0.458)	(0.458)	(0.458)
Net_Wealth_{t}	0.010***	0.010***	0.010***	0.010***
	(0.004)	(0.004)	(0.004)	(0.004)
Age_{it}	1.975***	2.099***	2.098***	2.595***
	(0.225)	(0.233)	(0.227)	(0.268)
$Gender_{i}$	-1.879***	-1.872***	-1.859***	-1.709***
	(0.270)	(0.266)	(0.270)	(0.274)
$Size_{jt-1}$	4.330***	4.327***	4.328***	4.335***
	(0.374)	(0.374)	(0.374)	(0.374)
BM_{jt-1}	1.729*	1.724*	1.731*	1.725*

	(1.003)	(1.002)	(1.002)	(1.002)
Momentum$_{jt}$	2.663***	2.656***	2.661***	2.663***
	(0.309)	(0.309)	(0.309)	(0.309)
Return Volatility$_{jt}$	182.528***	181.184***	181.954***	182.477***
	(22.206)	(22.197)	(22.204)	(22.191)
Dividends$_{jt}$	-0.014**	-0.015**	-0.015**	-0.014**
	(0.006)	(0.006)	(0.006)	(0.006)
Leverage$_{jt}$	-6.560***	-6.560***	-6.568***	-6.568***
	(1.272)	(1.271)	(1.271)	(1.271)
ROA$_{jt}$	1.086	1.037	1.039	1.042
	(2.185)	(2.184)	(2.185)	(2.184)
Year Indicators?	Yes	Yes	Yes	Yes
Politician Effect?	Yes	Yes	Yes	Yes
Firm Effect?	Yes	Yes	Yes	Yes
Intercept	-243.109***	-242.891***	-242.964***	-243.910***
	(3.223)	(3.225)	(3.224)	(3.235)
Ln_sigma	21.628***	21.627***	21.628***	21.626***
	(0.075)	(0.075)	(0.075)	(0.075)
N	1309727	1309727	1309727	1309727
pseudo R^2	0.088	0.088	0.088	0.088

Table 5

Table 5 presents Tobit model estimates of $Ownership_{ijt}$, which is defined as the natural logarithm of the dollar amount of shares owned if politician i invests in firm j at time t, and zero if he or she does not invest. $PAC\_Non-Investigation_{jit}$ is an indicator variable that equals unity if politician i receives a campaign contribution from firm j *and* is 'not' under investigation in year t, and zero otherwise. $PAC\_Investigation_{jit}$ is an indicator variable that equals unity if politician i receives a campaign contribution from firm j *and* is under investigation in year t, and zero otherwise. All other variables are defined in Appendix 1. The sample includes politicians from every party (i.e., Democratic, Republican, Independent, and Third-party). Standard errors corrected for clustering at the politician-firm level are reported in parentheses. * p < .10, ** p < .05, *** p < .01 (two-tailed test).

	(1) $Ownership_{ijt}$	(2) $Ownership_{ijt}$
$PAC\_Non-Investigation_{jit}$	4.803***	3.212***
	(1.182)	(0.292)
$PAC\_Investigation_{jit}$	-0.675	-6.087***
	(1.685)	(1.651)
$Com\_Firm\_Match_{ijt}$	-2.040*	-0.515*
	(1.238)	(0.295)
$State\_Firm\_Match_{ij}$	5.691***	4.495***
	(1.502)	(0.458)
Net_Wealth_{tt}	0.148*	0.009***
	(0.089)	(0.004)
Age_{it}	-8.423***	2.043***
	(2.125)	(0.225)
$Gender_i$	-4.112***	-1.867***
	(1.166)	(0.270)
$Size_{jt-1}$	5.646***	4.323***
	(1.573)	(0.374)
BM_{jt-1}	6.313	1.755*
	(4.007)	(1.003)

Momentum$_{jt}$	3.057***	2.675***
	(1.168)	(0.309)
Re*turn Volatility*$_{jt}$	338.272***	182.810***
	(98.420)	(22.203)
Dividends$_{jt}$	-0.015	-0.014**
	(0.026)	(0.006)
Leverage$_{jt}$	-3.108	-6.539***
	(4.914)	(1.271)
ROA$_{jt}$	6.758	1.158
	(8.287)	(2.184)
Intercept	-222.174***	-243.048***
	(12.536)	(3.223)
Ln_sigma	21.080***	21.622***
	(0.271)	(0.075)
N	107314	1309727
pseudo R^2	0.089	0.088

Table 6

Table 6, Columns 1 and 2 present Tobit model estimates of $Contract\_Amounts_{jt}$, while Columns 3 and 4 present Tobit model estimates of $Contract\_numbers_{jt}$. $Contract\_Amounts_{jt}$ is defined as the log of 1 plus contract amounts. $Contract\_numbers_{jt}$ is defined as the log of 1 plus the aggregate number of contracts. $Ownership\_Contribution\_Association_{jt}$ is defined as the estimated coefficient on PAC_i obtained from the firm j-year t specific Tobit model that regresses $Ownership_{ijt}$ onto PAC_i; herein, $Ownership_{ijt}$ is defined as the natural logarithm of the dollar amount of shares owned if politician i invests in the firm, and zero if he or she does not invest, and PAC_i is defined as an indicator variable that equals unity if politician i receives a contribution from the firm, and zero otherwise. All other variables are defined in Appendix 1. Standard errors corrected for clustering at the firm level are reported in parentheses. * p < .10, ** p < .05, *** p < .01 (two-tailed test).

	(1) Contracts Amounts$_{jt}$	(2) Contracts Amounts$_{jt}$	(3) Contracts Numbers$_{jt}$	(4) Contracts Numbers$_{jt}$
$Ownership\_Contribution\_Association_{jt}$	0.115***	0.079**	0.028***	0.016*
	(0.035)	(0.034)	(0.010)	(0.009)
$Size_{jt}$		2.300***		0.850***
		(0.310)		(0.094)
BM_{jt}		0.600		0.256
		(1.769)		(0.450)
$Herfindahl\_Index_{jt}$		-11.803		0.150
		(12.032)		(2.952)
$CAPX/Sales_{jt}$		-2.558		0.105
		(6.127)		(1.718)
ROA_{jt}		-2.412		-2.036
		(5.411)		(1.485)
$COGS/Sales_{jt}$		4.806**		1.462**
		(2.267)		(0.644)
Year Indicators?	Yes	Yes	Yes	Yes
Industry Indicators?	Yes	Yes	Yes	Yes
Intercept	12.481*	-43.927***	5.293**	-16.40***
	(6.920)	(10.409)	(2.477)	(3.346)

Ln_sigma	8.514***	8.122***	2.390***	2.238***
	(0.304)	(0.304)	(0.082)	(0.080)
N	2398	2315	2398	2315
pseudo R^2	0.065	0.078	0.114	0.141

Table 7

Table 7, Columns 1 and 2 present logit model estimates of $PAC\_Discontinuation_{ijt}$, Columns 3 and 4 present conditional fixed effect logit model estimates by fixing the effect at the politician level, and Columns 5 and 6 present conditional fixed effect logit model estimates by fixing the effect at the firm level. $PAC\_Discontinuation_{jit}$ is an indicator variable that takes the value 1 if politician i does 'not' receive a contribution from firm j at time t conditional upon receiving a contribution at time t-1, and zero when politician i receives a contribution from firm j at time t conditional upon receiving a contribution at time t-1. $Divest_{ijt-1}$ is defined as an indicator variable that takes a value of 1 when politician i is 'not' an investor in firm j at time t conditional upon being an investor at time t-1, and zero when politician i is an investor in firm j at time t conditional upon being an investor at time t-1. $Com\_Firm\_Match_{ijt-1}$, is an indicator variable that takes a value of 1 when the industry to which firm *j* belongs is under the influence of politician *i*'s Congressional committee at time *t-1*, and zero otherwise. All other variables are defined in Appendix 1. Standard errors are reported in parentheses. The standard errors reported in Columns 1 and 2 are corrected for clustering at the politician-firm level.* p < .10, ** p < .05, *** p < .01 (two-tailed test).

		(1)	(2)	(3)	(4)	(5)	(6)
		$PAC\_Discontinuation_{ijt}$		$PAC\_Discontinuation_{ijt}$		$PAC\_Discontinuation_{ijt}$	
$Divest_{it-1}$	**(1)**	0.263**	0.361***	0.385**	0.396**	0.299**	0.260*
		(0.111)	(0.122)	(0.165)	(0.166)	(0.142)	(0.143)
$Divest_{it-1}*Com\_Firm\_Match_{ijt-1}$ **(2)**			-0.560*	-0.738**	-0.729**	-0.672*	-0.647*
			(0.301)	(0.366)	(0.370)	(0.346)	(0.348)
Test 1 + 2 = 0 [p-value]			**[0.4711]**	**[0.2943]**	**[0.3284]**	**[0.2458]**	**[0.2322]**
$Com\_Firm\_Match_{ijt-1}$			-0.021	0.043	0.043	-0.157	-0.140
			(0.144)	(0.203)	(0.205)	(0.161)	(0.162)
$State\_Firm\_Match_{ij}$				-0.219	-0.233	-0.601***	-0.615***
				(0.161)	(0.163)	(0.165)	(0.167)

$Seniority_{it}$			-2.388**	-2.530**	0.087	0.032
			(1.142)	(1.179)	(0.098)	(0.100)
Age_{it}			0.439***		0.015**	0.015**
			(0.137)		(0.007)	(0.007)
$republican_i$					0.040	0.027
					(0.119)	(0.121)
$\Delta Size_{jt-1}$			-0.422*	-0.210	-0.776**	-0.318
			(0.238)	(0.243)	(0.316)	(0.329)
Year Indicator?	No	No	No	Yes	No	Yes
Intercept	-0.417***	-0.413***				
	(0.054)	(0.059)				
N	1939	1939	1810	1810	1775	1775
pseudo R^2	0.002	0.004	0.014	0.029	0.021	0.037

Appendix I

Note: the source in each description indicates the origin of the data I use to compute the variables.

Variables	Description
Politician-firm-specific characteristics	
$Ownership_{ijt}$	The natural logarithm of the dollar amount of shares owned if politician i invests in firm j at time t, and zero if he or she does not invest. Source: The Center for Responsive Politics
PAC_{jit}	An indicator variable that equals unity if politician i receives a campaign contribution from firm j in year t, and zero otherwise. Source: The Center for Responsive Politics
$State\_Firm\_Match_{ij}$	It is defined, for Representatives, as an indicator variable that takes a value of 1 if both the headquarter of firm j and the Congressional district of politicians i belong to the same state, and zero otherwise., while defined, for Senators, as an indicator variable that takes a value of 1 if the headquarter of firm j are in the same state of politicians i, and zero otherwise. Source: The Center for Politics Response and Compustat
$Com\_Firm\_Match_{ijt}$	An indicator variable that takes a value of 1 when the industry membership of firm j is under the jurisdiction of the Congressional committee assignment of politician i at time t, and zero otherwise. Source: Compustat and the website of Charles Stewart III (MIT) http://web.mit.edu/17.251/www/data_page.html
$PAC\_Non-Investigation_{jit}$	An indicator variable that equals unity if politician i receives a campaign contribution from firm j *and* is 'not' under investigation in year t, and zero otherwise. Source: The Center for Responsive Politics
$PAC\_Investigation_{jit}$	An indicator variable that equals unity if politician i receives a campaign contribution from firm j *and* is under investigation in year t, and zero otherwise. Source: The Center for Responsive Politics

$PAC\_Discontinuation_{ijt}$	An indicator variable that takes the value 1 if politician i does 'not' receive a contribution from firm j at time t conditional upon receiving a contribution at time t-1, and zero when politician i receives a contribution from firm j at time t conditional upon receiving a contribution at time t-1. Source: The Center for Responsive Politics
$Divest_{it-1}$	An indicator variable that takes a value of 1 when politician i is 'not' an investor in firm j at time t conditional upon being an investor at time t-1, and zero when politician i is an investor in firm j at time t conditional upon being an investor at time t-1. Source: The Center for Responsive Politics

Politician-specific characteristics

$Net\ Wealth_{it}$	The difference between $Assets_{it}$ and $Liabilities_{it}$. *Assets* are the total number of all legal ownerships a politician has in a company or property, including brokerage accounts, corporate bonds, and stocks. Politicians should report only assets worth more than $1,000 at the end of the calendar year or producing more than $200 in income. Politicians report the value of each of their assets within one of several ranges. The Center for Politics Response compute a minimum (maximum) value of total assets by summing the minimum (maximum) values of individual assets owned by each politician. I use the average of the minimum and maximum values of total assets as the value of total assets owned by a politician. *Liabilities* include loans, credit card debt, and mortgages on properties that produce income. Congress members and top officials in the executive branch must report liabilities that total more than $10,000 at any time during the calendar year. Politicians report the amount of each of their liabilities within one of several ranges. The Center for Politics Response compute a minimum (maximum) value of total liabilities by summing the minimum (maximum) values of individual liabilities owed by each politician. I use the average of the minimum and maximum values of total liabilities as the value of total liabilities owed by a politician. Source: The Center for Responsive Politics

Age_{it}	The age of politician i at time t. Source: Wikipedia
$Gender_i$	An indicator variable takes a value of 1 if politician i is male, and zero otherwise. Source: Wikipedia
$republican_i$	An indicator variable equal to 1 if a politician i is republican at time t, and zero otherwise. Source: The Center for Responsive Politics
$Powerful\_Committee_{it}$	An indicator variable that takes a value of 1 if *politician i* is a member of an influential and powerful committee at time t, and zero otherwise. Source: The website of Charles Stewart III (MIT) http://web.mit.edu/17.251/www/data_page.html
$No\_Powerful\_Committees_{it}$	The number of seats on influential committees a politician i holds in year t. Source: The website of Charles Stewart III (MIT) http://web.mit.edu/17.251/www/data_page.html
$Seniority_{it}$	The log of 1 plus the number of years since the date a politician was first elected to Congress. Source: The Center for Responsive Politics

Firm-specific characteristics

PAC_rep_{jt}	The sum of all contributions paid to all Republican candidates (regardless of whether the candidate is elected) by firm j in year t. Source: The Center for Responsive Politics
PAC_dem_{jt}	The sum of all contributions paid to all Democratic candidates (regardless of whether the candidate is elected) by firm j in year t. Source: The Center for Responsive Politics
$PAC\ dem_{jt} - PAC\ rep_{jt}$	The difference between PAC_dem_{jt} and PAC_rep_{jt}. Source: The Center for Responsive Politics
$Contract\_Amounts_{jt}$	The log of 1 plus contract amounts Source: Eagle Eye Publishers, Inc. http://www.usaspending.org
$Contract\_Numbers_{jt}$	The log of 1 plus the aggregate number of

	contracts. Source: Eagle Eye Publishers, Inc. http://www.usaspending.org
$Ownership\_Contribution\_Association_{jt}$	The estimated coefficient on PAC_i obtained from the firm j-year t specific Tobit model that regresses $Ownership_i$ onto PAC_i. Source: Estimated by the author using data from the Center for Responsive Politics
$Size_{jt}$	The log of the market capitalization for firm j at the end of year t. Source: Compustat
$Size_{jt-1}$	The log of the market capitalization for firm j at the beginning of year t. Source: Compustat
BM_{jt}	The book-to-market ratio for firm j at the end of year t. Source: Compustat
BM_{jt-1}	The book-to-market ratio for firm j at the beginning of year t. Source: Compustat
$Momentum_{jt}$	The twelve-month buy-and-hold stock return. Source: CRSP
$Return Volatility_{jt}$	The standard deviation of daily returns. Source: CRSP
$Dividends_{jt}$	Dividends per share divided by the year-end share price. Source: Compustat and CRSP
$Leverage_{jt}$	The ratio of total debt to total assets for firm j at time t. Source: Compustat
ROA_{jt}	The income before extraordinary items available to common divided by total assets. Source: Compustat
$Herfindahl\_Index_{jt}$	The Herfindahl sales concentration index based on the total sales of all firms that have the same two-digit SIC code. Source: Compustat
$CAPX/Sales_{jt}$	The ratio of capital expenditure to sales for firm j in year t. Source: Compustat
$COGS/Sales_{jt}$	The ratio of cost of goods sold to sales for firm j at time t. Source: Compustat

| $\Delta Size_{jt-1}$ | The change in firm size during year t-1. |

Appendix II

The Case of Representative Jerry Lewis (R-CA)

Representative Jerry Lewis (R-CA) is a sixteen-term member of Congress and has been a member of the House Appropriations Committee since 1980. From 2005 to 2006, he served as chairman of the full committee, and he currently serves as a ranking member. Rep. Lewis' ethical issues arise from his misusing of his position on the Appropriations Committee to steer hundreds of millions of dollars in earmarks to family, friends, former employees, and corporations in exchange for contributions to his campaign committee:

"In 2005, shortly after becoming chairman of the Appropriations Committee, Rep. Lewis was asked to buy into an initial public offering of a fledgling bank, Security Bank of California, headed by his close friend James Robinson. Rep. Lewis' initial investment of $22,000 for 2,200 stocks in Security Bank was worth nearly $60,000 in 2006, an increase of almost 300%. The stock was recommended to Rep. Lewis by Mr. Robinson's wife, a former chair and board member of the Loma Linda University Children's Hospital Foundation, a branch of Loma Linda University Medical Center. Rep. Lewis has helped direct more than $200 million in federal dollars to the medical center, which has facilities named in his honor. In June 2006, Rep. Lewis acknowledged that the medical center benefitted from $40 million in earmarks. Many of Security Bank's board members have also contributed to Rep. Lewis' campaign and are linked to businesses that received federal earmarks. They include Zareh Sarrafian, an executive with Loma Linda Medical Center and president of the Hospital Foundation's board, and Bruce Varner, a friend of Rep. Lewis' who served on the board of the National Orange Show Events Center in San Bernardino. The center has received more than $800,000 in federal funds." (Crew report 2009, pp. 37–38)

The Case of Representative Maxine Waters (D-CA)

Representative Maxine Waters (D-CA) is a ten-term member of Congress and a senior member of the House Financial Services Committee. She arranged a meeting between the Department of Treasury and OneUnited Bank, a company with close financial ties to Ms. Waters, involving both investments and contributions.

"In September 2008, Rep. Waters asked then-Secretary of the Treasury Henry Paulson to hold a meeting for minority-owned banks that had suffered from Fannie Mae and Freddie Mac losses. The Treasury Department complied and held a session with approximately a dozen senior banking regulators, representatives from minority-owned banks, and their trade association. Officials of OneUnited Bank, one of the largest black-owned banks in the country that has close ties to Rep. Waters, attended the meeting along with Rep. Waters' chief of staff. Kevin Cohee, chief executive officer of OneUnited, used the meeting as an opportunity to ask for bailout funds. . . . Former Bush White House officials stated they were surprised when OneUnited Officials asked for bailout funds. . . . In December 2008, Rep. Waters intervened again, asking Treasury to host another meeting to ensure minority-owned banks received part of the $700 billion allocated under the Troubled Asset Relief Program. . . . Within two weeks, on December 19, 2008, OneUnited secured $12.1 million in bailout funds. . . . This was not

the first time Rep. Waters used her position to advance the interests of the bank. Rep. Waters' spouse, Sidney Williams, became a shareholder in OneUnited in 2001, when it was known as the Boston Bank of Commerce. In 2002, Boston Bank of Commerce tried to purchase Family Savings, a minority-owned bank in Los Angeles. Instead, Family Savings turned to a bank in Illinois. Rep. Waters tried to block the merger by contacting regulators at the FDIC. She publicly stated she did not want a major white bank to acquire a minority-owned bank. When her efforts with the FDIC proved fruitless, Rep. Waters began a public pressure campaign with other community leaders. Ultimately, when Family Savings changed direction and allowed Boston Bank of Commerce to submit a winning bid, Rep. Waters received credit for the merger. The combined banks were renamed OneUnited. . . . In March 2004, she acquired OneUnited stock worth between $250,001 and $500,000, and Mr. Williams purchased two sets of stock, each worth between $250,001 and $500,000. In September 2004, Rep. Waters sold her stock in OneUnited and her husband sold a portion of his. That same year, Mr. Williams joined the bank's board. . . . OneUnited Chief Executive Kevin Cohee and President Teri Williams Cohee have donated a total of $8,000 to Rep. Waters' campaign committee since 2002. . . . On October 27, 2009, less than two months before OneUnited received a $12 million bailout, the bank received a cease-and-desist order from the FDIC and bank regulatory officials in Massachusetts for poor lending practices and excessive executive compensation . . . the bank provided excessive perks to its executives, including paying for Mr. Cohee's use of a $6.4 million mansion . . ." (Crew report 2009, pp. 123–125)

Chapter 5

Summary and Suggestions for Future Research

In this thesis, I examine why there are distortions in investor portfolio selection, and show the consequence of these distortions on firms' investment decisions. These distortions in portfolio selections could be either due to market frictions or investor preferences. I introduce an example for each of these two reasons. Specifically, I introduce the quality of accounting system as an example for market frictions, and the personal relation of investors with firms as an example for investor preferences. I show that these two examples indeed explain the distortions in investors' portfolio allocations. I also show that firms, as a consequence of these distortions, do not invest efficiently. The overall conclusion is that improving the quality of the accounting system, as part of country-level institutions, mitigates the distortions in investors' investment decision, and consequently improves those of firms. Good institutions, however, will not always guarantee that there are no distortions in investor portfolio selections. Investors could also choose to misallocate their funds due to personal motives. I provide below a summary of each of the three essays constituting my thesis, and possible directions for future research.

In Chapter two, I examine the economic consequences of the mandatory adoption of IFRS in EU countries by showing which types of economies have the largest reduction in investment-cash flow sensitivity post-IFRS. I also examine whether the reduction in investment-cash flow sensitivity depends on firm size as well as economy type. I find that the investment-cash flow sensitivity of insider economies is higher than that of outsider economies pre-IFRS and that IFRS reduces the investment-cash flow sensitivity of insider economies more than that of outsider economies. Also, I find that small firms in insider economies have the highest sensitivity of investment to lagged cash flow pre-IFRS, and that they are no longer sensitive to lagged cash flow post-IFRS. Overall, my results suggest that IFRS adoption might have improved the functioning of capital markets in relation to small firms in insider economies. Bear in mind that my documented results might not be a direct outcome of IFRS but rather an indirect outcome. For example, IFRS adoption might have changed the proportion of firms

being audited by the Big 4 auditors. Observing big auditing firms in the market might have subsequently affected the trust of both current and potential investors in the stock market. Any increase in investors' trust in the stock market is likely to imply a higher flow of external capital to firms, and, accordingly, lower investment-cash flow sensitivity. Examining this line of argument empirically is an important topic for future research. In addition, my results might not be attributed solely to IFRS adoption as there were simultaneous institutional and enforcement improvements in the EU suggesting that the documented results might be the outcome of IFRS or these improvements or the joint effects of both sets of changes working together. Disentangling these two effects is a challenge for future empirical research. In addition, the documented increase in investment efficiency could be either due to more public information released by managers to investors or due to changes in investors' perception about how much private information mangers do possess. In other words, it is interesting to investigate whether the documented benefits of IFRS adoption are due to actual changes in firms' information environment or whether they are due to changes in market's assessment of how good the information environment is likely to be.

In Chapter three, I show that the level of conditional accounting conservatism of foreign markets significantly influences decisions to diversify portfolios internationally. This could be either because conditional conservatism *per se* is attractive to international investors, or because the unmodelled factors that attract foreign investors to a country also cause these countries to adopt conditionally conservative accounting practices. We also find that the positive association between investor diversification decision and conditional conservatism is sensitive to the level of conditional conservatism of investors' home markets. Two reasons explain this finding: (1) investors are expected to invest more in foreign countries whose accounting systems are similar to their own; or (2) investors based in poor quality home markets choose to hold concentrated portfolios of their home equities, thereby sacrificing diversification in foreign markets. If conditional conservatism serves to alleviate foreign investors' concerns related to insiders have asymmetric access to information then one would expect the chosen mode of entry into a foreign market (as foreign portfolio or direct investor) to be sensitive to the level of conditional conservatism. I find evidence supportive of this expectation. My results indicate that conditionally conservative accounting systems improve

risk sharing. Overall, my results suggest an important role for the quality of accounting systems on the degree of investor diversification. If this is indeed true, one would predict an exogenous change in the quality of accounting system (for example, by adopting IFRS) to be accompanied by changes in the degree of investor diversification. For example, do we observe a reduction (an increase) in the propensity to enter as a block holder (portfolio investors) in a foreign market that adopted IFRS? and is the effect more pronounced in markets that enforced the adoption of IFRS and used to have a prior poor accounting system? In addition, since there will be lower demand on monitoring via ownership concentration in the post-IFRS adoption period due to transparency improvement, one might ask: do we indeed observe large shareholders who used to monitor the firm in the pre-IFRS adoption to divest all (or at least a significant portion) of their holdings in the post-IFRS period? In other words, can IFRS adoption reduce the cost borne by dedicated monitors due to being under-diversified? Testing these empirical predictions is an interesting topic for future research.

In Chapter four, I examine the role of stock ownership by politicians on the market for political favors. Specifically, I predict that the stock ownership of a politician in a firm can be a possible mechanism to establish a mutual relation with this firm. I define a 'mutual relation' as an agreement in which firms support politicians during the election and politicians, in turn, provide private benefits to these firms. I document pieces of evidence supporting my prediction as follows. There is a positive association between the ownership of politicians and the contribution they receive from firms during the elections. This association is a function of how valuable is establishing a mutual relation between politicians and firms. Politicians invest more in firms that favor their party and less in firms that oppose their party. The strength of the ownership-based relation with contributing firms is positively associated with the amount as well as the number of government contracts awarded to firms. When politicians divest the stock, the established relation with contributing firms breaks down. Such break-down, however, only exists when there are no other mechanisms enforcing politician-firm relations. As I explain in chapter four, the ownership of stocks by politicians acts as a mechanism that fosters repeated interactions, reputation building, and long-term relationships of politicians that invest *with* firms in which they invest. This implies that politicians will not trade their stocks, which might, accordingly, lead to losses due to their inability to readjust their portfolio

holdings. Some politicians, however, might be seeking relations with firms not as a 'politician' seeking political gains (via firms' support and contributions) but as an 'investor' seeking access to insider information. Thus, another possible definition of a mutual relation between firms and politicians could be an agreement in which firms provides politicians with private insider information (thereby enabling them to trade on firm-specific information) and politicians, in turn, provide private benefits to these firms. Thus, one might ask: is a political network (i.e., the connection between firms and politicians) a channel via which private information can be impounded into stock prices? Examining this line of argument empirically is an interesting avenue for future research.