Does Corporate Hedging Attract Foreign Investors?

Evidence from International Firms

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Abstract

We study how corporate financial hedging affects the demand of foreign institutional investors. Given that investors benefit from hedging when the manager has information not directly observable to shareholders (DeMarzo and Duffie, 1991), corporate hedging is especially valuable for international investors that invest abroad facing the highest informational uncertainty. We focus on a comprehensive sample of 7,878 international non-financial companies from 2001 to 2009, for which we have collected measures of both foreign exchange hedging and interest rate hedging. We document a strong, positive relationship between foreign institutional demand and corporate hedging for both US and non-US institutions. The effect of hedging is concentrated in the demand of non-bank-affiliated foreign investors, whereas bank-affiliated investors are less sensitive to it. The impact of hedging on international demand is higher for less transparent countries, and a low quality of governance amplifies the effect of lower transparency. We address the issue of potential endogeneity of hedging with firm-fixed effects as well as with an instrumental variable specification that exploits changes in corporate hedging induced by changes in the asset quality of the relationship banks. We also use the IPO as an experiment and show that the before-IPO hedging policy is positively related to international investor demand after the IPO.

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Introduction

Over the last decade, 28% of non-US firms have actively engaged in financial hedging. This percentage increased from 6% in 2002 to 35% in 2009. Over the same period, the ownership of international institutional investors in these firms has grown from 8% to 12%. Figure 1 reports the time patterns of these two variables. At first, these two phenomena appear contradictory. Indeed, more diversified investors – e.g., international institutional investors – would be less interested in investing in firms that hedge. Is there a link between the two phenomena? This is the topic of this paper.

Modigliani and Miller (1958) imply that if capital markets are perfect, shareholders possess the requisite tools and information to create their desired risk profiles and thus that there is no reason for a firm to hedge. The finance literature has advanced several arguments on why the firm hedges – taxes, managerial risk aversion, costly external financing and agency costs (Smith and Stulz, 1985; Froot, et al., 1993; Graham and Rogers, 2002). For example, Stulz (1996) argues that the primary goal of hedging is to eliminate the possibility of a costly low-tail outcome that would cause financial distress or make a company unable to pursue its investment strategy. This would make hedging enhance firm value in the presence of costly market imperfections.

All these theories have in common some frictions in the market that can be reduced by the firm's hedging. For example, in the absence of tax carry-forward provisions or in the presence of bankruptcy risk, a firm that resorts to hedging to smooth its cash flows will increase its value. However, this higher value, by being reflected in a higher price, would make investors ex ante indifferent. Therefore, in the presence of efficient markets and homogeneous investors, it is unclear whether hedging will induce a specific investor clientele.

To link hedging and investor demand, we must consider heterogeneous investors. We consider a particular form of investor heterogeneity: differences in the geographical location. We argue that foreign investors, being at a higher information disadvantage with respect to domestic investors (Brennan and Cao, 1997, Coval and Moskowitz, 1999, 2001), find it more valuable to invest in firms that hedge.

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We rely on DeMarzo and Duffie (1991) and posit that shareholders benefit from hedging in cases where the manager has information not directly observable to the shareholders. Hedging, by reducing the noise around the firm cash flows, allows investors to make better portfolio optimization decisions. This characteristic suggests that hedging should be especially appreciated in the presence of higher information asymmetry between investors/shareholders and the firm.

We argue that there are a specific set of investors for whom information asymmetry is particularly high: foreign investors. These investors are at a higher information disadvantage compared to domestic investors, as they are located further away, often speaking a different language and having limited knowledge of the business environment of foreign countries. Indeed, the business risk of the firm is compounded by the inability of foreign investors to fully understand the country and political risk. These investors would especially appreciate the firm's engaging in hedging activities.

We thus hypothesize that hedging should be particularly appreciated by foreign investors. We also hypothesize that, given that foreign investors face an informational disadvantage that is higher for a less transparent country, hedging will be more appreciated by international investors for countries featuring higher informational uncertainty.

Consider, for example, two institutional investors: a Fidelity international fund and the Societe Generale asset management division, both investing in French stocks. Consider one firm: Peugeot. This firm faces interest rate risk due to its exposure vis-à-vis the French financial market as well as foreign exchange risk related to its ability to handle currency fluctuations. Domestic investors – i.e., Societe Generale – have better information about these decisions as well as a higher ability to interpret them than foreign investors – i.e., Fidelity. This advantage of domestic investors is compounded in the case the local government – as is the case in France – does interfere in firm decisions or in cases where local governance – as it does under French law – provides scarce protection to shareholders.

In other words, the foreign investor will face an informational disadvantage along several dimensions: the industrial context of the firm as well as the country's political and governance condition. Therefore, any measure that reduces this informational disadvantage will be highly

appreciated by international investors. This suggests that, in our example, international investors investing in France will prefer the firms that do hedge – e.g., Peugeot.

To the best of our knowledge, no paper has focused on this issue, largely due to there being, until recently, a lack of data. Three obstacles have existed: a lack of data on the portfolio ownership of international investors, a lack of data on hedging on an international scale and a lack of a proper identifying restriction that can pin down the exogenous (with respect to ownership) determinants of corporate hedging.

In this paper, we bridge this gap and focus on the link between hedging and the internationalization of the firm's ownership structure. We ask whether international investors appreciate firms that hedge. We consider the two most widely used forms of hedging: interest rate hedging and foreign exchange rate (FX) hedging. We use information on a comprehensive sample of 7,878 international companies from 2001 to 2009, for which we have collected information on both FX hedging and interest rate hedging and for which we have available data on international portfolio ownership by international institutional investors.

We begin by linking firm corporate hedging to foreign institutional demand. We document a strong positive relationship between the demand of foreign investors and hedging. Firms that hedge display a 26% higher foreign institutional ownership with respect to the unconditional mean. This finding holds for both interest rate hedging and FX hedging. Interest rate hedging increases foreign ownership by 14%, and FX hedging increases foreign ownership by 20% with respect to the unconditional mean.

If we break foreign ownership down into ownership by US institutions and ownership by non-US institutions, we find that the demand of both groups is strongly positively related to corporate hedging. Firms that hedge display 24% (25%) higher US (non-US) foreign ownership with respect to the unconditional mean. Interest rate hedging increases ownership by 17% (10%) and FX hedging increases ownership by 19% (20%) with respect to the unconditional mean in the case of US (non-US) ownership.

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One potential concern is that given that many international asset managers are affiliated with banks lending abroad, these results simply capture a spurious correlation, as firms hedge because the bank – to which the investor is affiliated – forces them to hedge. To address this issue, we separately analyze the demand of foreign investor holdings by investors affiliated with banking conglomerates and the rest. We show that the effect of hedging on the demand of non-bank-affiliated foreign institutional investors is four times stronger than the effect on the demand of bank-affiliated investors. Moreover, if we decompose hedging into its components, we observe that although non-bank-affiliated foreign institutional investors are sensitive to both FX and interest rate hedging, bank-affiliated investors are not sensitive to interest rate hedging.

This finding rejects the concern of a potential spurious correlation between institutional investor demand and bank affiliation. It also suggests that the investors that are more informed – i.e., the bank-affiliated institutional investors (Acharya and Johnson, 2007, Massa and Rehman, 2008, Massoud et al., 2010, Ivashina and Sun, 2010) – are less sensitive to hedging.

Next, we test whether the effect of hedging on international demand is higher among countries with less transparency. We begin by focusing on two dimensions of transparency. The first is related to the standard measures of informational transparency. The second is related to the induced uncertainty related to the quality of governance of the country. As Pastor and Veronesi (2012) have argued, "governments change these rules from time to time, eliciting price reactions in financial markets" (Pastor and Veronesi, 2012). This induced "institutional uncertainty" compounds the learning uncertainty of the international investors – who are less able to be aware of all political changes in the country or to properly insure themselves against these changes – and thus should increase the preference for hedging for international investors.

We use as information-related proxies the quality of reporting standards, the analyst forecast dispersion and whether English is commonly used in the country. We find that the effect of hedging on demand is stronger in the case of non-English speaking countries, low reporting standards and high analyst dispersion. In the case of the quality of governance, we use the efficacy of the board and the

protection of minority of shareholders' interests. We find that the quality of governance by itself does not significantly affect international investors' appreciation of corporate hedging. However, bad governance amplifies the effect of high uncertainty on the link between hedging and institutional investor demand. When the quality of governance is lower, analyst dispersion more substantially increases the demand of corporate hedged firms. Both these results provide evidence in favor of an information-based reason why hedging is important to foreign investors.

We then focus on a third test based on a standard proxy for information: geographical distance. Following the literature (e.g., Coval and Moskowitz, 1999, 2001), we relate the geographical "bias" (under-allocation of foreign stocks) of international investors to corporate hedging. We expect that when the asset manager is located farther away, he has less information about the stock and thus is more sensitive to the corporate hedging policy of the firm. Indeed, hedging reduces the gap between the distance at which the asset manager invests and the distance at which he should invest if he were investing as far away as is required for him to be globally diversified – i.e., a lower under-allocation bias toward foreign stocks (Coval and Moskowitz, 2001). We find that hedging reduces the under-allocation bias of foreign investors by 12%. This relationship implies that hedging not only increases foreign investor demand *per se* but also attracts more distant foreign investors. This finding provides additional support to the information hypothesis.

Our results are robust to the concerns of endogeneity. Indeed, it may be argued that foreign institutional investors press firms to hedge, which would induce reverse causality. To address this issue, we take a two-pronged approach. First, we provide an instrumental variable specification that more properly addresses the issue of reverse causality. Second, we use an experiment based on firm IPOs.

In the instrumental variable specification, we relate the change in foreign ownership to the change in hedging policy instrumented with some exogenous variable. We use as an instrument the changes in asset quality of the relationship banks. The intuition is that if the relationship banks face a deterioration in their overall asset quality, they will exert pressure on the firms to hedge to reduce their

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exposure. Alternatively, the financial troubles of the relationship banks will induce the firms to hedge to refinance themselves with other banks. In either case, the deterioration in the financial condition of the relationship banks will induce the firms to hedge.

The instrumented results are consistent with the main ones. Moreover, they show that hedging affects international institutional investor demand only for non-bank-affiliated investors. This finding not only supports the previous results but also provides a useful consistency check. Indeed, for investors not affiliated with banks, there is no potential spurious correlation between investors' investment decisions and the actions taken by the banks. Once we properly control for endogeneity, bank-affiliated investors do not appear to be so interested in hedging. This finding may be due to the inside information they derive from their loans as well as to the potential spurious correlation induced by the hedging policy imposed by the banks on the firms. In the case of non-bank-affiliated investors, such concerns do not exist, and we find a direct link between these investors' demand and the corporate hedging policy of the firm.

Next, we provide an experiment to further address the reverse causality concern. We focus on the firms that go through an IPO within the sample period and examine the impact of corporate hedging in place before the IPO on institutional investor demand after the IPO. The idea is that the corporate hedging policy enacted before the IPO is less likely to be driven by the governance pressure of post-IPO foreign investors. Indeed, we find that the before-IPO hedging policy is positively related to international investor demand after the IPO. Hedging increases international demand for the stock by 37% relative to the unconditional mean. In addition, as in the previous cases, the effect is there only for the non-bank-affiliated institutional investors.

Finally, it may be argued that our results are spuriously driven by some specific firm characteristics we are omitting in our analysis. To address this issue, we consider a specification based on firm fixed effects. Also in this case, the results are robust.

Our study contributes to several strands of literature. Until recently, empirical examinations of corporate hedging had been hindered by the general unavailability of data on hedging activities. The

disclosure of hedging policy in a firm's annual and interim reports in recent years has made the analysis feasible, generating a literature attempting to examine the determinants of hedging (e.g., Nance, et al., 1993, Tufano, 1996, and Géczy, et al., 1997) and whether there exists a link between hedging and corporate valuation.

The evidence is far from conclusive. For example, Allayannis and Weston (2001) and Carter, et al. (2006) document that hedging leads to a 5-10% increase in firm value. Graham and Rogers (2002) document a positive relationship between derivatives use and firms' debt capacity. Guay and Kothari (2003) examine the magnitude of corporate risk exposure hedged by financial derivatives and find that derivatives use appears to be a small portion of the corporate risk profile. They conclude that previous findings on the effect of derivatives use on firm value are either driven by other risk-management activities or spurious. Jin and Jorion (2006) reach contrasting results.

More recently, Campello, et al. (2011) show that hedging leads to lower interest spreads and reduces financial constraints. We contribute to this literature by studying the class of investors who value hedging more. Whereas we do not directly draw value implications, the fact that international investors – presumably the more diversified ones – are the ones that appreciate hedging is consistent with hedging increasing firm value.

Second, we relate to the literature on portfolio choice in both domestic and international contexts (e.g., Coval and Moskowitz, 1998, 2001, Gaspar et al., 2005, Ferreira and Matos, 2008, Ferreira et al., 2010, Kang and Stulz, 1997, Gillan and Starks, 2007, Froot and Ramadorai, 2008). We contribute by showing how hedging affects international investor demand and how this relationship is connected with the information environment of the country.

Third, we add to the literature on quality of governance (La Porta et al., 1997, 1999, 2002, Claessens et. al, 2000, Laeven and Levine, 2008). We contribute by showing how hedging helps firms to overcome bad governance characteristics and attract international investment.

Fourth, our work helps to understand the home-bias puzzle through examining investor behavior in international diversification. Indeed, the presence of cross-sectional variations in the demand for

hedging depending on location – and thus information – further confirm an information explanation for the home bias puzzle.

The remainder of the paper is organized as follows. In Section II, we present our main testable hypotheses. In Section III, we describe the data and the construction of the main variables. In Section IV, we present the main results. In Section V, we discuss our econometric methodology to address potential endogeneity concerns and provide further robustness checks. In Section VI, we examine investor demand, hedging and the role of information. A short conclusion follows.

II. Hypothesis

We now outline our hypothesis. We begin with Modigliani and Miller's (1958) irrelevance proposition. In the presence of perfect capital markets, shareholders are able to create their own desired risk profiles and thus do not assign any value to the hedging policy of the firm. In other words, if investors are fully diversified, hedging is not required. In fact, it may not even be appreciated, as the investors are able to hedge the risk by diversifying their portfolios without incurring the costs of hedging faced by the company.

It has been argued that some risk – i.e., bankruptcy risk – cannot truly be diversified away by investors. Indeed, increasing the number of assets in the portfolio will only allow the firm to reduce the percentage of risk in the portfolio, but the fact that such a risk is a one-sided risk will make the diversification less effective. Corporate hedging reduces the probability of lower-tail realizations, reducing the costs of financial distress (e.g., Smith and Stulz, 1985, Stulz, 1996) and reducing managerial incentives to engage in risk-shifting (Campbell and Kracaw, 1990, Purnanandam, 2008). Froot et al. (1993) argue that hedging can reduce the underinvestment problem due to costly external financing. The same argument holds for the case of exposure to systematic risk, as pure portfolio diversification will not help.

However, in both these cases, the question is whether the cost to the investor of entering a derivative contract to hedge risk is higher than that of allowing the firm to hedge away such a risk.

Although this question may not apply to an ordinary investor, the answer is likely to be negative for the case of specialized international asset managers[1]. This problem is even more salient in the international context, in which the institutional investors are more likely to be diversified and thus less subject to specific firm risk.

In addition, if hedging reduces risk, it should be properly incorporated into the stock price, and a firm that reduces its risk profile by hedging would command a higher price. Investors should be indifferent between paying a higher price for a firm that hedges and a lower one for a firm that does not hedge[2]. In fact, investors may actually like the risk profile of the stock, depending on its correlation with the assets they have in the portfolio.

In sum, it is uncertain whether investors do in fact prefer the firm to hedge. To identify a link between hedging and investor demand, we must consider some very specific source of market imperfection. We focus on information asymmetry between managers and investors. As DeMarzo and Duffie (1991) have shown, shareholders benefit from hedging especially in the case in which the manager has some payoff-relevant information not directly observable to the shareholders. Hedging, by reducing the noise in the firm's cash flows, allows the shareholders to make better portfolio decisions: "If the firm has some information pertinent to its own dividend stream that is not made available to its shareholders, it may be in the interests of its shareholders for the firm to adopt an appropriate financial hedging policy…Even though hedging may be costly, these policies typically call for the firm to hedge the risk complete" (DeMarzo and Duffie, 1991).

The key intuition is the fact that firms have proprietary information and do not wish or are unable to inform their shareholders of risks that the shareholders could otherwise hedge using the security markets. "The privacy of this information may be of strategic importance in the firm's marketplace, or may merely be due to the cost of disseminating up-to-date news on the corporation's production plans and other ventures…it is impossible for shareholders to adopt for themselves hedging strategies that

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[1] It is worth mentioning that the restrictions that reduce the ability of US mutual funds to hold derivatives do not apply to the case of derivatives held for hedging purposes. Moreover, these restrictions do not apply to most of the international funds that are the topic of this study.

[2] Moreover, a reduction in the risk profile of the firm does not necessarily entail a higher price if it simply brings down the risk to the level of the other firms. Investors may simply prefer to invest in assets where such a risk does not exist.

are based on information they do not have. The firm, however, may hedge on their behalf…Since shareholders do not know how to hedge these risks, they want the firm to hedge on their behalf" (DeMarzo and Duffie, 1991)

We argue that there is a specific set of investors for whom the asymmetry of information is particularly high: foreign investors. Whereas foreign investors tend to be more diversified than the domestic ones, they are at a higher information disadvantage, as they are located further away, and often speaking a different language. In this case, hedging reduces the firm risk for them more than for other investors. In other words, if the investors are not fully informed or the firm is opaque, hedging will help reduce the impact of information asymmetry. Given that international investors face a higher informational barrier, hedging should be particularly appreciated by those investors. This allows us to formulate our main hypothesis.

H1: Hedging attracts international investors.

The previous considerations suggest that hedging will be particularly appreciated by shareholders of firms with greater informational asymmetry. More specifically, given that foreign investors will face an informational disadvantage that is higher for less transparent countries, we expect that hedging will be more appreciated by international investors for countries with higher informational uncertainty. This intuition allows us to formulate our second hypothesis.

H2: The effect of hedging on international demand is higher for less transparent countries.

Before moving to the empirical results, we describe the data and the main variables we will use in the analysis.

III. Construction of Data and Main Variables

Our initial sample includes all the stocks included in the Compustat Global Security Daily database. Compustat Global Daily comprises of reliable daily market data on over 12,000 international (non-North American) publicly listed companies in 70 countries around the world, including coverage of

over 96% of the European market capitalization and 88% of the Asian market capitalization. We exclude financial firms with SIC codes from 6000 to 6999[3].

We collect the hedging information from company filing reports in the Capital IQ corporate filings database for international firms between 2001 and 2009. In line with Campello et al., (2011), we focus on the use of financial derivatives to hedge against exchange rate risk and interest rate risk. We perform an extensive search among company filings for keywords related to the company's use of financial derivatives to hedge against foreign exchange risk and interest rate risk. To the best of our knowledge, Capital IQ is the only database that starts to offer keyword searching functions on global company reports with manageable searching outcomes. However, it does not allow mass-downloading of the reports so we are not able to collect the notional value of derivatives positions as in Campello et al., (2011). Therefore, we follow the majority of papers using derivatives data (e.g., Allayannis and Weston, 2001, Purnanandam, 2008) and measure hedging activity with a hedging dummy. We proceed as follows.

For foreign exchange hedging, we search among all the company filings from 2001 to 2009 except insider holdings for the following keywords: "foreign exchange forward"; "forward foreign exchange"; "foreign exchange rate forward"; "currency forward"; "currency rate forward"; "foreign exchange option"; "currency option"; "foreign exchange rate option"; "currency rate option"; "foreign exchange future"; "currency future"; "foreign exchange rate future"; "currency rate future"; "foreign exchange swap"; "currency swap"; "foreign exchange rate swap"; "currency rate swap"; "foreign exchange cap"; "currency cap"; "foreign exchange rate cap"; "currency rate cap"; "foreign exchange collar"; "currency collar"; "foreign exchange rate collar"; "currency rate collar"; "foreign exchange floor"; "currency floor"; "foreign exchange rate floor"; and "currency rate floor".

Among the sample firms, there are 20,583 filings[4] that contain such keywords, the majority of which come from Annual Reports (8092), Interim Reports (5098), 6-K (1926) and 20-F (1373). The most commonly used derivatives instruments for hedging foreign exchange risk are foreign exchange

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[3] The reason to exclude financial firms is that financial firms use derivatives for both trading and hedging purposes.

[4] We include both the main filings and their amendments in the search.

forwards. For each firm-year, the company is considered to be a foreign exchange hedger (FX hedger) if one of these filings dates from the previous three[5] years including the current year[6].

For interest rate hedging, we search all the company filings from 2001 to 2009, except insider holdings, for the following keywords: "interest rate swap"; "interest rate cap"; "interest rate collar"; "interest rate floor"; "interest rate forward"; "interest rate option"; and "interest rate future". Among the sample firms, 13,607 filings contain such keywords, the majority of which come from Annual Reports (6022), Interim Reports (2939), 6-K (1498) and 20-F (1097). The most commonly used derivatives instruments for hedging interest rate risk are interest rate swaps. For each firm-year, the company is considered to be an interest rate hedger if one of these filings dates from the previous three years[7].

We use data on international institutional equity ownership from FactSet/LionShares from 2002 to 2009. This dataset compiles institutional ownership from public filings, company annual reports, stock exchanges and regulatory agencies around the world. Institutions are defined as professional money managers and include mutual fund companies, investment advisors, pension funds, bank trusts and insurance companies[8]. FactSet/LionShares international institutional ownership data have been used in several other studies investigating the investment behavior of foreign investors (Ferreira and Matos, 2008, Bartram et al., 2011, Ng et al., 2011). We consider all types of stock holdings (common shares and ADRs). We address the issue of different reporting frequencies by institutions from different countries by selecting the latest year-end available holdings updates. We merge Compustat Global with Factset using company ISINs.

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[5] All of our results are consistent if we change the 3-year requirment into 2-year or the current year. The results on interest rate hedging are generally stronger with the 3-year requirement. This is due to the fact that the most commonly used interest rate hedging instruments are interest rate swaps, and swap contracts normally have longer maturities (1-5 years) compared to other derivative contracts.

[6] The firm may be misclassified as a FX hedger if the company specifically mentions that it does not use any foreign exchange derivatives in the reports. In this regard, we search for keywords such as "we (the company) do not (does not) have (utilize, enter) any foreign exchange (currency) derivatives". If one of these keywords is found, the filing is considered a non-FX hedger filing.

[7] The firm may be misclassified as an interest rate hedger if the company specifically mentions that it does not use any interest rate derivatives in the reports. To this end, we search for keywords such as "we (the company) do not (does not) have (utilize, enter) any interest rate derivatives". If one of these keywords is found, the filing is considered a non-interest rate hedger filing.

[8] Factset/LionShares contains two layers of data. The first layer is at the fund level, providing detailed information on the amount of holdings in international stocks. The second layer is at the institutional level (managing company for each fund), providing information on the location, type, and ultimate parent of asset managers.

We obtain the key balance sheet and income statement data from Capital IQ. Capital IQ provides extensive accounting information on over 60,000 global public and private companies worldwide. We match Compustat Global/Factset with Capital IQ using company names and country and manually evaluate the matching outcomes to ensure the validity of the matches. Our combined sample contains 37,440 firm-year observations from 2002 to 2009.

We classify asset managers into bank-affiliated and non-bank-affiliated institutions. We identify an asset management company as bank-affiliated if either its ultimate parent is a bank or among the companies controlled by the same ultimate parent there is a bank[9]. We obtain the identities of the ultimate parents of the institutional investors from Factset. We then manually match these names with the names of banks in Bankscope to determine the total amount of loans in assets.

In particular, we examine the ultimate parents of asset managers and retain only those that have loans exceeding 10 billion USD on the asset side of their balance sheet. This condition is very important, as Factset misclassifies sovereign wealth funds and other non-lending entities as bank-affiliated. For example, the Norwegian Sovereign Wealth Fund, managed by the "Norges Bank", the Central Bank of Norway, is classified by Factset as bank-affiliated. This misclassification has huge implications, as this fund managed 150 billion non-US stocks at the end of 2007 (6th largest asset manager in the world) and its inclusion among the "bank-affiliated" may significantly alter the results. Therefore, we expend much effort to ensure that the definition of bank-affiliated investors is correct.

We report the summary statistics of the main firm-level variables in Table I, Panel A. In the interest of brevity, we defer to the Appendix for a detailed definition of all the variables. For each variable we report the data source, mean, median, standard deviation and number of observations. In Panel B, we report the country-level statistics on both the average percentage of hedgers (foreign exchange hedgers and interest rate hedgers) and the average foreign institutional ownership (floating-

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[9] Factset/Lionshares has its own classification of investor types according to which an investment company managed by a bank is called a "Bank Management Division". Factset defines this investor type as "a general buyside firm whose ultimate parent is a bank". However, as acknowledged by Factset, there are serious misclassifications of investor types in the original data. For instance, "BNP Paribas asset management (Singapore) ltd." is classified as a bank-affiliated division, whereas "BNP Paribas asset management Asia ltd." is classified as an investment advisor; "BNP Paribas investment partners (Germany)" is classified as investment advisor, whereas "BNP Paribas investment partners Belgium" is classified as a bank-affiliated division. To address this issue, we strictly follow Factset's definition of a bank management division by manually evaluating the ultimate parents of all asset managers.

adjusted ownership[10]). On average, during the sample period, 28% of firms have engaged in hedging activities by either interest rate hedging or FX hedging. The fraction of FX hedger (24%) is higher than that of interest rate hedger (17%). The average foreign institutional ownership (floating-adjusted ownership) is 4.9% (8.0%), consistent with the figures reported in Ferreira and Matos (2008).

In Panel C, we report the ultimate parents of the top 10 largest asset managers holding non-US stocks at the end of December 2007. We report the name of the ultimate parent, the amount of holdings in billions of dollars and the country in which the ultimate parent is headquartered. We separate the funds by whether they are affiliated with banking conglomerates. Interestingly, unlike non-bank-affiliated investors, the largest bank-affiliated asset managers are mostly from Europe instead of the US, consistent with the fact that banking conglomerates dominate the European financial structure.

IV. Hedging and Foreign Investor Demand

We now analyze whether foreign institutional investor ownership is affected by the hedging decision of the firm. We first provide the main results and then consider the potential role played by bank affiliation.

A. Main Findings

We relate foreign ownership to corporate hedging decisions. We regress foreign ownership on our proxy for hedging and a set of control variables. We define foreign ownership as the ratio of foreign investor holdings divided by the year-end market capitalization. We consider as a proxy for hedging either a hedger dummy that equals 1 if the firm hedges using interest rate or foreign exchange derivatives contracts and 0 otherwise or, separately, both a FX hedger dummy and an interest rate

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[10] As Dahlquist et al. (2003) and Jotikasthira et al. (2012) have shown, the pure percentage ownership under-represents the true impact of foreign ownership. Indeed, a significant fraction of a firm's capital is tied down in the controlling stake. This may due to the ownership by governments, families or private entities. Therefore, we define the floating adjusted ownership as the direct foreign ownership scaled by the fraction of floating shares.

hedger dummy. The FX (interest rate) hedger dummy is a hedger dummy that equals 1 if the firm hedges foreign exchange rate risk (interest rate risk) using derivatives contracts and 0 otherwise.

We include among the control variables the standard firm-specific variables such as the size of the firm, the market-to-book ratio, (book) leverage, profitability, and dividend yield. These are variables that proxy for the main factors used to determine the demand of institutional investors – e.g., there may be funds specialized in investing in high-dividend stocks, stocks of levered firms, or stocks of cash-rich companies. The market-to-book and size variables proxy for the fact that demand may be affected by the way Morningstar and Lipper stocks are traditionally classified, i.e., fund styles as a function of value/growth and size.

We also include control variables that represent financial characteristics of the stocks, such as a stock's price return and volatility in the previous year. The former is a proxy for momentum, and the latter is a proxy for financial risk. In addition, we consider variables that proxy for investor attention, such as the fraction of foreign sales[11], the number of analysts tracking the stock, the affiliation of the stock with the S&P Global 1200 Index as well as with the local composite index, and the firm's cash holdings and asset tangibility. The former are standard measures in the literature, and both cash holdings and tangibility proxy for the degree of financial "transparency" of the firm's assets (e.g., Gopalan et al., 2010). We also control for the fraction of floating shares of the firm as the incentive to invest in a stock is a function of the ability to quickly liquidating the position. We include country and year fixed effects. Moreover, we also consider specifications in which we include country × year fixed effects to better control for any country characteristics that are time-varying.

We report the results in Table II. In columns (1)-(3), our variable of interest is a hedger dummy that equals 1 if the firm hedges foreign exchange risk or interest rate risk using derivatives contracts and 0 otherwise. In column (1), we include year fixed effects and country fixed effects. In column (2),

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[11] There is also another reason we include it as a control. Indeed, consider US investors investing in a German company. They will enjoy a natural hedge against foreign exchange risk when the company has a high share foreign sales in the US. If the ownership by US investors is large enough, the firm will have an incentive not to hedge foreign exchange risk, even if hedging reduces the volatility of cash flow. Therefore, in equilibrium, we expect that in the case of export-oriented industries, firms hedge less when they have higher foreign direct ownership. All of our results do not change if we add additional controls, such as the fraction of foreign income over total income and the fraction of foreign assets over total assets.

we consider country × year fixed effects. We add industry fixed effects at the two-digit SIC level in column (3). In columns (4)-(6), we consider foreign exchange hedgers and interest rate hedgers separately, with the same specifications as in columns (1)-(3). All the firm-level accounting variables are taken at the beginning of the year. We cluster the errors at the firm level.

The results show a strong positive relationship between the demand of foreign institutional investors and hedging. This relationship holds across the different specifications and for both interest rate hedging and FX hedging. Firms that hedge display a 26% higher foreign ownership with respect to the unconditional mean. Interest rate hedging increases ownership by 14%, and FX hedging increases ownership by 20% with respect to the unconditional mean.

Among the control variables, the results are in line with expectations. Foreign institutional investors tend to prefer larger, more profitable and less levered firms. This preference is consistent with a better ability to understand such firms and lower inherent riskiness. In addition, the "attention" variables stimulate demand. For example, firms with higher cash holdings attract more demand, as do firms that have ADRs, are part of a local major index, have more analysts tracking them or sell more products abroad. Past return does not appear to be significant, presumably due to its correlation with other variables.

As a robustness check, we decompose foreign ownership into ownership by US institutions and ownership by non-US institutions. For each fund, we identify its location by the headquarters of the managing company. The control variables are the same as in the previous specification. In the interest of brevity, we mute the control variables in the reporting of the results.

We report the demand by US institutions in Panel B and the demand by non-US institutions in Panel C. The layout of the columns is the same as in Panel A. The results are consistent with the previous ones and display a strong positive correlation between the demand of foreign investors and hedging for both US institutions and non-US institutions. The economic significance is also similar. Firms that hedge display a 24% (25%) higher US (non-US) foreign ownership with respect to the unconditional mean. Interest rate hedging increases ownership by 17% (10%) and FX hedging

increases ownership by 19% (20%) with respect to the unconditional mean in the case of US (non-US) ownership. This finding suggests that non-US institutions care less than US institutions for interest rate hedging.

B. The Role of Bank Conglomerates

Overall, these results show that hedging does indeed affect the demand of international investors. One potential objection is that many international asset managers are affiliated with banks lending abroad. Therefore, it may be the case that the firm hedges because the bank – to which the fund is affiliated – forces it to hedge. This would induce a spurious positive correlation between hedging and investor demand.

To address this issue, we separately analyze the demand of foreign investors affiliated with banking conglomerates and the rest. We adopt the classification of bank affiliation defined above. We consider as a dependent variable either bank-affiliated foreign ownership, defined as bank-affiliated foreign institutional holdings divided by the year-end market capitalization of the stock, or non-bank-affiliated foreign institutional holdings, calculated as the difference between total foreign ownership and bank-affiliated foreign ownership.

We report the results for bank-affiliated foreign institutional ownership in Panel D and those for non-bank-affiliated foreign ownership in Panel E. The layout of the columns is the same as in Panel A. The results show that for both bank-affiliated foreign investors and non-bank-affiliated ones, there is a strong positive correlation between their demand and hedging. However, if we examine this issue in greater detail, we find that the effect of hedging on the demand of non-bank-affiliated foreign institutional investors is four times stronger than that on the demand of bank-affiliated investors[12]. Moreover, if we break hedging into its components, we see that while non-bank-affiliated foreign institutional investors are sensitive to both FX and interest rate hedging, bank-affiliated ones are not sensitive to interest rate hedging.

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[12] In terms of economic significance relative to the unconditional mean, firms that hedge display a 24% higher foreign non-bank-affiliated demand, compared to an 18% increase in the demand of bank-affiliated investors.

These results are important for two reasons. First, they reject the hypothesis of a potential spurious correlation between institutional investor demand and bank affiliation. Second, and perhaps more importantly, they suggest that the investors that are more informed – i.e., bank-affiliated foreign institutional investors (Acharya and Johnson, 2007, Massa and Rehman, 2008, Massoud et al., 2010, Ivashina and Sun, 2010)– are less sensitive to hedging. This finding provides some preliminary evidence of the information-related role of hedging, which we will explore in detail in later sections.

V. Robustness Checks and Endogeneity Concerns

We now consider some robustness checks and econometric issues.

A. Robustness Checks

We begin by noticing that in the previous analysis, we have followed the literature (Coval and Moskowitz, 1999, 2001, Ferreira and Matos, 2008) and defined the dependent variable in terms of foreign ownership standardized by the number of shares outstanding. Another test may be based on the fraction of foreign institutional ownership in total institutional ownership. The reason why we did not use this as main variable is that domestic ownership is not as cleanly reported in Factset. Indeed, in some countries, domestic ownership is tracked only late in the sample. However, as a robustness check, we now re-estimate the main specification using as a dependent variable the fraction of foreign investor ownership in total institutional ownership.

We report the results in Table III. In columns (1)-(3), our variable of interest is a hedger dummy that equals 1 if the firm hedges foreign exchange risk or interest rate risk using derivatives contracts and 0 otherwise. In column (1), we include year fixed effects and country fixed effects. In column (2), we consider country × year fixed effects. We add industry fixed effects at the two-digit SIC level in column (3). In columns (4)-(6), we consider foreign exchange hedgers and interest rate hedgers separately, with the same specifications as in column (1)-(3).

The results show a strong positive correlation between the fraction of foreign investor ownership relative to total institutional ownership and hedging. This finding holds across the different

specifications and for both interest rate hedging and FX hedging. Firms that hedge display a 5% higher fraction of foreign investor ownership with respect to the unconditional mean. Interest rate hedging increases the fraction of foreign investor ownership by 2%, and FX hedging increases it by 4% with respect to the unconditional mean. These results are consistent with the previous ones and provide a further robustness check[13].

B. Addressing Potential Endogeneity

We now consider the issue of potential endogeneity. It may be that foreign institutional investors press firms to hedge. This may imply reverse causality. In addition, hedging may be related to some specific firm characteristics that we are omitting in our analysis. Therefore, to address these issues, we adopt a three-pronged approach. First, we consider a specification based on firm fixed effects. This approach addresses the issue of spurious correlation due to some firm-specific omitted variables. Second, we provide an instrumental variable specification that more properly addresses the issue of reverse causality. Third, we use an experiment based on firms' IPOs.

B.1. A Firm Fixed Effect Specification

We begin by considering a firm-fixed effect specification. This specification has the drawback of identifying the hedging effect out of large time-series variations away from the likely stable long-run average hedging policy and focuses entirely on time-series variation within firms as opposed to cross-sectional variation. Given that a persistent hedging policy can be better captured by a cross-sectional analysis, up to now, we have refrained from including a firm fixed effect. Also, the approach we have taken till now is in line with the standard hedging literature, which in general has not used firm fixed

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[13] The economic significance of hedging on the fraction of foreign ownership over total institutional ownership appears to be weaker than the previous results from the level regression. However, this finding is expected. Suppose that hedging increases foreign ownership from 5% to 6%, for a 20% increase relative to the unconditional mean, and it does not increase domestic ownership (as we will describe later), which remains at 2%. Consequently, the fraction of foreign ownership increases from 71% to 75%, which represents only a 5% increase relative to the unconditional mean, much smaller than the 20% economic significance for the level of foreign ownership. This reasoning also implies that examining the fraction of foreign ownership over total ownership is much less informative than the level of foreign holdings standardized by market capitalization. We therefore use it only as a robustness check.

effect regressions for precisely this reason. However, we now consider a firm-fixed effect specification in order to dispel the potential issue of omitted variables.

We therefore re-estimate the main relationship using a firm fixed effects specification. We report the results in Table IV. From column (1) to column (4), the dependent variable is total foreign ownership. In columns (3) and (4), we further control for country × year fixed effects. The dependent variable in column (5) is bank-affiliated foreign ownership, whereas in column (6), the dependent variable is non-bank-affiliated foreign ownership. We always include firm-fixed effects in each column and cluster the errors at the firm level.

The results show a strong positive relationship between the demand of foreign investors and hedging. This finding holds across the different specifications and for both interest rate hedging and FX hedging. Firms that hedge display 15% higher foreign ownership with respect to the unconditional mean. Interest rate hedging increases ownership by 8% and FX hedging increases ownership by 12% with respect to the unconditional mean.

These results confirm the previous ones and help to dispel the issue of spurious correlation due to the omission of some firm-specific variable. In addition, it is important to note that the effect is almost five times stronger for non-bank-affiliated institutional investors than for bank-affiliated ones.

B.2. An Instrumental Variable Specification

We address the issue of reverse causality by using an instrumental variable specification in which we relate the change in foreign ownership to the change in hedging policy instrumented with some exogenous variable. We use as the instrument the change in the asset quality of the relationship banks. The intuition is that if the lending banks face a deterioration in their loans, they may exert pressure on the firms to hedge to reduce their exposure. Or, alternatively, the financial troubles of the relationship banks will induce the firms to hedge to refinance themselves with other banks. In either case, a deterioration in the financial condition of the relationship banks will induce the firms to hedge. We operationalize this idea as follows.

First, we focus on the sample of firms that can be matched to LPC/Dealscan. Dealscan is a comprehensive international dataset that contains detailed information relating to the start and expiration dates of loan deals along with the names of the lending banks, loan amounts, and terms and conditions of the loans. We match the Capital IQ excel company id with the LPC company id using firm names. We manually check the matching outcomes to ensure the validity of the match.

Next, to obtain the change in the banks' asset quality, we match the LPC/Dealscan lender id with the Bankscope bank id using bank names. Again, we manually check the matching outcomes to ensure the validity of the match. We define the asset quality of a bank as the ratio of the impaired loans defined by the sum of total loans and loan reserves (Bankscope data item $2170/(2000+2070)$[14]). The intuition is that a higher ratio indicates a lower asset quality of the bank. For each firm-year, we define the asset quality of the relationship banks as the loan-amount weighted lagged asset quality among all the banks that have lending relationships with the firm in the last three years including the current year – i.e., the relationship banks. We then use the changes in the asset quality of such lending banks to the firm – i.e., the relationship banks – to instrument for the changes in hedging policy.

We report the results in Table V, Panel A. In columns (1) and (2), we report the OLS results without the instrument. The dependent variable is the change in foreign ownership with respect to the previous year. In column (1), the interested variable is "*D.Hedger*", the change in the hedging policy, which may take three values, 1, 0 and -1. It is 1 if the firm is a hedger this year but not last year (start-hedger), -1 if the firm is a hedger last year but not this year (stop-hedger), and 0 otherwise. In column (2), we drop the stop-hedgers and redefine a binary variable (start-hedging dummy) that equals 1 if the firm is a start-hedger and 0 otherwise.

In columns (3) to (6), we link the change in foreign institutional investor ownership to the start-hedging dummy, with it instrumented by the change in the asset quality of relationship banks. In column (3), we run a probit regression of the start-hedging dummy on the change in the asset quality of relationship banks. We calculate the fitted value from column (3) and use it as the instrument for

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[14] This ratio is defined in the Bankscope's Manual on "Ratio Definitions" as a measure for a bank's asset quality.

the start-hedging dummy in columns (4)-(6)[15]. The dependent variable in column (4) is the change in total foreign ownership. In column (5), the dependent variable is the change in bank-affiliated foreign ownership, whereas in column (6), it is the change in non-bank-affiliated foreign ownership. We perform the F-test to identify the weakness of the instrument. In all the specifications, we cluster the errors at the firm level.

We begin with the non-instrumented results (columns (1)-(2)). We observe that the international investor demand reacts positively to either increases in hedging – i.e., the change in the hedging policy is positive – or the initiation of hedging policies – i.e., start-hedging dummy equal to 1. These results confirm the previous ones. We then consider the first-stage specification. We see that a deterioration of the bank asset quality is positively related to hedging. The effect is strong and delivers a Staiger and Stock (1997) statistic of weak instruments over 20. This finding comfortably allows us to trust the strength of our instrument.

We then use the instrumented component of hedging to explain foreign investor demand. We find that the instrumented hedging policy is significantly positively related to international investor demand[16]. The effect is there only for the non-bank-affiliated investors. This finding not only supports the previous results but also provides a good consistency check. Indeed, once we properly control for endogeneity, bank-affiliated investors do not appear to be so interested in hedging. This difference may be due to the inside information they derive from their loans as well as the potential spurious correlation induced by the hedging policy being imposed on the firms by the banks. In the case of the non-bank-affiliated investors, such concerns do not exist, and we find a direct link between their demand and the hedging policy of the firm.

One potential concern is that the relationship between changes in hedging and the deterioration of asset quality of the relationship banks is due to spurious correlation: the borrower hedges because it

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[15] We follow Wooldrige (2001) and use the fitted value from the probit regression as the instrumental variable.

[16] A one-standard-deviation increase in the fitted start-hedging dummy (in this case, 5%) implies a change in foreign ownership of 5%*7.6=0.38, indicating a 0.38% increase in foreign ownership. For OLS, the start-hedging dummy (1 verse 0) implies a 0.53% increase in foreign ownership.

itself suffers negative shocks and as a result the quality of the assets of the bank deteriorates. We argue that this is not the case.

To address this issue, we perform a subsample analysis in which we consider only the firms that have not experienced a deterioration in their financial conditions and have instead seen an improvement. In such cases, the link between changes in hedging and deterioration of asset quality of the relationship banks cannot be due to a deterioration of the firm's specific conditions and therefore we are not in the presence of spurious correlation. Indeed, it would be difficult to argue that the quality of the assets of the banks deteriorates for some unobservable reason that is linked to the firm itself and induces the firm to hedge. We therefore focus on the subsample of firm-years with an increase in profitability ratio ("D. Profitability > 0") relative to the previous year.

We report the results in Table V, Panel B. We use the same specifications as in Panel A. For brevity, we only report the interested variables. The results show that the impact of changes in hedging on changes in foreign institutional investor ownership are both quantitatively and statistically similar in the subsample of firms with an increase in firm profitability. Moreover, the effect, as in the overall sample, is concentrated only for the non-bank-affiliated investors.

B.3. An Experiment: IPO-year Evidence

Finally, we consider an experiment. We consider firms that conduct IPOs within the sample period, and we examine the impact of corporate hedging in place before the IPO on institutional investor demand after the IPO. The idea is that the corporate hedging policy enacted before the IPO is less likely to be driven by the governance pressure of post-IPO foreign investors. This finding helps us to further address the problem of reverse causality.

We thus focus on a group of IPO firms during the sample period. We obtain the IPO sample from Thomson Financial's SDC New Issue database. We match Factset with the SDC New Issue database by company SEDOLs. We link the IPO-year foreign institutional ownership to the corporate hedging decision. We control for all the control variables defined in the previous specifications but with their value taken at the end of the IPO year. We also control for additional IPO characteristics based on

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information from SDC: a high-tech industry dummy, equal to 1 if the firm is in the high-tech industry (as defined by SDC) and 0 otherwise, a venture-capital-backed dummy, equal to 1 if the IPO is backed by venture capital and 0 otherwise, the number of book runners, a book-building dummy, equal to 1 if the pricing technique of the IPO is through book building and 0 otherwise, and a lockup provision dummy, equal to 1 if there exists a lockup period after the IPO and 0 otherwise.

We report the results in Table VI. The dependent variable in columns (1)-(4) is the total foreign institutional ownership of the IPO year. We use bank-affiliated and non-bank-affiliated foreign ownership in columns (5) and (6), respectively. The results show the before-IPO hedging policy is positively related to international investor demand after the IPO. We find that hedging increases international demand for the IPO stock by 37%. In addition, as in the previous cases, the effect is there only for the non-bank-affiliated investors. This finding further confirms our main results, showing a direct impact of corporate hedging on the demand of international institutional investors.

It is worth mentioning that in separate tests, we have also linked only domestic ownership to corporate hedging decisions. We find that domestic ownership is not significantly related to hedging, either interest rate hedging or foreign exchange hedging[17]. This finding further supports our results, showing that corporate hedging attracts international investors, as it helps to mitigate the information uncertainty. For domestic investors, such uncertainty is minimal; therefore, hedging is less important.

VI. Hedging, Investor Demand and the Role of Information

We now consider the second hypothesis: the effect of hedging on international demand is higher for a less transparent country. We focus on two dimensions of transparency. The first is related to the standard measures of informational transparency. The second is related to the induced uncertainty related to the quality of governance in the country. This "institutional uncertainty" compounds the learning uncertainty of the international investors – less capacity to follow political changes in the country or to properly insure themselves against these changes – and thus should increase international

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[17] We report this result in the Internet Appendix Table 1.

investors' preference for hedging. Finally, we consider geography-based measures of information uncertainty.

A. Hedging and Information

We begin by investigating how the relationship between foreign ownership and corporate hedging is related to the information environment of the country of the firm[18].

We re-estimate the same demand specification as before but split the sample along some measures that proxy for the ability of international investors to understand the country. We consider several proxies. The first measures whether English is commonly used in the country. The intuition is that most international portfolio managers use English as working language and thus investors are better able to understand the true business and financial position of a firm in a country where English is spoken more (Sarkissian and Schill, 2004). We define a country as an English-speaking country if English is the official or national language or is spoken by at least 20% of the population of the country.

The second proxy is the quality of reporting standards in the country. The index of reporting standards comes from the 2006 Global Competitiveness Report (Item 1.19: strength of auditing and reporting standards). We define a good reporting standard as a country that ranks above the median on such an index. The third proxy is based on the dispersion of analysts. We focus on firms with available information on analyst dispersion in the forecast (as defined in the Appendix) and split the sample by the country-median analyst dispersion (above median/below median).

For all these measures, we perform a CHOW test to evaluate the differences in coefficients on hedging between subsamples and report the Chi-squared statistic. In all the specifications, we also include, on top of the control variables defined before, country × year fixed effects and industry fixed effects. We also cluster the errors at the firm level.

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[18] We could have conditioned on the information environment of the firm itself, but this would be a very much endogenous variable, directly affected by the hedging decision of the firm.

The results are reported in Table VII. In columns (1) and (2), we split the sample by language, in columns (3) and (4), we split the sample by the reporting standards, whereas in columns (5) and (6), we split the sample by the analyst dispersion. In the interest of brevity, we only focus on the dummy of whether the firm hedges. The results, based on interest rate and FX hedging separately considered, are consistent and available upon request.

The results show that the effect of hedging on demand is stronger in the case of countries that are non-English speaking, those that have low reporting standards and those that have high analyst dispersion. Corporate hedging increases foreign demand by 34% (10%) compared to the unconditional mean in non-English speaking countries (in English speaking ones), by 44% (18%) compared to the unconditional mean in low-reporting-standard countries (in high-reporting ones), and by 31% (13%) compared to the unconditional mean in high-analyst-dispersion countries (in low-dispersion ones). The difference is highly statistically significant.

These results confirm the information hypothesis, suggesting that corporate hedging reduces uncertainty for international investors and thus that this effect is less pronounced when the informational uncertainty is more limited.

B. Hedging and Governance

We now focus on the quality of governance. The purpose of this analysis is twofold. We expect that hedging by itself does not proxy for or is directly related to the quality of governance. However, if the quality of governance is bad, we expect hedging to become more important for firms with higher uncertainty. That is, the quality of governance compounds the informational uncertainty of the firm, and hedging becomes more relevant.

We thus relate the link between foreign ownership and corporate hedging to the quality of governance in the country. We consider two proxies of quality of governance. The first is the protection of minority shareholders' interests in each country. The index comes from the 2006 Global Competitiveness Report (Item 1.21: protection of minority shareholders' interests). We consider it by itself as well, as we further split the sample according to the degree of analyst dispersion. The second

proxy is the efficacy of corporate boards in the country. In addition, in this case, we consider it by itself as well, as we further split the sample according to the degree of analyst dispersion. The index comes from the 2006 Global Competitiveness Report (Item 1.20: efficacy of corporate boards). In both cases, we perform a CHOW test to evaluate the differences in coefficients on hedging between subsamples and report the Chi-squared statistic. In all the specifications, we include, on top of the control variables defined previously, country $\times$ year fixed effects and industry fixed effects. We also cluster the errors at the firm level.

We report the results in Table VIII. In Panel A, we focus on the protection of minority shareholders' interests, and in Panel B, we focus on the efficacy of corporate boards. In columns (1) and (2), we split the sample by the governance indexes, whereas in columns (3) and (4), for lower values of the index – i.e., shareholder protection or board efficacy – we further split the sample by the country median analyst dispersion (above median/below median). In column (5) and (6), for the high value of the index – i.e., shareholder protection or board efficacy – we also split the sample by the country median analyst dispersion (above median/below median).

The results show that the quality of governance by itself does not significantly affect international investors' appreciation of corporate hedging. Indeed, for both proxies of governance, foreign institutional demand is statistically and economically related to hedging in the same way. However, if we condition on both the quality of governance and the dispersion of analysts (columns (3)-(6)), we observe that bad governance amplifies the positive effect of high uncertainty on the link between hedging and institutional investor demand. In particular, columns (3) and (4) show that, in the case of high analyst dispersion, hedging increases foreign ownership by 43% (45%) compared to the unconditional mean for the case of low shareholder protection (low efficacy of the board) subsample. The difference is not only economically significant but also statistically very relevant.

Overall, these results are in line with the previous ones and further confirm the information hypothesis. We now provide a third test based on a standard proxy for information: geographical distance.

C. Hedging and Geography

We now focus on distance. The literature (e.g., Coval and Moskowitz, 1999, 2001) has shown that geographical distance is a good proxy for a lack of information. This provides us with an ideal test for our hypothesis. Indeed, we expect that an asset manager that is more geographically distant has less information about the foreign stock and will be more sensitive to the hedging policy. We thus build a proxy of "foreign investor distance" and relate it to corporate hedging.

We define our measure of distance as the difference between the log of the holdings-weighted actual investor-firm distances and the log of a benchmark distance assuming that each investor is globally diversified. This methodology is the same as that used by Coval and Moskowitz (1999, 2001). For each firm-year (i,t), the actual investor-firm distance is defined as $\sum_{j\in J}(H_{i,j,t}/\sum_{j\in J}H_{i,j,t})Dist_{i,j}$,

where $H_{i,j,t}$ represents the holdings of investor j in firm i, and J is the set of foreign investors investing in firm i. $Dist_{i,j}$ is defined as the great circle distance between investor j and firm i, calculated using the geographical coordinates (latitudes and longitudes) of the capital cities of the investor country and the firm country. The benchmark distance is defined as $\sum_{k\in K}(H_{k,t}/\sum_{k\in K}H_{k,t})Dist_{i,k}$, where K represents the universe of investors, and $H_{k,t}$ is the total holdings of investor k in year t. $Dist_{i,k}$ represents the great circle distance between investor k and firm i defined as before.

We regress this measure on our proxies for corporate hedging and a set of control variables. These are defined as in the previous specifications. We cluster the errors at the firm level. We include country and year fixed effects. Moreover, we also include a specification in which we include country × year fixed effects.

The results are reported in Table IX. The layout of the columns is the same as in Table III. We consider both overall hedging as well as interest rate and FX hedging separately. The results indicate a strong positive relationship between foreign investor distance and hedging. This finding holds across

the different specifications and for FX hedging[19]. In particular, hedging reduces the gap between the distance at which the asset manager invests and the distance at which he should invest if he is investing as far away as is necessary to be globally diversified – i.e., a lower under-allocation bias of international institutional investors toward foreign stocks (Coval and Moskowitz, 2001) by 12%. It implies that hedging does not simply increase foreign investor demand *per se*, but also attracts more distant foreign investors. This evidence provides additional support to the information hypothesis.

Conclusion

We study how corporate financial hedging affects foreign institutional investor demand. We rely on DeMarzo and Duffie's (1991) intuition that shareholders benefit from hedging in the case where the manager has information not directly observable to the shareholders. We argue that among the potential investors, foreign investors are those for whom the asymmetry of information is particularly high and the benefits of hedging are greater. We therefore posit that hedging should be particularly appreciated by foreign investors and that this appreciation is higher for less transparent countries.

We study this issue using information on a large sample of 7,878 international companies from 2001 to 2009, for which we have collected measures of both foreign exchange hedging and interest rate hedging, and for which we have available information on international portfolio ownership by international institutional investors.

We provide evidence of a strong positive relationship between the demand for foreign investors and hedging. If we decompose foreign ownership into US institutions and non-US institutions, we find that the demand of both is strongly positively related to corporate hedging. In addition, if we separately analyze the demand of foreign holdings by funds affiliated with banking conglomerates and the rest, we see the effect of hedging on the demand of non-bank-affiliated foreign institutional investors is much stronger than the effect on the demand of bank-affiliated foreign investors. This

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[19] Interestingly, there is no significant relationship between the foreign investor distance and interest rate hedging. Given that interest rate hedging does indeed increase foreign ownership from the previous results, this finding implies that distant foreign investors and close foreign investors react similarly to interest rate hedging policy.

finding suggests that investors that are more informed – i.e., the bank-affiliated ones – are less sensitive to hedging.

We directly test the information hypothesis by investigating whether the effect of hedging on international demand is higher for less transparent countries. For all the measures of informational disadvantage facing foreign investors, we find that the effect of hedging on demand increases with greater informational disadvantage. A context featuring weak governance quality amplifies the effect of a high informational disadvantage on the link between hedging and institutional demand. Next, we relate the geographical distance between the asset manager and the firm to corporate hedging. We show that an asset manager that is more geographically distant from a firm is more sensitive to the firm's hedging policy.

We control for potential endogeneity of hedging using a three-pronged approach. First, we consider a specification based on firm fixed effects that addresses the issue of spurious correlation due to some firm-specific omitted variables. Second, we provide an instrumental variable specification that more properly addresses the issue of reverse causality. The instrumental variable specification exploits as an instrument the changes in the asset quality of the relationship banks. Third, we focus on the IPO firms during the sample period and examine the impact of corporate hedging in place before the IPO on institutional investor demand after the IPO. We show that the before-IPO hedging policy is positively related to international investor demand after the IPO.

Our study has important normative and corporate implications. Indeed, international firms may exploit their hedging policy as a means of attracting foreign international investors to reduce the cost of capital. This may be an alternative to otherwise restricted or expensive ADR issuances or cross-listing.

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Appendix: Variable Definitions

Foreign exchange hedger (FX hedger): we search among all the company filing forms from 2001 to 2009 except insider holdings in the Capital IQ corporate filings database, for the following keywords:

"foreign exchange forward", "forward foreign exchange", "foreign exchange rate forward", "currency forward", "currency rate forward";

"foreign exchange option", "currency option", "foreign exchange rate option", "currency rate option";

"foreign exchange future" , "currency future", "foreign exchange rate future", "currency rate future";

"foreign exchange swap" , "currency swap", "foreign exchange rate swap", "currency rate swap";

"foreign exchange cap" , "currency cap", "foreign exchange rate cap", "currency rate cap";

"foreign exchange collar" , "currency collar", "foreign exchange rate collar", "currency rate collar";

"foreign exchange floor" , "currency floor", "foreign exchange rate floor", "currency rate floor".

Among the sample firms, there are 20,583 filings[1] that contain such keywords, the majority of which come from Annual Reports (8092), Interim Reports (5098), 6-K (1926) and 20-F (1373). For each firm-year, the company is considered to be a foreign exchange hedger (FX hedger) if one of those filings is filed in the previous three years[2].

Interest rate hedger: we search among all the company filing forms from 2001 to 2009 except insider holdings in the Capital IQ corporate filings database, for the following keywords:

"interest rate swap", "interest rate cap", "interest rate collar", "interest rate floor", "interest rate forward", "interest rate option", "interest rate future".

Among the sample firms, there are 13,607 filings that contain such keywords, the majority of which come from Annual Reports (6022), Interim Reports (2939), 6-K (1498) and 20-F (1097). For each firm-year, the company is considered to be an interest rate hedger if one of those filings is filed in the previous three years[3].

Hedger: for a given firm-year, the company is either a foreign exchange hedger or an interest rate hedger.

Total foreign institutional ownership: for a given stock-year, foreign institutional ownership is calculated as foreign institutional investor holdings divided by the year-end market capitalization. A fund is considered as a foreign investor if the headquarter of the managing company is in a different country from the headquarter of the firm. We determine fund location by the headquarter of the managing company instead of the fund domicile. We include all the fund holdings based on the last reporting dates. The data on global institutional holdings are drawn from the Factset/LionShares database. We sum institutional holdings in local and ADR shares.

Foreign ownership-US: for a given stock-year, foreign institutional ownership by US investors is calculated as US investor holdings divided by the year-end market capitalization. We include all the fund holdings based on the last reporting dates.

Foreign ownership-Non US: for a given stock-year, foreign institutional ownership by non-US investors is calculated as total non-US investor holdings divided by the year-end market capitalization.

Foreign bank-affiliated ownership: for a given stock-year, foreign bank-affiliated ownership is calculated as foreign institutional investor holdings managed by banks divided by the year-end market capitalization. Factset/Lionshares has its own classification of investor types, among which investment companies managed by banks is called "Bank Management Division". Factset defines this investor type as "a general buyside firm whose ultimate parent is a bank". However, as acknowledged by Factset, there are serious misclassifications of investor types in the original data. For instance, "BNP Paribas asset management (Singapore) ltd." is classified as a bank-affiliated division, while "BNP Paribas asset management Asia ltd." is classified as an investment advisor; "BNP Paribas investment partners (Germany)" is classified as an investment advisor, while "BNP

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[1] We include both the main filings and their amendments in the search.
[2] The firm may be misclassified as a FX hedger if the company specifically mentions that it does not use any foreign exchange derivatives in the reports. In this regard, we search for keywords such as "we (the company) do not (does not) have (utilize, enter) any foreign exchange (currency) derivatives". If one of those keywords is found, the filing is considered as a non-FX hedger filing.
[3] The firm may be misclassified as an interest rate hedger if the company specifically mentions that it does not use any interest rate derivatives in the reports. In this regard, we search for keywords such as "we (the company) do not (does not) have (utilize, enter) any interest rate derivatives". If one of those keywords is found, the filing is considered as a non-interest rate hedger filing.

Paribas investment partners Belgium sa" is classified as a bank-affiliated division.

To address this issue, we strictly follow the Factset's definition of bank management division by manually checking the ultimate parents of asset managers. In particular, we identify an asset manager as bank-affiliated if its ultimate parent has an average amount of loans exceeding 10 billion USD on the asset side of its balance sheet during the sample period, i.e., the ultimate parent is a commercial bank. We obtain the names of the ultimate parents of institutional investors from Factset. Then we match the names of ultimate parents with the names of banks in Bankscope to determine the amount of loans. The rest of institutions are then defined as non-bank affiliated.

Foreign non-bank-affiliated ownership: for a given stock-year, foreign non-bank-affiliated ownership is calculated as foreign institutional holdings not managed by banks divided by the year-end market capitalization.

Total domestic institutional ownership: for a given stock-year, domestic institutional ownership is calculated as domestic institutional investor holdings divided by the year-end market capitalization. A fund is considered as a domestic investor if the headquarter of the managing company is in the same country as the headquarter of the stock.

Log(market value): for a given stock-year, it is calculated as the log of year-end market capitalization of the stock.

*Book leverage***:** for a given stock-year, it is defined as the ratio of the book value of total debt to the book value of total assets.

Market-to-book: for a given stock-year, it is defined as the market value of equity divided by the book value of the assets.

*Profitability***:** for a given stock-year, it is defined as the ratio of net income to the book value of total assets.

Cash holding: for a given stock-year, it is defined as the ratio of total cash and short term investments to the book value of total assets.

Tangibility: for a given stock-year, it is defined as the ratio of net property, plant and equipments to the book value of total assets.

Dividend yield: for a given stock-year, it is defined as the gross dividend per common share of equity.

Foreign sales: for a given stock-year, it is defined as the ratio of foreign sales to total sales (WorldScope WC08731)

Free-floating percentage: for a given stock-year, it is defined as the ratio of the number of shares not closely held by insiders divided by the total shares outstanding.

S&P global 1200: for a given stock-year, it is a dummy variable which equals 1 if the firm is included in the S&P global 1200 index.

Local composite index: for a given stock-year, it is a dummy variable which equals 1 if the firm is included in the local composite index of the country.

Return volatility: for a given stock-year, it is defined as the standard deviation of daily returns of the stock over the year.

Past return: for a given stock-year, it is the cumulative return of the stock over the year.

Log(1+number of analyst): for a given stock-year, it is the log value of the number of analysts covering the stock. If there is no analyst coverage reported in IBES, the number is set to 0.

Analyst dispersion: for a given earnings forecast, it is defined as the standard deviation divided by the median value of the analyst estimates. We use the median dispersion among 1 year, 2-year and 3-year earnings forecasts in the year as the firm-year analyst dispersion.

ADR dummy: for a given stock-year, it is a dummy variable which equals 1 if the firm is cross-listed on a US exchange and 0 otherwise.

Figure I
Foreign Institutional Ownership and Percentage of Hedgers during the Sample Period

In this graph, we plot the evolvement of foreign institutional ownership and the percentage of hedgers for our sample of international firms during the period of 2002 to 2009. Foreign institutional ownership is calculated as the market value-weighted average ownership of foreign institutional investors among the sample firms. The percentage of hedgers is defined as the fraction of firms that are engaged in either foreign exchange hedging or interest rate hedging using derivatives instruments. Detailed descriptions on the identification of hedging firms are given in the Appendix.
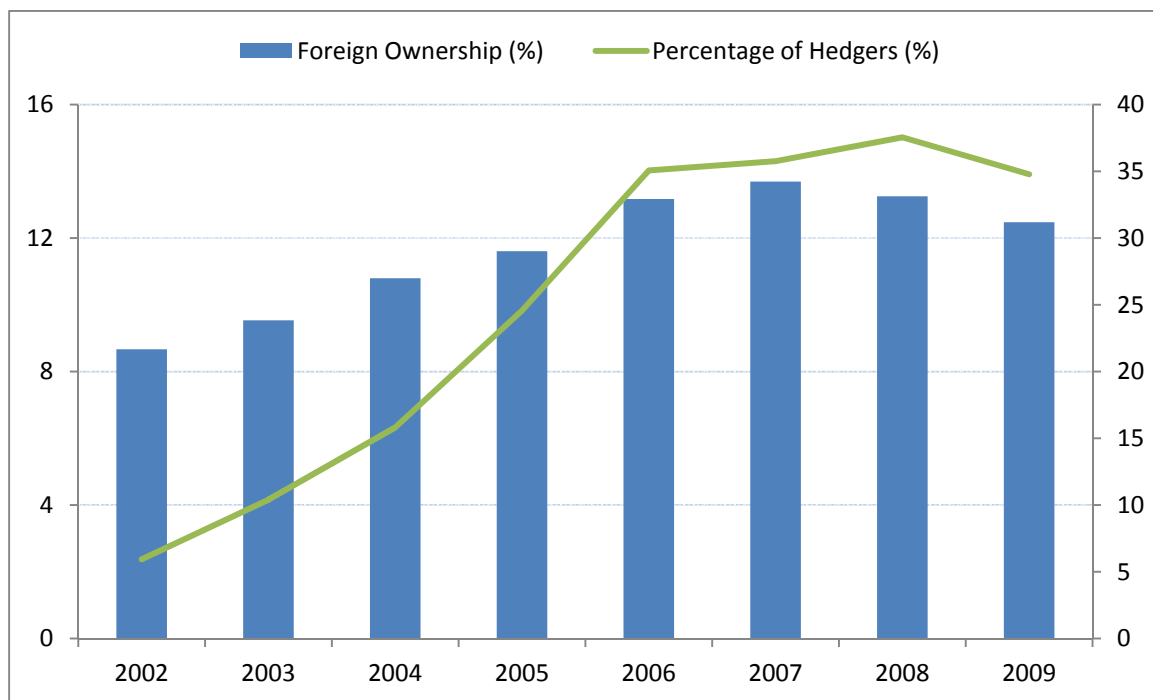
Table I
Summary Statistics

Panel A: Summary Statistics of Main Variables

This table provides summary statistics of firm-level variables used in this study. Our initial sample include all the stocks included in the Compustat Global Security Daily database covering non-North American stocks with available information on foreign ownership from Factset. We merge Compustat Global with Factset using company ISINs. Information on company hedging comes from Capital IQ, which allows keywords searches among global company filings. We also obtain firm accounting variables from Capital IQ. We match Factset with Capital IQ using company names, and manually verify the matching outcomes to ensure the validity of the matches. Our combined sample contains from 37440 firm-year observations from 2002 to 2009. For each variable we report the data source, mean, median, standard deviation and number of observations. The detailed definition of each variable can be found in the appendix.

	Data Source	Mean	Median	Std. Dev.	N
Hedging variables					
Hedger (FX hedger or interest rate hedger)	Capital IQ	0.28	0.00	0.45	37440
FX hedger	Capital IQ	0.24	0.00	0.43	37440
Interest rate hedger	Capital IQ	0.17	0.00	0.38	37440
Ownership variables					
Total foreign institutional ownership (%)	Factset	4.90	1.92	7.15	37440
Foreign US ownership (%)	Factset	1.99	0.54	3.56	37440
Foreign non-US ownership (%)	Factset	2.91	0.91	4.79	37440
Foreign bank-affiliated ownership (%)	Factset	0.78	0.06	1.61	37440
Foreign non-bank-affiliated ownership (%)	Factset	4.12	1.54	6.16	37440
Total domestic institutional ownership	Factset	3.57	0.41	7.43	37440
Firm characteristics					
Log (market value)	Factset	19.43	19.24	1.73	37440
Book leverage	Capital IQ	0.21	0.19	0.18	37440
Market-to-book	Capital IQ	0.97	0.60	1.14	37440
Profitability	Capital IQ	0.02	0.03	0.15	37440
Cash holding	Capital IQ	0.13	0.09	0.13	37440
Tangibility	Capital IQ	0.31	0.28	0.21	37440
Dividend yield	Capital IQ	0.21	0.01	0.59	37440
Foreign sales	Worldscope	0.19	0.00	0.29	37440
Free-floating percentage	Worldscope	0.68	0.71	0.24	37440
S&P global 1200	Compustat Global	0.10	0.00	0.30	37440
Local composite index	Compustat Global	0.44	0.00	0.50	37440
Return volatility	Compustat Global	0.03	0.03	0.02	37440
Past return	Compustat Global	0.12	0.02	0.67	37440
Log(1+Number of analyst)	IBES	1.31	1.10	1.07	37440
Analyst dispersion	IBES	0.20	0.12	0.23	18403
ADR dummy	BNY-Mellon	0.06	0.00	0.24	37440

Table I (Cont'd)

Panel B: Average Corporate Hedging and Foreign Institutional Ownership by Country

In this table, we report country by country the average percentage of hedgers (foreign exchange hedgers and interest rate hedgers) and the average foreign institutional ownership (floating-adjusted ownership). We define the floating-adjusted ownership as the original foreign institutional ownership divided by the fraction of shares not closely held by insiders.

Country	Hedger	FX Hedger	Interest Rate Hedger	Foreign Ownership(%)	Foreign Ownership (%) (Floating adj.)	N
Argentina	0.27	0.27	0.24	1.18	1.44	41
Australia	0.74	0.66	0.43	4.28	6.08	1883
Austria	0.34	0.31	0.16	10.31	20.94	205
Belgium	0.41	0.32	0.34	7.93	15.84	302
Brazil	0.43	0.38	0.38	8.40	17.74	65
Chile	0.50	0.47	0.33	1.76	5.03	107
China	0.13	0.11	0.07	6.41	9.14	1796
Croatia	0.10	0.10	0.00	1.79	2.47	10
Denmark	0.25	0.22	0.20	8.15	12.26	244
Egypt	0.42	0.29	0.29	4.24	5.02	24
Finland	0.41	0.38	0.30	8.82	12.69	396
France	0.30	0.25	0.24	7.48	14.24	1581
Germany	0.19	0.15	0.14	7.30	12.79	1736
Greece	0.34	0.27	0.24	3.86	5.35	406
Hong Kong	0.41	0.33	0.24	5.12	11.80	1684
India	0.42	0.41	0.13	5.06	8.08	188
Indonesia	0.18	0.18	0.10	5.97	9.94	119
Ireland	0.45	0.44	0.36	20.31	29.08	165
Israel	0.64	0.61	0.22	4.77	9.39	250
Italy	0.55	0.31	0.50	5.31	12.45	738
Japan	0.11	0.09	0.08	3.11	4.28	11117
Kuwait	0.50	0.30	0.40	0.24	0.52	10
Lithuania	0.20	0.17	0.10	13.58	43.23	30
Malaysia	0.39	0.37	0.14	2.48	3.33	1273
Mexico	0.56	0.49	0.44	19.22	25.36	45
Netherlands	0.46	0.37	0.35	17.61	28.73	248
New Zealand	0.60	0.48	0.51	4.07	5.60	235
Norway	0.55	0.51	0.36	8.38	15.31	401
Oman	0.36	0.27	0.27	0.58	1.02	11
Pakistan	0.38	0.37	0.23	1.55	1.55	99
Philippines	0.38	0.35	0.20	4.15	6.02	201
Poland	0.17	0.17	0.07	3.72	8.10	346
Portugal	0.42	0.29	0.37	5.65	15.57	38
Russian Federation	0.46	0.39	0.28	8.81	18.58	61
Saudi Arabia	0.19	0.14	0.10	0.11	0.18	21
Singapore	0.50	0.44	0.27	3.80	7.51	700
South Africa	0.52	0.48	0.35	6.60	9.74	361
South Korea	0.28	0.28	0.04	4.87	7.82	2506
Spain	0.36	0.27	0.32	7.22	14.05	368
Sri Lanka	0.40	0.30	0.40	6.23	6.23	10
Sweden	0.26	0.24	0.12	7.42	10.82	716
Switzerland	0.43	0.42	0.22	10.57	16.90	433
Taiwan	0.14	0.12	0.09	3.60	4.53	2968
Thailand	0.56	0.53	0.32	3.94	4.82	240
Turkey	0.29	0.26	0.15	4.94	10.20	529
United Kingdom	0.44	0.38	0.31	5.37	8.53	2518
Vietnam	0.07	0.07	0.00	1.59	1.59	15
Average	0.28	0.24	0.17	4.90	7.95	

Table I (Cont'd)

Panel C: Largest Asset Managers Holding Non-US Stocks

We report the top 10 largest asset managers holding non-US stocks at the end of December 2007. We classify asset managers into bank-affiliated and non-bank-affiliated institutions. We identify an asset manager as bank-affiliated if its ultimate parent is a bank or in the group (referring to the same ultimate parent) there is an affiliated bank. In either case, the bank must have an amount of loans exceeding 10 billion USD on the asset side of its balance sheet. We obtain the information on the ultimate parents of institutional investors from Factset. Then, we manually match the names of ultimate parents/affiliated bank with the names of banks in Bankscope to determine the amount of loans in assets. We report the name of the ultimate parent, the amount of holdings in billions of dollars and the country where the ultimate parent is headquartered.

	Non-bank-affiliated Institutions			Bank-affiliated Institutions		
	Name	Holdings (Billions)	Country	Name	Holdings (Billions)	Country
1	The Capital Group Co.	385	United States	JPMorgan Chase & Co.	130	United States
2	FMR LLC (Fidelity Investments)	361	United States	Deutsche Bank AG	109	Germany
3	BlackRock Inc.	298	United States	SAS Rue La Boétie	94	France
4	AXA S.A.	197	France	BPCE S.A.	91	France
5	Franklin Resources Inc.	178	United States	BNP Paribas S.A.	88	France
6	Government of Norway (Norges Bank)	150	Norway	UBS AG	69	Switzerland
7	Allianz SE	124	Germany	UniCredit SpA	65	Italy
8	Invesco Ltd.	114	United States	HSBC Holdings plc	65	United Kindom
9	Schroders plc	91	United Kindom	ING Groep N.V.	56	Netherlands
10	Stichting Pensioenfonds ABP	83	Netherlands	Lloyds Banking Group plc	53	United Kindom

Table II
Foreign Institutional Ownership and Hedging

In this table, we link foreign institutional ownership to corporate hedging decisions. Panel A presents our main results. The dependent variable is total foreign ownership, defined as the ratio of foreign investor holdings divided by the year-end market capitalization. In column (1)-(3), our variable of interest is a hedger dummy which equals 1 if the firm hedges foreign exchange risk or interest rate risk using derivatives contracts, and 0 otherwise. In column (1), we include year fixed effects and country fixed effects. In column (2), we consider country × year fixed effects. We add industry fixed effects at two-digit SIC level in column (3). In columns (4)-(6), we consider foreign exchange hedger and interest rate hedger separately, with the same specifications as in columns (1)-(3).

In Panel B, the dependent variable is foreign institutional ownership by US institutions. In Panel C, the dependent variable is foreign ownership by non-US institutions. For each fund, we determine its location by the headquarter of the managing company instead of the fund domicile.

In Panel D, we consider foreign investor holdings managed by banking conglomerates. We consider a fund as bank-affiliated if the ultimate parent of the managing company is a bank. The detailed identification procedure is described in the appendix. The dependent variable is bank-affiliated foreign ownership defined as bank-affiliated foreign institutional holdings divided by the year-end market capitalization of the stock. For consistency we only include the subsample of firms with non-zero bank-affiliated ownership. In Panel E, the dependent variable is non-bank-affiliated foreign ownership, calculated as the difference between total foreign ownership and bank-affiliated foreign ownership. We focus on the sample of firms with positive non-bank-affiliated ownership.

Panel B to Panel E follow the same layout as in Panel A. For brevity, we only report the coefficients of the interested variables. We always cluster the errors at the firm level. All firm-level accounting variables are taken at the beginning of the year. The detailed definition of each variable can be found in the appendix. ***, ** and * represent significance levels at 1%, 5% and 10% respectively using robust standard errors with t-statistics given in parentheses.

Table II (Cont'd)

Panel A: Total Foreign Institutional Ownership

Dep. var.: Total FO	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	1.34***	1.27***	1.29***			
	(9.95)	(8.63)	(8.93)			
FX hedger				1.06***	1.01***	1.00***
				(6.76)	(6.09)	(6.12)
Interest rate hedger				0.65***	0.60***	0.68***
				(3.47)	(3.18)	(3.64)
Controls						
Log (market value)	0.94***	1.03***	1.04***	0.92***	1.01***	1.03***
	(16.58)	(17.51)	(17.48)	(16.37)	(17.31)	(17.24)
Free-floating percentage	4.36***	4.46***	4.46***	4.39***	4.48***	4.48***
	(16.72)	(16.08)	(16.24)	(16.82)	(16.17)	(16.33)
Return volatility	5.12*	8.63***	4.89*	5.25*	8.73***	4.94*
	(1.78)	(2.88)	(1.68)	(1.82)	(2.91)	(1.69)
Past return	0.01	-0.08	-0.10*	0.02	-0.08	-0.10*
	(0.21)	(-1.35)	(-1.68)	(0.27)	(-1.31)	(-1.65)
Book leverage	-1.97***	-1.80***	-1.48***	-2.04***	-1.86***	-1.56***
	(-5.91)	(-5.42)	(-4.50)	(-6.13)	(-5.61)	(-4.75)
Market-to-book	0.09	0.13*	0.12*	0.09	0.14**	0.13*
	(1.31)	(1.95)	(1.83)	(1.39)	(2.04)	(1.94)
Profitability	0.97***	1.11***	1.24***	0.98***	1.12***	1.25***
	(2.83)	(3.20)	(3.70)	(2.87)	(3.24)	(3.72)
Cash holding	1.45***	1.37***	1.20***	1.48***	1.40***	1.22***
	(3.33)	(3.12)	(2.67)	(3.39)	(3.17)	(2.72)
Tangibility	-0.21	-0.43	-0.46	-0.19	-0.41	-0.44
	(-0.68)	(-1.42)	(-1.45)	(-0.63)	(-1.36)	(-1.38)
Foreign sales	1.57***	1.50***	1.54***	1.53***	1.46***	1.51***
	(6.53)	(6.24)	(6.38)	(6.37)	(6.08)	(6.23)
Dividend yield	0.24*	0.16	0.14	0.24*	0.15	0.14
	(1.94)	(1.23)	(1.15)	(1.91)	(1.20)	(1.11)
Number of analyst	1.41***	1.37***	1.39***	1.41***	1.37***	1.39***
	(15.51)	(15.17)	(15.27)	(15.54)	(15.18)	(15.29)
ADR dummy	1.97***	1.80***	1.80***	1.93***	1.76***	1.76***
	(5.47)	(5.06)	(5.17)	(5.36)	(4.96)	(5.06)
S&P global 1200	0.14	-0.02	0.01	0.08	-0.08	-0.05
	(0.50)	(-0.07)	(0.03)	(0.28)	(-0.28)	(-0.20)
Local composite index	0.60***	0.61***	0.65***	0.57***	0.59***	0.63***
	(3.09)	(3.14)	(3.41)	(2.98)	(3.04)	(3.30)
Country FE, Year FE	Y	-	-	Y	-	-
Country × Year FE	-	Y	Y	-	Y	Y
Industry FE	-	-	Y	-	-	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.397	0.413	0.425	0.398	0.414	0.426
Number of Obs.	37,440	37,440	37,440	37,440	37,440	37,440

Table II (Cont'd)

Panel B: Foreign Institutional Ownership by US Institutions

Dep. var.: FO (US Funds)	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	0.50***	0.50***	0.51***			
	(7.48)	(6.79)	(7.11)			
FX hedger				0.38***	0.37***	0.38***
				(5.00)	(4.49)	(4.67)
Interest rate hedger				0.31***	0.34***	0.35***
				(3.33)	(3.57)	(3.66)
Other controls	Y	Y	Y	Y	Y	Y
Country FE, Year FE	Y	-	-	Y	-	-
Country × Year FE	-	Y	Y	-	Y	Y
Industry FE	-	-	Y	-	-	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.320	0.331	0.340	0.321	0.331	0.341
Number of Obs.	37,440	37,440	37,440	37,440	37,440	37,440

Panel C: Foreign Institutional Ownership by Non-US Institutions

Dep. var.: FO (Non-US Funds)	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	0.80***	0.72***	0.73***			
	(8.89)	(7.40)	(7.59)			
FX hedger				0.64***	0.60***	0.58***
				(6.05)	(5.43)	(5.34)
Interest rate hedger				0.31**	0.23*	0.30**
				(2.55)	(1.90)	(2.50)
Other controls	Y	Y	Y	Y	Y	Y
Country FE, Year FE	Y	-	-	Y	-	-
Country × Year FE	-	Y	Y	-	Y	Y
Industry FE	-	-	Y	-	-	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.339	0.357	0.372	0.339	0.357	0.372
Number of Obs.	37,440	37,440	37,440	37,440	37,440	37,440

Table II (Cont'd)

Panel D: Foreign Institutional Ownership by Bank-Affiliated Investors

Dep. var.: FO (Bank-affiliated Investors)	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	0.29***	0.24***	0.25***			
	(6.88)	(5.47)	(5.74)			
FX hedger				0.26***	0.23***	0.24***
				(5.10)	(4.48)	(4.55)
Interest rate hedger				0.06	0.03	0.04
				(1.06)	(0.49)	(0.84)
Other controls	Y	Y	Y	Y	Y	Y
Country FE, Year FE	Y	-	-	Y	-	-
Country × Year FE	-	Y	Y	-	Y	Y
Industry FE	-	-	Y	-	-	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.256	0.296	0.309	0.256	0.296	0.309
Number of Obs.	22,105	22,105	22,105	22,105	22,105	22,105

Panel E: Foreign Institutional Ownership by Non-Bank-Affiliated Investors

Dep. var.: FO (Non-bank-affiliated Investors)	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	1.05***	1.01***	1.02***			
	(9.03)	(7.85)	(8.08)			
FX hedger				0.83***	0.79***	0.78***
				(6.08)	(5.39)	(5.39)
Interest rate hedger				0.51***	0.51***	0.57***
				(3.11)	(3.06)	(3.45)
Other controls	Y	Y	Y	Y	Y	Y
Country FE, Year FE	Y	-	-	Y	-	-
Country × Year FE	-	Y	Y	-	Y	Y
Industry FE	-	-	Y	-	-	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.367	0.379	0.390	0.367	0.379	0.391
Number of Obs.	36,333	36,333	36,333	36,333	36,333	36,333

Table III
Foreign Investor Fraction and Hedging

In this table, we link the fraction of foreign institutional ownership over total institutional ownership to corporate hedging decisions. The dependent variable is defined as foreign institutional ownership divided by the sum of foreign institutional ownership and domestic institutional ownership. In column (1)-(3), our variable of interest is a hedger dummy which equals 1 if the firm hedges foreign exchange risk or interest rate risk using derivatives contracts, and 0 otherwise. In column (1), we include year fixed effects and country fixed effects. In column (2), we consider country × year fixed effects. We add industry fixed effects at two-digit SIC level in column (3). In column (4)-(6), we consider foreign exchange hedger and interest rate hedger separately, with the same specifications as in column (1)-(3). We always cluster the errors at the firm level. All firm-level accounting variables are taken at the beginning of the year. ***, ** and * represent significance levels at 1%, 5% and 10% respectively using robust standard errors with t-statistics given in parentheses.

Dep. var.: Total FO/(Total FO+Total DO)	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	0.04***	0.04***	0.04***			
	(8.23)	(6.90)	(7.29)			
FX hedger				0.03***	0.03***	0.03***
				(5.96)	(5.67)	(5.71)
Interest rate hedger				0.02***	0.01**	0.02***
				(3.03)	(2.05)	(2.64)
Controls						
Log (market value)	-0.00	0.01***	0.00	-0.00	0.01***	0.00
	(-0.30)	(3.28)	(1.15)	(-0.55)	(3.07)	(0.92)
Free-floating percentage	0.07***	0.07***	0.07***	0.07***	0.07***	0.07***
	(6.72)	(6.12)	(6.08)	(6.77)	(6.16)	(6.13)
Return volatility	1.14***	1.54***	1.39***	1.15***	1.54***	1.39***
	(7.73)	(9.97)	(9.11)	(7.75)	(9.96)	(9.10)
Past return	-0.02***	-0.03***	-0.03***	-0.02***	-0.03***	-0.03***
	(-5.52)	(-8.99)	(-9.15)	(-5.48)	(-8.96)	(-9.13)
Book leverage	-0.03**	-0.02*	-0.01	-0.03**	-0.02*	-0.02
	(-2.19)	(-1.66)	(-0.99)	(-2.36)	(-1.72)	(-1.12)
Market-to-book	-0.01***	-0.01**	-0.01**	-0.01***	-0.01**	-0.00**
	(-3.93)	(-2.51)	(-2.12)	(-3.83)	(-2.42)	(-2.01)
Profitability	-0.09***	-0.09***	-0.07***	-0.09***	-0.09***	-0.07***
	(-6.26)	(-6.13)	(-5.02)	(-6.22)	(-6.10)	(-4.99)
Cash holding	0.02	0.02	-0.00	0.02	0.02	-0.00
	(1.21)	(0.87)	(-0.04)	(1.25)	(0.88)	(-0.02)
Tangibility	0.07***	0.06***	0.00	0.07***	0.06***	0.00
	(6.04)	(5.06)	(0.19)	(6.08)	(5.09)	(0.23)
Foreign sales	0.02**	0.02**	0.03***	0.02**	0.02*	0.03***
	(2.24)	(1.97)	(3.32)	(2.08)	(1.80)	(3.18)
Dividend yield	0.02***	0.01***	0.01**	0.02***	0.01***	0.01**
	(4.71)	(3.14)	(2.57)	(4.68)	(3.13)	(2.54)
Number of analyst	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(-7.25)	(-9.42)	(-7.59)	(-7.27)	(-9.44)	(-7.62)
ADR dummy	0.09***	0.07***	0.07***	0.09***	0.07***	0.07***
	(10.50)	(9.43)	(9.19)	(10.34)	(9.29)	(9.04)
S&P global 1200	0.08***	0.07***	0.07***	0.08***	0.07***	0.07***
	(10.55)	(9.44)	(9.64)	(10.31)	(9.23)	(9.41)
Local composite index	0.04***	0.04***	0.05***	0.04***	0.04***	0.05***
	(4.99)	(5.22)	(5.56)	(4.91)	(5.17)	(5.49)
Country FE, Year FE	Y	-	-	Y	-	-
Country × Year FE	-	Y	Y	-	Y	Y
Industry FE	-	-	Y	-	-	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.383	0.446	0.457	0.384	0.447	0.458
Number of Obs.	37,440	37,440	37,440	37,440	37,440	37,440

Table IV
Foreign Institutional Ownership and Hedging: Firm Fixed Effect Regression

In this table, we identify the causality of corporate hedging on foreign institutional ownership using a firm-fixed effect specification. From column (1) to column (4), the dependent variable is the total foreign institutional ownership. In column (3) and (4), we control for country × year fixed effects. The dependent variable in column (5) is bank-affiliated foreign ownership, while in column (6) the dependent variable is the non-bank managed foreign ownership. We always include firm-fixed effects in each column and cluster the errors at the firm level. ***, ** and * represent significance levels at 1%, 5% and 10% respectively using robust standard errors with t-statistics given in parentheses.

Dep. var.:	Total FO				Bank-Affiliated FO	Non-Bank Affiliated FO
	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	0.76***		0.56***		0.14***	0.64***
	(7.50)		(5.20)		(3.42)	(6.55)
FX hedger		0.62***		0.40***		
		(5.25)		(3.31)		
Interest rate hedger		0.38***		0.41***		
		(2.62)		(2.77)		
Controls						
Log (market value)	1.11***	1.11***	1.34***	1.34***	0.40***	0.90***
	(13.89)	(13.88)	(15.42)	(15.41)	(9.73)	(11.69)
Free-floating percentage	1.20***	1.20***	1.50***	1.50***	0.55***	0.93***
	(4.51)	(4.51)	(5.03)	(5.04)	(4.55)	(3.44)
Return volatility	-6.72**	-6.73**	-6.38**	-6.42**	0.00	-6.57**
	(-2.41)	(-2.41)	(-2.31)	(-2.32)	(0.00)	(-2.30)
Past return	-0.00	-0.00	-0.03	-0.03	-0.01	-0.01
	(-0.11)	(-0.08)	(-0.68)	(-0.66)	(-0.32)	(-0.15)
Book leverage	-0.73*	-0.73*	-0.56	-0.56	0.25	-0.70*
	(-1.82)	(-1.83)	(-1.40)	(-1.40)	(1.26)	(-1.79)
Market-to-book	0.03	0.03	0.05	0.05	0.04*	-0.02
	(0.56)	(0.56)	(1.00)	(1.00)	(1.69)	(-0.31)
Profitability	0.54*	0.55*	0.38	0.39	0.25	0.40
	(1.82)	(1.85)	(1.26)	(1.28)	(1.48)	(1.40)
Cash holding	-0.19	-0.18	-0.22	-0.21	-0.15	-0.28
	(-0.50)	(-0.47)	(-0.59)	(-0.55)	(-0.70)	(-0.74)
Tangibility	-0.22	-0.21	-0.58	-0.58	0.03	-0.31
	(-0.43)	(-0.42)	(-1.13)	(-1.12)	(0.12)	(-0.62)
Foreign sales	0.22	0.21	0.19	0.18	-0.09	0.27
	(0.91)	(0.89)	(0.80)	(0.78)	(-0.96)	(1.09)
Dividend yield	0.36***	0.35***	0.29**	0.29**	0.04	0.36***
	(3.21)	(3.18)	(2.53)	(2.50)	(0.95)	(3.07)
Number of analyst	0.45***	0.45***	0.43***	0.43***	0.05*	0.37***
	(6.88)	(6.91)	(6.72)	(6.71)	(1.87)	(5.86)
ADR dummy	1.95***	1.92***	1.72***	1.70***	0.13	1.76***
	(4.68)	(4.60)	(4.29)	(4.23)	(0.89)	(4.07)
S&P global 1200	0.87***	0.86***	0.96***	0.95***	0.02	0.77***
	(3.66)	(3.61)	(3.95)	(3.90)	(0.32)	(3.36)
Local composite index	0.60***	0.60***	0.59***	0.59***	0.12*	0.51***
	(3.46)	(3.44)	(3.50)	(3.49)	(1.69)	(2.97)
Year FE	Y	Y	-	-	Y	Y
Country × Year FE	-	-	Y	Y	-	-
Firm FE	Y	Y	Y	Y	Y	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.848	0.848	0.855	0.855	0.753	0.829
Number of Obs.	37,440	37,440	37,440	37,440	22,105	36,333

Table V
Foreign Institutional Ownership and Hedging: First Difference Regression with Instruments

In this table, to strengthen the causality relationship, we link the change in foreign institutional ownership to the change in hedging policy. Most importantly, we instrument the change in hedging policy by the changes in asset quality of the relationship banks. We proceed as follows.

First, we focus on the sample of firms that can be matched to LPC/Dealscan, which contains information on bank loans. We match the Capital IQ excel company id with the LPC company id using firm names. We manually verify the matching outcomes to ensure the validity of the match.

Next, to obtain the change in asset quality of banks, we match the LPC/Dealscan lender id with the Bankscope bank id using bank names. We manually verify the matching outcomes to ensure the validity of the match. The asset quality of a bank is defined as the ratio of the impaired loans defined by the sum of total loans and loan reserves (Bankscope data item 2170/(2000+2070)). For each firm-year, the asset quality of relationship banks is defined as the loan-amount weighted lagged asset quality among all the banks that have lending relationships with the firm in the last three years including the current year. Then, we use the changes in asset quality of relationship banks to instrument for the changes in hedging policy.

Panel A reports the main results based on the full sample. In column (1) and (2), we report the OLS results without the instrument. The dependent variable is the change in foreign institutional ownership with respect to the previous year. In column (1), the interested variable is "D.Hedger", the change in the hedging policy, which may take three values, 1, 0 and -1. It is 1 if the firm is a hedger this year but not last year (start-hedger), -1 if the firm is a hedger last year but not this year (stop-hedger), and 0 otherwise. In column (2), we drop the stop-hedgers, and redefine a binary variable (start hedging dummy) which equals 1 if the firm is a start-hedger and 0 otherwise. From columns (3) to (6), we link the change in foreign ownership to the start hedging dummy, with it instrumented by the change in asset quality of relationship banks. In column (3), we run a probit regression of the start hedging dummy on the change in asset quality of relationship banks. We calculate the fitted value from column (3) and use it as the instrument for the start-hedging dummy in columns (4)-(6). The dependent variable in column (4) is the change in total foreign ownership. In column (5), the dependent variable is the change in bank-affiliated foreign ownership, while in column (6) it is the change in non-bank-affiliated foreign ownership. We perform the F-test to identify the weakness of the instrument. We always cluster the errors at the firm level. . ***, ** and * represent significance levels at 1%, 5% and 10% respectively using robust standard errors with t-statistics given in parentheses.

In Panel B, we perform a subsample analysis, where we focus on the subsample of firm-years with an increase in profitability ratio ("D. Profitability > 0") relative to the previous year. We use the same specifications as in Panel A. For brevity, we only report the interested variables.

Table V (Cont'd)
Panel A: Full Sample Analysis

	Without Instruments		Two-stage Instrumental Regression		
			First Stage (Probit)	Second Stage		
				D. Total FO	D. Bank Affiliated	D. Non-Bank Affiliated
	(1)	(2)	(3)	(4)	(5)	(6)
Start hedging dummy		0.53**		7.60***	0.31	6.56**
		(2.43)		(2.63)	(0.34)	(2.52)
D. Bank asset quality			0.14***			
			(4.47)			
D.Hedger	0.47***					
	(2.85)					
Controls						
D.Log (market value)	1.37***	1.34***	0.08	1.30***	0.38***	1.01***
	(8.45)	(7.83)	(0.91)	(6.15)	(5.79)	(5.43)
D.Free-floating percentage	1.13**	1.17**	0.06	1.14*	0.65***	0.64
	(2.24)	(2.30)	(0.17)	(1.79)	(3.45)	(1.13)
D.Return volatility	-9.83**	-10.21**	1.16	-10.35*	-2.63	-9.12
	(-2.05)	(-2.08)	(0.33)	(-1.65)	(-1.20)	(-1.56)
D.Past return	-0.04	-0.03	0.08	-0.14	-0.03	-0.11
	(-0.48)	(-0.38)	(1.42)	(-1.36)	(-0.79)	(-1.21)
D.Book leverage	-0.01	-0.03	1.11**	-1.36	-0.52	-0.91
	(-0.01)	(-0.03)	(2.28)	(-1.11)	(-1.47)	(-0.81)
D.Market-to-book	-0.14	-0.14	0.04	-0.20	-0.07*	-0.14
	(-0.85)	(-0.86)	(0.39)	(-0.98)	(-1.66)	(-0.74)
D.Profitability	1.64**	1.75**	0.42	1.67*	0.24	1.47
	(1.98)	(2.03)	(0.94)	(1.71)	(1.15)	(1.56)
D.Cash holding	-1.11	-1.39	1.29*	-2.38	-0.70	-1.64
	(-1.00)	(-1.20)	(1.74)	(-1.63)	(-1.50)	(-1.22)
D.Tangibility	-1.05	-1.14	0.07	-0.89	-0.23	-0.71
	(-1.26)	(-1.32)	(0.13)	(-0.85)	(-0.77)	(-0.75)
D.Foreign sales	0.53	0.59	-0.27	0.75	-0.17	0.86*
	(1.27)	(1.37)	(-1.02)	(1.40)	(-1.39)	(1.76)
D.Dividend yield	0.36*	0.42**	-0.16	0.58**	-0.06	0.61***
	(1.69)	(1.97)	(-1.54)	(2.34)	(-0.79)	(2.83)
D.Number of analyst	-0.13	-0.15	0.00	-0.25	-0.07*	-0.19
	(-1.10)	(-1.27)	(0.05)	(-1.60)	(-1.74)	(-1.26)
D.ADR dummy	0.69	0.69	0.34	-0.02	-0.13	0.12
	(1.47)	(1.46)	(1.37)	(-0.04)	(-0.81)	(0.24)
D.S&P global 1200	-0.11	-0.10	0.07	-0.11	-0.03	-0.09
	(-0.49)	(-0.45)	(0.30)	(-0.30)	(-0.37)	(-0.26)
D.Local composite index	0.46	0.36	0.11	0.29	0.12	0.20
	(1.47)	(1.16)	(0.61)	(0.68)	(1.22)	(0.49)
Year FE	Y	Y	Y	Y	Y	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
Number of Obs.	5,119	4,852	4,345	4,345	3,483	4,332
Test of weak instruments (F-value)	-	-	-	22.24***	18.70***	22.21***

Panel B: Subsample Analysis (D.Profitability > 0)

	Without Instruments		Two-stage Instrumental Regression		
			First Stage (Probit)	Second Stage		
				D. Total FO	D. Bank Affiliated	D. Non-Bank Affiliated
	(1)	(2)	(3)	(4)	(5)	(6)
Start hedging dummy		0.55**		7.48***	-0.29	7.31***
		(1.99)		(2.61)	(-0.36)	(2.71)
D. Bank asset quality			0.17***			
			(4.02)			
D.Hedger	0.58**					
	(2.55)					
Same Specification as Panel A	Y	Y	Y	Y	Y	Y
Number of Obs.	2,541	2,449	2,189	2,189	1,764	2,188
Test of weak instruments	-	-	-	16.65***	16.01***	16.65***

Table VI
Foreign Institutional Ownership and Hedging: IPO-year Evidence

In this table, we focus on a group of IPO firms during the sample period. We obtain the IPO sample from Thomson Financial's SDC New Issue database. We match Factset with the SDC New Issue database by company SEDOLs. We link the IPO-year foreign ownership to the corporate hedging decision. All the previously used control variables are taken at the end of the IPO year. We also control for additional IPO characteristics based on information from SDC: a high-tech industry dummy, equal to 1 if the firm is in the high tech industry and 0 otherwise, a venture-capital backed dummy, equal to 1 if the IPO is backed by the venture capital and 0 otherwise, the number of book runners, a book building dummy, equal to 1 if the pricing technique of the IPO is through book building and 0 otherwise, and a lockup provision dummy if there exists a lockup period after the IPO and 0 otherwise. The dependent variable in columns (1)-(4) is the foreign institutional ownership of the IPO-year. We use bank-affiliated and non-bank-affiliated foreign ownership in column (5) and (6) respectively. ***, ** and * represent significance levels at 1%, 5% and 10% respectively using robust standard errors.

Dep. var.:	Total FO				Bank FO	Non-Bank FO
	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	2.88***	3.05***	2.24***	2.13***	0.03	2.00***
	(3.95)	(4.12)	(3.03)	(2.82)	(0.11)	(2.75)
Controls						
Log (market value)	1.31***	1.39***	0.41*	0.30	-0.18*	0.15
	(6.81)	(6.41)	(1.95)	(1.26)	(-1.77)	(0.65)
Free-floating percentage	6.37***	5.68***	4.59***	4.54***	0.57	4.41***
	(6.28)	(5.71)	(4.70)	(4.76)	(1.53)	(4.77)
Book leverage		-6.13***	-4.89***	-5.72***	-0.83	-5.53***
		(-3.88)	(-3.29)	(-3.90)	(-0.95)	(-3.90)
Market-to-book		0.03	0.21*	0.28***	0.14***	0.23**
		(0.27)	(1.92)	(2.59)	(2.77)	(2.01)
Profitability		-6.69***	-5.82***	-6.22***	-2.34	-4.72***
		(-3.48)	(-3.08)	(-3.35)	(-1.57)	(-2.66)
Cash holding		-5.66***	-5.41***	-5.71***	-2.01***	-4.32***
		(-4.02)	(-4.11)	(-4.21)	(-3.17)	(-3.31)
Tangibility		0.13	-0.12	0.03	-0.64	0.80
		(0.09)	(-0.09)	(0.02)	(-1.19)	(0.60)
Foreign sales		0.67	1.18	1.60*	0.83**	1.07
		(0.78)	(1.45)	(1.96)	(2.15)	(1.41)
Dividend yield		-0.57	-1.17***	-1.11***	-0.40**	-0.77*
		(-1.41)	(-2.74)	(-2.64)	(-2.23)	(-1.85)
Number of analyst			2.50***	2.38***	0.42***	2.09***
			(6.38)	(6.00)	(2.93)	(4.97)
ADR dummy			5.35***	5.46***	0.03	6.10**
			(2.77)	(2.77)	(0.05)	(2.58)
S&P global 1200			-0.25	-1.17	0.37	-1.41
			(-0.09)	(-0.40)	(0.51)	(-0.55)
Local composite index			-0.52	-0.15	0.32	-0.05
			(-0.62)	(-0.18)	(1.10)	(-0.06)
High-tech industry dummy				-1.30**	-0.42*	-0.89*
				(-2.41)	(-1.75)	(-1.75)
Venture-capital backed dummy				1.88***	0.06	1.86***
				(3.19)	(0.29)	(3.19)
Number of book runners				-0.69	-0.19	-0.81*
				(-1.62)	(-1.43)	(-1.95)
Book building dummy				1.77**	-0.22	1.33*
				(2.40)	(-0.53)	(1.72)
Lockup provision dummy				1.58***	0.48*	1.21**
				(2.59)	(1.84)	(2.16)
Country FE, Year FE	Y	Y	Y	Y	Y	Y
Industry FE	-	Y	Y	Y	Y	Y
R-squared	0.308	0.349	0.426	0.450	0.339	0.422
Number of Obs.	777	777	777	777	497	715

Table VII

Table VII
Foreign Institutional Ownership and Hedging: Subsample Analysis
by Information Environment

In this table, we perform subsample analyses on the relationship between foreign institutional ownership and corporate hedging. We split the sample by the information environment of countries. In columns (1) and (2), we split the sample by whether English is commonly used in a country. We define a country as an English-speaking country if English is the official or national language, or is spoken by at least 20% of the population of the country. In column (3) and (4), we split the sample by the reporting standard of each country (above median/below median). The index on reporting standard comes from the 2006 global competitiveness report (item 1.19: strength of auditing and reporting standards). In columns (5) and (6), we focus on the firms with available information on analyst dispersion in IBES. We split the sample by the country-median analyst dispersion (above median/below median). We perform a CHOW test to evaluate the differences in coefficients on hedging between subsamples and report the Chi-squared statistic. Country × year fixed effects, industry fixed effects are always included and we cluster the errors at the firm level.

Dep. var.: Total FO	Language		Reporting Standard		Analyst Dispersion	
	Non-English	English	Low	High	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	1.66***	0.50**	2.14***	0.92***	2.15***	0.97***
	(8.47)	(2.26)	(6.34)	(5.76)	(6.71)	(4.37)
Controls						
Log (market value)	0.98***	1.20***	0.77***	1.16***	1.10***	1.32***
	(13.58)	(9.72)	(6.01)	(16.68)	(8.58)	(10.80)
Free-floating percentage	4.79***	4.05***	3.46***	5.12***	8.00***	8.44***
	(13.85)	(6.83)	(6.17)	(14.10)	(12.61)	(12.93)
Return volatility	3.54	5.54	-5.85	6.36*	26.42***	10.90
	(0.86)	(1.15)	(-0.77)	(1.91)	(2.79)	(1.13)
Past return	0.07	-0.50***	0.25*	-0.28***	0.24	-0.45**
	(0.89)	(-4.32)	(1.96)	(-3.87)	(1.48)	(-2.20)
Book leverage	-2.15***	0.76	-3.93***	-0.27	-2.66***	-0.71
	(-5.11)	(1.11)	(-5.07)	(-0.70)	(-3.65)	(-1.02)
Market-to-book	-0.03	0.30***	-0.55***	0.32***	-0.24	0.38***
	(-0.34)	(2.96)	(-3.23)	(4.28)	(-1.55)	(3.27)
Profitability	3.10***	0.30	3.81***	1.44***	4.92***	1.50*
	(5.52)	(0.68)	(2.88)	(3.98)	(5.02)	(1.80)
Cash holding	1.13*	1.35*	-0.93	1.47***	1.59	2.42**
	(1.74)	(1.91)	(-0.82)	(2.84)	(1.53)	(2.27)
Tangibility	-0.61	-0.08	-0.86	-0.36	-0.89	-0.94
	(-1.41)	(-0.15)	(-1.23)	(-0.97)	(-1.22)	(-1.28)
Foreign sales	1.87***	0.92**	1.05**	1.73***	1.85***	1.52***
	(5.57)	(2.42)	(1.98)	(6.11)	(3.93)	(3.53)
Dividend yield	0.10	0.24	0.63**	0.02	0.72***	-0.11
	(0.67)	(0.47)	(1.96)	(0.13)	(2.60)	(-0.48)
Number of analyst	1.58***	1.07***	2.00***	1.05***	2.21***	1.44***
	(13.69)	(5.52)	(11.32)	(9.25)	(9.95)	(6.01)
ADR dummy	1.93***	1.57**	3.49***	0.90**	1.47***	1.88***
	(4.30)	(2.40)	(4.51)	(2.28)	(3.09)	(3.58)
S&P global 1200	-0.56*	1.71**	0.45	0.15	-1.38***	-0.38
	(-1.83)	(2.19)	(0.46)	(0.51)	(-2.81)	(-0.97)
Local composite index	0.58**	0.82*	0.94	0.86***	0.17	1.33***
	(2.51)	(1.83)	(1.08)	(4.13)	(0.44)	(3.34)
Country × Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.419	0.424	0.380	0.450	0.416	0.441
Number of Obs.	29,255	8,185	10,772	26,636	9,141	9,262
Test in diff. in coefficients (Chi-squared value)	15.49***		10.74***		11.39***	

Table VIII
Foreign Institutional Ownership and Hedging: Subsample Analysis
by Corporate Governance

In this table, we examine the relationship between foreign institutional ownership and corporate hedging by splitting the sample by the country-level corporate governance indices. We further perform a double split by both corporate governance and information environment of the country. For consistency we focus on the firms with available information on analyst dispersion. In Panel A, columns (1) and (2), we split the sample by the index indicating the level of protection of minority of shareholders' interest of each country (above median/below median). The index comes from the 2006 global competitiveness report (Item 1.21: protection of minority shareholders' interests). In column (3) and (4), for the low shareholder protection subsample, we further split the sample by the country median analyst dispersion (above median/below median). In column (5) and (6), for the high shareholder protection subsample, we further split the sample by the country median analyst dispersion (above median/below median). Panel B follows the sample specifications as in Panel A, except that we use another index representing the efficacy of corporate boards of the country for the sample split. It comes from "Item 1.20: efficacy of corporate boards" in the 2006 global competitiveness report. We perform a CHOW test to evaluate the differences in coefficients on hedging between subsamples and report the Chi-squared statistic. Country × year fixed effects, industry fixed effects are always included and we cluster the errors at the firm level.

Panel A: Sample Split by "Protection of Minority Shareholders Interest"

Dep. var.: Total FO	Minority Shareholder Protection		Low Protection Analyst Dispersion		High Protection Analyst Dispersion	
	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	1.68***	1.06***	2.34***	1.24***	1.34***	0.97***
	(5.46)	(3.82)	(5.64)	(3.59)	(3.48)	(2.84)
Other Controls	Y	Y	Y	Y	Y	Y
Country × Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.409	0.461	0.439	0.391	0.455	0.496
Number of Obs.	9,152	9,237	4,590	4,562	4,621	4,616
Test in diff. in coefficients (Chi-squared value)	2.23		6.67***		0.61	

Panel B: Sample Split by "Efficacy of Corporate Boards"

Dep. var.: Total FO	Efficacy of Corporate Boards		Low Efficacy Analyst Dispersion		High Efficacy Analyst Dispersion	
	High	Low	High	Low	High	Low
	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	1.69***	1.10***	2.48***	1.21***	1.23***	1.09***
	(5.27)	(4.09)	(5.34)	(3.59)	(3.31)	(3.40)
Other Controls	Y	Y	Y	Y	Y	Y
Country × Year FE	Y	Y	Y	Y	Y	Y
Industry FE	Y	Y	Y	Y	Y	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.403	0.458	0.431	0.389	0.446	0.497
Number of Obs.	8,559	9,830	4,245	4,314	4,849	4,981
Test in diff. in coefficients (Chi-squared value)	2.05		7.93***		0.10	

Table IX
Foreign Investor Distances and Hedging

In this table, we relate foreign investor distances to corporate hedging decisions. The dependent variable is the difference between the log of the holdings-weighted actual investor-firm distances and the log of a benchmark distance assuming that each investor is fully diversified globally. For each firm-year (i,t), the actual investor-firm distance is defined as: $\sum_{j \in J}(H_{i,j,t}/\sum_{j \in J}H_{i,j,t})Dist_{i,j}$, where $H_{i,j,t}$ is the holdings value of investor j in firm i, and J is the set of foreign investors investing in firm i. $Dist_{i,j}$ is defined as the great circle distance between investor j and firm i, calculated using the geographical coordinates (latitudes and longitudes) of the capital cities of the investor country and the firm country. The benchmark distance is defined as: $\sum_{k \in K}(H_{k,t}/\sum_{k \in K}H_{k,t})Dist_{i,k}$, where K represents the universe of investors, and $H_{k,t}$ is the total holdings value of investor k at year t. $Dist_{i,k}$ is the great circle distances between investor k and firm I defined as before. The table layout is the same as in Table II.

Dep. var.: Log (Actual Distance/Benchmark Distance)	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	0.02*	0.04***	0.04***			
	(1.93)	(3.66)	(3.68)			
FX hedger				0.04***	0.05***	0.05***
				(3.17)	(4.19)	(4.01)
Interest rate hedger				-0.01	-0.00	0.00
				(-0.80)	(-0.11)	(0.02)
Controls						
Log (market value)	0.03***	0.03***	0.03***	0.03***	0.03***	0.03***
	(7.04)	(5.69)	(6.11)	(6.96)	(5.60)	(6.02)
Free-floating percentage	-0.04*	-0.01	-0.01	-0.04*	-0.01	-0.01
	(-1.83)	(-0.47)	(-0.43)	(-1.86)	(-0.45)	(-0.41)
Return volatility	0.52	0.42	0.72**	0.50	0.40	0.71**
	(1.50)	(1.17)	(2.00)	(1.44)	(1.13)	(1.97)
Past return	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***	-0.02***
	(-4.56)	(-3.38)	(-3.70)	(-4.57)	(-3.36)	(-3.69)
Book leverage	-0.05*	-0.05*	-0.05*	-0.05*	-0.04	-0.05*
	(-1.89)	(-1.75)	(-1.78)	(-1.75)	(-1.64)	(-1.70)
Market-to-book	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***	-0.04***
	(-7.12)	(-7.47)	(-6.97)	(-7.09)	(-7.43)	(-6.93)
Profitability	-0.09**	-0.08**	-0.08**	-0.09**	-0.08**	-0.08**
	(-2.52)	(-2.38)	(-2.34)	(-2.50)	(-2.36)	(-2.33)
Cash holding	-0.15***	-0.13***	-0.08**	-0.15***	-0.13***	-0.09**
	(-3.44)	(-3.07)	(-1.96)	(-3.49)	(-3.10)	(-1.99)
Tangibility	0.08***	0.09***	0.10***	0.08***	0.09***	0.10***
	(3.37)	(3.69)	(3.38)	(3.36)	(3.69)	(3.39)
Foreign sales	0.15***	0.15***	0.14***	0.15***	0.15***	0.14***
	(7.42)	(7.40)	(6.84)	(7.29)	(7.26)	(6.74)
Dividend yield	0.07***	0.07***	0.06***	0.07***	0.07***	0.07***
	(6.22)	(6.19)	(5.94)	(6.23)	(6.20)	(5.94)
Number of analyst	-0.03***	-0.03***	-0.02***	-0.03***	-0.03***	-0.02***
	(-5.58)	(-4.48)	(-4.25)	(-5.62)	(-4.49)	(-4.25)
ADR dummy	0.03**	0.04**	0.03**	0.03**	0.03**	0.03*
	(2.14)	(2.38)	(2.05)	(2.06)	(2.27)	(1.96)
S&P global 1200	-0.03**	-0.03**	-0.03**	-0.03**	-0.03**	-0.04***
	(-2.13)	(-2.34)	(-2.53)	(-2.20)	(-2.49)	(-2.66)
Local composite index	0.12***	0.12***	0.12***	0.12***	0.12***	0.12***
	(7.76)	(7.77)	(7.61)	(7.80)	(7.77)	(7.61)
Country FE, Year FE	Y	-	-	Y	-	-
Country × Year FE	-	Y	Y	-	Y	Y
Industry FE	-	-	Y	-	-	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.354	0.371	0.378	0.354	0.371	0.378
Number of Obs.	37,379	37,379	37,379	37,379	37,379	37,379

Internet Appendix

Table 1: Domestic Institutional Ownership and Hedging

In this table, we link domestic institutional ownership to corporate hedging decisions. The dependent variable is domestic institutional ownership, defined as domestic institutional investor holdings divided by the year-end market capitalization. In columns (1)-(4), we use the full sample as in Table III, Panel A, where domestic ownership is set to 0 if no domestic ownership is reported in Factset. In columns (5)-(6) we focus on the subsample of non-zero domestic ownership. We include country × year fixed effects and cluster the errors at the firm level in all specifications. ***, ** and * represent significance levels at 1%, 5% and 10% respectively using robust standard errors.

Dep. var.: Total DO	Full Sample				Non-zero Total DO	
	(1)	(2)	(3)	(4)	(5)	(6)
Hedger	-0.16	-0.16			-0.03	
	(-1.46)	(-1.53)			(-0.25)	
FX hedger			-0.26**	-0.24*		-0.22
			(-2.09)	(-1.89)		(-1.30)
Interest rate hedger			0.03	-0.02		0.10
			(0.24)	(-0.11)		(0.54)
Log (market value)	0.11**	0.19***	0.12**	0.20***	-0.08	-0.08
	(2.45)	(4.04)	(2.51)	(4.12)	(-1.32)	(-1.22)
Free-floating percentage	1.25***	1.26***	1.25***	1.26***	2.09***	2.09***
	(5.92)	(5.95)	(5.91)	(5.93)	(7.14)	(7.13)
Return volatility	-25.14***	-23.01***	-25.03***	-22.94***	-39.11***	-38.96***
	(-9.44)	(-8.71)	(-9.41)	(-8.69)	(-8.55)	(-8.53)
Past return	0.28***	0.28***	0.28***	0.28***	0.45***	0.44***
	(5.37)	(5.25)	(5.35)	(5.24)	(5.77)	(5.75)
Book leverage	0.60**	0.54**	0.58**	0.54**	0.49	0.47
	(2.34)	(2.10)	(2.27)	(2.08)	(1.35)	(1.29)
Market-to-book	0.14**	0.14**	0.14**	0.14**	0.07	0.06
	(2.51)	(2.45)	(2.48)	(2.41)	(0.90)	(0.86)
Profitability	2.37***	2.18***	2.37***	2.18***	2.98***	2.98***
	(7.50)	(6.89)	(7.49)	(6.87)	(5.95)	(5.95)
Cash holding	-0.77**	-0.44	-0.76**	-0.44	-0.48	-0.46
	(-2.17)	(-1.26)	(-2.15)	(-1.25)	(-1.01)	(-0.97)
Tangibility	-1.51***	-0.52*	-1.51***	-0.52*	-0.85**	-0.84**
	(-6.22)	(-1.88)	(-6.22)	(-1.88)	(-2.12)	(-2.11)
Foreign sales	0.72***	0.59***	0.74***	0.60***	0.74***	0.76***
	(3.46)	(2.73)	(3.55)	(2.80)	(2.69)	(2.76)
Dividend yield	-0.19**	-0.17**	-0.19**	-0.17**	-0.13	-0.13
	(-2.27)	(-1.98)	(-2.28)	(-1.98)	(-1.30)	(-1.31)
Number of analyst	0.71***	0.67***	0.72***	0.67***	0.84***	0.84***
	(12.39)	(11.17)	(12.41)	(11.20)	(10.53)	(10.57)
ADR dummy	-1.27***	-1.24***	-1.25***	-1.23***	-1.23***	-1.23***
	(-6.67)	(-6.47)	(-6.60)	(-6.41)	(-5.33)	(-5.28)
S&P global 1200	-1.07***	-1.09***	-1.06***	-1.08***	-0.84***	-0.83***
	(-6.61)	(-6.72)	(-6.56)	(-6.67)	(-4.60)	(-4.56)
Local composite index	-0.60***	-0.61***	-0.60***	-0.62***	-0.95***	-0.96***
	(-4.23)	(-4.34)	(-4.25)	(-4.34)	(-5.38)	(-5.40)
Country × Year FE	Y	Y	Y	Y	Y	Y
Industry FE	-	Y	-	Y	Y	Y
Clustering	Firm	Firm	Firm	Firm	Firm	Firm
R-squared	0.564	0.571	0.564	0.571	0.581	0.581
Number of Obs.	37,440	37,440	37,440	37,440	25,719	25,719