

**CORPORATE GOVERNANCE AND THE HEDGING PREMIUM
AROUND THE WORLD***

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ABSTRACT

This paper examines the use of foreign currency derivatives (FCDs) as a proxy for risk management and its potential impact on firm value in a broad sample of firms from thirty-nine countries between 1990 and 1999. Our sample allows us to exploit differences in corporate governance across firms and countries, their impact on risk management policies and their value implications. We find that on average, hedging is associated with higher firm value around the world and that corporate governance is an important factor in assessing the value of risk management. The hedging premium is statistically significant and economically large for firms with strong *internal* corporate governance (such as those with an institutional blockholder) and those which reside in countries with strong *external* governance (such as those with an English legal origin), and insignificant for firms with weak internal governance and those which reside in countries with weak external governance. Finally, hedging is (not) valuable even when internal corporate governance is weak (strong), if the firm happens to reside in a country with strong (weak) external governance. Overall, our findings suggest that both firm-level and country-level corporate governance play a significant role in understanding *when* risk management is associated with higher value. Moreover, our results imply that risk management is one channel through which stronger corporate governance translates into higher firm value.

Risk management theories (e.g., Smith and Stulz (1985), Bessembinder (1991), Froot, Scharfstein, and Stein (1993), and Leland (1998)) suggest that risk management adds value to a firm by reducing expected taxes or financial distress costs, by mitigating underinvestment, or by allowing a firm to increase its debt capacity and take advantage of debt tax-shields without an increase in risk. Previous empirical literature has examined which theories of hedging are borne out in the data (see e.g., Tufano (1996), Geczy, Minton, and Schrand (1997), Haushalter (2000), and Graham and Rogers (2002), among others), while, more recently, another stream has examined directly the impact of corporate risk management on firm value (see e.g., Allayannis and Weston (2001), Carter, Rogers, and Simkins (2003), and Guay and Kothari (2003)). Specifically, Allayannis and Weston (2001) find that the use of foreign currency derivatives increases value in a large sample of U.S. nonfinancial firms with exposure to exchange rates, while Carter et al. (2003) find a similar effect for the fuel hedging strategies of the US airline industry. On the other hand, Guay and Kothari (2003) argue that based on the magnitudes of the notional amounts of the derivatives used by U.S. firms, the value implications may be less strong.

While this prior work has focused on the value implications of risk management among U.S. firms, in this paper we examine whether hedging adds value in a broad sample of firms, which reside in thirty-nine countries, during 1990-1999. Our sample allows us to examine important issues that could not be examined before and in addition, serve as an out-of sample test of the hypothesis of whether risk management adds value. Specifically, we can exploit differences in internal as well as external corporate governance structures across countries and examine their implications for the value of risk management.¹

¹ Previous work using non-U.S. data has only examined which hedging theories hold across countries. In particular, Lel (2003) examines the impact of internal and external corporate governance and the degree of financial market development on the decision to hedge and finds evidence that they are both important determinants in the decision to hedge. More broadly, Bartram, Brown, and Fehle (2003) examine the use of financial derivatives in a large sample of nonfinancial firms across 48 countries and find evidence of common firm factors such as leverage, liquidity, and growth opportunities predicting derivatives use, however, not all of them in a manner consistent with theory. In addition, with the exception of the size of the local derivatives market, they find few country-specific factors to be important in the use of derivatives. Allayannis, Brown, and Klapper (2003) examine the determinants of alternative types of debt based on the currency denomination, including debt originally denominated in foreign currency and then swapped into domestic currency, in a sample of large East Asian firms during the Asian crisis and find evidence that macro-factors, such as interest-rate differentials affected the derivative use of East Asian firms in a manner less consistent with hedging behavior and more consistent with speculation. Faulkender (2003) reaches a similar conclusion examining, in a sample of U.S. firms, interest rate exposure through debt and the impact of interest rate derivative use on it. Prior to those papers, work on derivatives usage was based on a single country (e.g., among others, Bodnar (1999) examines

The main hypothesis that we test is that strong (weak) internal/external corporate governance should lead to value-increasing (non value-increasing) risk management activities. This is an important issue to resolve, since so far, we have only been able to identify in the aggregate, whether risk management adds value or not, not *when* risk management adds value.

We are not the first to acknowledge that corporate governance is important for the hedging decision. Smith and Stulz's (1985) model shows that managers with a large proportion of their wealth tied to a firm might engage in risk management activities to protect themselves and not necessarily to benefit their shareholders. Tufano (1998) suggests that, in the absence of agency conflicts, risk management enables a firm to avoid the deadweight costs of external financing and allows the pursuit of profitable investment opportunities by guaranteeing the availability of internally generated funds (i.e., the Froot, Scharfstein and Stein theory of risk management holds (1993)); however, in the presence of agency conflicts, risk management could actually be value-destroying, since the absence of market discipline that external financing imposes on managers allows them to freely pursue their "pet" projects, irrespective of their value to the firm. Finally, Breeden and Viswanathan (1999) show that managers with inferior skills will be less likely to hedge and manage risk properly, unless monitored by outsiders. This is because hedging can improve the informativeness of the earnings numbers and reveal their true type (see also DeMarzo and Duffie (1995)). Empirically, Tufano (1996), in a sample of gold mining firms finds that the existence of non-managerial blockholders is negatively linked to the decision to hedge, while Lel (2003) finds evidence that differences in corporate governance internationally significantly affect the hedging decision. What is unique to our paper is the linkage between the quality of internal and external corporate governance across countries and its affect on the value of risk management.²

Corporate governance has some clear implications on the risk management decision and its effectiveness. First, if left alone, managers may engage in risk management activities, which may not

derivatives usage among German firms; Berkman, Bradbury, and Magan (1997) examine NZ firms; Alkeback and Hagelin (1999) examine Swedish firms; and Bodnar, Jong, and Macrae (2003) examine derivatives usage among Dutch firms).

serve shareholders' interests. For example, if an insider is a large blockholder, as is often the case in firms outside the U.S. (see e.g., Lins (2003)), then he/she may simply want to protect himself/herself (Smith and Stulz (1985)), or to pursue his/her own interests (Tufano (1998)) and engage in hedging activities even when he/she should not. On the other hand, if the manager is well diversified due to holdings in other firms, or is of inferior ability then he/she may not engage in risk management activities even when he/she should (e.g., Breeden and Viswanathan (1999)). In both cases, such misalignment of interests may lead to sub-optimal, non-value-increasing risk management. The misalignment is reduced in a good *internal* corporate governance environment, such as the one provided by a large outside blockholder, such as an institution (see e.g., Hartzell and Starks (2003)). Perhaps as importantly, we should expect the quality of *external* corporate governance to have a strong influence on such agency costs and the resultant managerial activity. For example, stronger investor protection rights and stricter enforcement of laws should reduce agency costs (e.g., Lins (2003), LLSV (2000), and Dyck and Zingales (2003)), and improve the value of risk management activities. In addition, in countries with strong creditor rights, bankruptcy costs are expected to be large, and therefore hedging more valuable (see e.g., Smith and Stulz (1985))³. This positive relation between corporate governance and risk management is by no means obvious, since it is entirely plausible that risk management could add the most value when the agency costs are the largest, for example, in a country with weak external governance, where hedging could act as a signal of value for managers and the firm (DeMarzo and Duffie (1995)). Finally, we examine the interaction between internal and external corporate governance by examining the value implications of risk management for firms with strong (weak) internal corporate governance, which reside in countries with weak (strong) external governance.

² Prior literature has found ample evidence on the impact of ownership structure and corporate governance more broadly, on capital structure decisions (e.g., Berger, Ofek, and Yermack (1997)), on investment decisions (e.g., Cho (1998)) and, on firm value (e.g., Lemmon and Lins (2003), La Porta, Lopez-de-Silanes, Shleifer, and Vishny –LLSV hereafter- (2002)).

³ Claessens, Djankov, and Klapper (2003) find evidence supportive of the above argument, by showing that strong creditor rights along with stricter enforcement of laws result in greater likelihood of bankruptcy, while Miller and Puthenpurackal (2002) add to the evidence by finding a lower risk premium for foreign firms associated with stronger creditor protection laws and stricter enforcement.

To examine the value implications of risk management and its links to corporate governance, we use a broad (and unique) sample of exchange-traded American Depositary Receipts (ADRs), which consists of firms from thirty-nine countries during 1990-1999. Studying firms with ADRs has several advantages: first, these firms are required to file with the SEC and reconcile with the US GAAP and FASB rules in their annual reports. This allows the collection of *firm-level internal* governance proxies, such as ownership structure (e.g., blockholders and their identity) and board composition (e.g., whether the CEO is the chairman of the board), as well as reduces the inherent biases due to differences in accounting standards and reporting requirements across countries (e.g., the disclosure of derivatives use).⁴ Second, these are some of the largest, most liquid (and most sophisticated) firms in their local markets, which increases the likelihood of derivatives usage and facilitates comparisons with results based on U.S. samples used in prior studies.⁵ Third, previous research suggests that foreign firms trading in the U.S. can bond themselves to better governance using U.S. laws, a bias which works against our hypotheses (since, in that case, no distinction could be made regarding external corporate governance). However, it is important to note that the bonding hypothesis does not predict that, for example, Telmex will have the same corporate governance as AT&T, or British Telecom (another ADR), just because it is cross-listed. Supporting this argument, Siegel (2003) finds that in extreme cases of asset tunneling by Mexican firms with ADRs, U.S. institutional response has been lax in that the SEC did not try to recover the billions of dollars stolen from US investors.⁶

Similar to Allayannis and Weston (2001), we focus on firms with ex-ante exposure to exchange rates through foreign sales, so that our sample-firms have an incentive to use foreign currency derivatives (FCDs) for hedging purposes and expect that the use should be on average beneficial, consistent with

⁴ Note also that with the exception of firms with ADRs, which have to comply with US GAAP, derivatives disclosures outside the U.S. are mostly voluntary. Also note that excluding non-ADR firms is not likely to bias our results, given that Lel (2003) using a similar sample, and Allayannis et al. (2003) in a sample of large East Asian firms show no differences in the use of derivatives between firms that cross-list versus those that do not.

⁵ The majority of prior work in risk management has used samples of large U.S. firms, such as the Fortune 500, or the S&P 500 firms (see e.g., Geczy et al. (1997), Graham and Rogers (2002) etc.). Allayannis and Weston (2001) use a more comprehensive sample of firms with assets above 500 million USD; however, the sample used here is similar in terms of median size of assets (for the entire sample, median size of assets is 2103 million vs. 2573 in Allayannis and Weston (2001)).

⁶ For a complete discussion of the bonding hypothesis, see Benos and Weisbach (2003).

value-enhancing risk management theories. It is very likely that these firms also use other types of derivatives, such as interest-rate or commodity derivatives, whose incident is correlated with the use of currency derivatives, so to a large extent, the potential benefit should not be interpreted as arising solely from FCD use. Hence, as in Allayannis and Weston (2001), we interpret our results to reflect the value of a firm's overall risk management activities, rather than the value of its currency risk management alone (and currency derivatives use to be a mere proxy for risk management). To measure the impact of hedging on firm value, we follow closely the methodology in Allayannis and Weston (2001), which uses the Tobin's Q ratio as a proxy for firm value and includes a dummy in the regression to indicate whether a firm uses currency derivatives or not along with controls for factors that affect firm value, such as size, leverage, and profitability.⁷

We find a positive and significant association between a firm's use of currency derivatives and its value, suggesting that risk management adds value for firms around the world. The magnitude of the hedging premium is substantial (on average, ranging between 9% and 20% in the various alternative specifications) for firms with exposure to exchange rate movements. This is undoubtedly large, however, it is in line with Allayannis and Weston's (2001) premium of 4.8% for US firms, if we consider, for example, the significantly higher exposure that these firms face due to the substantially higher exchange-rate volatility of currencies outside the US (as well as to interest rates and commodity prices). In sum, these results are consistent with the hypothesis that risk management adds value and corroborate results on the hedging premium for domestic US firms and the airline industry reported in prior work.

Our next sets of tests exploit our sample's differences in internal and external governance structures to examine their impact on the value of risk management. We first examine the impact of the internal, firm-specific corporate governance proxies on the value of risk management. Consistent with our hypothesis, we find that firms with good internal corporate governance (such as firms with an institutional

⁷ This methodology has been used extensively in corporate finance: research areas in which Q is used to measure firm value include cross listing (Doidge, Karolyi and Stulz (2004)), corporate diversification (Lang and Stulz (1994), and Servaes (1996)), takeovers (Servaes (1991)), equity ownership (LLSV (2002) and Lins (2003)), and hedging (Allayannis and Weston (2001)).

blockholder) are rewarded with a higher premium in their risk management activities. Risk management activities of firms with weak internal corporate governance (such as firms with an insider as the largest blockholder) do not carry a significant premium, on average; however, our evidence suggests that they are not value-destroying either. This is perhaps related to the fact that our ADR sample represents the strongest firms from each country, which are less likely to suffer from extreme agency problems. Similar results are obtained using several alternative proxies for good/weak internal corporate governance such as the absence/presence of family and state ownership, the existence/nonexistence of high managerial cash flow rights and the strength/weakness of internal governance based on a firm-level governance index constructed in the spirit of Gompers, Ishii, and Metrick (2003).

We next examine the impact of external corporate governance on the hedging premium. Consistent with our expectations, we find that firms, which reside in countries with strong shareholder rights, strong creditor rights, or with an English legal origin, are rewarded with a significantly higher premium than firms with weak external corporate governance. These results also hold for several other related proxies of external corporate governance that we use such as the efficiency of the judicial system, the level of public and private enforcement and the extent of a merger activity within a country. Although the hedging premium for firms residing in countries with weak external corporate governance is positive, it is never statistically significant. This suggests that by mitigating agency costs, strong external, country-specific corporate governance mechanisms lead to value-increasing risk management policies.

Our last tests examine how the interaction of firm-specific internal corporate governance and country-specific external governance impacts the value of risk management. We find that in general, the impact of weak external governance cannot be mitigated by good internal firm-level corporate governance. However, and perhaps most interestingly, we find that the impact of weak internal firm-level corporate governance can be mitigated by strong external country-level governance. Therefore, while on average, firms with weak internal corporate governance do not add value with their risk management activities, when they reside in a country with strong legal environment, they do. This suggests that a

strong legal environment reduces the ability of insiders to engage in risk management activities for their own benefit only. This finding also adds to prior evidence on corporate decisions/events (e.g., the decision to use derivatives; and CEO turnover after bad performance), which are more aligned with value-maximization theories when the external legal framework is strong (see e.g., Lel (2003) and, DeFond and Hung (2004), respectively).

In summary, we find that on average, hedging is associated with higher firm value around the world. Furthermore, our results suggest that the corporate governance environment (both internal and external) is an important factor in understanding *when* risk management is associated with higher value. In this way, our results not only add to the evidence on the value of risk management, but to the literature on the value of corporate governance. While previous studies document that corporate governance is positively related to value, our results uncover a specific channel by which good governance improves value. In other words, we find that one way good corporate governance improves value is through value-increasing risk management activities taken by managers.

The remainder of the paper is organized as follows. Section I develops the hypotheses and describes the data. Section II examines the impact of corporate governance on the value of risk management and presents the tests and results. Section III concludes.

I. Hypothesis development and Data

To examine the relationship between firm valuation, corporate governance, and hedging in an international context, we gather a dataset of foreign firms that are cross-listed in the U.S. as level II and level III ADRs, for the period between 1990 and 1999.⁸ The use of foreign firms with ADRs provides several advantages in studying the hedging practices of non-U.S. firms. For one, using cross-listed firms allows us to examine a sample that is free of any reporting bias. While firms' disclosure on derivatives usage is on a voluntary basis in most countries, the ADR firms are required to file periodically with the

⁸ See Miller (1999) for a complete description of the types of ADRs.

SEC and reconcile with US GAAP and the Financial Accounting Standards Board (FASB) rules in their annual reports.⁹ FASB rules SFAS 105 and SFAS 119 mandate that firms disclose their use of derivatives, if any, as well as the reasons for using them in 20-F forms, beginning June 15, 1990. In addition, this mandatory adherence to a single standard helps us control for the substantial differences that exist in accounting standards across countries, as well as allow us to hand-collect detailed firm-level *internal* governance information.¹⁰ Further, ADRs constitute a more natural setting to examine financial hedging than their local counterparts because they have greater growth opportunities, greater foreign exchange exposure, and are generally some of the largest firms in their local markets (e.g., see Doidge et al. (2004)).¹¹

A potential disadvantage of using cross-listed firms as representatives of firms in their respective countries is that they may have quite different characteristics than their local counterparts. Cross-listing in the U.S. enables firms to access external financing at a lower cost (e.g., Errunza and Miller (2000)). Further, cross-listed firms have lower controlling shareholder and managerial agency costs (since they become subject to the U.S. securities laws) relative to those that do not cross-list (e.g., Coffee (1999), Doidge et al. (2004), and Reese and Weisbach (2002)). These features of ADRs can influence the possible effect of hedging on corporate valuation. However, although ADRs have to conform to US GAAP and are governed by US security regulations, in practice, they are not US firms, and their country of origin and

⁹ A report by the United Nations Conference on Trade and Development states that on average, only half of the firms that use derivatives actually disclosed this information in their financial statements (see, “The role of accounting in the East Asian financial crisis: lessons learned?” Transnational Corporations, published by United Conference on Trade and Development, Geneva, volume 7 (3), December 1998. The report compares the compliance of firms with the International Accounting Standards across five East Asian countries).

¹⁰ Governance data is disclosed in two sections. “Item 4. Control of Registrant” and “Item 10. Directors and Officers of the Registrant”. Item 4 contains the list of directors and of major shareholders and their shareholdings in the firm. Both are reported as a number of outstanding shares, and as a percentage. Item 10 contains the names of the managers and board members, and their short bios. The bios include the age, education, and current and previous job positions of each person. Item 4 also discloses whether the firm has a blockholder (major shareholders), state or family ownership and the managerial share ownership, among other things. Family ownership is sometimes disclosed in Item 10. Inside/outside blockholder classification is based on the data from Item 4 (the list of major shareholders with greater than 10 percent share of ownership) and Item 10 under the short bios of managers. The bios also have information about whether there is a representative of the blockholder firm/person on the board, or as a manager. Dual CEO classification is obtained from Item 10.

¹¹ Existing literature indicates that large firms, firms with greater ex-ante foreign exchange risk and firms with greater growth opportunities are more likely to engage in hedging activities. In fact, most of the recent U.S. based studies focus on large firms with an existing foreign exchange exposure (e.g., Geczy et al. (1997), and Allayannis and Weston (2001)).

the rules and regulations (i.e., shareholder and creditor rights) present in those countries, where presumably the bulk of assets lie, are important in determining outcomes in the event of bankruptcy or lawsuits (see e.g., Siegel (2003)). Further, to the extent that ADRs have similar corporate governance with each other, and to that of US firms, then any bias associated with our ability to detect a relationship between corporate governance and hedging value runs against us. Finally, both Le1 (2003), and Allayannis et al. (2003) show that cross-listing does not affect the extent that firms hedge foreign exposure. Specifically, Le1 (2003) estimates a 2SLS model in which the decision to cross-list is modeled in the first stage and the decision to use derivatives in the second and finds that corporate governance is still important in the decision to hedge even after controlling for self-selection in the cross-listing decision.

The sample of cross-listed foreign firms that are subject to the U.S. disclosure and reporting regulations are obtained from CRSP. This list is augmented with the Bank of New York's ADR database, available on the website www.adrbny.com, and the one of the Securities Data Company (SDC). After excluding financial institutions and utilities, which may have different motivations for the use of derivatives than non-financial firms, as well as firms from tax-heavens, such as Bermuda and Luxemburg, the sample contains 535 foreign firms. We also exclude non-unique ADRs and those with missing financial data and 20-F forms. This screening reduces the sample size to 402 firms. We then exclude firms that are located in countries for which the LLSV variables do not exist. These firms are mainly from China and ex-Soviet block countries. Finally, we exclude ADRs with incomplete data in COMPUSTAT tapes. Our final sample contains 1,605 firm-year observations from thirty-nine countries. It is an unbalanced panel set of 378 firms.

We hand-collect data on whether these firms use foreign exchange derivatives, and the reasons of using them from the 20-F forms and annual reports filed with the SEC. The reasons include hedging, speculating, or market making. All the firms in our sample indicate that they use derivative contracts

solely for hedging purposes.¹² The 20-F forms are obtained from Thomson Research (formerly Global Access). We follow Lins (2003), among others, in defining the firm-level governance variables that are collected from the 20-F forms.

A1. Hypothesis development and variable definitions

We use the market-to-book ratio as a proxy for Tobin's Q to reflect a firm's market value. Tobin's Q is defined as the ratio of total assets less the book value of equity plus the market value of equity to the book value of assets. Since the distribution of Tobin's Q is skewed in our sample (the mean value of Tobin's Q is 2.21 whereas its median value is 1.50), we use the natural log of Q to limit the impact of this skewness on our results. This also makes our results more comparable to those of Allayannis and Weston (2001) who also use the natural log of Q to correct for the skewness of its distribution.

A.1.1 Control Variables

To control for factors that have been shown to affect firm value (Q), we use the following firm-level financial control variables. Firm size has been shown to affect firm value (e.g., see Mueller (1987) and Peltzman (1977)), so we include the log of total assets to control for the effect of firm size on Q . We also use the log of sales as an alternative proxy for firm size.

To control for financing constraints, we include a dividend dummy, which equals one if the firm's dividend yield is greater than the median dividend yield for the sample in the current year (most of the firms in our sample pay dividends, so we can not construct the dividend dummy to indicate whether the firm paid dividend in the current year or not, as most previous work). Several studies argue that the greater the dividend yield, the lower the probability that the firm is financially constrained (e.g., Fazzari,

¹² Hedging data is disclosed in two sections. The first section is "Item 9A. Quantitative and Qualitative Disclosure about Market Risk". The second one is in the "Notes to the Financial Statements" under the title "Financial Instruments". The information generally includes if the firm has used any currency/interest rate/commodity derivatives, and the notional/fair values if it used any derivatives. We classify a firm as a currency derivative user (FCD user) if the firm disclosed that it used currency derivatives for hedging purposes. For those firms that do not disclose any currency derivatives under item 9A and "Financial Instruments", the entire financial notes are read to make sure that the firm does not disclose any use of currency derivatives. These firms are classified as non-currency derivative users (FCD non-user).

Hubbard, and Petersen (1988)). Firms that are more likely constrained may have higher Q values because they only undertake positive NPV projects (see Lang and Stulz (1994), and Servaes (1996)). We should hence expect a negative relationship between dividend dummy and Q . Leverage, defined as the ratio of total debt to shareholder equity, is included to control for the possible effects of capital structure on firm value. More profitable firms are likely to have higher Q values and thus firm profitability (proxied by return on assets, which is calculated as the ratio of net income to total assets) is also included in the analysis.

We also control for the firm's investment opportunities, as several studies show that firms with greater growth opportunities are more likely to engage in hedging (see Froot et al. (1993) and Geczy et al. (1997)). We use three variables to proxy for investment growth. As in Yermack (1996), we use the ratio of capital expenditures to sales and the ratio of research and development expenses to sales, and similar to Morck and Yeung (1991) we use consumer goodwill, defined as the ratio of advertising to total sales. If information is missing for any of these variables, we assume them to be zero.¹³

Earlier literature on firm diversification suggests that industrial diversification is value destroying. That is, firms with multiple industrial segments have lower Q values relative to single-segment firms (see Berger and Ofek (1995), and Lang and Stulz (1994)). Outside the U.S., the evidence is mixed with UK and Japanese firms exhibiting a diversification discount, whereas German firms are not (see Lins and Servaes (1999)). We control for the effect of industry-wise diversification on Q by including a diversification indicator variable, which equals one if the firm has more than one business segments (at the four-digit SIC level), and zero otherwise. Finally, we use year dummies to control for time effects, two-digit SIC codes to control for industry effects, and country dummies to control for cross-country variation in Q due to unobserved country factors.

A.1.2. Corporate governance and the value of risk management

The goal in this paper is to examine the relationship between hedging and firm valuation under different corporate governance mechanisms. Derivatives can be used either for hedging or for speculation purposes. Theory states that hedging can be a value-increasing strategy because it reduces cash flow volatility and allows firms to reduce the likelihood of financial distress or to mitigate underinvestment (e.g., Smith and Stulz (1985), Bessembinder (1991), and Froot et al.(1993)). On the other hand, the use of derivatives for speculative purposes should increase cash flow volatility. Therefore, the positive impact of derivatives use on firm value, as documented by Allayannis and Weston (2001) and implied by many other papers, should be observed only when firms use derivatives for hedging purposes. Also, hedging as a result of managerial risk aversion or to allow management to pursue their “pet” projects should not lead to an increase in value. Thus, we hypothesize that the positive effect of hedging is associated with better corporate governance since better-governed firms are more likely to use derivatives for hedging purposes. Specifically, we examine the effects of internal firm-level ownership structure and external country-level governance mechanisms, as well as the interaction between them on the relationship between hedging and firm value.

First, we examine whether the firm-level internal ownership structure influences the effect of hedging on firm value. Many studies show that firm value is adversely affected by the degree of managerial agency costs (e.g., see Shleifer and Vishny (1997), Lins (2003), and Claessens, Djankov, Fan, and Lang (2002)).¹⁴ In the context of risk management, a firm’s ownership structure may influence how firms use derivatives contracts.¹⁵ For example, corporate insiders and inside blockholders may have different incentives than the outside investors and this difference in incentives can adversely affect the positive effect of hedging on firm value. In particular, to the extent that corporate insiders do not bear the

¹³However, we also repeat the analyses excluding the missing observations and find that the results are qualitatively similar.

¹⁴See Holderness (2003) for a survey of the effects of blockholders on firm valuation.

¹⁵Although the empirical evidence on the relationship between the firm-level internal ownership structure and corporate hedging decision is limited, Tufano (1996) documents that the existence of non-managerial blockholders reduces the extent of hedging in a sample of gold mining firms. Differentiating among different types of blockholders, Lel (2003) finds that inside blockholders

consequences of their decisions, they may use derivatives for reasons other than value maximization. Further, managers with inferior skills, for example, may want to take bets on firm output rather than to hedge the financial risks, in order to increase the noise associated with firm performance and hide their true managerial ability (Breedon and Viswanathan (1999)). Therefore, managerial blockholders may have fewer incentives to appropriately manage firm risks. We hypothesize that the positive impact of hedging on firm valuation is reduced if managers are also the largest blockholders in the firm, i.e., if there is a misalignment in the incentives between inside blockholders and outside investors.

On the other hand, non-managerial blockholders may function as monitors of managers' actions and thus mitigate managerial agency costs. Therefore, the existence of non-managerial blockholders, such as institutions, may prevent the use of derivatives for speculation, and ensure its use for hedging purposes. Thus, we hypothesize that hedging is associated with greater firm valuation when outside blockholders are present. Studying foreign firms provides a natural setting to examine the impact of firm ownership structure on the value-implications of risk management since managerial agency costs are more severe (e.g., LLSV (1998) and Lins (2003)), and hence may play an even more important role, in determining the effect of hedging on firm value.¹⁶ At the same time, ADRs are presumably some of the best firms outside the U.S., so, on average, we may not expect to find extreme value-destroying hedging activities in our sample.

Second, we examine the potential effects of the external corporate governance environment on the relationship between hedging and firm valuation. The external corporate governance environment at the country level may influence the effect of hedging on firm value by mitigating the potentially adverse effects of agency costs of equity and debt (e.g., see LLSV (2002)). Furthermore, if managers with inferior ability use derivatives for speculation rather than for hedging so that their performance measure does not reflect their ability perfectly, then increased monitoring of managerial activities should mitigate this

reduce the likelihood of hedging whereas outside blockholders, and blockholders that are financial institutions or institutional investors, increase the likelihood of hedging.

¹⁶ See Denis and McConnell (2003) and the citations contained therein.

adverse effect. Since one such monitoring mechanism is the level of external shareholder protection, we hypothesize that the use of derivatives is value-adding for firms located in countries with stronger investor protection rights.

Third, we examine how the interaction between the firm-level internal ownership structure and the country-level external governance structure influences the effect of hedging on firm valuation. As noted earlier, managerial agency costs may negatively affect the positive effect of hedging on firm valuation. However, these adverse effects can be mitigated by the existence of stronger investor protection rights, which serve to monitor managerial activities (e.g., see Lins (2003), LLSV (2000), and Dyck and Zingales (2003)). Thus, strong investor protection rights can help align the interests of managers with those of shareholders by enabling greater levels of shareholder scrutiny of managerial decisions. Therefore, we should expect that hedging is positively related to firm value in countries with stronger investor protection rights even when the internal, firm-specific corporate governance is weak.

A.1.2.1 Internal Governance variables

We use two main proxies for firm-level governance mechanisms to examine the relationship between firm-level internal governance structures and the effect of hedging on firm value. Following Lins (2003) and Lang, Lins, and Miller (2003), ‘largest BH is an insider’ is defined as a dummy variable which equals one if the largest blockholder, i.e., another firm/person/family that owns 10% or more of outstanding shares, is in the firm management, and zero otherwise. Because the severity of managerial agency costs is greater if managerial blockholders exist, we expect that hedging is not value-adding when there is an inside blockholder. Similarly, ‘largest BH is an outsider’ is defined as a dummy variable that equals one if the largest blockholder is not in the firm management, and zero otherwise. As this type of blockholders can monitor managers’ actions, we expect that the presence of such blockholders should yield a positive relationship between hedging and firm value (see e.g., Mitton (2002)).

In further tests, we refine the definition of the blockholder to include several specific types of blockholders, such as whether the blockholder is an institutional investor, a family, or the state, which

have been shown in prior work to have an important role in firm governance and in affecting agency costs. Specifically, Shleifer and Vishny (1997) argue that large shareholders, such as institutions, have a stronger financial incentive to monitor management, while Coffee (1991) and Gillan and Starks (2000) add that institutional investors have greater incentives to monitor since they cannot always sell the shares of underperforming firms due to potential adverse price effects, as well as due to indexing. McConnell and Servaes (1990) find empirical evidence of a significant positive relationship between Q and the fraction of shares owned by institutional investors and Smith (1996) finds an increase in shareholder wealth when financial institutions include a firm in their watch list. Finally, Hartzell and Starks (2003) find that institutional ownership is positively related to the pay-for-performance sensitivity of executive compensation and negatively related to the level of compensation suggesting that institutions mitigate agency costs through effective monitoring. We expect firms with an institution as a large outside blockholder to add value through risk management.

Conversely, we expect firms with a family affiliation to engage in less valuable risk management activities than firms without such an affiliation. Fama and Jensen (1985) show how large, undiversified shareholders could employ different investment decision rules than diversified shareholders, and pursue objectives such as firm growth or firm survival, and not firm value maximization. Further, Shleifer and Summers (1988) note that families have incentives to redistribute rents from employees to themselves. Faccio, Lang, and Young (2001) examine family ownership and control among East Asian firms and find that family control leads to wealth expropriation when financial markets are not very transparent. Similarly, we expect firms which are state owned to engage in less valuable risk management activities. Inefficiencies of state-owned firms have long been documented (see e.g., Boycko, Shleifer, and Vishny (1995)). Shleifer and Vishny (1997) explain state ownership in terms of cash flow and control rights: "...While in theory these firms are controlled by the public, the de facto control rights belong to the bureaucrats. These bureaucrats can be thought of as having extremely concentrated control rights, but no significant cash flow rights because the cash flow ownership of state firms is effectively dispersed

amongst the taxpayers in the country”. Dewenter and Malatesta (2001) find in a sample of large, non-US industrial firms, that state-owned firms are significantly less profitable and exhibit significantly greater labor intensity (measured by the employee to sales ratio) than privately-owned firms. Similarly, LaPorta and Lopez-de-Silanes (1999) and Claessens and Djankov (1999) find improved profitability for newly privatized Mexican and Eastern European firms, respectively.

Another classification we use is according to the presence or not of a CEO who also holds the position of chairman of the board (dual CEO). Jensen (1993) and Yermack (1996) find that firms are more highly valued and boards more effective monitors when the CEO and the chairman positions are separated. Clearly, the presence of a dual CEO gives rise to a conflict of interest as the CEO can then evaluate his own performance and set the agenda of the board. We should expect that such firms would be more likely to pursue risk management activities for reasons outside value maximization.

We also distinguish firms according to the cash flow and voting rights of the largest managerial blockholder. Generally, higher managerial cash flow rights and lower managerial voting rights mitigate agency conflicts and allow managers to pursue value maximization. Claessens et al. (2002) disentangle the incentive and entrenchment effect of large ownership in a large sample of East Asian corporations and find that firm value increases with the cash flow ownership of the largest blockholder and falls when the control rights of the largest blockholder exceed its cash flow rights. LLSV (2002) also find higher valuations for firms with higher cash-flow ownership by controlling shareholders across 27 countries. We should expect risk management to be more valuable among firms with higher cash flow and lower voting rights by the largest blockholder.

Finally, in the spirit of Gompers et al. (2003), who use the incidence of 24 unique governance rules to construct a firm-specific governance index to proxy for the level of shareholder rights among US firms, we consider 7 alternative governance rules (such as, whether the firm has no inside blockholder, or whether the firm has at least one outside or one institutional blockholder) to construct a firm-specific governance index for the firms in our sample. Our index ranges from 0 (weak governance) to 7 (strong

governance) and firms are well-distributed across these categories (for example, the majority of firms, (36.12% of our sample) have a score of 4, 30.86% have a score of 3, and 9.91% have a score of 5; in contrast, less than 7% of the firms in our sample earn a 6 or a 7).¹⁷ An advantage of such an index is that we make use of our entire sample of firms (this is not the case for some of the governance variables described earlier), which should add to the power of our tests. We expect firms with strong governance as indicated by our index to earn a higher risk management premium than firms with weak governance.

A.1.2.2 External Governance variables

We use three main proxies for external country-level governance mechanisms to examine its impact on the value of risk management. The strength of shareholder rights is measured by the aggregate index of how well shareholders' rights are protected under law. The strength of creditor rights is measured by the aggregate index of how well creditor rights are favored under bankruptcy and reorganization laws. 'English legal origin' equals one if the country the firm is located in has an English legal origin, and zero otherwise. Because strong investor protection laws may restrain corporate insiders' ability to expropriate wealth from outside investors, this may affect the role of hedging on firm value because of its impact on the degree of agency conflicts between corporate insiders and outside investors; we hence expect the positive effects of good internal firm governance measures on corporate hedging policy to be less pronounced in countries with weaker investor protection laws (e.g., see LLSV (2000)). Conversely, we expect the negative effects of weak internal firm governance on corporate hedging policy to be less pronounced in countries with stronger investor protection laws.

In addition to the above metrics we also use several other variables that have been recently suggested in the literature to characterize external governance, such as the efficiency of the judicial system and the extent to which private or public enforcement exists (see LLSV (1998) and La Porta, Florencio Lopez-de-Silanes, and Shleifer (2003)). Judicial efficiency is defined as the "efficiency and

¹⁷ A detailed description of the method used to construct the firm-specific governance index is available by the authors upon request-see also Appendix A.

integrity of the legal environment as it affects business, particularly foreign firms” has a scale from 0 to 10 and is produced by Business International Corporation, a country risk rating agency. Private enforcement of laws can benefit firms by reducing the costs of private contracting. This can be achieved, for example, by laws, which standardize security contracts (such as mandating disclosure in a report and explicitly articulating liability if the law is not obeyed). Public enforcement of laws, on the other hand, can take the form of the SEC, or a Central Bank who is an independent body and can regulate outside of political influences. Such an enforcer can have access to information through subpoena or other means, which can be more effective than a private enforcer. In theory, then, both public and private enforcement can work, and are preferable to low or no public or private enforcement. La Porta et al. (2003) find significant evidence that private enforcement laws through disclosure and liability rules benefit stock markets, but weak evidence for the effectiveness of public enforcement. We should expect in countries with high private (and perhaps also high public) enforcement, managers to be more liable to laws which reduce agency conflicts, and therefore expect a premium for hedging activities in such countries.

We also use a measure of merger activity within the country (both the number as well as the dollar value) computed by Bris and Cabolis (2003), which includes all completed acquisitions of public companies available in Securities Data Corporation between 1985-2000, excluding LBOs, spinoffs, repurchases, minority stake purchases, recapitalizations, and privatizations. Jensen (1986) argues that takeovers occur as a response to breakdowns of internal controls and inefficient use of resources by management. Takeover activity reduces agency costs by removing poor managers and streamlining operations (see, Jensen and Ruback (1983) for evidence that shareholders in successful takeover targets realize substantial wealth increases). Even the threat of a takeover can discipline management and focus them on value maximization. We should expect that in countries with a high number or dollar value of merger activity managers will more likely pursue value maximizing risk management objectives.

Our final measure of external governance is the legality measure put forth by Berkowitz, Pistor, and Richard (2003). Legality is an aggregation of individual legality proxies into a single legality index through a principal components analysis (see Berkowitz et al. (2003), p.182, for an exact description of

the index). Berkowitz et al. (2003) find that their legality index is related to economic development. We expect firms which reside in countries with strong legality to pursue more valuable risk management activities than firms from countries with weak legality.

A.2. Descriptive statistics

Table 1 presents the country distribution of the firms in the sample and the corresponding foreign currency derivative use (panel A), summary statistics for the full sample (panel B), as well as for the subsamples based on firms with and without foreign sales (panels C and D), and for the subsamples based on firms with and without currency derivatives (panel E). All the variables and the sources are defined in Appendix A. Similar to Allayannis and Weston (2001) we use the foreign sales ratio to classify firms into those with and without ex-ante exchange rate exposure (see also Geczy et al. (1997) and Allayannis and Ofek (2001)). Because firms with no exchange-rate exposure should not have any incentive to engage in currency hedging, we examine the effect of currency hedging on firm value separately for firms with and without exchange rate exposure. An alternative classification could be based on the existence of foreign debt. However, most of our firms employ foreign debt as part of their capital structure (and exchange-rate risk is taken into account when that decision is made), so it is not clear that a firm with a higher level of foreign debt actually has higher exposure. In that sense, separating based on the existence of foreign sales or not offers an advantage and also remains close to the existing literature. Thus, we report summary statistics for the subsamples based on foreign sales and currency derivatives use separately.

Specifically, panel A presents the number of firm-year observations in each country and the percent of each country's observations in the total sample, as well as the number of FCD users and nonusers for each country. Among the 39 countries represented, our sample contains the largest number of firms from the UK (24.74% of the sample) and then from Japan and Mexico (9.22% and 7.60% respectively). Our firms exhibit a large cross-sectional variation in the use of FCD ranging from 100% for firms from Belgium, Finland, Portugal, Singapore, and Taiwan, to 0% for firms from the Dominican Republic, Ghana, and Russia. Panel B presents summary statistics for the full sample. The mean value of

assets for the firms in our sample is \$9274 and the mean value of sales is \$7507. On average, 72% of our sample observations have foreign sales and 62% of our sample firms use currency derivatives. This usage ratio is somewhat higher than that reported for the U.S.-based studies but it is consistent with non-U.S. based surveys, such as the one by Bodnar (1999) who finds 78% of German firms using derivatives.

Panel C shows summary statistics for firms with positive foreign sales ($FS > 0$), and panel D summary statistics for firms without any foreign sales ($FS = 0$). These panels show that firms with exchange-rate exposure are larger (mean assets of \$10731 million vs. \$5477 million), are more likely to use currency derivatives (69% vs. 44%) and are more likely to be diversified across industries. Also, in almost all metrics of strong internal and external corporate governance, firms with positive foreign sales have higher values, indicating that there are fewer agency problems for the sample of firms with foreign sales than for the one without (e.g., 15.4% of firms with foreign sales have an institutional blockholder versus 13% for firms without foreign sales; and 44.2% reside in countries with an English legal origin versus 29% for firms without foreign sales). Hence, given the less severe agency problems observed within the sample of firms with foreign sales, it is less likely to find extreme value-destroying hedging activities. Finally, Panel E presents summary statistics for firms that use currency derivatives versus those that do not use currency derivatives for the sample of firms with foreign sales. Derivative users are much larger and have lower capital expenditure and R&D ratios. Since previous studies indicate that larger firms and firms with lower capital expenditures have lower Tobin's Q values (e.g., Lang and Stulz (1994)), controlling for these differences will be important in our tests.

Table 2 presents the Pearson correlation matrix for key variables in the paper for our sample of firms with exposure. The pair-wise correlations are generally low, except for those within country-level external, and within firm-level internal, governance measures (e.g., the correlation between strong shareholder rights and strong creditor rights is 0.6). However, the correlations between measures of strong internal and strong external governance, though still positive, are much smaller (e.g., the correlation between strong shareholder rights and 'largest blockholder is an outsider' (internal corporate governance

index) is 0.085 (0.264)). This suggests that examining separately internal and external governance, as well as their interaction, on the value of risk management has merit and it is not the case that both types of governance proxy for identical structures, but instead, they are picking up different features of governance. Also, we note the positive correlations between measures of strong governance (e.g., strong shareholder rights, English legal origin, largest blockholder is an outsider) and Q , consistent with prior work. Other correlations are less consistent; for example, we observe a negative correlation between shareholder rights and the use of foreign currency derivatives. However, several confounding factors may be behind such association and the multivariate regressions that we perform subsequently will account for them. Although not reported, the correlations between alternative firm-level internal governance measures (both those proxying for strong as well as those proxying for weak governance) and their interaction terms with the FCD dummy are high and statistically significant. For example, the correlation between the corporate governance index and its interaction with the FCD dummy is 0.49, while the correlation using family affiliation, as the measure of corporate governance is 0.65. Therefore, to avoid multicollinearity in our multivariate regressions we split the sample according to the median value of the governance variable (i.e., strong and weak) and examine separately the relationship between hedging and firm value on these two subsamples and then compare the coefficients on the FCD dummy across the two subsamples.

The correlation results also show a negative relationship between hedging and Tobin's Q . While this would seem inconsistent with our hypothesis, it is important to note that many factors that affect Q differ substantially across subsamples. For example, as Panel E in Table 1 shows, currency derivative users are much larger than non-users, which can affect the results of the univariate analysis because these large firms arguably have fewer growth opportunities than smaller firms. This is also reflected in the capital expenditures, the R&D expenses and the dividends, as reported in panel E; more mature firms with fewer growth opportunities distribute more profits as dividends and have lower capital expenditure and R&D ratios.

II. Tests and Results

A.1. Econometric Method

To assess the effect of risk management on firm value, we examine differences in Tobin's Q for our panel data set of foreign firms' hedging activities. We face several econometric issues in our analysis. First, there is the possibility of lack of independence at the firm level since risk management policies are likely to be correlated from year to year. Second, Tobin's Q is known to vary substantially across countries, so controlling for unobserved country effects is important. However, many of our external governance variables are perfectly correlated across countries, which makes inference more challenging. Third, the decision to adopt risk management policies may be endogenously determined by issuer characteristics that are correlated with value.

The main results in this paper are reported using a model of country fixed effects, in which firms within a country share a common factor. In such a pooled time-series cross-section regression, the standard errors are likely to be inflated because of dependence at the firm level. To control for this, in all our analyses, we adopt a variation of the standard robust estimator of variance (Huber (1967), White (1980)), developed by Rogers (1993), to compute robust standard errors. This procedure takes into account the possibility that observations within clusters may not be independent. We specify that observations for each firm are part of the same cluster.

The formula for the standard robust estimator of variance is

$$\hat{Z} = \hat{V} \left(\sum_{j=1}^N u_j' u_j \right) \hat{V} \quad (1)$$

where $\hat{V} = \left(\partial^2 \ln L / \partial \beta^2 \right)^{-1}$ is the conventional estimator of variance and u_j is the contribution from the j th observations to the scores $\partial \ln L / \partial \beta$.

In the above formula, observations are assumed to be independent. If however, observations denoted by j are not independent but they can be divided into M groups G_1, G_2, \dots, G_M that are independent, then the robust estimator of variance is

$$\hat{Z} = \hat{V} \left(\sum_{k=1}^M u_k^{(G)}, u_k^{(G)} \right) \hat{V} \quad (2)$$

where $u_k^{(G)}$ is the contribution of the k th group to the scores $\partial \ln L / \partial \beta$.

Hence, for the case where observations within clusters are not independent, the application of the robust variance formula involves using a different decomposition of $\partial \ln L / \partial \beta$, namely $u_k^{(G)}$, $k=1, \dots, M$ rather than u_j , $j=1, \dots, N$. In this way, our model controls for known determinants of Tobin's Q within as well as across countries. In addition, it adjusts standard errors for the potential lack of independence.

We estimate our models using country fixed effects because in our models, random country effects are rejected by the Hausman specification test. Therefore, to test the differential impacts of risk management on firm value across external, country-level governance mechanism while controlling for country, we will follow previous research (Lins 2003, Lang et al. 2003) and split the sample by our variables of interest (such as English vs. non-English legal origin).

A natural alternative to this model is that of firm fixed (or random) effects. However, since in our data there is much less time series variation in the risk management policies of foreign firms than in the cross-section, a firm fixed effects specification is likely mis-specified.¹⁸ For example, Zhou (2001) shows that by relying on the within variation, fixed effects estimators lack the power to detect significant relationships if the time series displays relatively little variation.

¹⁸ Specifically, out of 1160 firm-year observations we have 43 firms initiating a hedging program (i.e., switching from nonhedgers to hedgers) and 22 firms stopping one (i.e., switching from hedgers to nonhedgers).

Finally, one potential concern regarding our tests is endogeneity. Suppose that firms with high value tend to use currency derivatives for reasons unrelated to risk management and that our controls for firm and country characteristics do not capture this information. Then, we might infer a link between FCD use and firm value when none exists. For example, suppose that

$$Y = \beta x + \delta C + \varepsilon, \quad (9)$$

where C is the indicator variable which takes on the value one if the firm uses a FCD and zero otherwise.

Since firms choose to use FCD based on various factors, we can model this decision as

$$\begin{aligned} C^* &= \gamma' \omega + u \\ C &= 1 \quad \text{if } C^* > 0, \quad 0 \text{ otherwise} \end{aligned} \quad (10)$$

If the typical firm selects their derivative use because of some expected benefit in Y , then OLS estimates of δ will not correctly measure the effect of risk management. This problem of self-selection is often handled empirically with a treatment effects model (see e.g., Greene (1990)).

To assess the degree of self-selection bias in our tests, we employ a treatment effects model for our main value regression that controls for this bias. We model the hedging decision as a function of firm-specific variables that have been shown to be important factors in previous work, such as size, leverage, and research and development intensity (see e.g., Graham and Rogers (2002), Geczy et al. (1997), etc.). We obtain consistent estimates via full maximum likelihood estimation.¹⁹

A.2. Corporate Governance and Risk Management Effectiveness

A.2.1. The Hedging Premium around the World

In this section we present the results of the hypothesis of whether risk management adds value around the world and whether corporate governance affects its effectiveness. Following Allayannis and Weston (2001), in Table 3 we present results of the hedging premium for the sample of firms with exposure to exchange rates (foreign sales > 0) and the sample of firms with no exposure (foreign sales = 0). We

expect that only firms with exposure, which have therefore an incentive to hedge, are rewarded in the marketplace with a higher valuation. Panel 3A shows results from a model of country fixed effects, in which firms within a country share a common factor. To control for potential lack of independence over time, the standard errors are corrected for within-firm correlation. We also include year dummies to account for any time trends as well as industry controls at the 2-digit SIC. Further, we include firm-specific factors described earlier in the data section, such as size, profitability, leverage, etc., which have been commonly used in prior work as controls in firm-value regressions.

Consistent with our hypothesis, as the coefficient on the FCD dummy indicates, we find a positive and significant hedging premium for firms with exposure and a positive but insignificant one for firms without exposure. This suggests that, on average, hedging adds value around the world. The magnitude of the hedging premium is substantial: we find that on average, firms, which manage risk are valued about 14.5% higher than similar firms, which do not manage risk (in additional robustness tests using a median regression and a regression where we eliminate the top and bottom 5% of Qs we find a 10% and a 9% premium respectively). Although at first glance, this premium seems rather large, it is broadly in line with Allayannis and Weston's (2001) premium of 4.8% for a sample of U.S. firms, considering that foreign firms face a significantly higher exchange rate volatility of their local currency than firms in the U.S.²⁰ Several of the control variables are also significant and with the appropriate sign. For example, similar to previous work, we find that small and low-levered firms are associated with higher value. In addition, financially constrained firms are also associated with higher Qs, as indicated by the negative coefficient on the dividend yield dummy and also found in previous work.

In separate, by-year tests we find that in seven out of the nine years of our sample with exposure, the hedging premium is positive and in only two it is negative (but statistically insignificant). The premium is positive and significant during the last two years of the sample (1999 and 1998), but

¹⁹ A Heckman [1979] two-step estimation procedure produces similar results.

otherwise not significant, perhaps reflecting our lower power (due to the lower number of observations) in the earlier part of our sample (specifically, we have 61 observations during 1992 and 211 during 1999, reflecting the increased popularity in ADR listings during the 1990s). The median premium from these by-year results is 0.152, in line with the premium found before.

To control for potential endogeneity we estimate a treatments effects model described in detail in the econometrics section. In the first stage we model the decision to use currency derivatives using variables that have been shown previously to be important such as size, leverage, research and development, and corporate governance (e.g., Geczy et al. (1997), Graham and Rogers (2002), and Lel (2003)), while in the second stage using the predicted values for the decision to use derivatives, we estimate its impact on firm value. Panel B of Table 3 shows results of the value regression for the subsamples of firms with and without foreign sales. Similar to our previous results, we find a positive and significant relationship between the use of foreign currency derivatives and firm value for firms with foreign sales and no significant relationship for firms without foreign sales. In the first stage we find results consistent with prior work that finds that size is an important determinant of the use of derivatives (i.e., that there are fixed costs to hedging (e.g., Geczy et al. (1997))) and that strong corporate governance (for example, the presence of an institution as a blockholder) is positively linked to the use of derivatives (e.g., Lel (2003)). These results suggest that endogeneity does not affect our result that, on average, risk management is beneficial for foreign firms with foreign exchange exposure and show that the hedging premium is independent of how governance affects the hedging decision.

A.2.2. Internal Corporate Governance and the Hedging Premium

So far, we have established that on average, hedging adds value around the world. In the subsequent tests, we examine the impact of corporate governance on the effectiveness of hedging. Several theories suggest that strong (weak) internal corporate governance, which reduces (increases) agency costs, should be

²⁰ It is also interesting to note that the premium, while substantial, is less than the 22.4% premium that LLSV (2002) document for firms with good external corporate governance (i.e., located in common law countries) and the 16.5% premium that Doidge et al. (2004) find for cross listed versus non-cross listed firms.

linked to valuable (non-valuable) risk management activities (e.g., Smith and Stulz (1985)). Following Lins (2003) we proxy for the quality of internal, firm-specific corporate governance using two variables: a dummy variable, which equals one if the largest blockholder is an insider and zero otherwise; and a dummy variable, which equals one if the largest blockholder is an outsider and zero otherwise. We expect that large inside blockholders would engage in less valuable risk management activities, primarily for their own benefit, while large outside blockholders would ensure through monitoring that insiders undertake risk management activities that are in shareholders' interest.

Table 4, panel A, columns 1 and 2, present results of the impact of hedging for samples of high and low inside ownership respectively, where we classify a firm as a high inside ownership one if it has an insider as the largest blockholder and a low inside ownership one if it does not have an insider as the largest blockholder. Consistent with our hypothesis, we find that firms with low inside ownership have a positive and significant hedging premium (coefficient of 0.170), whereas firms with high inside ownership show a positive but insignificant premium. Although the coefficients on the significant control variables are consistent with prior findings, different factors appear to be important for the two samples (leverage and dividend dummy for the high inside ownership sample and size and dividend dummy for the low ownership sample) suggesting that performing regressions in two separate samples has merit.

Our second set of tests focuses on the presence of an outsider as the largest blockholder. Again, we separate the sample in high and low outside ownership, where a firm is assigned to the former sample if the largest blockholder is an outsider and to the latter if it is not. Although the magnitude of the coefficient is larger for firms with high outside ownership than for firms with low outside ownership (0.243 versus 0.140), the difference is not statistically significant. In further tests, we alter the definition of an outside blockholder to consider institutional blockholders and thereby increase the sharpness of our tests. We also performed several other tests that yield supportive evidence regarding the firm-level internal corporate governance and the impact on risk management activities using alternative measures of internal corporate governance that have been described earlier. Table 4, panel B presents the results from

these tests. To conserve space we only report the coefficients and t-statistics on the foreign currency derivatives dummy across the alternative governance measures (both strong and weak). Specifically, we separate according to the presence of an institutional investor as an outside blockholder and find significant evidence that firms with an institutional investor as an outside blockholder engage in valuable risk management activities, consistent with theoretical arguments by Coffee (1991) and Shleifer and Vishny (1997) and empirical evidence in McConnell and Servaes (1990), Gillan and Starks (2000), and Hartzell and Starks (2003), among others, suggesting the effectiveness of institutions as outside monitors.

Consistent with Claessens and Djankov (1999), Dewenter and Malatesta (2001), and Shleifer and Vishny (1997) we find evidence that risk management activities of firms that are state-owned are not rewarded by the market with a premium, while those of firms which are not state-owned are rewarded with a premium. A similar result is also obtained when we separate firms according to family ownership, which is consistent with evidence in Faccio et al. (2001) that family ownership and control among East Asian firms is associated with wealth expropriation. We should expect (and find) that the use of derivatives by such family-owned firms would only serve families to speculate on future output or to allow them to pursue their “pet” projects. Interestingly, the coefficient on the derivatives dummy in the sample of family-owned firms is negative (although not significant). In contrast, firms without a family affiliation show a positive and significant hedging premium. In further tests in which we separate firms according to the existence of a CEO who also holds the position of the chairman of the board, a situation which is associated with more severe agency costs (see e.g., Jensen (1993) and Yermack (1996)), we find that the absence of such a CEO from a firm positively impacts its risk management activities and firms without such a CEO show a positive hedging premium (0.172), while the presence of such a CEO does not yield a premium from risk management activities.

We also present results on Table 4 (panel B) from tests separating firms according to managerial cash flow and managerial voting rights. Consistent with Claessens et al. (2002) we find significant evidence that firms for which the largest blockholder has high managerial cash flow rights are rewarded

with a premium by the market for their risk management activities, while those with low managerial cash flow rights are not. However, we do not find any difference in the hedging premiums among firms with low versus high managerial voting rights; in fact, both samples exhibit insignificant premiums. Finally, consistent with our hypothesis our test using a firm-specific governance index that we constructed in the spirit of Gompers et al. (2003) shows a positive and significant hedging premium (0.176) for firms with above median score in the corporate governance index. Overall, in these tests we find an economically significant premium as well for firms with strong internal corporate governance, and in some cases, the premium is rather large; however, the median hedging premium for firms with strong internal corporate governance is 0.176 (Table 4, panel B). Taken together these results suggest that severe agency conflicts reduce the effectiveness of risk management activities and that mitigating them allows firms to improve firm value through value-increasing risk management activities.

A.2.3. External Corporate Governance and the Hedging Premium

While the previous tests focus on the firm-level internal corporate governance and its impact on risk management value, our next tests examine the impact of external, country-level governance. In particular, we perform tests based on samples that are separated according to the strength of shareholder rights, the strength of creditor rights, and legal origin. The importance of these governance proxies for economic growth and value was shown in LLSV (1998, 2002) and here we are employing them in the context of risk management. Although there is a positive (and significant) correlation between measures of strong internal firm-specific corporate governance (such as when firms have an institution as a blockholder) and strong external country-level governance (such as strong shareholder rights), these two measures of governance are not the same and as we show later on, there are many firms in our sample which can be classified as strong in one dimension and weak in the other. Table 5, columns 1 and 2 present results of tests for a hedging premium for firms which reside in a country with strong and weak shareholder rights respectively. A country is included in the sample of strong shareholder rights, if it has anti-director rights above the sample median value of 4, otherwise it is classified as a country with weak shareholder rights.

We find a positive and significant hedging premium for firms which reside in countries with strong shareholder rights and a positive but insignificant premium for firms which reside in countries with weak shareholder rights. The difference between the two coefficients is statistically significant at the 5 percent level. A similar result is also obtained when we split the sample according to strong and weak creditor rights countries (columns 3 and 4). This is consistent with our hypothesis that in countries with strong creditor rights, bankruptcy costs are expected to be large, and therefore hedging more valuable (see e.g., Smith and Stulz (1985), and Claessens et al. (2003)). Finally, we split our sample based on legal origin and in particular based on whether a firm resides in a country with an English legal origin or not (columns 5 and 6). Legal origin has been consistently found to be an important factor associated with firm value and financial development (e.g., LLSV (2002)). We find strong evidence that firms, which reside in a country with an English legal origin engage in significantly more valuable risk management activities than firms, which reside in a country with a non-English legal origin. Generally, these regressions have relatively high explanatory power as suggested by the adjusted- R^2 , which range between 35% and 52% (and generally higher than those reported in fixed-effects regressions in Allayannis and Weston (2001) for US firms).

We also use a variety of alternative measures proposed in the literature to reflect the quality of country-level external governance such as the efficiency of the judicial system (LLSV (1998)), public and private enforcement (La Porta et al.(2003)), the number and dollar amount of merger activity within a country (Bris and Cabolis (2003)) and a composite measure of legality (Berkowitz et al. (2003)). Consistent with our hypothesis we find that in high quality external governance countries, firms engage in valuable risk management activities, while in low quality external governance countries firms are not rewarded with a premium (Table 5, panel B). The hedging premium ranges in those specifications between 0.150 and 0.249 for firms residing in high quality external governance countries and in all specifications it is also significantly higher than the hedging premium of firms residing in low quality external governance countries.

We also estimate several other alternative specifications as robustness checks (not tabulated). It is possible that the hedging premium may be an artifact of the degree of development of the derivatives markets, which is simply correlated with the quality of external governance, such as English legal origin. We estimate two regressions splitting the sample according to the existence or not of derivatives markets and find significant difference in the hedging premium between firms, which reside in countries with derivatives markets versus in markets without derivatives markets. However, when we further split the sample according to legal origin, we find that only firms that reside in countries with an existing derivatives market and an English legal origin show a premium from their risk management activities. In contrast, firms from countries with an existing derivatives market but with a non-English legal origin show no premium from risk management. This result suggests that the hedging premium is linked to the legal origin (external corporate governance) and not to the existence or not of derivatives markets.

A second possibility is that the difference in premium is due to the financial growth in the country and not due to the external corporate governance. To test this hypothesis, we split our sample into firms from high GDP countries and firms from low GDP countries: we find no difference in the hedging premium between these two categories suggesting that differences in financial development do not explain differences in risk management value. Finally, we also separate according to whether a firm resides in an emerging or in a developed country. We find a significant difference between such firms, with firms residing in developed countries exhibiting a premium for risk management activities. However, when we further split the sample according to legal origin we find a premium only for firms from developed countries, which also have an English legal origin, again suggesting that the risk management premium is not due to differences in the financial stage and maturity of the country of origin but due to its legal environment. These tests in their entirety suggest that derivatives market development and financial growth and development do not explain the differences in hedging premium; instead, external corporate governance does.

A.2.4. The Interaction between Internal and External Corporate Governance and the Hedging Premium

Our main result so far is that strong internal and external governance play an important role in risk management and its value by ensuring that risk management activities are taken for the benefit of shareholders; conversely, weak corporate governance is associated with non-valuable risk management activities. Our final tests in this section examine the interaction between firm-specific internal corporate governance and country-specific external governance and its impact on the value of risk management. In these tests we want to explicitly focus on situations where internal governance is weak and external is strong or vice-versa, and examine the implications of such interactions for risk management value.

Table 6 presents the results of these tests. For brevity, we only report results on the currency derivatives dummy. We split the sample in finer categories than in our previous tests holding one category (internal or external) fixed while varying the other. For example, the first set of tests is for the sample of firms with weak internal governance (internal governance index below median), which also reside in countries with strong shareholder rights versus the sample of firms with weak internal governance, which reside in countries with weak shareholder rights. The second and third set of tests hold fixed the internal corporate governance (weak) and use alternative measures of external corporate governance such as creditor rights and legal origin, to differentiate between strong and weak external corporate governance. Specifically, we examine whether firms with weak internal corporate governance, which on average do not engage in value-increasing risk management activities (as our previous tests suggest), differ in their risk management activities depending on the quality of the external environment. In other words, does a strong external country-level corporate governance system mitigate agency costs associated with weak internal firm-level governance system and improve on the value of risk management? We find some significant evidence that strong external corporate governance has a positive impact on internal governance and yields valuable risk management activities. We obtain the strongest results when we use English origin as the criterion of external governance to classify firms (set 3), although our results are also broadly consistent when using the strength of shareholder rights as a

criterion. Specifically, firms with weak internal corporate governance show a positive and significant hedging premium when they reside in countries with an English legal origin, while those with weak internal corporate governance, which reside in countries with a non-English legal origin do not have a positive premium on their risk management activities. This suggests that a strong legal environment ensures that currency derivatives are used to benefit shareholders, even if the firm has weak internal governance system.

We next examine whether strong internal corporate governance, which is associated on average with value-increasing risk management activities may be affected by the external corporate governance. Specifically, is the value of risk management for firms with strong internal corporate governance (internal corporate governance index above median) tempered by weak external governance? Sets 4-6 of regressions show significant evidence on the importance of external governance and how weak external governance can reduce the effectiveness of strong internal governance. We find that firms with strong internal governance have a significant hedging premium when they reside in countries with strong shareholder rights or an English legal origin, whereas similar firms with strong internal governance which reside in countries with weak shareholder rights or a non-English legal origin do not show a significant hedging premium (and the Chow test shows that the two premia are significantly different at the 1 percent level). With the exception of creditor rights as a measure of external corporate governance (set 5), similar results are obtained using several other measures of external governance, such as the efficiency of the judicial system, private and public enforcement, and the number of the mergers within the country (results not reported). The results suggest that the value of risk management is critically affected by the impact of external governance so that firms with strong internal governance only exhibit a hedging premium, when they reside in a country with strong external governance.

III. Conclusions

In this paper we examine the impact of corporate governance on the value of risk management around the world. We find that on average, hedging is valuable around the world, adding to existing evidence by Allayannis and Weston (2001) on US firms. Corporate governance plays an important role in assessing the value of risk management. We find that firms with weak internal corporate governance do not engage in valuable risk management activities while firms with strong internal corporate governance do. External corporate governance is very important for risk management effectiveness. Firms that reside in countries with strong external governance (such as countries with strong shareholder rights protection or an English legal origin) show a positive hedging premium. Most interestingly, strong external corporate governance can mitigate agency costs and increase risk management value even when internal corporate governance is poor, while weak external corporate governance may mitigate risk management benefits arising from strong internal corporate governance. Our paper has important implications on how quality corporate governance translates into higher firm value and suggests that risk management is one such avenue. While risk management is on average valuable around the world, it is only so as a result of the valuable risk management activities of firms with strong internal or external corporate governance.

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Table 1
Summary statistics

This table provides the descriptive statistics for the sample used throughout the regressions. Panel A displays the country distribution of the firms in the sample across FCD users and non-users. Panel B displays the mean, median and the standard deviation values for the variables for the full sample. Panel C reports these values only for firms with positive foreign sales and Panel D for those with no foreign sales. Panel E reports firm and country-level characteristics for FCD users and nonusers. Tobin's Q is calculated as total assets less the book value of equity plus the market value of equity in the numerator and book value of assets in the denominator. Foreign sales dummy equals one if the firm has foreign sales, zero otherwise. FCD dummy equals one if the firm uses currency derivatives such as currency forwards, currency futures, currency options or currency swaps for hedging purposes, zero otherwise. 'Largest BH is an insider' takes on the value of one if the largest blockholder (holding 10% or greater percentage of outstanding shares) is in firm management, zero otherwise. 'Largest BH is an outsider' takes on the value of one if the largest blockholder (holding 10% or greater percentage of outstanding shares) is not in firm management, zero otherwise. 'Institutional investor as BH' equals one if the firm has an institutional investor as a blockholder (holding 10% or greater percentage of outstanding shares), zero otherwise. State ownership equals one if the firm has the government as a shareholder, zero otherwise. Family ownership dummy equals one if the firm is a family firm, defined as a firm managed and/or owned by the members of a family, zero otherwise. Dual CEO equals one if the firm's CEO is also the chairman of the board, zero otherwise. 'Cash flow (voting) rights of the largest managerial BH' is a dummy variable that equals one if the percentage of ownership of cash flow (voting) rights by the largest managerial blockholder is greater than its sample median, zero otherwise. Internal governance index is a ranking of the strength of an internal firm-level governance system. It ranges from 0 to 7, 7 being the strongest system. Shareholder and creditor rights are index variables and higher values of these variables correspond to better investor protection. English legal origin equals one if the country's legal origin is English. Efficiency of judicial system is an assessment of the "efficiency and integrity of the legal environment as it affects business, particularly foreign firms". Public enforcement index equals the arithmetic mean of supervisor characteristics, investigative powers, orders, and criminal indices. Private enforcement index equals the arithmetic mean of disclosure and burden of proof indices. Country-level merger activity (number-wise) is the ratio of the number of mergers to the total number of firms in a given country and year. Legality is an overall index of several country-level external governance mechanisms, derived from a principal components analysis of five observed legality variables. Total assets refer to firms' total assets. Sales is annual net sales. Return on assets is the ratio of net income to total assets. Leverage is the ratio of total debt to shareholder equity. Capex/sales is capital expenditures scaled by sales. Diversification dummy takes on the value of one if firm has at least one other business segment with a different (four-digit) SIC code, zero otherwise. R&D/sales is research and development expenses scaled by sales. Advertising/sales is the ratio of advertising expenses to sales. Dividend dummy takes on the value of one if the firm's dividend yield is greater than the median yield for the sample, zero otherwise. The dollar figures are measured in million USD, and reported in absolute terms, although we use them in logs throughout the regressions.

Panel A. Country Distribution

Country name	# obs	Country %	FCD user	FCD non-user
Argentina	49	3.05%	20	29
Australia	71	4.42%	54	17
Belgium	1	0.06%	1	0
Brazil	42	2.62%	22	20
Chile	67	4.17%	44	23
China	12	0.75%	2	10
Colombia	6	0.37%	0	6
Denmark	18	1.12%	16	2
Dominican Republic	2	0.12%	0	2
Finland	20	1.25%	20	0
France	89	5.55%	68	21
Germany	27	1.68%	19	8
Ghana	4	0.25%	0	4
Greece	14	0.87%	4	10
Hong Kong	27	1.68%	8	19
Hungary	3	0.19%	1	2
India	3	0.19%	1	2
Indonesia	19	1.18%	1	18
Ireland	61	3.80%	30	31
Israel	38	2.37%	23	15
Italy	52	3.24%	50	2
Japan	148	9.22%	128	20
Mexico	122	7.60%	24	98

Netherlands	97	6.04%	85	12
Norway	32	1.99%	31	1
Peru	7	0.44%	2	5
Philippines	10	0.62%	4	6
Poland	1	0.06%	0	1
Portugal	6	0.37%	6	0
Russia	4	0.25%	0	4
Singapore	6	0.37%	6	0
South Africa	27	1.68%	6	21
South Korea	17	1.06%	12	5
Spain	6	0.37%	5	1
Sweden	60	3.74%	51	9
Switzerland	24	1.50%	18	6
Taiwan	2	0.12%	2	0
UK	397	24.74%	230	167
Venezuela	14	0.87%	1	13
Total	1605	100.00%	995	610

Variable name	No. obs.	Mean	Median	Std. Dev.
Panel B. Full sample				
Tobin's Q	1605	2.213	1.499	2.305
Foreign sales dummy	1605	0.723	1.000	0.448
FCD dummy	1605	0.620	1.000	0.486
Largest BH is an insider	1605	0.442	0.000	0.497
Largest BH is an outsider	1605	0.165	0.000	0.371
Institutional investor as a BH	1605	0.148	0.000	0.355
State ownership dummy	1605	0.119	0.000	0.324
Family ownership dummy	1605	0.281	0.000	0.450
Dual CEO	1585	0.264	0.000	0.459
Cash flow rights of the largest managerial BH	1570	25.03	18.33	25.00
Voting rights of the largest managerial BH	1569	25.77	19.25	25.46
Internal governance index	1605	3.464	3.000	1.145
Shareholder rights	1579	3.502	4.000	1.405
Creditor rights	1565	2.201	2.000	1.432
English legal origin	1583	0.401	0.000	0.490
Efficiency of judicial system	1555	8.675	10.000	1.794
Public enforcement	1579	0.467	0.560	0.271
Private enforcement	1579	0.598	0.670	0.189
Country-level number-wise merger activity	1552	9.115	6.797	7.232
Country-level dollar-wise merger activity	1552	22.49	2.380	125.47
Legality	1605	18.13	20.36	4.051
Total assets	1605	9273.91	2102.59	19446.95
Sales	1605	7506.54	1209.19	17676.43
Return on assets	1605	0.010	0.041	0.167
Leverage	1605	0.554	0.365	0.896
Capex/sales	1605	0.209	0.082	0.402
Diversification dummy	1605	0.533	1.000	0.499
R&D/sales	1605	0.345	0.000	6.422
Advertising/sales	1605	0.008	0.000	0.021
Dividend dummy	1605	0.517	1.000	0.500

Panel C. Foreign Sales > 0				
Tobin's Q	1160	2.165	1.482	2.193
FCD dummy	1160	0.691	1.000	0.462
Largest BH is insider	1160	0.378	0.000	0.485
Largest BH is outsider	1160	0.183	0.000	0.387
Institutional investor as a BH	1160	0.154	0.000	0.361
State ownership dummy	1160	0.098	0.000	0.298
Family ownership dummy	1160	0.272	0.000	0.445
Dual CEO	1143	0.255	0.000	0.436
Cash flow rights of the largest managerial BH	1134	20.34	12.945	23.56
Voting rights of the largest managerial BH	1133	21.23	13.600	24.06
Internal governance index	1160	3.555	4.000	1.166
Shareholder rights	1151	3.576	4.000	1.374
Creditor rights	1143	2.322	2.000	1.411
English legal origin	1152	0.442	0.000	0.497
Efficiency of judicial system	1128	9.172	10.000	1.390
Public enforcement	1151	0.470	0.670	0.279
Private enforcement	1151	0.621	0.710	0.177
Country-level number-wise merger activity	1124	9.845	8.511	7.376
Country-level dollar-wise merger activity	1124	22.525	2.380	134.046
Legality	1160	19.249	20.410	3.089
Total assets	1160	10730.62	2817.92	20159.71
Sales	1160	9407.43	1788.78	19810.78
Return on assets	1160	0.009	0.040	0.168
Leverage	1160	0.576	0.387	0.943
Capex/sales	1160	0.144	0.067	0.280
Diversification dummy	1160	0.609	1.000	0.488
R&D/sales	1160	0.300	0.009	6.906
Advertising/sales	1160	0.009	0.000	0.022
Dividend dummy	1160	0.520	1.000	0.500

Panel D. Foreign Sales = 0

Tobin's Q	445	2.339	1.528	2.574
FCD dummy	445	0.436	0.000	0.496
Largest BH is insider	445	0.609	1.000	0.489
Largest BH is outsider	445	0.119	0.000	0.324
Institutional investor as a BH	445	0.130	0.000	0.337
State ownership dummy	445	0.173	0.000	0.379
Family ownership dummy	445	0.306	0.000	0.461
Dual CEO	442	0.290	0.000	0.515
Cash flow rights of the largest managerial BH	436	37.22	37.07	24.54
Voting rights of the largest managerial BH	436	37.57	37.02	25.24
Internal governance index	445	3.225	3.000	1.052
Shareholder rights	428	3.304	4.000	1.470
Creditor rights	422	1.872	2.000	1.440
English legal origin	431	0.290	0.000	0.454
Efficiency of judicial system	427	7.360	6.500	2.060
Public enforcement	428	0.457	0.500	0.245
Private enforcement	428	0.535	0.460	0.205
Country-level number-wise merger activity	428	7.199	5.176	6.467
Country-level dollar-wise merger activity	428	22.391	2.150	99.475
Legality	445	15.197	14.510	4.742
Total assets	445	5476.63	1193.42	16892.26
Sales	445	2551.39	541.07	8381.75
Return on assets	445	0.014	0.046	0.164
Leverage	445	0.496	0.289	0.759
Capex/sales	445	0.379	0.198	0.583
Diversification dummy	445	0.337	0.000	0.473
R&D/sales	445	0.460	0.000	4.949
Advertising/sales	445	0.006	0.000	0.021
Dividend dummy	445	0.510	1.000	0.500

Panel E. FCD users vs. non-users for firms with foreign sales > 0

Variable name	FCD users (801 observations)				FCD non-users (359 observations)			
	No. obs.	Mean	Median	Std. Dev.	No. obs.	Mean	Median	Std. Dev.
Tobin's Q	801	1.964	1.431	1.927	359	2.615	1.803	2.641
FCD dummy	801	1.000	1.000	0.000	359	0.000	0.000	0.000
Largest BH is an insider	801	0.311	0.000	0.463	359	0.526	1.000	0.500
Largest BH is an outsider	801	0.175	0.000	0.380	359	0.201	0.000	0.401
Institutional investor as a BH	801	0.159	0.000	0.365	359	0.145	0.000	0.352
State ownership dummy	801	0.125	0.000	0.331	359	0.039	0.000	0.194
Family ownership dummy	801	0.199	0.000	0.399	359	0.435	0.000	0.496
Dual CEO	787	0.240	0.000	0.427	356	0.287	0.000	0.453
Cash flow rights of the largest managerial BH	779	20.011	11.000	25.285	355	21.065	17.100	19.260
Voting rights of the largest managerial BH	778	20.424	11.965	25.164	355	22.995	17.800	21.387
Internal governance index	801	3.643	4.000	1.124	359	3.359	3.000	1.233
Shareholder rights	799	3.502	4.000	1.305	352	3.744	4.000	1.507
Creditor rights	798	2.261	2.000	1.287	345	2.464	3.000	1.656
English legal origin	798	0.380	0.000	0.486	354	0.582	1.000	0.494
Efficiency of judicial system	782	9.339	10.000	1.203	346	8.796	10.000	1.682
Public enforcement	799	0.455	0.600	0.286	352	0.504	0.670	0.261
Private enforcement	799	0.613	0.670	0.171	352	0.640	0.750	0.189
Country-level number-wise merger activity	779	9.565	8.240	7.368	345	10.477	9.280	7.366
Country-level dollar-wise merger activity	779	26.582	2.380	146.783	345	13.363	2.010	99.042
Legality	801	19.846	20.410	2.231	359	17.918	20.410	4.147
Total assets	801	14513.18	5146.37	22412.75	359	2290.99	305.28	9474.72
Sales	801	12751.39	4267.32	22467.27	359	1946.40	153.90	7857.89
Return on assets	801	0.045	0.046	0.072	359	-0.073	0.023	0.265
Leverage	801	0.643	0.434	0.899	359	0.427	0.152	1.019
Capex/sales	801	0.127	0.067	0.236	359	0.184	0.064	0.356
Diversification dummy	801	0.688	1.000	0.464	359	0.432	0.000	0.496
R&D/sales	801	0.330	0.012	8.291	359	0.235	0.000	0.901
Advertising/sales	801	0.010	0.000	0.021	359	0.007	0.000	0.023
Dividend dummy	801	0.629	1.000	0.483	359	0.276	0.000	0.448

Table 2
Correlation matrix

This table provides the Pearson correlation matrix for the variables and the associated significance levels only for firms with positive foreign sales. Tobin's Q is calculated as total assets less the book value of equity plus the market value of equity in the numerator and book value of assets in the denominator. FCD dummy equals one if the firm uses currency derivatives for hedging purposes, zero otherwise. Shareholder and creditor rights are index variables and higher values of these variables correspond to better investor protection. English legal origin equals one if the country's legal origin is English. 'Largest BH is an insider' takes on the value of one if the largest blockholder (holding 10% or greater percentage of outstanding shares) is in firm management, zero otherwise. 'Largest BH is an outsider' takes on the value of one if the largest blockholder (holding 10% or greater percentage of outstanding shares) is not in firm management, zero otherwise. Internal governance index is a ranking of the strength of an internal firm-level governance system. It ranges from 0 to 7, 7 being the strongest system. Return on assets is the ratio of net income to total assets. Leverage is the ratio of total debt to shareholder equity. Capex/sales is capital expenditures scaled by sales. The stars ***, **, and * indicate significance at the 1-percent, 5-percent, and 10-percent level, respectively.

	Tobin's Q	FCD dummy	Strong shareholder rights	Strong creditor rights	English legal origin	Largest BH is an insider	Largest BH is an outsider	Internal governance index	Return on assets	Leverage
Tobin's Q	1.000									
FCD dummy	-0.138***	1.000								
Strong shareholder rights	0.066**	-0.081***	1.000							
Strong creditor rights	0.055*	-0.066**	0.603***	1.000						
English legal origin	0.121***	-0.188***	0.709***	0.648***	1.000					
Largest BH is an insider	-0.024	-0.206***	-0.322***	-0.187***	-0.214***	1.000				
Largest BH is an outsider	0.023	-0.031	0.085***	0.044	0.150***	-0.368***	1.000			
Internal governance index	0.002	0.113***	0.264***	0.301***	0.276***	-0.676***	0.675***	1.000		
Return on assets	-0.118***	0.326***	-0.108***	-0.059**	-0.104***	-0.019	-0.095***	-0.056*	1.000	
Leverage	-0.162***	0.106***	-0.076***	-0.064**	-0.112***	0.003	-0.045	0.029	0.047	1.000
Capex / sales	0.045	-0.094***	0.064**	0.038	0.041	0.061**	0.010	0.015	-0.104***	0.160***

Table 3
Hedging premium for the full sample

This table displays the hedging premium for the full sample split up with respect to foreign sales. Panel A reports the results from an OLS regression and panel B reports the results from a treatment effects model. The dependent variable is Ln (Tobin's Q), calculated as the log of total assets less the book value of equity plus the market value of equity in the numerator and book value of assets in the denominator. FCD dummy equals one if the firm uses currency derivatives for hedging purposes, zero otherwise. Ln (Total assets) is the log of total assets. Return on assets is the ratio of income to total assets. Leverage is the ratio of total debt to shareholder equity. Capex/sales is capital expenditures scaled by sales. Diversification dummy takes on the value of one if the firm has at least one other business segment with a different (four-digit) SIC code, zero otherwise. R&D/sales is research and development expenses scaled by sales. Advertising/sales is the ratio of advertising expenses to sales. Dividend dummy takes on the value of one if the firm's dividend yield is greater than the median yield for the sample, zero otherwise. The standard errors are corrected for within- and across-firm correlation. The stars ***, **, and * indicate significance at the 1-percent, 5-percent, and 10-percent level, respectively.

Panel A. Hedging premium with country fixed effects estimation with correction for within firm correlation

Variable name	Foreign sales >0		Foreign sales = 0	
	Coefficient	t-statistics	Coefficient	t-statistics
<i>FCD dummy</i>	0.145**	2.06	0.046	0.59
Ln (Total assets)	-0.061***	-2.90	-0.039	-1.23
Return on assets	0.166	0.77	-1.106**	-2.47
Leverage	-0.050**	-2.11	-0.099	-1.55
Capex/sales	0.956	0.97	-0.008	-0.08
Diversification dummy	0.050	0.07	-0.012	-0.13
R&D/sales	-0.003***	-2.68	0.005	1.04
Advertising/sales	0.903	0.72	3.011	1.51
Dividend dummy	-0.215***	-3.92	-0.150*	-1.86
Intercept	1.012***	4.75	1.294***	3.05
Country dummies	Yes		Yes	
Industry dummies at 2-digit SIC	Yes		Yes	
Year dummies	Yes		Yes	
No. of observations	1160		445	
R square	0.395		0.517	

Panel B. Hedging premium with a treatment effects model

Variable name	Foreign sales > 0		Foreign sales = 0	
	Coefficient	t-statistics	Coefficient	t-statistics
<i>FCD dummy</i>	0.203**	0.046	0.053	0.25
Ln (Total assets)	-0.066***	-3.07	-0.040	-1.05
Return on assets	0.211	0.97	-1.093***	-2.67
Leverage	-0.050**	-2.21	-0.099	-1.60
Capex/sales	0.095	0.99	-0.008	-0.08
Diversification dummy	0.014	0.19	-0.008	-0.09
R&D/sales	-0.003***	-2.77	0.005	1.17
Advertising/sales	0.763	0.62	3.037	1.64
Dividend dummy	-0.224***	-4.15	-0.151**	-1.96
Intercept	0.052	0.19	0.628	1.50
Country dummies	Yes		Yes	
Industry dummies at 2-digit SIC	Yes		Yes	
Year dummies	Yes		Yes	
No. of observations	1136		434	

Table 4
Hedging premium under different firm-level internal governance mechanisms

This table displays the hedging premium for the sample with positive foreign sales split up with respect to different firm-level internal governance mechanisms. Panel A reports the results based on inside and outside ownership. Panel B reports the results for alternative measures of internal firm-level governance. The dependent variable is Ln (Tobin's Q), calculated as the log of total assets less the book value of equity plus the market value of equity in the numerator and book value of assets in the denominator. FCD dummy equals one if the firm uses currency derivatives for hedging purposes, zero otherwise. High inside (outside) ownership refers to firms where the largest blockholder is an insider (outsider) and low inside (outside) ownership refers to firms where the largest blockholder is not an insider (outsider). Institutional (non-institutional) ownership dummy equals one if the firm has (does not have) an institutional investor as a blockholder, zero otherwise. State (non-state) ownership dummy equals one if the firm has (does not have) the government as a shareholder, zero otherwise. Family (non-family) ownership dummy equals one if the firm is (not) a family firm, where a family firm is defined as a firm managed and/or owned by the members of a family, zero otherwise. Dual (non-dual) CEO dummy equals one if the firm's CEO is also (not) the chairman of the board, zero otherwise. High (low) managerial cash flow rights of the largest BH is a dummy variable that equals one if the percentage of ownership of cash flow rights by the largest managerial blockholder is greater than (lower than or equal to) its sample median, zero otherwise. High (low) managerial voting rights of the largest BH is a dummy variable that equals one if the percentage of ownership of voting rights by the largest managerial blockholder is greater than (lower than or equal to) its sample median, zero otherwise. High (low) internal governance index dummy equals one if the index value is greater than (lower than or equal to) its sample median, zero otherwise. Ln (Total assets) is the log of total assets. Return on assets is the ratio of income to total assets. Leverage is the ratio of total debt to shareholder equity. Capex/sales is capital expenditures scaled by sales. Diversification dummy takes on the value of one if the firm has at least one other business segment with a different (four-digit) SIC code, zero otherwise. R&D/sales is research and development expenses scaled by sales. Advertising/sales is the ratio of advertising expenses to sales. Dividend dummy takes on the value of one if the firm's dividend yield is greater than the median yield for the sample, zero otherwise. The standard errors are corrected for within- and across-firm correlation. The stars ***, **, and * indicate significance at the 1-percent, 5-percent, and 10-percent level, respectively. ^^, ^, and ^ indicate that the variable of interest is statistically different between two groups at the 1-percent, 5-percent, and 10-percent level, respectively.

Panel A. Hedging premium and inside/outside ownership of cash flows

All firms with foreign sales > 0								
Variable name	column (1)		column (2)		column (3)		column (4)	
	High inside ownership	Low inside ownership	High outside ownership	Low outside ownership	High outside ownership	Low outside ownership	High outside ownership	Low outside ownership
	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
<i>FCD dummy</i>	0.077^^	0.65	0.170*^^	1.77	0.243*	1.77	0.140*	1.78
Ln (Total assets)	0.002	0.05	-0.076***	-2.99	-0.076*	-1.67	-0.054**	-2.33
Return on assets	0.092	0.35	0.147	0.52	-0.073	-0.27	0.270	0.90
Leverage	-0.114***	-2.77	-0.031	-0.99	-0.038	-0.80	-0.061**	-2.39
Capex/sales	0.127	0.90	0.036	0.20	0.062	0.23	0.133	1.17
Diversification dummy	-0.166	-1.44	0.028	0.25	-0.140	-0.79	0.025	0.32
R&D/sales	-0.059	-0.67	-0.002	-0.95	0.053	0.80	-0.004***	-2.92
Advertising/sales	1.498	1.07	-0.224	-0.07	3.661	0.28	0.216	0.19
Dividend dummy	-0.195**	-2.50	-0.219***	-2.72	-0.128	-0.87	-0.249***	-4.24
Intercept	0.611*	1.86	1.099***	3.77	0.577	1.07	1.037***	5.22
Country dummies	Yes		Yes		Yes		Yes	
Industry dummies at 2-digit SIC	Yes		Yes		Yes		Yes	
Year dummies	Yes		Yes		Yes		Yes	
No. of observations	438		722		212		948	
R-square	0.480		0.437		0.613		0.413	

Panel B. Hedging premium and alternative measures of internal firm-level governance

Governance measure	All firms with foreign sales > 0					
	FCD dummy (strong governance)	t-statistics	# of firms	FCD dummy (weak governance)	t-statistics	# of firms
Institutional vs. non-institutional ownership	0.444***	2.57	179	0.123	1.55	981
Non-state vs. state ownership	0.127***	1.82	1046	0.168**	0.85	114
Non-family vs. family ownership	0.183***	2.23	845	-0.007**	-0.06	315
Non-dual CEO vs. dual CEO	0.172***	2.52	852	0.054**	0.25	291
High vs. low managerial cash flow rights (largest BH)	0.234*	1.75	285	0.119	0.98	413
Low vs. high managerial block voting rights (largest BH)	0.059	0.51	406	0.183	1.34	292
High vs. low internal governance index	0.176***	2.13	612	0.050**	0.44	548

Table 5
Hedging premium under different country-level external governance mechanisms

This table displays the hedging premium for the sample with positive foreign sales split up with respect to different country-level external governance mechanisms. Panel A reports the results based on shareholder and creditor rights, and whether the country has an English legal origin. Panel B reports the results for alternative measures of external country-level governance. The dependent variable is Ln (Tobin's Q), calculated as the log of total assets less the book value of equity plus the market value of equity in the numerator and book value of assets in the denominator. FCD dummy equals one if the firm uses currency derivatives for hedging purposes, zero otherwise. Strong shareholder (creditor) protection rights dummy takes on the value of one if the country's score on the shareholder (creditor) rights index is above the sample median value, zero otherwise. Weak shareholder (creditor) protection rights dummy takes on the value of one if the country's score on the shareholder (creditor) rights index is below or at the sample median value, zero otherwise. English legal origin dummy equals one if the country's legal origin is English, zero otherwise. High (low) efficiency of judicial system takes on the value of one if the country scores above (below or at) the sample median value, zero otherwise. High (low) public enforcement index dummy takes on the value of one if the country has a public enforcement index above (below or at) the sample median, zero otherwise. Similarly, high (low) private enforcement index dummy takes on the value of one if the country has a private enforcement index above (below or at) the sample median, zero otherwise. High (low) country-level merger activity dummy (dollar-wise and number-wise) equals one if the merger activity in the country is above (below or at) the sample median value, zero otherwise. Strong (weak) legality dummy takes on the value of one if the country's score on the legality index is above (below or at) the sample median value, zero otherwise. Ln (Total assets) is the log of total assets. Return on assets is the ratio of income to total assets. Leverage is the ratio of total debt to shareholder equity. Capex/sales is capital expenditures scaled by sales. Diversification dummy takes on the value of one if the firm has at least one other business segment with a different (four-digit) SIC code, zero otherwise. R&D/sales is research and development expenses scaled by sales. Advertising/sales is the ratio of advertising expenses to sales. Dividend dummy takes on the value of one if the firm's dividend yield is greater than the median yield for the sample, zero otherwise. The standard errors are corrected for within- and across-firm correlation. The stars ***, **, and * indicate significance at the 1-percent, 5-percent, and 10-percent level, respectively. ^^^, ^^, and ^ indicate that the variable of interest is statistically different between two groups at the 1-percent, 5-percent, and 10-percent level, respectively.

Panel A. Hedging premium and investor protection rights

All firms with foreign sales > 0												
Variable name	column (1)		column (2)		column (3)		column (4)		column (5)		column (6)	
	Strong shareholder rights		Weak shareholder rights		Strong creditor rights		Weak creditor rights		English legal origin		Non-English legal origin	
	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics	Coefficient	t-statistics
<i>FCD dummy</i>	0.281***^^^	2.46	0.097^^^	1.18	0.278***^^	2.55	0.092^^	1.07	0.260***^^^	2.54	0.014^^^	0.16
Ln (Total assets)	-0.092**	-2.34	-0.014	-0.60	-0.092***	-2.75	-0.005	-0.20	-0.054	-1.52	-0.043	-1.61
Return on assets	0.056	0.21	0.411	1.36	0.076	0.29	0.488	1.29	-0.040	-0.15	0.785***	2.59
Leverage	-0.035	-1.29	-0.078**	-2.11	-0.037	-1.35	-0.078**	-2.12	-0.038	-1.34	-0.069*	-1.84
Capex/sales	0.267	1.59	-0.044	-0.36	0.169	1.08	-0.006	-0.05	0.154	1.06	-0.004	-0.03
Diversification dummy	0.247*	1.94	-0.119	-1.43	0.165	1.42	-0.072	-0.85	0.121	1.02	-0.006	-0.08
R&D/sales	-0.005**	-2.45	1.138***	5.27	-0.004**	-2.03	1.154***	4.94	-0.004**	-2.36	1.962**	2.18
Advertising/sales	-1.131	-0.83	2.732*	1.70	0.792	0.49	1.488	1.02	0.974	0.59	1.764	1.09
Dividend dummy	-0.278*	-1.92	-0.239***	-4.56	-0.264**	-2.02	-0.241***	-4.69	-0.246*	-1.82	-0.221***	-4.62
Intercept	1.192***	4.77	0.622***	2.60	1.213***	4.57	0.516**	2.07	0.831***	2.79	0.944***	3.82
Country dummies	Yes		Yes		Yes		Yes		Yes		Yes	
Industry dummies at 2-digit SIC	Yes		Yes		Yes		Yes		Yes		Yes	
Year dummies	Yes		Yes		Yes		Yes		Yes		Yes	
No. of observations	398		753		440		703		509		643	
R-square	0.359		0.512		0.353		0.516		0.350		0.524	

Panel B. Hedging premium and alternative measures of external country-level governance

All firms with foreign sales > 0						
Governance measure	FCD dummy (strong governance)	t-statistics	# of firms	FCD dummy (weak governance)	t-statistics	# of firms
High vs. low efficiency of judicial system	0.150* [^]	1.68	780	0.175 [^]	1.48	348
High vs. low public enforcement (La Porta et al. (2003))	0.249** ^{^^}	2.29	619	0.065 ^{^^}	0.78	532
High vs. low private enforcement (La Porta et al. (2003))	0.205** ^{^^}	2.16	672	0.054 ^{^^}	0.50	479
High vs. low number-wise merger activity (Bris and Cabolis (2003))	0.190** ^{^^^}	1.90	615	0.099 ^{^^^}	0.97	509
High vs. low dollar-wise merger activity (Bris and Cabolis (2003))	0.165 [^]	1.60	587	0.112 [^]	1.18	537
Strong vs. weak legality (Berkowitz et al. (2003))	0.157* [^]	1.81	777	0.181 [^]	1.57	383

Table 6
Hedging premium under different country-level external and firm-level internal governance mechanisms

This table displays the hedging premium for the sample with positive foreign sales split up with respect to different country-level external and firm-level internal governance mechanisms. The chow test p-value is reported below each set, and indicates whether the variable of interest is statistically different between two sub-samples. The dependent variable is Ln (Tobin's Q), calculated as the log of total assets less the book value of equity plus the market value of equity in the numerator and book value of assets in the denominator. FCD dummy equals one if the firm uses currency derivatives for hedging purposes, zero otherwise. High (low) internal governance index dummy equals one if the index value is greater than (lower than or equal to) its sample median, zero otherwise. Strong shareholder (creditor) protection rights dummy takes on the value of one if the country's score on the shareholder (creditor) rights index is above the sample median value, zero otherwise. Weak shareholder (creditor) protection rights dummy takes on the value of one if the country's score on the shareholder (creditor) rights index is below or at the sample median value, zero otherwise. English legal origin dummy equals one if the country's legal origin is English, zero otherwise.

Set classification	Sample	No. obs.	FCD dummy	t-statistic
1	Low internal governance index and strong shareholder rights	131	0.113	0.41
1	Low internal governance index and weak shareholder rights	414	-0.003	-0.03
	<i>Chow test p-value</i>			<i>0.529</i>
2	Low internal governance index and strong creditor rights	138	-0.090	-0.26
2	Low internal governance index and weak creditor rights	405	-0.038	-0.35
	<i>Chow test p-value</i>			<i>0.501</i>
3	Low internal governance index and English legal origin	175	0.357*	1.74
3	Low internal governance index and non-English legal origin	371	-0.106	-0.96
	<i>Chow test p-value</i>			<i>0.090</i>
4	High internal governance index and strong shareholder rights	267	0.281***	2.63
4	High internal governance index and weak shareholder rights	339	0.086	0.89
	<i>Chow test p-value</i>			<i>0.011</i>
5	High internal governance index and strong creditor rights	302	0.263***	2.72
5	High internal governance index and weak creditor rights	298	0.240**	2.37
	<i>Chow test p-value</i>			<i>0.033</i>
6	High internal governance index and English legal origin	334	0.244**	2.40
6	High internal governance index and non-English legal origin	272	0.055	0.56
	<i>Chow test p-value</i>			<i>0.007</i>

Appendix A Description of Variables

This table provides the source and the definitions of the variables used throughout the regressions. All variables are measured at the end of each fiscal year.

Variable Name	Definition
<u>A. Firm-specific variables</u>	
Tobin's Q	Total assets less the book value of equity plus the market value of equity in the numerator and book value of assets in the denominator. Obtained from Compustat.
FCD dummy	Equals one if the firm reported that it used currency derivative contracts for hedging purposes in its 20-F form/annual report, zero otherwise.
Largest BH is an insider	Equals one if the largest blockholder (holding 10% or greater percentage of outstanding shares) is in firm management, zero otherwise. Collected from the 20-F forms and proxy statements.
Largest BH is an outsider	Equals one if the largest blockholder (holding 10% or greater percentage of outstanding shares) is not in firm management, zero otherwise. Collected from the 20-F forms and proxy statements.
Institutional investor as BH	Equals one if the firm has an institutional investor as a blockholder (holding 10% or greater percentage of outstanding shares), zero otherwise. Collected from the 20-F forms and proxy statements.
State ownership	Equals one if the firm has the government as a shareholder, zero otherwise. Collected from the 20-F forms and proxy statements.
Family ownership	Equals one if the firm is a family firm, defined as a firm managed and/or owned by the members of a family, zero otherwise. Collected from the 20-F forms and proxy statements.
Dual CEO	Equals one if the firm's CEO is also the chairman of the board, zero otherwise. Collected from the 20-F forms and proxy statements.
Cash flow rights of the largest managerial BH	Equals one if the percentage of ownership of cash flow rights by the largest managerial blockholder is greater than its sample mean, zero otherwise.
Voting rights of the largest managerial BH	Equals one if the percentage of ownership of voting rights by the largest managerial blockholder is greater than its sample mean, zero otherwise.
Internal governance index	A ranking of the strength of an internal firm-level governance system. It ranges from 0 to 7, 7 being the strongest system. This index is comprised of seven governance measures. One extra point is added for each of the following: the absence (presence) of an inside (outside or institutional investor) BH, if the CEO is not also the chairman, cash flow (voting) rights of the largest managerial BH is greater (lower) than its median value, and no discrepancy between the cash flow and voting rights of the largest BH.
Foreign sales dummy	Equals one if the firm has foreign sales greater than zero, zero otherwise.
Total assets	Firm total assets. Obtained from Compustat.
Leverage	The debt-to-sales ratio, calculated as the ratio of total debt to shareholder equity. Obtained from Compustat.
Return on assets	The ratio of net income to total assets. Obtained from Compustat.
Capex/sales	The capital expenditures divided by net sales. Obtained from Compustat.
Diversification dummy	Equals one if firm has at least one other business segment with a different (four-digit) SIC code, zero otherwise. Obtained from the Segment file of Compustat.
R&D/sales	The ratio of research and development expenses to net sales. Obtained from Compustat.
Advertising/sales	The ratio of advertising expenses to net sales. Obtained from Compustat.
Dividend dummy	Equals one if the firm's dividend yield is greater than the median dividend yield for the sample, zero otherwise. Obtained from Compustat.
<u>B. Country-specific variables</u>	
Shareholder rights	An aggregate measure of antidirector rights. Obtained from LLSV (1998). Higher values refer to stronger shareholder protection.
Creditor rights	An aggregate measure of creditor rights. Obtained from LLSV (1998). Higher values refer to stronger creditor protection.

English legal origin	Equals one if the country that the firm is located in is of English origin, zero otherwise. Obtained from LLSV (1998).
Efficiency of judicial system	Assessment of the “efficiency and integrity of the legal environment as it affects business, particularly foreign firms” produced by the country risk rating agency International Country Risk (ICR) and obtained from LLSV (1998). High scores represent higher efficiency levels.
Public enforcement	The index of public enforcement equals the arithmetic mean of: (1) Supervisor characteristics index; (2) Investigative powers index; (3) Orders index; and (4) Criminal index. Obtained from La Porta et al. (2003).
Private enforcement	The index of private enforcement equals the arithmetic mean of: (1) Disclosure Index; and (2) Burden of proof index. Obtained from La Porta et al. (2003).
Country-level merger activity (number-wise)	The ratio of the number of mergers to the total number of firms in a given country and year. Obtained from Bris and Cabolis (2003).
Country-level merger activity (dollar-wise)	The ratio of the dollar value of mergers to the total market capitalization in a given country and year. Obtained from Bris and Cabolis (2003).
Legality	Legality is derived from a principal components analysis of the covariance matrix from the efficiency of the judiciary, rule of law, corruption, risk of expropriation, and the risk of contract repudiation. Obtained from Berkowitz et al. (2003).
