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Do Investors in Controlled Firms Value Insider Trading Laws? International Evidence

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I. Introduction

Insider trading has long been debated in law and economics literature.¹ The central question is whether insider trading is efficiency-improving or efficiency-reducing for firms and the stock market as a whole. At the market level, the debate concerns the effect of insider trading on characteristics of the stock market, such as stock market liquidity and volatility and stock price efficiency or accuracy. The relevant question here is whether insider trading enhances or reduces stock market efficiency. At the firm level, the debate focuses on the impact of insider trading on the intra-firm agency conflict, the classic conflict of interest between managers or controlling shareholders (the agents) and non-controlling shareholders (the principals).² The salient question at the firm level is

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¹ For a summary of the debate, see Beny (2007a); Bainbridge (1999).

² See Jensen and Meckling (1976) for description of the agency conflict and agency costs.

whether insider trading ameliorates or worsens this conflict. This article focuses on the impact of insider trading on the agency conflict within the firm.³

The impact of insider trading on the intra-firm agency conflict is an important issue because it raises the weighty corollary question of who ought to monitor and regulate insider trading: the government, via a blanket prohibition of insider trading, versus firms and shareholders, via private contracting. There are three major views on the impact of insider trading on the agency conflict. The first position is that insider trading mitigates this conflict and therefore insider trading regulation reduces intra-firm efficiency. (Carlton and Fischel 1983). In contrast, the second position holds that insider trading exacerbates the agency conflict and consequently insider trading regulation promotes intra-firm efficiency. (e.g., Cox 1986; Manove 1989; Kraakman 1991; Klock 1994; Maug 2002).

The third position straddles the fence, maintaining that the effect of insider trading on the agency conflict is indeterminate and varies across firms. Nevertheless, according to proponents of the third view, private contracting is superior to insider trading regulation because private parties are more capable than the government of assessing the effect of insider trading on the corporation. (see, e.g., Haddock and Macey 1987; Epstein 2004).⁴ Private contracting will promote varied and efficient responses to insider trading across firms. According to those who espouse the third view, firms in

³ See, e.g., Bhattacharya and Daouk (2002) for evidence of the effects of insider trading and/or insider trading regulation on stock markets as a whole.

⁴ Carlton and Fischel (1983) may also be categorized under the third view because they consider the possibility that insider trading harms the firm by reducing liquidity of the firm's shares. But they ultimately dismiss this possibility by arguing that if it were true, we would have observed firms voluntarily banning insider trading before it became illegal in the United States.

which insider trading exacerbates the agency conflict will prohibit insider trading, while firms in which insider trading mitigates the agency conflict will permit insider trading.

Although law and economics scholars have long stressed the need for empirical evidence on the impact of insider trading on the intra-firm agency conflict (see, e.g., Carlton and Fischel 1983 and Easterbrook 1985), there were few empirical studies on this topic until recently.⁵ Because insider trading is illegal in virtually every country with a public stock market (Bhattacharya and Daouk 2002), it is impossible to conduct a direct empirical test of whether insider trading exacerbates the agency conflict and whether private contracting is superior to a mandatory ban.⁶ However, we can assess these issues indirectly by exploiting cross-country variation in the strength of insider trading laws and enforcement.⁷ If insider trading exacerbates the agency conflict, we would expect insider trading regulation (assuming it is effective) to be associated with higher corporate value because corporate value is a proxy for agency costs. (Morck, et. al. 1988).⁸ This article investigates the latter proposition by examining the relationship between the strength of a country's insider trading laws and corporate value.

⁵ The main evidence adduced by opponents of insider trading regulation in support of their deregulatory position is the historical survival of insider trading in the United States prior to the enactment of insider trading rules, without any apparent attempt by private parties to prohibit insider trading. (Carlton and Fischel 1983). According to Carlton and Fischel (1983), this evidence suggests that shareholders did not perceive insider trading to exacerbate the agency conflict because, if they had, they would have prohibited insiders from trading long before the legislature and the courts preempted the issue. In response, Judge Easterbrook (1985) argues that the historical survival of insider trading in the United States may have meant merely that the cost of such contracting was too high, not that shareholders had no desire to prohibit insider trading. (Easterbrook 1985; see also Cox 1986). Recent empirical studies on insider trading laws and enforcement include Ackerman and Maug (2006); Beny (2005, 2007a); Bhattacharya and Daouk (2002, 2005); Bris (2005); and Durnev and Nain (2005). All of these recent studies provide evidence on the cross-country implications of insider trading laws and enforcement.

⁶ Also, the near-universal illegality of insider trading arguably places the burden on opponents of insider trading regulation to show that such regulation is more costly than beneficial, since they seek to change the current status quo.

⁷ This is not possible at the domestic level unless, like Canada, a country exhibits state/provincial variation in its insider trading laws and enforcement, or unless one uses time series data for a single country that span periods before and after the enactment of insider trading legislation.

⁸ See Jensen and Meckling (1976) for the original formulation of agency costs.

Based on a simple agency model of corporate value diversion through insider trading by a controlling shareholder, I derive two empirically testable hypotheses about the relationship between corporate value and insider trading laws: (1) more stringent insider trading laws increase firm value by reducing the controlling shareholder's incentive to divert corporate value through insider trading and (2) more stringent insider trading laws and an increase in the controlling shareholder's financial stake in the firm are substitute means to mitigate the agency conflict. I test these hypotheses using firm-level data from a cross-section of large firms from twenty-seven developed countries. This article's central finding is that stronger insider trading laws and enforcement are associated with higher corporate valuation for the firms in common law countries, but not for the firms in civil law countries.⁹

Part II of this article provides an overview of existing law, economics, and finance literature that characterizes insider trading as an agency issue and presents the two hypotheses. Part III describes the data and presents descriptive statistics. Part IV outlines the empirical methodology and presents the regression results. Part V addresses the robustness of the results. Finally, Part VI concludes.

II. Prior Literature and Hypotheses

This Part summarizes prior literature characterizing insider trading as an agency issue and presents two empirically testable hypotheses.

A. Insider Trading Ameliorates the Agency Conflict between Managers and Shareholders

⁹ I do not find that cash flow ownership and insider trading laws are substitute means to control agency costs within the firm. If anything, my evidence suggests that insider trading laws and ownership are complementary ways to mitigate agency costs, although this result is generally statistically insignificant.

Manne (1966) was the first legal scholar to point out the potential beneficial role of insider trading as a form of compensation. In *Insider Trading and the Stock Market*, he argues that insider trading is valuable to firms because it motivates insiders to be more entrepreneurial. According to Manne (1966), “entrepreneurs” within the firm, and their productive output, are difficult to identify *ex ante*. Thus, if corporate insiders’ compensation is set in advance, it will be inefficient because it will not be calibrated to their *ex post* entrepreneurial activity. In contrast, when corporate insiders are allowed to engage in insider trading, they will be rewarded (via insider trading profits) in direct proportion to and contemporaneously with their innovations. In this manner, insider trading can maximize insiders’ incentives to innovate and thereby improve corporate performance.

Carlton and Fischel (1983) recast Manne’s (1966) efficient compensation thesis within the modern framework of agency and contract theory. In their view, capital and product markets do not adequately discipline or incentivize managers because these markets work imperfectly. *Ex ante* compensation contracts are also deficient because they often require costly “periodic renegotiations *ex post* based on (imperfectly) observed effort and output.” (Carlton and Fischel 1983, 869).

In contrast, insider trading enables managers to continually update their compensation in light of new information without incurring renegotiation costs. Insider trading increases managers’ incentives by linking their “fortunes more closely to those of the firm.” (Carlton and Fischel 1983, 877). More specifically, insider trading aligns managers’ and shareholders’ interests by allowing managers to profit from the increase in

firm value caused by their efforts.¹⁰ Carlton and Fischel (1983) also argue that insider trading improves the managerial labor market by reducing firms' screening and monitoring costs,¹¹ because the most capable and least risk averse managers will self-select into the firms that permit insider trading.

The theoretical economics and finance literature also contains several accounts of insider trading as a mechanism to reduce the agency conflict within the firm. Dye (1984) uses a mathematical model to prove Carlton and Fischel's (1983) claim that insider trading may increase shareholder wealth by better aligning manager and shareholder interests than standard earnings-contingent contracts. Bebchuk and Fershtman show that insider trading may enhance corporate value by increasing managers' effort levels (Bebchuk and Fershtman 1993) or by causing them to select risky but profitable investment projects that otherwise would be rejected if they were not allowed to trade on inside information. (Bebchuk and Fershtman, 1994). The mathematical proofs of these propositions formalize Carlton and Fischel's (1983) non-technical arguments. Finally, Noe (1997) demonstrates with a formal model that, even if insider trading does not increase insiders' effort levels, it may cost firms less (i.e., involve lower managerial rents) than standard compensation contracts because of a "substitution effect between explicit managerial compensation and insider trading" profits. (Noe 1997, 311). That is, when managers engage in insider trading, firms pay them lower salaries.¹²

¹⁰ In response, opponents of insider trading argue that managers can also profit from corporate failures that they have caused by taking short positions in their firms' stocks. See Part II.B below.

¹¹ Lower screening and monitoring costs imply lower agency costs.

¹² Roulstone confirms the existence of a substitution effect between insider trading and total compensation: "firms that restrict when insiders can trade pay a 4% to 13% premium in total compensation relative to firms that do not restrict insider trading, after controlling for economic determinants of compensation." (Roulstone 2003, p. 526).

B. Insider Trading Exacerbates the Agency Conflict between Managers and Shareholders

Some law and economics scholars argue that, rather than aligning shareholder and manager interests, insider trading may exacerbate the agency conflict. Kraakman (1991) argues that, through insider trading, managers may be able, *ex post*, to sabotage an efficient *ex ante* compensation contract and thereby counteract performance-based compensation schemes intended to calibrate pay to productivity. (Kraakman 1991).

Cox (1986) argues that it is very difficult in practice to ensure that those who create valuable information (i.e., entrepreneurial innovations) are the only ones within the firm who are able to profit from it. To the extent that the firm's "true" entrepreneurs cannot exclude other insiders from profiting on the positive information, their incentives to innovate will be reduced rather than increased. Furthermore, the non-excludability of insider trading profits may cause the firm's "true" entrepreneurs to conceal their information to monopolize insider trading profits, and thus reduce the flow of information and productive efficiency within the firm. (Haft 1982).

Some legal scholars also argue that allowing managers to trade on inside information may give them incentives to take on too much risk or to undertake projects that reduce corporate value. Because insider trading is more profitable when stock prices are more volatile, insider trading may encourage managers to undertake excessively risky projects (to increase volatility) that would create private opportunities for profitable insider trading but that would reduce corporate value. (Kraakman 1991). In addition, because managers can profit from insider trading regardless of corporate performance, insider trading may increase managers' incentive to under-perform by making them indifferent between good and bad corporate performance. (Anabtawi 1989; Kraakman

1991; Klock 1994). If corporate insiders are permitted to sell the firm's shares short, the potential problems of excessive risk-taking¹³ and compensation unbundling induced by insider trading may be worsened. (Klock 1994).

Several theoretical economics and finance articles also demonstrate that insider trading may worsen the agency conflict between managers and shareholders. Manove formally demonstrates how insider trading can reduce corporate value by discouraging investment because corporate insiders "with private information are able to appropriate some part of the returns to corporate investments...at the expense of other shareholders." (Manove 1989, 823).¹⁴ If shareholders suspect such appropriation, they will favor a reduction in corporate investment. Bebchuk and Fershtman (1990) show that insider trading may increase managers' incentive to "waste" corporate value by encouraging them to make decisions that maximize their potential trading profits rather than corporate value.

C. Insider Trading has an Indeterminate Impact on the Agency Conflict between Managers and Shareholders

As noted above, some scholars are agnostic about whether insider trading is harmful to the firm and suggest that the effect of insider trading probably varies across firms. (Haddock and Macey 1987; Epstein 2004).

D. Dominant Shareholders: Insider Trading and Monitoring

Another strand of insider trading literature addresses the impact of insider trading in the context where there is a dominant (controlling) shareholder in the firm. By virtue of their controlling position, large shareholders have greater access to corporate

¹³ In response, some legal scholars argue that insider trading mitigates managers' excessive risk aversion. Carlton and Fischel (1983).

¹⁴ Douglas (1989) also shows that the information asymmetry due to insider trading transfers wealth from shareholders to insiders.

management and, as a result, to material, non-public information. Thus, like managers, they can earn greater profits from trading than small shareholders. There are two conflicting views about the impact of insider trading on controlling shareholders' incentives to monitor managers.¹⁵

Demsetz and Bhide argue that insider trading increases controlling shareholders' incentives to monitor managers. Controlling shareholders are beneficial to firms, they argue, because these shareholders have greater incentives to monitor managers (and thus to mitigate the manager-shareholder agency conflict) than small, dispersed shareholders who face collective action problems. However, holding a concentrated ownership position imposes risks on the dominant shareholder, in particular the risks of holding an undiversified portfolio. (Demsetz 1986; Bhide 1993). Thus, controlling shareholders must be compensated both for assuming the risks of concentrated ownership and for monitoring managers. (Demsetz 1986; Bhide 1993). Demsetz and Bhide argue that insider trading profits are a convenient way to compensate controlling shareholders for these activities. (Demsetz 1986; Bhide 1993). Restricting insider trading may therefore have a negative impact on corporate value by reducing controlling shareholders' incentives to monitor by raising the costs and liabilities of active shareholding. (Demsetz 1986; Bhide 1993).

In contrast, Maug (2002) suggests that insider trading may adversely affect controlling shareholders' incentives to monitor managers. In Maug's view, large shareholders may use their dominance in the service of their own (and managers') interests at the expense of small shareholders if they are permitted to engage in insider

¹⁵ See Jensen and Meckling (1976); Demsetz (1986); Shleifer and Vishny (1986); Bhide (1993).

trading.¹⁶ Using a mathematical model, Maug shows how insider trading can induce large shareholders to expropriate corporate value from small investors rather than monitor managers. In the model, managers may bribe dominant shareholders not to discipline them when they are performing poorly by sharing private information with those shareholders. If the firm's stock is sufficiently liquid, trading on such information is profitable, and large shareholders may prefer to trade on this information instead of monitoring managers (i.e., foregone trading profits represent the opportunity cost of monitoring). In summary, Maug's model suggests that banning insider trading may align the interests of controlling and small shareholders, while permitting insider trading may increase the likelihood that dominant shareholders will collude with shirking managers, in exchange for trading profits at the expense of minority shareholders and corporate performance.

The impact of insider trading on managers' and controlling shareholders' incentives and thus on the agency conflict is ultimately an empirical question, which has yet to be satisfactorily answered. (Easterbrook 1985). This article attempts to answer this question by investigating the relationship between corporate valuation and insider trading laws across countries.¹⁷ It builds upon La Porta et al.'s (2002) empirical study of the relationship between investor protection and corporate valuation.

¹⁶ Along similar lines, La Porta et al. (1999) suggests that the primary agency problem in firms with controlling shareholders "is not the failure of the Berle and Means (1932) professional managers to serve minority shareholders, but rather the...expropriation of such minorities...by controlling shareholders." (La Porta et al. (1999), pp. 3-4). The implication is that the law ought to be concerned not only with preventing managerial value diversion but also with containing expropriation by large shareholders. (see, e.g., La Porta et al. 1998; La Porta, et al. 1999; and Bukart and Panunzi 2006).

¹⁷ The article by Bhattacharya and Daouk (2002) is distinguishable in that they investigate the relationship between the enactment and enforcement of insider trading laws and the *aggregate* cost of capital across countries. Moreover, while Masson and Madhavan (1991) examine the relationship between executives' insider trading and the marginal value of the firm, their study differs from the present study in several important respects: it is based solely on U.S. data, it considers only legal (not illegal) insider

E. Hypotheses

This article tests two hypotheses regarding the effect of insider trading regulation on the agency conflict in firms that have a controlling shareholder.¹⁸

Hypothesis 1 (H1). *More stringent insider trading laws increase firm value by reducing the controlling shareholder's incentive to divert corporate value through insider trading.*¹⁹

The first hypothesis (H1) addresses the first order effect of insider trading laws on corporate value. As noted above, the literature contains conflicting accounts of the effect of insider trading on the agency conflict (and hence corporate value). Bhide (1993) and Demsetz (1986) argue that insider trading is beneficial because it compensates controlling shareholders for the valuable monitoring role that they play. The implication is that prohibiting insider trading will reduce controlling shareholders' incentives to monitor managers, to the detriment of corporate value. (Bhide 1993). Maug (2002) counters with the claim that prohibiting insider trading will increase controlling

trading, and it does not address the role of insider trading law/enforcement as a potential constraint upon executives' incentives to trade.

¹⁸ I focus on firms with a controlling shareholder for two reasons. First, while a substantial part of the prior literature focuses on the conflict between managers and shareholders, the conflict between managers and controlling shareholders on the one hand and minority shareholders on the other hand is probably the more salient conflict outside of the United States. (La Porta et al. 2002). Since I test the hypotheses on international data, this consideration motivates my focus on firms with a controlling shareholder. Second, testing the implications of insider trading laws in firms with dispersed share ownership would require data on executive compensation, since insider trading profits may substitute for other forms of compensation and insider trading may thus have a non-discernable impact on corporate value (assuming there are no incentive effects). (Roulstone 2003; Noe 1997). Yet, these data are not readily available for foreign corporations. In contrast, data on the existence of controlling shareholders and their ownership and control stakes are available. Controlling shareholders are subject directly or indirectly to the insider trading prohibition in all of the countries in my sample.

¹⁹ The alternative hypothesis is that insider trading laws have no impact (or a negative impact) on corporate value.

shareholders' incentives to monitor managers instead of colluding with them at the expense of minority shareholders. Under Maug's (2002) account, insider trading laws force controlling shareholders to internalize the costs that insider trading imposes upon minority shareholders, while reducing their benefits from insider trading. H1, which adopts Maug's (2002) view as the null hypothesis, puts these competing claims to the empirical test.

Hypothesis 2 (H2). *Insider trading laws and the controlling shareholder's financial stake in the firm are substitute means to mitigate the agency conflict. Therefore, the more restrictive the insider trading prohibition, the lower the marginal increase in corporate value from an increase in the controlling shareholder's financial stake in the firm.*²⁰

The second hypothesis (H2) predicts a substitution effect between the insider trading prohibition and the controlling shareholder's financial stake in the firm.²¹ For the reasons explained above, the insider trading prohibition may mitigate the conflict of interest between controlling and minority shareholders. The financial stake of the controlling shareholder may also mitigate this conflict.²² Assuming that insider trading is costly to the firm, the controlling shareholder will bear a greater share of this cost as

²⁰ The alternative hypothesis is that insider trading laws and the controlling shareholder's financial stake are complementary ways to mitigate the agency conflict.

²¹ This prediction is analogous to the hypothesized substitution effect between executive compensation and managers' profits from insider trading. (Carlton and Fischel 1983). See Easterbrook (1985) on the potential substitutability between insider trading laws and other mechanisms to mitigate the agency conflict between managers and shareholders. See also Bukart and Panunzi (2006), who discuss substitution between investor protection laws and alternative agency cost control devices.

²² This is the established insight that greater cash flow ownership by corporate insiders (managers, large shareholders, etc.) lowers their incentives to divert corporate wealth from outside investors. For example, see Jensen and Meckling (1976); Shleifer and Vishny (1986).

her financial stake in the firm increases. Thus, her incentive to trade will fall as her ownership stake in the firm increases if insider trading is detrimental to the firm.

Assuming insider trading is detrimental, the substitution hypothesis (H2) predicts that, as the controlling shareholder's financial stake increases, the marginal valuation effect of an increase in the stringency of the insider trading prohibition will fall.

(Equivalently, as the insider trading prohibition becomes more stringent, the marginal valuation effect of an increase in the controlling shareholder's financial stake will fall.)

Table 1 summarizes the article's empirically testable hypotheses.

III. Data and Summary Statistics

In this Part, I describe the data and present summary statistics.

The Data

La Porta and his co-authors shared their firm-level data with me. They assembled valuation and ownership information for the twenty largest firms (based on market capitalization) in twenty-seven developed countries (based on 1993 per capita income).

La Porta et al. (2002) focuses on large firms because it is more difficult to detect the beneficial impact of investor protection laws on corporate value for large firms.²³ Their sample excludes firms that are foreign-affiliates as well as banks and other financial institutions. Most of the data are for 1995 and 1996, but a few data points come from 1997 and two observations are from before 1995. (La Porta et al. 2002).

Like La Porta et al. (2002), I consider only firms that have an identifiable controlling shareholder. I focus on this type of firm because controlling shareholders

²³ As La Porta et al. (2002) point out, large firms may have several alternative means to constrain expropriation of minority investors, "including public scrutiny, reputation-building, foreign shareholdings, or listings on international exchanges." (La Porta et al. 2002, p. 16). Consequently, the benefits of legal constraints ought to be harder to detect in large firms.

have superior access to inside information relative to small shareholders and therefore have a greater opportunity to engage in insider trading by colluding with managers at the expense of small shareholders. At the same time, controlling shareholders are better able to monitor managers in the interest of small shareholders and presumably will do so if they are adequately compensated. These competing tendencies highlight the struggle between the net effect of insider trading on controlling shareholders' incentive to monitor managers and expropriate value from minority shareholders. (compare Bhidé (1993) and Demsetz (1986) with Maug (2002)). I adopt La Porta et al.'s (2002) definition of control where a shareholder is deemed to have control over the firm if the shareholder owns ten percent or more of the firm's voting shares.

Dependent Variable

The dependent variable in this study is "Tobin's Q," a measure of corporate valuation and proxy for agency costs commonly used in corporate finance literature. Tobin's Q is the ratio of the market value of the firm to the replacement cost of its assets.²⁴ A larger Tobin's Q suggests that the market values the firm more highly than firms with a lower Tobin's Q. Higher Tobin's Q may result from the market's optimism about the firm's future growth prospects because of good management, lower agency costs, favorable market conditions, or a high level of goodwill. I use La Porta et al.'s (2002) measure of Tobin's Q, which they define as "the book value of assets minus the book value of equity minus deferred taxes plus the market value of common stock" (i.e., the market value of assets) divided "by the book value of assets." (La Porta et al. 2002,

²⁴ Tobin's Q is not a perfect measure of firm valuation, since the numerator partly reflects the market value of intangible assets, but the denominator does not include the firm's investments in intangible assets. See Demsetz and Villalonga (2001) for a more thorough discussion of the pros and cons of Tobin's Q relative to alternative valuation measures. Nevertheless, it is one of the most commonly used measures of corporate value in the literature.

p. 1156). Controlling for other factors that may affect corporate valuation, if insider trading laws mitigate the agency conflict and thereby reduce agency costs, firms in countries with more stringent insider trading laws ought to have higher Tobin's Qs.

Independent Variables

Both countries' insider trading laws and controlling shareholders' financial stakes in firms may influence these shareholders' choice between monitoring and colluding with managers. Thus, I include measures of these characteristics as independent variables in the regressions presented in Part IV.

Hypothesis 1 (H1) predicts that firms in countries with more stringent insider trading laws have higher market valuations because such laws reduce controlling shareholders' incentive to divert corporate value through insider trading. As a measure of the stringency of insider trading laws, I use Beny's (2005) insider trading law index (*ITL*). *ITL* is an index of five substantive elements of each country's insider trading law: (1) whether the law prohibits insiders from tipping outsiders; (2) whether the law prohibits trading by tippees²⁵; (3) whether the law provides a private right of action to investors who traded opposite the insider(s) who traded in violation of the country's insider trading law; (4) whether the potential damages are a multiple of the insider's trading profits; and (5) whether violation of the law is a criminal offense.²⁶ Each element is assigned the value of zero or one, and the total *ITL* index is the sum of the individual elements. Thus, *ITL* equals five in countries with the most prohibitive insider trading laws (e.g., the United States), and *ITL* equals zero in countries with the least prohibitive

²⁵ Tippees are outsiders who receive material non-public information from corporate insiders who are prohibited from trading on the basis of such information themselves.

²⁶ In Beny (2007a) I explain in more detail the rationale for including each element of the law in the insider trading law index.

insider trading laws (e.g., Mexico and Norway).²⁷ The insider trading laws of all the countries in the sample prohibit insider trading by controlling shareholders, either directly or indirectly. Thus, at least in theory, controlling shareholders who engage in illegal insider trading in these countries are subject to the sanctions coded in the Beny (2005) index.

The insider trading laws on the books are one matter. Whether they are enforced and to what degree is another matter altogether because the laws' deterrent effect is a function of the probability that they will be enforced. (see, e.g., Zimring and Hawkins, 1973). Unfortunately, reliable international data on the frequency and degree of insider trading enforcement is not available. Thus, for the time being, I must rely on a fairly rudimentary enforcement measure. That measure is a dummy variable that is equal to one if a country's insider trading law was enforced at least once prior to 1994, and zero otherwise.²⁸ I call this measure *Enforced* and I include it as an independent variable in the regressions. I also include the interaction between (i.e., the product of) *ITL* and *Enforced* in the regressions.

The underlying data from which I construct the variable *Enforced* are from Bhattacharya and Daouk (2002), who report the year in which over one hundred countries enforced their insider trading laws for the first time. This measure of enforcement is admittedly problematic. That a country has enforced the law at least once by 1994 does not provide much insight on the frequency and degree of enforcement. Nevertheless, it

²⁷ All of the countries in the sample had insider trading laws on the books as of 1994. In fact, most stock markets have insider trading laws, but the rate and timing of enforcement varies considerably across markets. See Bhattacharya and Daouk (2002) and Beny (2007b).

²⁸ I choose 1994 as the cut-off date because the dependent variables come from around the period 1995-1996 and because the insider trading law indices are based on the sample countries' insider trading rules as they existed around the same period. Both the content and the enforcement of these laws may have changed in many of these countries since 1994. See Herrington (2004) for more recent measures of insider trading rules and enforcement across countries.

may be a proxy (even if a noisy one) for active enforcement based on the logic that having been enforced once, a law is more likely to be enforced again. It may also distinguish sham regimes from non-sham or partially-sham regimes. H1 predicts that the regression coefficients on both *Enforced* and the product of *ITL* and *Enforced* will be positive.

Hypothesis 2 (H2) predicts a substitution effect between the insider trading prohibition and the controlling shareholder's financial stake in the firm. That is, H2 predicts that as the controlling shareholder's financial stake increases, the marginal positive effect (on corporate value) of an increase in the stringency of the insider trading prohibition will fall. As a measure of the controlling shareholder's financial stake, I use La Porta et al.'s (2002) measure of the proportion of the firm's cash flow rights directly and indirectly owned by the controlling shareholder. I control for this measure directly in the regressions because, as noted above, when the controlling shareholder has a greater financial stake in the firm, she will bear a greater proportion of any losses caused by the agency conflict that may be exacerbated by insider trading. In addition, to test H2, I include the interaction between (i.e., the product of) the insider trading law index, *ITL*, and the controlling shareholder's financial stake as a separate independent variable in the regressions. H2 predicts that the regression coefficient on this interaction term will be negative.

Control Variables

I include several additional control variables in the regressions below. Prior research shows that corporate valuation is positively related to the firm's investment opportunities. Following La Porta et al. (2002), I use sales growth as a proxy for the

firm's investment opportunities. La Porta et al. define sales growth as the average annual rate of growth of the firm's sales for the previous three-year period (or fewer years, if three years' of sales data are unavailable).

Prior research also demonstrates that common law legal origin is positively related to the level of investor protection in a country and to the country's degree of financial development and corporate valuation. (see, e.g., La Porta et al. 1997, 1998, 2002).²⁹ Conversely, civil law legal origin is negatively related to investor protection, financial development, and corporate valuation. (Id.). Therefore, I include a dummy variable that equals one if the firm's country is a common law country and zero if the firm's country is a civil law country. I also control for industry because corporate valuation is likely to vary systematically by industry, as discussed below.

The data are described in Table 2.

Summary Statistics

Table 3 presents the mean and median values of several key variables for the full sample and for each individual country in the sample. I divide the sample into two regimes: Low ITL and High ITL. The cutoff between High ITL and Low ITL is the median value of the interaction term, $ITL * Enforced$, which equals two. I classify countries with a value of $ITL * Enforced$ that is greater than the median of two as High ITL regimes, while I classify those with a value of $ITL * Enforced$ that is less than or equal to the median of two as Low ITL regimes. Consistent with H1, the High ITL countries have higher mean and median values of *Tobin's Q* than the Low ITL countries. The t-test statistic reveals that the difference in mean *Tobin's Q* between the High ITL and the Low

²⁹ Roe (2006) argues, however, that politics explains different levels of financial development across countries better than legal origin.

ITL countries is statistically significant at the 1% level. However, the difference in median *Tobin's Q* between the High ITL and the Low ITL countries is not statistically significant.

Consistent with H2, Table 3 also shows that the controlling shareholder tends to own a larger fraction of the firm's cash flows in the Low ITL countries than in the High ITL countries.. The differences in both mean and median cash flow ownership between the two regimes are statistically significant at the 1% level. Finally, mean and median sales growth are higher in the High ITL countries than in the Low ITL countries, and the difference is statistically significant at the 10% and 1% levels, respectively. This suggests that the firms in the High ITL countries tend to have greater investment opportunities than the firms in the Low ITL countries.

Table 4 presents the means by legal origin. The common law countries in the sample have a greater average value of *ITL* than the civil law countries in the sample. This difference is statistically significant at the 1% level. Nearly half of the common law countries have enforced their insider trading laws at least once. In comparison, only 25% of the civil law countries have enforced their insider trading laws at least once. This difference is statistically significant at the 1% level. Average *Tobin's Q* is higher for the firms in civil law countries than for the firms in common law countries, and the difference is statistically significant at the 1% level. Finally, mean sales growth, a proxy for investment opportunities, is not significantly different between the common law and civil law firms.

Table 5 presents simple correlations highlighting the relationship between *Tobin's Q* and several key variables. *Tobin's Q* is positively correlated with *ITL* (correlation

coefficient of 0.09 and 5% statistical significance) and *Enforced* (correlation coefficient of 0.11 and 1% statistical significance). Although they are not large, these correlations are consistent with H1, which predicts a positive relationship between insider trading law and corporate valuation (see Table 1). *Tobin's Q* is also positively correlated with sales growth (correlation coefficient of 0.23 and 1% statistical significance). While the magnitudes of the foregoing correlation coefficients are not large, they are consistent with ex ante expectations. Controlling for other factors that may affect corporate valuation, multivariable regression analysis will reveal whether the positive association between *Tobin's Q* and insider trading laws withstands deeper scrutiny.

IV. Methodology and Regression Results

A. Methodology

To test Hypotheses 1 and 2 (H1 and H2), I estimate variations on the following basic regression:

$$Tobin's\ Q = B_0 + B_1SalesGrowth + B_2ITL + B_3Ownership + B_4ITL*Ownership + e$$

where *Tobin's Q* (the dependent variable) is a measure of corporate valuation, *SalesGrowth* is the average annual rate of sales growth for to the previous three years, *ITL* is the insider trading law index, *Ownership* is the controlling shareholder's financial stake (cash flow rights) in the firm, and *ITL*Ownership* is the product of the two previous variables. H1 predicts that B_2 will be positive, while H2 predicts that B_4 will be negative. I also report alternative specifications to the basic regression, as explained below. I consider a coefficient to be statistically significant if it is at least significant at the 10% level.

I use random effects maximum likelihood estimation because the errors are not independent within countries and this methodology takes both within and between country variation into account, adjusting the standard errors to reflect the correlation among observations from the same country. In all of the regressions reported below, the dependent variable is the log of 1 plus *Tobin's Q*. I take the log of *Tobin's Q* because its distribution is skewed to the right, and a log transformation of *Tobin's Q* yields a more normal distribution. Each firm's *Tobin's Q* is adjusted by industry, i.e., for each firm *Tobin's Q* equals its *Tobin's Q* minus the world-wide median *Tobin's Q* for all of the firms in the same industry. The rationale for this adjustment is to eliminate industry-specific components of valuation.

B. Results

Table 6 presents the results of random effects regressions. The regressions in Panel A use the insider trading law index, *ITL*, while the regressions in Panel B use the interaction term, *ITL*Enforced*. In all of the regressions in both panels, the coefficient on sales growth is positive and significant. In column (1) of Panel A, the coefficient on *ITL* is positive, consistent with H1 (see Table 1); however, it is statistically insignificant. In column (2) of Panel A, the coefficient on cash flow ownership of the controlling shareholder is positive and significant at the 10% level. In column (3) of Panel A, the coefficient on the interaction, *ITL*Enforced* and cash flow ownership is positive and significant at the 10% level, suggesting that cash flow ownership and insider trading laws are complementary. This result is inconsistent with H2 (the "Substitution" Hypothesis), which predicts a negative coefficient on the interaction between *ITL* and cash flow ownership (see Table 1). Finally, none of the coefficients on the independent variables,

except sales growth, are statistically significant when I include them jointly in a single regression in column (4) of Panel A.³⁰ The regressions in Panel B, which replaces *ITL* with *ITL*Enforced* but are otherwise identical to the regressions in Panel A, yield similar results to those in Panel A.

It may be inappropriate to lump all of the firms together, as I do in Table 6, without allowing for heterogeneity – that is, systematic differences in the effect of insider trading laws on agency costs – among the sample firms. Prior research has shown that financial markets and corporate governance structures differ significantly between common law and civil law countries (see, e.g., La Porta et al. 1997, 1998). Consistent with this research, I find significant differences by legal origin among the firms and countries in my sample. For instance, the common law firms tend to have significantly more liquid shares than the civil law firms. In addition, the ownership and control stakes of controlling shareholders tend to be more closely aligned in the common law firms than in the civil law firms. Moreover, controlling shareholders are more likely to be corporations (as opposed to families, the state or financial institutions) in the common law firms relative to the civil law firms. Finally, the common law countries have significantly greater investor protections (as measured by La Porta et al.'s (1998) original anti-director rights index), a significantly greater frequency of insider trading law enforcement (as measured by the variable *Enforced*), significantly more liquid stock markets, and a significantly greater frequency of corporate acquisitions relative to the civil law countries.

Therefore, I allow for heterogeneity between the common law and civil law firms by interacting the variables of interest with the dummy variable for common law origin in

³⁰ This may result from multicollinearity among these variables.

a new set of regressions.³¹ I also address multicollinearity between *ITL* and the interaction terms by centering *ITL* on its sample mean. The dependent variable is still the log of 1 plus *Tobin's Q*, where, as explained above, *Tobin's Q* is adjusted by industry. The independent variables are sales growth, cash flow ownership, centered-*ITL*, and several interaction terms between common law origin and various other variables that I explain as I present the results. The results are reported in Table 7.

In column (1) of Table 7, the coefficient on centered-*ITL* is negative but insignificant, while the coefficient on the interaction between centered-*ITL* and common law is positive and significant at the 1% level. The regression in column (2) is the same as the regression in column (1), except that in column (2) I control for common law origin. This has two effects: First, the coefficient on centered-*ITL* becomes significant at the 10% level; and second, the net effect of cash flow ownership becomes negative for the common law firms.

In columns (3) and (4) of Table 7, I replace centered-*ITL* with the interaction between centered-*ITL* and *Enforced*. The results in columns (3) and (4) are consistent with those in columns (1) and (2). The coefficients on the centered-*ITL***Enforced* are negative (albeit insignificant) in columns (3) and (4), while the coefficients on the interaction between centered-*ITL***Enforced* and common law origin are positive and significant at the respective 1% and 5% levels for the firms in common law countries.³²

The regressions in Table 7 also suggest that although cash flow ownership is generally

³¹ While country fixed effects estimation would be a preferable approach, I am unable to run fixed effects regressions because the insider trading law variables already serve as country dummy variables. Also, I do not split the sample into common law and civil law firms because that would reduce the variation among the independent variables. Below, I discuss the effect of controlling explicitly for several factors that one may expect to differ systematically between the common and civil law countries and firms.

³² The regression in column (4) differs from the regression in column (3) only in that it controls for common law origin.

associated with greater corporate valuation, (i.e., cash flow ownership by the controlling shareholder has an incentive effect), this effect is stronger for the firms in civil law countries than for the firms in common law countries.³³ Inconsistent with H2, the coefficients on the interaction terms between cash flow ownership and the insider trading measures are positive (see rows (8) – (11)), suggesting that cash flow ownership and insider trading laws are complements rather than substitutes. However, these coefficients are insignificant.

In summary, the results in Table 7 suggest that H1 accurately describes the firms in common law countries but that H1 does not accurately describe the firms in civil law countries. Specifically, insider trading laws are associated positively with corporate valuation for the firms in common law countries (see rows (4) and (5) of Table 7). In contrast, for the firms in civil law countries, insider trading laws are (at best) irrelevant to corporate valuation (see row (3) of Table 7) and (at worst) negatively associated with corporate valuation (see row (2) of Table 7). While cash flow ownership of the controlling shareholder is generally positively associated with corporate valuation for the firms in civil law countries, the results on cash flow ownership are mixed for the firms in common law countries. Finally, inconsistent with H2, there does not appear to be a substitution effect between insider trading law and the controlling shareholder's equity stake in the firm. To the contrary, the coefficients in rows (8) through (11) in Table 7 suggest that, if anything, there is a complementary relationship between cash flow ownership and insider trading law. However, this relationship is statistically insignificant.

³³ This result is consistent with Durnev and Kim (2005), who find that the incentive effect of cash flow ownership is more important when investor protection is weaker.

V. Robustness Checks

In this section, I address several potential robustness concerns. First, I investigate whether the results are robust to controlling for a firm's industry. The regressions in Tables 7 and 8 do not control for industry. However, corporate valuation may vary systematically by industry. (see, e.g., Demsetz and Lehn 1985). Industry variation in corporate valuation may result in some industries being inherently more prone than others to private benefits extraction. (i.e., "amenity potential", according to Demsetz and Lehn 1985). Another reason for industry variation in valuation may stem from different industries being at different stages of growth. (La Porta et al. 2002). Thus, a common approach in the literature is to control for industry in corporate valuation regressions. (see, e.g., Demsetz and Lehn 1985; Morck et al. 1988; and Claessens, et al. 2002). I add industry dummies to the regressions and substitute La Porta et al.'s (2002) industry adjusted sales growth variable for the raw sales growth measure. La Porta et al. (2002) define industry adjusted sales growth as the difference between the firm's sales growth and the world median sales growth among firms in the same industry. Using industry adjusted sales growth instead of raw sales growth controls for the possibility "that different industries may be at different stages of maturity and growth that determine their valuations." (La Porta et al. 2002, p. 1159).

Second, I address the potential endogeneity of corporate ownership. Thus far, I have assumed that the controlling shareholder's ownership stake is exogenous, i.e., determined independently of the country's insider trading laws. This assumption may be incorrect. La Porta et al. (1998) show that ownership tends to be more concentrated in countries with weak investor protections than in countries with strong investor

protections. Similarly, in other work I show that ownership concentration is greater in countries with lax insider trading laws than in countries with stringent insider trading laws, controlling for legal origin, anti-director rights, and other factors relevant to ownership concentration (Beny 2005). If the controlling shareholder's ownership stake is endogenous to the country's legal rules governing financial markets, the results in Table 7 may be biased. I address this issue in the same manner as La Porta et al. (2002). They address the issue by considering only "within-country variation in cash-flow ownership (fixed effects estimation), which is arguably more exogenous to the legal regime," by replacing the raw measure of the controlling shareholder's cash flow ownership with the difference between the controlling shareholder's cash flow ownership at the firm level and the country average of the same variable. (La Porta et al. 2002, p. 1166).

The results of the foregoing adjustments are presented in Table 8. A comparison of Tables 7 and 8 reveals that the results are essentially the same after I make these adjustments. The major differences between Tables 7 and 8 are that: (1) most of the statistically significant coefficients in Table 7 become even more significant in Table 8; (2) the coefficient on centered-*ITL*Common Law* becomes slightly smaller (compare row (4) in Table 7 with the same row in Table 8); (3) the coefficients on centered-*ITL*Enforced*Common Law* decrease in magnitude (compare row (5) of Table 7 with the same row in Table 8); and (4) the positive coefficient on cash flow ownership (row (6) in Tables 7 and 8) becomes significant at the 5% level in every regression in Table 8, in contrast to Table 7, where the coefficient on cash flow ownership (row (6)) is insignificant in column (1) and significant at only the 10% level in column (2). Otherwise, the results in Tables 7 and 8 are substantively the same.

Another concern is whether the results are influenced by omitted variables. As discussed above, heterogeneity in the relationship between insider trading laws and corporate valuation among the sample firms may result from systematic differences between common law and civil law countries in factors relevant to the relationship between insider trading laws and corporate valuation. These factors include various financial, market, regulatory and institutional characteristics. In Table 7, I addressed this issue by interacting the insider trading law and ownership variables with common law origin. However, if the data are available, it is preferable to control directly for the relevant factors that may systematically differ between common law and civil law countries.

I address omitted variables by explicitly controlling for several potentially relevant financial, market, regulatory and institutional characteristics of the sample countries and firms, including: (1) enforcement environment and judicial efficiency; (2) liquidity of the firm's shares and the stock market; (3) corporate disclosure; (4) market participants' perception of the severity of insider trading in the stock market; (5) the firm's control structure and the strength of the country's corporate law; (6) the market for corporate control; and (7) the controlling shareholder's identity. I explain the rationale and effect of controlling for each of these factors in turn.³⁴

First, the results may derive from the general quality of the legal system rather than insider trading law if countries with more stringent insider trading laws also have more stringent enforcement, stronger rule of law, or more efficient judiciaries than countries with less stringent insider trading laws.³⁵ I alternately control for each of these

³⁴ I do not present the results in the interest of brevity.

³⁵ Beny's (2005) evidence suggests that this is the case.

country characteristics using the following variables: the dummy variable *Enforced*, which is a dummy variable equal to one if the country enforced its insider trading law for the first time by 1994 and zero otherwise; a measure of the rule of law from La Porta et al. (1998); and an index of judicial efficiency from La Porta et al. (1998). Table 2 describes these variables in greater detail. The results are robust to controlling for each of these variables.

Second, the different relationship between insider trading laws and valuation between the common law and civil law firms may result from systematic differences in share liquidity between the two legal systems. Specifically, if common law firms tend to have more liquid shares than civil law firms, and if there is a positive relationship between stock market liquidity and insider trading laws,³⁶ the positive relationship observed between valuation and insider trading laws among the common law firms may stem from the fact that these firms have more liquid shares than civil law firms³⁷ since investors are willing to pay a liquidity premium. (Amihud and Mendelson 1986; La Porta et al. 2002).

I investigate the effect of liquidity by controlling for both stock market liquidity and individual firm liquidity using data from the World Bank and Datastream. Both liquidity measures are described in detail in Table 2. These data confirm that both stock

³⁶ Georgakopoulos (1993) argues that it is only when the stock market becomes sufficiently liquid that there is adequate social demand for insider trading regulation. Beny's (2007b) finding that countries with more liquid stock markets are more likely to pass and enforce insider trading laws than countries with less liquid stock markets is consistent with this claim. The explanation could be that insider trading is more profitable and thus more likely to occur the more liquid is the stock market, other things equal (Maug 2002). But see Bhide (1993), who argues that causality runs from insider trading laws to liquidity, rather than the reverse. (Bhide 1993). In any event, stock markets do tend to be more liquid in countries with more stringent insider trading laws and enforcement. (Bhattacharya and Daouk, 2002; Beny (2005, 2007a).

³⁷ Civil law firms' shares may be relatively illiquid because ownership is more concentrated among these firms. According to Bhide (1993), "when stockholding is fully diffuse, the firm's stock is likely to be the most liquid." (Bhide 1993, pp. 45-46). Consistent with this claim, Eleswarapu and Krishnamurti (1999) find that ownership concentration and liquidity are inversely related among Indian firms.

markets and individual firm stocks are more liquid in the common law sample countries.³⁸ As expected, the coefficients on both stock market liquidity and firm liquidity are positive and significant in the Tobin's Q regressions. However, the results are robust to controlling for both liquidity measures.³⁹

Third, the regressions in Table 7 do not control for the quality of corporate disclosure. Academics and lawmakers have long noted the close relationship between disclosure rules and insider trading laws. More punctual and higher quality disclosure ought to reduce insiders' opportunity to trade profitably relative to the rest of the market. (Baiman and Verrecchia 1996; Fried 1997; Maug 2002; Shin 1996).⁴⁰ I control for two measures of disclosure. First, I control for the quality of accounting standards, as reported in La Porta et al. (1998). This index ranks countries according to the quality of their corporate disclosure practices as of 1990. Second, I control for a measure of legal disclosure requirements, constructed by La Porta et al. (2006). This index measures how much corporate governance-relevant information firms are legally required to include in their offering prospectuses. I describe both disclosure variables in more detail in Table 2. Alternately controlling for these disclosure variables has no effect on the results reported above.

³⁸ Ownership (of the controlling shareholder) is also more concentrated among the civil law firms (see Table 4).

³⁹ La Porta et al. (2002) address liquidity indirectly by investigating whether the sample firms that have American Depository Receipts (ADRs) traded in the U.S. have higher valuations than those without ADRs. They find a small positive effect of ADRs for the common law firms but not for the civil law firms, which is "inconsistent with the view that liquidity drives [their finding that valuation is greater for common law firms than for civil law firms] since, on that theory, the benefit of an ADR for valuation ought to be higher in less liquid markets (in civil law countries)." (La Porta et al. 2002, p. 1165).

⁴⁰ Indeed, an important pillar of U.S. insider trading legislation is the "disclose or abstain" rule, which requires that insiders either disclose material nonpublic information or refrain from trading on the basis of such information. Several other countries effectively follow the "disclose or abstain" approach.

Fourth, the results may arise because I do not control for the public perception of insider trading. A perception that insider trading is more prevalent in common law countries may explain why insider trading regulation is more strongly and positively associated with corporate valuation in such countries. To address this issue, I control for the perception of insider trading, using a measure from the World Economic Forum's Global Competitiveness Report (1996), which is described in Table 2. Controlling for the perception of insider trading does not alter the results. In fact, for the countries in my sample, the public perception of insider trading is greater among the civil law countries than among the common law countries. This would seem to suggest a plausible alternative interpretation of the results; namely, that insider trading laws are perceived to be less effective in civil law countries. That is, holding constant the public perception of insider trading activity, the investing public may view insider trading regulations to be less effective at controlling such activity in civil law countries than in common law countries. However, it may also mean that there are offsetting benefits to insider trading in civil law countries. I discuss these issues in more detail below.

Fifth, the results may result from systematic differences in controlling shareholders' incentives and ability to extract private benefits. Such differences may result from systematic differences in corporate control structures, corporate laws, or some combination thereof, between civil law and common law countries. Consider Maug's (2002) theoretical framework in which large shareholders face a tradeoff between monitoring and engaging in insider trading.⁴¹ Other things equal, the greater the

⁴¹ Managers may bribe large shareholders not to monitor by giving them private information on which they can profitably trade. (Maug 2002). If large shareholders' marginal payoffs from trading are greater than their marginal payoffs from monitoring, at the margin they will choose trading over monitoring. (Maug 2002).

controlling shareholder's incentives and ability to extract private benefits, the more likely she is to trade rather than to monitor at the margin.⁴² Two characteristics that have a strong influence on the controlling shareholder's incentives and ability to extract private benefits are the firm's control structure and the country's corporate laws.⁴³ I therefore control for both of these characteristics.

I use one firm-specific and one country-specific proxy for the controlling shareholder's incentives and ability to extract private benefits. As a proxy for the controlling shareholder's incentives to extract private benefits I use the "control wedge", which is the divergence between the controlling shareholder's control and ownership stakes from La Porta et al. (2002).⁴⁴ The larger the control wedge, the greater the deviation from one-share-one-vote, and thus the greater the controlling shareholder's incentives and ability to extract private benefits at the expense of minority shareholders. (Grossman and Hart 1988; Morck, Shleifer, and Vishny 1988; Harris and Raviv 1988; Shleifer and Vishny 1997; Bebchuk, Kraakman, and Triantis 2000; and La Porta et al. 2002). Consistent with this, empirical research has shown that there is a tradeoff between ownership and control, with corporate valuation increasing in the controlling shareholder's cash flow ownership (the *incentive effect*) and decreasing in the controlling shareholder's voting control (the *entrenchment effect*). (Morck, Shleifer, and Vishny

⁴² However, for this logic to explain the results in Tables 7 and 8, it ought to be the case that controlling shareholders have greater incentives to expropriate private benefits in the common law countries. But that does not describe the empirical pattern revealed in the law and finance literature.

⁴³ La Porta et al. (2002) find that common law origin and stronger anti-director rights are associated with higher corporate valuation for their same sample of firms. My results may be driven by anti-director rules rather than by insider trading laws, if countries that have stricter anti-self-dealing corporate laws also tend to have more stringent insider trading laws. Indeed, they do for this sample. The correlation coefficients are 0.36 (significance 1%) between the original anti-director rights index (La Porta et al. 1998) and *ITL*; 0.27 (significance 1%) between the revised anti-director rights index (Djankov et al. (2006)) and *ITL*; and 0.44 (significance 1%) between the anti-self-dealing (Djankov et al. (2006)) index.

⁴⁴ I use two measures of the control wedge, the arithmetic difference and the ratio between the controlling owner's control and ownership stakes. The results are the same with either measure.

1988; Claessens et al. 2002; Morck, Stangeland, and Yeung 2000; and Durnev and Kim 2005).

As a proxy for the ability to extract private benefits, I use three measures of the stringency of a country's corporate laws: La Porta et al.'s (1998) original anti-director rights index; (2) Djankov et al.'s (2006) revised anti-director rights index; and (3) Djankov et al.'s (2006) anti-self-dealing index. Alternately controlling for the control wedge and each investor protection variable does not alter the results. In fact, the insider trading law variables overcome La Porta et al.'s (1998) original anti-director rights index and Djankov et al.'s (2006) revised anti-director rights and anti-self-dealing indices. The coefficients on the insider trading law variables remain positive and significant for the common law sample firms, while the coefficients on the anti-director and anti-self-dealing variables are insignificant.

Sixth, it may be inappropriate to ignore the market for corporate control, as I do in Table 7. Corporate takeovers provide a fertile (and common) context for insider trading.⁴⁵ The more competitive the market for corporate control, the greater the potential profits from trading on the basis of private information about an impending takeover, since greater competition increases takeover premia. (Burkart et al. 1998). The market for corporate control is less competitive when control is more closely held, as it tends to be among firms in civil law countries. (see, e.g., Dyck and Zingales 2004; and Nenova 2003). In addition, hold-out problems are less severe when ownership is more

⁴⁵ Two recent studies that document insider trading around corporate takeovers are Ackerman and Maug (2006) and Bris (2005). Bris (2005) studies the relationship between the profitability of insider trading around corporate takeovers and insider trading law and enforcement and finds that insider trading is less profitable when the law is more stringent. Ackerman and Maug (2006) study the relationship between insider trading laws and enforcement and the predictability of takeover announcement returns and find that there is less private information trading in stock markets governed by more stringent insider trading laws. Both Bris (2005) and Ackerman and Maug (2006) use Beny's (2005) index of insider trading law.

concentrated, as it tends to be in firms in civil law countries, driving down the price of corporate acquisitions. For these reasons, corporate takeovers may present less lucrative trading opportunities in civil law countries, other things equal. In short, if the market for corporate control is less competitive in civil law countries than in common law countries, this may partly explain the apparent irrelevance of insider trading laws to corporate valuation in the sample civil law firms.⁴⁶

Therefore, I control for three measures of the market for corporate control. First, I control for the average percent of acquisitions that were successful between January 1, 1990 and December 31, 1999 from Bris (2005). Second, I control for the ratio of the average per capita market value of acquisitions in constant U.S. dollars between January 1, 1990 and December 31, 1999 from Bris (2005) to GDP in 1995 U.S. dollars. Finally, I control for the average percent of acquisitions that were hostile between January 1, 1990 and December 31, 1999 from Bris (2005). In addition to the preceding measures of the market for corporate control, I also use the mean and median values of the block premium as a percentage of firm equity value from Dyck and Zingales (2004). Dyck and Zingales (2004) use the block premium to infer the private benefits of control across countries. The block premium may also be a proxy for the degree of competition in the market for corporate control, a higher (lower) block premium suggesting less (more) competition in the market for corporate control. Bris' (2005) corporate control and Dyck and Zingales' (2004) block premia data are described in greater detail in Table 2.

⁴⁶ Bris' (2005) data suggest that the likelihood of a corporate takeover is greater in common law countries, although the relative market value of a corporate takeover seems to be larger in civil law countries. It is unclear which way this information cuts.

Alternately controlling for these measures of the market for corporate control and the block premium does not alter the results.⁴⁷

Seventh, the identity of the controlling shareholder may be relevant insofar as different controlling shareholders may have different incentives to extract private benefits of control. For example, a controlling shareholder that is a family may have stronger incentives to engage in insider trading than a controlling shareholder that is a corporation.⁴⁸ Perhaps civil law and common law countries have a differential prevalence of types of controlling shareholders. Thus, I control for the controlling shareholder's identity using La Porta et al.'s (2002) data (see Table 2). This does not change the results.

The results are also robust to controlling for GDP per capita. In fact, the civil law countries of my sample have slightly higher average GDP per capita than the common law countries, although the difference is statistically insignificant. Finally, I check whether any country drives the results by sequentially dropping each country from the regressions in Table 7. No single country drives the results.

VI. Conclusion

This article yields two main findings. First, for the sample firms in common law countries, insider trading laws and enforcement are positively associated with higher corporate valuation. This evidence supports the claim that insider trading laws and their enforcement may help to mitigate agency costs. In contrast, the relationship between

⁴⁷ None of the coefficients on Bris' (2005) acquisition measures is significant. However, the coefficients on Dyck and Zingales' (2004) block premia measures – mean block premium and median block premium – are negative and significant at the 1% and 5% levels, respectively.

⁴⁸ Hung and Trezevant (2004) find that insiders of Southeast Asian firms that are controlled by the wealthiest families seem to be especially aggressive in trading on inside information. Their data are for firms in Indonesia, Malaysia, the Philippines, and Thailand. My sample does not include firms from any of these countries.

valuation and insider trading law is negative (but generally insignificant) for the firms in civil law countries. Second, the results do not support the notion that cash flow ownership and insider trading laws are substitute means to control agency costs. If anything, the results suggest that insider trading laws and equity ownership are complementary ways to mitigate agency costs, although this finding is generally statistically insignificant.

The result that insider trading laws are positively associated with corporate valuation in the common law but not in the civil law countries, even though I control for many relevant characteristics that may systematically differ between common and civil law countries, is puzzling. There are at least two possible explanations for this result. The first potential explanation is an economic rationale. Demsetz (1986) and Bhidé (1993) suggest that insider trading laws may have a perverse effect on corporate value by reducing large shareholders' incentives to engage in corporate monitoring because these laws reduce insider trading profits, which compensate for such monitoring. Perhaps the results can be seen in this light; that is, insider trading laws may discourage large shareholders from monitoring in civil law countries but not in common law countries. The negative relationship between insider trading laws and corporate valuation among the civil law firms is generally statistically insignificant, however, which is inconsistent with Demsetz' (1986) and Bhidé's (1993) hypothesis. Instead, the results suggest that insider trading laws may have a beneficial impact on monitoring at best and no effect at worst.

The second potential explanation for the difference between common law and civil law firms is a legal/institutional rationale. More specifically, insider trading laws

may be relatively ineffective in civil law countries. Indeed, recent research suggests that insider trading laws are less effective in countries where investor protections are relatively weaker, as in civil law countries. Durnev and Nain (2005) argue that, where investor protection is sufficiently weak and controlling shareholders are prohibited from trading, these shareholders may compensate for lost trading profits by engaging in various covert forms of expropriation. In addition, Durnev and Nain (2005) find that if investor protection is sufficiently weak, “private information trading may remain unchanged and even increase in the presence of insider trading restrictions.” (Durnev and Nain 2005, p. 22).⁴⁹ Similarly, Grishchenko et. al. (2002) find that “stocks...that provide better investor protection [and information disclosure] exhibit less private information trading.” In contrast, Durnev and Nain (2005) find that insider trading laws unambiguously reduce private information trading “in countries where shareholder rights are well protected.” (Durnev and Nain 2005, p. 22).⁵⁰ Furthermore, Bhattacharya and Daouk (2005) suggest that the cost of equity may actually increase when a country merely enacts, but does not enforce, insider trading legislation.

The problem with the legal/institutional explanation is that the common law-civil law dichotomy that I find is robust to controlling for various legal and institutional differences among the countries in my sample. Nevertheless, the robustness of the dichotomy may be due to the fact that the existing legal and institutional measures are not good variables. If that is the case, comparative law and finance scholars ought to

⁴⁹ According to Durnev and Nain (2005), “[t]he opaque informational environment that often accompanies covert activities of controlling shareholders can, in turn, increase the information acquisition activity of market professionals who trade at the expense of uninformed investors.” (Durnev and Nain 2005, p. 25).

⁵⁰ Similarly, Ackerman and Maug's (2005) evidence suggests that insider trading laws have a greater impact “in countries with more effective” judicial systems. But there is no reason to expect judiciaries to be more efficient in common law countries than in civil law countries.

construct more direct measures of the legal order and particularly the securities regulatory and enforcement environment. (see La Porta et al. 2005 for a comparative study of securities laws and enforcement).

Over the past two decades, there has been a concerted international effort to encourage countries to adopt insider trading laws and to vigorously enforce such laws. (Haddock and Macey, 1986; Gevurtz, 2002). However, the results of this article suggest that insider trading laws are not uniformly associated with corporate valuation, a proxy for agency costs, across countries. Indeed, the results suggest that insider trading laws may not be an effective way to reduce agency costs in civil law countries. Moreover, the costs of insider trading laws may well exceed their benefits in civil law countries. Consequently, this article's results could be read to support contractualists who oppose a one-size-fits-all approach (i.e., a mandatory prohibition) to insider trading. (Carlton and Fischel 1983; Haddock and Macey 1987; and Epstein 2004).

,Such a reading of the results of this article is unwarranted, however. If the contractualists are to bear the burden of proving that mandatory insider trading laws exacerbate agency costs, they must show that more stringent insider trading laws have a significantly negative impact on corporate valuation.⁵¹ The evidence in this Article does not support such a claim. In addition, private contractual approaches to insider trading are inherently problematic because of transaction costs, uncertainty, and externalities,⁵²

⁵¹ The near-universal illegality of insider trading arguably places the burden on opponents of insider trading regulation to show that such regulation is more costly than beneficial, since they seek to change the status quo.

⁵² Negative externalities are an especially important consideration in the insider trading debate, which both this article and much of the agency literature on insider trading abstract from. Studies that address some potential negative external effects of insider trading include Baiman and Verrechia (1996); Beny (2005, 2007); Bhattacharya and Daouk (2002); Bushman et al. (2005); Cox (1986); Du and Wei (2004); Fishman and Hagerty (1992); Georgakopoulos (1993); Goshen and Parchomovsky (2001); Klock

and may be unenforceable by private parties. (see, e.g., Easterbrook 1985; Cox 1986). Furthermore, the apparent insignificance of insider trading laws to firms in civil law countries may stem from relatively lax enforcement of these laws in civil law countries. (see Jackson and Roe 2006). If that is the case, the appropriate policy response may be greater sanctions and more stringent enforcement, not repeal of insider trading laws, in the latter countries.

Ultimately, the results of this article suggest that the firm-level impact of insider trading laws may depend on the local context in which such laws are applied (or not applied, as the case may be).

(1994); Kraakman (1991); and Shin (1996). Glaeser et al. (2001) address the general issue of public versus private regulation of stock markets.

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Table 1: Summary of Testable Hypotheses

| Hypothesis | Dependent Variable | Hypothesized Relationship to Corporate Value |
|------------|--|--|
| H1 | Insider Trading Law | Positive |
| H2 | Cash Flow Ownership of the Controlling Shareholder | Positive |
| H3 | Insider Trading Law*Cash Flow Ownership of the Controlling Shareholder | Negative |

Table 2: Description of Variables

| <i>Description</i> | |
|--|--|
| <u>Dependent Variables</u> | |
| Tobin's Q | Tobin's Q is defined as the market value of assets divided by their replacement value at the close of the most recent fiscal year. The market value of assets is measured by the book value of assets minus the book value equity minus deferred taxes plus the market value of common stock. The replacement value of assets is approximated by the book value of assets. La Porta et al. (2002). |
| Industry-Adjusted Tobin's Q | The industry-adjusted Tobin's Q for a given firm is defined as the difference between that firm's Tobin's Q and the <i>world median</i> Tobin's Q among firms in the same industry. Industry reference groups are defined at the three-digit S.I.C. level if there are at least five WorldScope firms (not including the sample firms) in the group and, if not, at the two-digit S.I.C. level. La Porta et al. (2002). |
| Cash Flow to Price Ratio | The cash flow to price ratio is computed as the sum of earnings (net income before extraordinary items) and depreciation. When cash flow is negative, the cash flow to price ratio is assigned a missing value. The average cash flow to price ratio for the three most recent fiscal years is reported in US dollars. Price, in US dollars, is the market value of common equity at the end of the most recent fiscal year. La Porta et al. (2002). |
| Industry-adjusted Cash Flow to Price Ratio | The industry-adjusted cash flow to price ratio is defined as the difference between the firm's cash flow to price ratio and the <i>world median</i> cash flow to price ratio among firms in the same industry. Industry control groups are defined in the same manner as for industry-adjusted Tobin's Q (see above). La Porta et al. (2002). |
| <u>Insider Trading Law Variables</u> | |
| Tipping | Tipping equals one if corporate insiders are prohibited from tipping outsiders (tippees) about material non-public information and/or encouraging them to trade on such information for personal gain; equals zero otherwise. Gaillard (1992); Stamp and Welsh (1996). |
| Tippee | Tippee equals one if tippees, like corporate insiders, are prohibited from trading on material non-public information that they have received from corporate insiders; equals zero otherwise. Gaillard (1992); Stamp and Welsh (1996). |
| Damages | Damages equals one if potential monetary penalties for violating insider trading laws are proportional to insiders' trading profits; equals zero otherwise. Gaillard (1992); Stamp and Welsh (1996). |
| Criminal | Criminal equals one if violation of insider trading laws is a potential criminal offense; equals zero otherwise. Gaillard (1992); Stamp and Welsh (1996). |
| Private | Private equals one if private parties have a private right of action against parties who have violated the country's insider trading laws. Gaillard (1992); Stamp and Welsh (1996). |
| ITL | The aggregate insider trading law index, <i>ITL</i> , equals the sum of (1) Tipping; (2) Tippee; (3) Damages; and (4) Criminal; and (5) Private. Equivalently, the sum of Scope, Sanction and Private. IT Law ranges from 0 to 5, with 0 representing the most lax formal insider trading law and 5 representing the most restrictive insider trading law. Gaillard (1992); Stamp and Welsh (1996). |
| Enforced | A proxy for actual enforcement, Enforced by 1994 is an indicator variable that equals one if the country's insider trading law has been enforced for the first time by the end of 1994. Bhattacharya and Daouk (2002). |
| ITL*Enforced | IT Law times Enforced by 1994. |
| <u>Ownership and Control Variables</u> | |
| Control Rights | "The fraction of the firm's voting rights, if any, owned by its controlling shareholder. To measure control we combine a shareholder's <i>direct</i> (i.e., through shares registered in her name) and <i>indirect</i> (i.e., through shares |

held by entities that, in turn, she controls) *voting* rights in the firm. A shareholder has an *x percent indirect control* over firm A if: (1) she controls directly firm B which, in turn, directly controls *x* percent of the votes in firm A; or (2) she controls directly firm C which in turn controls firm B (or a sequence of firms leading to firm B each of which has control over the next one, *i.e.*, they form a control chain) which, in turn, directly controls *x* percent of the votes in firm A. A group of *n* companies form a *chain of control* if each firm 1 through *n - 1* controls the consecutive firm. A firm in our sample has a controlling shareholder if the sum of her direct and indirect voting rights exceeds 10 percent. When two or more shareholders meet our criteria for control, we assign control to the shareholder with the largest (direct plus indirect) voting stake.” La Porta et al. (2002).

Cash Flow Rights “Ultimate cash flow right of the controlling shareholder in the sample firm. CF Rights are computed as the product of all the equity stakes along the control chain (see description of Control Rights for an explanation of ‘control chains’).” La Porta et al. (2002).

Country-adjusted Cash Flow Rights Calculated by taking the difference between the cash flow ownership of the controlling owner of a given firm and the countrywide mean cash flow ownership of controlling shareholders. La Porta et al. (2002).

Additional Variables

Sales Growth Sales growth is computed by the geometric average annual percentage growth in lagged net sales for up to 3 years conditional on availability of the data. Sales are reported in US dollars. La Porta et al. (2002).

Industry-Adjusted Sales Growth Industry adjusted sales growth is defined as the difference between the firm’s sales growth (GS) and the *world median* GS among firms in the same industry. Industry control groups are defined in the same manner as for industry-adjusted Tobin’s Q (see above). La Porta et al. (2002).

Common Law A dummy variable that equals one if the legal origin of the country is English common law and zero otherwise. La Porta et al. (1998); CIA (2000).

Industry Industry reference groups are defined at the three-digit S.I.C. level if there are at least five WorldScope firms (not including the sample firms) in the group and, if not, at the two-digit S.I.C. level. La Porta et al. (2002).

Rule of Law The rule of law measure is an “[a]ssessment of the law and order tradition in the country. Average of the months of April and October of the monthly index between 1982 and 1995. Scale from 0 to 10, with lower scores for less tradition for law and order.” La Porta et al. (1998) compile this variable from the *International Country Risk Guide*. A higher rule of law score signifies that the legal system is relatively more capable of resolving disputes and enforcing contracts.

Judicial Efficiency The index of judicial efficiency is an “[a]ssessment of the ‘efficiency and integrity of the legal environment as it affects business, particularly foreign firms,’” averaged from 1980-1983. La Porta et al. (1998) get this variable from *Business International Corporation*.

Stock Market Liquidity Stock market liquidity is measured as stock market value traded divided by GDP. World Bank World Development Indicators (1995).

Firm Liquidity Individual firm liquidity is measured as the average monthly turnover ratio, *i.e.*, the total value traded divided by total market capitalization, from January 1, 1994 to December 1, 1996. Datastream.

Disclosure Index The Disclosure index equals the arithmetic average of 6 separate indices of information that firms are legally required to include in their prospectuses: (1) Compensation; (2) Shareholders; (3) Inside Ownership; (4) Irregular contracts; (5) Transactions.

(1) Compensation is “[a]n index of prospectus disclosure requirements regarding the compensation of directors and key officers. Equals one if the law or the listing rules require that the compensation of each director and key officer be reported in the prospectus of a newly-listed firm; equals one-half if only the aggregate compensation of directors and key officers must be reported in the prospectus of a newly-listed firm; equals zero when there is no requirement to disclose the compensation of directors and key officers in the prospectus for a newly-listed firm.”

(2) Shareholders is “[a]n index of disclosure requirements regarding the Issuer’s equity ownership structure.

Equals one if the law or the listing rules require disclosing the name and ownership stake of each shareholder who, directly or indirectly, controls ten percent or more of the Issuer's voting securities; equals one-half if reporting requirements for the Issuer's 10% shareholders do not include indirect ownership or if only their aggregate ownership needs to be disclosed; equals zero when the law does not require disclosing the name and ownership stake of the Issuer's 10% shareholders. No distinction is drawn between large-shareholder reporting requirements imposed on firms and those imposed on large shareholders themselves."

(3) Inside Ownership is "[a]n index of prospectus disclosure requirements regarding the equity ownership of the Issuer's shares by its directors and key officers. Equals one if the law or the listing rules require that the ownership of the Issuer's shares by each of its directors and key officers be disclosed in the prospectus; equals one-half if only the aggregate number of the Issuer's shares owned by its directors and key officers must be disclosed in the prospectus; equals zero when the ownership of Issuer's shares by its directors and key officers need not be disclosed in the prospectus."

(4) Irregular contracts is "[a]n index of prospectus disclosure requirements regarding the Issuer's contracts outside the ordinary course of business. Equals one if the law or the listing rules require that the terms of material contracts made by the Issuer outside the ordinary course of its business be disclosed in the prospectus; equals one-half if the terms of only some material contracts made outside the ordinary course of business must be disclosed; equals zero otherwise."

(5) Transactions is "[a]n index of the prospectus disclosure requirements regarding transactions between the Issuer and its directors, officers, and/or large shareholders (i.e., "related parties"). Equals one if the law or the listing rules require that all transactions in which related parties have, or will have, an interest be disclosed in the prospectus; equals one-half if only some transactions between the Issuer and related parties must be disclosed in the prospectus; equals zero if transactions between the Issuer and related parties need not be disclosed in the prospectus." La Porta et al. (2003)

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|-------------------------------------|---|
| Accounting Standards Index | The accounting index is a measure of the quality of accounting standards. The accounting index assigns a rating to companies' 1990 annual reports on the basis of their inclusion or exclusion of 90 items. The 90 items are divided into 7 categories (general information, income statements, balance sheets, funds flow statement, accounting standards, stock data and special items). For each country, the index is based on examination of a minimum of 3 companies. The companies represent a cross-section of various industries. Seventy percent are industrial companies, while the remaining thirty percent are financial companies. La Porta et al. (1998). |
| Perception of Insider Trading | The perception of insider trading is based on a survey that asks corporate executives many questions, including whether insider trading is common in their domestic stock markets. The variable ranges from one to six, with one indicating that corporate executives strongly agree, and six indicating that corporate executives strongly disagree, that insider trading is common in their domestic stock markets. World Economic Forum, Global Competitiveness Report (1996). |
| Control Wedge | The control wedge is the difference between the controlling shareholder's control rights and cash flow rights. La Porta et al. (2002). |
| Original Anti-Director Rights Index | The original anti-director rights index is "[f]ormed by adding 1 when: (1) the country allows shareholders to mail the proxy vote to the firm, (2) shareholders are not required to deposit their shares prior to the general shareholders' meeting, (3) cumulative voting or proportional representation of minorities in the board of directors is allowed, (4) an oppressed minorities mechanism is in place, (5) the minimum percentage of share capital that entitles a shareholder to call for an extraordinary shareholders meeting is less than or equal to 10 percent (the sample median), or (6) shareholders have preemptive rights that can be waived only by a shareholders' vote. The index ranges from zero to six." La Porta et al. (1998). |
| Revised Anti-Director Rights Index | The revised anti-director rights index "relies on the same basic dimensions of corporate law [as the original anti-director rights index] but defines them with more precision." "The general principle behind the construction of the revised anti-director rights index is to associate better investor protection with laws that explicitly mandate, or set as a default rule, provisions that are favorable to minority shareholders." Djankov et al. (2006) |
| Anti-Self-Dealing Index | The average of the ex-ante and ex-post indices of the private control of self-dealing transactions. The index of ex-ante control of self-dealing transactions is the "[a]verage of approval by disinterested shareholders and ex-ante disclosure." The index of ex-post control of self-dealing transactions is the "[a]verage of disclosure |

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| | in periodic filings and ease of proving wrongdoing.” Djankov et al. (2006) |
| Measures of the Market for Corporate Control | The three measures of the market for corporate control include: (1) the average percent of acquisitions that were successful between January 1, 1990 and December 31, 1999; (2) the average per capita market value of acquisitions in constant U.S. dollars between January 1, 1990 and December 31, 1999 divided by GDP in 1995 U.S. dollars; and (3) the average percent of acquisitions that were hostile between January 1, 1990 and December 31, 1999. The corporate control data come from Bris (2005), whose “total sample includes all takeover announcements that took place between 1 January 1990 and 31 December 1999, available in the Securities Data Corporate Mergers and Acquisitions database. Only public companies are considered, and [he] exclude[s] LBO deals, spinoffs, recapitalizations, self-tender and exchange offers, repurchases, minority stake purchases, acquisitions of remaining interest, and privatizations. Second and subsequent bids that occur within a window of four years relative to an initial announcement are excluded. A bid is considered Hostile when the board officially rejects the offer but the acquiror persists with the takeover, or if the offer is a surprise to the target’s board and the [board] has not yet given a recommendation. A deal is successful when it has been either totally or partially completed” (Bris 2005, Table 1, p. 272). The GDP data come from the World Bank World Development Report CD-Rom (2003). |
| Block Premium | The block premium is “the difference between the price per share paid for the control block and the price on the Exchange two days after the announcement of the control transaction, divided by the price on the Exchange after the announcement and multiplied by the proportion of cash flow rights represented in the controlling block” (Dyck and Zingales 2004, p. 547). Dyck and Zingales (2004) estimate control block premia for 39 countries using 393 controlling block sales between 1990 and 2000. |
| Controlling Shareholder’s Identity | This variable is a dummy variable that represents the controlling shareholder’s identity: family, corporation, financial institution, the state, a foreign state, or other. La Porta et al. 2002. |

Table 3 Means and Medians by Insider Trading Regime

The table reports means and medians of key variables by insider trading regime. Countries with a value of *ITL*Enforced* that is greater than the median of two are classified as High ITL regimes, while those with a value of *ITL*Enforced* that is less than or equal to two are classified as Low ITL regimes. *N* is the total number of firms observed for each country; *ITL* is the index of insider trading law; *Enforced* equals one if the country's insider trading law was enforced at least once before 1994, and zero otherwise; *Tobin's Q* is Tobin's Q from La Porta et al. (2002); *Cash Flow Ownership* is the fraction of common equity owned by the controlling shareholder from La Porta et al. (2002); and *Sales Growth* is the growth of sales, expressed in percentage terms, from La Porta et al. (2002). All variables are described in detail in Table 2. The superscripts a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | <i>N</i> | <i>ITL</i> | <i>Enforced</i> | <i>ITL*Enforced</i> | <i>Tobin's Q</i> | <i>Cash Flow Ownership</i> | <i>Sales Growth</i> |
|-----------------|----------|------------|-----------------|---------------------|------------------|----------------------------|---------------------|
| All Countries | 537 | | | | | | |
| Mean | | 3.22 | 0.55 | 1.84 | 1.56 | 0.29 | 0.15 |
| Median | | 3 | 1 | 2 | 1.30 | 0.24 | 0.12 |
| Low ITL Regimes | | | | | | | |
| Australia | 20 | | | | | | |
| Mean | | 4 | 0 | 0 | 1.41 | 0.25 | 0.15 |
| Median | | 4 | 0 | 0 | 1.37 | 0.28 | 0.15 |
| Austria | 20 | | | | | | |
| Mean | | 2 | 0 | 0 | 1.17 | 0.47 | 0.13 |
| Median | | 2 | 0 | 0 | 1.12 | 0.51 | 0.09 |
| Denmark | 20 | | | | | | |
| Mean | | 3 | 0 | 0 | 1.92 | 0.30 | 0.16 |
| Median | | 3 | 0 | 0 | 1.50 | 0.27 | 0.11 |
| Germany | 20 | | | | | | |
| Mean | | 3 | 0 | 0 | 1.41 | 0.30 | 0.12 |
| Median | | 3 | 0 | 0 | 1.19 | 0.27 | 0.07 |
| Greece | 20 | | | | | | |
| Mean | | 2 | 0 | 0 | 1.98 | 0.48 | 0.25 |
| Median | | 2 | 0 | 0 | 1.67 | 0.53 | 0.22 |
| Ireland | 20 | | | | | | |
| Mean | | 4 | 0 | 0 | 1.31 | 0.29 | 0.15 |
| Median | | 4 | 0 | 0 | 1.29 | 0.18 | 0.13 |
| Italy | 20 | | | | | | |
| Mean | | 3 | 0 | 0 | 1.10 | 0.35 | 0.13 |
| Median | | 3 | 0 | 0 | 1.03 | 0.30 | 0.07 |
| Japan | 20 | | | | | | |
| Mean | | 2 | 1 | 2 | 1.66 | 0.25 | 0.02 |
| Median | | 2 | 1 | 2 | 1.33 | 0.16 | 0.01 |
| Mexico | 20 | | | | | | |
| Mean | | 1 | 0 | 0 | 1.65 | 0.36 | 0.09 |
| Median | | 1 | 0 | 0 | 1.64 | 0.34 | -0.04 |
| New Zealand | 20 | | | | | | |
| Mean | | 4 | 0 | 0 | 1.53 | 0.24 | 0.17 |
| Median | | 4 | 0 | 0 | 1.33 | 0.23 | 0.17 |
| Norway | 20 | | | | | | |
| Mean | | 1 | 1 | 1 | 1.36 | 0.27 | 0.16 |
| Median | | 1 | 1 | 1 | 1.14 | 0.23 | 0.14 |
| Portugal | 20 | | | | | | |
| Mean | | 4 | 0 | 0 | 1.20 | 0.46 | 0.24 |

| | | | | | | | |
|-----------------------|------------|--------------------|--------------------|--------------------|--------------------|-------------------|--------------------|
| <i>Median</i> | | 4 | 0 | 0 | 1.09 | 0.51 | 0.20 |
| Spain | 20 | | | | | | |
| <i>Mean</i> | | 4 | 0 | 0 | 1.18 | 0.26 | 0.09 |
| <i>Median</i> | | 4 | 0 | 0 | 1.16 | 0.21 | 0.05 |
| Switzerland | 20 | | | | | | |
| <i>Mean</i> | | 3 | 0 | 0 | 1.71 | 0.34 | 0.15 |
| <i>Median</i> | | 3 | 0 | 0 | 1.34 | 0.35 | 0.11 |
| Low ITL Overall | 280 | | | | | | |
| <i>Mean</i> | | 2.86 | 0.14 | 0.21 | 1.47 | 0.33 | 0.14 |
| <i>Median</i> | | 3 | 0 | 0 | 1.27 | 0.29 | 0.10 |
| High ITL Regimes | | | | | | | |
| Argentina | 19 | | | | | | |
| <i>Mean</i> | | 3 | 1 | 3 | 1.25 | 0.39 | 0.15 |
| <i>Median</i> | | 3 | 1 | 3 | 1.15 | 0.39 | 0.13 |
| Belgium | 20 | | | | | | |
| <i>Mean</i> | | 3 | 1 | 3 | 1.33 | 0.29 | 0.14 |
| <i>Median</i> | | 3 | 1 | 3 | 1.22 | 0.29 | 0.09 |
| Canada | 20 | | | | | | |
| <i>Mean</i> | | 5 | 1 | 5 | 1.97 | 0.25 | 0.18 |
| <i>Median</i> | | 5 | 1 | 5 | 1.75 | 0.16 | 0.17 |
| Finland | 20 | | | | | | |
| <i>Mean</i> | | 3 | 1 | 3 | 1.17 | 0.30 | 0.16 |
| <i>Median</i> | | 3 | 1 | 3 | 1.10 | 0.23 | 0.15 |
| France | 20 | | | | | | |
| <i>Mean</i> | | 4 | 1 | 4 | 1.38 | 0.02 | 0.10 |
| <i>Median</i> | | 4 | 1 | 4 | 1.27 | 0.18 | 0.08 |
| Hong Kong | 20 | | | | | | |
| <i>Mean</i> | | 3 | 1 | 3 | 1.49 | 0.32 | 0.16 |
| <i>Median</i> | | 3 | 1 | 3 | 1.16 | 0.27 | 0.11 |
| Israel | 19 | | | | | | |
| <i>Mean</i> | | 3 | 1 | 3 | 1.27 | 0.24 | 0.16 |
| <i>Median</i> | | 3 | 1 | 3 | 1.17 | 0.19 | 0.13 |
| Netherlands | 20 | | | | | | |
| <i>Mean</i> | | 3 | 1 | 3 | 2.06 | 0.33 | 0.18 |
| <i>Median</i> | | 3 | 1 | 3 | 1.74 | 0.26 | 0.13 |
| Singapore | 20 | | | | | | |
| <i>Mean</i> | | 4 | 1 | 4 | 1.76 | 0.31 | 0.23 |
| <i>Median</i> | | 4 | 1 | 4 | 1.55 | 0.29 | 0.26 |
| South Korea | 19 | | | | | | |
| <i>Mean</i> | | 5 | 1 | 5 | 1.14 | 0.18 | 0.19 |
| <i>Median</i> | | 5 | 1 | 5 | 1.07 | 0.17 | 0.21 |
| Sweden | 20 | | | | | | |
| <i>Mean</i> | | 3 | 1 | 3 | 1.45 | 0.12 | 0.18 |
| <i>Median</i> | | 3 | 1 | 3 | 1.21 | 0.07 | 0.16 |
| United Kingdom | 20 | | | | | | |
| <i>Mean</i> | | 3 | 1 | 3 | 2.15 | 0.14 | 0.12 |
| <i>Median</i> | | 3 | 1 | 3 | 1.72 | 0.12 | 0.10 |
| United States | 20 | | | | | | |
| <i>Mean</i> | | 5 | 1 | 5 | 2.98 | 0.20 | 0.12 |
| <i>Median</i> | | 5 | 1 | 5 | 3.08 | 0.17 | 0.10 |
| High ITL Overall | 257 | | | | | | |
| <i>Mean</i> | | 3.61 | 1 | 3.61 | 1.65 | 0.26 | 0.16 |
| <i>Median</i> | | 3 | 1 | 3 | 1.31 | 0.19 | 0.13 |
| Difference of Means | | | | | | | |
| Low ITL vs. High ITL | | -0.76 ^a | -0.86 ^a | -3.40 ^a | -0.18 ^a | 0.07 ^a | -0.02 ^c |

Beny:

(t-statistic)

Difference of Medians

| | | | | | | |
|--|-------------|---|---------------------------|-------------|--------------------------|-------------------------|
| | 0.34 | . | 533.00^a | 0.82 | 18.30^a | 6.05^a |
|--|-------------|---|---------------------------|-------------|--------------------------|-------------------------|

Low ITL vs. High ITL

(Chi² statistic)

Table 4: Means by Legal Origin

The table reports means and medians of key variables by legal origin, common law or civil law. *N* is the total number of firms observed for each legal origin; *ITL* is the index of insider trading law; *Enforced* equals one if the country's insider trading law was enforced at least once before 1994, and zero otherwise; *Tobin's Q* is Tobin's Q from La Porta et al. (2002); *Cash Flow Ownership* is the fraction of common equity owned by the controlling shareholder from La Porta et al. (2002); and *Sales Growth* is the growth of sales, expressed in percentage terms, from La Porta et al. (2002). All variables are described in detail in Table 2. The superscripts a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | <i>N</i> | <i>ITL</i> | <i>Enforced</i> | <i>ITL*</i> <i>Enforced</i> | <i>Tobin's</i> <i>Q</i> | <i>Cash</i> <i>Flow</i> <i>Ownership</i> | <i>Sales</i> <i>Growth</i> |
|--|------------|--------------------------|--------------------------|--------------------------------|----------------------------|--|-------------------------------|
| Common Law | 179 | 2.88 | 0.50 | 1.49 | 1.45 | 0.25 | 0.14 |
| Civil Law | 358 | 1.77 | 0.25 | 2.55 | 1.77 | 0.32 | 0.16 |
| Difference of Means Civil Law vs. Common Law (t-statistic) | | -1.01^a | -0.17^a | -1.07^a | 1.56^a | 0.07^a | -0.02 |

Table 5: Correlation Matrix

This table presents pairwise correlation coefficients for *Tobin's Q*, the insider trading law and enforcement measures (*ITL*, *Enforced*, and *ITL*Enforced*), *Cash Flow Ownership* and *Sales Growth*. All variables are described in detail in Table 2. The numbers in parentheses are the probability levels (p-values) at which the null hypothesis of zero correlation can be rejected in two-tailed tests. The superscripts a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively.

| | <i>ITL</i> | <i>Enforced</i> | <i>ITL*Enforced</i> | <i>Tobin's Q</i> | <i>Cash Flow Ownership</i> | <i>Sales Growth</i> |
|----------------------------|------------------------------|------------------------------|------------------------------|-----------------------------|----------------------------|---------------------|
| <i>ITL</i> | 1.00 | | | | | |
| <i>Enforced</i> | 0.12 ^a (0.01) | 1.00 | | | | |
| <i>ITL*Enforced</i> | 0.45 ^a (0.00) | 0.90 ^a (0.00) | 1.00 | | | |
| <i>Tobin's Q</i> | 0.09 ^b (0.05) | 0.11 ^a (0.01) | 0.17 ^a (0.00) | 1.00 | | |
| <i>Cash Flow Ownership</i> | -0.15 ^a (0.00) | -0.19 ^a (0.00) | -0.20 ^a (0.00) | 0.04 (0.38) | 1.00 | |
| <i>Sales Growth</i> | 0.12 ^a (0.01) | 0.02 (0.68) | 0.05 (0.28) | 0.23 ^a (0.00) | 0.06 (0.18) | 1.00 |

Table 6: Random Effects Regressions

The table presents random effects regressions for the dependent variable, $\text{Log}(1+\text{Tobin's } Q)$, where *Tobin's Q* is adjusted by industry, as described in Table 2. Standard errors are reported in parentheses. Superscripts a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are described in detail in Table 2.

Panel A
Dependent Variable: $\text{Log}(1+\text{Tobin's } Q)$

| Independent Variable | (1) | (2) | (3) | (4) |
|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <i>Sales Growth</i> | 0.69 ^a (0.13) | 0.69 ^a (0.14) | 0.68 ^a (0.14) | 0.68 ^a (0.14) |
| H1 <i>ITL</i> | 0.01 (0.04) | | | 0.00 (0.05) |
| H2 <i>Cash Flow</i> <i>Ownership</i> | | 0.15 ^c (0.09) | | 0.04 (0.31) |
| H3 <i>Cash Flow</i> <i>Ownership</i> * | | | 0.05 ^c (0.03) | 0.04 (0.09) |
| <i>ITL</i> <i>Constant</i> | -0.02 (0.15) | -0.04 (0.06) | -0.04 (0.05) | -0.05 (0.18) |
| <i>Number of</i> <i>Observations</i> | 538 | 538 | 538 | 538 |
| χ^2 | 25.39 | 28.46 | 28.69 | 28.70 |
| $\text{Prob} > \chi^2$ | 0.00 ^a | 0.00 ^a | 0.00 ^a | 0.00 ^a |

Panel B
Dependent Variable: $\text{Log}(1+\text{Tobin's } Q)$

| Independent Variable | (1) | (2) | (3) | (4) |
|---|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| <i>Sales Growth</i> | 0.68 ^a (0.14) | 0.68 ^a (0.13) | 0.68 ^a (0.14) | 0.68 ^a (0.14) |
| H1 <i>ITL*Enforced</i> | 0.03 (0.02) | | | 0.03 (0.03) |
| H2 <i>Cash Flow</i> <i>Ownership</i> | | 0.15 ^c (0.09) | | 0.12 (0.13) |
| H3 <i>Cash Flow</i> <i>Ownership</i> * | | | 0.06 ^b (0.03) | 0.02 (0.05) |
| <i>ITL*Enforced</i> <i>Constant</i> | -0.05 (0.06) | -0.04 (0.06) | -0.03 (0.05) | -0.09 (0.08) |
| <i>Number of</i> <i>Observations</i> | 537 | 537 | 537 | 537 |
| χ^2 | 26.85 | 28.34 | 29.28 | 30.59 |
| $\text{Prob} > \chi^2$ | 0.00 ^a | 0.00 ^a | 0.00 ^a | 0.00 ^a |

Table 7: Random Effects Regressions (Heterogeneity)

The table presents random effects regressions for the dependent variable, $\text{Log}(1+\text{Tobin's } Q)$, where *Tobin's Q* is adjusted by industry, as described in Table 2. C_ITL is mean-centered *ITL*, i.e., the difference between the country's *ITL* and the world mean of *ITL*. Superscripts a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are described in detail in Table 2.

| Dependent Variable: $\text{Log}(I+Q)$ | | | | |
|--|--------------------|--------------------|-------------------|--------------------|
| Independent Variable | (1) | (2) | (3) | (4) |
| (1) | 0.69 ^a | 0.70 ^a | 0.69 ^a | 0.69 ^a |
| <i>Sales Growth</i> | (0.13) | (0.13) | (0.14) | (0.14) |
| (2) | -0.09 | -0.09 ^c | | |
| C_ITL | (0.06) | (0.06) | | |
| (3) | | | -0.07 | -0.08 |
| $C_ITL*Enforced$ | | | (0.07) | (0.07) |
| (4) | 0.28 ^a | 0.22 ^c | | |
| $C_ITL*Common Law$ | (0.11) | (0.12) | | |
| (5) | | | 0.30 ^a | 0.27 ^b |
| $C_ITL*Enforced*Common Law$ | | | (0.11) | (0.11) |
| (6) | 0.17 | 0.20 ^c | 0.17 ^c | 0.21 ^b |
| <i>Cash Flow Ownership</i> | (0.11) | (0.11) | (0.10) | (0.10) |
| (7) | -0.27 | -0.41 ^c | -0.15 | -0.28 |
| $Cash Flow Ownership*Common Law$ | (0.21) | (0.25) | (0.18) | (0.21) |
| (8) | 0.02 | 0.03 | | |
| $Cash Flow Ownership*C_ITL$ | (0.12) | (0.12) | | |
| (9) | 0.28 | 0.35 | | |
| $Cash Flow Ownership*C_ITL*Common Law$ | (0.25) | (0.26) | | |
| (10) | | | 0.04 | 0.04 |
| $Cash Flow Ownership*Enforced*C_ITL$ | | | (0.05) | (0.05) |
| (11) | | | 0.02 | 0.02 |
| $Cash Flow Ownership*C_ITL*Enforced*Common Law$ | | | (0.07) | (0.07) |
| (12) | | 0.13 | | 0.12 |
| <i>Common Law</i> | | (0.12) | | (0.10) |
| (13) | -0.10 ^c | -0.13 ^b | -0.08 | -0.12 ^b |
| <i>Constant</i> | 0.05 | (0.06) | (0.05) | (0.06) |
| <i>Number of Observations</i> | 537 | 537 | 537 | 537 |
| χ^2 | 41.03 | 42.19 | 42.42 | 43.74 |
| $Prob > \chi^2$ | 0.00 ^a | 0.00 ^a | 0.00 ^a | 0.00 ^a |

Table 8: Random Effects Regressions (Robustness)

The table presents random effects regressions for the dependent variable, $\text{Log}(1+\text{Tobin's } Q)$, where *Tobin's Q* is adjusted by industry, as described in Table 2. *C_ITL* is mean-centered *ITL*, i.e., the difference between the country's *ITL* and the world mean of *ITL*. *Industry Adjusted Sales Growth* is the difference between the firm's sales growth and the world median sales growth among firms in the same industry. *Country-Adjusted Cash Flow Ownership* is the difference between the controlling shareholder's cash flow ownership and mean cash flow ownership for all firms in the country. Standard errors are reported in parentheses. Superscripts a, b, and c denote statistical significance at the 1%, 5%, and 10% levels, respectively. All variables are described in detail in Table 2.

| <i>Dependent Variable: Log(1+Q)</i> | | | | |
|---|--------------------|--------------------|-------------------|-------------------|
| Independent Variable | (1) | (2) | (3) | (4) |
| (1) | 0.84 ^a | 0.84 ^a | 0.83 ^a | 0.83 ^a |
| <i>Industry-Adjusted Sales Growth</i> | (0.14) | (0.14) | (0.14) | (0.14) |
| (2) | -0.09 ^b | -0.09 ^b | | |
| <i>C_ITL</i> | (0.04) | (0.04) | | |
| (3) | | | -0.06 | -0.06 |
| <i>C_ITL*Enforced</i> | | | (0.06) | (0.06) |
| (4) | 0.22 ^a | 0.19 ^b | | |
| <i>C_ITL*Common Law</i> | (0.09) | (0.10) | | |
| (5) | | | 0.23 ^b | 0.21 ^b |
| <i>C_ITL*Enforced*Common Law</i> | | | (0.10) | (0.11) |
| (6) | 0.22 ^b | 0.22 ^b | 0.22 ^b | 0.22 ^b |
| <i>Country-Adjusted Cash Flow Ownership</i> | (0.11) | (0.11) | (0.11) | (0.11) |
| (7) | -0.37 | -0.38 | -0.29 | -0.30 |
| <i>Country-Adjusted Cash Flow Ownership*Common Law</i> | (0.25) | (0.25) | (0.20) | (0.20) |
| (8) | 0.06 | 0.06 | | |
| <i>Country-Adjusted Cash Flow Ownership*C_ITL</i> | (0.12) | (0.12) | | |
| (9) | 0.19 | 0.20 | | |
| <i>Country-Adjusted Cash Flow Ownership*C_ITL*Common Law</i> | (0.26) | (0.26) | | |
| (10) | | | 0.18 | 0.19 |
| <i>Country-Adjusted Cash Flow Ownership*Enforced*C_ITL</i> | | | (0.18) | (0.18) |
| (11) | | | 0.08 | 0.08 |
| <i>Country-Adjusted Cash Flow Ownership*C_ITL*Enforced*Common Law</i> | | | (0.28) | (0.28) |
| (12) | | 0.06 | | 0.05 |
| <i>Common Law</i> | | (0.09) | | (0.08) |
| (13) | Yes | Yes | Yes | Yes |
| <i>Industry Dummies</i> | | | | |
| (14) | 0.00 | -0.01 | 0.03 | 0.01 |
| <i>Constant</i> | (0.07) | (0.07) | (0.06) | (0.07) |
| <i>Number of Observations</i> | 520 | 520 | 520 | 520 |
| X^2 | 53.28 | 53.71 | 53.12 | 53.43 |
| $\text{Prob} > \chi^2$ | 0.00 ^a | 0.00 ^a | 0.00 ^a | 0.00 ^a |