NBER WORKING PAPER SERIES

INVESTOR PROTECTION AND CORPORATE VALUATION

Rafael La Porta
Florencio Lopez-de-Silanes
Andrei Shleifer
Robert Vishny

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Andrei Shleifer, and Robert Vishny
NBER Working Paper No. 7403
October 1999
JEL No. G32, G31

## **ABSTRACT**

We present a model of the effects of legal protection of minority shareholders and of cash flow ownership by a controlling shareholder on the valuation of firms. We then test this model using a sample of 371 large firms from 27 wealthy economies. Consistent with the model, we find evidence of higher valuation of firms in countries with better protection of minority shareholders, and weaker evidence of the benefits of higher cash flow ownership by controlling shareholders for corporate valuation.

Rafael La Porta
Department of Economics
Harvard University
Cambridge, MA 02138
and NBER

Florencio Lopez-de-Silanes
Kennedy School of Government
Harvard University
79 JFK Street
Cambridge, MA 02138
and NBER
f_lopezdesilanes@harvard.edu

Andrei Shleifer
Department of Economics
Littauer M9
Harvard University
Cambridge, MA 02138
and NBER
ashleifer@harvard.edu

Robert W. Vishny
Graduate School of Business
The University of Chicago
1101 E. 58th Street
Chicago, IL 60637
and NBER
vishny@gsb.uchicago.edu

1. Introduction.

Recent research suggests that the extent of legal protection of investors in a country is an important determinant of the development of its financial markets. Where laws are protective of outside investors and well enforced, investors are willing to finance firms, and financial markets are both broader and more valuable. In contrast, where laws are unprotective of investors, the development of financial markets is stunted. Moreover, systematic differences among countries in the structure of laws and their enforcement, such as the historical origin of their laws, account for the differences in financial development (La Porta et al. or LLSV 1997, 1998).

How does better protection of outside investors (both shareholders and creditors) promote financial market development? When their rights are better protected by the law, outside investors are willing to pay more for financial assets such as equity and debt. They pay more because they recognize that, with better legal protection, more of the firm's profits would come back to them as interest or dividends as opposed to being expropriated by the entrepreneur who controls the firm. By limiting expropriation, the law raises the price that securities fetch in the marketplace. In turn, this enables more entrepreneurs to finance their investments externally, leading to the expansion of financial markets.

Although the ultimate benefit of legal investor protection for financial development has now been well documented, the effect of protection on valuation has received less attention. In this paper, we present a theoretical and empirical analysis of this effect.

To understand the law's ability to limit the expropriation of investors, it is important to recognize the differences in the structure of ownership and control among firms both within and across countries, since these differences influence the power as well as the incentives of the

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controlling shareholders to expropriate minority shareholders. In most countries, large publicly

traded firms are generally not widely held, but rather have controlling shareholders (La Porta,

Lopez-de-Silanes and Shleifer or LLS, 1999), who are entrenched at the helm and have the

ability to designate and monitor corporate managers. As a consequence, these shareholders have

the power to expropriate minority shareholders, as well as creditors, within the constraints

imposed by the law. The central agency problem in such firms is not the failure of the Berle and

Means (1932) professional managers to serve minority shareholders, but rather the -- often legal -

- expropriation of such minorities, as well as of the creditors, by controlling shareholders.

The power of the controlling shareholders to expropriate outside investors is moderated

by their financial incentives not to do so. An important source of such incentives is equity or

cash flow ownership by the controlling shareholder. In general, expropriation is costly (Burkart,

Gromb, Panunzi 1998), and therefore higher cash flow ownership should lead to lower

expropriation, other things equal. This is exactly the incentive effect of managerial cash flow

ownership emphasized by Jensen and Meckling (1976) and modeled in this paper.

Our empirical analysis evaluates the influence on corporate valuation of investor

protection and ownership by the controlling shareholder using company data from 27 of the

wealthiest economies around the world. We use Tobin's Q and the price to cash flow ratio to

measure corporate valuation. We use the origin of a country's laws and the index of specific

legal rules as indicators of shareholder protection. To understand the effects of ownership, we

focus on companies which have controlling shareholders, thereby hoping to keep the power to

expropriate relatively constant. This restriction is in line with the evidence and the theoretical

work (Zingales 1995, LLS 1999, Bebchuk 1999) suggesting that, in countries with poor investor

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protection, it is efficient for the entrepreneurs to retain control of their firms. Among these companies, we consider cash flow ownership by the controlling shareholder as a measure of incentives. This empirical strategy allows us to assess the effect of investor protection on corporate valuation holding both the power and the incentives to expropriate constant, as well as to shed light on the Jensen-Meckling effect in a new context.

Our basic finding is that, consistent with theory, better shareholder protection is associated with higher valuation of corporate assets. This finding provides support for the quantitative importance of the expropriation of minority shareholders in many countries, as well as for the role of the law in limiting such expropriation. We also find some evidence that higher incentives from cash flow ownership are associated with higher valuations.

This research continues a number of strands in corporate finance. First, this paper relates to the "law and finance" literature, summarized recently in LLSV (1999). In addition to identifying the effects of investor protection on financial market development, this literature also shows how law influences corporate ownership structures (LLSV 1998, LLS 1999, and Claessens et al. 1999a), dividend policies (LLSV 2000), the efficiency of investment allocation (Rajan and Zingales 1998, Wurgler 2000), economic growth (Demirguc-Kunt and Maksimovic 1998, Beck, Levine, and Loayza 2000), and even the susceptibility of a country's financial markets to a crash (Johnson et al. 1999). Our study of valuation also relates to the work that examines the voting premium in different countries, and tends to find higher voting premia in countries with inferior shareholder protection (e.g., DeAngelo and DeAngelo 1985, Zingales 1994, Nenova 1999).

This paper also continues a large literature on the effects of corporate ownership structures on valuation. Demsetz and Lehn (1985), Morck, Shleifer and Vishny (1988),

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McConnell and Servaes (1990), Holderness, Kroszner and Sheehan (1999), among others, study the effect of managerial ownership on the valuation of firms in the United States. Morck, Shleifer and Vishny (1988) distinguish between the negative control effects (which they call entrenchment) and the positive incentive effects of higher ownership. These studies of U.S. data generally find that valuation is both positively affected by incentives, and negatively affected by entrenchment. More recently, Gorton and Schmid (1999) find some evidence of positive effects of bank ownership on the valuation of German firms. In a study closely related to ours, Claessens et al. (1999b) separate the effects of entrepreneurial control and cash flow ownership on the valuation of firms in several East Asian countries. They find that stronger entrepreneurial control adversely affects valuation, while cash flow ownership affects it positively.

Section 2 of the paper presents our model. Section 3 describes the data and some of the measurement issues. Section 4 presents a preliminary analysis of the data, and in particular demonstrates the basic findings of the effect of investor protection on valuation. Section 5 presents the more complete regression analysis. Section 6 concludes.


2. A simple model.

In this section, we present a model of a firm fully controlled by a single shareholder, called the entrepreneur. There is now a sizable theoretical literature that deals with optimal ownership structures of firms depending on the levels of "private benefits of control" (Grossman and Hart 1988, Harris and Raviv 1988, Bebchuk 1999, Bennedsen and Wolfenzon 1999, Wolfenzon 1999). Some of this literature argues that high private benefits of control, which typically accompany low levels of shareholder protection, lead to heavy consolidation of control

in equilibrium (Grossman and Hart 1988, Zingales 1995, LLS 1999, Bebchuk 1999). Expropriating outside investors -- even legally -- may require some secrecy, which mediates against shared control (LLS 1999). Alternatively, an entrepreneur who gives up control invites hostile takeover bids from raiders who themselves wish to expropriate minority shareholders (Zingales 1995, Bebchuk 1999). Empirically, LLS show that, in most countries, control is indeed heavily concentrated, usually in the hands of a founding family. Our assumption that there is one controlling shareholder is thus consistent with the available theory and evidence.

We assume that this controlling shareholder has cash flow or equity ownership $\alpha$ in the firm. Although the entrepreneur's voting rights may be below 50%, they would typically be higher than his cash flow rights $\alpha$ because he owns shares with superior voting rights, has constructed an ownership pyramid, or simply controls the board (LLS 1999). For now, we assume that $\alpha$ is exogenous and do not consider the sale of equity by the entrepreneur. There may be many elements from the history and the life-cycle of the firm determining $\alpha$. We discuss the extension of the model to endogenous $\alpha$ after presenting the basic case.

The firm has the amount of cash I, which it invests in a project with the gross rate of return R. The firm has no costs, so the profits are RI. In this simple model, the scale of investment does not matter. Not all of the profits are distributed to shareholders on a pro rata basis. As a benefit of controlling the firm, the entrepreneur can divert a share s of the profits from the firm to himself, before he distributes the rest as dividends. This diversion can take the form of salary, transfer pricing, subsidized personal loans, non-arms-length asset transactions, and it some cases outright theft. In most countries, much of such diversion short of theft is legal. However, unless the entrepreneur can simply steal profits with impunity, he has to engage in

costly but legal maneuvering to divert profits, such as setting up intermediary companies, taking risks of possible legal challenges, and so on (Burkart, Gromb and Panunzi 1998).

As a consequence of the costs of such legal expropriation, when the entrepreneur diverts share s of the profits, he only receives $sRI - c(k,s)RI$, where $c(k,s)$ is the share of the profits that he wastes when s is diverted. We call c the cost-of-theft function. Here k denotes the quality of shareholder protection; the better protected are the shareholders, the more has to be wasted to expropriate a given share of profits. Thus if the law accommodates something close to outright theft, then k is low and c is close to zero, but when the law is very stringent, then k is high and significant resources must be wasted to expropriate a given share of profits. Formally, we assume that $c_k > 0$, $c_s > 0$, $c_{ss} > 0$, and $c_{ks} > 0$. The first inequality means that stealing is costlier in a more protective legal regime; the second means that the marginal cost of stealing is positive; the third means that the marginal cost of stealing rises as more is stolen; and the final -- crucial -- inequality means that the marginal cost of stealing is higher when investors are better protected. We assume that the cost c is borne by the entrepreneur rather than by all the shareholders[2].

Under these assumptions, the entrepreneur maximizes

(1)     $\alpha\,(1-s)RI + sRI - c(k,s)RI$,

where the first term is his share of after-theft cash flows (or dividends), and the remaining two terms are his benefits from expropriation. Since the solution for optimal s is independent of RI, the scale of the firm, we can assume that the entrepreneur maximizes:

(2)     $U = \alpha(1-s) + s - c(k,s)$

The first order condition for this problem is given by:

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[2]This assumption does not affect any of our principal results.

(3)     $U_s = -\alpha + 1 - c_s(k,s) = 0,$

which can be rewritten as:

(4)     $c_s(k,s) = 1 - \alpha.$

The last expression is the counterpart of the Jensen-Meckling (1976) condition for the consumption of perquisites by the entrepreneur. It states that the higher is the cash flow ownership by the entrepreneur, the greater are his incentives to distribute dividends in a non-distortionary way rather than expropriate minority shareholders in a distortionary way, and hence the lower is the equilibrium level of expropriation for a given k. High cash flow ownership reduces minority expropriation.

We can now examine this first order condition to derive several testable implications of the model. Differentiating the first order condition with respect to k, we get

(5)     $c_{ks}(k,s) + c_{ss}(k,s)\dfrac{ds^*}{dk} = 0$

We can rearrange terms and recall our assumptions on the function c to obtain:

(6)     $\dfrac{ds^*}{dk} = -\dfrac{c_{ks}(k,s)}{c_{ss}(k,s)} < 0$

Result 1: In countries with better shareholder protection, there is less expropriation of minority shareholders.

Next, we differentiate the first order condition with respect to $\alpha$ to obtain.

$$(7) \qquad c_{ss}(k,s^*)\frac{ds^*}{d\alpha}=-1$$

Under our assumptions on the cost-of-theft function c, condition (7) implies:

$$(8) \qquad \frac{ds^*}{d\alpha}=-\frac{1}{c_{ss}(k,s^*)}<0$$

This gives us another important comparative static (Jensen and Meckling 1976):

Result 2: Higher cash flow ownership by the entrepreneur is associated with less expropriation of minority shareholders.

But what about the implications of this model for valuation? The most natural way to measure valuation is this model is with Tobin's Q, which is given by $Q=(1-s^*)R$. The comparative statics results are then given by:

$$(9) \qquad \frac{dQ}{dk}=-\frac{ds^*}{dk}R>0,$$

$$(10) \qquad \frac{dQ}{d\alpha}=-\frac{ds^*}{d\alpha}R>0,$$

$$(11) \qquad \frac{dQ}{dR}>0.$$

We summarize these calculations as hypotheses to be tested in the empirical part of the paper.

Result 3: *Other things equal*

H1: Firms in more protective legal regimes should have higher Tobin's Qs;

H2: Firms with higher cash flow ownership by the controlling entrepreneur should have higher Tobin's Qs;

H3: Firms with better investment opportunities should have higher Tobin's Qs.

In our empirical work, we use the ratio of cash flow to price, CF/P, as an alternative measure of valuation. The theoretical interpretation of CF/P is somewhat ambiguous. If cash flows are reported after expropriation takes place, than CF/P is identically equal to 1 in this model, and is independent of investor protection. If CF/P is reported before expropriation takes place, then expropriation of the minority shareholders will be reflected in a lower price relative to these reported cash flows, and hence CF/P declines as investor protection gets better. This ambiguity should be kept in mind when interpreting our evidence.

The model can be used to address one further interesting question: does the marginal benefit of stronger incentives from cash flow ownership decrease as shareholder protection improves? That is, is it the case that:

$$(12) \quad \frac{d^2 Q}{d\alpha dk} < 0?$$

In principle, this would be a plausible result, since, with good shareholder protection,

expropriation might be so costly that cash flow ownership hardly matters. Unfortunately, in the general case this result depends on a number of difficult to sign third derivatives. Specifically, differentiation yields the following conditions:

$$(13) \quad \frac{d^2 Q}{d\alpha dk} = -R \frac{d^2 s^*}{d\alpha dk}$$

Differentiating equation (8) with respect to k, we obtain:

$$(14) \quad \frac{d^2 s^*}{d\alpha dk} = \frac{c_{ssk}(k,s^*) + c_{sss}(k,s^*) \dfrac{ds^*}{dk}}{(c_{ss}(k,s^*))^2}.$$

In general, we cannot be sure that the numerator of the last expression is positive. However, in the special case of a quadratic cost-of-theft function, we obtain this result. Specifically, let

$$(15) \quad c(k,s^*) = \frac{1}{2}ks^2.$$

In this case, all our assumptions on the function c hold and differentiation yields:

$$(16) \quad c_{ssk}(k,s^*) = 1 > 0, \text{ and}$$

$$(17) \quad c_{sss}(k,s^*) = 0$$

In this case, expression (13) is negative, and we have another testable prediction.

Result 4:

H4: For the quadratic cost-of-theft function, the effect of the entrepreneur's cash flow ownership on valuation is lower in countries with good investor protection.

Before examining the hypotheses H1-H4 empirically, we briefly consider the case of the endogenous determination of cash flow ownership, $\alpha$[3]. In line with both the empirical and the theoretical work in this area, we continue to assume that the entrepreneur retains control of the firm, and only examine his choice of cash flow ownership. For the purposes of this discussion, we also continue to use the quadratic cost-of-theft function used in Result 4, although Result 5 presented below holds more generally.

Suppose that the entrepreneur tries to raise funds F to finance I by selling equity. Since equity ownership gives him an incentive not to expropriate minority shareholders, the terms on which the entrepreneur is able to raise funds depend on the equity share he retains, $\alpha$. Specifically, if the entrepreneur invest I, then the amount of funds he can raise, $F(\alpha)$, is given by what shareholders with a required rate of return of zero (as a normalization) can expect to get back on their investment, after expropriation takes place:

$$(18) \qquad F(\alpha) = (1-\alpha)(1-s^*)RI = (1-\alpha)\left(1-\frac{(1-\alpha)}{k}\right)RI$$

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The second equality follows from the calculation of the optimal theft level for the quadratic cost-of-theft function. Figure 1 presents the function F($\alpha$), which is quadratic in $\alpha$ when the cost-of-theft function is quadratic. To finance investment I, the entrepreneur must raise F($\alpha$) that is at least equal to I. Figure 1 illustrates that any $\alpha$ in the interval [a,b] brings revenues sufficient to cover the investment cost. The entrepreneur would however sell the least equity he can to finance his investment: in equilibrium $\alpha$ = b, and is the highest solution to the equation:

(19) $\quad F(\alpha) = I$

The reason for this is that a higher retained equity stake reduces expropriation, and in equilibrium the entrepreneur pays for inefficient expropriation out of his own pocket by receiving a lower price for the shares. He wants to commit to the least expropriation, which he does by retaining the highest feasible ownership stake compatible with raising enough finance for his investment.

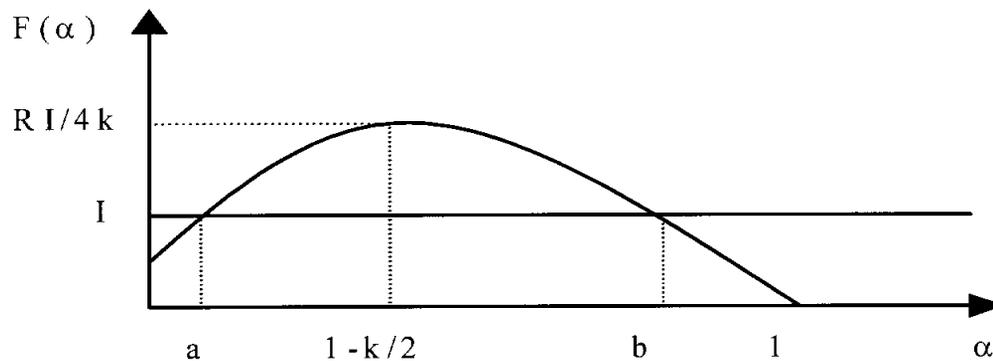We note that the revenue function reaches its maximum at

(20) $\quad \alpha = 1 - \dfrac{k}{2}$

which means that in equilibrium,

(21) $\quad \alpha \geq 1 - \dfrac{k}{2}$

**Figure 1**

**Revenues raised by the entrepreneur as a function of retained ownership.**



These calculations lead to the following straightforward result

Result 5: The poorer is investor protection, the smaller is the set of projects that can be financed.

Proof: The maximum amount that can be raised is $RIk/4$, which is increasing in k.

This result is easy to explain. Fix $\alpha$. Inferior shareholder protection means that the entrepreneur expropriates more in equilibrium. The price of the shares is then lower and the entrepreneur raises fewer dollars. Since this is true for all $\alpha$, the maximum obtained with weak protection must be below that obtained with good protection. This result is broadly consistent with the findings that capital markets are broader (LLSV 1997) and firms tend to be larger in countries with better investor protection (Kumar, Rajan and Zingales 1999).

The specific model we present here also yields one counterintuitive and not particularly general result, namely that, when a firm goes public, an entrepreneur retains a higher fraction of

the cash flows in countries with better investor protection. The reason is that, in this model, the entrepreneur sells just enough shares to cover the set up costs I. Since good investor protection leads to higher share prices, the entrepreneur needs to sell a smaller fraction of the company to raise I. When entrepreneurs have other reasons to sell equity, such as diversification, better investor protection reduces their residual cash flow ownership (Shleifer and Wolfenzon 1999).

3. Data.

*Construction of the sample*

Our main ownership sample is based on firms previously studied by LLS (1999). We collect valuation and ownership data for the largest twenty firms (by market capitalization of common equity) in each of 27 countries. Using the largest firms makes it harder to find the benefits of investor protection for corporate valuation, since large firms have access to substitute mechanisms for limiting their expropriation of minority shareholders, including public scrutiny, reputation-building, foreign shareholdings, or listings on international exchanges. We generally use the richest countries based on 1993 per capita income, but exclude a number of them that do not have significant stock markets (e.g., Kuwait, United Arab Emirates, and Saudi Arabia).

Like LLS (1999), the ownership sample studied here excludes all affiliates of foreign firms. A firm is defined as an affiliate of a foreign company if at least 50 percent of its votes are directly or indirectly controlled by a single foreign corporate owner. Unlike LLS (1999), we here exclude banks and financial firms (S.I.Cs. 6,000 through 6,999) because valuation ratios for financial firms are not comparable to those of non-financial firms. Finally, because the model makes predictions for the valuation of firms that have controlling shareholders, we focus on the

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subsample of firms that are not widely-held (as defined below). This means that some countries (such as the UK and the US, for example) have considerably fewer than twenty observations in the ownership sample. The final ownership sample in this paper consists of 371 firms.

As a rule, our companies come from the WorldScope database[4]. For Argentina, WorldScope coverage is limited and we use other sources to add five firms to the sample. We generally rely on annual reports, 20-F filings for companies with American Depositary Receipts (ADRs), proxy statements, and -- for several countries -- country-specific books that detail ownership structures of their companies. We use the Internet because many individual companies (e.g., in Scandinavia), as well as institutions (e.g., the Paris Bourse and *The Financial Times*) have Websites that contain information on ownership structures. Virtually all of our data are for 1996 and 1995, though we have two observations where the data come from the earlier years, and a few from 1997. Because ownership patterns tend to be relatively stable, the fact that the ownership data do not all come from the same year is not a big problem.

For several countries, our standard procedures do not work because disclosure is so limited. For Greece, we take the 20 largest corporations for which we could find ownership data (mostly in *Bloomberg*). For Mexico, we take the 20 largest WorldScope firms that have ADRs. For Israel, we rely almost entirely on 20-Fs, Lexis/Nexis and Internet sources. For Korea, different sources offer conflicting information on corporate ownership structures of chaebols. We were advised by Korean scholars that the best source for chaebols (2 cases) contains information as of 1984, so we use the more stale but reliable data.

To describe control of companies, we identify all shareholders who control over 20

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[4]See Appendix A for more details on data sources.

percent of the votes. In many cases, the principal shareholders in our firms are themselves corporate entities and financial institutions. We then try to find the major shareholders in these entities, the major shareholders in the major shareholders, and so on, until we find the ultimate controllers of the votes. We say that a corporation has a controlling shareholder (ultimate owner) if this shareholder's direct and indirect voting rights in the firm exceed 20 percent. A shareholder has x% indirect control over firm A if: (1) it controls directly firm B which, in turn, directly controls x% of the votes in firm A; or (2) it 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 directly controls x% of the votes in firm A. Table I provides a more precise definition. The idea behind using 20 percent of the votes is that this is usually more than enough to have effective control of a firm[5].

In addition to defining control, we need to compute cash flow ownership of the controlling shareholder (or family), the $\alpha$ from the model. We measure $\alpha$ as the fraction of the sample firm's cash flow rights owned directly and indirectly by the controlling shareholder. The shareholder may hold the cash flow stake $\alpha$ directly. If alternatively a fraction x of the cash flows in the sample company is owned by another corporation which the controlling shareholder controls, and if he owns the fraction y of the cash flows of this corporation, then $\alpha$ is equal to the product of x and y. If there are several chains of ownership between the controlling shareholder and the sample company, we add his cash flow ownership across all these chains.

Table I summarizes all the variables. We use two rough proxies for protection of

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[5]As a robustness check, we also considered a slightly larger sample of 421 firms in which the control of 10 percent of the votes is taken as sufficient for effective control. The results for this sample were statistically weaker, but very similar to those we present here.

minority shareholders, the theoretical k of the model. The first is a dummy equal to one if a country's company law or commercial code is of common law origin, and zero otherwise. Because we have data on fewer countries than LLSV (1998), we do not distinguish between French, German, and Scandinavian civil law origins in this paper. LLSV (1998) show that countries with the common law legal origin have better protection of minority shareholders than do countries with civil law legal origins. The reason for this finding may be the judiciary philosophy of common law countries, which allows judges to broadly interpret certain principles, such as fiduciary duty, and hence authorizes them to prohibit more forms of minority expropriation. Alternatively, common law countries may protect minority investors better because corporate owners have less political influence. The second measure of investor protection is the index of anti-director rights, also from LLSV (1998). This index reflects such aspects of minority rights as the ease of voting for directors, the freedom of trading shares during a shareholders meeting, the possibility of electing directors through a cumulative voting mechanism or proportional representation of minorities on the board, the existence of a grievance mechanism for oppressed minority shareholders, such as a class action lawsuit or appraisal rights for major corporate decisions, the existence of a preemptive right to new security issues by the firm, and the percentage of votes needed to call an extraordinary shareholder meeting. LLSV (1997) find that the anti-director rights score predicts stock market development across countries.

Our principal measure of valuation is Tobin's Q, which has been used in similar analyses since Demsetz and Lehn (1985) and Morck et al. (1988). We compute it for the most recent fiscal year available, typically 1995. The numerator of Tobin's Q is the book value of assets minus the book value of common equity and deferred taxes plus the market value of common

equity. The denominator is the book value of assets. We also compute the cash-flow-to-price

ratios as a measure of valuation[6]. Its numerator is the average cash flow over the three most

recent fiscal years, with negative (average) cash-flows set to missing. We average cash flow to

smooth the business cycles[7]. The denominator is the market value of common equity at the end

of the most recent fiscal year. To minimize the weight of outliers, we cap the two valuation

measures at both the 5th and 95th percentile.

For each firm, we also compute its annual sales growth rate over the most recent three

fiscal years. This is our rough proxy for the expected rate of return on investment, R. We cap

growth in sales at both the 5th and 95th percentiles to avoid problems with outliers. We use sales

rather than earnings growth to avoid dealing with the volatility and manipulability of earnings.

For our two measures of valuation and the sales growth rate, we also compute industry

adjusted measures. For each company in a given industry, we make this adjustment relative to

the world-wide rather than country-wide average for that industry (*i.e.*, we take out world-wide

industry effects rather than country-industry effects). As an example, consider the computation

of the industry-adjusted growth in sales. We first find the world-wide median growth in real

sales for each industry using all WorldScope (non-sample) firms in the twenty seven countries of

our sample. The industry-adjusted growth in sales for a company is the difference between its

own sales growth and the world median sales growth in its industry.[8] The idea is that different

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[6]As checks of robustness, we also tried the (less theoretically clearcut) earnings-to-price
and the sales-to-price ratios; and obtained results similar to those reported in the paper.

[7]We obtain the results similar to those reported here when cash flows are not averaged.

[8] Industry is defined at the three-digit S.I.C. level whenever there are at least five
WorldScope non-sample firms in the control group (363 cases) and at the two-digit S.I.C. level

industries might be at different stages of maturity and growth that determine their valuations.

In addition to the ownership sample, we present some of the raw statistics on the effect of investor protection on valuation for a broader sample of March, 1996 Worldscope firms, for which we do not have ownership data. In this sample, we restrict attention to firms from the same 27 countries covered in the ownership sample, and exclude financial firms for which standard valuation measures are inappropriate. This sample consists of 8,513 firms.

One final issue that needs mentioning is the differences in consolidation rules in financial statements among countries, which can in principle severely distort our measures of valuation. We have examined this issue in some detail, and summarize our findings in Appendix B. Based on this analysis, we do not adjust the reported accounting data.


4. Preliminary results on investor protection and valuation.

Table II presents the basic results from the broad Worldscope sample on the relationship between legal origin (common vs. civil law) and valuation across 27 countries. For each country, we compute the median Tobin's Q and the cash-flow-to-price ratio for the relevant Worldscope firms in that country. We also present the number of observations in each country, the country's antidirector rights score, and the median sales growth rate of the sample firms from that country. Finally, we compute the median of medians of each variable among civil law and common law countries separately, and compare them.

Two points should be noted. First, in the Worldscope sample, countries like the U.S., the U.K., and Japan have a lot more firms than most other countries do. As we argued in LLSV

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when the previous condition is not met (8 cases).

(1997), broad stock markets reflect high levels of minority shareholder protection in these countries. By focusing on country medians, however, we do not give these countries any higher weight. Second, Table II confirms the findings of our earlier papers, namely that common law countries have sharply higher antidirector rights scores than civil law countries do. The median anti-director rights score is 2 for civil law countries, and 4 for common law countries.

The principal result of Table II is that companies in common law countries have higher valuations than do companies in civil law countries. The median of medians (MOM) Tobin's Q is 1.23 for common law, and 1.10 for civil law countries (t = -2.06). The MOM cash flow to price ratio is higher in civil law countries (.12 vs. .10, although the significance level is only 10%). These results are consistent with the prediction that better shareholder protection is associated with higher corporate valuation. At the same time, the growth rate in sales in also higher for common law countries, suggesting that the investment opportunities their companies face may be better. Without controlling for such opportunities as well as differences in industrial composition and ownership structures, these results must be regarded as preliminary.

Table III presents the same calculations as those in Table II, except on the "ownership sample" -- the firms for which we have computed ownership and which have controlling shareholders. The number of firms from the U.S., U.K., and Japan, countries with relatively dispersed ownership structures (LLS 1999), falls dramatically in this sample. Despite a very different sample, the findings of Table II are confirmed. The MOM Tobin's Q in common law countries is 1.48 compared to 1.21 in civil law countries (t=2.16). The differences across legal systems in MOM cash flow to price ratio is also large and statistically significant (t=2.88). Differences in sales growth rates, however, continue to favor common law countries.

Table IV examines the robustness of these results. In Panel A, we look at the

Worldscope sample, but sort countries on the basis not of legal origin but of the anti-director

rights score, which can be low (0, 1, 2, or 3) or high (4 or 5). Although qualitatively the results

of Table II are preserved, the statistical significance of the difference in MOM Tobin's Q's is

now lower. Still, the MOM Tobin's Q remains higher, and cash flow to price ratio lower, in

countries with high anti-director rights score (the latter is statistically significant). Panel B

presents a very similar result for the ownership sample. In the regressions presented below, we

do not find as sharp a difference between the legal origin and the anti-director rights results.

In summary, Tables II-IV document that firms in countries with better shareholder

protection have higher valuations relative to some measure of their "fundamentals," such as

assets or cash flow, than firms in countries with inferior shareholder protection. This result is

broadly consistent with the main prediction of our model. At the same time, the model generates

additional predictions, which may also mean that a simple comparison of medians omits

important confounding effects. In the next section, we turn to the regression analysis to

reexamine Hypothesis 1 and to address the additional predictions.


IV. Regression analysis.

For most of the analysis in this section, we follow the literature on the relationship

between ownership and valuation in treating $\alpha$ as exogenous. At the end of the section, we

consider some of the issues posed by the possible endogeneity of $\alpha$.

Table V presents our basic tests of the hypotheses developed in Section 2. All the

regressions are run on 371 firms from 27 countries. Since valuations may be country-specific in

ways not captured by our investor protection variables, all the regressions are run with country random effects. Hausman tests fail to reject the hypothesis that random effects is the appropriate specification. In all regressions, we control for the past growth rate in sales as a measure of investment opportunities for each firm. There are two panels in Table V corresponding to the two measures of valuation we use: Tobin's Q and cash flow to price ratio.

Each panel contains 4 regressions. In the first two we use the common law dummy as the measure of shareholder protection, and in the second two the antidirector rights score. For each measure of shareholder protection, we present two specifications. First, we use shareholder protection as the only independent variable, besides the sales growth rate. From the point of view of the model, this corresponds to regressing Q on k and R. Second, we also include in the regression the cash flow rights of the controlling shareholder as well as an interaction term between that measure and the investor protection variable. This corresponds to testing the full model, since we are regressing Q on k, R, $\alpha$, and k$\bullet\alpha$. Recall that Hypotheses 2 and 4 predict that incentives from cash flow ownership should exert a positive influence on valuation, and that this influence should be greater in countries with inferior protection of shareholders.

Panel A of Table V presents the results for Tobin's Q as a measure of valuation. Note first that growth in sales has a positive coefficient in all specifications. When the common law dummy is used as a measure of shareholder protection and is included alone, it is significant at only 15% level. But when it is included along with the cash flow rights and the interaction term, its coefficient is significant at the 10% level, and implies that Tobin's Q rises by an impressive .34 as one moves from civil to common law origin, other things equal. The coefficient on the cash flow rights is significant at the 10% level also, although the coefficient on the interaction

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term is not. These parameter estimates imply that, as cash flow ownership rises from 20% to 30%, Tobin's Q rises by .27 in civil law countries, and not at all in common law countries.

When included alone, the antidirector rights score is insignificant. But when cash flow rights and the interaction term are added to the regression, the coefficient on antidirector rights becomes significant at the 10% level and suggests that an improvement in the score by 2 points (from the civil law to the common law median) raises Tobin's Q by about .2. The coefficient on the cash flow rights variable is .6 and significant at the 5% level. The coefficient on the interaction term is -.15, and very marginally significant, although its sign is consistent with the prediction of the theory. These results imply that as cash flow ownership rises from, say 20% to 30%, Tobin's Q increases by about .03 when the anti-director score is 2, and not at all when the anti-director score is 4. The incentive effect is small even in civil law countries.

Panel B of Table V presents the results for the cash flow to price ratio. The growth in sales is significant with a predicted sign in all specifications. The results using both the common law dummy and the anti-director score as measures of shareholder rights are also extremely strong: in all four regressions better shareholder protection is associated with sharply higher and statistically significant valuation, consistent with Hypothesis 1. The results on incentives are not, however, significant, although the signs of coefficients are generally consistent with the theory.

Table VI presents the results with industry adjusted data. The conclusion that investor protection is associated with higher valuation is if anything statistically stronger than in Table V. The result that incentives are associated with higher valuation when investor protection is poor also holds up for Tobin's Q, but not for cash flow to price. The results are thus similar to those without the industry adjustment. In particular, the evidence continues to support Hypothesis 1.

*A discussion of results on incentives.*

In the empirical analysis so far, we have assumed that α is exogenous. Although this assumption follows most of the literature in this area, it may be questioned. Our defense of this assumption is that, generally speaking, ownership patterns are extremely stable, especially outside the United States, and are shaped largely by histories of the companies and their founding families. Still, we next consider some ways to get around this assumption, and some empirical implications of endogenous ownership. We also discuss the incentives results more broadly.

According to the theory in Section 2, there may be a country-specific effect in our measure of cash flow ownership. The incentive effect we are picking up is then a cross-country rather than a cross-firm effect. Lacking instruments, we can address this problem by focusing solely on within-country variation of cash flow ownership, which is arguably more exogenous to the legal regime. In Table VII we use as our cash flow rights variable for each firm the measure relative to the country mean. This adjustment reduces the magnitude and significance of the investor protection results. The common law dummy remains marginally significant in some specifications. The incentive effects show up at about 15% significance level, indicating that our earlier findings are not driven solely by differences between countries.

A possible reason for this fragility of the evidence on incentives may come from our assumption that the degree of control by the controlling shareholder is constant (effectively nearly absolute) as long as he has over 20% of the votes. If the degree of control rises as the voting rights increase, and if moreover cash flow rights are correlated with voting rights, then our incentive measure may be capturing greater control by the dominant shareholder rather than greater incentives. And if greater control is associated with greater expropriation, then valuation

should fall with greater control rights. Our finding of only a weak incentive effect may come from this confounding of incentives and power. Put differently, the same problems that plague U.S. data in separating incentive and control effects also plague the international data.

We explore this issue in Table VIII, which presents country medians of cash flow and control rights. The last column of Table VIII computes, for each country, the median ratio of cash flow rights to control rights held by the controlling shareholder in the ownership sample, which we call the wedge. The wedge close to 1 points to small deviations from one-share-one-vote (through pyramids or multiple classes of stock), whereas a small number points to a large deviation. We also compute the MOM for common and civil law origins. The clear message of Table VIII is that in this sample the deviations from one share one vote are small. Although in some countries such as Sweden and Israel the median wedge is low (i.e., the deviations are large), on average they are relatively small (see LLS 1999 for a further discussion of this issue). The world-wide MOM wedge is .93; it is 1 for common law, and .92 for civil law countries. Perhaps the reason for our finding a weak incentive effect, then, is the problem of separating econometrically cash flow ownership from control. Nonetheless, we see no plausible alternative to our specification in this data set, since the theoretical model makes the sharp prediction that all the variables that we have included in the regressions should actually be there.

VI. Conclusion.

In this paper, we presented a simple theory of the consequences of corporate ownership for corporate valuation in different legal regimes. We have also tested this theory using data on companies from 27 wealthy countries around the world. The results generally confirm the crucial

prediction of the theory, namely that poor shareholder protection is penalized with lower valuations. This evidence supports the importance of expropriation of minority shareholders by controlling shareholders in many countries, and for the role of the law in limiting such expropriation. As such, it adds an important link to the explanation of the consequences of investor protection for financial market development.

The evidence is more mixed on some of the other implications of the theory. On the incentive effects of cash flow ownership, the evidence provides some support for the theory, and is consistent with the findings of Claessens et al. (1999b) on a larger sample of companies from Asia. The evidence expands our understanding of the role of investor protection in shaping corporate finance, by clarifying the roles which both the incentives and the law play in delivering value to outside shareholders.

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## Table I: The Variables

This table describes the variables collected for the twenty seven countries included in our study. The first column gives the name of the variable. The second column describes the variable and provides the sources from which the variable was collected.

| Variable | Description |
| --- | --- |
| Common Law | Equals one if the origin of the Company Law or Commercial Code of the country is the English Common Law and zero otherwise. *Source: La Porta et al. (1998).* |
| Civil Law | Equals one if the Company Law or Commercial Code of the country originates in Roman Law and 0 otherwise. *Source: La Porta et al. (1998).* |
| Antidirector Rights | Index of antidirector rights. The index of antidirector rights is formed by adding one when: (1) the country allows shareholders to mail their proxy vote; (2) shareholders are not required to deposit their shares prior to the General Shareholders' Meeting; (3) cumulative voting or proportional representation of minorities on 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 ten percent (the sample median); (6) or when shareholders have preemptive rights that can only be waved by a shareholders meeting. The range for the index is from zero to six. Source: *La Porta et al. (1998).* |
| Tobin's Q | The ratio of the market value of assets to their replacement value at the end of the most recent fiscal year. The market value of assets is proxied by the book value of assets minus the book value of equity minus deferred taxes plus the market value of common stock. The replacement value of assets is proxied by the book value of assets. Source: *WorldScope Database (3/96).* |
| Ind-Tobin's Q | Industry-adjusted Tobin's Q ratio. Ind-Tobin's Q is computed as the difference between Tobin's Q and the *world median* Tobin's Q for the firm's industry. Industry control groups are defined at the three-digit S.I.C. level whenever there are at least five WorldScope firms (excluding sample firms) in that group and at the two-digit S.I.C. level otherwise. Source: *WorldScope Database (3/96).* |
| CF/P | The cash-flow-to-price ratio. Cash flow is defined as the sum of earnings (net income before extraordinary items) and depreciation. We set the ratio to missing when cash flow is negative. It is expressed in US dollars and averaged over the three most recent fiscal years. Price is defined as the market value of common equity, expressed in US dollars, at the end of the most recent fiscal year. Source: *WorldScope Database (3/96).* |
| Ind-CF/P | Industry-adjusted cash flow-to-price ratio. Ind-CF/P is computed as the difference between CF/P and the *world median* CF/P for the firm's industry. Industry control groups are defined at the three-digit S.I.C. level whenever there are at least five WorldScope firms (excluding sample firms) in that group and at the two-digit S.I.C. level otherwise. Source: *WorldScope Database (3/96).* |
| GS | Geometric average annual percentage growth in lagged (net) sales for up to 3 years depending on data availability. Sales are expressed in (US$) dollars. Source: *WorldScope Database (3/96).* |

| Variable | Description |
|----------|-------------|
| Ind-GS | Average annual Industry-adjusted growth in lagged (net) sales for up to three years depending on data availability. Ind-GS is computed as the difference between GS and the *world median* GS for the firm's industry. Industry control groups are defined at the three-digit S.I.C. level whenever there are at least five WorldScope firms (excluding sample firms) in that group and at the two-digit S.I.C. level otherwise. Source: *WorldScope Database (3/96)*. |
| Control Rights | Equal to the fraction of the firm's voting rights owned by its controlling shareholder. To measure control we combine a shareholder's *direct* (*i.e*, through shares registered in her name) and *indirect* (*i.e*, through shares held by entities that, in turn, she controls) voting rights in the firm. A shareholder has an *x% indirect control* over firm A if: (1) she controls directly firm B which, in turn, directly controls x% 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% 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 twenty 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. |
| CF 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"). |
| Wedge | The ratio of Cash Flow Right over Control Rights. |
| CF Rights*Antidirector | Equal to the product of CF Rights and Antidirector Rights. |
| CF Rights*Common | Equals CF Rights if Common Law is equal to one and 0 otherwise. |

## Table II: The WorldScope Sample

Panel A classifies countries by legal origin and presents medians by country for all *WorldScope* firms in our 27 sample countries. N is the number of firms in each country. Definitions for the remaining variables are in Table I. Panel B reports tests of medians for civil versus common legal origin.

| Country | N | Antidirector Rights | Tobin's Q | CF / P | GS (%) |
|---|---|---|---|---|---|
| *Panel A: Medians* | | | | | |
| Argentina | 32 | 4 | 1.0861 | 0.1485 | 10.17 |
| Austria | 52 | 2 | 1.1088 | 0.1716 | 10.56 |
| Belgium | 73 | 0 | 1.1021 | 0.1362 | 8.43 |
| Denmark | 114 | 2 | 1.1671 | 0.1147 | 10.03 |
| Finland | 72 | 3 | 1.0812 | 0.1934 | 14.09 |
| France | 457 | 3 | 1.0904 | 0.1458 | 7.37 |
| Germany | 333 | 1 | 1.2359 | 0.1300 | 6.65 |
| Greece | 73 | 2 | 1.4218 | 0.0831 | 11.49 |
| Italy | 137 | 1 | 1.0156 | 0.1723 | 2.84 |
| Japan | 1836 | 4 | 1.3020 | 0.0410 | -0.98 |
| Korea | 185 | 2 | 1.0663 | 0.0726 | 11.05 |
| Mexico | 68 | 1 | 1.3365 | 0.0949 | -4.95 |
| Netherlands | 146 | 2 | 1.2213 | 0.1402 | 9.45 |
| Norway | 73 | 4 | 1.1450 | 0.1021 | 10.60 |
| Portugal | 52 | 3 | 0.9577 | 0.1109 | 9.41 |
| Spain | 100 | 4 | 1.0691 | 0.1161 | 5.59 |
| Sweden | 119 | 3 | 1.0875 | 0.1209 | 14.08 |
| Switzerland | 125 | 2 | 1.0550 | 0.1073 | 10.52 |
| **Civil Law Median** | **107** | **2** | **1.0963** | **0.1185** | **9.74** |
| | | | | | |
| Australia | 181 | 4 | 1.2345 | 0.0998 | 15.17 |
| Canada | 348 | 5 | 1.1510 | 0.1262 | 9.55 |
| Hong Kong | 159 | 5 | 1.0424 | 0.1373 | 11.93 |
| Ireland | 47 | 4 | 1.2862 | 0.0972 | 14.71 |
| Israel | 21 | 3 | 1.1672 | 0.1141 | 13.50 |
| New Zealand | 47 | 4 | 1.1949 | 0.0970 | 15.94 |
| Singapore | 125 | 4 | 1.4001 | 0.0523 | 17.07 |
| United Kingdom | 1157 | 5 | 1.4257 | 0.0812 | 10.27 |
| United States | 2381 | 5 | 1.3950 | 0.0808 | 8.24 |
| **Common Law Median** | **159** | **4** | **1.2345** | **0.0972** | **13.50** |
| | | | | | |
| **Sample Median** | **119** | **3** | **1.1510** | **0.1141** | **10.27** |
| | | | | | |
| *Panel B: Test of Medians (z-statistic)* | | | | | |
| Civil vs Common Law | | | -3.53[a] | -2.06[b] | 1.80[c] | -2.52[b] |

a=Significant at 1% level; b=Significant at 5% level; c=Significant at 10% level; d=Significant at 15% level.

## Table III: The Ownership Sample

Panel A classifies countries by legal origin and presents medians by country for the sub-sample of 371 firms that have a controlling shareholder at the twenty percent level. N is the number of firms in each country with a controlling shareholder at the twenty percent level. Definitions for the remaining variables are in Table I. Panel B reports tests of medians for civil versus common legal origin.

| Country | N | Antidirector Rights | Tobin's Q | CF / P | GS (%) |
|---|---|---|---|---|---|
| *Panel A: Medians* | | | | | |
| Argentina | 20 | 4 | 1.1494 | 0.1467 | 14.07 |
| Austria | 19 | 2 | 1.1131 | 0.1502 | 9.31 |
| Belgium | 19 | 0 | 1.2181 | 0.1326 | 8.95 |
| Denmark | 16 | 2 | 1.5695 | 0.0851 | 11.43 |
| Finland | 14 | 3 | 1.0457 | 0.2045 | 11.85 |
| France | 10 | 3 | 1.2176 | 0.1022 | 9.36 |
| Germany | 13 | 1 | 1.1842 | 0.1537 | 8.62 |
| Greece | 20 | 2 | 1.6734 | 0.0748 | 22.05 |
| Italy | 18 | 1 | 1.0320 | 0.1503 | 7.33 |
| Japan | 7 | 4 | 1.3665 | 0.0462 | 0.84 |
| Korea | 9 | 2 | 1.0580 | 0.1232 | 13.72 |
| Mexico | 20 | 1 | 1.6388 | 0.0949 | -4.00 |
| Netherlands | 13 | 2 | 1.9258 | 0.0754 | 12.25 |
| Norway | 16 | 4 | 1.1443 | 0.1130 | 14.16 |
| Portugal | 18 | 3 | 1.1367 | 0.1067 | 22.00 |
| Spain | 15 | 4 | 1.2061 | 0.1104 | 5.05 |
| Sweden | 17 | 3 | 1.2130 | 0.1023 | 15.05 |
| Switzerland | 13 | 2 | 1.4645 | 0.0782 | 10.78 |
| **Civil Law Median** | **16** | **2** | **1.2096** | **0.1086** | **11.11** |
| | | | | | |
| Australia | 6 | 4 | 1.4823 | 0.0696 | 14.08 |
| Canada | 10 | 5 | 1.5738 | 0.0779 | 11.88 |
| Hong Kong | 19 | 5 | 1.1842 | 0.0811 | 11.32 |
| Ireland | 7 | 4 | 1.3228 | 0.0738 | 10.25 |
| Israel | 19 | 3 | 1.1669 | 0.1189 | 12.88 |
| New Zealand | 15 | 4 | 1.4771 | 0.0839 | 21.32 |
| Singapore | 14 | 4 | 1.6874 | 0.0398 | 26.59 |
| United Kingdom | 1 | 5 | 3.3825 | 0.0306 | 39.59 |
| United States | 3 | 5 | 2.2638 | 0.0561 | 24.30 |
| **Common Law Median** | **10** | **4** | **1.4823** | **0.0738** | **14.08** |
| | | | | | |
| **Sample Median** | **15** | **3** | **1.2181** | **0.0949** | **11.88** |
| | | | | | |
| *Panel B: Test of Medians (z-statistic)* | | | | | |
| Civil vs Common Law | | -3.53[a] | -2.16[b] | 2.88[a] | -2.21[b] |

a=Significant at 1% level; b=Significant at 5% level; c=Significant at 10% level; d=Significant at 15% level.

**Table IV: Robustness of the Univariate Results**

The table presents results of two robustness tests. Panels A and B present medians of medians for the *WorldScope* and ownership samples, respectively, for countries sorted according to antidirector rights. N is the median number of firms. Definitions for the remaining variables are in Table I.

| Country | N | Antidirector Rights | Tobin's Q | CF / P | GS (%) |
|---|---|---|---|---|---|
| *Panel A: WorldScope Sample by Antidirector Rights* | | | | | |
| Low Antidirector Median | 114 | 2 | 1.1021 | 0.1209 | 10.03 |
| High Antidirector Median | 142 | 4 | 1.2147 | 0.0985 | 10.43 |
| Z-stat Low vs. High Antidirector | | -4.50[a] | -1.51[d] | 1.90[c] | -1.07 |
| *Panel B: Ownership Sample by Antidirector Rights* | | | | | |
| Low Antidirector Median | 17 | 2 | 1.2130 | 0.1067 | 11.43 |
| High Antidirector Median | 12 | 4 | 1.4218 | 0.0758 | 14.08 |
| Z-stat Low vs. High Antidirector | | -4.50[a] | -1.56[d] | 2.68[a] | -1.37 |

a=Significant at 1% level; b=Significant at 5% level; c=Significant at 10% level; d=Significant at 15% level.

**Table V - Random Effects Regressions for Raw Data**

Random effects regressions for the cross-section of 371 firms in 27 countries. Table I provides definitions for the variables. The dependent variables are: (1) Tobin's Q in Panel A; and (2) CF/P in Panel B. The independent variables are: (1) GS, the three-year geometric average annual growth rate in sales; (2) Common Law, a dummy variable that equals one if the legal origin of the Company Law or Commercial Code of the country in which the firm is incorporated is Common Law and zero otherwise; (3) Antidirector Rights, the Index of Antidirector rights of the country in which the firm is incorporated; (4) CF Rights, the fraction of the cash flow rights held by the firm's controlling shareholder; (5) the interaction between CF Rights and Common; and (6) the interaction between Antidirector Rights and CF Rights. Standard errors are shown in parentheses.

*Independent Variables*

| Constant | GS | Common Law | Antidirector | CF Rights | CF Rights* Common | CF Rights* Antidirector | Overall R² |
|---|---|---|---|---|---|---|---|
| *Panel A: Tobin's Q* | | | | | | | |
| 1.3417ᵃ (0.0967) | 0.5945ᵃ (0.1861) | 0.2578ᵈ (0.1688) | | | | | 0.0369 |
| 1.2404ᵃ (0.1061) | 0.6095ᵃ (0.1868) | 0.3425ᶜ (0.1820) | | 0.2733ᶜ (0.1608) | -0.2702 (0.2991) | | 0.0471 |
| 1.2211ᵃ (0.1876) | 0.6016ᵃ (0.1862) | | 0.0681 (0.0574) | | | | 0.0224 |
| 1.0150ᵃ (0.1974) | 0.6299ᵃ (0.1867) | | 0.1135ᶜ (0.0603) | 0.6160ᵇ (0.3045) | | -0.1519ᵈ (0.0969) | 0.0383 |
| *Panel B: Cash-flow-to-price Ratio* | | | | | | | |
| 0.1360ᵃ (0.0072) | -0.0767ᵃ (0.0191) | -0.0368ᵃ (0.0124) | | | | | 0.1036 |
| 0.1371ᵃ (0.0096) | -0.0776ᵃ (0.0191) | -0.0456ᵃ (0.0164) | | -0.0025 (0.0164) | 0.0257 (0.0305) | | 0.1040 |
| 0.1598ᵃ (0.0136) | -0.0782ᵃ (0.019) | | -0.0118ᵃ (0.0042) | | | | 0.0937 |
| 0.1620ᵃ (0.0179) | -0.0786ᵃ (0.0192) | | -0.0133ᵇ (0.0055) | -0.0064 (0.0312) | | 0.0045 (0.0099) | 0.0945 |

a=Significant at 1% level; b=Significant at 5% level; c=Significant at 10% level; d=Significant at 15% level.

## Table VI - Random Effects Regressions for Industry-Adjusted Data

Random effects regressions for the cross-section of 371 firms in 27 countries. Table I provides definitions for the variables. The dependent variables are: (1) Ind-Tobin's Q in Panel A; and (2) Ind-CF/P in Panel B. The independent variables are: (1) GS-Ind, the three-year geometric average annual growth rate in industry-adjusted sales; (2) Common Law, a dummy variable that equals one if the legal origin of the Company Law or Commercial Code of the country in which the firm is incorporated is Common Law and zero otherwise; (3) Antidirector Rights, the Index of Antidirector rights of the country in which the firm is incorporated; (4) CF Rights, the fraction of the cash flow rights held by the firm's controlling shareholder; (5) the interaction between CF Rights and Common; and (6) the interaction between Antidirector Rights and CF Rights. Standard errors are shown in parentheses.

### Independent Variables

| Constant | GS-Ind | Common Law | Antidirector | CF Rights | CF Rights* Common | CF Rights* Antidirector | Overall $R^2$ |
|---|---|---|---|---|---|---|---|
| *Panel A: Industry - Adjusted Tobin's Q* | | | | | | | |
| 0.0924 (0.0777) | 0.5767[a] (0.1785) | 0.1967[a] (0.1398) | | | | | 0.0377 |
| 0.0203 (0.0915) | 0.5934[a] (0.1787) | 0.3229[b] (0.1607) | | 0.2990[c] (0.1543) | -0.3770 (0.2875) | | 0.0517 |
| -0.0065 (0.1525) | 0.5837[a] (0.1785) | | 0.0535 (0.0472) | | | | 0.0287 |
| -0.1809 (0.1686) | 0.6058[a] (0.1791) | | 0.0892[c] (0.0521) | 0.5230[c] (0.2940) | | -0.1200 (0.0935) | 0.0446 |
| *Panel B: Industry - Adjusted Cash-flow-to-price Ratio* | | | | | | | |
| 0.0398[a] (0.0064) | -0.0742[a] (0.0193) | -0.0293[b] (0.0116) | | | | | 0.0787 |
| 0.0455[a] (0.0091) | -0.0757[a] (0.0193) | -0.0467[a] (0.0159) | | -0.0153 (0.0165) | 0.0510[d] (0.0308) | | 0.0827 |
| 0.0604[a] (0.0123) | -0.0755[a] (0.0193) | | -0.0100[a] (0.0038) | | | | 0.0819 |
| 0.0685[a] (0.0170) | -0.0763[a] (0.0193) | | -0.0129[b] (0.0053) | -0.0233 (0.0316) | | 0.0084 (0.0100) | 0.0836 |

a=Significant at 1% level; b=Significant at 5% level; c=Significant at 10% level; d=Significant at 15% level.

**Table VII: Random Effects and Demeaned Ownership**

Random effects regressions for the cross-section of 371 firms in 27 countries. Table I provides definitions for the variables. The dependent variables are: (1) Tobin's Q in Panel A; and (2) Industry-adjusted Tobin's Q in Panel B. The independent variables are: (1) GS, the three-year geometric average annual growth rate in sales; (2) Common Law, a dummy variable that equals one if the legal origin of the Company Law or Commercial Code of the country in which the firm is incorporated is Common Law and zero otherwise; (3) Antidirector Rights, the Index of Antidirector rights of the country in which the firm is incorporated; (4) CF Rights, the deviations from the country mean of the fraction of the cash flow rights held by the firm's twenty percent controlling shareholder (defined in Table I); (5) the interaction between CF Rights and Common; and (6) the interaction between Antidirector Rights and CF Rights. Standard errors are shown in parentheses.

| | | | Independent Variables | | | | |
| Constant | GS | Common Law | Antidirector | CF Rights | CF Rights* Common | CF Rights* Antidirector | Overall R² |
|---|---|---|---|---|---|---|---|
| | | | *Panel A: Tobin's Q* | | | | |
| 1.3459ª (0.0977) | 0.5936ª (0.1866) | 0.2581ᵈ (0.1705) | | | | | 0.0350 |
| 1.3450ª (0.0992) | 0.6002ª (0.1868) | 0.2600ᵈ (0.1730) | | 0.2580ᵈ (0.1620) | -0.1828 (0.3005) | | 0.0398 |
| 1.2213ª (0.1896) | 0.6008ª (0.1867) | | 0.0685 (0.0580) | | | | 0.0207 |
| 1.2179ª (0.1908) | 0.6195ª (0.1869) | | 0.0687 (0.0583) | 0.5436ᶜ (0.3041) | | -0.1211 (0.0971) | 0.0275 |
| | | | *Panel B: Industry-Adjusted Tobin's Q* | | | | |
| 0.0923 (0.0781) | 0.5734ª (0.1816) | 0.2027ᵈ (0.1408) | | | | | 0.0363 |
| 0.0915 (0.0813) | 0.5851ª (0.1816) | 0.2067 (0.1464) | | 0.4305ᵈ (0.2963) | -0.0893 (0.0959) | | 0.0419 |
| -0.0124 (0.1530) | 0.5818ª (0.1815) | | 0.0560 (0.0474) | | | | 0.0276 |
| -0.0165 (0.1578) | 0.5934ª (0.1816) | | 0.0574 (0.0488) | 0.4305ᵈ (0.2968) | | -0.0890 (0.0960) | 0.0331 |

a=Significant at 1% level; b=Significant at 5% level; c=Significant at 10% level; d=Significant at 15% level.

## Table VIII: Ownership, Control, Wedge

Panel A classifies countries by legal origin and presents medians by country for the sub-sample of 371 firms that have a controlling shareholder at the twenty percent level. N is the number of firms in each country with a controlling shareholder at the twenty percent level. Definitions for the remaining variables are in Table I. Panel B reports tests of medians for civil versus common legal origin.

| Country | N | CF Rights | Control Rights | Wedge |
|---|---|---|---|---|
| *Panel A: Medians* | | | | |
| Argentina | 20 | 0.4062 | 0.4640 | 0.8767 |
| Austria | 19 | 0.5000 | 0.5190 | 1.0000 |
| Belgium | 19 | 0.3019 | 0.3653 | 0.8431 |
| Denmark | 16 | 0.3765 | 0.5287 | 1.0000 |
| Finland | 14 | 0.4325 | 0.5820 | 0.9256 |
| France | 10 | 0.2195 | 0.3133 | 0.6574 |
| Germany | 13 | 0.2930 | 0.3490 | 0.9172 |
| Greece | 20 | 0.5303 | 0.5303 | 1.0000 |
| Italy | 18 | 0.3078 | 0.5113 | 0.6354 |
| Japan | 7 | 0.5250 | 0.5250 | 1.0000 |
| Korea | 9 | 0.2610 | 0.2960 | 1.0000 |
| Mexico | 20 | 0.3419 | 0.5264 | 0.7706 |
| Netherlands | 13 | 0.3820 | 0.6935 | 1.0000 |
| Norway | 16 | 0.2465 | 0.3288 | 0.8723 |
| Portugal | 18 | 0.5100 | 0.5100 | 1.0000 |
| Spain | 15 | 0.3700 | 0.4898 | 0.9036 |
| Sweden | 17 | 0.0950 | 0.4100 | 0.2571 |
| Switzerland | 13 | 0.3100 | 0.5225 | 0.9156 |
| **Civil Law Median** | **16** | **0.3559** | **0.5107** | **0.9164** |
| Australia | 6 | 0.3518 | 0.3641 | 1.0000 |
| Canada | 10 | 0.2322 | 0.4926 | 0.6601 |
| Hong Kong | 19 | 0.2807 | 0.3500 | 1.0000 |
| Ireland | 7 | 0.5220 | 0.5220 | 1.0000 |
| Israel | 19 | 0.2023 | 0.3820 | 0.5000 |
| New Zealand | 15 | 0.2818 | 0.3093 | 1.0000 |
| Singapore | 14 | 0.3077 | 0.3227 | 1.0000 |
| United Kingdom | 1 | 0.1212 | 0.3093 | 0.3918 |
| United States | 3 | 0.2370 | 0.2370 | 1.0000 |
| **Common Law Median** | **10** | **0.2807** | **0.3500** | **1.0000** |
| **Sample Median** | **15** | **0.3078** | **0.4640** | **0.9256** |
| *Panel B: Test of Medians (z-statistic)* | | | | |
| Civil vs Common Law | | 1.85[c] | 2.32[b] | -0.60 |

a=Significant at 1% level; b=Significant at 5% level; c=Significant at 10% level; d=Significant at 15% level.

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