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The Limits of Financial Globalization

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Abstract

Despite the dramatic reduction in explicit barriers to international investment activity over the last 60 years, the impact of financial globalization has been surprisingly limited. I argue that country attributes are still critical to financial decision-making because of "twin agency problems" that arise because rulers of sovereign states and corporate insiders pursue their own interests at the expense of outside investors. When these twin agency problems are significant, diffuse ownership is inefficient and corporate insiders must co-invest with other investors, retaining substantial equity. The resulting ownership concentration limits economic growth, financial development, and the ability of a country to take advantage of financial globalization.

Keywords: financial globalization, investor protection, Corporate Finance

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ABSTRACT

Despite the dramatic reduction in explicit barriers to international investment activity over the last 60 years, the impact of financial globalization has been surprisingly limited. I argue that country attributes are still critical to financial decision-making because of "twin agency problems" that arise because rulers of sovereign states and corporate insiders pursue their own interests at the expense of outside investors. When these twin agency problems are significant, diffuse ownership is inefficient and corporate insiders must co-invest with other investors, retaining substantial equity. The resulting ownership concentration limits economic growth, financial development, and the ability of a country to take advantage of financial globalization.

* Reese Chair in Banking and Monetary Economics at the Ohio State University and Research Associate at the National Bureau of Economic Research. This is the text of my presidential address delivered to the membership of the American Finance Association in Philadelphia on January 8, 2005. I am grateful to Warren Bailey, Steve Buser, Harry DeAngelo, Linda DeAngelo, Henrik Cronqvist, Craig Doidge, Vihang Errunza, Mara Faccio, Rudi Fahlenbrach, Eugene Fama, Peter Henry, David Hirshleifer, Steve Kaplan, Andrew Karolyi, Ravi Kumar, Anil Makhija, John Persons, Patricia Reagan, Andrei Shleifer, Frank Warnock, Ingrid Werner, Randy Westerfield, Rohan Williamson, Ishay Yafeh, and Luigi Zingales for comments and discussions. I also thank Kuan-Hui Lee and Carrie Pan for research assistance and Sandra Sizer for editorial assistance.

At the end of World War II, the financial markets of most countries were closed to cross-border trade in financial assets. Since then, many countries have sharply reduced such barriers. The liberalization of trade in financial assets is often called "financial globalization."

In neoclassical models, financial globalization generates major economic benefits. In particular, it enables investors worldwide to share risks better, it allows capital to flow where its productivity is highest, and it provides countries an opportunity to reap the benefits of their respective comparative advantages (see Stulz, (1999a), for a review).

Using models in which the only friction is the existence of explicit barriers to trading in financial assets across countries, such as taxes on international trade in financial assets, economists conclude that financial globalization is beneficial because aggregate welfare is higher absent this friction. With complete financial globalization and perfect markets within countries, a country irrelevance proposition holds according to which asset prices, portfolios, and firm financial policies are not country dependent.

The empirical evidence for the predictions of these neoclassical models is mixed. While some authors find a positive impact of financial globalization on growth (see, for instance, Bekaert, Harvey, and Lundblad, (2005)), abundant evidence shows that, so far, the positive impact of financial globalization is limited. Indeed, a 2003 International Monetary Fund (IMF) study on the effects of financial globalization on developing countries concludes that "Thus, while there is no proof in the data that financial globalization has benefited growth, there is evidence that some countries may have experienced greater consumption volatility as a result." (see Prasad et al. (2003)).

Even now, a typical investor's portfolio is heavily weighted towards stocks from his home country and a country's investment is closely tied to the amount it saves. Although neoclassical theory predicts large capital flows towards developing countries, empirically, net equity flows to

these countries are negative from 1996 through 2004.[1] As Obstfeld and Taylor (2003) put it, "Capital transactions seem to be mostly a rich [country]-rich [country] affair" (p. 175), with the country factor emerging as the most important factor in asset returns. A firm's country of incorporation is a more important determinant of its financial policies than its industry. Many of these facts have become paradoxes that are explored in many papers.

What I refer to here as the traditional theory of international finance explores the implications for asset prices, portfolios, and corporate finance of exogenous cross-border barriers to international investment in models in which the country irrelevance proposition holds when barriers are removed (see Karolyi and Stulz, (2003), for a review). This approach to international finance has proved useful in characterizing the impact on asset prices and portfolio choice of barriers to international investment. However, it cannot explain why countries remain relevant for finance because explicit barriers are now much lower and it does not shed much light on the nature of other, implicit, barriers.[2]

In this paper, I outline an alternative to the neoclassical model that explains the limited impact of financial globalization, shows why the country irrelevance proposition does not hold, and provides a foundation for a new theory of international finance that recognizes countries are relevant even in the absence of cross-border barriers to international investment.

My model is grounded in the stylized fact of the La Porta, Lopez-de-Silanes, and Shleifer (1999) study, namely that outside the United States. and the United Kingdom, firms rarely enjoy diffuse ownership but rather are typically controlled by large shareholders (see also Claessens, Djankov, and Lang, (2000); Faccio and Lang, (2002)).

In my model, all investors risk expropriation by the state and outside investors additionally risk expropriation by those who control firms, whom I call corporate insiders, since they are

[1] Using data from the World Economic Outlook of the IMF, the sum of net equity flows to less developed countries from 1996 to 2004 is -67.4 billion U.S. dollars.
[2] This criticism applies to my dissertation, Stulz (1980). See Adler and Dumas (1983) and Karolyi and Stulz (2003) for reviews of the results of this approach for asset pricing and portfolio choice.

sometimes managers and at other times controlling shareholders. Efficient contracting dictates that when the risks of expropriation by corporate insiders and the state are higher, corporate insiders must co-invest more with other investors in equilibrium. These risks are country-specific, because, subject to constraints and trade-offs that depend on country characteristics, such as history, laws, location, and economic development, those who control a country's state can establish, enforce, and break rules that affect investors' payoffs within that country.

When expropriation risks are significant, it is optimal for corporate ownership to be highly concentrated, which limits economic growth, risk-sharing, financial development, and the impact of financial globalization. In particular, both the limited resources and the risk aversion of corporate insiders decrease the extent of their co-investment response to a reduction in the cost of capital brought about by financial globalization. Thus, the impact of financial globalization is smaller than it would be in a model without frictions.

Corporate insiders appropriate private benefits, and thereby expropriate investors because they maximize their own welfare rather than the welfare of outside investors. In doing so, they create what I refer to as "the agency problem of corporate insider discretion." These private benefits can take many different forms, from excessive spending on corporate planes to outright theft. Through the rights they grant investors in corporations and the degree to which they protect these rights, states affect the cost to corporate insiders of extracting private benefits from the firms they control.

When the cost of appropriating private benefits is low for corporate insiders, diffuse ownership is dominated by concentrated ownership, since co-investment by corporate insiders aligns their incentives better with minority shareholders and, therefore, reduces expropriation of these shareholders.

North (1981) distinguishes between a predatory and a contracting theory of the state. With the contracting theory, the state makes it easier for private parties to enter mutually advantageous contracts and it enforces these contracts. How well a state performs this role depends on the

country's endowments, on its level of financial and economic development, on its institutions, and on the incentives of its rulers.[3] The state cannot perform this role when anarchy and disorder prevail. However, as emphasized by Djankov et al. (2004), state rulers with powers to fight anarchy and disorder can use these powers to maximize their own welfare. As they do so, they affect the payoffs of investors and corporate insiders, benefiting some and hurting others.

For simplicity, I use the term "expropriation by the state" to denote actions that state rulers take to improve their welfare by reducing the return on corporate investments. State rulers can use the powers of the state to expropriate investors by actions ranging from outright confiscation to regulations that favor the constituencies of the current rulers of the state and include redistributive taxes. The discretion of rulers to use the state for their own benefit creates an agency problem that I refer to as "the agency problem of state ruler discretion."

When this agency problem is significant, corporations with professional managers and atomistic shareholders are inefficient. The dispersed ownership organizational form is inefficient because managers can best reduce the risks of state expropriation by taking actions that both increase their discretion and also make it harder to monitor their actions. In this case, managers become entrenched and can more easily take advantage of atomistic shareholders.

In contrast, controlling shareholders who are also managers have weaker incentives to consume private benefits than do professional managers, but they have far greater incentives to take actions that decrease expropriation by the state. Therefore, ownership concentration increases as the importance of the state ruler agency problem increases.

As the twin agency problems – those associated with corporate insiders and state rulers – worsen, greater ownership concentration becomes more efficient and corporate insiders must co-invest more with other investors. The risk-sharing benefit of financial globalization is inversely

[3] See Fukuyama (2004) for a discussion of the obstacles states face in performing various functions and of the difficulties involved in surmounting these obstacles.

related to how much co-investment occurs in equilibrium, because when corporate insiders co-invest, their portfolios are overweighted in the equity of their firm.

Strikingly, eliminating a country's barriers to international investment can lower investment and economic growth because of the capital flight that takes place when the twin agency problems are severe.

However, my analysis shows that the neoclassical model ignores a crucial benefit of financial globalization: Financial globalization will lead to a reduction in the importance of the twin agency problems over time. In particular, by opening borders, financial globalization provides means and incentives for corporate insiders to protect the rights of their minority investors more through better corporate governance. Further, open borders shackle the "grabbing hand," to use the felicitous expression of Shleifer and Vishny (1999).

This paper proceeds as follows. In Section I, I assess the extent of financial globalization. In Section II, I discuss the limits of financial globalization and possible explanations. In Section III, I present a one-period model of an all-equity firm in which corporate insiders and state rulers can expropriate investors. In Section IV, I examine the determinants of state ruler agency costs and their implications for my model of the all-equity firm. In Section V, I show that the twin agency problems affect corporate ownership concentration and explore how the two agency problems interact. In Sections VI and VII, I demonstrate how these agency problems help explain the limits of financial globalization. I focus first on well-known international finance puzzles and then turn to corporate finance. I explain how financial globalization helps reduce the twin agency problems in Section VIII. Section IX concludes.

I. The Extent of Financial Globalization

If financial globalization means a reduction in formal barriers to trade in financial assets, then the process has been dramatic. Many authors attempt to construct indices to quantify the extent of formal barriers to trade in financial assets and how these barriers evolve over time. Eichengreen

(2001) discusses many of these indices and their limitations. Here, I use three of these indices to document this process of financial globalization.

Since 1950, the IMF has published yearly information on restrictions on financial transactions. Quinn (1997) carefully codes this information to construct an index of openness, where the index takes a value of 12 for a country that is completely open and a value of zero for a country that is completely closed. Quinn's index shows that the United States is completely open except during a brief period. However, the United States is an exception. For instance, for the United Kingdom, the index was 3.5 in 1950 and rose to 12 only in 1979. In 1997, the last year for which the index is available for a large number of countries, only a handful of countries that are not among the developed countries were fully open.

For a constant sample of developed countries, the average index increases from 4.16 in 1950 to 11.6 in 1999. For a constant sample of 68 developing countries, the index is 5.6 in 1973, reaching 8.34 in 1997. On average, developing countries in 1997 have the same degree of openness as the developed countries in the late 1970s, but there is more variance in the index among developing countries in 1997 than there was among developed countries in the late 1970s.

Kaminsky and Schmuckler (2002) provide another index, which measures the liberalization of equity investment, the financial sector, and the capital account. For each component, the index identifies three regimes: Fully liberalized, partially liberalized, and repressed. In the index, a value of one indicates that a sector is repressed and a value of three indicates that it is fully liberalized. The openness index is the average of the three sector indexes.

Kaminsky and Schmuckler compute the index for 28 countries and include both the highly developed and the less developed countries. In 1973, the first year for which the index is available, the cross-country average was 1.43. No country was fully liberalized at the start of the index. By October 2002, the average was 2.82. Only three of the 28 countries were not fully liberalized, namely, Argentina, Malaysia, and the Philippines.

A third index, constructed by Edison and Warnock (2003), shows the fraction of a country's equity capitalization represented by shares that foreign investors are not allowed to acquire. This measure exists only for less developed countries. The index starts in 1989, when only 33% of the market capitalization was available to foreign investors for the 14 countries for which the authors report data. By 2000, this fraction, computed across 28 countries, had risen to 76%.

Instead of measuring barriers to international trade in financial assets to gauge the extent of financial globalization, I assess the extent to which trade takes place. I do this in two different ways. First, updating the data from Obstfeld and Taylor (2003), in Figure 1 I plot the foreign assets held by investors in countries for which continuous data are available as a fraction of GDP.[4] Figure 1 shows a dramatic increase in foreign assets to GDP since 1945 that has accelerated in recent years.

[Figure 1 about here]

Second, Figure 2 plots gross cross-border trading by foreign investors in the United States. The figure shows the sum of transactions in long-term securities (stocks and bonds) in the United States between foreign investors and residents from 1977 through 2003. Over that period, the ratio of these transactions to GDP increased from 5.76% to 344.18%, or by a factor of 60. In contrast, the ratio of the dollar volume on the NYSE to GDP grew from 7.4% to 88.2%, or by a factor of 12.[5] The increase in cross-border gross flows is consistent with a substantial reduction in barriers to trade in securities across countries.[6]

[Figure 2 about here]

II. The Limits of Globalization

With such a dramatic increase in cross-border securities trading and the disappearance of many formal barriers to international investment, we would expect countries, per se, to matter

[4] I use the data from Obstfeld and Taylor (2003) from 1870 to 1995. The data for 2002 is obtained from the International Financial Statistics.
[5] NYSE Factbook, different years.
[6] Tesar and Werner (1995) were the first to show that foreign investors have a high turnover.

little in finance. However, this is not the case: countries remain very important. The empirical evidence shows that they matter for portfolio choice, savings and investment, stock returns, and the size of the stock market:

*Portfolio choice***:** The fact that investors overweight domestic securities in their portfolios has been puzzling researchers for at least 30 years (for reviews of the evidence, see Lewis, (1999), and Karolyi and Stulz, (2003)). While this home bias has decreased over time, it still remains large. I use the home bias measure of Ahearne, Griever, and Warnock (2004). This measure is one minus the ratio of the portfolio share of foreign equity for investors in a country and the portfolio share of the equity of that country in the world market portfolio. If investors hold the world market portfolio and there is no home bias, the measure is zero.

Figure 3 shows how the home bias measure has evolved over time for the United States.[7] In 2001, the portfolio share of foreign equities of U.S. investors was 22% of what it would have been had these investors held the world market portfolio; thus the home bias measure was 78%. (The measure averaged 63% in 2001 for a sample of 18 developed countries; see Sorensen et al. (2004)). Figure 3 also shows that the portfolio share of foreign stocks for U.S. investors was trivial before increasing sharply in the early 1990s, after which it stagnated. It has increased again in recent years.

[Figure 3 about here]

*Savings and investment***:** Feldstein and Horioka (1980) show that savings and investment levels were very close for most countries. This finding came to be known as the Feldstein-Horioka puzzle. As investors diversify internationally, a country's savings, which depends on income and wealth, and a country's investment, which depends on growth opportunities, should become less closely related to each other. Since Feldstein and Horioka, this expected evolution has happened to some extent, but recent studies mostly conclude that the puzzle is still strong. For

[7] I am grateful to Frank Warnock for providing me with these data.

instance, Aizenman, Pinto, and Radziwill (2004) show that across developing countries, the fraction of investment financed by local savings did not change in the 1990s.

A related puzzle is the Lucas paradox. Lucas (1990) points out that if production functions are the same across countries, then neoclassical models imply that the productivity of capital must be very high in developing countries, since wages are very low in these countries. Using these models, we might predict large capital flows towards these countries. However, such flows do not take place. Strikingly, in 2000, developed countries' investment per capita was US$6,000, whereas in developing countries, investment per capita was only US$400 (see Wolf, (2004), pp. 114-115).

*Consumption***:** In a fully integrated world, investors would share consumption risks across countries. As a result, the consumption growth of investors who have the same preferences for goods and who face the same relative prices would be perfectly correlated, regardless of where these investors are located (see Stulz, (1981), for an early derivation of these conditions).

Backus, Kehoe, and Kydland (1992) are the first to show that consumption growth rates are even less correlated internationally than are output growth rates. Obstfeld (1994) finds that consumption risk-sharing has increased over time. Using more recent data, however, Sorensen et al. (2004) find that, while income risk-sharing has increased over time, consumption risk-sharing has not.

Stock returns: Over the last ten years or so, there has been much debate in finance as to whether countries matter more or less than industries for stock returns. For a period of time, it even looked like industries might matter more than countries (see Cavaglia, Brightman, and Aked, (2000)). However, researchers quickly discovered that this impression was due to the high correlation of internet and telecom stocks across countries in the late 1990s (see Brooks and Del Negro, (2002)). At present, country factors are important for stock returns among developed countries and even more so among less developed countries.

*Size of stock market***:** The ratio of stock market capitalization to GDP varies widely across countries. This ratio is typically viewed as a measure of financial development.

All these empirical facts are related and can be explained in one of three ways. First, it could be argued that even though many formal barriers to international finance trade have been removed, many obstacles to international investment remain. There is some truth to this explanation. For instance, as Ammer et al. (2004) show, increasing the accessibility of foreign shares through ADR programs can have a very significant impact on American investors' ownership of these shares. However, this explanation can only go so far, given the spectacular increase in gross flows.

Second, the simple neoclassical model's predictions could be inappropriate, because the model ignores important individual characteristics. For instance, individuals might tilt their portfolios towards domestic assets because of behavioral biases. (See Bailey, Kumar, and Ng, (2004), and Graham, Harvey, and Huang, (2004), for recent analyses of behavioural biases that may worsen the home bias.)

Third, market imperfections could make neoclassical models inappropriate for predicting the impact of financial globalization.

A well-known explanation for some of the puzzles I discuss above that relies on a goods market imperfection is the work of Obstfeld and Rogoff (2001). Their explanation relies on the fact that investors who live in different countries face different relative prices because of transportation costs. Such explanations are based on the role of distance, since transportation costs increase with distance. Unfortunately, the role of distance cannot explain why borders and sovereign states are so important for corporate finance.

More generally, transportation costs or behavioral explanations cannot explain why borders are important for corporate ownership, firm size, capital structure, and governance:

*Corporate ownership***:** The composition of firm ownership varies systematically across countries. La Porta, Lopez-de-Silanes, and Shleifer (1999) find that, except in countries with

good investor protection, few firms are widely held. Typically, most firms have a family as a controlling shareholder. In countries that protect shareholder rights well, they find that 47.92% of firms are widely held, in that no shareholder holds more than 20% of the votes. Using that criterion (p. 494), these authors find that in countries with poor shareholder rights, only 12.67% of the firms are widely held.

Figure 4 reports the distribution of insider ownership across countries for 48 countries in 2002. For each country, I use data reported on Worldscope to compute the percentage of market capitalization held by corporate insiders as well as the average of the percentage of firm equity capitalization held by corporate insiders. These data have important limitations, since the reporting requirements and accuracy of firm disclosures vary widely across countries. Further, insider ownership consists of the sum of blocks of shares owned, which may include blocks unrelated to the controlling shareholders. Nevertheless, using these data, it is clear that most countries have substantial insider ownership. Not surprisingly, the United Kingdom and the United States are at the extreme left-hand tail of the ownership distribution. Though the fraction of market capitalization held by insiders in the United States in 2002 is 15.68%, the median for the sample of 48 countries is 50.78%.

[Figure 4 about here]

*Firm size***:** Kumar, Rajan, and Zingales (2001) find that firm size differs systematically across countries. They examine 15 European countries and conclude that firms are larger in countries in which the judicial system is more efficient.

*Capital structure***:** Studies that find that country factors help explain capital structures include Booth et al. (2001). These authors examine ten emerging market countries and conclude that country factors are more important in explaining capital structures in these countries than are the traditional firm-specific variables. Focusing on developed countries, however, Rajan and Zingales (1995) show that the qualitative relations between firm-specific variables and capital structure are often the same across the G-7 countries.

Fan, Titman, and Twite (2003) consider a sample of 39 developed and developing countries. They find that "a corporation's capital structure is determined more by the country in which it is located than by its industry affiliation." They also conclude that "countries that are more corrupt tend to be more levered and use more short-term debt."

*Governance***:** Countries explain an extremely large fraction of the variation of governance indexes across firms. Dyck and Zingales (2004) and Nenova (2003) show that control premia vary systematically across countries. Further, Doidge, Karolyi, and Stulz (2004b) find that country characteristics explain more than 70% of the variation in the S&P Governance rankings.

III. Investor Protection, Government Expropriation, and Co-Investment

Since formal barriers to asset trade cannot explain why corporate finance differs across countries, some other friction must explain why the country irrelevance proposition fails to hold. This friction is the existence of country-specific contracting costs which in turn lead to differences in the importance of the twin agency problems across countries.

I now present a model that I use to analyze the implications of the twin agency problems for the impact of financial globalization. My model builds on recent studies that emphasize the relation between investor protection and the extraction of private benefits by corporate insiders.[8] However, my model differs from this literature in three important ways. First, it considers the possibility of state expropriation. Second, it takes into account risk, which is generally ignored in the literature. An exception is Himmelberg, Hubbard, and Love (2002), who study the impact of the idiosyncratic risk born by controlling shareholders when investor protection is imperfect on the firm's cost of capital. Third, my model uses a more general cost function for the extraction of private benefits by insiders.

[8] See Johnson, Boone, Breach, and Friedman (2000); Lombardo and Pagano (2002); La Porta, Lopez-de-Silanes, Shleifer, and Vishny (2002); Durnev and Kim (2005); Shleifer and Wolfenzon (2002); and Doidge, Karolyi, and Stulz (2004a, 2004b).

The model is a one-period model in which firms produce one good and pay a liquidating dividend at the end of the period. There are two classes of agents. Portfolio investors can invest only in securities and the risk-free asset. Entrepreneurs also have access to unique investment opportunities; they exploit these investment opportunities by starting firms and becoming corporate insiders.

When entrepreneurs start a firm, I assume they sell equity to minority shareholders and retain control of the firm as corporate insiders. Under the assumptions made so far, the firm is an all-equity firm. We know (see, for instance, Jensen, (1986), and Stulz, (1990)) that debt is a useful tool for controlling agency problems. Later, I briefly discuss its use.

I assume that corporate insiders have enough discretion to appropriate private benefits, and that their discretion does not depend on the cash flow rights they control.[9] I also assume that the appropriation of private benefits has a cost that varies across countries, and that countries with better investor protection make it more expensive for insiders to expropriate investors. Shleifer and Wolfenzon (2002) interpret the deadweight cost as a punishment for insiders who appropriate private benefits. Alternatively, La Porta et al. (2002) model a cost of appropriation of private benefits that is paid at the firm level and represents the cost of diverting funds from the firm. Here, however, it simplifies the analysis to specify the cost as being paid by the insiders on their own account. Since I consider a firm when it first issues securities, there is no loss of generality with this assumption because, ultimately, the insiders pay the cost anyway.

I assume that expropriation by the state takes place after appropriation of private benefits by insiders, so that the state does not expropriate private benefits. To the extent that some of these benefits are nonpecuniary or hidden, it is reasonable to believe that at the very least they are less subject to state expropriation than are cash dividends. I simplify the analysis further by assuming that state expropriation is not stochastic.

[9] There are many ways corporate insiders can structure their ownership and assign voting rights to shares to ensure that they enjoy control. Morck, Wolfenzon, and Yeung (2004) discuss the economic importance of the ways insiders control votes in excess of their fractional ownership of cash flows.

The payoffs to minority shareholders, and hence the price these shareholders are willing to pay for shares, fall with the private benefits consumed by corporate insiders. Insiders appropriate fewer private benefits if they own a larger fraction of the firm's cash flows, since they pay for more of their private benefits through a decrease in their share of the liquidating dividend. Consequently, if they own a larger stake in the firm's cash flow, they can sell shares at a higher price and pay less of the deadweight cost of private benefits.

By investing in the firm, corporate insiders bear risks that they cannot diversify. Therefore, in determining their optimal holding of firm shares, they trade off the benefit of a decrease in the cost of appropriating private benefits against the cost of bearing more risk.

All agents can invest in a risk-free investment opportunity that has a rate of return *r*. This rate of return could proxy for opportunities in the informal sector. Because the rate *r* fixes the rate of interest, I eliminate the impact of financial globalization on the risk-free rate, an impact that is the focus of Shleifer and Wolfenzon (2002). I assume that there is no risky borrowing and no short-selling of securities.

I assume that an investment opportunity requires a fixed investment. I limit the analysis to the investment opportunity of one entrepreneur who starts one firm. Let *K* be the fixed amount of capital invested in that investment opportunity. At the end of the period, the following sequence of events takes place: The investment opportunity yields a random cash flow of $\tilde{a}K$, insiders appropriate private benefits equal to a fraction *f* of $\tilde{a}K$, the state engages in expropriation, and finally the firm liquidates and pays out a liquidating dividend. The cash flow is normally distributed with an expected value of $\bar{a}K$ and a volatility of σK.[10]

After expropriation by corporate insiders, the cash flows available for distribution are $(1 - \alpha)(1 - f)aK$, where α is the insiders' fractional cash flow ownership. Because of state

[10] While the assumption of a normal distribution is inconsistent with the limited liability of equity, this assumption simplifies the analysis and the inconsistency is irrelevant for the results that are my focus.

expropriation, the shareholders receive only a fraction *g* of the cash flows net of private benefits, so that they receive a dividend equal to $g(1-\alpha)(1-f)aK$. In the next section, I endogenize *g*.

Corporate insiders can also invest in securities and the risk-free asset. The entrepreneurs who do not take advantage of their unique investment opportunities become portfolio investors.

I assume that corporate insiders can consume private benefits costlessly up to a fraction *c* of the firm's cash flow. Any expropriation of cash flow in excess of the threshold level *c* is subject to a deadweight cost that increases in the dollar amount expropriated and is convex in the fraction of cash flow expropriated.

I set the deadweight cost at $0.5b(Max[f-c,0])^2 aK$, where $b > 0$. Investor protection is an increasing function of *b*, which is a country-specific constant.

With my assumptions, the payoff to insiders at the end of the period is:

$$P = faK + g\alpha(1-f)aK - 0.5b(Max[f-c,0])^2 aK. \quad (1)$$

The insiders choose *f* to maximize (1). Since they appropriate private benefits after uncertainty is resolved, uncertainty does not affect the expropriation decision. It is always optimal for insiders to expropriate at least a fraction *c* of the cash flow, since they incur no penalty for doing so and cannot credibly commit not to do so. The solution is:

$$f = c + \left(\frac{1-\alpha g}{b}\right). \quad (2)$$

As in La Porta et al. (2002), appropriation of private benefits falls as *b* and α increase because an increase in these variables makes expropriation less profitable for insiders. Expropriation by the state leads to greater consumption of private benefits for a given level of firm ownership by insiders, because any money the insiders leave in the firm will be partially expropriated by the state.

Minority investors value the firm by discounting the firm's cash flows net of expropriation by insiders and by the state at their required expected return, *R*. From their perspective, firm value is:

$$V_0 = \frac{\left[1-\left(c+\frac{1-\alpha g}{b}\right)\right] g\bar{a}K}{1+R}. \qquad (3)$$

Firm value increases with the firm's required investment, *K,* with the quality of the firm's investment opportunity, $\bar{a}$*,* with inside ownership, α, with investor protection from insiders, *b,* and with a decrease in state expropriation, i.e., an increase in *g*. A 1% reduction in the rate of state expropriation increases firm value by more than 1% because it also decreases the rate of consumption of private benefits. Further, firm value falls as insiders can expropriate more without a deadweight cost, i.e., as *c* increases, and as the investors' required expected return, *R*, increases. For a given level of cash flow ownership by corporate insiders, firm value does not depend on the firm's total risk, but rather on the firm's priced risk, since *R* increases with the risk premium that investors require to bear the risk of the firm.

As α increases, insiders expropriate less. Thus, while the deadweight cost of expropriation is lower, they bear more of the firm's risk. To model this trade-off, I assume that insiders are risk averse with constant relative risk aversion, so that their expected utility is:

$$E(\tilde{W}) - 0.5QVar(\tilde{W}), \qquad (4)$$

where $\tilde{W}$ is random terminal wealth and *Q* is a constant.

To reflect the situation that is common in most countries, I assume that risky securities have positively correlated returns. For simplicity, I focus on the case in which corporate insiders want to short the other risky securities to hedge their investment in their firm. In this case, being unable to sell securities short, corporate insiders invest only in their firm and the risk-free asset. Therefore, I assume that corporate insiders do not have access to other risky assets, since in this case, they would not hold them anyway.

If insiders are not too risk averse and they have a small enough stake in their firm, they will want to hold other risky assets. I discuss this possibility later in this section.

The amount insiders co-invest with minority investors is the capital invested in the firm minus the equity sold to minority investors, $K - (1 - \alpha)V_0$. I assume that entrepreneurs cannot finance the firm entirely from their own initial wealth, W_0, so that $K > W_0$. For the firm to start up, it must be that the corporate insiders can finance the firm's initial investment with a co-investment that is no larger than their wealth at time 0, W_0. This condition may not be satisfied if the twin agency problems are sufficiently severe that an investment by insiders greater than W_0 is required for the firm to be able to make an initial investment of K.[11]

The impact of an increase in insider ownership on the external funds raised is the sum of two effects of opposite signs. First, an increase in insider ownership decreases private benefits, so that the firm's value increases. Shares can then be sold at a higher price, which increases the proceeds from selling a given fraction of cash flow rights. Second, when insider ownership increases, a smaller fraction of the firm is sold, so that the proceeds from selling shares are lower. When investor protection is poor, the first effect dominates for low levels of insider ownership and the second effect dominates for high values.[12] Otherwise, the second effect always dominates.

For now, I consider the case in which the insiders can finance their co-investment and the optimal amount of co-investment is less than W_0. With this assumption, it follows that:

$$\begin{aligned} E(\tilde{W}) &= E(\tilde{P}) + \left(W_0 - [K - (1-\alpha)V_0]\right)(1+r), \\ Var(\tilde{W}) &= Var(\tilde{P}), \end{aligned} \tag{5}$$

where $\tilde{P}$ is the random variable corresponding to the payoff defined by equation (1). This payoff is the sum of the dividends and private benefits received by insiders, minus their cost of extracting private benefits. Under my assumptions, the insiders choose their ownership, α, to maximize their expected utility given in equation (4), with the expected terminal wealth and the variance of terminal wealth as shown in (5), the expropriation rate *f* solved for in (2), and minority investors who value the firm according to equation (3), subject to the constraints that

[11] The amount of external funds raised, $(1 - \alpha)V_0$, is maximized for $\alpha > 0$ if $b \leq (1 + g)/(1 - c)$ and for $\alpha = 0$ otherwise.

[12] Specifically, when $b < (1 + g)/(1 - c)$.

they cannot invest in other risky assets, cannot sell shares short, and cannot borrow on personal account. For entrepreneurs to invest in the firm, their expected utility at the optimum must exceed their expected utility if they do not invest in the firm. If there is an interior solution for insider ownership, the expected utility function of insiders is concave in insider ownership.

A. Comparative Statics of Insider Ownership

Since insiders are risk averse, insider ownership falls with the total risk of the firm and with the insiders' degree of risk aversion. An increase in the quality of the investment opportunity results in an increase in the expected deadweight costs of appropriation of private benefits, so that optimal insider ownership increases. For a given level of insider ownership, insiders bear more risk as the size of the initial investment, K, increases. Therefore, an increase in K is associated with a decrease in insider ownership.

An increase in the required expected return on the firm's equity, R, makes external finance less advantageous for insiders relative to investing their own wealth since they have to pay a higher risk premium (i.e., $R - r$ increases) to lay off firm risk, so that the insider ownership of cash flow rights increases.[13] Since an increase in the risk-free rate, r, makes external finance relatively more advantageous in exactly the same way that an increase in R makes external finance relatively less advantageous, the comparative statics for r are exactly the opposite from those for R.

An increase in expropriation by the state, that is, a decrease in g, leads to more expropriation from minority shareholders for a given level of insider ownership. As long as investor protection is not too strong, insiders increase their ownership stake following a decrease in g to reduce the impact of the greater expropriation by the state on their consumption of private benefits and

[13] When investor protection is extremely low, however, it is possible for the opposite result to hold. The condition for this to occur is that $b < (1 - 2\alpha g + g)/(1 - c)$. Note that when investor protection is poor, there are cases in which an increase in α could increase proceeds from external finance.

hence on the value of the firm. Consequently, expropriation by the state leads to greater ownership concentration as long as investor protection is not too strong.[14]

An increase in investor protection brought about by an increase in b reduces the benefit of insider ownership, so insider ownership falls as b increases.[15] The effect on ownership of an increase in c depends on the parameters of the model. When the parameters are such that insider ownership is high, an increase in c reduces insider ownership. As c increases, the proceeds from external finance fall for a given level of insider ownership, because insiders receive more private benefits and the equity is worth less for outsiders. The increase in c therefore increases the risk born by insiders, which leads them to decrease their ownership stake. For low values of insider ownership, the derivative cannot be signed unambiguously.

So far, I have focused on the case in which insiders hold no other risky assets. This case is appropriate when insiders have a large stake in the firm and are not able to hedge by selling securities short. Short-selling and derivatives transactions limit the impact of co-investment on the risk born by insiders, and make it possible for insiders to hold a larger cash flow stake. Even when they are possible, such transactions are intrinsically limited because of moral hazard and credit risk considerations. When insiders have a small stake, they are likely to want to hold other risky securities but they will still be overweight in the equity of their firms as long as the twin agency problems are significant.

The limiting case is the one in which the assumptions of the neoclassical model with perfect markets and no agency problems hold. The neoclassical model can be obtained by making investor protection perfect and eliminating expropriation by the state. In this case, both insiders and noninsiders hold the market portfolio of risky assets, so that firms have the same ownership regardless of the countries they belong to.

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[14] As b increases, there is a range such that the sign of the derivative of α with respect to g cannot be established unambiguously. Eventually, for large b, the derivative is unambiguously negative.

[15] This result requires that R is not too large compared to r, since otherwise the comparative static result cannot be established unambiguously.

B. When Do Entrepreneurs Start Firms?

The expected utility of the entrepreneur if he becomes a corporate insider increases as the investment opportunity becomes better, the risk-free rate increases, and state expropriation falls. It falls as the risk-aversion of insiders increases, the variance of cash flows increases, and the expected rate of return required by outside investors increases. Consequently, as expropriation by the state worsens, entrepreneurs reject more investment opportunities.

If there is no risk of government expropriation, better investor protection always increases the welfare of entrepreneurs and makes it more likely that they will take advantage of investment opportunities. However, with government expropriation, a worsening of investor protection can make entrepreneurs better off. To understand this result, suppose that insiders can consume one dollar of private benefits without deadweight costs. By consuming a dollar of private benefits, the insiders decrease their dividends by $\$\alpha g$ and their proceeds from selling shares by $\$(1 - \alpha)g$. Thus, they give up $\$g$ and receive \$1, making a net gain of $\$1 - \$g$ (assuming $r = R$). Therefore, investor protection that makes it impossible for insiders to consume private benefits can reduce the payoff to entrepreneurs from starting the firm because more of the cash flows of the firm go to the state. As insiders consume increasingly more private benefits without deadweight costs (i.e., c increases), they eventually are made worse off because they can no longer guarantee that outside investors will earn their required expected return and hence become unable to sell equity to outsiders.

IV. Expropriation by the State and Corporate Finance

North (1981) writes that "The existence of a state is essential for economic growth; the state, however, is the source of man-made economic decline." (p. 20). In my model, the state plays both roles, one that promotes growth and one that prevents it. First, the state affects the level of investor protection from corporate insiders and third parties. In a country with better investor

protection, entrepreneurs find it more advantageous to start firms. Second, state rulers may expropriate resources for their own benefit.

By state expropriation, state rulers can decrease the returns of all firms, but they can also discriminate across firms so that they decrease the returns of some firms and improve the returns of others. States can tax cash flows, confiscate assets, forbid particular activities, or require bribes to enrich themselves. Therefore, the term "expropriation" covers a wide range of activities. Though the experience of Yukos comes to mind, many forms of expropriation take place in developed countries. For instance, Olson (1984) analyzes how one form of expropriation is due to activities of interest groups that preserve their ability to extract rents through the use of state powers and Roe (2003) discusses how German co-participation as well as political interference more generally reduces the discretion of managers to maximize shareholder wealth and therefore impacts the governance and ownership of firms.[16]

In this section, I first examine the determinants of the rate of expropriation by the state. I assume that the state rulers extract private benefits from their positions, but that it is costly for them to do so. In a democracy, if rulers were to reduce the payoffs of investors too much they might not be re-elected. In a dictatorship, consuming too many private benefits might lead rulers to be overthrown. Further, as Olson (2000) points out, excessive current consumption of private benefits by the rulers decreases the value of their future private benefits. Institutions and the distribution of political power determine the costs that rulers bear for consuming private benefits.

The institutions that limit state ruler discretion can be the outcome of history, electoral processes, or even decisions by dictators. Glaeser and Shleifer (2002) argue that civil law was developed to prevent coercion of law enforcers through bribes and violence. Such coercion was less of a threat in England, which made possible the development of common law. Acemoglu, Johnson, and Robinson (2001) provide evidence that the nature of institutions in former European

[16] Faccio (2005) shows that firms benefit when their board members enter politics.

colonies depends on the intensity of settlement by European colonizers.[17] In countries where Europeans did not immigrate in large numbers, colonizers put in place institutions that facilitated the extraction of resources rather than institutions that protected property rights. In a related paper, Acemoglu and Johnson (2003) provide evidence that institutions that facilitate contracting are less important than institutions that protect property rights. Rajan and Zingales (2003) show how incumbents at times may prefer institutions that limit financial development to preserve their rents. Perotti and von Thadden (2003) develop a model in which shareholder protection is weak when the median voter does not own much equity. Pagano and Volpin (2004) present a model in which political parties cater to different voters in different electoral systems and find that investor protection is weaker in countries with proportional representation than it is in countries with majority representation.

To simplify my analysis, I assume that the rulers maximize the expected proceeds from expropriation, which they get to consume subject to a cost of appropriation. This cost is similar to the cost of appropriation of private benefits for corporate insiders. I ignore the rulers' risk aversion for simplicity and assume that they choose g to maximize the expected value of:

$$U = (1-f)(1-g)\tilde{a}K - 0.5h(1-g)^2(1-f)\tilde{a}K. \quad (6)$$

With these assumptions, g is given by:

$$g = 1 - \frac{1}{h}. \quad (7)$$

Here, h is an exogenous index of constraints on the state. When h is extremely high, no expropriation takes place. If h is equal to one, the state expropriates everything and there is no production. For a given constraint level on the state, entrepreneurs start a firm only if their expected utility when they do so exceeds their expected utility if they become portfolio investors. The expected utility that insiders derive from taking advantage of an investment opportunity

[17] See also Acemoglu, Johnson, and Robinson (2004) for a review of the literature on the role of institutions and Glaeser, La Porta, Lopez-de-Silanes, and Shleifer (2004) for a critique.

increases with h. Consequently, under my assumptions, there is a threshold for h, H, such that if $h < H$, the entrepreneurs do not take advantage of their investment opportunity because their participation constraint is not satisfied. A country's threshold H is inversely related to h, so that willingness of entrepreneurs to take advantage of investment opportunities is inversely related to the level of constraints on the state.

So far, I assume that the state's rate of expropriation is given and does not depend on the actions of the firm. Corporate insiders can take actions to reduce the state's proceeds from expropriation. As already discussed, they can do so by consuming more private benefits, but they have many other tools at their disposal to reduce expropriation by the state.

To reduce the state's proceeds from expropriation, the insiders who control the firm can make themselves more essential to the success of the firm. They can do so through the firm's investment policies, its contracting policies, and its financing policies. By investing in projects that depend on their skills and contacts, the insiders can make it harder for the state to remove them from their position of control. Further, they put themselves in a better position to negotiate with the state, since the firm may be worth much less without them.

In a country with high risk of expropriation, corporate insiders may choose to invest in projects that would be negative net present value projects in a country where the risk of state expropriation is trivial just because they reduce the risk of state expropriation. For instance, insiders may choose to invest in projects essential to the economy, so that disruption of these projects would be costly to the state. Insiders can also invest in projects that benefit the rulers of the state. By making themselves useful to the state rulers, they can gain from their connections and reduce the extent of state expropriation.

Going beyond the model, the extent of expropriation can be related to firm balance sheets in several ways. First, firms may benefit from having extremely complicated and largely impenetrable financial arrangements. Such arrangements make it riskier for the state to expropriate shareholders since a financial weakening of the firm resulting from expropriation may

have unforeseen consequences. At the same time, however, such arrangements make it easier for insiders to expropriate other investors.

Second, to the extent that debt holders are less likely to be expropriated than shareholders, debt financing is advantageous.

Third, the source of debt finance may affect the probability of expropriation. Firms may choose to borrow from banks close to the state rulers to make expropriation more painful for them. Short-term debt is more advantageous because predatory actions by the state can lead to the financial collapse of the firm, making such actions more costly to the state rulers.

Fourth, the composition of assets can also affect the probability of expropriation. Fixed tangible assets can serve as collateral for debt. If debt holders are less likely to be expropriated, then firms benefit from having such assets, which enable them to borrow more.

Greater transparency and boards dominated by outside directors are often viewed as hallmarks of good governance. When there are significant risks of expropriation by the state, neither of these two good-governance attributes are likely to enhance the wealth of shareholders. While transparency increases firm value, in that it makes it harder for insiders to expropriate from investors, it also decreases firm value because it makes expropriation by the state easier.

Existing evidence shows that the attitude of the state towards firms affects the informativeness of accounting numbers. For instance, Bushman and Piotroski (2005) find that bad news is incorporated in accounting income more quickly in civil law countries with more expropriation risk. They conclude that "managers appear to adjust their financial reporting in response to the nature of the State's involvement" (p. 44). Zimmerman and Goncharov (2004) show that the distribution of earnings for Russian firms changed after the country allowed firms to report accounting earnings that differ from those used for taxation.

The ability of the state to favour some firms and expropriate others can make a lack of transparency more advantageous for the firms that are favored by the state than those that are not. Leuz and Oberholzer-Gee (2003) find that in Indonesia firms with close connections to the state

have less transparency than firms with no connections to the state. They argue that this is because firms want to disguise the benefits they receive from the state. An alternate interpretation of their result that would be consistent with the approach of this paper is that firms close to the state rulers are concerned about expropriation if a change in regime occurs. However, it is also plausible that the threat of public exposure explains the behavior of these firms since exposure might make it harder for the state to provide them benefits.

Desai, Dyck, and Zingales (2003) emphasize that when the state has incentives to force accurate disclosure to collect taxes, corporate taxation has an indirect benefit for minority shareholders in that it reduces the extent of expropriation of these investors by corporate insiders. However, this benefit is a two-edged sword for both investors and the state rulers. Greater disclosure makes expropriation by the state easier, but it also makes transfers that benefit state rulers easier to observe. When state rulers try to expropriate them, outside directors with only small stakes in the firm may not be reliable defenders of minority shareholders. Because they have small or even negligible stakes in the firm, state rulers can more easily sway these outside directors by using threats or bribes.

Dispersed firm ownership is inefficient when expropriation by the state is significant. Management that makes itself more indispensable to the firm and makes it harder for outsiders to assess its performance decreases the state's ability to expropriate shareholders. At the same time, it also decreases its cost of consuming private benefits, since it becomes less subject to discipline from the market for corporate control, the labor market, and shareholders (see Shleifer and Vishny, (1989)). Consequently, when management entrenches itself by reducing the possibility of expropriation by the state, the gains that shareholders make may be offset by losses in the form of insiders' appropriation of private benefits. Further, when management has only a small stake in the firm's cash flows, it may use its entrenched position to extract the best deal from the state for itself, rather than to protect shareholders.

In the presence of state expropriation, corporate insiders want to retain operational control. Doing so makes management indistinguishable from corporate insiders and makes it harder for the state to expropriate them. By having control, insiders can make decisions that limit the potential for state expropriation. Insiders want to hold a significant stake in the firm's cash flows to make it credible that they will aggressively fight state expropriation. By having a cash flow stake, they create incentives to make decisions that benefit minority shareholders. Absent such a stake, insiders could let the state expropriate minority shareholders in exchange for the right to appropriate more private benefits granted by the state, which would make outside funds more costly and possibly make access to outside funds impossible altogether.

My analysis makes three important simplifying assumptions that should be relaxed in further work. First, I assume that h is exogenously given. However, this assumption ignores the possibility (see Olson, (2000)) that rulers may also find it optimal to add constraints to the state so that investment will be higher, thereby increasing proceeds from future expropriation.

Second, my analysis ignores the possibility that the state may be more efficient at delivering public goods if its rulers have some discretion (see Djankov et al. (2004)), so that expected cash flows before expropriation may be maximized for some positive value of h.

Finally, the rate of state expropriation is assumed to be deterministic. Obviously, this is a simplification. If expropriation were uncertain, however, it would remain valuable for corporate insiders to take actions that minimize the extent of expropriation if it happens. Uncertainty about expropriation introduces an important complication, which is that it affects the risk that corporate insiders bear for a given ownership stake. Everything else equal, this greater uncertainty would lead insiders to have a smaller stake in the firm. On the other hand, for a given level of uncertainty, firms in countries with more expected expropriation would have a higher ownership concentration because ownership concentration reduces expropriation. The prediction that expropriation by rulers of the state leads to a higher ownership concentration would therefore hold even if expropriation were uncertain as long as the impact of ownership concentration on

expected expropriation is sufficiently large. Finally, expropriation uncertainty would make it less likely that entrepreneurs would start firms.

It is important to emphasize the distinction between state inefficiency and state expropriation. State performance in facilitating contracting varies widely across countries. For instance, the resources available to the state depend on the country's economic development, so that states in poorer countries will typically face greater obstacles in facilitating contracting. A state that is less efficient will lead firms to choose contracting forms that rely less on the state. When firms have to use more contracts that do not rely on the state for enforcement, they find contracting more expensive and their ability to create value limited. However, state inefficiency does not lead firms to expend resources to worsen their governance. In contrast, state expropriation can lead firms to do precisely that.

V. Ownership Concentration and the Twin Agency Problems

The controlling shareholder discretion and the state ruler discretion agency problems both contribute to ownership concentration. However, these agency problems also reinforce each other. When the state ruler agency problem is significant, controlling shareholders can exploit it to their advantage. For instance, by bribing state rulers, they can get away with expropriation of minority shareholders that would not be possible if the state strictly adhered to its laws and regulations. Further, corporate insiders who earn rents through control of corporations do not have incentives to take steps that would reduce the discretion of state rulers when that discretion helps them protect their rents.

In this section, I show that both agency problems help explain ownership concentration across the world. To examine the relation between the twin agency problems and ownership concentration, I need measures of ownership concentration and variables that explain the prevalence of the twin agency problems. The data are reported in Table I.

[Insert Table I about here]

La Porta et al. (1999) examine the extent to which corporations in various countries are widely held. I use their data for the fraction of firms that are widely held, using the 10% threshold. I also use the 10% threshold for the fraction of firms under family control. Accordingly, I define a firm as widely held if the largest blockholder controls less than 10% of the votes and as family controlled if the largest blockholder is a family that controls more than 10% of the votes. For Malaysia, the Philippines, Taiwan, and Thailand, I supplement the La Porta et al. (1999) data with data from Claessens et al. (2000).

I also use data reported by Worldscope for blockholdings in 2002 as a proxy for ownership by corporate insiders. These data have the problems mentioned earlier when discussing Figure 4, but they have the advantage of providing a measure of fractional cash flow ownership by insiders. I use an equally weighted average of blockholdings and a value-weighted average. I report the results using the equally weighted average. The results using the value-weighted average are similar, but they are not reported.

Three types of variables serve as determinants of the intensity of agency problems. First, I use the antidirector rights index of La Porta et al. (LLSV, 1998). This index measures the legal rights of minority shareholders. A higher value means that shareholders have more rights; the highest value of this index is six.[18] The weakness of this measure for my analysis is that it does not take into account the ability of firms to use private solutions to compensate for weaknesses in the law.

Second, I use an index that measures the state's respect for property rights. I use LLSV's index of the risk of expropriation by the state. This index measures the threat of outright confiscation or "forced nationalization." A higher value of the index means less expropriation

[18] LLSV state that the 'index is formed by adding 1 when (1) the country allows shareholders to mail their 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 pre-emptive rights that can be waived only by shareholders' vote." (p. 1123).

risk. LLSV average the index for the months of April and October between 1982 and 1995 and normalize it so that its highest value is 10.

Third, I control for measures of financial and economic development. Specifically, I use the ratio of stock market capitalization to GDP, stock market turnover, the ratio of stock and bond market capitalization to GDP, and GDP per capita. The development data are from Pinkowitz, Stulz, and Williamson (2004) and are averaged from 1988 through 1999 (except for the bond market capitalization to GDP ratio which is only available for the last 10 years).

Inspection of Table I shows that a low risk of expropriation, which means a high expropriation index, is a precondition for diffuse ownership. In results not reported, I find that the fraction of firms widely held is significantly higher (at better than 1% level of confidence) in countries with below-median expropriation risk (i.e., above-median expropriation risk index). Further, the fraction of firms with family control, the equally weighted average of insider ownership, and the value-weighted average of insider ownership are all significantly higher (again, at better than 5%) in countries with above-median expropriation risk.

Table II reports regressions of measures of ownership concentration on the expropriation index, the antidirector rights index, and a measure of development. The first two panels use the supplemented data of La Porta et al. (1999). The advantage of using these data is that their reliability has been established by the authors at the firm level and that they take into account pyramids and multiple share classes in estimating the voting rights controlled by the largest blockholder. The authors do not provide the fractional ownership of cash flows or of voting rights, but instead only a dummy variable for whether fractional ownership of voting rights leads to control of the firm.

[Table II about here]

In Table II, Panel A, the first regression is a Tobit regression of the fraction of widely held firms on the antidirector rights and the expropriation indexes. Both of these indexes have positive,

significant coefficients. Thus, a decrease in either of the two proxies for the twin agency problems decreases the percentage of firms that are widely held in a country.

The other regressions of Panel A control for measures of development. In all the regressions, an increase in the antidirector rights index makes it more likely that a firm is widely held. In all the regressions but one, a decrease in the risk of expropriation makes it more likely that a firm is widely held. The only regression in which expropriation is not significant is the one in which I control for GDP per capita. The difficulty is that GDP per capita and the expropriation index are very highly correlated (correlation is 0.81).[19] The measures of financial development have mixed results. Stock market capitalization and the sum of stock market and bond market capitalizations are not significant, but turnover is significant.

Panel B of Table II shows the results of Tobit regressions of the fraction of family-controlled firms on the explanatory variables.[20] The results are striking. In each regression, the expropriation index has a negative, significant coefficient, which means that countries with a smaller risk of expropriation have fewer family-controlled firms. The antidirector rights index is significant when the measure of financial development is the ratio of stock market capitalization to GDP, but not otherwise. Somewhat strangely, stock market capitalization has a positive, significant coefficient in that regression.

Panel C shows ordinary least squares (OLS) regressions of the equally weighted average of inside ownership on the same explanatory variables as in Panels A and B. The expropriation index and the antidirector rights index have significant negative coefficients in all regressions.

[19] In regressions not reported here, I replace GDP by the part of GDP not correlated with expropriation. When I do that, expropriation is significant and the GDP variable is not significant. However, if instead I replace expropriation by the part of expropriation not correlated with GDP, then GDP is significant and the expropriation variable is not. Finally, if I use only the part of GDP not correlated with expropriation and the part of expropriation not correlated with GDP, then both variables are significant.

[20] Morck, Wolfenzon, and Yeung (2004) provide evidence that there is a relation between the proportion of family-controlled firms and corruption measures, but they do not control for the antidirector index or financial development.

The regressions reported so far in Table II show that there is a significant relation between ownership concentration and an index of expropriation by the state. Except for the regressions for family ownership where typically only the expropriation index is significant, both the expropriation and the antidirector rights indexes are always significant. The regressions therefore show that ownership concentration is related to the intensity of the twin agency problems.

There are several concerns with the regressions using the expropriation index. First, the expropriation index could be low (expropriation risk high) in countries with high ownership precisely because ownership is concentrated. In other words, it could be that the inequality that accompanies ownership concentration leads to greater risks of expropriation. Second, concentrated ownership and the expropriation index could both be determined by an unspecified variable. Third, the expropriation index could be significant because it is highly correlated with a variable that is an important determinant of ownership concentration. Fourth, the expropriation index is partly a measure of sentiment since it is based on a survey.[21]

To address these concerns, I re-estimate the regressions, substituting for the index of expropriation a measure of the distribution of political power, the PolconV index (Henisz, 2000). The index is a continuous variable that ranges from zero, indicating a dictatorship, to one, indicating democracy, and represents the degree to which checks and balances are present in a country's political system. It is a proxy for the level of constraints on state rulers. I use the value of the PolconV index for 1960 (except for Malaysia and Singapore, for which PolconV reports values for 1963 and 1965, respectively). This helps address the concerns about regressions using the expropriation index. This approach is most useful to deal with reverse causation since ownership concentration in 2002 cannot affect PolconV for 1960. To the extent that ownership concentration and the level of constraints on state rulers are persistent, using PolconV for 1960 does not necessarily resolve the two other concerns about using the expropriation index.

[21] See Rodrik (2004).

The results of the regressions using PolconV are reported in Panel D using the ratio of stock market capitalization to GDP as the control for development. The PolconV index is significantly related to the fraction of firms with diffuse ownership (I find the highest p-value, 0.108, when I control for GDP per capita). Similar results hold for the fraction of family-controlled firms, except that, as expected, the coefficient has the opposite sign. Finally, with the equally weighted ownership measure, PolconV has a significant negative coefficient when the development controls are the ratio of stock market capitalization to GDP, turnover, and the ratio of stock and bond market capitalization to GDP, but not when they are GDP per capita (results not reported).

I also estimate univariate regressions that show a strong relation between the ownership measures and expropriation risk. OLS regressions that use the equally weighted average of inside ownership (not reported) make it possible to evaluate the explanatory power of the various variables. With these regressions, the expropriation index and the PolconV index have an adjusted R-squares of, respectively, 33.01% and 18.94%. The adjusted R-square is 9.33% for the anti-director rights index. The adjusted R-square is 8.25% for the ratio of the sum of stock and bond market capitalizations to GDP and 16.86% for GDP per capita. It is close to zero for stock market capitalization to GDP and turnover (adjusted R-square is 2.45% and 0.45%, respectively). The lesson from these adjusted R-squares values is that variables that proxy for expropriation risk have substantial explanatory power. Other variables proxying for the quality of government or property rights used in the literature, such as an index of corruption, the country rating, and the LLSV law and order index, have less explanatory power than the expropriation index, but they do have significant coefficients, as expected. In multiple regressions, these variables remain significant except, typically, in regressions that control for GDP per capita.

VI. The limits of financial globalization and the twin agency problems

In this section, I show that the central prediction of my analysis, namely, that to reduce the economic importance of the twin agency problems insiders must co-invest significantly with

outsiders, has important implications for all the international finance puzzles and explains the limited impact of financial globalization.

A. The Home Bias

In neoclassical models, investors hold their country's market portfolio when their country is completely segmented from world capital markets. Investors move to holding the world market portfolio when their country becomes completely integrated in these markets.

Assuming that corporate insiders are typically domestic investors, the twin agency problems create a home bias in equity portfolios because insiders overweight their portfolios in their firms' shares.[22]

To see why, consider the following numerical example. The argument in this example builds on Dahlquist et al. (2003). Suppose that a country has poor investor protection and/or high state expropriation, so that ownership is concentrated. Suppose that the stock market wealth of the country equals its aggregate wealth of 100, that the country's market represents 1% of world market wealth, and that insiders own 60% in each firm. In that case, the insiders own 60 in domestic equity and minority shareholders own 40. After financial globalization, insiders own fewer shares in their companies because external finance becomes more advantageous. Say that their holdings of domestic shares drop to 50. The minority shareholders, whom I call portfolio investors, invest in the world market portfolio, investing 1% in their home country. As a result, even though the country represents 1% of all world stock market wealth, local investors have 50.5% of their wealth invested in the local market.

The model has the following implications for the home bias in the absence of barriers to international investment:

[22] Note that all investors who receive private benefits will overweight their portfolio towards the firms from which they receive such benefits if the private benefits they receive increase with their ownership share even if they are not corporate insiders in the sense of being blockholders who control the firm. Giannetti and Simonov (2005) provide evidence of this effect using data from Sweden.

1) Countries with worse governance have a smaller fraction of wealth owned by foreign investors because insiders have a larger ownership share in such countries.

2) Smaller countries have a larger fraction of wealth owned by foreign investors and portfolio investors who live in smaller countries with a smaller share of the world market portfolio invest proportionally more abroad.

3) Countries with higher state expropriation have a lower fraction of wealth owned by foreign investors, all else equal.

Of course, portfolio investors typically have portfolios that exhibit many biases. Consequently, many variables may turn out to be useful in explaining the portfolios they hold. The key point of this analysis is that co-investment puts a constraint on how much risk can be shared internationally and forces domestic investors to hold more domestic shares than they would in a neoclassical model.

B. The Feldstein-Horioka Paradox

The co-investment that results from the twin agency problems creates a correlation between savings and investment and hence helps explain the empirical evidence of such a correlation provided first by Feldstein and Horioka (1980).

Consider the simplest dynamic version of my model. Firms last one period and investors are assumed to be myopic. In each period, entrepreneurs receive an investment opportunity and then decide whether to take it or not. In a neoclassical model, if investment opportunities are not serially correlated, an entrepreneur's investment will be unrelated to his past savings. At the country level, investment and savings will be uncorrelated as long as the country is small.

With the twin agency problem, entrepreneurs must co-invest. Their wealth depends on the success of earlier investments. If they did well in the previous period, they are more likely to start a firm this period because, with higher wealth, they can afford to co-invest more. It follows that the twin agency problems create a direct link between savings and investment.

C. The Lucas Paradox

Recall that the Lucas paradox is that neoclassical models imply a high marginal product of capital in emerging countries, given the wage rates prevailing there.

Countries in which the twin agency problems are more important will have higher physical productivity of capital than countries in which these problems are less important. In other words, the physical marginal product of capital will be higher because investment will stop at the point at which it is no longer profitable net of the costs of the twin agency problems.

To see this, assume that entrepreneurs in two different countries have access to exactly the same investment opportunity. One country, country G, has sufficiently good investor protection and a sufficiently low risk of expropriation that corporate ownership is dispersed in equilibrium. The other country, country B, does not have these valuable attributes. In country B, the return to entrepreneurship from a given level of investment is lower than in country G because:

1) Corporate insiders must co-invest to reduce the adverse impact of the twin agency problems. Co-investment is costly because it forces corporate insiders to bear more risk for a given expected return than they would otherwise. It follows that co-investment reduces the gains from entrepreneurship, so that less capital is invested. Further, the amount of capital invested is limited by the entrepreneurs' resources to co-invest.

2) The state will expropriate part of the investment opportunity's return, which reduces the return on investment.

3) The agency costs of corporate insider discretion do not disappear in equilibrium. Thus, more investment leads to more deadweight costs.

The twin agency problems create a wedge between the return on a dollar of investment in the two countries, so that the physical marginal product of capital will be higher in country B than in country G. Earlier papers by Gertler and Rogoff (1990) and Shleifer and Wolfenzon (2002) also observe that agency costs create a wedge that can help explain the Lucas paradox.

D. Consumption

Since the twin agency problems make it optimal for corporate insiders to co-invest with outside investors and to overweight the equity of their firms in their portfolios, the consumption of corporate insiders will be highly correlated with their firms' return. In contrast, minority shareholders hold the world market portfolio so that their consumption will be driven by the return of the world market portfolio. Aggregate consumption is a weighted average of the consumption of portfolio investors and corporate insiders. Though the consumption of portfolio investors is perfectly correlated across countries, the consumption of corporate insiders is not. In countries with greater co-investment, consumption will be more correlated with domestic returns and less correlated with foreign consumption.

The model has no labor income. Consumption from labor income would affect the results. Nevertheless, the twin agency problem would reduce consumption correlation across countries because corporate insiders cannot share risk to the same extent as portfolio investors.

E. Country Effects in Returns

The twin agency problems make it possible to understand why country effects are so powerful in stock returns. This is because any change in the economic importance of the twin agency problems changes the present value of future cash flows of firms.

F. Stock Market Capitalization and Financial Development

The twin agency problems reduce reliance of firms on outside equity, which makes the equity market less important in countries in which the twin agency problems are significant. As the twin agency problems decrease in importance in a country, equity markets should acquire a more significant economic role, so that financial development should be inversely related to the importance of the twin agency problems.

Financial globalization follows a U-shape over the last 120 years. Figure 1 shows that U-shape clearly. In the early 1990s, the world's foreign assets to GDP ratio returns to its level of a century ago.

This U-shape is closely related to what Rajan and Zingales (2003) call the "great reversal." They show that the level of financial development, measured, for instance, by the ratio of stock market capitalization to GDP, also follows a U-shape pattern. In their model, incumbents protect their rents by repressing financial development. They can only do so effectively when international trade and capital flows are jointly weak.

Changes in the importance of the twin agency problems through time can help explain the "great reversal." In particular, we would expect the state ruler agency problem to have been more important in the 1930s than it was in 1900 or 2000 for many countries. For instance, Goetzman (2004) attributes the U-shape to two blows to the global financial architecture: World War I and the influence of anticapitalist ideologies, starting with the Bolchevik revolution.

VII. The Twin Agency Problems, Corporate Finance, and Financial Globalization

The results in Sections III and IV go a long way in explaining why firms and corporate finance differ across countries. In these sections, I show that ownership is more concentrated when the twin agency problems are more important. It also follows from my analysis that firms will be smaller in countries in which the twin agency problems are more significant because the wealth and risk appetite of corporate insiders naturally limit firm size when co-investment is important. I now turn to how the twin agency problems limit the benefits of financial globalization for firms.

A. Financial Globalization, Firm Value, and Investment

Theoretical models of financial globalization investigate the impact of a reduction in barriers to international investment. Starting with Subrahmanyam (1975), these models show that, in general, removing barriers to international investment decreases a firm's cost of capital and

improves welfare.[23] As barriers fall, the required expected return on a stock in a country becomes determined globally. Consequently, risks that were not diversifiable become diversifiable. In models without frictions other than barriers to international investment, the elimination of these barriers increases the present value of future cash flows and leads firms to expand as their cost of capital falls.

Henry (2000) shows that a reduction in barriers to international investment increases shareholder wealth, and Bekaert and Harvey (2000) show that it is accompanied by a drop in the required expected return on equity. However, as explained in Stulz (1999b), these changes are smaller than what we would expect to find in a neoclassical setting.[24]

There are at least five reasons why the twin agency problems reduce the ability of firms to take advantage of financial globalization. First, entrepreneurs gain from globalization by being able to sell securities at a higher price. To the extent that the twin agency problems make it optimal for corporate insiders to co-invest with other investors, the benefit from the decrease in the cost of capital is naturally reduced for entrepreneurs.[25] Second, investment opportunities that become valuable when the cost of capital falls require insiders to co-invest and bear more risk. Their ability to do so is limited by their risk aversion and their wealth. Consequently, the extent to which corporate insiders can take advantage of these investment opportunities is lower than in the neoclassical model.[26] Third, Section III shows that a reduction in the cost of capital can reduce corporate ownership and increase the consumption of private benefits, which in turn diminishes the positive impact on a firm's value of a reduction in the cost of capital. Fourth, foreigners seem to be particularly vulnerable to expropriation by state rulers, which limits the impact of financial

[23] These models typically do not focus on how financial globalization leads to greater financial development within countries, which furthers the decrease in the cost of capital. Early research that looks at this link is Errunza (1974).
[24] Some authors document larger changes. See, for instance, Edison and Warnock (2003).
[25] This assumes that their holdings of other stocks are unimportant, since otherwise they would make a capital gain on these holdings, part of which they could use to co-invest in their firm.
[26] This last effect could be reduced if, contrary to my assumptions, corporate insiders have a significant portfolio of shares that increases in value as a result of financial globalization.

globalization on a firm's cost of equity when the state ruler agency problem is significant. Goetzman (2004) argues that a situation in which firms are almost wholly owned by foreigners, which would be the situation for small countries if investors hold the world market portfolio, cannot be an equilibrium because domestic residents would not put up with it. Fifth, when the state ruler agency problem is significant, financial globalization can be more easily reversed in that the state rulers can erect new barriers to international investment.[27]

It follows that the neoclassical model overstates the firm value benefit of financial globalization. A major reason for this is that it ignores the fact that in a world with the twin agency costs, firms are limited in their ability to take advantage of a reduction in the cost of capital by the willingness and ability of insiders to co-invest as production expands. Therefore, the concentration of ownership caused by the twin agency problems can help explain why the impact on firm value of a reduction in barriers to international investment is smaller than expected in a neoclassical model.

I now consider the effect on firm value, minority investors, and corporate insiders of a decrease in barriers to international investment for an already-established firm. Suppose first that a reduction in barriers to international investment takes place and that corporate insiders sell no new shares. In this case, minority investors gain from the increase in the value of their shares. The fractional ownership is unaffected, so the increase in firm value is as predicted by the neoclassical model. The corporate insiders do not gain from financial globalization because they own the same stake in the firm as before and their utility depends on the risk of the cash flows they will receive from that stake rather than on the present value of that stake in the stock market. For the corporate insiders of existing firms to gain from financial globalization, it must be that they expect to raise more capital following the reduction in barriers to international investment.

B. Firm Creation and Financial Globalization

[27] See Perrotti and Van Oijen (2001) for the view that liberalizations become credible over time and Martell and Stulz (2003) for supportive evidence using long-term returns after liberalizations.

So far, in this section, I assume that entrepreneurs always invest in their investment opportunity and I focus on the impact of financial globalization on existing firms. However, financial globalization also impacts firm creation.

The decision of entrepreneurs to start firms depends on their investment opportunity set. The expected utility of portfolio investors increases as barriers to international investment fall, because they can reap greater benefits from international diversification. Therefore, for entrepreneurs to choose to invest in their unique investment opportunity, it must be that their expected utility as portfolio investors does not increase so much that becoming portfolio investors has more value to them than starting a firm. Such an outcome is possible, however.

To see that financial globalization can decrease the number of firms in the economy and therefore can have an adverse impact on investment, consider the case in which the benefit to entrepreneurs from starting firms is small when the country is segmented because the twin agency problems are large. Financial globalization has little impact on the benefit of starting a firm in this case because co-investment is large, so that few funds are raised at the lower cost of capital. It follows that in this case financial globalization may increase the expected utility of entrepreneurs if they become portfolio investors more than if they start firms. Therefore, financial globalization may result in fewer firms being created and in capital outflows.

These results are consistent with empirical evidence finding a relation between the impact of financial liberalization on growth and a country's economic development or the quality of its institutions. For instance, Edwards (2001) finds that financial liberalization hurts extremely poor countries, but these countries are likely to have the worst institutions. Arteta, Eichengreen, and Wyplosz (2003) find weak results that financial liberalization has a more positive impact on richer countries, but they find stronger results that financial liberalization helps more countries with better institutions. Finally, Klein (2005) finds an inverted U-shape relation between the impact on growth of financial liberalization and the quality of institutions, so that financial

liberalization is most beneficial for growth for countries that have neither the best nor the worst institutions.

C. Private Solutions to the Twin Agency Problems

In Section IV, I discuss the various ways in which corporate insiders can reduce expropriation by the state. Corporate insiders can also take actions that commit them to lower consumption of private benefits. First, they can make organizational decisions that reduce their ability to expropriate. For instance, they can choose to put outsiders on the firm's board. Second, they can make financing decisions that achieve the same purpose. Debt can make the appropriation of private benefits less profitable, since insiders might lose control if the firm cannot pay the creditors back. Third, insiders can build a reputation for not expropriating minority investors.[28]

Recent empirical evidence shows that various mechanisms firms can use to commit to investors that they will receive a return on their investments can be effective even when the law offers limited protection to investors. For instance, Franks, Mayer, and Rossi (2004) show that the ownership of a sample of British firms in existence in 1900 evolved in the same way as the ownership of a similar sample of firms in existence in 1960, even though the antidirector rights index had a value of one from 1900 to 1946 but had reached a value of five by the end of the century. Allen, Qian, and Qian (2004) show similarly that the informal sector in China has found many ways to alleviate the problem of China having poor legal mechanisms.

The usefulness of these approaches to reduce the importance of the agency costs of insider discretion falls as the agency problem of state ruler discretion becomes more serious. First, these approaches often rely on private contracting, but private contracting is less reliable when state rulers have more discretion since they can abrogate contracts and prevent their enforcement. Second, the payoff from investments generally falls as the importance of the state ruler agency problem increases and, therefore, the payoffs to investments in governance fall also. Third, a

[28] See Gomes (2000).

predatory state limits the benefit from corporate transparency by making it valuable for those connected to the rulers to hide the benefits they receive from the state, and for those not connected to the rulers to hide the true state of the firm to make expropriation harder. Fourth, as discussed earlier, insider entrenchment can reduce expropriation by the state.

It follows that firms find it more costly to control the agency problem of corporate insider discretion when the agency problem of state ruler discretion is important. However, when the agency problem of corporate insider discretion is poorly controlled, it is less profitable for firms to use external finance. Though the analysis so far ignores information asymmetries, these asymmetries are more important when firms are less transparent. By making the firm less transparent to reduce expropriation by the state, corporate insiders increase information asymmetries and, therefore, make it more expensive to access external sources of finance. As firms use less external finance, they benefit less from financial globalization since financial globalization benefits firms by lowering the cost of capital on the capital they raise.

VIII. Will Financial Globalization Lead to a Decrease in the Importance of the Twin Agency Problems?

So far, I have taken the importance of the twin agency problems in a country to be given. However, an important benefit of financial globalization is that it creates conditions for the twin agency problems to become less important over time.

A. Financial Globalization and the Agency Costs of Corporate Insider Discretion

I first demonstrate that financial globalization increases firms' incentives to reduce the agency costs of corporate insider discretion, and then show that financial globalization provides tools firms can use to do so.

A.1. Does financial globalization provide incentives for firms to improve governance?

Financial globalization reduces the cost of outside finance for firms. As the cost of outside finance falls, firms use more of it. Consequently, if it is costly for firms to improve their governance, they are more likely to do so when they use more external finance. It follows that financial globalization creates incentives for firms to improve governance. The limitation to governance improvements is, however, that such improvements may expose firms to more expropriation from the state.[29]

With a new firm, insiders capture the benefit from increased firm-level governance because it allows them to sell securities at a higher price as long as it does not increase state expropriation too much. Similarly, if insiders could vote to increase investor protection by the state before they start a new firm, they will choose to do so if that means an increase in investor protection has no deadweight cost. With such an increase, they optimally invest less in the firm and therefore bear less firm risk.

Bebchuck and Roe (1999) point out that incumbent corporate insiders do not necessarily benefit from improvements in corporate governance. The same can be true here, but even incumbents may choose to improve a firm's corporate governance as the cost of capital falls.

Consider first the Bebchuck and Roe (1999) argument. Assume that insiders invested in a firm when investor protection was low. The minority investors bought the securities assuming that a significant fraction of cash flows was going to be expropriated by insiders. Just before insiders can appropriate private benefits after cash flows are realized, the state sharply improves investor protection. With this higher level of investor protection, insiders expropriate only a small fraction of cash flows, which makes minority investors better off but reduces insiders' appropriation of private benefits.

Now, consider the case in which the cost of capital drops because of financial globalization. Insiders in existing firms receive a benefit from improvements in investor protection when a

[29] In Doidge, Karolyi, and Stulz (2004b), financial globalization leads to greater investments in governance for a different reason, namely, that it reduces the cost of such investments.

reduction in the cost of capital enables them to profitably increase the scale of the firm or to take advantage of growth opportunities that would not otherwise have been profitable. In this case, the firm must raise new capital and does so on better terms with better investor protection. However, the insiders have to trade off the benefit of raising capital more cheaply against the loss resulting from their decreased ability to extract private benefits from control. But insiders who raise funds for the first time instead benefit from the ex ante reduction in private benefits.[30]

When investor protection is low, a reduction in barriers to trade in goods and services increases incentives for the state to increase investor protection. To see why, consider a country in which firms face imperfect competition before trade liberalization. After the reduction in barriers, firms face greater competition by firms from countries in which investor protection is higher.

Suppose that there is a country that meets the assumptions of the neoclassical model. Insiders in that country incur no deadweight agency costs. Consequently, competition among firms will push goods prices to the point at which investors just earn the required expected rate of return and there are no abnormal profits. When this happens, firms in countries with high agency costs will not be profitable, because there will not be enough rents to pay for the deadweight agency costs. As a result, to reduce their deadweight agency costs entrepreneurs will lobby for improvements in investor protection, or, alternatively, will lobby for the country to erect barriers to trade.

A.2. Does Financial Globalization Provide Tools for Good Governance?

Financial globalization provides tools to insiders to reduce the agency costs of corporate insider discretion. First, it completes markets and reduces the costs of some securities trades. Second, financial globalization enables insiders to rent investor protection mechanisms from other countries. Third, it gives insiders access to specialized knowledge and skills.

[30] See Doidge, Karolyi, and Stulz (2004a) for an analysis of such a trade-off.

In a world where capital markets are segmented, firms are stuck with the institutions of their country. If the country has weak financial markets or poor securities laws, firms have to live with them. As barriers to trade in financial assets fall, firms can choose to list on foreign exchanges and raise funds abroad.

Coffee (1999) and Stulz (1999b) discuss how ADR programs permit foreign firms to borrow U.S. institutions of investor protection. By listing on a U.S. exchange, a foreign firm is subject to some U.S. securities laws and regulations. It is also monitored by the exchange, the S.E.C., and other U.S. gatekeepers. Although this monitoring may at times seem weak and tentative, it is monitoring that otherwise would not have taken place.[31]

B. Financial Globalization and the State Ruler Agency Costs

Financial globalization reduces the state's ability to expropriate. It gives resident investors an exit, which raises the reservation utility of insiders and makes it difficult for state rulers to reduce barriers to international investment when the risk of expropriation is high, since if they do so, insiders will export capital. Further, the state rulers cannot, with impunity, take actions that increase the risk of expropriation unless they first raise barriers to international investment. It follows that rulers of countries with open borders find it more costly to take steps to expropriate investors. In a related observation, Rajan and Zingales (2003) point out that the ability of incumbents to protect their rents is much more limited when capital flows are buoyant.

Rather than expropriating assets directly, state rulers can also direct resources towards some firms and away from others. For instance, they can make it difficult for some firms to raise funds or they might increase the cost of funds through rationing. Financial globalization sharply reduces the ability of state rulers to engage in such practices because it makes foreign sources of capital available to local firms.

[31] See Siegel (2005) for a critical view of the extent of this monitoring.

Capital markets differ in the costs they impose on firms that want to raise funds. Further, specific segments of capital markets simply do not exist in many countries. U.S. investors take the existence of a long-term bond market for granted, but very few countries have a liquid long-term bond market. In many countries, issuing securities is expensive and heavily regulated.

However, since the 1960s, firms have been able to issue debt and convertible debt on offshore markets that are unregulated. These markets can dramatically reduce the ability of local regulators and financial institutions to restrict security issues, and thus they lower the cost of external funds for firms.

This discussion makes it clear that financial globalization reduces the ability of those in control of the state to extract rents. If they attempt to do so, resident investors can put their money elsewhere, foreign investors can go home, and local firms will become uncompetitive. From this perspective, it is not surprising that financial crises will sometimes occur in those countries in which investor protection is weak and respect for property rights suspect.

Rather than viewing financial crises as the downside of financial globalization, this view suggests that the possibility of such crises is intrinsic to the benefits from financial globalization. Free capital flows make it harder for the state to expropriate investors because it gives investors an exit. Not surprisingly, investors will use that exit if they feel threatened. The problem in those cases is not the capital flows, but the fact that investors feel threatened.

IX. Conclusion

Although barriers to international investment have fallen sharply over the last 50 years, the impact of financial globalization has been limited -- countries still matter a great deal. I argue that the reason why countries still matter so much is that finance is critically affected by twin agency problems. First, those who control a firm can use their power for their own benefit, which creates what I call “the agency problem of corporate insider discretion.” Second, those who control the

state can use their powers to improve their welfare, which creates what I call "the agency problem of state ruler discretion."

Note that these are twin problems rather than two separate problems. They prosper together because they feed on each other. As these agency problems worsen, concentrated ownership becomes more efficient than diffuse ownership. To show this, my analysis exploits a simple one-period partial equilibrium model and focuses mostly on new firms. I do not directly model the agency problem of state ruler discretion and the actions firms can take to affect state expropriation. State expropriation can take many forms, but for simplicity, in my model I assume that it is deterministic and I do not distinguish among forms of expropriation. I consider only all-equity public firms in which each share has one vote and analyze only portfolio equity flows.

The implications of these limitations of my approach should, and hopefully will, be examined in future work, but the central role of the twin agency problems in fostering ownership concentration should remain. Relaxing some of my simplifying assumptions would make it possible to enrich the analysis and examine issues such as the composition of capital flows, the determinants of the risk of state expropriation, and the cross-section of expected returns on risky assets in the presence of the twin agency problems. I conjecture that such a relaxation would show that foreign direct investment represents a larger fraction of capital flows when the twin agency problems are more important.

When concentrated ownership is optimal, insiders must co-invest with outsiders. Co-investment constrains the benefits from financial globalization because it makes it harder for risks to be shared internationally and for capital to be invested where it is most productive.

Co-investment has the following implications:

1) Corporate insiders bear a significant amount of their firms' risks.

2) Firm size is constrained by the wealth of corporate insiders and their appetite for risk.

3) Co-investment decreases the extent to which firms raise equity externally, which makes equity markets less active and resilient.

4) Co-investment forces corporate insiders to overweight their firms' equity in their portfolios, so that fewer risks can be shared across countries.

5) Since corporate insider consumption depends heavily on the success of their firms, consumption is imperfectly correlated across countries, so that investors have to forgo risk-sharing opportunities.

6) Since corporate insiders can co-invest more when they are wealthier, a country's savings and investment tend to be correlated, which prevents the country from taking full advantage of investment opportunities when savings are low.

7) Co-investment limits the impact on firm investment of a decrease in the cost of equity capital, such as the decrease brought about by financial globalization, because an increase in firm investment requires that insiders co-invest more and bear more risk.

My analysis also makes predictions about other aspects of corporate finance. In particular, countries in which the twin agency problems are severe should be expected to have higher leverage and a higher proportion of short-term debt than countries in which these problems are more benign. Further, investment in corporate governance is less profitable in countries in which the agency problem of state ruler discretion is significant, because many activities that entrench corporate insiders help reduce the risk of expropriation by the state.

This paper shows that the twin agency problems help explain important paradoxes in international finance, and help us understand why finance and corporate governance differs across countries and across time. These problems determine how well investors can share risks across countries and separate savings decisions from investment decisions. Any investigation of these problems shows how special the United States and the United Kingdom are in having successfully controlled these problems relatively well. As long as these problems are not controlled better, they will limit the impact of financial globalization. As progress is made in controlling these problems, the world will reap greater and greater benefits from financial globalization.

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Figure 1. Foreign assets relative to GDP

This figure uses the data from Obstfeld and Taylor (2003). The GDP figure is the sum of the GDPs of the countries for which there are data on foreign assets.

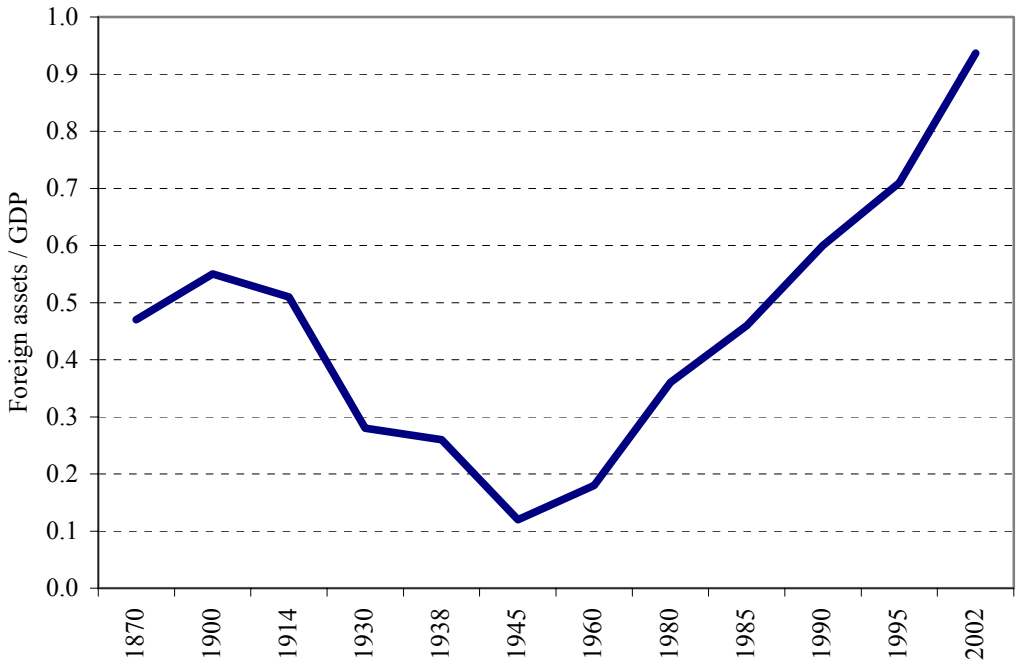


Figure 2. Gross cross-border flows to GDP

This figure uses U.S. Treasury International Capital System (TIC) data reported by the U.S. Treasury for gross purchases and gross sales of securities between foreign investors and U.S. residents. The aggregate trading activity is the sum of purchases and sales.

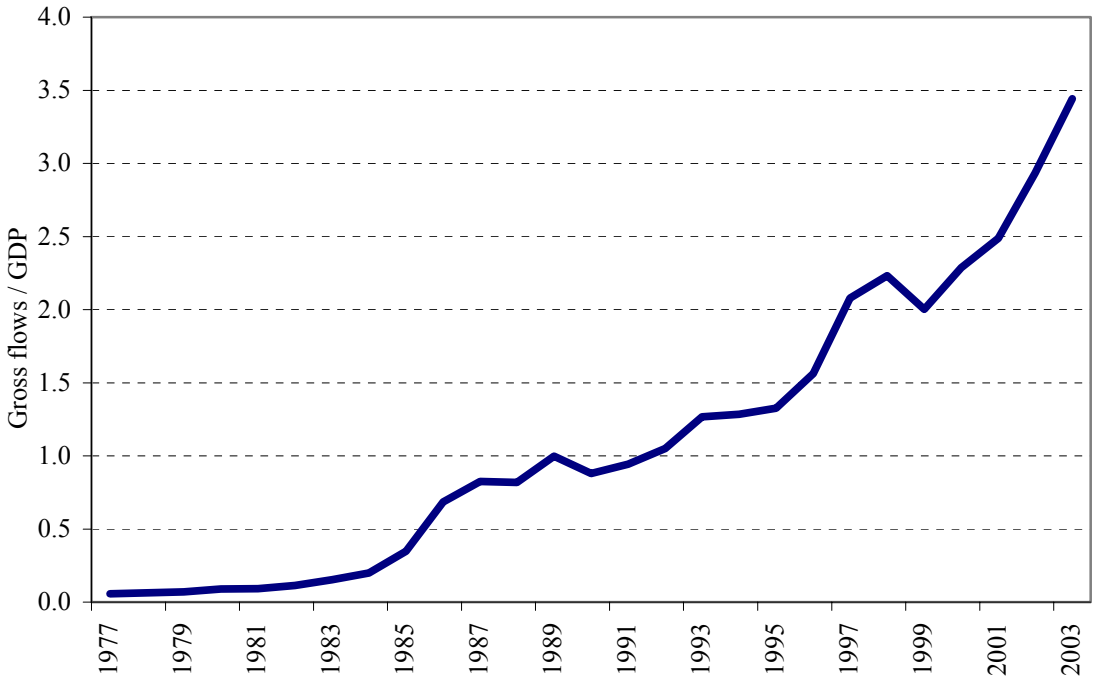


Figure 3. The home bias for U.S. investors

This figure shows the home-bias measure for U.S. investors and the ratio of foreign stocks in the portfolios of U.S. investors. The home-bias measure, introduced by Ahearne, Griever, and Warnock (2004), is one minus the ratio of the portfolio share of foreign stocks in U.S. portfolios divided by the portfolio share of foreign stocks in the world market portfolio. If there were no home bias and investors held the world market portfolio, the home-bias measure would equal zero.

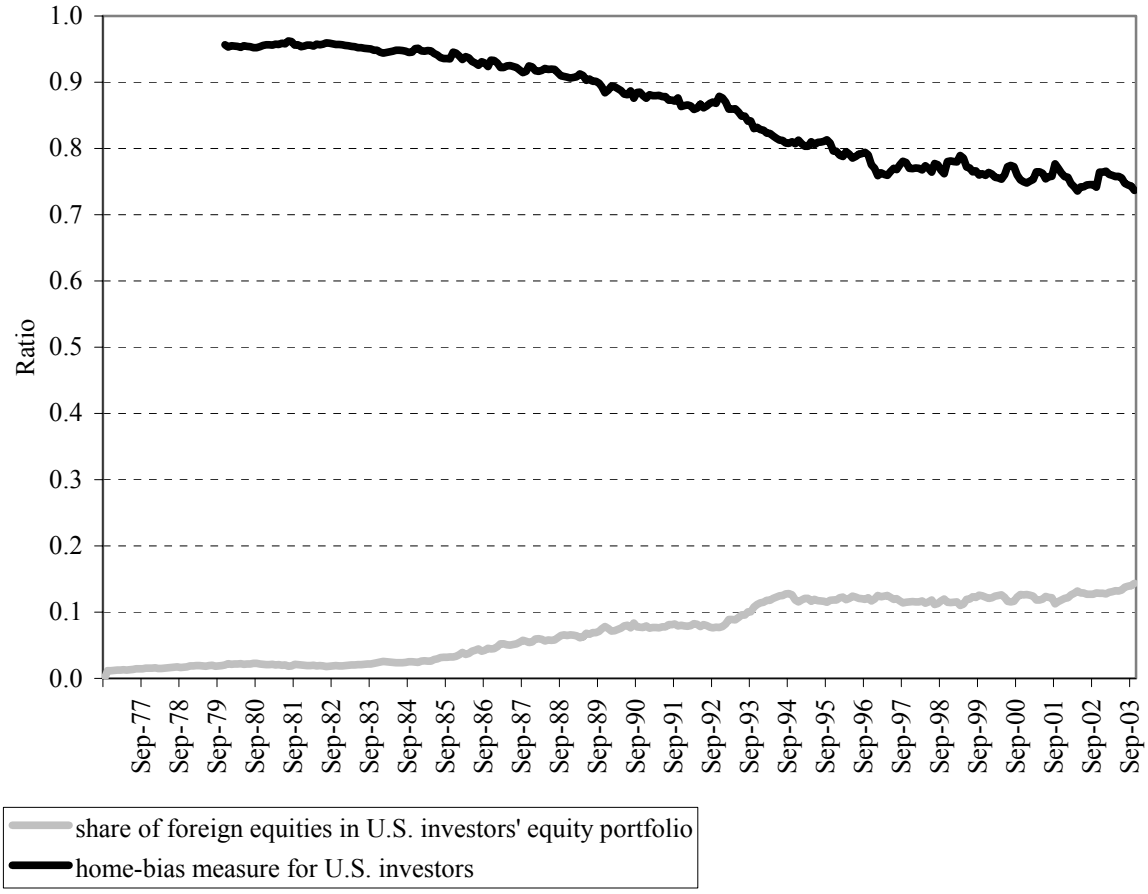
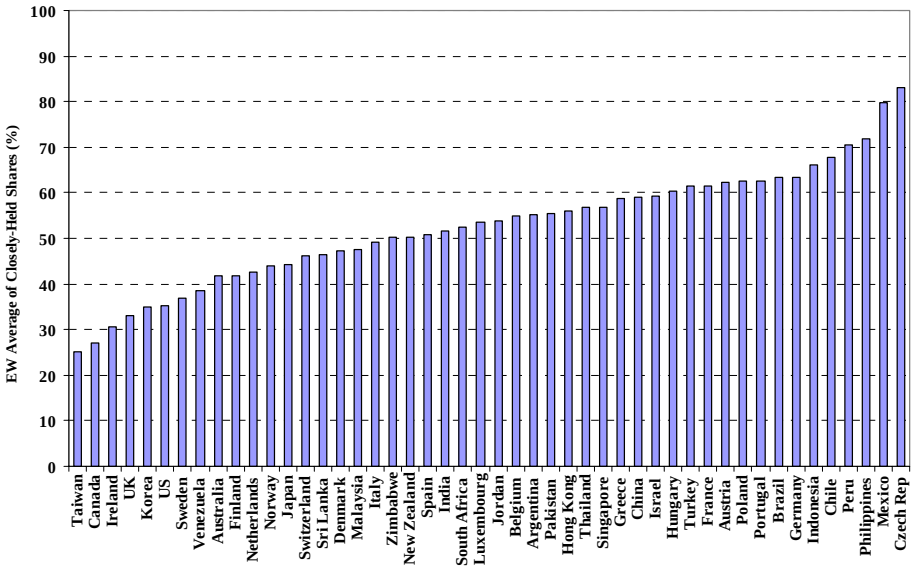


Figure 4. The distribution of corporate ownership

This figure shows the equally weighted (EW) average percentage and the value-weighted (VW) average percentage of shares held by corporate insiders across countries in 2002, where shares held by corporate insiders are proxied by the block holdings reported by Worldscope.



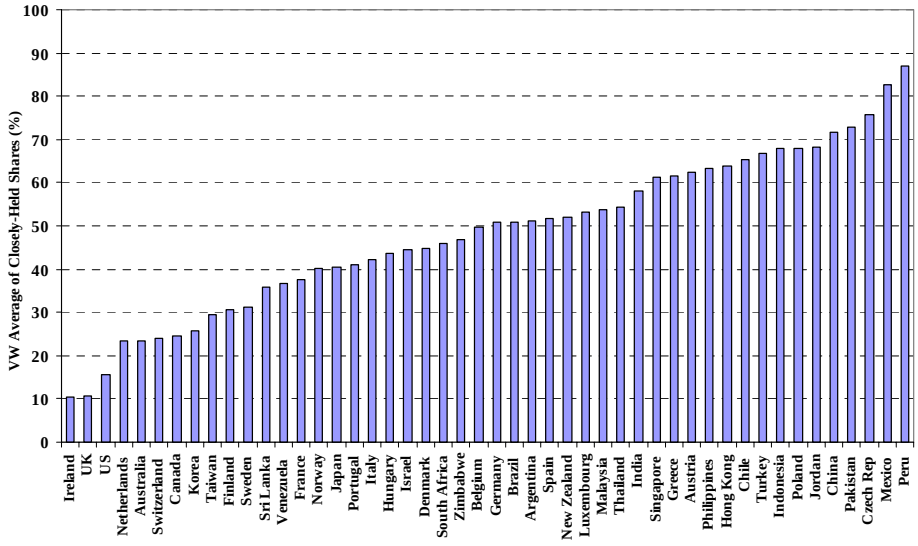


Table I. The Data

Widely held (family control) is the fraction of firms with no controlling shareholder (family controlling shareholder) who holds more than 10% of the voting rights, and Close_ew (Close_vw) is the equally (value-) weighted average fraction of firm stock market capitalization held by insiders according to Worldscope in 2002. PolconV is an index of constraints of the state rulers. The values are for 1960 (except 1963 is used for Malaysia, 1965 for Singapore, and the value for West Germany for Germany), with values from 0 to 1, where 0 represents full dictatorship and 1 democracy. Exprisk is expropriation risk from LLSV and Antidir is the LLSV index of minority protection. The measures of financial development are obtained from Pinkowitz, Stulz, and Williamson (2004) and are averaged over 1988 to 1999. Scap is the ratio of stock market capitalization to GDP, Sturn is the stock market turnover, reported GDP is GDP per capita, Bcap is bond market capitalization to GDP (not available for 1988), and Tcap is the sum of Bcap and Scap for the years for which both ratios are available.

Country Name	Widely Held	Family Control	Close_ew	Close_vw	PolconV	Exprisk	Antidir	Scap	Sturn	GDP	Bcap	Tcap
Argentina	0.00	0.65	0.55	0.51	0.00	5.91	4	0.13	0.33	7246	0.02	0.16
Australia	0.55	0.10	0.42	0.23	0.86	9.27	4	0.63	0.40	20330	0.17	0.81
Austria	0.05	0.15	0.62	0.62	0.74	9.69	2	0.13	0.58	28772	0.31	0.45
Belgium	0.00	0.50	0.55	0.50	0.86	9.63	0	0.47	0.17	26821	0.53	1.01
Brazil			0.63	0.51	0.88	7.62	3	0.21	0.47	4298	0.12	0.39
Canada	0.50	0.30	0.27	0.24	0.85	9.67	5	0.67	0.46	19624	0.12	0.81
Chile			0.68	0.65	0.69	7.50	5	0.81	0.10	4172	0.14	1.00
Denmark	0.10	0.35	0.47	0.45	0.77	9.67	2	0.38	0.44	33740	1.02	1.41
Finland	0.15	0.10	0.42	0.31	0.77	9.67	3	0.58	0.35	26296	0.33	0.94
France	0.30	0.20	0.62	0.38	0.36	9.65	3	0.42	0.56	26657	0.48	0.92
Germany	0.35	0.10	0.64	0.51	0.84	9.90	1	0.30	1.34	29595	0.50	0.81
Greece	0.05	0.65	0.59	0.62	0.36	7.12	2	0.26	0.50	11454	0.02	0.28
Hong Kong, China	0.10	0.70	0.56	0.64		8.29	5	2.13	0.51	21023	0.08	2.29
India			0.52	0.58	0.28	7.75	5	0.33	0.36	387	0.01	0.34
Ireland	0.45	0.15	0.31	0.10	0.75	9.67	4	0.26	0.67	17834	0.04	0.31
Italy	0.15	0.20	0.49	0.42	0.76	9.35	1	0.24	0.48	18807	0.30	0.55
Japan	0.50	0.10	0.44	0.40	0.74	9.67	4	0.85	0.43	41438	0.45	1.26
Korea, Rep.	0.40	0.35	0.35	0.26	0.28	8.31	2	0.40	1.44	9746	0.36	0.77
Malaysia	0.01	0.58	0.48	0.54	0.73	7.95	4	1.77	0.42	3845	0.31	2.18
Mexico	0.00	1.00	0.80	0.83	0.05	7.29	1	0.28	0.39	3299	0.01	0.31
Netherlands	0.30	0.20	0.43	0.23	0.77	9.98	2	0.84	0.63	26483	0.25	1.13
New Zealand	0.05	0.45	0.50	0.52	0.73	9.69	4	0.44	0.29	15836	0.00	0.45
Norway	0.05	0.25	0.44	0.40	0.76	9.88	4	0.28	0.57	32408	0.23	0.52
Peru			0.71	0.87	0.48	5.54	3	0.19	0.32	2181	0.02	0.23
Philippines	0.02	0.42	0.72	0.63	0.32	5.22	3	0.61	0.34	1093	0.00	0.61
Portugal	0.00	0.50	0.63	0.41	0.00	8.90	3	0.24	0.40	10667	0.13	0.38
Singapore	0.05	0.45	0.57	0.61	0.29	9.30	4	1.46	0.49	21343	0.14	1.64
South Africa			0.52	0.46	0.28	6.88	5	1.46	0.13	3965	0.14	1.61
Spain	0.15	0.25	0.51	0.52	0.00	9.52	4	0.37	0.79	14814	0.15	0.53
Sweden	0.00	0.55	0.37	0.31	0.76	9.40	3	0.75	0.47	27308	0.54	1.31
Switzerland	0.50	0.40	0.46	0.24	0.85	9.98	2	1.38	0.77	44437	0.52	1.95
Thailand	0.02	0.57	0.57	0.54	0.00	7.42	2	0.53	0.80	2501	0.08	0.61
Turkey			0.62	0.67	0.00	7.00	2	0.20	1.10	2838	0.00	0.21
United Kingdom	0.90	0.05	0.33	0.11	0.73	9.71	5	1.24	0.51	18920	0.19	1.46
United States	0.80	0.20	0.35	0.16	0.86	9.98	5	0.95	0.78	27487	0.84	1.82

Table II. Determinants of Ownership Concentration

A widely-held firm is defined as one with no controlling shareholder with more than 10% of the votes. A family-controlled firm is one in which the controlling shareholder is a family with more than 10% of the votes. The equally weighted average of closely-held shares uses the fraction of stock market capitalization held by insiders according to Worldscope for 2002. PolconV is an index of constraints on the state rulers. The values are for 1960 (except 1963 is used for Malaysia, 1965 for Singapore, and the value for West Germany for Germany), with values from 0 to 1, where 0 is dictatorship and 1 democracy. The explanatory variable is GDP per capita and its coefficient is multiplied by 10,000. Exprisk is expropriation risk, anti-dir is the LLSV index of minority protection, scap is the ratio of stock market capitalization to GDP, sturn is the stock market turnover, and tcap is the sum of stock and bond market capitalization to GDP. P-values are in parentheses.

Panel A: The dependent variable is the fraction of widely-held firms (Tobit regression)					
Intercept	-0.981	-0.991	-0.965	-1.145	-0.844
	(0.009)	(0.009)	(0.010)	(0.001)	(0.056)
Exprisk	0.104	0.104	0.098	0.085	0.079
	(0.010)	(0.010)	(0.016)	(0.018)	(0.173)
Anti-dir	0.081	0.074	0.074	0.105	0.084
	(0.024)	(0.062)	(0.046)	(0.004)	(0.021)
Scap		0.043			
		(0.669)			
Tcap			0.057		
			(0.487)		
Sturn				0.446	
				(0.008)	
GDP					0.035
					(0.578)
Pseudo R^2	0.349	0.353	0.360	0.502	0.356
Panel B: The dependent variable is the fraction of family-controlled firms (Tobit regression)					
Intercept	1.475	1.468	1.514	1.530	1.360
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Exprisk	-0.115	-0.117	-0.125	-0.109	-0.095
	(0.000)	(0.000)	(0.000)	(0.000)	(0.029)
Anti-dir	-0.027	-0.048	-0.037	-0.033	-0.029
	(0.280)	(0.073)	(0.142)	(0.142)	(0.249)
Scap		0.131			
		(0.071)			
Tcap			0.087		
			(0.152)		
Sturn				-0.168	
				(0.173)	
GDP					-0.03
					(0.525)
Pseudo R^2	0.417	0.480	0.458	0.454	0.425

Panel C: The dependent variable is the equally-weighted average of inside ownership (OLS)					
Intercept	1.091	1.091	1.086	1.122	1.090
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Exprisk	-0.054	-0.054	-0.053	-0.051	-0.054
	(0.000)	(0.000)	(0.000)	(0.000)	(0.011)
Anti-dir	-0.033	-0.033	-0.032	-0.039	-0.033
	(0.006)	(0.016)	(0.013)	(0.003)	(0.008)
Scap		-0.001			
		(0.977)			
Tcap			-0.008		
			(0.798)		
Sturn				-0.083	
				(0.156)	
GDP					0.000
					(0.987)
Adj. R^2	0.454	0.436	0.438	0.472	0.436

Panel D: Expropriation risk replaced by political constraint			
	Dep. var. is the fraction of widely-held firms (Tobit regression)	Dep. var. is the fraction of family-controlled firms (Tobit regression)	Dep. var. is the equally weighted average of inside ownership (OLS)
Intercept	-0.332	0.693	0.717
	(0.028)	(0.000)	(0.000)
PolconV	0.413	-0.438	-0.172
	(0.013)	(0.000)	(0.008)
Anti-dir	0.086	-0.060	-0.030
	(0.029)	(0.033)	(0.052)
Scap	0.064	0.135	-0.024
	(0.592)	(0.133)	(0.619)
Pseudo R^2 or adj. R^2	0.395	0.429	0.282

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