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Law and Ownership Reexamined

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ABSTRACT

Sixteen measures of legal protections for public market investors, including the Anti-Director Rights Index, the Anti-Self-Dealing Index, and legal origins, are all unrelated to ownership concentration in a large and representative sample of firms frssom 32 countries. Furthermore, when laws were strengthened in a variety of countries, ownership either stayed the same or became more concentrated. The two theories behind the proposed negative relation of law and ownership concentration are inconsistent with each other and inconsistent with established empirical regularities. In sum, both the evidence and the theory are at odds with the influential proposition that large shareholdings are a response to weak legal protections for public market investors.

Keywords: Law and finance, ownership concentration, investors' legal protections

JEL Codes: G15, G32, G34

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1 Introduction

One of the most influential findings from the law and finance literature is that large-percentage shareholders in public corporations are a response to weak legal protections for public market investors. This theory was initially proposed in La Porta, Lopez-de-Silanes, Shleifer, and Vishny (LLSV) (1998) and has been confirmed and refined by the same researchers and others, as summarized in Table 1.[1]

This theory now serves as a cornerstone for many analyses in corporate governance and theory of the firm. For example, Burkart and Panunzi (2006, p. 1) note, "empirical studies indicate that ownership is on average more concentrated in countries with poor legal shareholder protection." Perotti and von Thadden (2006, p. 158) write: "concentrated ownership will emerge naturally when investor protection is weak." And Denis and McConnell (2003, p. 30) summarize "strong legal protection for shareholders appears to be a necessary condition for diffuse equity investment.... In countries with weak protection, however, it appears that only ownership concentration can overcome the lack of protection."

In spite of the wide acceptance of an inverse relation between investors' legal protections and ownership concentration, doubts have arisen. Some commentators have pointed out that all of the empirical analyses that identify the inverse relation use the same unconventional methodology of analyzing country averages instead of the underlying firm observations. All of the existing studies also use one of two ownership datasets. One dataset, Worldscope, has been criticized on the grounds of accuracy, while the other, LLSV's dataset of the ten largest corporations in a country, has been criticized on the grounds of having only a few of the very largest firms from a given country. There are also several long-run within-country studies showing ownership concentration increasing over the same period when in-

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[1] La Porta, Lopez-de-Silanes, and Shleifer (LLS) (2013) survey both the law and ownership literature and the broader law and finance literature. Kim *et al.* (2006) report that LLSV (1998) is the most cited paper in either economics or finance since 1994.

	Analyses of Country Averages Only	Firm-Level Controls in Regressions	Conclusion
La Porta *et al.*, 1998	Yes	None	Ownership concentration is lower in common law countries and when shareholders have strong legal rights to sue corporate directors (Anti-Director Rights Index, Original).
La Porta *et al.*, 1999	Yes	No Regressions*	Same as above.
Beny, 2005	Yes	None	Concentration is lower in countries with strong legal prohibitions on insider trading.
Stulz, 2005	Yes	None	Concentration is lower when the threat of expropriation by the government is lower and when shareholders have strong legal rights to sue corporate directors (Anti-Director Rights Index, Original).
La Porta *et al.*, 2006	Yes	None	Concentration is marginally lower with disclosure requirements of securities laws; after controlling for disclosure, the Anti-Director Rights Index, Original is found to be unrelated to ownership concentration.
Li *et al.*, 2006	Yes	None	Financial institutions own more stock as Anti-Director Rights Index, Original increases.
Roe, 2006	Yes	None*	Ownership concentration is lower when shareholders have strong rights to sue corporate directors (Anti-Director Rights Index, Original) and when the country was at peace during the 20^{th} century.
Djankov *et al.*, 2008	Yes	None	Concentration is lower with ex-post private controls on self-dealing by corporate insiders; this Anti-Self-Dealing Index is seen as superior to the Anti-Director Rights Index, Revised.
La Porta *et al.*, 2008	Yes	None	Ownership concentration is lower with the Anti-Self-Dealing Index.
Mueller and Philippon, 2011	Yes	None	Families own less stock when national labor relations are good and when the Anti-Director Rights Index, Revised increases.

Table 1: Summary of the Literature on Ownership Concentration around the World.

Note: *Some analyses are conducted only with medium-sized firms.

Description: Published papers that analyze the relation between investors' legal protections and the ownership concentration of public corporations.

Interpretation: There is a homogeneity to the published papers in that all analyze country averages of ownership (not firm observations) and all, consequently, fail to include any firm-level controls in regressions.

vestor protection laws were becoming stronger.[2] Lastly, there are questions about the theories linking ownership to investors' legal protections.

[2]I summarize these studies in Figure 2.

I reexamine the relation between investors' legal protections and ownership concentration by using firm observations and the most accurate, representative ownership data available. I conduct a wide range of investigations both with and without firm-level controls and find no support for any relation, negative or positive, between investors' legal protections and the ownership concentration of public corporations. In cross-sectional analyses of corporations from 32 countries, about half of the legal measures proposed in the literature as mattering to investors are positively related to ownership concentration and about half are negatively related. Most measures, including all of the most commonly used measures such as the Anti-Director Rights Index and a country's legal origins, are statistically insignificant; those few that are (weakly) significant in the baseline analyses lose any significance in robustness tests.

The existing evidence on long-run changes of legal protections and ownership within a diverse group of countries, which to my knowledge is summarized for the first time in this paper, likewise fails to support the hypothesized relation. Several countries strengthened investor protection laws over the years studied, but none experienced the predicted decline in ownership concentration. Instead, as investor protection laws grew stronger, in most of these countries ownership became more concentrated. Finally, the two theories behind the proposed negative relation of law and ownership are inconsistent with each other and inconsistent with established empirical regularities.

In short, although the proposition that ownership concentration of public corporations is inversely related to investors' legal protections is widely held and influential, neither the empirical evidence nor the theory is supportive.

2 Existing Criticisms of the Law and Ownership Literature

2.1 The Laws

Which Laws Matter? One of LLSV's most important contributions was to work with lawyers from around the world to quantify investors' legal protections. This painstaking work was then summarized in a series of indices, which have enabled the flowering of cross-country empirical research over the last 15 years.

One criticism that has been voiced in the literature is that LLSV have not identified the specific laws that actually matter to investors.[3] Most measures are imperfect to some extent, and ultimately one can beat a legal index only with another legal index (a point lost on some of LLSV's critics). I am aware of only two other efforts to codify investors' legal protections across a broad array of countries. Beny (2005) has constructed six indices of insider trading laws for 33 countries. The Centre for Business Research at the University of Cambridge has developed an index of shareholder protection for 25 countries.[4] In the empirical analyses in this paper, I use these seven indices in addition to the nine shareholder-right indices developed by LLSV.

Accuracy. A related criticism is that LLSV have miscoded shareholder protection laws for some countries.[5] Only Spamann (2010) has corrected the coding of an index, in this case the influential Anti-Director Rights Index. I use Spamann's recoded Index for 1995 because that year coincides with my ownership data.[6].

Data Mining. Some papers identify the laws that matter to investors by running horse races among alternative indices. The index that "wins" the race is deemed to be the relevant one for investors. Although this empirical strategy is understandable both because the theories relating investors' legal protections to ownership concentration are not fully developed and because empirical regularities in this area are often unknown, it can nevertheless be criticized on the grounds of data mining.

I address this issue in two ways. First, I use different ownership data than is used in the published research. This, of course, is a conventional guard against data mining. Second, I report results from all 16 shareholder-protection indices that have been developed to date. If most of these indices are inversely related to ownership concentration, then fears of data mining could be allayed. On the other hand, if only a few of the indices are negative, then to allay fears of data mining we would need a

[3]For instance, Coffee (2001), Vagts (2002), Berkowitz *et al.* (2003a, 2003b), Graff (2008).

[4]The Centre has also developed indices of creditor and worker protections. In this paper, I focus exclusively on shareholder protection.

[5]These critics include Berndt (2002) (Germany and United Kingdom), Braendle (2006) (Germany), Cools (2005) (Belgium, France, and the United States), and Enriques (2002) (Italy).

[6]I highly recommend Spamann's legal research, which can be found at: http://rfs.oxfordjournals.org/content/23/2/467/suppl/DC1

theory tying the specific laws that happen to be significant to ownership concentration.

2.2 Ownership Data

Only two ownership databases have been used in the published research on law and ownership; both databases have been criticized, albeit on different grounds. Two of the Table 1 papers (Stulz, 2005 and Li *et al.*, 2006) use Worldscope ownership data. Although this sample is large and covers many countries, the data is seen as being inaccurate. For instance, it undercounts the ownership of United States corporations, in part by ignoring outside blocks and inside blocks owned by other corporations.[7] At the same time it overcounts the ownership of non-United States corporations, in part by including custodial accounts as large blocks.[8]

LLSV (1998) and LLS (1999) hand collected ownership data and constructed two databases, which are used in the remaining Table 1 papers. One is a sample of the ten largest firms in 49 countries. Their other (less frequently used) sample consists of the twenty largest firms in 27 countries. Because these data are hand collected, accuracy is assured. There are issues, however, with the samples' sizes and representativeness. These samples have only ten or twenty observations for most countries, with some countries having even fewer observations. Moreover, the firms are the very largest firms in their country. Given that there is a well-documented inverse relation between firm size and ownership concentration (for example, Demsetz and Lehn, 1985), these firms are unlikely to be representative of other firms from the same country. Moreover, the size of these large firms often varies substantially from country to country. The largest firms in the

[7]Holderness (2009) documents the problems for United States firms from researchers relying on the tables found in proxy statements reporting the stock ownership of directors and officers. The typical exchange-listed firm has outside blockholders who hold 11% of the stock (median 7%). Because these blockholders do not have board representation, their block ownership is not reflected in the ownership tables. In addition, some firms have entities such as trusts or other corporations that own large-percentage blocks. Often these blockholders have designated representatives who serve as directors or officers. Although this information is inevitably disclosed in the proxies, typically in footnotes, firms are inconsistent on whether they include such block ownership in the proxy's director and officer aggregate ownership figure.

[8]Holland and Warnock (2003) check the Worldscope data for Chile. They find that in some cases up to half of the stock that Worldscope includes as "closely held" by insiders is actually held by depository banks for small, individual accounts.

United States, for example, are far larger than the largest firms in Ecuador. Yet none of the existing analyses control for any cross-country differences in firm characteristics.

A look back helps explain why these two samples are small and limited to the largest firms in a country. When this research began, reliable electronic data on block ownership were unavailable. Indeed, this is still the case. Consequently, LLSV and LLS had to hand collect ownership data from a large number of countries (27 or 49 depending on the dataset). This must have been a time-consuming process even for ten (or twenty) firms per country. The original interest was in how often firms are diffusely held. The authors, consequently, started with the very largest firms in a country because they thought these would be the ones most likely to be diffusely held. They found, somewhat to their surprise, that even among these largest of all firms "dispersed ownership in large public companies is simply a myth (LLSV, 1998, p. 1146)." The problem is that data that were originally intended to answer a question involving the very largest firms in a country are now being used to make inferences regarding all firms in the country. The theories linking investors' legal protections to ownership concentration are applicable to all public firms, not just the largest ones.

To obtain the largest and most representative sample, I combine four ownership datasets. All involve hand-collected data, and all have been used in published papers. In combining these datasets, I am not alone. For instance, Doidge *et al.* (2009) combine three of the four datasets. Because these databases have already been extensively discussed in the literature, I will discuss them only briefly here.

The "Primary Database" uses the ownership data from Faccio and Lang (2002) for 13 Western European countries (4,721 firms). The European countries are Austria, Belgium, Finland, France, Germany, Ireland, Italy, Norway, Portugal, Spain, Sweden, Switzerland, and the United Kingdom. I then add the data from Claessens *et al.* (2000) for nine East Asian countries (2,980 firms). The Asian countries are Hong Kong, Indonesia, Japan, South Korea, Malaysia, Philippines, Singapore, Taiwan, and Thailand. Finally, I add the United States ownership sample from Holderness (2009) (375 firms). These are randomly selected, CRSP-listed corporations from 1995. All three sources include shareholders who own at least 5% of the common stock. When a firm has dual-class voting stock, the blockholders' voting power is used. If a firm has no blockholders, it is included at zero block ownership.

The "Emerging Markets Database" comes from Lins (2003) and consists of hand-collected data from 17 countries (1,579 firms): Argentina, Brazil, Chile, Hong Kong, Indonesia, Israel, Malaysia, Peru, Philippines, Portugal, Singapore, South Africa, South Korea, Sri Lanka, Taiwan, Thailand, and Turkey. The Emerging Markets Database, in contrast to the Primary Database, excludes firms without blockholders. This is why the two databases are not combined. All investigations are conducted separately with the two databases.

These two databases address most but not all of the criticisms that have been voiced about the databases that underlay the existing law and ownership studies. They are roughly as large as Worldscope, but they are more accurate because the data is hand collected. They are much larger than the LLSV and LLS databases (6,973 versus only 450-500). Although the firms (as in LLSV and LLS) are not randomly selected (save those from the United States), they encompass a broad range in firm size and other characteristics.

Some have criticized the existing literature on law and ownership because it does not address private firms. The Primary and Emerging Markets databases, likewise, do not include private companies. Ownership data on private firms, with rare exceptions, is not publicly available. Although it would be interesting to know the relation between the law and ownership for private firms, some of the laws of interest apply only to public firms, securities laws for instance. Moreover, private firms often have control mechanisms, such as family monitoring and limits on stock transferability, that typically are not found in public firms (Fama and Jensen, 1983).

Some readers have raised questions because 39% of the firms in the Primary Database come from Japan and the United Kingdom. These readers worry that the large number of observations from these two countries might unduly influence results. (This is not a potential problem with the Emerging Markets Database because it is more balanced.) To address this issue, in robustness tests I replicate my core analyses using a random sample of 200 firms from each country in the Primary Database. When a country has less than 200 firms, I use all of the sample firms from that country. I then run 100 regressions with 100 (somewhat) different samples of firms. I average the coefficients and p-values from the 100 regressions. These bootstrapping steps help ensure that no country is unduly influencing the results.

2.3 Ownership Measures

The measures of ownership concentration used in the existing literature have not been controversial. My baseline analyses use the aggregate voting ownership of all 5% or greater common shareholders. I use the 5% threshold because this is the level at which most countries mandate public disclosure of ownership stakes. (Some countries mandate disclosure at lower levels. I exclude these blocks in the interest of consistency across countries.) I use the aggregate ownership of all blockholders because the theories of interest address the organizational role of all large shareholders.

Four alternative measures of ownership concentration are used as the independent variable in robustness tests:

1. A logistic transformation of aggregate block ownership (thus converting a bounded measure to an unbounded measure);
2. The stock ownership of the largest shareholder;
3. A dummy variable that take a value of one (and zero otherwise) if the largest shareholder owns at least 10% of the firm;
4. The same at 20%.

3 Methodology

All of the existing studies of law and ownership use country averages of ownership even though the underlying firm-level data are available. Holderness (2016) explains that statisticians have long warned that aggregate data analysis (such as country averages) can create misleading inferences about individual units (such as firm ownership). That paper further shows that there is a negative and statistically significant relationship between country averages of ownership and three key measures of investors' legal protections. But when the same data are used on a firm basis, the coefficient on each of the legal measures either changes sign or loses statistical significance. Holderness (2016) uses the two ownership databases that underlay the existing analyses and follows regression specifications used in the literature.

Results change for three reasons: First, with individual data it is feasible to control for individual-level (firm-level) determinants of ownership.

Second, with individual data each firm is weighted equally. Third, with individual data standard errors directly reflect variations in individual firms' ownership, thereby eliminating the possibility of artificial clustering that can occur by eliminating all within-country variation by averaging observations within a country. The changes triggered by these three factors are why the distinguished statistician David Freedman (2006, p. 4028) warns, "it is all too easy to draw incorrect conclusions from aggregate data."

In the present paper, accordingly, I use firm observations. This individual-data approach also follows the fundamental approach in some published law and finance papers (albeit not on ownership concentration), including LLSV (2000) (dividend policy) and Doidge *et al.* (2007) (corporate governance). My empirical investigations start from the premise that corporations, as opposed to countries, have large-percentage shareholders and that ownership concentration will be influenced both by firm-level considerations, such as firm size, and by country-level considerations. The latter includes those considerations of interest to us, legal protections for investors, as well as ancillary country-level considerations, such as a country's per capita wealth. Specifically, I estimate the following model:

$$y_i = a + b'x_i + d'c_i + e_i$$

where y_i is firm $i's$ ownership concentration; x_i is a set of firm-level variables for firm i (such as firm size); c_i is a set of country-level variables applicable to firm i, some of which are legal (such as shareholders' rights to sue directors) and others of which are non-legal (such as the log of a country's gross domestic product (GDP) per capita); and e_i is an error term.

I estimate this relation using ordinary least squares (OLS) with robust standard errors that are clustered by country. Alternative estimation methods are used in the robustness tests. First, I replicate the OLS regressions with Tobit regressions to take account of the censoring of the ownership data at zero for the Primary Database and at 5% for the Emerging Markets Database. Second, I use hierarchical linear or multilevel modeling. This approach, which is widely used in political science and epidemiology but seldom in economics or finance, considers each country as a separate level with firms nested within each country and accounts for both firm- and country-level data in the same model (Raudenbush and Bryk, 2002). One advantage of hierarchical modeling is that it allows firm-level effects, say the relation between firm size and ownership concentration, to vary across

countries. This methodology seems appropriate for many law and finance questions.

3.1 Controls

Firm-Level Controls. Given that we are using firm observations, we can use firm-level controls to help ensure that cross-country differences in ownership concentration do not simply reflect cross-country differences in firm characteristics. For instance, one reason why firms from a given country may have less concentrated ownership than firms from another country is not because of stronger legal protections but simply because the firms are larger (perhaps due to an industry effect).

There is general agreement on two factors that are likely to influence ownership concentration: firm size and firm age. Both of these relations are well known to hold within country (for instance, Demsetz and Lehn, 1985). The negative relation between ownership concentration and firm size is seen as resulting primarily from individuals' wealth constraints and, to a lesser extent, from the possibility that blockholders are able to accomplish less as firms become larger. The negative relation between ownership concentration and firm age appears to be driven by company founders selling their stakes piecemeal over time for diversification reasons and by companies issuing equity, often for acquisitions, thereby diluting the ownership of existing shareholders. I control for size with the natural log of a firm's market value; I control for age with the natural log of the number of years since a firm's incorporation. (All variables are defined in Table 2.) If we fail to control for firm size and firm age, then cross-country differences in ownership concentration may simply reflect difference in either firm size or firm age and have nothing to do with differences in investors' legal protections.[9]

Robustness tests, which modify the baseline regressions reported in the Appendix, add other firm-level factors that are sometimes correlated with ownership concentration: stock-return volatility, scope for discretionary spending, and industry dummies for media, financial, and utility corporations.[10] In the robustness tests I also substitute the natural log of sales for the log of market value of equity as the measure of firm size, and I

[9]As LLS (1999, p. 474) note, "we should be careful that our measures of block ownership do not simply proxy for [firm] size."

[10]Papers identifying these influences include Demsetz and Lehn (1985), Himmelberg *et al.* (1999), and Faccio and Lang (2002).

Variable	Description	Source
	Firm-Level Variables	
Ownership Concentration	Aggregate percent stock ownership of all shareholders who own at least 5% of the stock ("blockholder"). When a firm has dual class voting stock, voting percent is used. When a firm has no blockholders, the firm is included at zero ownership.	For United States firms: Holderness (2009) hand collected from annual proxy statements as close to 1995 as possible. For non-United States firms also hand collected: Faccio and Lang (2002) for European companies; Claessens *et al.* (2000) for East Asian Companies; Lins (2003) for emerging markets firms.
Firm Size (log)	The natural log of the market value of the firm's equity.	For United States firms: CRSP/ Compustat Merged Database. For non-United States firms: Thomson Financial Datastream.
Age of Firm (log)	The natural log of the number of years since incorporation.	For United States firms: Mergent Database or websites of individual companies. For non-United States firms: Thomson Financial Datastream.
PPE/Sales	The ratio of tangible, long-term assets (property, plant, and equipment) to sales. (re-scaled)	For United States firms: CRSP/ Compustat Merged Database. For non-United States firms: Thomson Financial Datastream.
CapX/PPE	The ratio of capital expenditures to the stock of long-term assets (property, plant, and equipment). (re-scaled)	Same as above.
Free Cash Flow	The ratio of operating income to sales. Only non-negative ratios are used. (re-scaled)	For United States firms: CRSP/ Compustat Merged Database. For non-United States firms: Thomson Financial Datastream.
Volatility	Standard deviation of firm's weekly stock price over the previous 12 months.	Datastream.
Financial Dummy	A dummy variable that equals one if the firm's primary Standard Industrial Classification (SIC) code is between 6000 and 6999 (inclusive) and zero otherwise.	For United States firms: CRSP/ Compustat Merged Database. For non-United States firms: Thomson Financial Datastream.
Utility Dummy	A dummy variable that equals one if the firm's primary SIC code is between 4900 and 4999 (inclusive) and zero otherwise.	Same as above.
Media Dummy	A dummy variable that equals one if the firm's primary SIC code is between 2700 and 2799 (inclusive) or between 4830 and 4899 (inclusive) and zero otherwise.	Same as above.
	Indices of Legal Protections for Investors (Country-Level)	
Common Law Dummy	Takes a value of one if a country has a common law legal tradition and zero otherwise.	La Porta *et al.* (1998).
Anti-Director Rights Index	Spamann; 1998 comparison; col AF: ADRidef (prevote)	Spamann (2010).
Anti-Self-Dealing Indices:		
Anti-Self-Dealing Index	"Average of ex-ante and ex-post private control of self-dealing."	Djankov *et al.* (2008). These data come from Andrei Shleifer's website accessed on March 4, 2009

Table 2: Description of Variables Used in Paper.

Variable	Description	Source
Ex-Ante Private Enforcement	"Index of ex-ante control of self-dealing transactions. Average of approval by disinterested shareholders and ex-ante disclosure."	Same as above.
Ex-Post Private Enforcement	"Index of ex-post control over self-dealing transactions. Average of disclosure in periodic filings and ease of proving wrongdoing."	Same as above.
Public Enforcement	"Index of public enforcement if all disclosure and approval requirements have been met. Ranges from 0 to 1. One quarter point when each of the following sanctions is available: (1) fines for the approving body; (2) jail sentences for the approving body; (3) fines for Mr. James; and (4) jail sentence for Mr. James."	Same as above.
Securities Laws Indices:		
Disclosure Requirements	"The index of disclosure equals the arithmetic mean of (1) prospectus; (2) compensation; (3) shareholders; (4) inside ownership; (5) contracts irregular; and (6) transactions"	La Porta *et al.* (2006).
Liability Standards	"The index of liability standards equals the arithmetic mean of (1) liability standard for the issuer and its directors; (2) liability standard for distributors; and (3) liability standard for accountants."	Same as above.
Public Enforcement	"The index of public enforcement equals the arithmetic mean of (1) supervisor characteristics index; (2) rule-making power index; (3) investigative powers index; (4) orders index; and (5) criminal index."	Same as above.
Insider Trading Indices:		
Sanctions	"Sanction is a subindex of insider trading law. Sanction is a proxy for the expected criminal and monetary sanctions for violating a country's insider trading laws. It is the sum of Damages and Criminal."	Beny (2005)
Scope of Laws	"Scope is a subindex of insider trading law. Scope measures the breadth of the insider trading prohibition. It is the sum of Tipping and Tippee."	Same as above.
IT Laws	"The aggregate IT Law index equals the sum of (1) Tipping, (2) Tippee, (3) Damages, and (4) Criminal, or equivalently, the sum of Scope and Sanction."	Same as above.
Enforced by 1994	"A proxy of actual enforcement, Enforced by 1994 is an indicator variable that equals 1 if the country's insider trading law has been enforced for the first time by the end of 1994."	Same as above.

Table 2: *Continued*.

Variable	Description	Source
Public Enforcement Power	"The public enforcement index is the arithmetic mean of an index of the securities market supervisor's characteristics and an index of the securities market supervisor's investigative powers."	Same as above.
Private Enforcement Power	"The product of Private Right and Efficiency of the Judiciary."	Same as above.
Shareholder Protection Index:		
	Composite of ten variables including prohibitions on multiple voting rights, requirements for independent board members, and feasibility of dismissing directors.	http://www.cbr.cam.ac.uk/research/programme2/project2-20.htm.
	Ancillary Country-Level Control Variables	
Per Capita GNP (Log)	The natural logarithm of "GDP per capita in Purchasing Power terms—in 1994—World Development Indicators."	La Porta, Lopez-de-Silanes, and Shleifer (2008). These data come from Andrei Shleifer's website accessed on March 4, 2009.
Days to collect on a bounced check	"Logarithm of the length (in calendar days) of the judicial procedure to collect on a bounced check."	Djankov, La Porta, Lopez-de-Silanes, and Shleifer (2008). These data come from Andrei Shleifer's website accessed on March 4, 2009.
Efficiency of Judiciary	"Assessment of the 'efficiency and integrity of the legal environment as it affects business, particularly foreign firms' produced by the country risk rating agency International Country Risk (ICR). It may be 'taken to represent investors' assessment of conditions in the country in question'."	La Porta, Lopez-de-Silanes, and Shleifer (2006). These data come from Andrei Shleifer's website accessed on March 4, 2009.
Rule of Law	"Assessment of the law and order tradition in the country produced by the country risk rating agency International Country Risk (ICR)."	La Porta, Lopez-de-Silanes, Shleifer, and Vishny (1998). These data come from Andrei Shleifer's website accessed on March 4, 2009.

Table 2: *Continued*.

substitute the number of years since incorporation instead of the natural log of the number of years since incorporation as the measure of firm age.

Country-Level Controls. Non-legal country-level factors are also likely to impact ownership concentration. Most existing studies control for such factors, and they range broadly from the log per capita GDP to a country's accounting standards. Although there is no consensus on these ancillary country-level controls, most papers include two. First, most papers control for the wealth of a country, presumably to hold constant the level of financial development. All but two of the papers use the natural log of per capita GDP, and that is what I use. (LLS (1999) and Stulz (2005), in contrast, use GDP per capita.) The second commonly used control is the effectiveness of

the judiciary. The reasoning is that if one examines the impact of investor protection laws on ownership concentration, it is important to hold constant how effectively those laws are enforced. I use the most recent measure of the effectiveness of the judiciary, the natural log of how long it takes to litigate a bounced check (Djankov *et al.*, 2008). In robustness tests I use two alternative measures of legal enforcement that have been used in the literature, the efficiency of the judiciary and the rule of law.

4 Empirical Results

Table 3 and Figure 1 present the key empirical results of this paper. They contain regressions of ownership concentration on all 16 measures of legal protections for investors in public corporations that have been proposed in the literature to date. There are both simple and multiple regressions of each index from both the Primary and the Emerging Markets Database. The full results for all 64 regressions can be found in the Appendix.

4.1 Legal Origins

The simplest test of the theory that large shareholders are a response to poor legal protections for investors is to determine if ownership is less concentrated in firms from common law countries.[11] Common law countries typically offer more legal protections and better enforcement than do civil law countries (LLSV, 1998).[12] Data mining is less of a concern here because there is only one dimension: Does a country have a common law tradition? Moreover, most countries adopted their legal origins, or had them imposed

[11]The common law has its origins in the English common law courts. It relies on individual judges to adjudicate disputes. As these precedents accumulate, they begin to have the force of law. The common law spread around the world as the British Empire expanded. It is the legal foundation not only for the United Kingdom but also for countries such as India, Australia, and the United States (with the exception of Louisiana, which follows the Napoleonic code). The civil law is older, having its origins in Roman law. In contrast to the common law, it is heavily codified and makes extensive use of legal experts to formulate rules. The civil law is most frequently associated with Napoleon, who imposed the Napoleonic Code (a version of the civil law) on France in 1804 after the chaos of the French Revolution.

[12]This conclusion has made its way from the academic literature into the financial press. For example, see Thompson, Nicholas, "Laws (and Wealth) of Nations," Boston Globe, January 9, 2005.

	Primary Database		Emerging Markets Database	
	Simple	Multiple	Simple	Multiple
Common Law Legal Origin	Negative	Negative	Positive	Positive
Anti-Director RightsIndex	Negative	**Negative**	Negative	Positive
Self-Dealing Indices				
Anti-Self-Dealing	Negative	**Negative**	Positive	Positive
Public Enforcement	**Positive**	**Positive**	Positive	Positive
Ex-Ante Private Enforcement	Negative	**Negative**	Positive	Positive
Ex-Post Private Enforcement	**Negative**	Negative	Positive	Positive
Securities Laws Indices				
Disclosure Requirements	**Negative**	Negative	Negative	Negative
Liability Standards	**Negative**	**Negative**	Negative	Negative
Public Enforcement	Positive	**Positive**	**Positive**	Positive
Insider Trading Indices				
Sanctions	Positive	Positive	**Negative**	**Negative**
Scope of Laws	Positive	**Positive**	**Negative**	Negative
IT Laws	Positive	**Positive**	**Negative**	**Negative**
Enforced by 1994	**Negative**	**Negative**	**Negative**	Negative
Public Enforcement Power	**Positive**	**Positive**	Positive	Positive
Private Enforcement Power	Positive	**Positive**	Positive	Positive
Shareholder Protection Index	**Negative**	Negative	Negative	**Negative**
	Summary			
By Regression:	9 **(5)**Negative 7 **(2)** Positive	9 **(5)** Negative 7 **(6)** Positive	8 **(4)** Negative 8 **(1)** Positive	7 **(3)** Negative 9 **(0)** Positive
By Database:	18 **(10)** Negative 14 **(8)** Positive		15 **(7)** Negative 17 **(1)** Positive	
Overall:	33 **(17)** Negative 31 **(9)** Positive			

Table 3: Summary of Regressions of Ownership Concentration on Legal Indices.

Description: Summary of simple and multiple OLS regressions of the ownership concentration at public corporations in light of indices of laws that protect investors in public corporations. The full regressions are reported in the Appendix. Ownership concentration is the aggregate voting percent of all shareholders who own at least 5% of the stock. The primary database involves 23 countries; the emerging markets database involves 17 countries. There are 8,076 to 5,940 observations for the Primary Database and 1,405 to 469 observations for the Emerging Markets Database. Entries are bolded if the p-value on the coefficient is 0.10 or less. The multiple regressions control for log of GDP per capita, the log of the time it takes to litigate a bounced check, log of firm size, log of firm age, and missing data. All variables are defined in Table 2.

Interpretation: There is no consistently negative relation between 16 widely used measures of investors' legal protections and ownership concentration, either individually or as a group.

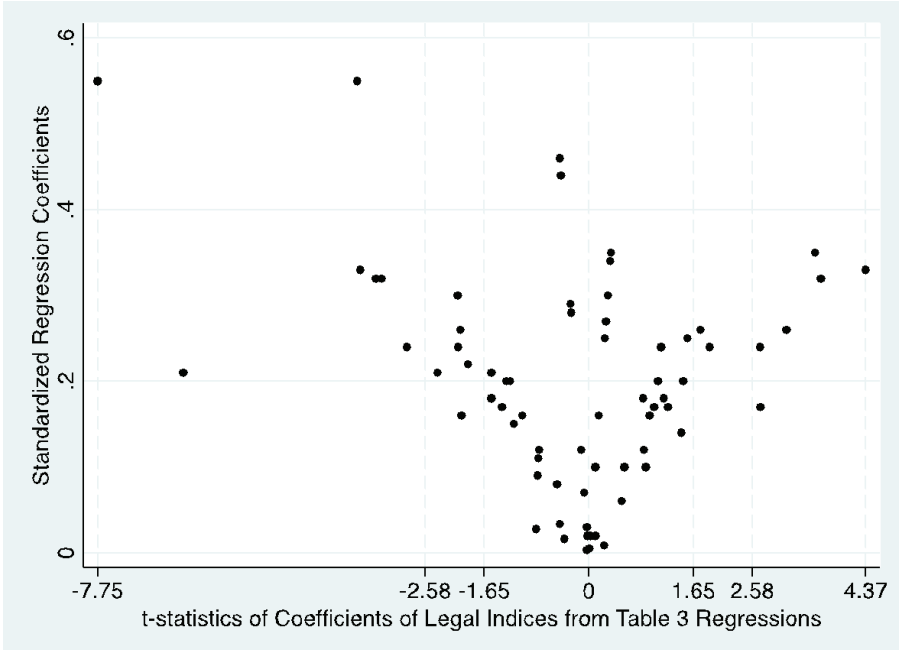

Figure 1: Standardized Regression Coefficients and t-statistics from Regressions of Ownership Concentration on Legal Indices.

Description: Standardized regression coefficients and t-statistics from OLS simple and multiple regressions in which the key independent variable is various legal indices of protections for investors in public corporations, such as whether the country has a common law legal tradition and the rights shareholders have to sue corporate directors (Anti-Director Rights Index). The regressions are summarized in Table 3 and fully reported in the Appendix. (Those regressions, however, report traditional regression coefficients not the standardized regression coefficients that are used in this figure.)

Interpretation: There is no consistently negative and significant relation between 16 widely used measures of investors' legal protections and ownership concentration. The t-statistics are roughly half positive and half negative, and most of the standardized regression coefficients are small, suggesting that any relation may not be economically important.

through colonization or military conquest, long before the advent of the modern public corporation. Thus, blockholders could have had little, if any, influence over the choice of a country's legal origins, so the endogeneity problem of reverse causation should not be an issue.

If the conventional wisdom is correct, the coefficient on the common law dummy should be negative and significant.

When I use firm-level observations, control for firm-level determinants, and have a large and representative sample of public firms, the common law dummy is negative with the Primary Database, but it never approaches statistical significance with p-values of 0.62 and 0.44 (Table A1). With the Emerging Markets Database, the common law dummy changes sign and remains insignificant. Simply put, there is no statistically significant relationship or even a relationship that is consistently of the same sign here.

Statistical significance aside, the regressions suggest that common law firms have from 4% less to 12% more aggregate block ownership than do their civil-law counterparts. Given that the average aggregate block ownership of all the sample firms is 37% and given that there are no theories or evidence (which I am aware of) that identify the importance of incremental block ownership of this magnitude, one can question whether any of the differences in ownership concentration associated with different legal origins are economically significant. If 35% ownership does not provide investors with protection, will 40%?

4.2 Legal Indices as a Group

Researchers have developed 15 indices of statutory protections for shareholders in public corporations laws, ranging from the rights shareholders have to sue directors (Anti-Director Rights Index) to laws limiting self-dealing by corporate insiders (Anti-Self-Dealing Index) to legal sanctions on insider trading (Sanctions) (Table 1 and Table 2). Published papers usually focus on just a few of these indices, but I will examine all of them to determine if there is a discernable pattern.

The advantage of examining these indices over legal origins is that the indices would seem to encompass specific laws that are more likely to matter to investors. Nevertheless, as summarized in Table 3 and Figure 1, there is no apparent relation between these indices as a group and ownership concentration.[13] Indices are almost as likely to be positively associated with ownership concentration as they are to be negatively associated (31 versus 33). This roughly equal divide holds between the databases and between the simple and multiple regressions. In addition, many of the indices flip sign between the databases and most are statistically insignificant. The mean t-statistic from all 64 regressions is −0.39. There also is little relation

[13]Table 3 and Figure 1 also include the legal origins results from Table A1.

between the magnitude of these coefficients and ownership concentration. The average standardized regression coefficient (not reported in Table 3 but used in Figure 1) from all 64 regressions is only −0.02. Simply put, there appears to be no statistically significant relationship or economically significant or even a relationship that is consistently of the same sign here.

4.3 Specific Legal Indices

The results in Table 3 and Figure 1 do not support the proposition that the legal environment for public market investors in general is associated with differences in the ownership concentration of public corporations. It is possible, indeed reasonable, that only certain laws matter to investors. A danger with this reasoning, however, is data mining: We may investigate a large number of indices and conclude that the ones that matter to investors are the few that happen to be statistically significant, perhaps by chance. To some extent, this might have happened with the existing literature when researchers run horse races among alternative legal measures and ownership concentration. To their credit, they typically report many results, some of which show no relation or even a positive relation between a particular legal measure and ownership concentration. It would be a misinterpretation to conclude that the measures that happen to be negative and significant are the ones that ultimately matter to public market investors.

To guard against the possibility of mining for a specification that happens to "work," we would ideally start with a theory that ties specific laws to ownership concentration. Djankov *et al.* (2008) state that the Anti-Self-Dealing Index is seen as "better grounded in theory" than the other indices (in particular, the Anti-Director Rights Index which figures prominently in the early papers on law and ownership).[14] The Anti-Self-Dealing Index, however, as reported in Table A3, is not consistently significant or even of the same sign in the four regressions.

An alternative approach is to acknowledge that the theories linking investors' legal protections to ownership concentration are incomplete and instead simply to search for robust empirical regularities. If an index is robustly related to ownership concentration, it could guide the development of a theory that ties the specific laws in the index to ownership concentration. The problem with this reasoning is that no index is significant in all four specifications in Table 3.

[14]Djankov *et al.* (2008), p. 461.

Eight of the indices at least have the same sign in all four specifications, with four being positive and four being negative. I now investigate whether these eight indices plus the Anti-Self-Dealing Index (because it is seen as better grounded in theory) are robust under alternative specifications. I conduct 22 robustness tests on each index. These tests, which are modifications of the Appendix regressions, build on the discussions in the previous section of the paper. They range from alternative measures of ownership concentration, to additional firm characteristics that might impact ownership, to different measures of the effectiveness of a country's judiciary.

The untabulated robustness tests provide no support for the hypothesis that ownership concentration is inversely related to any of the nine legal indices. Results that were already weak in Table 3, in that none were statistically significant in all four specifications, become even weaker in the robustness tests.

The robustness results with the Anti-Self-Dealing Index are representative:

- The negative coefficient with the Primary Database loses significance when dummy variables are used to represent the ownership of the largest shareholder at either the 10% or 20% level.
- The coefficient with the Primary Database also loses significance when the effectiveness of the judiciary is measured by the International Country Risk Index, a metric used in some published papers.
- The coefficient with the Primary Database changes sign to be positive though insignificant in one robustness test (200 randomly selected companies from each country).
- With the Emerging Markets Database, the coefficient on the Anti-Self-Dealing Index remains positive in all specifications; in one specification it becomes statistically significant (10% dummy to measure ownership concentration).

Similar inconsistent patterns, both in sign and statistical significance, are found in the robustness tests for the eight indices that are the same sign in Table 3. In these robustness tests, three of the indices now change sign within the same database (Public Enforcement, Burden of Proof, and Private Enforcement Power). One other index (Disclosure Requirements) now changes sign within both databases. As with the baseline regressions

reported in Table 3, there is no index with significant results of the same sign in both databases.

4.4 Why Results Change

The preceding analyses have followed the existing literature in that they are cross-sectional cross-country regressions. In addition, they have analyzed the same legal measures and (in some cases) use specifications similar to those in the existing literature. Why, therefore, do the results differ fundamentally from what is reported in the existing literature? There are a variety of reasons for the differences, any one of which seems to be sufficient to overturn the conventional wisdom.

Weakness of Existing Results. The empirical findings reported in the existing literature often are not robust, their wide influence notwithstanding. Consider the Anti-Director Rights Index. In the paper where it was introduced (LLSV, 1998), the Anti-Director Rights Index appears in only one regression involving ownership concentration as the dependent variable (Table 8 of LLSV, 1998). There are twelve other control variables and 39 observations (countries). The Index is negatively and significantly related to ownership at the 5% level, but one must naturally worry about the small number of observations and the large number of control variables.

The Anti-Director Rights Index, nevertheless, quickly gained prominence as it was used as a control in a wide variety of analyses. In one such analysis, Stulz (2005) investigates whether ownership is more concentrated when the threat of government expropriation is greater. He finds that the Index is generally but not invariably negatively related to ownership. For instance, in four of five specifications there is no relation between the Index and the fraction of public firms controlled by families.

Spamann (2010) identifies miss-codings both in the original Index and in a revised index offered in Djankov *et al.* (2008). When he corrects the coding, Spamann finds no relation between the Anti-Director Rights Index and LLSV's original ownership data (analyzed on a country average basis, as in other published papers).

Consider also the Anti-Self-Dealing Index, which is now viewed as having the strongest theoretical relation with ownership concentration. In the paper where it was introduced (Djankov *et al.*, 2008), the authors develop four self-dealing indices (which are noted in Table 2 of the present paper). Djankov *et al.* investigate whether these indices are related to ownership

concentration using the country averages from LLSV. The results are mixed: The Ex-Ante Private Enforcement Index is positive and insignificant; the Ex-Post Private Enforcement Index is negative and significant at the 1% level; the Anti-Self-Dealing Index is negative and insignificant; and the Public Enforcement Index is positive and insignificant. They also instrument the Anti Self-Dealing Index with a common law legal origin. In the second stage of the regression, the Index is insignificant. (They also test a revised version of the Anti-Director Rights Index and generally find it to be insignificantly related to ownership concentration.)

LLS (2008) review the law and finance literature. The only measure they consider with ownership concentration is the Anti-Self-Dealing Index, which was negatively but insignificantly related to ownership in Djankov *et al.* (2008). Now, with the same ownership data but a slightly different specification (the time to litigate a bounced check has been removed as a control), the same index is marginally significant (p-value 0.08). When Holderness (2016) replicates this exact regression using the same underlying data but on a firm basis, the Index loses statistical significance (p-value 0.15).

A closer look at the literature involving most of the other legal measures would reach a similar conclusion: The relation between the law and ownership concentration actually reported in the literature is often not as strong as many seem to think it is.

Mono-Methodology. There is also a homogeneity to the existing empirical investigations of law and ownership: All examine country averages (not firm observations), and all use one of two ownership databases (even though as discussed earlier both databases have serious limitations). A companion paper, Holderness (2016), shows that the negative relation between the law and ownership is not robust if instead of using country averages we use the same data from the existing literature but on a firm-level basis. The basic result of an inverse relation between the law and ownership turns insignificant and in one case actually changes sign if we only weight firm observations equally (which is one implication of going from country averages to the underlying firm observations). The basic result also changes when we simultaneously weight each firm equally and control for the firm-level determinants of size and age. These exercises use three of the most influential legal measures: a common law legal origin, the Anti-Director Rights Index, and the Anti-Self-Dealing Index.

Thus, key results are not robust if one switches from country-average regressions to firm-level regressions even with the original ownership data.

Holderness (2016) explains that the use of country averages instead of the underlying firm observations requires extreme assumptions that are unlikely to be satisfied with ownership concentration. Statisticians for over a hundred years have cautioned against such aggregate data analysis. Simply put, no case has been made (to my knowledge) for the use of country averages to answer firm-level questions when the underlying firm data are available, despite its wide (but far from universal) use in the law and finance literature and despite many warnings over the years by statisticians.

Accurate and Representative Ownership Data. Although Holderness (2016) concludes that country average analyses are inappropriate for analyses of law and ownership and probably for other law and finance topics that seek to understand firms, some readers have asked whether the results in the present paper change if country averages are used instead of firm observations. When I replicate the Table 3 regressions as country averages (untabulated), the results remain weak. For example, while 17 of the 64 regressions in Table 3 have coefficients for legal measures that are negative and significant, when I run the same regressions as country averages, only 10 of the 64 regressions are negative and significant. Given that these robustness tests follow the existing literature in that they use country averages and have only country-level controls, it appears that accurate and representative ownership data alone are sufficient to refute the conventional wisdom of an inverse relation between the law and ownership concentration. In other words, refutation is not conditional on conducting firm-level (as opposed to country-average) analyses.

Data Mining. By examining all legal indices and not just selected ones, we have investigated whether there is a relation between the general legal environment for public market investors and ownership concentration. Unfortunately, not only as a group is there no pattern, but also I have been unable to identify a single legal measure that is consistently negatively or positively related to ownership concentration. If future research does identify such a measure, we must guard against the possibility of data mining.[15]

[15]Holderness (forthcoming) identifies what appears to be a strong relation between how egalitarian a country is (treating people equally) and the ownership concentration of public firms located in the same country. He readily acknowledges that the relation was identified in part by data mining, including several horse races. Having said this, the relation between egalitarianism and ownership concentration is positive and significant in 40 regressions tabulated in the paper. He then subjects the relation to an additional 46 untabulated robustness tests. The largest p-value on the egalitarianism coefficient in any of these 86 different tests is 0.06.

Summary. The negative relation between investors' legal protections and ownership concentration is called into question if we just examine the existing studies carefully (some indices are positive and most are insignificant; those that are significant often lose significance under different but reasonable specifications); just use firm-level observations rather than country averages (an approach statisticians have recommended for decades); or just use representative and accurate ownership data. Furthermore, if one combines some of these considerations, say accurate data with firm-level analyses (as in this paper), again there is no evidence of a negative relation between the law and ownership concentration.

5 Long-Run Within-Country Evidence

The conventional theory is that investors' legal protections substitute for ownership concentration. The theory is causal. Thus, if there are no spurious factors driving the relation, it should hold both in cross-sectional tests and in time-series tests. That is to say, as investor protection laws become stronger (weaker), ownership should become more diffuse (more concentrated).

Unfortunately, the firm ownership data necessary for conventional time-series tests of this proposition are unavailable. For twelve countries, however, researchers have hand-collected ownership data for a few points in time.

Figure 2 summarizes this evidence (with supporting material found in Table A17).[16] In all of these countries other things were happening concurrently that also likely impacted ownership concentration. For instance, firms might have become larger (which would tend to decrease concentration) or younger (which would tend to increase concentration). With the limited data available, we seldom are able to distinguish among such competing explanations.

With this caution in mind, we should note that in every country for which data are available, save possibly the United Kingdom, ownership has

[16]The results reported in Figure 2 are driven by data availability. Few of the papers report the aggregate holdings of all large shareholders, but all of the papers, save one, report the holdings of the largest shareholder. Hence I have chosen this metric for Figure 2. When both the average and median figures are available, I report the average. Long-run United States data is available only for the aggregate holdings of directors and officers, so Figure 2 reports the change in that average holding over time.

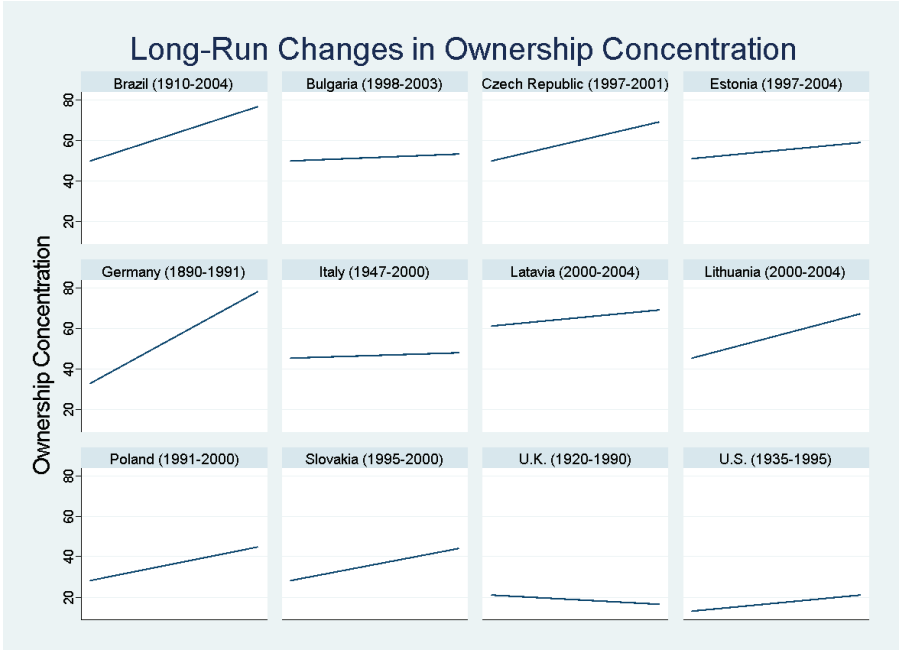

Figure 2

Description: Long-run changes in the ownership concentration of public corporations for the 12 countries for which such data is available. The time periods are different for each country and are reported above each individual figure. For all countries except the United States, the figure reports the percentage ownership of common stock held by the largest shareholder in a firm. For the United States, the figure reports the ownership of common stock held by the directors and officers as a group (because data on the long-run changes in the ownership concentration of the largest shareholder is unavailable). Only the beginning and ending ownership are used for each figure. The sources for the data used in this figure as well as additional information can be found in Appendix Table A17.

Interpretation: In many of these countries legal protections for investors were strengthened over the periods measured. There is little evidence that ownership became less concentrated as investor protection laws became stronger. If anything, the opposite may be the case.

become more concentrated over time. Yet, at the same time, for most of these countries, legal scholars have identified changes that strengthened the legal protections for public market investors. Some of these changes have even been documented for the specific legal indices that play a prominent role in the literature and are addressed in this paper.

I will briefly discuss the long-run evidence for two countries. For the United States, Holderness *et al.* (1999) report that even though between 1935 (the first year reliable ownership data became available due to the introduction of U.S. Securities and Exchange Commission (SEC) regulations) and 1995 firms became larger (in real terms) and older, both of which tend to cause ownership to be less concentrated, ownership nevertheless became significantly more concentrated. Managerial ownership increased from an average of 13% for exchange-listed corporations in 1935 to 21% in 1995. Ownership increased significantly in every decile of firm size except the largest decile where it remained the same, again even though in every decile firms had become larger in real terms over this sixty-year period. Ownership also became more concentrated for every industry studied. Over the same sixty-year period, there were major improvements in investors' legal protections, including the implementation of federal securities laws and the development of class action lawsuits.

The United Kingdom is the only country in Figure 2 that shows any decrease in ownership concentration, this over the period 1920 to 1990. Franks *et al.* (2009) also report data from 1950 (which is not reflected in Figure 2 because that figure is based solely on the beginning and ending data). Using random samples of corporations, they find that the ownership both of the largest shareholder (which is summarized in Figure 2) and directors and officers as a group decreased from 1920 to 1950 and then increased from 1950 to 1990. The increase between 1950 and 1990 is noteworthy because most investor protection laws in the United Kingdom were implemented during this period. For instance, over this forty-year period LLSV's Anti-Director Rigths Index went from 3 to 5, the Private Enforcement Index (self-dealing) went from 0.667 to 0.750, the Disclosure Index (securities) went from 0.667 to 0.833, the Liability Standards Index (securities) went from 0.333 to 0.667, and the Public Enforcement Index (securities) went from 0 to 0.745. Franks *et al.* also study the rate of diffusion of ownership concentration as corporations age using samples from 1900 and 1960. Even though the major legal reforms had been implemented by the time of the latter sample, they find that the rates of diffusion were similar in the two periods. They conclude (2009, p. 4038) that, "investor protection does not, therefore, explain dispersion of ownership in the United Kingdom."

Given that ownership concentration stayed the same or increased in a diverse group of countries over different time periods when investors'

legal protections were generally becoming stronger, it appears that if there is a negative relation between the law and ownership it is of secondary importance to other causal factors.

6 The Theory of Law and Ownership Concentration

Given that the data do not support the hypothesis linking investors' legal protections and ownership concentration, it is time to reexamine the hypothesis itself. There are two branches to the theoretical literature that predicts an inverse relation between investor protection laws and ownership concentration. The two theories have opposed views on the fundamental role of large shareholders in public corporations. Moreover, both theories are inconsistent with certain established empirical regularities.

One branch of the theoretical literature views large shareholders as outsiders who monitor managers to halt the appropriation of corporate resources by insiders.[17] Under this theory, shareholder lawsuits and blockholder monitoring are substitutes. When shareholders have few rights to sue managers, the value of a blockholder who can monitor managers increases and so does ownership concentration. A problem with this theory is that around the world, most large shareholders are managers, not outside monitors.[18] There is little reason to expect blockholders to monitor themselves. Monitoring implies an external constraint. Nevertheless, the empirical literature seldom distinguishes between internal and external blockholders.

The other branch of the theoretical literature views large shareholders as insiders who appropriate corporate resources. Under this diametrically opposed view of blockholders, the frequency of blockholders increases as legal constraints decline because it becomes easier for large shareholders to appropriate corporate resources.[19] Under this theory, blockholders are complements to weak legal protections for public market investors. Although this branch of the theoretical literature is consistent with the empirical

[17] LLSV (1998), Djankov *et al.* (2008).

[18] The involvement of blockholders in management has been documented by the following papers: LLS (1999), 27 wealthy countries; Faccio and Lang (2002), 13 Western European countries; Claessens *et al.* (2000), nine East Asian countries; Lins (2003), 18 emerging markets countries; Holderness (2009), the United States.

[19] Zingales (1995), Bebchuk (1999), Shleifer and Wolfenzon (2002), Perotti and von Thadden (2006).

regularity that most blockholders are insiders and thus in a position to appropriate corporate resources, a problem is that in most countries firm value apparently does not decrease with ownership concentration and may even increase.[20]

Furthermore, although investor protection laws have the potential to limit the appropriation of corporate resources, these laws are unlikely to influence management decisions (Roe, 2002). In the United States, for instance, management decisions are not subject to judicial review because of the business judgment rule. Large shareholders, however, often influence management decisions directly through their voting power and indirectly through their buying and selling of large blocks of stock.[21]

These effects are not considered in theoretical analyses that focus exclusively on the appropriation of corporate resources while ignoring management decisions. One theoretical paper that does consider blockholders' impact on management decisions and not just on the appropriation of corporate resources, Burkart and Panunzi (2006), concludes there is no reason to expect any systematic relation between investors' legal protections and ownership concentration.

7 Conclusion

One of the most influential findings from the law and finance literature is that of an inverse relation between the legal protections for public market investors and the ownership concentration of public corporations. In spite of its influence, or perhaps because of it, doubts have arisen over this proposition.

Some doubts have arisen because all of the empirical papers documenting this relation have followed an approach which is open to criticism for three major reasons: (1) inaccurate or non-representative ownership data; (2) a country-average methodology that over-weights firms from certain countries depending on the composition of the database and fails to control for systematic differences in firms across countries; and (3) focusing on those legal indices that happen to win horse races.

[20] Denis and McConnell (2003). The notable exception is the United States where there appears to be little relation between ownership concentration and firm value. Demsetz and Villalonga (2001).

[21] Edmans (2009), Edmans and Manso (2011).

This is the first paper to analyze the relation between investors' legal protections and ownership concentration using both firm-level observations as well as broad and accurate ownership data.

I find no evidence that ownership concentration varies systematically with the legal protections for investors, much less that it varies negatively. In particular, there is no apparent relation between ownership concentration and legal origins. Likewise, there is no systematic relation between ownership concentration and 15 indices that encompass a wide range of investor protection laws. If there is a legal protection for public market investors that is significantly related to ownership concentration, the profession has yet to identify it.

Evidence on long-run within-country changes in ownership similarly shows no negative relation between changes in legal protections and subsequent changes in ownership concentration. In many countries, including such diverse countries as Bulgaria, the United States, and Italy, the ownership concentration of public corporations stayed the same or increased following major legal reforms.

Finally, the two general theories underlying the hypothesized inverse relation between investors' legal protections and ownership concentration have diametrically opposed views on the fundamental role of large shareholders in public corporations. Both theories also conflict with certain well-established empirical regularities about the ownership of public corporations around the world.

The findings in this paper suggest several avenues for future research. One would be to understand why ownership concentration varies around the world. After controlling for firm-level determinants of ownership concentration, a substantial country component seemingly remains. The findings in this paper do not preclude the possibility that these cross-country differences reflect legal differences, but at the least they suggest a more complicated explanation is needed or that researchers have yet to identify the laws that both matter to investors and impact ownership concentration. An altogether different avenue would be to investigate if culture affects ownership concentration. Several papers, including Stulz and Williamson (2003) and Guiso *et al.* (2006), find that other aspects of finance vary with culture. Consistent with this line of research, Holderness (forthcoming) identifies what appears to be a strong and robust relation between how egalitarian a country is (treating people equally) and the ownership concentration of its public corporations.

Given how pervasive large shareholders are in all countries and given the strong incentives and broad decision rights they have, understanding the causes of concentrated stock ownership in public corporations is a topic of clear importance. On this crucial point, I am in complete agreement with the existing literature.

A Appendix

The appendix tables show the OLS regressions of the ownership concentration at public corporations from 32 countries. Ownership concentration is the aggregate voting percent of all shareholders who own at least 5% of the common stock. If a firm has no blockholders, the firm is included in the Primary Database at zero block ownership. All firms (by design) in the Emerging Markets Database have at least one 5% shareholder. The regressions include but do not report dummy variables that equal one when the associated variable has missing data and zero otherwise. Variables are defined in Table 2. (p-values are reported in parentheses and are calculated using robust standard errors which are clustered by country.)

	Primary Database	Emerging Markets Database		
Common Law	−4.24	−5.77	12.08	6.88
	(0.62)	(0.44)	(0.16)	(0.35)
Per Capita GDP (Log)		−5.74		−0.72
		(0.07)		(0.83)
Days to Collect Check (Log)		6.31		6.64
		(0.20)		(0.36)
Firm Size (Log)		−2.70		−0.11
		(0.00)		(0.84)
Age of Firm (Log)		−2.14		−1.66
		(0.00)		(0.09)
Constant	37.70	79.71	42.13	25.20
	(0.00)	(0.08)	(0.00)	(0.68)
Observations	8,076	8,076	1,415	1,405
Adjusted R^2	0.01	0.14	0.07	0.16

Table A1: Legal Origins.

	Primary Database	Emerging Markets Database		
Anti-Director Rights Index	−4.88	−4.81	−2.98	0.76
	(0.30)	(0.06)	(0.76)	(0.92)
Per Capita GDP (Log)		−11.04		0.38
		(0.01)		(0.91)
Days to Collect Check (Log)		1.47		7.49
		(0.75)		(0.32)
Firm Size (Log)		−2.66		−0.29
		(0.00)		(0.56)
Age of Firm (Log)		−1.85		−1.32
		(0.01)		(0.15)
Constant	55.72	170.78	61.75	14.13
	(0.00)	(0.01)	(0.14)	(0.86)
Observations	7,897	7,897	1,345	1,345
Adjusted R^2	0.03	0.16	0.01	0.14

Table A2: Anti-Director Rights Index.

	Primary Database	Emerging Markets Database		
Anti-Self-Dealing Index	−16.11	−23.43	23.29	15.30
	(0.19)	(0.05)	(0.21)	(0.32)
Per Capita GDP (Log)		−4.97		−1.14
		(0.09)		(0.75)
Days to Collect Check (Log)		6.75		6.79
		(0.15)		(0.35)
Firm Size (Log)		−2.64		−0.16
		(0.00)		(0.77)
Age of Firm (Log)		−2.30		−1.59
		(0.01)		(0.08)
Constant	45.83	84.23	32.02	20.83
	(0.00)	(0.05)	(0.07)	(0.72)
Observations	8,076	8,076	1,405	1,405
Adjusted R^2	0.03	0.17	0.06	0.16

Table A3: Anti-Self-Dealing Index (Self-Dealing Indices).

	Primary Database	Emerging Markets Database		
Public Enforcement	21.36	20.22	7.64	9.34
	(0.00)	(0.00)	(0.22)	(0.16)
Per Capita GDP (Log)		−4.68		0.61
		(0.06)		(0.85)
Days to Collect Check (Log)		6.34		10.15
		(0.05)		(0.15)
Firm Size (Log)		−2.31		−0.30
		(0.00)		(0.58)
Age of Firm (Log)		−1.97		−2.35
		(0.02)		(0.04)
Constant	29.23	59.18	46.57	−2.00
	(0.00)	(0.11)	(0.00)	(0.97)
Observations	8,076	8,076	1,405	1,405
Adjusted R^2	0.12	0.23	0.03	0.18

Table A4: Public Enforcement Index (Self-Dealing Indices).

	Primary Database	Emerging Markets Database		
Ex-Ante Private Enforcement	−7.57	−14.32	19.13	11.34
	(0.44)	(0.06)	(0.12)	(0.26)
Per Capita GDP (Log)		−5.93		−0.68
		(0.04)		(0.83)
Days to Collect Check (Log)		6.95		6.29
		(0.13)		(0.38)
Firm Size (Log)		−2.71		−0.18
		(0.00)		(0.75)
Age of Firm (Log)		−2.22		−1.52
		(0.01)		(0.09)
Constant	39.75	84.79	35.33	22.60
	(0.00)	(0.04)	(0.01)	(0.70)
Observations	8,076	8,076	1,405	1,405
Adjusted R^2	0.01	0.17	0.09	0.17

Table A5: Ex-Ante Private Enforcement Index (Self-Dealing Indices).

	Primary Database	Emerging Markets Database		
Ex-Post Private Enforcement	−35.67	−26.89	12.54	12.23
	(0.01)	(0.14)	(0.54)	(0.58)
Per Capita GDP (Log)		−4.59		−1.17
		(0.18)		(0.78)
Days to Collect Check (Log)		5.17		7.70
		(0.29)		(0.31)
Firm Size (Log)		−2.52		−0.20
		(0.00)		(0.72)
Age of Firm (Log)		−2.21		−1.69
		(0.01)		(0.09)
Constant	61.72	91.84	40.08	19.67
	(0.00)	(0.06)	(0.04)	(0.76)
Observations	8,076	8,076	1,405	1,405
Adjusted R2	0.06	0.16	0.01	0.15

Table A6: Ex-Post Private Enforcement Index (Self-Dealing Indices).

	Primary Database	Emerging Markets Database		
Disclosure	−30.45	−21.09	−3.00	−11.13
	(0.03)	(0.25)	(0.86)	(0.43)
Per Capita GDP (Log)		−6.01		−0.11
		(0.09)		(0.97)
Days to Collect Check (Log)		4.30		6.57
		(0.37)		(0.44)
Firm Size (Log)		−2.57		−0.31
		(0.00)		(0.60)
Age of Firm (Log)		−2.19		−1.75
		(0.00)		(0.08)
Constant	58.26	106.18	52.17	37.49
	(0.00)	(0.03)	(0.00)	(0.61)
Observations	8,076	8,076	1,405	1,405
Adjusted R^2	0.04	0.15	0.00	0.15

Table A7: Disclosure Index (Securities Laws Indices).

	Primary Database	Emerging Markets Database		
Liability Standards	−33.57	−33.19	−3.32	−0.40
	(0.00)	(0.00)	(0.84)	(0.98)
Per Capita GDP (Log)		−5.96		−0.12
		(0.04)		(0.97)
Days to Collect Check (Log)		3.50		7.59
		(0.33)		(0.36)
Firm Size (Log)		−2.31		−0.28
		(0.00)		(0.63)
Age of Firm (Log)		−2.06		−1.67
		(0.03)		(0.09)
Constant	54.61	112.71	51.70	21.92
	(0.00)	(0.01)	(0.00)	(0.76)
Observations	8,076	8,076	1,405	1,405
Adjusted R^2	0.10	0.21	0.00	0.15

Table A8: Liability Standards (Securities Laws Indices).

	Primary Database	Emerging Markets Database		
Public Enforcement	16.64	19.79	33.16	23.55
	(0.29)	(0.07)	(0.10)	(0.27)
Per Capita GDP (Log)		−7.64		−2.41
		(0.01)		(0.51)
Days to Collect Check (Log)		1.94		3.78
		(0.60)		(0.61)
Firm Size (Log)		−2.42		0.22
		(0.00)		(0.62)
Age of Firm (Log)		−1.21		−1.42
		(0.10)		(0.11)
Constant	27.82	100.10	28.26	41.41
	(0.01)	(0.03)	(0.08)	(0.50)
Observations	8,076	8,076	1,405	1,405
Adjusted R^2	0.04	0.17	0.11	0.18

Table A9: Public Enforcement (Securities Laws Indices).

	Primary Database	Emerging Markets Database		
Sanctions	3.56	8.39	−24.11	−29.84
	(0.61)	(0.16)	(0.00)	(0.00)
Per Capita GDP (Log)		−6.99		−5.95
		(0.02)		(0.16)
Days to Collect Check (Log)		6.53		−10.64
		(0.17)		(0.07)
Firm Size (Log)		−2.57		−0.18
		(0.00)		(0.78)
Age of Firm (Log)		−1.92		−2.26
		(0.01)		(0.05)
Constant	31.94	74.91	75.25	203.15
	(0.00)	(0.09)	(0.00)	(0.01)
Observations	8,076	8,076	1,310	1,310
Adjusted R^2	0.00	0.16	0.20	0.30

Table A10: Sanctions (Insider Trading Indices).

	Primary Database	Emerging Markets Database		
Scope	14.68	18.80	−12.52	−8.76
	(0.13)	(0.00)	(0.09)	(0.22)
Per Capita GDP (Log)		−11.15		2.25
		(0.00)		(0.52)
Days to Collect Check (Log)		−0.11		6.74
		(0.98)		(0.44)
Firm Size (Log)		−2.01		−0.74
		(0.00)		(0.30)
Age of Firm (Log)		−1.91		−1.52
		(0.02)		(0.15)
Constant	10.08	123.69	69.79	20.76
	(0.56)	(0.01)	(0.00)	(0.78)
Observations	8,076	8,076	1,310	1,310
Adjusted R^2	0.06	0.21	0.08	0.19

Table A11: Scope (Insider Trading Indices).

	Primary Database	Emerging Markets Database		
Insider Trading Laws	7.30	8.88	−14.82	−17.53
	(0.23)	(0.01)	(0.00)	(0.00)
Per Capita GDP (Log)		−8.83		1.48
		(0.00)		(0.65)
Days to Collect Check (Log)		4.28		−3.85
		(0.26)		(0.56)
Firm Size (Log)		−2.25		−0.83
		(0.00)		(0.21)
Age of Firm (Log)		−1.94		−2.54
		(0.01)		(0.02)
Constant	14.85	86.36	89.74	118.64
	(0.44)	(0.03)	(0.00)	(0.11)
Observations	8,076	8,076	1,310	1,310
Adjusted R^2	0.04	0.19	0.21	0.28

Table A12: Insider Trading Laws (Insider Trading Indices).

	Primary Database	Emerging Markets Database		
Enforced by 1994	−18.32	−12.34	−12.87	−9.27
	(0.00)	(0.07)	(0.09)	(0.15)
Per Capita GDP (Log)		−4.25		2.04
		(0.25)		(0.51)
Days to Collect Check (Log)		2.26		6.18
		(0.62)		(0.48)
Firm Size (Log)		−2.76		−0.65
		(0.00)		(0.33)
Age of Firm (Log)		−1.97		−1.66
		(0.01)		(0.14)
Constant	49.35	93.19	57.25	17.04
	(0.00)	(0.05)	(0.00)	(0.81)
Observations	8,076	8,076	1,310	1,310
Adjusted R^2	0.11	0.17	0.09	0.19

Table A13: Insider Trading Laws Enforced by 1994 (Insider Trading Indices).

	Primary Database	Emerging Markets Database		
Public Enforcement Power	20.79	20.83	40.14	20.86
	(0.09)	(0.00)	(0.15)	(0.41)
Per Capita GDP (Log)		−6.32		−0.36
		(0.04)		(0.91)
Days to Collect Check (Log)		2.60		5.13
		(0.47)		(0.53)
Firm Size (Log)		−2.37		0.12
		(0.00)		(0.80)
Age of Firm (Log)		−1.22		−0.81
		(0.06)		(0.28)
Constant	25.66	83.33	23.16	18.37
	(0.00)	(0.06)	(0.23)	(0.76)
Observations	8,076	8,076	1,310	1,310
Adjusted R^2	0.07	0.18	0.12	0.19

Table A14: Public Enforcement Power (Insider Trading Indices).

	Primary Database	Emerging Markets Database		
Private Enforcement Power	0.69	1.25	0.12	0.65
	(0.38)	(0.01)	(0.88)	(0.41)
Per Capita GDP (Log)		−6.97		0.25
		(0.01)		(0.95)
Days to Collect Check (Log)		6.00		9.05
		(0.18)		(0.31)
Firm Size (Log)		−2.74		−0.65
		(0.00)		(0.37)
Age of Firm (Log)		−1.88		−1.74
		(0.01)		(0.07)
Constant	34.68	84.65	48.39	9.30
	(0.00)	(0.05)	(0.00)	(0.91)
Observations	8,076	8,076	1,310	1,310
Adjusted R^2	0.01	0.16	0.00	0.18

Table A15: Private Enforcement Power (Insider Trading Indices).

	Primary Database	Emerging Markets Database		
Shareholder Protection Index	−6.47	−4.34	−1.98	−4.03
	(0.07)	(0.27)	(0.25)	(0.00)
Per Capita GDP (Log)		−15.74		−21.16
		(0.05)		(0.00)
Days to Collect Check (Log)		0.69		11.94
		(0.87)		(0.00)
Firm Size (Log)		−3.26		−0.06
		(0.00)		(0.95)
Age of Firm (Log)		−1.62		−0.97
		(0.10)		(0.25)
Constant	71.32	232.93	68.67	188.04
	(0.00)	(0.01)	(0.00)	(0.00)
Observations	5,940	5,940	479	479
Adjusted R^2	0.09	0.21	0.01	0.07

Table A16: Shareholder Protection Index.

Country	Start Year	Start N	Start Ownership	End Year	End N	End Ownership	Measure	Statistic	Source
Brazil	1910	23	50%	2004	20	76.6%	Largest shareholder	Average	Musacchio (2008)
Bulgaria	1998	267	49.7%	2003	268	53.1%	Largest shareholder	Average	Private correspondence with Vladimir Atanasov; see also Atanasov *et al.* (2010)
Czech Republic	1997	61	50%	2001	59	69%	Largest shareholder	Median	Olsson *et al.* (2005)
Estonia	1997	73	51%	2004	14	59%	Largest shareholder	Median	Olsson *et al.* (2005)
Germany	1890	8	32.6%	1991	97	78.1%	Largest shareholder	Average	Franks *et al.* (2006) for 1890; Edwards and Weichenrieder (2004) for 1991
Italy	1947	120	45%	2000	231	48%	Largest shareholder	Average	Aganin and Volpin (2005)
Latvia	2000	58	61%	2004	40	69%	Largest shareholder	Median	Olsson *et al.* (2005)
Lithuania	2000	87	45%	2004	45	67%	Largest shareholder	Median	Olsson *et al.* (2005)
Poland	1991	8	27.9%	2000	210	44.6%	Largest shareholder	Average	Dzierzanowski and Tamowicz (2003)
Slovakia	1995	824	28%	2000	829	44%	Largest shareholder	Median	Olsson *et al.* (2005)
U.K.	1920	53	20.8%	1990	243	16.3%	Largest shareholder	Average	Franks *et al.* (2009)
U.S.	1935	1,419	13%	1995	4,202	21%	Directors and Officers	Average	Holderness *et al.* (1999)

Table A17: Long-Run Within-Country Changes in Ownership Concentration (Data for Figure 2).

Description: This table summarizes the data used in Figure 2 to report long-run changes in the ownership concentration at public corporations in twelve countries. If a country is not included, it is because I am unaware of a study documenting ownership changes over at least a four-year period.

Interpretation: In many of these countries legal protections for investors were strengthened over the periods measured. There is little evidence that ownership became less concentrated as investor protection laws became stronger. If anything, the opposite may be the case.

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