



THE VALUATION OF IPOs IN THE EUROPEAN LEGAL FRAMEWORK

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Abstract

We question whether an evolution in the national legal system leads to higher valuations for companies going public. We investigate this issue with reference to the population of firms going public on the main and second stock markets in the three largest economies of Continental Europe over the last fifteen years (1995-2009). We use a new dynamic measure of the evolution of the legal framework, defined as the compliance record of the Member States of the European Union. Controlling for the nature of the firm as well as for the identity of the ultimate shareholder, we find that an increase in the annual number of infringements is related to a decrease in the valuation of the firms going public. Therefore, we conclude that a higher evolution of the legal system leads to higher valuations of firms.

Keywords: IPOs, legal framework, stock market, Europe

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1. Introduction

There is a range of economic, legal, institutional and cultural differences influencing the environment in which corporate financing takes place. In particular, law and the quality of its enforcement are important determinants of what rights security holders have and how well these rights are protected (La Porta et al., 2002). The differences in legal protections of investors might indeed help explain why firms are financed and valued so differently in different

countries. This paper is related to this stream of literature binding together law and finance. Precisely, we extend the literature on IPO and contribute to the literature on “law and finance” showing how legal environments affect firm valuation.

There is a variety of situations where the value of a firm must be established without referring to its current market price, for example when calculating gift or estate taxes on a closely held business. Corporate control transactions such as mergers, acquisitions, and management buyouts also require an

independent valuation of equity. However, the most crucial time for valuation is a firm's IPO. Indeed, the principal challenge facing a company going public is convincing a wide variety of potential external investors that it has potential.

The valuation of IPOs is an important topic in finance. Nevertheless, the empirical literature on this subject focuses on U.S. offerings. The Continental European context has drawn less interest, probably due to the greater difficulty of constructing large and homogeneous datasets. This peculiarity doubtless has an effect on the valuation of firms, with several implications for studies in corporate finance (La Porta et al., 1999). Empirically, we investigate the effect of the evolution of the legal framework on the valuation of firms going public. Specifically, we study the population of 526 companies that went public in the period 1995-2009 on the main and secondary markets of the three largest economies in Continental Europe, namely Germany (Deutsche Börse: Geregelter Markt and Amtlicher Markt), France (Euronext: Premier Marché and Second Marché), and Italy (Borsa Italiana: MTA and Expandi).

Compared to the traditional static measure proposed by La Porta et al. (1998), we propose a new country-specific time-variant measure of the evolution of the legal framework. We refer to the compliance record of the Member States of the European Union. Specifically, we analyze the statistics on the "infringement procedures". The explanations of infringements may vary from the pursuit of national objectives that diverge from EU objectives to fragmented domestic political and administrative systems with high number of "veto" players (e.g. public authorities with overlapping responsibilities), from weak governments based on fragile coalitions to inefficient public administration systems with low degree of professionalism. However, we believe that this is a suitable country-level time-variant measure of the evolution of the legal system.

The remainder of this paper is structured as follows. Section 2 reviews the literature, Section 3 presents the research design, and Section 4 discusses our econometric results. Section 5 concludes the paper.

2. Previous Literature

The present contribute is related to several field of research. We position the paper with reference to the literature in (1) law and finance, (2) valuation of firms, (3) agency problems between corporate constituents, (4) corporate governance.

2.1 Law and finance

This paper is related to the stream of literature on law and finance, which compares institutional frameworks around the world and studies their impact on economic behavior. In this field, the contributions by La Porta et al. (1997, 1998, 1999, 2000, 2002) have

moved this topic to the top of the research agenda by documenting the relationship between the law and economic growth, the development of markets, and the governance of firms. Importantly, they proved that investors are willing to pay more for financial assets when being better protected by the legal system.

Rights granted to shareholders depend on the legal rules of the jurisdiction in which a company operates and the corresponding shares are issued. La Porta et al. (1998) show that common-law countries have the strongest legal protection of investors, while French civil law countries have the weakest. Beck et al. (2001) point out that a country's legal origin helps to explain the development of its financial institutions. Legal systems differ in their ability to facilitate private exchanges and to support new financial and commercial transactions.

Given the systematic differences in the structure of legal systems and their corresponding enforcement we analyze how these differences might impact the valuation of firms. Specifically, we contribute to this stream of literature by testing whether differences in the legal systems, and in their evolution, are recognized by the market of investors.

2.2 Valuation of firms

The valuation of firms going public is an important area of investigation in both financial and accounting literature. Over the last decade, research on this topic has evolved in several directions. For example, a broad stream of research beginning with Kim and Ritter (1999) studies the methodologies used to price IPO companies (e.g. Purnanandam and Swaminathan, 2004; Cassia, Paleari and Vismara, 2004; Jagannathan and Gao, 2005). The consensus is that on average, IPO firms are priced higher than equivalent listed firms. Other studies specifically address this over-optimism, questioning the role of financial analysts and other intermediaries (Paleari, Pellizzoni and Vismara, 2008). On one hand, analysts reduce the agency costs associated with the separation of ownership and control (Jensen and Meckling, 1976). On the other hand, analysts may provide biased information. Prior research has indicated that their earnings forecasts systematically exceed actual figures (e.g. Rajan and Servaes, 1997; Brav and Lehavy, 2003).

A closely related branch of literature investigates the relevance of accounting data to the values of IPO firms. These studies typically examine three classes of potential value drivers (Guo, Lev and Zhou, 2005): firm and issue attributes (such as the stake retained by pre-IPO owners or the age of the firm at its IPO), financial fundamentals (such as sales, earnings, and research and development expenditures), and non-financial information (such as web traffic, patents or alliance agreements).

As our goal is to relate IPO valuation to firm-level variables of ownership, this paper falls squarely into the first group. Its unique contribution,

investigating the effects of the legal aspects and governance characteristics, is of particular interest in the European context.

2.3 Agency problems between corporate constituents

Conflicts of interests between management and shareholders arise in companies with a dispersed ownership structure. The separation of ownership and control leads indeed to a divergence of interests between the managers and shareholders (Berle and Means, 1932). On the other hand, the presence of a controlling shareholder may induce another agency problem, that is the potential opportunistic behaviour of the large blockholder towards minority shareholders. It is therefore of interest to consider ownership aspects when dealing with the valuation of firms (Bonardo et al., 2007).

In terms of relationship between ownership structure and firm performance, Berle and Means (1932) suggested that the diffuseness of shareholdings should be inversely correlated with firm performance. Much later, Jensen and Meckling (1976) analyzed the conflict of interest between managers and owners when the latter must pay to monitor the performance of the former. Their model implies that managerial ownership is inversely related to the strength of the board's monitoring role. For example, in firms with little managerial ownership, a strong board will be selected to monitor the activities of management (Fama and Jensen, 1983). Accordingly, an IPO can increase agency problems by reducing the level of management ownership. Leland and Pyle (1977) developed an IPO model in which the original shareholders seek financing for projects whose true value is not made public. The entrepreneurs can convincingly signal their project's quality by retaining a significant ownership stake, since false representation would be costly. Even though they originate from very different perspectives, the three results just mentioned are in agreement: a high level of managerial ownership tends to increase outside confidence in the firm. Our paper contributes to this stream by analyzing the relationship between valuation and a more qualitative aspect of ownership.

Most empirical papers on the relationship between ownership structure and valuation or performance are based on an Anglo-Saxon perspective: the firm's ownership is widely dispersed. However, in continental Europe (Franks and Mayer, 2001), Japan, and many other Asian countries (Hiraki et al., 2003), we often observe more concentrated ownership structures. In regulated industries such as energy and telecommunication, the government may effectively control large companies (Boubakri et al., 2004). In other industries, most firms are privately controlled through pyramidal structures (La Porta et al., 1999).

A similar pattern is evident when we consider how ownership and control are separated in the two

regions. In the UK and USA, public companies and family-owned companies coexist. Sometimes firms adopting a two-class ownership structure, where one group of shareholders has limited voting rights. In continental Europe, the situation is quite different (Becht and Röell, 1999, La Porta et al., 1999, Buyschaert et al., 2004). A two-class structure is often observed in conjunction with pyramids, so that the controlling shareholder need only formally control the company with the highest position in the group (Bebchuck et al., 2000, Faccio and Lang, 2002). This allows the group as a whole to conduct its financial activities with minimal investment from the majority shareholders (Slovin and Sushka, 1997) and no chance for minority shareholders to affect or dismiss an operation. Claessens et al. (2002) conduct a similar analysis of East Asian Countries, with the same result. Our contribution focuses on Continental Europe.

2.4 Corporate Governance

The recent literature expresses various concerns over the effects of pyramidal ownership in continental Europe. First, when control over a firm is exerted through the group structure rather than direct ownership, managerial agency costs may be high (Claessens et al., 2002; La Porta et al., 2002; Bekaert et al., 2003; Lins, 2003). Likewise, the benefits of private control in this environment are larger (Burkart et al., 1998; Nenova, 2003; Doidge, 2004; Dyck and Zingales, 2004). Secondly, recent studies in corporate finance emphasize the point that pyramids adversely affect the protection of minority shareholders (Bebchuck et al., 2000; La Porta et al., 2000). Third, pyramidal structures undermine the market for corporate control. This last point has often been investigated in works analyzing how markets award voting rights (Nenova, 2003; Doidge, 2004; Meoli et al., 2008).

As pyramids allow a single shareholder to control large conglomerates (Becht and Roell, 1999; Faccio and Lang, 2002), an important research question is how the existence of a controlling shareholder affects a firm's value. The prior literature considers two hypotheses. According to the interest alignment hypothesis, large shareholders with a higher level of cash flow rights are more committed to actively monitoring managerial activities and maximizing the firm's value. La Porta et al. (2002) and Claessens et al. (2002) report evidence supporting a positive correlation between the cash flow rights of large shareholders and Tobin's *q*-statistic in samples of large seasoned firms. We test these hypothesis with reference to a sample of firms going public in Continental Europe, taking into account several specificities of corporate governance mechanisms.

3 Research Design

3.1 The IPO market in Continental Europe

European IPOs are not overseen by a single regulator as in the United States, but by a patchwork of distinct national regulators. Regulators belonging to the European Union have only one duty in common: to follow legal guidelines set out by the European Investment Services Directive, the Prospectus Directive, and the Transparency Directive. Any firm wishing to undertake an IPO on a regulated market must first obtain permission from the appropriate regulator. Depending on the firm's country, this entity may be the Ministry of Finance, an independent authority over security markets, or the stock exchange itself. In addition, most European stock exchanges are segmented into a main market and one or more second-tier markets dedicated to particular classes of firms. Historically, the second-tier markets tend to succeed during hot periods and collapse during cold periods. On the other hand, Europe has witnessed considerable evolution in the segmentation of its stock markets.

The structures of European markets are linked to the strikingly cyclic character of the IPO landscape. For a long time, Europe's IPO market was dwarfed by the U.S. IPO market (Ritter, 2003). In the year 2000, however, continental European IPOs exceeded U.S. IPOs in volume for the first time in at least several decades. Furthermore, in Continental Europe we assist to a simultaneous process of consolidation and fragmentation of stock markets (Paleari, Ritter and Vismara, 2010). It is therefore of interest to focus on the main and second market of the major Continental economies, namely Germany, France, and Italy.

3.2 Sample and descriptive statistics

Our sample of IPOs is selected from the EURIPO database, which provides prospectuses as well as very detailed information on the companies. EURIPO includes all companies that have recently gone public in Europe¹. Our sample comprises only firms that executed 'real' initial public offerings; it excludes introductions (admissions with no initial offer), re-admissions, and companies already listed on other stock markets. The IPOs of investment entities (such as trusts) and financial companies are also excluded, because these firms have unusual characteristics compared to other IPO firms.

Table 1 provides a breakdown of our sample by market and year of listing. A total of 526 companies went public in stock markets of the three main economies in Continental Europe. The sample is

actually made of the population of IPOs taking place in the period 1995-2009 on the main and secondary markets (i.e. excluding so-called 'new markets') in Germany (Deutsche Börse: Geregelter Markt and Amtlicher Markt), France (Euronext: Premier Marché and Second Marché), and Italy (Borsa Italiana: MTA and Expandi).

[INSERT HERE TABLE 1]

Table 2 reports descriptive statistics of IPOs, while Table 3 presents the variables and data sources. The highest median Tobin's Q is found for German companies, where there is also the highest underpricing. Firms going public in Italy are, on average, more mature and bigger, whereas the French ones are the more profitable.

In order to determine the impact of legal aspects on the valuation of firms, we need to control for the effects of ownership and governance variables. To this extent, we introduce a set of dedicated variables. A dummy variable is used to identify firms that are part of a pyramidal structure. Following the definition given in Faccio and Lang (2002), pyramiding occurs whenever a single shareholder owns one corporation through another which he controls but does not totally own. We set a 10% threshold for the controlling stake. While pyramiding is not the only way to separate ownership and control, we neglect less common mechanisms such as firm-specific voting caps, golden shares and informal alliances (i.e., voting blocs), and transfer restrictions on shares. While a dual share structure is widely used in Europe, in most countries companies do not issue non-voting shares before being listed. For instance, in Italy only listed companies are allowed to issue shares with limited voting rights (law 216/1974 and articles 145-147 of the law 58/1998). Furthermore, such shares must grant higher dividends. Thus, the two-class share structure is not relevant to IPO valuation in Italy.

To represent the ultimate shareholder's identity, we introduce the following set of dummy variables²:

1. Family: the ultimate shareholder is an individual, a family, or a firm that is unlisted on any stock exchange.
2. Widely-held financial institution: the ultimate shareholder is a financial firm (SIC 6000-6999) that is widely held at the control threshold.
3. Widely-held corporation: the ultimate controlling shareholder is a non-financial firm that is widely held at the control threshold.
4. State: the control chain is headed by a national government (domestic or foreign), local authority (county,

¹ The EURIPO database is maintained by Universoft, a spin-off of the University of Bergamo (www.euripo.eu). It contains data on all the companies that went public through IPOs on European stock markets since 1985, totalling more than 5,000. Specific data on these firms are derived from IPO prospectuses and annual reports.

² A few very uncommon cases are dropped, so this set of dummies does not constitute a complete partition of the sample.

municipality, etc.), or government agency.

[INSERT HERE TABLE 2 AND 3]

3.3 Methodology: the choice of the dependent variable

We rely upon the Tobin's Q, a widely recognized indicator of the firm's future growth opportunities as assessed by the market of investors (Bonardo et al., 2010). We use the ordinary least squares (OLS) regression model shown below (with White robust standard errors), taking the Tobin's Q as the dependent variable:

Economic theory assumes that the difference between market value and book value is the present value of a company's future abnormal earnings, the latter resulting from either monopoly power or innovation. The q value for a firm, originally introduced by Tobin and Brainard (1968) and Tobin (1969), is defined as the ratio of the market value of the outstanding financial claims on the firm to the current replacement cost of the firm's assets. This ratio has been accepted as an important measure for firm valuation and used to explain a wide variety of economic phenomena. Tobin's Q is usually proxied by the ratio of market value of assets to the book value of assets, where the market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock. In line with the literature, we use this proxy. However, we performed the regression analysis using alternative measures as well (e.g. the ratio of the market value of equity over book value of equity or the ratio of market value of equity over sales), but the results did not change significantly.

3.4 Methodology: the proxy of the evolution of legal framework

Nowadays, virtually every cross-country study employs the legal origin classification proposed by La Porta et al. (1998). However, these indices have some limitations in that they are static and refer to national legal environments in 1995. In the late 1990s, many countries have undergone substantial reforms of their corporate legislations. It is therefore likely that such indices of 1995 no longer reflect the true differences in national legal systems. Second, for our purposes, we need to rely on a dynamic measure of the evolution of the legal framework in which companies operated.

We therefore use a new time-variant measure of the legal framework. We examine the compliance record of the Member States of the European Union. Specifically, we analyze the statistics on the "infringement procedures". For our purposes, compliance is defined to be conformity with the requirements of EU law. The typical measure of compliance is to identify its opposite; i.e. whether

there is non-compliance. Non-compliance or, in the words of the Court, "failure of Member States to fulfill their obligations" is indicated by "infringement proceedings". These are the proceedings normally initiated by the European Commission against Member States on the basis of Articles 226 and 228 (or Article 88 on state aid). The explanations of infringements may vary from the pursuit of national objectives that diverge from EU objectives to fragmented domestic political and administrative systems with high number of "veto" players (e.g. public authorities with overlapping responsibilities), from weak governments based on fragile coalitions to inefficient public administration systems with low degree of professionalism. However, we believe that this is a suitable country-level time-variant measure of the evolution of the legal system.

We consider the performance of Member States over time. To this aim, we count the annual cases of infringements cases initiated against each country. The average number of infringements for each country has been 18.5. Considering only the country under observation (i.e. Germany, France, and Italy), the average grows to 20.7, with Italy at the top (23.4) and Germany at the bottom (17.2). The performance of these States over time has not deteriorated and may have actually improved, given the increase in legislation and the corresponding burden of compliance.

4. Econometric Results

We run four regression analyses on our dataset. Model (1) includes only the essential set of regressors: firm age, firm size, offer size, and participation ratio. All baseline regressions also include industry and year dummies. The results generally align with our expectations: the coefficients on firm age and firm size are all negative and significant, while participation coefficients are positive and significant.

Model (2) considers the effects of pyramids, multiple control chains, and cross-holding. The dummy variable identifying pyramidal ownership has a negative effect on valuation. Model (3) extends to include variables differentiating the nature of the ownership structure, between families, widely held corporations and financial institutions and State-owned firms. The only significant variable is the latter, with a negative valuation for privatizations. However, all the statistical significances of ownership and governance variables disappear in Model (4) that considers measures of the evolution of the legal systems.

In the final model, we find that the legal framework of France and Italy negatively affect the valuation of firms going public. These are the countries where infringements take place more frequently. Therefore, we conclude that a higher evolution of the legal system leads to higher valuations of firms.

[INSERT HERE TABLE 4]**5. Conclusions**

Given the beneficial impact of governance regulation on economic growth and the development of markets, an important question to ask is whether an evolution in the national legal system leads to higher valuations for companies going public.

This paper investigates this issue with reference to the population of firms going public on the main and second stock markets in the three largest economies of Continental Europe, namely Germany, France, and Italy. We propose a new variable to measure the evolution of the legal systems. Compared to the traditional static measure proposed by La Porta et al. (1998), we need indeed to rely on a dynamic measure of the evolution of the legal framework in which companies operated. Our country-specific time-variant measure of the evolution of the legal framework is defined as the compliance record of the Member States of the European Union. Specifically, we analyze the statistics on the “infringement procedures”. The explanations of infringements may vary from the pursuit of national objectives that diverge from EU objectives to fragmented domestic political and administrative systems with high number of “veto” players (e.g. public authorities with overlapping responsibilities), from weak governments based on fragile coalitions to inefficient public administration systems with low degree of professionalism. However, we believe that this is a suitable country-level time-variant measure of the evolution of the legal system.

Of course, eventual peculiarities in the valuation of firms going public might not be related to the evolution of the legal systems itself, but instead emerges from correlations between the latter and unmeasured features of firm quality. While this is a possibility, we specifically adopt a dynamic measure of the legal framework. Moreover, we control for the effect of a number of firm characteristics on valuation and performance, referring to three main fields: (1) characteristics of the offer and the firm itself, (2) ownership structure, and (3) corporate governance.

Controlling for the nature of the firm as well as for the identity of the ultimate shareholder, we find that an increase in the annual number of infringements is related to a decrease in the valuation of the firms going public. Therefore, we conclude that a higher evolution of the legal system leads to higher valuations of firms.

Examining the causal link between the legal framework and IPO valuation contributes to previous literature at different levels. First, our evidence relates to former analyses on the relevance of firm-level variables on IPO valuation, providing new evidence in the European context. Further, our evidence also contributes to the long lasting debate on the relationship between finance and growth (Levin, 1998, 2004), supporting that a positive legal environment

interacts with the financial function in the process of value creation.

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Appendices

Table 1. Description of the IPO sample by year and by market. In the last row and column, percentages are relative to the sample of 526 IPOs.

	1995-1997	1998-2000	2001-2003	2004-2006	2007-2009	1995-2009	%
Premier Marché	0	5	5	6	0	16	3.04
Second Marché	68	98	10	4	0	180	34.22
<i>France (total)</i>	<i>68</i>	<i>103</i>	<i>15</i>	<i>10</i>	<i>0</i>	<i>196</i>	<i>37.26</i>
Geregelter Markt	4	38	8	3	6	59	11.22
Amtlicher Markt	8	47	2	37	17	111	21.10
<i>Germany (total)</i>	<i>12</i>	<i>85</i>	<i>10</i>	<i>40</i>	<i>23</i>	<i>170</i>	<i>32.32</i>
Expandi	1	1	1	12	15	30	5.70
MTA	29	41	21	23	16	130	24.71
<i>Italy (total)</i>	<i>30</i>	<i>42</i>	<i>22</i>	<i>35</i>	<i>31</i>	<i>160</i>	<i>30.42</i>
<i>Sample</i>	<i>110</i>	<i>230</i>	<i>47</i>	<i>85</i>	<i>54</i>	<i>526</i>	

Table 2. Descriptive statistics. The table reports the averages (median for Tobin's Q) of the descriptive variables, defined in the text and in Table 3.

	Tobin's Q	Firm Age (years)	Firm Size (Sales €m)	Leverage (%)	Profitability (ROE %)	Proceeds (€m)	Partecipation (%)	Underpricing (%)
France	3.05	15	289.74	129.94	21.09	83.13	10.01	3.29
Germany	7.64	17	272.51	136.36	13.04	98.39	8.38	29.57
Italy	2.27	30	451.34	129.35	14.50	221.80	13.19	8.58
TOTAL	3.48	18	309.68	132.13	17.07	109.07	9.93	13.71

Table 3. Variable definition and data sources. All variables were measured at the time of the IPO.

Variables	Definition
Dependent variable	
Tobin's Q	Ratio of market value of assets to the book value of assets, where the market value is calculated as the sum of the book value of assets and the market value of common stock less the book value of common stock. <i>Source:</i> EURIPO database.
Descriptive statistics and control variables	
Firm Age	Years between the firm's initial incorporation and the time of the IPO. <i>Source:</i> EURIPO database.
Firm Size	Sales (€m) (natural logarithm in the regressions). <i>Source:</i> EURIPO database.
Leverage	Ratio between long-term debt and equity. <i>Source:</i> EURIPO database.
Profitability	Net earnings over book value of equity. <i>Source:</i> EURIPO database.
Proceeds	Offer price times number of shares offered (€m) (natural logarithm in the regressions). <i>Source:</i> EURIPO database.
Participation	Percentage of the IPO offering composed of existing shares. <i>Source:</i> EURIPO database.
Underpricing	Difference between the first-day closing price and the final offer price, scaled by the final offer price (%). <i>Source:</i> EURIPO database.
Offer Size	Offer price times number of shares offered (€m) (natural logarithm in the regressions)
Industry dummies	Dummy variables referring to the Financial Times Stock Exchange (FTSE) Global Classification System. <i>Source:</i> DATASTREAM.
Year dummies	Dummy variables referring to the year of IPO. <i>Source:</i> EURIPO database.
Ownership and governance variables	
Pyramids	Dummy variable equal to 1 when the controlling shareholder owns one corporation through another which he does not totally own. We set a 10% threshold to define a controlling stake. <i>Source:</i> hand-collected from IPO prospectuses.
Multiple control chains	Firm Y is held through "multiple control chains" if it has an ultimate owner who controls it via a multitude of control chains, each of which includes at least 5 percent of the voting rights at each link (Faccio and Lang, 2002). <i>Source:</i> hand-collected from IPO prospectuses.
Cross-holding	Dummy variable equal to 1 when a company directly or indirectly controls its own stocks (Faccio and Lang, 2002). <i>Source:</i> hand-collected from IPO prospectuses.
Family	Dummy variable equal to 1 when the ultimate shareholder is an individual, a family, or a firm that is not listed on any stock exchange. <i>Source:</i> hand-collected from IPO prospectuses.
Widely held financial inst.	Dummy variable equal to 1 when the ultimate controlling shareholder is a financial firm (SIC 6000-6999) that is widely held at the control threshold. <i>Source:</i> hand-collected from IPO prospectuses.
Widely held corporations	Dummy variable equal to 1 when the ultimate controlling shareholder is a non-financial firm that is widely held at the control threshold. <i>Source:</i> hand-collected from IPO prospectuses.
State	Dummy variable equal to 1 when a national government (domestic or foreign), local authority (county, municipality, etc.) or government agency is the controlling shareholder. <i>Source:</i> hand-collected from IPO prospectuses.
Legal Framework	
Country-level time-variant measure	Cases against Member States upheld by the Court of Justice of the European Union. <i>Source:</i> Court of Justice, Annual Reports.

Table 4. Regression Models. Results of OLS regressions on the sample of 526 IPOs

Constant	9.601*** (2.575)	9.848*** (2.572)	9.650*** (2.604)	9.973*** (2.551)
Firm Age	-0.242** (0.102)	-0.244** (0.102)	-0.248** (0.102)	-0.203** (0.101)
Firm Size	-0.322*** (0.045)	-0.311*** (0.045)	-0.296*** (0.046)	-0.292*** (0.045)
Offer Size	1.107** (0.491)	1.341*** (0.500)	1.155** (0.513)	0.839 (0.527)
Participation Ratio	0.041*** (0.009)	0.041*** (0.009)	0.038*** (0.009)	0.035*** (0.009)
Industry dummies	Yes	Yes	Yes	Yes
Year dummies	Yes	Yes	Yes	Yes
Pyramids	-	-0.554** (0.235)	-0.547** (0.235)	-0.162 (0.258)
Multiple control chains	-	0.167 (0.270)	0.176 (0.270)	0.335 (0.267)
Cross-holding	-	-1.229 (1.735)	-1.195 (1.726)	-1.508 (1.691)
Family	-	-	-0.067 (0.336)	0.281 (0.335)
Widely held financial inst.	-	-	0.056 (0.633)	-0.062 (0.621)
Widely held corporations	-	-	1.021 (0.660)	0.959 (0.646)
State	-	-	-1.047** (0.454)	-0.472 (0.466)
LF: France	-	-	-	-0.041*** (0.010)
LF: Germany	-	-	-	-0.001 (0.026)
LF: Italy	-	-	-	-0.062*** (0.014)
R ²	0.357	0.363	0.374	0.404
adjR ²	0.331	0.335	0.342	0.370