

Country Risk and Valuation of U.S.-Listed Foreign IPOs

Congsheng Wu, Ph.D.
Professor of Finance
School of Business
University of Bridgeport

Abstract

This study investigates the association of country risk with IPO valuation. Based on the law and finance literature, we hypothesize that firms domiciled in countries with higher country risk are worth less, other things equal. We test this hypothesis with a sample of international companies making their IPO debuts in the United States. We find that several commonly used country-level variables can explain the observed IPO valuation differences across countries. In particular, the index of economic freedom, developed by the Heritage Foundation, and the Transparency International's corruption index have significant impact on IPO valuations. Specifically, IPO firms domiciled in countries with more economic freedom and less corruption are associated with higher valuation.

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I. Introduction

Over the past few decades, many foreign companies have made their initial public offering (IPO) debuts in the United States. The primary driver of this practice, commonly referred to as cross-listing, is the increasing demand for foreign shares by American investors. While such a listing provides a more convenient channel to achieve global diversification, previous studies in the literature show that foreign firms benefit from it as well. The economic benefit from such a U.S. listing has been examined in these studies, from several angles.

Miller (1999), for instance, investigates the announcement effect associated with a U.S. listing. He finds a positive abnormal return upon listing announcements, which implies that investors anticipate positive impact from cross-listing. Later studies have attempted to identify the sources of the positive impact. These sources may arise from 1) risk premium reduction (Foerster and Karolyi, 1999), 2) access to more developed capital markets (Lins, Strickland, and Zenner, 2005), and 3) information disclosure. See Karolyi (2006) for a survey.

Other studies have examined the first-day performance or underpricing of foreign IPOs listed in the United States. Bruner, Chaplinsky and Ramchand (2004), for instance, show that foreign firms making IPOs in the U.S. experience approximately the same underpricing on average as U.S. domestic IPOs. They argue that the risk of foreign IPOs arising from asymmetric information and high country risk are offset by characteristics that reduce their risk relative to U.S. domestic IPOs. Bruner, Chaplinsky and Ramchand (2006)

further show that there is no significant difference in underpricing between emerging and developed market IPOs made in the U.S.

Despite extensive research, a relatively unexplored area is how the valuation of U.S.-listed foreign shares is determined at the time of the IPO. The IPO literature documents evidence that some offer- and firm-specific characteristics such as industry and size affect valuation (e.g., Aggarwal, Bhagat, and Rangan, 2009). The examination of post-offer valuation of newly listed firms is important because only a fraction of the total shares are sold in an IPO, and the vast majority of the shares are held by long-term, staying shareholders. A closely related study to this paper is Doidge, Karolyi and Stulz (2004), which find that companies from around the world that cross list in U.S. are associated with valuation premiums relative to other firms from their home country that do not cross list. They suggest that their results are consistent with the bonding and monitoring hypothesis (Coffee, 1999, 2002, and Reese and Weisbach, 2002).

Unlike Doidge, Karolyi and Stulz (2004), this paper attempts to investigate what determine the valuation of U.S.-listed foreign IPOs. Specifically, it investigates whether some commonly used country-level variables affect the cross-section of IPO valuation.

While a U.S. listing provides an opportunity for firms domiciled in a segmented market to achieve a higher valuation, U.S. bound foreign firms are faced with a couple of obstacles that may prohibit them from reaching the full valuation level. The first obstacle is the information asymmetry that lies between investors and foreign companies seeking a cross-listing. Whereas information barrier, to a certain extent, can be mitigated due to the uniform accounting standards for exchange-listed IPOs in the U.S., it is far from being eliminated.

The second, perhaps more severe, barrier that may keep a foreign IPO from reaching its full valuation through a U.S. listing is the risk associated with the country where the listing company is domiciled. Previous studies have shown that country risk indeed affects equity valuations. Erb, Harvey and Viskanta (1996), for instance, find that several country-risk measures are correlated with future equity returns. Recent empirical work in the law and finance literature (for example, La Porta et al., 1997, 1998) indicates that legal variables such as the respect for the rule of law, protection of property rights, enforceability of contracts, and legal heritage have a causal relationship with levels of economic growth.

Another related line of research focuses on the link of economic freedom to economic growth. Economic freedom, after all, is the fundamental right of every human to control his or her own labor and property. Economic theories from as early as Adam Smith in 1776 indicate that economic freedom affects not only incentives, but also productive effort and the effectiveness of resource use. Empirical studies along this line generally document a positive link between economic freedom and growth (see, for example, De Haan and Sturm, 2000 and Wu, 2011).

In general, countries with weak legal institutions or less economic freedom are associated with weak investor protection and shaky corporate governance. Hence, the main hypothesis of the paper is that the valuation of foreign IPOs is inversely related to country risk. In other words, firms domiciled in countries with higher country risk are worth less, other things equal, at their IPO debuts in the United States.

We test this hypothesis by using a sample of foreign IPOs listed in the U.S. between 1986 and 2002. We investigate whether some commonly used country-level variables can explain the observed variances in IPO valuation. The first country risk measure is the

indicator variable that shows a country's legal heritage. La Porta et al. (1998) assign each country to one of four legal traditions: English common law, French civil law, German civil law and Scandinavian civil law. They show that laws vary a lot across countries, partly due to differences in legal origin. The drawback of the legal heritage indicators is that they fail to capture the distinctive contemporary characteristics of each nation's legal systems and institutions within the same heritage. In other words, countries with the same legal heritage are taken as the same. To overcome this drawback, we use several other gauges of country risk, which include the index of economic freedom, developed by the Heritage Foundation, and Transparency International's corruption index. We also adopt two relatively new measures: the anti-self-dealing index and the revised anti-director rights index, both taken from Djankov et al. (2008).

Overall, this paper finds that the valuation of U.S.-listed foreign IPOs is significantly affected by a number of country risk measures, the most pronounced of which are economic freedom and corruption. Our result is comparable to Bell, Moore and Al-Shammari (2008), who demonstrate that firms from countries with governmental policies and institutional practices that protect the economic freedom of its citizens are significantly less underpriced than IPOs of firms originating from countries experiencing lower levels of economic freedom.

The rest of the paper proceeds as follows. The next section reviews the literature and postulates the hypothesis. Section III explains the sample and data. Section IV provides the descriptions of the variables used in the paper and the summary statistics. Section V presents the regression results. Section VI summarizes.

II. Literature Review and Hypothesis

Do foreign firms benefit from a U.S. listing? The finance literature has provided a definitively positive answer. Previous studies have examined the economic benefit of cross-listing in the U.S. from multiple angles. The market segmentation hypothesis is the most often cited motive for cross-listing. This hypothesis posits that cross-listing allows international investors to avoid cross-border barriers to investment. These barriers may arise from regulatory restrictions which prevent investors from investing in these markets, asymmetric information, or simply from lack of knowledge about a security or market (for example, Merton 1987). Removing barriers and integrating markets allows for more efficient diversification and thus lowers the risk of a security. Based on this hypothesis, a firm's stock price will rise and the cost of capital will decline in response to the cross-listing.

Miller (1999) tests this market segmentation hypothesis directly and finds that a cross-listing on a U.S. stock exchange by a non-U.S. firm is associated with a significantly positive price reaction in the home market. This finding suggests that the market expects the cross-listing to have a positive impact on the firm's value.

Many studies have examined the direct and indirect issue costs of foreign firms making their IPO debuts in the United States. Bruner, Chaplinsky and Ramchand (2004), for instance, document that foreign IPOs in the U.S. experience approximately the same underpricing on average as U.S. domestic IPOs. They find that while foreign IPOs start out being less familiar to U.S. investors in terms of analyst coverage and riskier in terms of country risk, they also have certain characteristics such as greater size, asset tangibility, and geographic proximity. They argue that the risk of foreign IPOs arising

from asymmetric information and high country risk are offset by these characteristics that reduce their risk relative to U.S. domestic IPOs

Bruner, Chaplinsky and Ramchand (2006) further show that IPOs from emerging markets experience the same costs on average as IPOs from developed market countries. Although there is a large gap between the country risk ratings of the emerging and developed market countries, IPO issuers from emerging markets appear to bridge that gap by being large issuers in their respective home countries, listing more frequently on the NYSE, and having a greater proportion of activity in manufacture and infrastructure segments, and a lower proportion in high-tech segments. These issues occur following periods of strong U.S. and home market equity performance which helps to alleviate country risk. In comparison to their developed market peers, emerging market issuers are a select group of higher-quality firms.

Francis et al. (2010) examine a sample of foreign IPOs from the perspective of the signaling arguments. They find that signaling does matter in determining IPO underpricing, especially for firms domiciled in countries with segmented markets. They report a significant positive and robust relationship between the degree of IPO underpricing and segmented-market firms' seasoned equity offering activities. The evidence supports the notion that some firms are willing to leave money on the table voluntarily to get a more favorable price at seasoned offerings when they are substantially wealth constrained, a prediction embedded in the signaling theory.

The signaling argument is corroborated by Blass and Yefeh (2001), who examine a sample of Israeli IPOs in the U.S. and Israel to understand how firms choose a specific listing location. They find that companies that list in the U.S. are young and

overwhelmingly high-tech oriented. They argue that high-quality innovative firms are willing to incur additional costs associated with listing in the U.S. in order to real their value and distinguish themselves from firms that issue stock back home.

Ding, Nowak and Zhang (2010) take a different approach by analyzing a stock listing as an entrepreneurial decision and interpret the choice of IPO location as entrepreneurial signaling. Building on institutional economic theory, they show that a foreign listing in a developed market with better institutional infrastructure enables firms from an emerging economy to enjoy a more efficient institutional environment, which is beneficial to their pursuit of long-term benefits. From this strategic perspective, they find evidence that the IPO location decision is driven not only by short-term financial considerations, but also by the entrepreneur's pursuit of long-term benefits.

In recent years, the bonding hypothesis, which is built on the notion that listing in a developed market improves corporate governance, has gained more attention in the empirical literature. Coffee (1999, 2002) and Stulz (1999) are the first to point out that corporate governance matters in cross-listing. They propose that firms with poor home country corporate governance often cross-list their securities on stock markets located in countries with more rigorous governance standards. By bonding themselves to higher accounting, disclosure and governance standards in the United States, foreign firms enhance access to capital, which, in turn, lowers the cost of capital and increases the value of the firm.

Firms outside the U.S. are generally controlled by large shareholders and, from the controlling shareholder's perspective, there are costs as well as benefits from cross-listing. Cross-listing limits the ability of controlling shareholders to take private benefits

from their firms, but it also provides external finance and funds firms' investment opportunities. Controlling shareholders are willing to "bond" themselves not to take private benefits when the value of having access to external capital is large relative to the size of private benefits. In such circumstances, firms often have investment opportunities that require external financing.

A number of studies have tested the bonding hypothesis. Reese and Weisbach (2002), for example, examine the relation between the number of U.S. cross-listings and the level of investor protection in the cross-listed firms' home countries. They show that equity issues increase following all cross-listings, regardless of shareholder protection. Moreover, the increase is larger for cross-listings from countries with weak protection. These results are deemed as consistent with the bonding hypothesis.

Doidge, Karolyi and Stulz (2004) examine the firms' valuation premium with and without cross-listing, using Tobin's q as the measure of valuation. Using data from 40 countries on the valuation samples of 714 cross-listed and 4078 non cross-listed firms in 1997, they find a substantial positive valuation premium for firms cross-listed in the U.S. The valuation difference is statistically significant and largest for exchange-listed firms. The premium persists even after controlling for a number of firm and country characteristics.

Under global market integration in the sense that securities with the same risk have the same expected returns, firms listing in the U.S. should fetch the same valuation as other firms that do not cross list. In reality, however, many markets, especially emerging markets, are fully or semi-segmented. A U.S. listing provides an opportunity for firms domiciled in segmented markets to achieve a higher valuation. However, there are a couple of obstacles

facing these U.S. bound foreign firms that may prohibit them from reaching full valuation level.

First of all, a significant degree of asymmetric information exists between investors and foreign companies seeking cross-listing. The uniform accounting standards for exchange-listed IPOs in the U.S. may partially mitigate the problem of asymmetric information, but they will not eliminate it. By the same token, companies from English-speaking countries such as Britain and Canada or countries with the same legal heritage are expected to have less asymmetric information.

Another, perhaps more severe, barrier that may keep a foreign firm from reaching its full valuation through a U.S. listing is the risk associated with the country where the firm is domiciled. Previous studies find that country risk indeed affects equity valuations. Erb, Harvey and Viskanta (1996), for example, find that several country-risk measures are correlated with future equity returns. In addition, they find that these country-risk measures are highly correlated with equity valuation metrics such as price/book ratios.

Recent empirical work in the law and finance literature has analyzed country-level data on economic growth and various measures of legal, financial, and political institutions to uncover which institutions are associated with more rapid economic growth. La Porta et al. (1997, 1998), for example, show that legal variables such as the respect for the rule of law, protection of property rights, enforceability of contracts, and legal heritage have a causal relationship with levels of economic growth.

A parallel line of research focuses on the link of economic freedom to economic growth. Economic freedom, above all, is the fundamental right of every human to control his or her own labor and property. The link between prosperity and economic freedom is well

established in 1776 by Adam Smith in his influential work, *The Wealth of Nations*. Economic freedom affects incentives, productive effort, and the effectiveness of resource use. Studies along this line generally document a positive link between economic freedom and growth (e.g., De Haan and Sturm, 2000 and Wu, 2011).

Bell, Moore and Al-Shammari (2008) demonstrate that firms from countries with governmental policies and institutional practices that protect the economic freedom of its citizens are significantly less underpriced than IPOs of firms originating from countries experiencing lower levels of economic freedom. They further show that firms from emerging economies can overcome negative country perceptions by increasing their international scope of operations prior to their IPO process and by retaining higher levels of insider ownership in the respective firms.

Moore, Bell and Filatotchev (2010) argue that foreign IPO firms are simultaneously embedded in the regulatory environment of the country of origin and the country of listing. Countries that lack institutional mechanisms that effectively protect investors allow majority owners to act opportunistically and divert resources as a means to avoid sharing benefits with minority shareholders. As a result, foreign IPO performance is related to country of origin institutional factors.

In sum, countries with weak legal institutions or less economic freedom offer weak investor protection and shaky corporate governance. As a result, IPOs coming from these countries are expected to have a higher risk premium. Hence, our main hypothesis is that the valuation of foreign IPOs is inversely related to country risk. That is, IPO firms domiciled in countries with higher country risk are worth less, other things equal.

III. Sample and Data

The Securities Data Company's (SDC) data base is used to obtain all foreign IPOs made in the U.S. market between 1986 and 2002. We first exclude financial institutions (SIC 60-67), utilities companies (SIC 491), real estate investment trusts (REITs), closed end funds, rights offerings and unit offerings. We also require that that an IPO must be available in the Center for Research in Security Prices (*CRSP*) to be included in the sample. The *CRSP* is also used to double check whether or not an offer is a genuine IPO. This is done by reviewing the listing date in *CRSP* to see if it is consistent with the offer date found in the SDC database.

Since this study uses accounting data to compute firm valuation measures, consistency in accounting rules is of crucial importance. To be included in the sample, the foreign firm must also be available in the Standard and Poors' *Research Insight*. Accounting data from the *Research Insight* will be used to calculate Tobin's q. The majority of the IPOs in our sample are listed on a major stock exchange (NYSE/Nasdaq/Amex). Foreign firms listed on the major exchanges are required to follow the U.S. accounting standards.

This selection procedure yields a total of 293 US-listed foreign IPOs, coming from 46 markets. The number of foreign U.S. IPOs changes substantially over time. It grew from two in 1986 to a peak of 59 in 1996, but declined significantly in subsequent years.

The measure of firm valuation is Tobin's q. This study follows Doigde, Karolyi and Stulz (2004) and others to compute the q ratio for each IPO firm, using financial data at the end of the IPO year as below:

$$q = \frac{(TA - BE) + ME}{TA}$$

where TA is the book value of total assets and BE is the book value of common equity, both of which are taken from the Standard and Poors' *Research Insight*. ME is the market value of common equity, measured by the total number of shares outstanding times the stock price at the end of the IPO year. To check consistency of our results, we also compute the ME/BE ratio as a proxy for valuation.

Table 1 contains the summary statistics of Tobin's q and ME/BE ratio by year and other characteristics. On average, the q ratio for the 293 U.S.-listed foreign IPO firms in our sample is 3.021 while the median is 1.925. The mean and median ME/BE ratios are 4.605 and 2.786, respectively.

Among these foreign firms, 124 belong to the high-tech industry. The high-tech firms have an average q ratio of 4.026, compared to 2.284 for firms from all other industries. The simple t-test results, not reported in the table, indicate a significant difference between the two groups. The results for ME/BE ratio are similar. High-tech IPO firms have higher market-to-book ratios, with an average of 6.251, compared to 3.397 on average for all other issuers.

Additionally, 154 of the foreign IPOs are listed in the U.S. in the form of American Depositary Receipts (ADRs). The rest of the IPOs take the form of ordinary shares. Companies from Canada and Israel, for example, typically issue ordinary shares when going public in the United States. The ADR-type IPOs have a mean q ratio of 2.763 while the figure for ordinary-share IPOs is 3.308. The difference, however, is not statistically significant based on the simple t-test.

A total of 160 IPOs are global offerings, which are simultaneous offerings in other markets as well as in the United States. The rest of the IPOs are limited to the U.S. market

alone. The average q ratio for global IPOs is 2.891 while that for pure U.S. offerings is 3.179.

The New York Stock Exchange (NYSE) hosts 133 of the IPOs, the American Stock Exchange (AMEX) 17, and the Nasdaq 135. In addition, eight foreign IPOs are listed in the SmallCap or the OTC market. The results show that the Nasdaq and SmallCap IPOs have higher q and ME/BE ratios, compared to those listed on NYSE or AMEX.

IV. Country-Level Variables and Univariate Analyses

This section describes the country-level variables to be used in this study. Summary statistics, univariate analyses and correlations are also provided.

4.1 The index of economic freedom and corruption

Economic theory indicates that economic freedom affects incentives, productive effort, and the effectiveness of resource use. Economic freedom, above all, is the fundamental right of every human to control his or her own labor and property.

Empirical studies have attempted to use various indicators of economic freedom to examine the relationship between freedom and economic growth. De Haan and Sturm (2000) compare several indicators for economic freedom and test the robustness of the relationship between freedom and growth. Their main conclusion is that economic freedom indeed fosters economic growth.

This study uses the *Index of Economic Freedom*, created by the Heritage Foundation along with the Wall Street Journal. Since 1995 this index has tracked the march of economic freedom of more than 180 countries around the world. The Heritage Foundation describes the economic freedom as the absence of government coercion or

constraint on the production, distribution, or consumption of goods and services beyond the extent necessary for citizens to protect and maintain liberty itself.

The index of economic freedom measures ten components of economic freedom, assigning a grade in each component using a scale from 0 to 100, where 100 represents the maximum freedom. The ten component scores are then averaged to give an overall economic freedom score for each country. The ten components in the index are: 1) Business freedom; 2) Trade freedom; 3) Fiscal freedom; 4) Government spending; 5) Monetary freedom; 6) Investment freedom; 7) Financial freedom; 8) Property rights; 9) Freedom from corruption; and 10) Labor freedom.

For each IPO, we collect data for the economic freedom index and its ten components for the country where the IPO firm is registered, in the IPO year. Since the index starts from 1995, we use the 1995 score for those IPOs that were issued prior to that year.

Table 2 presents the average Tobin's q and ME/BE ratio of U.S.-listed foreign IPOs from each country and the country's economic freedom score. For the 46 nations in our sample, the average score of economic freedom is 68.9. In general, developed countries score higher than less developed countries. Hong Kong has been the freest economy since the coverage was initiated in 1995. Brazil (48.1), Russia (50.7) and China (52.5) have the lowest scores.

Table 2 also presents the freedom from corruption, one of the ten components in the index of economic freedom. Corruption erodes economic freedom by introducing insecurity and uncertainty into economic relationships. The score for the corruption component is derived primarily from the Transparency International's Corruption Perceptions Index (CPI).

For countries that are not covered in the CPI, the Heritage Foundation uses qualitative information from internationally recognized and reliable sources to determine the freedom from corruption score. This procedure considers the extent to which corruption prevails in a country.

The average score for the freedom from corruption is 69.8. New Zealand has the highest score (93.0) while Indonesia (13.0) and Papua New Guinea (20.0) have the lowest scores. The country having the highest q is Bahamas, which has but only one IPO. The q ratio of this IPO is 5.832. IPOs from Germany have the second largest q ratio, with a mean of 5.347. At the other end, firms from British Virgin Islands, the Philippines and Monaco have the lowest q ratios.

Also included in the table is per capita gross national income (GNI). GNI is converted into current U.S. dollars based on market exchange rates. The GNI data are obtained from the World Bank's *World Development Indicators* (WDI) database. The average GNI per capita is \$17,094 for the countries included in our sample.

4.2 The anti-self-dealing index and revised index of anti-director rights

Over the last 20 years, both academic and practical approaches to corporate governance have increasingly focused on the problem of investor expropriation, sometimes also referred to as self-dealing or tunneling. Specifically, those who control a corporation, whether they are managers, controlling shareholders, or both, can use their power to divert corporate wealth to themselves rather than sharing it with the other investors. Various forms of such self-dealing include executive perquisites, excessive compensation, transfer pricing, appropriation of corporate opportunities, self-serving financial transactions such as directed equity issuance or personal loans to insiders, and outright theft of corporate assets.

Djankov et al. (2008) devise a new measure of legal protection of minority shareholders against expropriation by corporate insiders: the anti-self-dealing index. This index focuses on private enforcement mechanisms, such as disclosure, approval, and litigation, that govern a specific self-dealing transaction. Their results are based on answers to a questionnaire distributed to attorneys from Lex Mundi law firms around the world. After processing the respondents' answers, they conducted follow-up conference calls to seek clarifications and to confirm their coding of the data. The 72 countries included in their final sample represent 99.3% of total world market capitalization in 2003. It is shown that the index is sharply higher in common law countries than in civil law countries. Consistent with this pattern, the anti-self-dealing index is lowest in Ecuador (0.08) and highest in Singapore (1.00).

Djankov et al. (2008) show that this theoretically grounded index predicts a variety of stock market outcomes, and generally works better than the previously introduced index of anti-director rights (La Porta, Lopez-de-Silanes, Shleifer, and Vishny, 1997, 1998). Djankov et al. (2008) also provide a revised index for anti-director rights.

We borrow the two indexes from Djankov et al. (2008) as proxy for country risk. As seen from Table 2, the mean anti-self-dealing index for our sample is 0.59, while the index of anti-director rights, on average, is 3.69.

4.3 The law of origin indicators

La Porta et al. (1998) assign each country to one of four legal traditions: English common law, French civil law, German civil law and Scandinavian civil law. They show that laws vary a lot across countries, partly due to differences in legal origin. In general, common laws give investors stronger legal rights than civil laws do, independent of the level

of per capita income. Common law countries give both shareholders and creditors the strongest, and French civil law countries the weakest, protection. German civil law and Scandinavian countries generally fall between the other two.

The legal origin variables are not available for offshore markets such as Bahamas, Bermuda, Cayman Island and British Virgin Islands. We therefore bundle them together to create a separate group, referred to as offshore market. Consequently, together with the four legal traditions, there are five distinctive groups in terms of law origins.

The results are presented in Table 3. Among the four legal traditions, the 22 IPOs from countries with the German civil law origin achieve the highest valuation, with a mean q ratio of 3.60. This is followed by IPOs from English common law countries. The mean q ratio for the 144 IPOs in this subsample is 3.443. Next are the 92 IPOs from French civil law countries, whose average q ratio is 2.471. The average q ratio for the 10 Scandinavian IPOs is 2.443, the lowest among the four legal traditions. Additionally, 25 IPOs hail from offshore markets. These IPOs, on average, have lower q ratios than the four legal traditions. The mean is 2.34 for this group.

We use the Kruskal-Wallis test to investigate if there is any difference in the medians among the five law-of-origin groups. The test results show no significant difference.

Also reported in Table 3 are the mean scores for the economic freedom index, the freedom from corruption, the anti-self-dealing index, the revised index of anti-director rights, and the per capita GNI for each of the five groups. In terms of economic freedom, the order from the highest to lowest is offshore markets (73.3), English common law (72.9), German civil law (69.6), Scandinavian civil law (65.0), and French civil law (61.5). In terms

of freedom from corruption, the order is Scandinavian (89.9), German (75.1) civil law and English common law (75.1), offshore centers (67.1), French civil law (58.6).

Scandinavian countries are the wealthiest, with an average per capita GNI of \$29,329, followed by German law countries (\$27,853), offshore markets (\$20,917), English common law countries (\$17,400), and French civil law countries (\$12,524). On the other hand, English common law nations have on average the highest economic growth rate.

Table 4 presents the correlation coefficients between the various country-level variables. As expected, economic freedom, freedom from corruption, anti-self-dealing and anti-director rights are all highly correlated. In general, they also tend to have high correlations with per capita GNI.

V. IPO Valuation and Country Risk: Empirical Results

The primary focus of the paper is the association IPO valuation with country risk. To this end, we specify the relationship in the following regression:

$$\text{IPO Valuation} = \alpha + \beta X + \gamma Y$$

The proxy for IPO valuation is Tobin's q, calculated using data at the end of the IPO year. The control variables are of two types. The variables in X are offer- and firm-specific variables that may affect the valuation of IPO firms. They include firm size, high tech dummy, global offer dummy, IPO first-day return and the number of underwriting managers. The description of these variables and their potential impact on stock valuation are discussed as follows.

The high tech indicator is a dummy variable that equals one for companies from the high technology industry and zero if otherwise. High tech companies are expected to have

higher valuation, other things equal, at the time of the IPO. This variable is used to control for potential industry effect.

The global dummy is an indicator that equals one for global IPOs, which are offered simultaneously in both the United States and other market places, and zero for IPOs offered exclusively in the U.S. market. Previous research such as Wu and Kwok (2003) and Chan, Wu, and Kwok (2007) show that global offerings, other things equal, have higher valuation than purely domestic offers.

The first-day return is the percentage difference between the first-day close price and the offer price. This variable is used to control for the pre-market demand for the IPO. Previous studies (for example, Ritter and Welch, 2002) have shown that hot IPOs are usually associated with high initial returns.

The number of underwriting managers may also be related to IPO valuation. More underwriters imply more client base and thus higher investor demand. If the demand curve for new shares is not perfectly elastic and downward sloping (e.g., Shleifer, 1986), a firm issuing shares to a larger client base can fetch a high price. Thus, other things equal, IPOs in which more underwriters participate will command higher valuation.

Firm size is proxied by the natural logarithm of total assets (in million dollars) at the end of the IPO year. The impact of firm size on IPO valuation is ambiguous, though. On the one hand, larger firms are often associated with less uncertainty regarding future prospects and hence according to the conventional IPO theory will have higher valuation at the offer. On the other hand, size may be an inverse proxy for growth opportunities. In the later case, larger firms should be associated with lower valuation.

The variables in Y include the law variables and other country-specific variables, described in Section 4. These variables are the central focus of this paper. The economic status of a nation is gauged by the natural logarithm of its gross national income (GNI) per capita.

A country's legal heritage is captured by the five law-of-origin indicators as discussed previously: English, French, German, Scandinavian and Offshore. It is well established in the literature that there is a correlation between a country's legal heritage and its levels of economic growth. The main drawback of these legal heritage indicators, however, is that countries with the same legal heritage are taken as the same, regardless of each nation's distinctive features in its legal system and institutions. The index of economic freedom and other country-level variables overcomes this drawback, as each nation has a distinctive score.

The regression results are reported in Table 5. The first regression includes only the first group of independent variables. The results indicate that high-tech IPOs are associated with higher q ratios. The coefficient estimate of the high-tech dummy is 1.24, and it is significant statistically at the 1% level. The global offer dummy is also positively correlated with IPO valuation, a result consistent with Chan, Wu and Kwok (2007).

At the same time, the coefficient of the size of the underwriting syndicate is significantly positive. This result is consistent with the notion that the demand curve for new shares is elastic. In this case, more underwriters bring more investors and hence enhance the demand for the IPO, leading to higher valuation.

The logarithm of total assets, on the other hand, is inversely related to IPO valuation. Its coefficient is statistically significant at the 1% level. This result can be

interpreted as being consistent with the notion that larger firms are associated with fewer growth opportunities and hence lower valuation.

In the second regression, we add per capital GNI (in natural logarithm) as an independent variable to control for a nation's economic development. The coefficient of the GNI variable is positive, though not significant statistically.

Next, in regression (3), per capita GNI is replaced with the legal indicator variables. A country's legal heritage is captured by the five law-of-origin indicators: English, French, German, Scandinavian and Offshore. To avoid collinearity, only the first four indicators are included in the regression. The results indicate that, compared to those from the offshore markets, IPOs from countries with English, French and German legal origins have higher q ratios. However, IPOs from Scandinavian countries and offshore centers do not have any material valuation difference.

In regression (4) we keep both per capita GNI and the legal indicators as regressors. The results show that none of the legal indicator variables has a significant coefficient estimate.

In regressions (5) to (8), we replace the law-of-origin indicators with one of the four country-risk measures, respectively. In regression (5), the economic freedom index alone is used as a proxy for country risk. The coefficient of the economic freedom index is significantly positive, implying that IPOs from countries with more economic freedom experience are associated with higher valuation.

In regression (6), we replace the index of economic freedom with the Transparency International's freedom from corruption. The results indicate that the corruption variable is

significantly correlated with IPO valuation. Its positive sign implies that IPO firms resident in countries with less corruption are associated with higher valuation at their U.S. listing.

On the other hand, the results from regressions (7) and (8) show that the anti-self dealing index and the anti-director rights index do not affect the post-IPO valuation in any significant way.

In regression (9), both economic freedom and legal indicators are included. The sign and magnitude of the coefficient estimates of the offer- or firm-specific variables are not changed materially. Specifically, high-tech IPOs and IPOs that are offered globally have significantly higher valuation than others. The size of underwriting syndicate is also significantly and positively correlated with the q ratio. On the other hand, the correlation of total assets with IPO valuation is significantly negative.

Turning to the country-level variables, the coefficient of the economic freedom index remains positive and significant. Its magnitude implies that for each 10 point increase in a nation's economic freedom index, the average q ratio can increase by 0.70. On the other hand, neither the GNI variable nor the legal heritage indicators has a significant coefficient estimate in the regression.

What can we conclude from these regression results? First of all, when used alone, the legal heritage indicators, economic freedom and freedom from corruption all have significant impact on the valuation of foreign IPOs listed in the U.S. while the anti-self-dealing index and the revised anti-director rights do not have any impact on IPO valuation. Secondly, the effect of the index of economic freedom and corruption are more pronounced than the legal indicators. The former two country-level risk measures convey richer information about a nation than the legal heritage indicators.

This result is comparable to Bell, Moore and Al-Shammari (2008), who demonstrate that firms from countries with governmental policies and institutional practices that protect the economic freedom of its citizens are significantly less underpriced than IPOs of firms originating from countries experiencing lower levels of economic freedom.

VI. Summary and Conclusions

This paper investigates whether commonly used legal and country risk variables affect the valuation of U.S.-listed foreign IPOs. Based on the law and finance literature, we hypothesize that countries with weak legal institutions or less economic freedom offer weak investor protection and shaky corporate governance. Consequently, other things equal, firms domiciled in such countries should be associated with a higher risk premium or a lower valuation when making their IPOs in a developed market.

We test this hypothesis with a sample of international companies making their IPO debuts in the United States between 1986 and 2002. To this end, we regress Tobin's q , computed at the end of the IPO year as a proxy for IPO valuation, on two types of independent variables. The first type is intended to control for firm- and offer-specific characteristics that have been proven in the existing literature to affect IPO valuation. The second type of variables includes the indicator variable that shows a country's legal heritage, the country's per capita GNI, index of economic freedom, freedom from corruption, anti-self-dealing index, and revised anti-director rights index.

The results show that, when used alone, most of these country-level variables are significantly related to IPO valuation. Specifically, IPOs coming from countries with English, French and German law origins fetch a higher valuation, compared to those from the offshore markets. The index of economic freedom, developed by the Heritage

Foundation and the Wall Street Journal, and the Transparency International's corruption index are also positively associated with IPO valuation. On the other hand, the anti-self-dealing index and the revised anti-director rights index are not related to the valuation of foreign IPOs in any significant way.

Moreover, the index of economic freedom and the corruption index prove to be more pronounced than the legal heritage indicators. The main drawback of these legal heritage indicators is that they fail to capture the distinctive contemporary characteristics of the legal systems and institutions of nations within the same heritage. In other words, countries with the same legal heritage are deemed as the same.

In sum, IPO valuation is affected by country-level variables, especially when the variable is represented by the economic freedom or corruption. Firms hailing from countries with more economic freedom and less corruption fetch a higher valuation when making their IPO debuts in the United States.

References

Aggarwal, R., S. Bhagat, and S. Rangan, 2009, "The impact of fundamentals on IPO valuation," *Financial Management*, 253-284, Summer.

Alesina, A., 1998, "The political economy of high and low growth," *Annual World Bank Conference on Development Economics 1997*. Washington DC: World Bank.

Barro, R.J., 1994, "Democracy and growth," *NBER Working Paper, No. 4909*.

Chan, Y.C., C. Wu, and C. Kwok, 2007, "Valuation of global IPOs: A stochastic efficient frontier approach," *Review of Quantitative Finance and Accounting* 29 (3), 267-284.

Bell, R. G., Moore, C. B., and Al-Shammari, H. A., 2008, "Country of origin and foreign IPO legitimacy: Understanding the role of geographic scope and insider ownership," *Entrepreneurship: Theory & Practice* 32(1): 185-202.

Blass, A., and Yafeh, Y., 2001, "Vagabond shoes longing to stray: Why foreign firms list in the United States," *Journal of Banking & Finance* 25(3): 555-572.

Bruner, R., Chaplinsky, S. and Ramchand, L., 2004, "US-bound IPOs: Issue costs and selective entry," *Financial Management* 33: 39-60.

Bruner, R., Chaplinsky, S., and Ramchand, L., 2006, "Coming to America: IPOs from emerging market issuers," *Emerging Markets Review* 7: 191-212.

Coffee, J., 1999, "The future as history: the prospects for global convergence in corporate governance and its implications," *Northwestern University Law Review* 93, 641-708.

Coffee, J., 2002, "Racing towards the top? The impact of cross-listings and stock market competition on international corporate governance," *Columbia Law Review* 102, 1757-1831.

De Haan, J. and Sturm, J.E., 2000, "On the relationship between economic freedom and economic growth," *European Journal of Political Economy* 16, 215-241.

Ding, Y., Nowak, E., and Zhang, H., 2010, "Foreign vs. domestic listing: An entrepreneurial decision," *Journal of Business Venturing* 25(2): 175-191.

Djankov, S., La Porta, R., Lopez-De-Silanes, F., and Shleifer, A., 2008, "The law and economics of self-dealing," *Journal of Financial Economics* 88: 430-465.

Doidge, C., Karolyi, G. A., and Stulz, R. M., 2004. "Why are foreign firms listed in the U.S. worth more?" *Journal of Financial Economics* 71(2), 205-238.

Erb, C.B., C.R., Harvey, and T.E. Viskanta, 1996, "Political risk, economic risk, and financial risk," *Financial Analyst Journal*, 29-46, November/December.

Foerster, S., and G. A. Karolyi, 1999, "The effects of market segmentation and investor recognition on asset prices: Evidence from foreign stocks listing in the United States," *Journal of Finance* 54, 981–1013.

Francis, B.B., Hasan, I., Lothian, J. R., & Sun, X., 2010, "The signaling hypothesis revisited: Evidence from foreign IPOs," *Journal of Financial and Quantitative Analysis* 45(1): 81–106.

Karolyi, G. , 2006, "The world of cross-listings and cross-listings of the world: Challenging conventional wisdom," *Review of Finance* 10(1): 99-152.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., and Vishny, R.W., 1997, "Legal determinants of external finance," *The Journal of Finance* 52 (3), 1131-1150.

La Porta, R., Lopez-De-Silanes, F., Shleifer, A., and Vishny, R.W., 1998, "Law and finance," *The Journal of Political Economy* 106 (6), 1113-1155.

Lins, K., D, Strickland, and M. Zenner, 2005, "Do non-U.S. firms issue equity on U.S. stock exchanges to relax capital constraints", *Journal of Financial and Quantitative Analysis* 40, 109-133.

Merton, R.C., 1987, "A simple model of capital market equilibrium with incomplete information," *Journal of Finance* 42, 483-510.

Miller, D.P., 1999. "The market reaction to international cross-listings: Evidence from depositary receipts," *Journal of Financial Economics* 51(1), 103-123.

Moore, C.B., Bell, R. G., and Filatotchev, I., 2010, "Institutions and foreign IPO firms: The effects of "home" and "host" country institutions on performance," *Entrepreneurship Theory and Practice* 34(3): 469-490.

Reese, W. A. Jr., and M. S. Weisbach, 2002, "Protection of minority shareholder interest, cross-listing in the United States, and subsequent equity offerings," *Journal of Financial Economics* 66, 65-104.

Ritter, J.R., Welch, I., 2002. "A review of IPO activity, pricing and allocations," *Journal of Finance* 57, 1795-1828.

Shleifer, A., 1986, "Do demand curves for stocks slope downward?" *Journal of Finance* 41, 579-590.

Stultz, R. M., 1999, "Globalization of equity markets and the cost of capital," *Journal of Applied Corporate Finance*, Fall, 8-25.

White, H.S., 1980, "A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity," *Econometrica* 48, 817-838.

Wu, C., Kwok, C.C.Y., 2003, "The pricing of global and domestic initial public offerings by U.S. companies," *Journal of Banking and Finance* 27, 1167-1184.

Wu, C., 2011, "Economic freedom, economic growth and China," *The Chinese Economy* 44 (5), 104-119.

Table 1
Sample Distribution and Summary Statistics

The table presents the sample distribution of the U.S.-listed foreign IPOs completed from 1986 to 2002, and the mean and median Tobin's q and market/book equity ratio. Tobin's q is the ratio of total asset (TA), minus book value of equity (BE), plus market value of equity (ME), over total asset. The market/book ratio is the ratio of market equity over book equity.

Tobin's q and ME/BE by Year					
Year	N	Mean q	Median q	Mean ME/BE	Median ME/BE
1986	2	1.265	1.265	1.604	1.604
1987	7	1.738	1.217	1.999	1.433
1988	3	1.238	1.139	1.424	1.234
1989	6	1.372	1.387	2.263	1.785
1990	3	1.270	0.993	1.512	0.988
1991	6	2.029	2.085	3.434	2.855
1992	17	3.412	2.954	7.133	3.682
1993	27	3.119	2.498	4.676	3.346
1994	26	2.787	1.713	3.400	2.056
1995	24	2.369	1.944	4.560	2.204
1996	59	3.326	2.112	3.441	3.041
1997	41	2.650	2.177	4.881	3.013
1998	21	3.981	1.611	9.947	2.385
1999	19	6.131	6.213	6.025	7.744
2000	18	1.986	1.774	2.430	1.877
2001	7	2.195	1.729	6.642	1.970
2002	7	2.155	1.480	3.865	2.045
Whole Sample	293	3.021	1.925	4.605	2.786
Mean Tobin's q and ME/BE by Industry					
High-tech	124	4.026	2.651	6.251	3.524
Non High-Tech	169	2.284	1.629	3.397	2.052
Mean Tobin's q and ME/BE by Exchange					
NYSE	133	2.300	1.611	3.611	2.163
AMEX	17	1.853	1.254	2.172	1.533
Nasdaq	135	3.657	2.443	5.715	3.134
OTC	2	2.195	2.195	2.640	2.640
SmallCap	6	8.307	2.858	9.224	3.397
Mean Tobin's q and ME/BE by Nature of Shares					
ADRs	154	2.763	1.929	4.099	2.859
Non-ADRs	139	3.308	1.925	5.165	2.496
Mean Tobin's q and ME/BE by Nature of Offerings					
Global IPOs	160	2.891	1.906	5.188	2.697
Pure U.S. IPOs	133	3.179	1.928	3.905	2.840

Table 2
Tobin's q, ME/BE and Law and Economic Indicators by Country

The table presents the mean Tobin's q and market/book ratios for the 293 U.S.-listed foreign IPOs completed in 1986-2002, and the law and economic indicators. Tobin's q is defined as the ratio of total asset (TA), minus book value of equity (BE), plus market value of equity (ME), over total asset. The market/book ratio is the ratio of market equity over book equity. Both ratios are computed based on year-end data obtained from the Standard and Poors' *Research Insight*. The index of economic freedom is obtained from the Heritage Foundation and the Wall Street Journal. The freedom from corruption index is taken from the Transparency International (TI). The anti-self dealing index and the revised anti-director index are obtained from Djankov et al. (2008). The legal heritage variables are obtained from La Porta et al. (1998) and other sources. Data on the per capita gross national income (GNI) are obtained from the World Bank's WDI database.

Country	N	Tobin's q	ME/BE	Economic Freedom Index	TI Corruption Index	Anti-Self Dealing	Anti-Director Rights	GNI per Capita (US\$)
Argentina	4	4.011	5.132	73.7	59.5	0.34	2	7,320
Australia	3	2.974	4.894	74.5	76.0	0.76	4	20,593
Bahamas	1	5.832	9.011	74.0	70.0	/	/	12,500
Belgium	2	2.703	3.174	65.3	79.5	0.54	3	27,990
Bermuda	10	2.016	6.142	74.4	70.0	/	/	30,888
Brazil	2	1.112	1.911	48.1	30.0	0.27	5	3,570
British Virgin	1	0.751	0.699	74.5	70.0	/	/	/
Canada	36	2.956	2.747	69.5	90.2	0.64	4	20,021
Cayman Islands	2	4.003	4.326	74.2	70.0	/	/	/
Chile	12	2.166	2.794	72.0	54.8	0.63	4	3,711
China	11	1.114	1.164	52.5	28.5	0.76	1	787
Cyprus	1	1.343	1.361	68.2	50.0	/	/	13,120
Denmark	2	2.890	3.607	67.3	90.0	0.46	4	28,630
Finland	2	1.320	1.879	63.7	90.0	0.46	3.5	22,750
France	17	2.289	3.155	62.3	82.8	0.38	3.5	25,116
Germany	7	5.347	11.842	67.2	86.4	0.28	3.5	28,554
Greece	6	1.996	5.988	61.0	50.3	0.22	2	11,718
Hong Kong	16	3.858	5.656	90.0	84.8	0.96	5	20,667
Hungary	2	2.901	4.469	55.3	41.0	0.18	2	3,665
Indonesia	3	2.300	3.046	61.3	13.0	0.65	4	1,047
Ireland	4	3.782	5.791	71.6	75.5	0.79	5	19,065
Israel	37	3.766	4.320	64.1	48.6	0.73	4	15,646
Italy	7	2.435	3.578	61.1	75.7	0.42	2	19,174
Japan	1	1.833	1.921	70.7	58.0	0.5	4.5	34,620
Jersey (in Africa)	1	4.987	6.826	74.4	70.0	/	/	/
Luxembourg	1	1.123	1.247	76.4	87.0	0.28	2	43,660
Mexico	19	2.825	5.582	61.0	49.1	0.17	3	4,087
Monaco	1	1.028	1.049	74.5	70.0	/	2	/
Netherlands Antilles	3	3.322	4.090	74.6	70.0	/	/	/
Netherlands	12	3.887	10.428	69.8	89.3	0.2	2.5	25,050

New Zealand	2	3.629	10.184	78.6	93.0	0.95	4	16,365
Norway	3	1.712	2.808	67.0	90.0	0.42	3.5	34,323
Panama	1	1.325	1.518	71.8	50.0	0.16	2	3,110
Papua New Guinea	1	1.557	1.566	54.8	20.0	/	/	1,040
Peru	2	2.622	3.495	62.5	30.0	0.45	3.5	2,190
Philippines	1	0.851	0.815	62.5	33.0	0.22	4	1,030
Portugal	1	1.200	1.454	62.4	70.0	0.44	2.5	10,620
Puerto Rico	2	1.219	1.267	74.5	70.0	/	/	6,580
Russia	3	2.279	3.302	50.7	25.0	0.44	4	2,140
Singapore	4	3.932	15.752	86.3	90.0	1	5	20,375
South Korea	3	2.065	3.680	71.9	61.0	0.47	4.5	10,187
Spain	2	1.078	1.304	62.8	50.0	0.37	5	7,895
Sweden	3	3.624	5.037	62.3	89.7	0.33	3.5	29,187
Switzerland	6	3.425	2.978	78.5	88.0	0.27	3	42,802
Taiwan	3	2.463	3.288	71.8	65.3	0.56	3	/
United Kingdom	30	3.841	4.997	77.2	89.5	0.95	5	19,282
Whole Sample	293	3.021	4.605	68.9	69.8	0.59	3.69	17,094

Table 3
Tobin's q, ME/BE and Law and Economic Indicators by Legal Heritage

The table presents the mean Tobin's q and market/book ratios for the 293 U.S.-listed foreign IPOs completed between 1986 and 2002. Tobin's q is defined as the ratio of total asset (TA), minus book value of equity (BE), plus market value of equity (ME), over total asset. The market/book ratio is the ratio of market equity (ME) over book equity (BE). Both ratios are computed based on year-end data obtained from the Standard and Poors' *Research Insight*. The index of economic freedom is obtained from the Heritage Foundation. The freedom from corruption index is taken from the Transparency International (TI). The anti-self-dealing index and the revised anti-director index are obtained from Djankov et al. (2008). The legal heritage variables are obtained from La Porta et al. (1998) and other sources. The per capita gross national income (GNI), measured in current U.S. dollars, and real GDP growth are obtained from the World Bank's WDI database.

Origin of Law	N	Tobin's q	ME/BE	Index of Economic Freedom	TI Corruption Index	Anti-Self-Dealing	Anti-Director Rights	GNI per Capita (Current US\$)	GDP Growth (%)
English	144	3.443	4.541	72.9	75.1	0.78	4.38	17,400	4.63
French	92	2.471	4.568	61.5	58.6	0.36	2.77	12,524	3.75
German	22	3.60	6.024	70.6	75.1	0.34	3.34	27,853	2.78
Scandinavian	10	2.443	3.451	65.0	89.9	0.41	3.60	29,329	3.20
Offshore	25	2.340	4.326	73.3	67.1	0.22	2.0	20,917	3.59
Whole Sample	293	3.021	4.605	69.0	69.8	0.59	3.69	17,094	4.10
Kruskal-Wallis Test									
Chi-square (p-value)		3.92 (0.42)	3.98 (0.41)	78.78 (0.000)	62.66 (0.000)	88.29 (0.000)	39.48 (0.000)	19.63 (0.001)	12.12 (0.017)

*** = significant at 1% level, ** = significant at 5% level, and * = significant at 10% level.

Table 4
Correlation Coefficients

This table presents the correlation coefficients between the various country-level variables. The index of economic freedom is obtained from the Heritage Foundation. The freedom from corruption index is taken from the Transparency International (TI). The anti-self-dealing index and the revised anti-director index are obtained from Djankov et al. (2008). The legal heritage variables are obtained from La Porta et al. (1998) and other sources. The per capita gross national income (GNI), in current U.S. dollars, and real GDP growth are obtained from the World Bank's WDI database.

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Index of Economic Freedom	1.00									
(2) TI Corruption Index	0.63 ^{***}	1.00								
(3) Anti-Self-Dealing	0.53 ^{***}	0.16 ^{***}	1.00							
(4) Anti-Director rights	0.61 ^{***}	0.34 ^{***}	0.62 ^{***}	1.00						
(5) Per capita GNI	0.41 ^{***}	0.70 ^{***}	0.02	0.21 ^{***}	1.00					
(6) English	0.53 ^{***}	0.23 ^{***}	0.81 ^{***}	0.70 ^{***}	0.05	1.00				
(7) French	-0.57 ^{***}	-0.35 ^{***}	-0.62 ^{***}	-0.66 ^{***}	-0.34 ^{***}	-0.78 ^{***}	1.00			
(8) German	0.06	0.08	-0.29 ^{***}	-0.08	0.32 ^{***}	-0.30 ^{***}	-0.20 ^{***}	1.00		
(9) Scandinavian	-0.08	0.16 ^{***}	-0.13 ^{**}	-0.02	0.26 ^{***}	-0.21 ^{***}	-0.14 ^{**}	-0.05	1.00	
(10) Offshore	0.05	-0.01	-0.12 ^{**}	-0.14 ^{**}	0.06	-0.09	-0.06	-0.02	-0.02	1.00

^{***} = significant at 1% level, ^{**} = significant at 5% level, and ^{*} = significant at 10% level.

Table 5
Regression Results of Tobin's q

This table presents the ordinary least squares (OLS) regression results. The dependent variable is Tobin's q, which is defined as the ratio of total asset (TA), minus book value of equity (BE), plus market value of equity (ME), over total asset. High-tech is an indicator variable which equals one if the issuer is in the high-tech industry and zero if otherwise. Global offer is a dummy that equals one if the offer is global and zero if it is issued exclusively in the U.S. Initial return, or underpricing, is the first-day rate of return of the IPO. N_Managers is the number of underwriters. The gross national income (GNI) per capita is in current U.S. dollars and is obtained from the World Bank's WDI database. The index of economic freedom is obtained from the Heritage Foundation. The freedom from corruption index is taken from the Transparency International (TI). The anti-self dealing index and the revised anti-director index are obtained from Djankov et al. (2008). The legal heritage variables are obtained from La Porta et al. (1998) and other sources. *t*-statistics (in brackets) are computed using heteroscedasticity corrected standard errors (White, 1980).

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Intercept	4.875 [5.21] ^{***}	2.327 [1.91] [*]	4.120 [4.60] ^{***}	2.665 [1.96] ^{*8}	-1.680 [-0.88]	2.187 [1.80] [*]	2.512 [1.37]	1.949 [0.96]	-2.083 [-1.04]
High-Tech	1.240 [3.51] ^{***}	1.252 [3.49] ^{***}	1.157 [3.32] ^{***}	1.199 [3.29] ^{***}	1.288 [3.63] ^{***}	1.267 [3.56] ^{***}	1.249 [3.36] ^{***}	1.217 [3.16] ^{***}	1.290 [3.57] ^{***}
Global Offer	0.631 [1.71] [*]	0.603 [1.59]	0.619 [1.70] [*]	0.621 [1.59]	0.774 [2.05] ^{**}	0.714 [1.88] [*]	0.633 [1.65] [*]	0.690 [1.71] [*]	0.683 [1.81] [*]
Initial Return	1.138 [1.10]	1.055 [0.94]	1.085 [1.01]	1.017 [0.87]	0.905 [0.85]	1.071 [0.97]	1.056 [0.94]	1.021 [0.91]	0.884 [0.82]
N_Managers	0.170 [2.61] ^{***}	0.194 [2.62] ^{***}	0.196 [3.05] ^{***}	0.191 [2.77] ^{***}	0.183 [2.36] ^{**}	0.189 [2.48] ^{**}	0.196 [2.64] ^{***}	0.201 [2.58] ^{***}	0.201 [2.72] ^{***}
Ln (TA)	-0.601 [-3.43] ^{***}	-0.648 [-3.37] ^{***}	-0.637 [-3.40] ^{***}	-0.648 [-3.36] ^{***}	-0.645 [-3.37] ^{***}	-0.638 [-3.36] ^{***}	-0.656 [-3.29] ^{***}	-0.652 [-3.33] ^{***}	-0.70 [-3.63] ^{***}
LN (GNI per capita)		0.223 [1.60]		0.140 [0.70]	0.265 [1.87] [*]	0.138 [1.02]	0.211 [1.10]	0.214 [1.11]	0.130 [0.66]

			0.975 [2.25]**	0.761 [0.91]					0.734 [0.88]
English									
French			0.992 [2.27]**	0.705 [0.75]					1.546 [1.56]
German			1.568 [1.69]*	1.386 [1.31]					1.615 [1.56]
Scandinavian			0.573 [1.27]	0.426 [0.52]					0.985 [1.15]
Economic Freedom					0.05 [2.85]***				0.07 [3.21]***
TI Corruption Index						0.016 [2.72]***			
Anti-Self-Dealing							0.007 [0.01]		
Anti-Director Rights								0.127 [0.81]	
Adj. R ²	0.157	0.165	0.155	0.157	0.178	0.173	0.159	0.161	0.175
F-value	11.91***	10.15***	6.97***	6.15***	9.61***	9.29***	8.21***	8.28***	6.35***

*** = significant at 1% level, ** = significant at 5% level, and * = significant at 10% level.