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ABSTRACT

This paper considers the question of whether raising capital is an important reason why firms go public. Using a sample of 16,958 initial public offerings from 38 countries between 1990 and 2003, we consider differences between firms that sell new, primary shares to the public, and existing secondary shares that previously belonged to insiders. Our results suggest that the sale of primary shares is correlated with a number of factors associated with the firm's demand for capital. In particular, issuance of primary shares is correlated with higher increases of investment, higher repayment of debt and increases in cash, and more subsequent capital-raising through seasoned equity offers. Since 79% of all capital raised through IPOs in our sample is from the sale of primary shares, we conclude that capital-raising is an important motive in the going-public decision.

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An initial public offering (IPO) is generally perceived as one of the most important milestones in a firm's lifecycle. It allows the firm to access the public equity markets for additional capital necessary to fund future growth, while simultaneously providing a venue for the initial shareholders to sell their ownership stake. From investors' perspective, an IPO provides a popular choice for investors, although the wisdom of investing in them has been challenged by academic evidence (see Ritter (1991)). It is no wonder that IPOs, especially the large ones, draw so much attention from the press.

Reflecting the importance of the going public decision, the academic literature on IPOs has been voluminous. Yet, perhaps surprisingly, the vast majority of empirical literature has ignored the underlying reasons why firms go public. Instead, it has focused on the underpricing, the long-run performance, and the time-clustering of IPOs (see Jenkinson and Ljungqvist (2001) or Ritter (2003) for surveys). Of the recent theoretical papers on the going-public decision, Chemmanur and Fulghieri (1999) focus on the capital-raising aspect of an IPO while Zingales (1995) and Mello and Parsons (1998) emphasize the sale of executives' shares and eventual change of control. The extent to which these various explanations explain actual firms' reasons for going public is largely unexplored.

The likely reason why there has been so little empirical work addressing the reasons for going public is that the most straightforward way to study the issue would be to compare the characteristics of firms that chose to go public with the firms that remained private. However, such a study would require extensive data on private firms, which generally are not available. One paper that is able to use this approach is Pagano, Panetta, and Zingales (1998) (PPZ), which utilizes a database containing information on 69 Italian firms that went public between 1982 and 1992, as well as a number of private Italian firms that did not go public but met the listing requirements of the public exchanges during the same time period. These authors conclude firms in their sample choose to go public not to finance future investments and growth, but rather to rebalance their leverage and to allow the managers to liquidate their positions.

Although these findings may hold for the sample considered by PPZ, it is not obvious that their results automatically extend to other countries and periods. For example, Mikkelsen et al. (1997) document that US IPOs are generally followed by a large growth in assets. While Mikkelsen et al. contains no explicit linkage between the firms' growth to the capital raising involved with the IPO, this finding is at least suggestive of the view that firms go public so that they can raise public equity capital to finance growth. To understand the motivations behind going public, one must consider a larger sample than that used by PPZ, preferably from a number of different countries. Unfortunately, the kind of data on private companies that PPZ have access to is not readily available for most countries. Therefore, one must use an alternative approach.

One such approach is to consider cross-sectional patterns in a sample of IPOs. IPOs differ along many dimensions; a particularly useful one for this purpose is the identity of the shares being offered to the public for sale. Some IPOs involve primary offerings of new shares, while others consist of the secondary sale of shares already held by insiders. A third group is made up of a combination of primary and secondary offerings. It seems plausible that differences between primary and secondary offerings could reflect differences in the underlying motivation of the IPO. In particular, IPOs that involve secondary offerings are likely to be driven by a desire for liquidity by the firm's executives, while primary offerings are more likely to reflect a demand for capital.¹ Of course these explanations are not mutually exclusive. Any IPO, even one in which the primary motive is to raise capital, nonetheless provides liquidity for executives and an IPO done as a secondary offering also allows the firm to raise equity capital from public markets subsequently.

This paper attempts to provide some insights into the underlying motives for IPOs by considering differences between the primary, secondary and combined offerings. We test the hypothesis that primary offerings are related to factors associated with the demand for capital, such as subsequent investment and

¹ Existing theoretical models do not seem to incorporate these differential motives simultaneously. For example, Chemmanur and Fulghieri(1999)'s model considers sale of primary shares to fund a new investment project, while Zingales(1995) and Mello and Parsons(1998) focus on the sale of secondary shares and does not model new investment and production activity.

seasoned equity offers. The extent to which primary offerings are correlated in the data with factors related to demand for capital measures the extent to which these offerings are motivated to raise capital. In contrast, if secondary offerings are not associated with demand for capital by the firm, they are likely motivated by factors that we cannot measure, such as executives' desire for liquidity.

First, we examine the distribution of types of shares offered at IPOs across countries using a sample of 16,958 IPOs from 38 countries between 1990 and 2003. We find that the proportion of secondary shares is the highest in European countries and the lowest in Asian countries excluding Japan. The differences between countries and across regions seem economically large and potentially reflect important differences in the economic institutions of these countries.

We next relate the types of IPO offerings with the subsequent increases in various accounting variables that are likely related to future investment and a firm's financial condition. We find that primary only offerings have the highest increases in all the variables, followed by combined offerings and secondary only offerings. Moreover, the value of the primary offerings, normalized by assets, is significantly correlated with increases in inventory, net property, plant and equipment (PPE), capital expenditure and R & D expenditure up to four years after the IPO even after controlling for firm size, as well as year, country, and industry fixed effects. In contrast, the value of the secondary offerings is substantially less related to these variables. These findings suggest that a motivation for using primary offerings is to raise capital, while IPOs done as secondary offerings reflect other motivations.

We estimate the increase in a number of alternative accounting variables that represent possible uses of the capital raised at the IPO. The largest increase is for cash holdings; for every dollar raised in the IPO, cash holdings rise by 68.8 cents per dollar raised in the year after the IPO. This decreases to 50.0 cents over a four-year period after the IPO as the money is spent on various projects. The largest expenditures appear to be on R&D and capital expenditures, which increase by 17.1 cents and 8.3 cents respectively per dollar raised in the year following the IPO, and by 88.2 cents and 38.7 cents over a four-year period. In addition, inventory rises as well (2.3 cents in the first year and 5.3 cents over a four-year period) and long-term debt is reduced (4.2 cents in the first year and 10.4 cents over a four year period).

We examine the extent to which these findings hold across geographical regions, and between civil and common law countries. We find that firms in all countries appear to rely on IPOs to raise capital to finance investment, although there are some differences across regions and legal regimes.

Finally, we examine the extent to which IPO offer type is related to subsequent capital raising. We first find that primary-only IPOs are generally followed by primary-only seasoned equity offerings (SEOs) and secondary-only IPOs are generally followed by secondary-only SEOs. In particular, 65% of SEOs that followed primary-only IPOs are also primary only and 64% of SEOs that followed secondary-only IPOs are also secondary only. This finding supports the view that secondary offerings are more related with liquidity motives. We also measure the value of capital raised following IPOs, and find that the proportion of new capital out of total proceeds raised through SEOs is the highest for primary only IPOs, followed by combined and secondary only IPOs. This finding holds both in a univariate setting, and in a multivariate framework controlling for other relevant factors. These results show that both the probability and the magnitude of subsequently raised fresh new capital following an IPO are positively correlated with the relative proportion of primary offerings in the initial public offering. Presumably, the IPOs done to raise capital as primary offerings are from firms with an ongoing demand for capital; subsequent to the offering these firms are likely to reenter the equity market to raise more capital. In contrast, when IPOs are done as secondary offerings for liquidity motives, then the firm is less likely to have an ongoing demand for capital, so subsequent offerings are less likely to involve raising new capital.

Overall, the results are consistent with the view that initial public offerings, when done through a primary offering, are motivated in large part to raise capital. Firms doing primary offerings tend to have higher increases in capital expenditures and R&D than firms doing secondary offerings. Subsequent to the IPO, they raise more capital through SEOs than do firms doing secondary offerings. Since 79.4% of the money raised in initial public offerings is through primary offerings, our findings suggest that demand for capital is a primary motive for going public.

Our results also have implications for the overall view of equity markets as a capital-raising tool. Some authors, most notably La Porta et al. (1997) have argued that in much of the world, especially in

civil law countries, equity markets are not used very commonly to raise capital. Our findings suggest an alternative conclusion; in these countries firms raise substantial quantities of equity capital through initial public offerings. When they do so, they predominately use primary offerings, the proceeds of which are then used to finance new investment.

The rest of the paper is organized as follows: Section I describes our data source and our sample. Section II provides distribution of IPO offer types across the 38 countries. Section III presents the distribution of subsequent increases in assets and expenditures for each of the 3 IPO offer types and examines the relationship between IPO type and the increase. Section IV examines the effect of IPO offer type on the probability and magnitude of subsequent capital raising activity. Section V is a short conclusion.

I. Data Sources and Sample Description

A. Data Sources

We obtain our IPO data from SDC Global New Issues Database. This database provides information on total proceeds and the number of primary and secondary shares offered for each IPO and SEO. WorldScope provides the accounting data for our sample IPOs. We augment WorldScope with Standard and Poor's Xpressfeed, which provides US and international data comparable to Compustat. SDC has very limited coverage for non-US IPO's prior to 1990, so we set our sample period to be from January 1990 to December 2003.

From all IPOs reported in SDC, we first filter out those that do not have information on total number of shares or the composition of primary and secondary shares. We also exclude IPOs where the total amount of proceeds is inconsistent with the offer price and the number of shares offered by more than \$5 million. A total of 2,301 IPOs were dropped using these initial filters. We then exclude the following firms from our sample:

- (a) All utilities (3 digit SIC's from 491 to 494) : 250 IPOs
- (b) All financials(1 digit SIC 6) : 5,057 IPOs

- (c) All privatizations : 173 IPOs.²
- (d) All telecoms(2 digit SIC 48): 655 IPOs³
- (e) All transition economies: 1,117 IPOs from China, Hungary and Poland
- (f) All nations with fewer than 10 IPO's during the sample period: 89 IPOs from 32 countries

These requirements are imposed to identify a sample of non-regulated private firms that go public.⁴ After applying these filters, we end up with 16,958 IPOs in 38 countries, each occurring between 1990 and 2003.⁵

B. IPOs around the World

Table I presents descriptive statistics of our global IPO sample. Panel A presents the number of IPOs and panel B shows the total proceeds raised through IPOs for each region and year in our sample. The U.S. is by far the largest IPO market, accounting for 27% of all IPOs and 45% of total proceeds.⁶ European IPOs are somewhat modest both in numbers and amount in early 1990's, but start to pick up in the mid 1990's and surpass US in the number of total IPOs by late 1990's. Asian IPOs peak in mid 1990's and then drop significantly in 1998-99 after the financial crisis of 1997. Although Asian IPOs comprise 37% in terms of numbers, they only account for 12% of the total proceeds, implying that Asian IPOs are generally smaller on average than other IPOs.⁷

² The privatizations are identified from Boutchkova and Megginson (2000), Belke and Schneider (2003), and *Hoover's Online*. For all IPOs which raised more than \$100 million that are not identified as privatizations in the previous two papers, we manually checked *Hoover's Online* to verify whether the IPO was a privatization or not. For those IPOs that were not identified on *Hoover's Online*, we checked the company's website if it had one as of June 2004.

³ Many of the telecom IPOs overlap with privatizations. When they do not, they tend to be very large joint ventures between existing telecom giants.

⁴ Cross listings such as ADR/ADS, GDR/GDS, or direct cross listings are included in the sample as long as it is done concurrently with the domestic IPO or it is the first listing in any public exchange. Multiple issues are counted as one IPO, and the total amount as well as the number of shares are aggregated after adjusting for differences in offer prices.

⁵ Roughly two-thirds of these IPOs do not have accounting information just prior to an IPO, partly because our accounting data stops at 2001. We drop these IPOs in sections III and IV, but include them in section II.

⁶ The amount raised through ADR/ADSs is included in the country of origin rather than in the U.S. Canadian domestic IPOs from 1990 to 1992 are all dropped according to the initial filter, and their coverage stops at 2001 in our dataset.

⁷ Almost 60% of Asian IPOs are from India, and Indian IPOs tend to be very small. The median value of proceeds in India is only US\$ 0.7 million, compared to the global median of US\$ 30 million.

II. Distribution of IPO offer types

IPOs vary along a number of dimensions, an important one of which is the type of shares being sold to the public. Firms have a choice of selling new, ‘primary’ shares, or existing, ‘secondary’ shares. A primary offering increases the number of shares outstanding and raises capital for the firm, while secondary offerings keep the number of shares outstanding constant and has no revenue consequences to the firm. A third type of offering is a combination of the two, selling some new shares and some previously-owned shares.

Table II presents statistics on the three types of IPOs in our sample. Panel A shows the number of IPOs that belong in each of the three categories, and panel B presents total proceeds from each type. Panel B also separates combined offerings into primary shares and secondary shares and reports the proceeds for each type within the combined category. Clearly, primary offerings are the most common, comprising 76.2% of all offerings. Pure secondary offerings are relatively uncommon, making up only 1.7% of the sample, while the remaining 22.2% are combinations of primary and secondary offerings.

Table II indicates that there are noticeable differences across countries and regions. For example, most of the Asian IPOs offer primary shares only. Except for Japan, Hong Kong and Singapore, where the financial markets are the most developed, primary only IPOs are well over 90% of the total IPOs in Asia. Secondary only offerings are extremely rare in this region. Even combined offerings are not common except in Japan and Hong Kong.

Compared to Asian IPOs, European IPOs exhibit relatively higher percentages of secondary only offerings, and lower percentage of primary only offerings. These differences probably reflect differences in the institutional environment and are consistent with the high rate of secondary offerings in Europe that has been documented elsewhere. In the PPZ sample, for example, of the 69 IPOs, only 28 were primary-only offerings. Jenkinson and Ljungqvist (2001) report that 67% of IPOs in Portugal and 23% in Germany were entirely secondary in the 1980s and early 1990s. In addition, Jenkinson and Ljungqvist report that European IPOs have begun using a higher proportion of primary offerings since the early 1990s. Both the fact that Europe has traditionally had a high proportion of secondary offerings, as well as

the recent change towards primary offerings within Europe, suggest that perhaps the conclusions of PPZ should be reexamined, since that study contains only 69 IPOs from one European country from the 1980s.

We can infer the value raised from primary shares and secondary shares respectively by separating out the proceeds from the combined category into those raised from primary shares and those raised from secondary shares and adding them back into proceeds from primary only and secondary only offerings. The last five columns of panel B in table II presents these calculations. Overall, 79% of the total proceeds are fresh new capital raised through primary shares. However, there are distinct cross-country variations. Except for Japan and Malaysia, roughly 90% or more of the total proceeds in Asian IPOs are fresh new capital. In contrast, the proportion of fresh capital is smaller in European countries. The lowest proportion is in France and Spain, where less than 60% of the total amount raised is from primary shares. The U.S. falls between Europe and Asia, with 82% of capital being raised from primary shares.

III. IPO Offer Type and Subsequent Growth

A. Univariate Analysis of Changes in Accounting Variables across IPO Offer Types

Presumably, there are a number of reasons why firms differ in the type of shares they offer in an IPO. The large differences across countries undoubtedly reflect institutional features of the particular markets. Yet, in addition to these institutional features, it seems plausible that the underlying reasons for going public will also affect the choice of what type of shares will be offered in an IPO. In particular, if a firm chooses to go public so that its managers can sell their shares, we expect that the firm is likely to use a secondary or combined offering. On the other hand, if it is going public to raise capital to be able to fund investments or to rebalance its capital structure, then it likely would use a primary offering. Our goal is to examine the view that differences in the underlying objectives of firms will lead to differences in the types of shares being offered.

We first compare the types of offers with changes in characteristics plausibly associated with potential reasons for going public. We consider seven accounting variables that potentially proxy for

future investment and growth: total assets, inventory, net PPE, capital expenditure, R&D, cash, and reduction in long-term debt. To minimize the impact of outliers, we focus on a logarithmic transformation of each variable. For balance sheet items (total assets, inventory, net PPE and cash), we calculate the log of one plus the change in each variable normalized by total assets prior to the IPO: $\ln[(V_t - V_0)/total\ assets_0 + 1]$, where V is the variable being measured, and years are normalized so that year 0 is the fiscal year end just prior to the IPO and year t denotes number of years after year 0. For income statement and cash flow statement items (capital expenditure, R&D and reduction in long-term debt), we consider the log of one plus the accumulation in each variable since the IPO, normalized by total assets prior to the IPO: $\ln[(\sum_{i=1}^t V_i)/total\ assets_0 + 1]$. As a consequence of this transformation, the resulting distribution of each variable is more symmetric than it is without the transformation.

Table III reports the means and medians of this normalized increase for each variable, broken down by IPO offer type. This table computes these changes for periods between one year and four years in length. It also presents t-statistics for comparisons of means between the primary-only and combined groups, and between the combined and secondary-only groups.⁸

Except for a few cases, increases are the largest in the primary only group, followed by the combined group. IPOs that only offer secondary shares exhibit the lowest increases in most cases. Moreover, these differences in increases in these variables between IPO offer types are generally statistically significant.

The accounting variables from Table III can be grouped into three categories, reflecting firm size (total assets and inventory), investments (net property plant and equipment, capital expenditures, and research and development), and financial flexibility (cash and long term debt reduction).⁹ The relation between the increases of each category of variables and the type of shares offered can be interpreted relatively easily.

⁸ The bold letters in this table and in subsequent tables indicate statistical significance at less than the 5% level.

⁹ Capital expenditures and reduction in long-term debt are directly taken from the cash flow statement, and reflect cash outflows from investing and financing activities, respectively.

The correlation between IPO type and the increases in the size variables (total assets and inventory) probably reflects that primary offers are used at the fastest growing firms. Firms that are growing the fastest probably have the greatest demand for external capital, to pay for both direct investments and indirect investments in activities such as advertising, as well as to fund increased working capital that could be reflected in the increases of inventories.

While the correlation between increase in size and IPO type could come through a number of channels, the correlation between the increases in the investment variables (net PPE, capital expenditures, and research and development) and the type of IPO provides more direct evidence. In particular, it seems likely that firms increasing investments most rapidly have the greatest demand for capital, and thus choose to issue primary shares when they go public. A desire to fund investments in capital expenditures, research and development, as well as elements of net property, plant and equipment could lead some firms to go public. In contrast, firms that go public to allow managers to cash out through secondary offers will have, on average, a lower demand for capital. As a result, we could observe the pattern documented in Table III, in which primary offers are associated with higher increases in investment than secondary offers.

Finally, both the increases in cash holdings and cash outflows used to reduce long-term debt are consistent with the view expressed by PPZ that firms go public to rebalance their capital structure. Firms wanting to pay down debt or keep cash in reserve to preserve financial flexibility issue primary shares when they go public to raise capital for this purpose. Consistent with this finding, the companies that issue primary shares have the highest average debt to total capital ratios (0.75 vs. 0.68 for combined offers and 0.62 for secondary offers) while after they go public, the order is reversed, the firms issuing primary offers having the lowest debt to total capital ratios (0.37 for primary, 0.40 for combined, and 0.59 for secondary).

In summary, the differences in normalized increases in the seven variables across different types of IPO offerings for various horizons suggest that the firms in each group might have different

motivations for going public. Firms issuing primary shares appear to use the capital both to increase investment, and to increase financial flexibility, presumably to be able to fund future investments.

Yet, while these comparisons are suggestive, they omit at least four potentially important considerations. First, Table II documents that type of IPO is highly correlated with the place of issue and accounting variables are likely to be so as well, for no other reason than the fact that accounting is done differently in different countries. Second, Jenkinson and Ljungqvist (2001) suggest that there has been a secular trend towards primary issues at least in Europe, which should be controlled for econometrically. Third, the univariate comparisons make no use of the quantity of equity that is issued, which certainly could affect the use of the funds. Finally, we do not consider differences within the ‘combined’ category; presumably a firm that issues 99% primary shares and 1% secondary is different from one that issues 99% secondary and 1% primary. We next consider the normalized increases in our accounting variables in a multivariate setting, controlling for these factors.

B. Multivariate Analysis of Changes in Accounting Variables across IPO Offer Types

To analyze the relation between IPO type and increases in the seven accounting variables, we use a continuous rather than a discrete characterization of IPOs. This approach allows us to analyze explicitly the relative proportion and values of secondary and primary shares. The hypothesis we test is that once other relevant factors are controlled for, a dollar of new capital raised through a primary issue is associated with a larger change in each accounting variable than a dollar going to managers through a secondary issue.

To test this hypothesis, we consider two alternative specifications. The first enters different kinds of capital separately, to examine whether each kind of capital has a different effect on each accounting variable. For convenience, we will refer to the proceeds from primary shares as ‘primary capital’ and proceeds from the secondary shares as ‘secondary capital’. In particular, we estimate:

$$Y = \beta_1 \ln \left[\left(\frac{\text{primary capital}}{\text{total assets}_0} \right) + 1 \right] + \beta_2 \ln \left[\left(\frac{\text{secondary capital}}{\text{total assets}_0} \right) + 1 \right] + \beta_3 \ln[\text{total assets}_0] + \text{FE} + \varepsilon \quad (1)$$

where $Y = \ln[(V_t - V_0)/total\ assets_0 + 1]$ for $V =$ total assets, inventory, net PPE or cash, and

$$= \ln[(\sum_{i=1}^t V_i / total\ assets_0) + 1] \text{ for } V = \text{capital expenditure, R\&D or reduction in LT debt.}$$

FE represents fixed effects and includes dummy variables for year, country and 2 digit SIC codes to control for time, country and industry specific effects. Log of total assets is also included as an additional control variable to capture any potential size related effect. We estimate this equation measuring changes in accounting variables for varying periods of time up to four years after the IPO. In each case, each variable is normalized by the book value of assets prior to the IPO.¹⁰

Second, we consider a specification in which we enter the fraction of primary shares sold out of total shares sold as an independent variable. This ratio equals one if only primary shares are offered, and zero if only secondary shares are offered. Combined offerings have values between zero and one, with mostly primary offerings being closer to one and mostly secondary being closer to zero. We estimate:

$$Y = \gamma_1 \cdot \left(\frac{\text{primary shares offered}}{\text{total shares offered}} \right) + \gamma_2 \ln \left(\frac{\text{total proceeds}}{\text{total assets}_0} \right) + \gamma_3 \ln[\text{total assets}_0] + \text{FE} + \xi \quad (2)$$

In addition to the fraction of primary shares sold, we also control for the proceeds of the IPO, scaled by the company size, and also log of total assets as well as year, country and industry fixed effects. A finding that the relative proportion of primary shares affects the increases in the accounting variables would suggest that in cases where the firm issues primary shares, it does so at least partially to raise new capital.

Specification (1) is structured to examine which of the two, the fresh capital raised or the proceeds from the sale of secondary shares, has a larger effect on subsequent growth. Therefore, we compare the relative magnitudes of β_1 and β_2 and test if the difference between the two is statistically significantly different from zero. Specification (2) is focused directly on whether the fraction of primary shares explains the increases in our dependent variables, once we control for the size of the IPO relative to firm size. The value of fresh capital equals total proceeds multiplied by the relative proportion of primary shares, and the value of secondary shares sold equals total proceeds multiplied by one minus this

¹⁰ We exclude those IPOs where the value of the total asset prior to the IPO is less than 5% of the total proceeds (2.9% of the sample) from the following regressions. Including these IPOs in the regressions yields similar results.

ratio. Thus, Specification (1) puts emphasis on combined effect of the relative proportion of primary shares and total proceeds, whereas Specification (2) aims at picking up the pure effect of this proportion, independent of the relative size of IPO.¹¹

Table IV presents estimates of these equations, but does not report the country, year, and industry fixed effects for the sake of brevity. Panel A of Table IV, containing estimates of Specification (1), indicates that fresh capital has a much stronger relation with the increases of all seven dependent variables than does the proceeds from secondary shares. The effect of fresh capital on the normalized changes in the accounting variables is positive and statistically significantly different from zero in each specification. In contrast, the coefficient on secondary capital is substantially and statistically smaller in each specification and is generally close to zero, although it is statistically positive in some specifications. This effect is consistent with the capital raising motivation for the IPO, as the firms with increasing expenditures are the ones raising primary rather than secondary capital. It also suggests that our equation is picking up the uses of the funds and not some spurious relation arising from econometric misspecification.

This pattern is confirmed by the estimates of Specification (2) in Panel B of Table IV. In this specification, we include the log of proceeds normalized by assets, as well as the fraction of primary shares in the offering. With each choice of dependent variable, the coefficient on the relative proportion of primary shares is positive and significantly different from zero, suggesting that primary shares are positively related to increases in accounting variables. In addition, the coefficient on the log of proceeds is consistently positive. The results from this panel confirm that firms increase their expenditures when proceeds are higher in the IPO, and when fresh capital is brought into the firm.

Comparing the coefficients for the equations representing different time horizons used in computing the dependent variables, there is a consistent pattern. For the equations representing changes in expenditures on inventory, PPE, capital expenditures, and R&D, the coefficients on primary capital

¹¹ We have also estimated these equations including firm age as another independent variable with similar results. This variable is only available for approximately 1/3 of the sample, so we choose to report the results without this variable in the equation.

(from Panel A) and on proceeds (from Panel B) are all increasing over time. This pattern suggests that the capital raised is not used all at once but rather partially saved and used in the future. Consistent with this pattern is the fact that the corresponding coefficients on changes in cash holdings have the opposite pattern in each table. These coefficients decrease with the time horizon of the dependent variables, suggesting that firms initially hold the capital as cash and pay it down over time.

A useful way to compare the effects of new cash across different uses is to calculate from each equation the change in the accounting variable implied from a dollar increase in new capital. This value provides a consistent way of comparing the relative importance of alternative uses of the cash raised.¹² We present the results of this calculation in Panel A of Table IV.¹³ For the total assets variable, the implied changes are all close to 1, which is not surprising since the book value of assets mechanically increases dollar for dollar whenever new capital is raised. Nonetheless, the fact that the implied change in assets for a dollar raised is close to a dollar suggests that the specification we use is picking up real rather than spurious effects.

For the other variables, the implied change per dollar raised is largest for the change in cash holdings. In year 1, firms hold 68.8 cents in cash for every dollar they raise, decreasing over time to 50 cents. The implied fraction spent on inventory, net PPE, capital expenditures, R&D, and debt reduction all increases over time. This effect is likely due to firms spending cash acquired in the IPO over a several year time period, as well as to firms that raise primary capital being more likely to raise subsequent capital in the years following the IPO.

This calculation also provides insights into the relative use of the funds raised in the IPO. In the first year after the IPO, it implies that for every dollar raised, R&D increases by 17.1 cents, capital

¹² The calculations are based on a median-sized firm in 1996 in US with 2 digit SIC 73 (business services). For example, dollar changes in inventory for $t = 1$ is calculated as follows: Median primary capital is 24, median secondary capital is 0, and median total assets prior to IPO are 24.453. (All units are in \$US mil). Using these inputs together with coefficients from table IV yields -0.00083 as the predicted value of the log transformation, implying a predicted change of -0.0203 in inventory. Then we add one to median primary capital and repeat the above procedure, which results in a predicted change of 0.00251 in inventory. The difference in the two predicted changes represents the dollar changes in inventory for 1 unit increase in primary capital, which is given by 0.02281.

¹³ We restrict this calculation to Specification (1) because to do so in Specification (2) would be complicated by the fact that an extra dollar of primary capital would affect both the relative proportion of primary shares and total proceeds.

expenditures by 8.3 cents, net PPE by 9.3 cents, inventory by 2.3 cents, and debt is reduced by 4.2 cents. These numbers rise over time, so that over a four-year period, for each dollar raised in the IPO, R&D rises by 88.2 cents, capital expenditures by 38.7 cents, PPE by 24.8 cents, inventory by 5.3 cents, and debt is reduced by 10.4 cents. The relative use of the funds seems clear; by far the largest fraction of money raised in the IPO is used to fund R&D and capital expenditures. A much smaller fraction is used to increase inventories and reduce debt.

Raising capital to fund future growth has been suggested in the literature as an important reason for going public. We interpret the results in this section as supporting this hypothesis for most IPOs, since the majority of new capital (79%), is from the sale of primary shares. As the proportion of primary shares increases, IPOs appear to be mainly aimed at raising capital to fund future growth. The largest uses of the funding appear to be R&D and capital expenditures. On the other hand, as the proportion of secondary shares increases, the motive for funding future investment diminishes. We conjecture that in this case the major motive might be something else, such as eventually selling out the company or obtaining liquidity and diversification.

C. International Differences in Capital-Raising at IPOs

Differences across Regions.

The results just presented suggest that firms around the world issue more primary shares when they have a demand for capital. However, there are well-known differences across countries in terms of how their firms raise capital, their reliance on equity vs. debt markets, and even the types of shares offered in an IPO (see Table II). It is plausible that the underlying reasons for IPOs could differ across regions given the wide variation observed in the institutional structure of financial markets.

To examine whether the underlying reasons for IPOs differ across regions, we break the sample into subsamples based on regions. To ensure sufficient data, we focus on three broad regions. We group North American companies (US and Canada) into one region, European companies into a second, and Asian companies into a third.

For each region, we reestimate Specification (1) from Table IV. We present the results for four of the dependent variables for each of the four time-periods for each region in Panels A-C of Table V.¹⁴ Panel A contains the results for the U.S. and Canada, Panel B for Europe, and Panel C for Asia.

The results for the U.S. and Canada closely mirror those for the entire sample. In each case, the coefficients for primary capital are positive and statistically larger than both zero and the coefficient on secondary capital. The coefficients on change in cash holdings decline with time period length, while the coefficients on R&D, capital expenditures, and debt reduction increase with the time period. The magnitudes of the effects are similar to the entire sample as well. The change in cash holdings per dollar raised declines from 72.2 cents to 46.5 cents, R&D increases from 15.4 cents to 87.2 cents, capital expenditures increase from 7.9 cents to 39.4 cents, and debt reduction increases from 4.5 cents to 10.2 cents.

The estimates for Europe are similar to those reported for the entire sample except that there is no evidence that firms use their new capital to reduce debt in Europe. The magnitude of the effect for R&D and capital expenditures again is increasing with the time horizon, although it seems to be of a smaller magnitude to the entire sample and to the North American subsample.¹⁵ The effect for cash holdings is also similar except that, unlike for the entire sample and the North American subsample, it increases when a four-year horizon is used.

The estimates for Asia are based on substantially smaller samples than for North America and Europe due to data availability. Thus, statistical significance is not as consistent and the patterns of coefficients' sizes are less clear. Nonetheless, it is evident that in Asia as well, firms that go public using primary offerings increase their expenditures on items reflected in the accounting variables we choose, while there is essentially no effect from capital raised through secondary offerings. Interestingly, Asian

¹⁴ We have estimated these equations for each region using the other three dependent variables presented in Table IV, as well as for all seven dependent variables using Specification (2). We omit these results to conserve on space. The results are similar to those reported.

¹⁵ We test the cross equation restriction that coefficients for the primary capital are the same in both regions, allowing for differences in constant terms, and find that the effects are significantly larger in US and Canada for the first two years, but not for longer periods than two years.

firms show dramatic increases in capital expenditures and the effect on R&D is close to zero, which may reflect the characteristics of the industrialization process in the manufacturing sector of this region. Thus, it appears that in all regions, raising capital is an important reason why firms go public.

Common vs. Civil Law.

Another possibility is that international differences in capital-raising are not due to geographic differences, but rather due to differences in legal systems. In a well-known paper, La Porta et al. (1997) suggest that countries with a legal system based on common law protect their shareholders well and their companies are more likely to finance investments through equity. In contrast, companies in countries with a legal system based on civil law are more likely to finance investment with debt, since shareholders are less well-protected and it is more difficult to raise equity. This argument would suggest that when IPOs do occur in civil law countries, the motive is more often to provide liquidity for executives, while in common law countries, the motive would be more often to raise capital.

To examine this possibility, we reestimate our model pooling firms by the legal system in which they operate. In Panel D of Table V, we present estimates of Equation (1) for common law firms, while in Panel E of Table V, we present corresponding estimates for Civil Law firms.

Comparing the two panels, it is evident that there are many more observations from Common Law countries than from Civil Law countries because of the large number of IPOs in the U.S., and for the availability of data for more firms in the U.S. and in the U.K. Yet, it appears from Panel E that when Civil Law firms go public, they do so to raise capital as well. The coefficients on change in cash, R&D, and capital expenditures are all positive, although of a smaller magnitude than for common law countries. But still, they have the same temporal pattern; the change in cash for each dollar raised decreases with the time horizon while the change in R&D and capital expenditures per dollar raised increases with the time horizon. The one difference between the equations in the two panels is that there is evidence that common law firms reduce debt with the cash they raise but civil law firms do not.

We test the cross-equation restriction that the coefficient on fresh capital is the same for common law firms as for civil law firms, allowing each legal regime to have a different constant term. We find that

we can reject the hypothesis that they are equal at the 5% level for slightly less than half of the equations, especially for R&D and cash holdings.¹⁶

It is commonly argued that a major difference between common law and civil law firms is that common law firms are more reliant on equity markets for financing than are civil law firms. Perhaps this claim is true for firms that are already public. The fact that more firms do go public in common law countries than in civil law countries is consistent with this view. However, our findings suggest that when civil law firms do go public, they do so to raise capital in a similar manner to common law firms.

IV. IPO Offer Type and Subsequent Equity Offerings

We have argued that in a cross-section of IPOs, firms' reasons for going public should be reflected in the identity of shares they sell to the public. Consistent with this argument are previous results showing that firms issuing primary shares have larger increase in a number of variables such as capital expenditures and research and development. An additional prediction of this argument is that firms choosing to issue primary shares, which presumably have higher demand for capital than firms issuing secondary shares, will raise more capital in other ways than firms issuing secondary shares. We do not have data on bank loans for our sample and firms issuing an IPO typically do not have access to the public debt markets immediately after going public. Therefore, we focus our analysis on the question of whether firms that have IPOs reenter the public equity market and raise capital through a seasoned equity offer following the IPO.

A. Univariate Tests

Table VI presents the total proceeds and fresh capital raised through SEOs during the two years following an IPO for each of the three IPO offer types, as well as for the entire sample. The total proceeds and fresh capital from original IPOs are also provided for comparison. The last seven columns show the number of SEOs by SEO offer type and also by IPO offer type.

¹⁶ For inventory, common law countries exhibit smaller coefficients than civil law countries.

Conditional on there being an SEO within two years of an IPO, the proportion of fresh capital out of total proceeds raised at SEOs is the lowest when the original IPO offering is secondary. Only 6% of the total proceeds from SEOs are fresh capital if the original IPO offer is secondary only. Out of 56 SEOs that followed the secondary-only IPOs, 64% of them again offered only secondary shares, strongly suggesting that the original IPO was indeed motivated by intentions to eventually sell out. In contrast, for primary-only IPOs, fresh capital raised at the SEO stage accounts for 56% of the total proceeds. Out of 2,386 SEOs that followed the primary-only IPO, 65% of them again offered primary shares only, implying that original IPO was motivated by demand for capital rather than to obtain liquidity.

Overall, there is a clear pattern to these data. Firms in general are more likely to issue secondary shares at an SEO than at an IPO. However, firms that issue primary shares at the IPO are much more likely to issue them again at the SEO. This finding is consistent with the argument that firms that issue primary shares have a higher demand for capital than those issuing secondary shares, suggesting that these firms go public at least in part to facilitate capital raising.

B. Multivariate Tests

We next consider the relation between IPO offer type and subsequent equity offerings in a multivariate context. To do so, we consider specifications similar to those estimated in Table IV, except that the dependent variable reflects subsequent capital raising. We report results using both Specifications (1) and (2), and for the entire sample and also for the subsample of combined offerings. As in the equations reported in Table IV, all equations include fixed effects capturing year effects, country effects and industry effects.

In Panel A-1 of Table VII, we estimate the probability of raising new capital through an SEO in the two years following the IPO. Our dependent variable equals one if the firm raises new capital through an SEO in the two years following the IPO, and zero otherwise. Because this dependent variable is dichotomous, we estimate this equation by logit. Second, in Panel A-2 of Table VII, we estimate the quantity of new capital raised in the two years following the IPO normalized by the total asset. This variable is censored at zero, so we estimate the equation using Tobit. Finally, in Panel A-3, the dependent

variable is the number of SEOs that raised new capital within 2 years of an IPO. This variable is also censored, so we also estimate this equation by Tobit.

In Panel B of Table VII, we test the hypothesis that as more secondary shares are offered at IPOs, the subsequent SEOs will also tend to sell more secondary shares. Specifically, we replace the dependent variables in Panels A-1, A-2 and A-3 with the probability of an at least partially secondary SEO (B-1), the secondary value raised in an SEO (B-2), and the number of at least partially secondary SEOs (B-3). Here, we expect the opposite pattern from that of Panel A; in particular, negative or insignificant coefficients for the value of the new capital raised at the IPO, but significantly positive coefficient for value of secondary shares sold at the IPO. Similarly, we also expect the coefficient for the relative proportion of primary shares to be significantly negative.

Our estimates in Panel A-1 indicate that the probability of raising new equity capital subsequent to an IPO is significantly positively correlated with the new capital raised at IPO for combined offerings, although the coefficient is insignificant when we use all 3 types of IPOs in the regression. In specification (2) however, the coefficients for relative proportion of primary shares are significantly positive when all 3 IPO types are used as well as when only the combined IPOs are used.

The tobit estimates in Panel A-2 exhibit similar and clearer results. Here, we find that the magnitude of the new capital raised subsequent to an IPO is significantly positively related to the quantity of fresh capital raised at the IPO, as well as to the proportion of primary offerings at IPO. Panel A-3, where the dependent variable is the number of SEOs that raised new capital, contains similar results.

Panels B-1, B-2, and B-3 present estimates of similar equations to those in Panels A-1, A-2 and A-3, except that the dependent variables are the number and proceeds of secondary shares from SEOs rather than the number and proceeds of new capital raising SEOs. The estimates in these panels indicate that the number of secondary offerings at the SEO stage and the quantity of secondary capital raised in these offerings is generally positively related to the sale of secondary shares in the original IPO.

Overall, the multivariate analysis suggests that as the relative proportion of new capital raised in the IPO increases, the probability, value of capital raised, and the frequency of subsequent offerings

raising new capital through an SEO all increase. In contrast, when the original IPO involves secondary shares, follow up offerings also are more likely to involve offerings of secondary shares. These results are also consistent with earlier arguments that demand for capital is an important determinant of the type of shares offered in an IPO. When the IPO offers primary shares, as in the majority of IPOs, there appears to be a relatively high demand for capital. This finding is consistent with capital raising being an important determinant of the going-public decision for these firms.

V. Conclusion

Initial public offerings are one of the most visible and most studied events in finance. Yet, the basic question of why firms go public has received astonishingly little attention from the empirical literature. We provide some evidence on this question, using a sample of 16,958 IPOs from 38 countries. Our approach is to recognize that IPOs differ in the type of shares they offer to the public. Some IPOs sell exclusively new, ‘primary’ shares, others sell exclusively ‘secondary’ shares held by insiders, while a third type sells a combination of the two. By comparing the types of IPOs, we are able to provide insight into how the motives for going public vary across types.

We first document some basic facts about the relative proportion of primary and secondary shares offered at the IPO. While firms in most countries issue a majority of primary shares, the proportion varies noticeably across countries, being lowest in European countries and the highest in Asian countries other than Japan.

Next, we test whether the choice of type of shares to issue can explain the differences in normalized increases across firms in a number of accounting variables that are likely to proxy for future growth and investment. Using both univariate and multivariate tests, we find that the amount of primary offerings are significantly correlated with increases in inventory, net property, plant and equipment (PPE), capital expenditures and R & D expenditures up to 4 years after the IPO, whereas the amount of secondary offerings have little or no explanatory power. The largest expenditures are on R&D and capital expenditures. We also find that primary offerings are more likely than secondary offerings to lead to

reductions in debt levels and increases in cash, which presumably ease potential financial constraints facing the firms.

Companies appear to save much of the cash raised and pay it out over a several year period. For each dollar raised, about 69 cents is kept as cash in the first year, declining to 50 cents in year four. Expenditures rise over time; R&D expenditures increase by 17 cents per dollar raised in the first year, increasing to 88 cents in year four. This relation between capital acquired in the IPO and subsequent expenditures holds in different regions of the world, and in countries with both common and civil law.

Finally, we examine the effect of IPO offer type on subsequent equity capital-raising activities. Again using both univariate and multivariate tests, we find that the probability and the magnitude of subsequently raised fresh capital through an SEO within two years of an IPO are positively correlated with the proportion of primary offerings.

Our conclusion is that firms offering primary shares appear to be associated with a higher demand for capital than firms offering secondary shares to the public. Since most IPOs offer at least some primary shares and primary shares represent 79% of the value of the shares sold to the public, this suggests that capital-raising is an important motive for going public. We emphasize that this conclusion is counter to the received wisdom of the profession, which argues that raising capital is not an important reason for going public (see Pagano, Panetta, and Zingales (1998)).

The ability of equity markets to provide financing for firms outside the U.S. and the U.K. has been widely questioned (see La Porta et al. (1997)). Yet, we find that primary offerings are the predominate form of IPO in most of the world, and primary offerings appear to be correlated with a number of factors measuring the demand for capital. These findings are at least suggestive of the idea that firms around the world do in fact use equity markets to raise capital for investment. The extent to which they do so, and the factors that determine across countries the differences in equity markets are important issues not analyzed here, and of course would be good topics for future research.

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Table I**Sample Descriptive Statistics**

This table presents the descriptive statistics for the sample. Panel A presents number of IPOs and Panel B shows the total proceeds raised through IPOs across different regions in the sample. The last row in each panel shows the percentages. The sample period is from 1990 to 2003.

Panel A: Number of IPOs									
Year	Asia (ex Japan)	Japan	Australia & NZ	Cont'l Europe	UK	Latin Am	US	Canada	Total
1990	67	3	4	13			152	3	242
1991	317	55	4	28	2	6	299	2	713
1992	534	17	26	26	15	9	410	4	1,041
1993	717	83	58	45	17	17	523	169	1,629
1994	1,172	135	92	77	90	33	445	161	2,205
1995	1,090	166	27	91	47	6	461	126	2,014
1996	899	139	51	128	143	15	668	198	2,241
1997	223	131	57	200	121	11	449	202	1,394
1998	84	76	26	242	60	3	247	131	869
1999	135	95	84	369	32	3	395	88	1,201
2000	322	189	126	396	168	6	313	102	1,622
2001	209	142	45	110	70	3	70	30	679
2002	221	109	55	53	51	1	64	1	555
2003	254	106	73	23	42	3	51	1	553
Total	6,244	1,446	728	1,801	858	116	4,547	1,218	16,958
%	36.8	8.5	4.3	10.6	5.1	0.7	26.8	7.2	100.0

Panel B: Total Amount of Proceeds (US\$ mil) raised at IPOs									
Year	Asia (ex Japan)	Japan	Australia & NZ	Cont'l Europe	UK	Latin Am	US	Canada	Total
1990	1,193	832	23	448			4,245	70	6,811
1991	3,001	3,657	196	1,522	201	587	10,506	43	19,711
1992	3,821	396	1,533	774	1,278	509	16,471	71	24,853
1993	4,524	3,606	909	3,366	567	1,663	19,600	2,916	37,151
1994	9,436	6,298	2,433	4,252	4,323	2,100	15,005	2,114	45,961
1995	7,822	7,385	1,206	10,786	2,318	717	21,844	886	52,964
1996	6,262	5,435	1,165	9,903	5,467	944	32,688	1,691	63,555
1997	7,845	2,174	1,094	10,955	5,566	1,157	23,693	2,717	55,201
1998	1,645	2,148	209	15,093	5,328	44	19,341	1,278	45,086
1999	7,129	5,152	1,226	25,893	3,853	383	42,751	438	86,824
2000	5,123	10,854	1,336	34,847	6,534	692	32,866	1,283	93,534
2001	5,920	4,180	453	5,578	1,769	1,813	22,265	531	42,509
2002	4,794	2,204	506	3,084	3,539	122	11,813	1	26,063
2003	4,418	4,221	2,221	254	2,856	81	6,734	1	20,785
Total	72,932	58,543	14,509	126,754	43,598	10,812	279,822	14,038	621,009
%	11.7	9.4	2.3	20.4	7.0	1.7	45.1	2.3	100.0

Table II
Distribution of IPO Offer Types

This table presents the distribution of IPO offer types across the countries in our sample. An IPO is characterized as primary only, secondary only or combined offering, according to the type(s) of shares being sold. Panel A presents the number of IPOs and Panel B shows the total proceeds. The percentages are reported in parentheses. The sample period is from 1990 to 2003.

Region	Nation	Panel A: Number of IPOs						Total issues number
		Primary only		Secondary only		Combined		
		Number	%	number	%	number	%	
Asia	Hong Kong	432	(81.1)	2	(0.4)	99	(18.6)	533
	India	3,582	(97.7)	53	(1.4)	30	(0.8)	3,665
	Indonesia	148	(98.7)	1	(0.7)	1	(0.7)	150
	Malaysia	388	(93.3)	7	(1.7)	21	(5.0)	416
	Pakistan	177	(99.4)	1	(0.6)			178
	Philippines	57	(95.0)			3	(5.0)	60
	Singapore	275	(89.9)	3	(1.0)	28	(9.2)	306
	South Korea	280	(99.6)			1	(0.4)	281
	Taiwan	454	(99.3)	2	(0.4)	1	(0.2)	457
	Thailand	197	(99.5)			1	(0.5)	198
	Japan	196	(13.6)	9	(0.6)	1,241	(85.8)	1,446
Pacific	Australia	602	(87.6)	20	(2.9)	65	(9.5)	687
	New Zealand	35	(85.4)	2	(4.9)	4	(9.8)	41
Europe	Austria	28	(71.8)	2	(5.1)	9	(23.1)	39
	Belgium	29	(64.4)	1	(2.2)	15	(33.3)	45
	Denmark	31	(64.6)	2	(4.2)	15	(31.3)	48
	Finland	29	(60.4)	4	(8.3)	15	(31.3)	48
	France	387	(78.7)	37	(7.5)	68	(13.8)	492
	Germany	256	(65.0)	7	(1.8)	131	(33.2)	394
	Greece	126	(96.9)			4	(3.1)	130
	Ireland	18	(72.0)			7	(28.0)	25
	Israel	77	(77.8)			22	(22.2)	99
	Italy	68	(54.8)	10	(8.1)	46	(37.1)	124
	Netherlands	36	(46.2)	6	(7.7)	36	(46.2)	78
	Norway	73	(92.4)			6	(7.6)	79
	Portugal	7	(70.0)	3	(30.0)			10
	Spain	21	(60.0)	8	(22.9)	6	(17.1)	35
	Sweden	53	(58.2)	11	(12.1)	27	(29.7)	91
	Switzerland	26	(50.0)	8	(15.4)	18	(34.6)	52
	UK	751	(87.5)	9	(1.0)	98	(11.4)	858
Turkey	11	(91.7)	1	(8.3)			12	
Latin Am	Argentina	6	(46.2)	4	(30.8)	3	(23.1)	13
	Bermuda	14	(73.7)			5	(26.3)	19
	Brazil	10	(66.7)	2	(13.3)	3	(20.0)	15
	Chile	14	(87.5)	1	(6.3)	1	(6.3)	16
	Mexico	29	(54.7)	4	(7.5)	20	(37.7)	53
North Am	Canada	897	(73.6)	9	(0.7)	312	(25.6)	1,218
	US	3,096	(68.1)	53	(1.2)	1,398	(30.7)	4,547
	Total	12,916	(76.2)	282	(1.7)	3,760	(22.2)	16,958

Table II— *Continued*

		Panel B: Total Amount of Proceeds (US\$ mil)														
Region	Nation	Primary		Secondary		Combined (primary & secondary) offerings						Total		Total		Total issues
		only offerings		only offerings		primary		secondary		combined total		Primary		Secondary		
		amount	%	amount	%	amount	%	amount	%	amount	%	amount	%	amount	%	
Asia	Hong Kong	11,121	(85.7)	63	(0.5)	1,240	(9.6)	551	(4.2)	1,791	(13.8)	12,361	(95.3)	614	(4.7)	12,976
	India	6,479	(94.0)	93	(1.3)	147	(2.1)	171	(2.5)	318	(4.6)	6,626	(96.2)	264	(3.8)	6,889
	Indonesia	5,418	(90.6)	155	(2.6)	343	(5.7)	66	(1.1)	410	(6.8)	5,762	(96.3)	222	(3.7)	5,983
	Malaysia	3,294	(74.7)	631	(14.3)	241	(5.5)	244	(5.5)	485	(11.0)	3,534	(80.2)	875	(19.8)	4,409
	Pakistan	628	(88.2)	84	(11.8)							628	(88.2)	84	(11.8)	711
	Philippines	1,723	(94.5)			66	(3.6)	35	(1.9)	101	(5.5)	1,790	(98.1)	35	(1.9)	1,824
	Singapore	4,756	(87.7)	303	(5.6)	271	(5.0)	94	(1.7)	365	(6.7)	5,027	(92.7)	397	(7.3)	5,424
	South Korea	18,550	(99.8)			10	(0.1)	24	(0.1)	35	(0.2)	18,560	(99.9)	24	(0.1)	18,585
	Taiwan	11,421	(99.5)	53	(0.5)	4	(0.0)	1	(0.0)	5	(0.0)	11,425	(99.5)	54	(0.5)	11,479
	Thailand	4,648	(99.9)			4	(0.1)	1	(0.0)	4	(0.1)	4,651	(100.0)	1	(0.0)	4,652
Japan	6,937	(11.9)	246	(0.4)	31,253	(53.4)	20,106	(34.3)	51,359	(87.7)	38,191	(65.2)	20,352	(34.8)	58,543	
Pacific	Australia	9,846	(73.8)	1,477	(11.1)	647	(4.9)	1,370	(10.3)	2,018	(15.1)	10,493	(78.7)	2,848	(21.3)	13,341
	New Zealand	811	(69.4)	128	(11.0)	39	(3.3)	190	(16.3)	229	(19.6)	850	(72.7)	319	(27.3)	1,168
Europe	Austria	1,140	(57.5)	417	(21.0)	229	(11.6)	197	(9.9)	426	(21.5)	1,370	(69.1)	614	(30.9)	1,984
	Belgium	3,345	(58.8)	1,610	(28.3)	445	(7.8)	289	(5.1)	734	(12.9)	3,790	(66.6)	1,899	(33.4)	5,689
	Denmark	1,323	(49.9)	88	(3.3)	457	(17.2)	786	(29.6)	1,243	(46.8)	1,780	(67.1)	874	(32.9)	2,654
	Finland	960	(41.7)	366	(15.9)	491	(21.3)	484	(21.0)	976	(42.4)	1,452	(63.1)	850	(36.9)	2,302
	France	7,890	(46.3)	3,069	(18.0)	1,478	(8.7)	4,588	(26.9)	6,066	(35.6)	9,368	(55.0)	7,656	(45.0)	17,025
	Germany	16,851	(51.8)	917	(2.8)	5,736	(17.6)	9,029	(27.8)	14,765	(45.4)	22,587	(69.4)	9,946	(30.6)	32,533
	Greece	3,057	(97.3)			57	(1.8)	29	(0.9)	86	(2.7)	3,114	(99.1)	29	(0.9)	3,143
	Ireland	456	(45.9)			362	(36.5)	175	(17.6)	537	(54.1)	818	(82.4)	175	(17.6)	993
	Israel	1,912	(66.0)			704	(24.3)	282	(9.7)	986	(34.0)	2,615	(90.3)	282	(9.7)	2,898
	Italy	4,173	(43.7)	1,621	(17.0)	2,076	(21.7)	1,685	(17.6)	3,761	(39.4)	6,248	(65.4)	3,307	(34.6)	9,555
	Netherlands	5,484	(39.3)	2,197	(15.7)	3,790	(27.1)	2,500	(17.9)	6,290	(45.0)	9,274	(66.4)	4,697	(33.6)	13,971
	Norway	1,794	(71.0)			554	(21.9)	180	(7.1)	734	(29.0)	2,348	(92.9)	180	(7.1)	2,528
	Portugal	583	(72.5)	221	(27.5)							583	(72.5)	221	(27.5)	805
	Spain	3,208	(41.3)	2,984	(38.4)	609	(7.8)	964	(12.4)	1,573	(20.3)	3,817	(49.1)	3,949	(50.9)	7,765
	Sweden	7,378	(74.2)	710	(7.1)	893	(9.0)	962	(9.7)	1,854	(18.7)	8,271	(83.2)	1,672	(16.8)	9,943
Switzerland	8,240	(65.5)	1,960	(15.6)	914	(7.3)	1,469	(11.7)	2,382	(18.9)	9,154	(72.8)	3,429	(27.2)	12,583	
UK	24,697	(56.6)	2,637	(6.0)	8,705	(20.0)	7,558	(17.3)	16,264	(37.3)	33,403	(76.6)	10,196	(23.4)	43,598	
Turkey	359	(93.0)	27	(7.0)							359	(93.0)	27	(7.0)	385	
Latin Am	Argentina	346	(44.1)	84	(10.7)	251	(32.0)	103	(13.1)	354	(45.2)	597	(76.2)	187	(23.8)	783
	Bermuda	2,518	(82.2)			230	(7.5)	314	(10.3)	544	(17.8)	2,748	(89.7)	314	(10.3)	3,062
	Brazil	538	(38.1)	212	(15.0)	312	(22.1)	349	(24.7)	661	(46.8)	850	(60.2)	562	(39.8)	1,412
	Chile	1,365	(90.6)	6	(0.4)	117	(7.8)	19	(1.2)	135	(9.0)	1,482	(98.4)	24	(1.6)	1,506
	Mexico	2,942	(72.7)	124	(3.1)	505	(12.5)	477	(11.8)	982	(24.3)	3,447	(85.1)	602	(14.9)	4,049
North Am	Canada	10,348	(73.7)	2	(0.0)	2,982	(21.2)	706	(5.0)	3,688	(26.3)	13,330	(95.0)	708	(5.0)	14,038
	US	174,576	(62.4)	20,039	(7.2)	55,891	(20.0)	29,315	(10.5)	85,207	(30.5)	230,468	(82.4)	49,354	(17.6)	279,822
Total		371,115	(59.8)	42,526	(6.8)	122,054	(19.7)	85,314	(13.7)	207,368	(33.4)	493,169	(79.4)	127,840	(20.6)	621,009

Table III

Average Normalized Increases in Assets and Expenditures Following IPOs, by Offer Type

This table presents the mean and median increases in assets and expenditures following an IPO. Increase in assets (total assets, inventory, net PPE, cash) is defined as

$\ln[(V_t - V_0)/total\ assets_0 + 1]$, and increase in expenditures (CAPEX, R&D, reduction in long term debt) is defined as $\ln[(\sum_{i=1}^t V_i / total\ assets_0) + 1]$, where 0 denotes the fiscal year end just prior to the IPO and t denotes number of years after year 0. t-statistics for comparisons of means between primary only and combined, and between combined and secondary only group are also provided. Bold letters indicate statistical significance at less than 5%. The sample period for this table is from 1990 to 2001.

V	t	N				Mean					Median		
		Total	IPO offer type			IPO offer type			t-stat		IPO offer type		
			prim only	sec only	comb -ined	prim only	sec only	comb -ined	prim v comb	v sec	prim only	sec only	-ined
Δ Total Assets	1	5,475	3,441	105	1,929	0.94	0.16	0.69	11.37	8.55	0.73	0.11	0.53
	2	4,678	2,910	90	1,678	1.13	0.35	0.93	7.14	7.17	0.93	0.29	0.79
	3	3,664	2,242	74	1,348	1.21	0.58	1.09	3.66	4.96	1.04	0.49	0.95
	4	2,845	1,728	58	1,059	1.27	0.68	1.19	2.16	4.15	1.11	0.60	1.07
Δ Inventory	1	5,329	3,340	100	1,889	0.07	0.03	0.06	3.28	2.12	0.01	0.01	0.01
	2	4,529	2,813	86	1,630	0.15	0.06	0.13	3.43	2.78	0.04	0.01	0.03
	3	3,551	2,176	72	1,303	0.22	0.08	0.17	3.79	2.70	0.07	0.03	0.05
	4	2,750	1,678	52	1,020	0.27	0.12	0.22	3.13	2.09	0.10	0.03	0.07
Δ Net PPE	1	5,453	3,426	104	1,923	0.17	0.05	0.12	7.09	3.40	0.07	0.02	0.05
	2	4,658	2,897	89	1,672	0.34	0.12	0.26	5.87	3.80	0.18	0.05	0.15
	3	3,644	2,228	74	1,342	0.44	0.20	0.37	3.65	3.19	0.25	0.14	0.23
	4	2,826	1,715	58	1,053	0.51	0.27	0.44	2.88	2.58	0.30	0.18	0.29
Σ CAPEX	1	5,021	3,286	96	1,639	0.19	0.09	0.16	3.92	3.47	0.11	0.06	0.10
	2	4,227	2,751	83	1,393	0.40	0.17	0.37	2.60	4.94	0.26	0.13	0.26
	3	3,266	2,098	68	1,100	0.56	0.29	0.54	0.88	4.60	0.39	0.22	0.42
	4	2,512	1,605	53	854	0.69	0.40	0.69	-0.12	4.09	0.51	0.31	0.56
Σ R&D	1	2,789	1,822	38	929	0.31	0.04	0.19	9.25	3.11	0.19	0.02	0.14
	2	2,373	1,525	35	813	0.63	0.10	0.40	9.20	3.66	0.48	0.05	0.31
	3	1,868	1,154	33	681	0.82	0.16	0.60	6.34	3.03	0.65	0.09	0.47
	4	1,453	862	27	564	0.96	0.23	0.78	3.93	2.44	0.80	0.12	0.67
Δ Cash	1	5,458	3,430	104	1,924	0.64	0.04	0.45	9.77	7.43	0.34	0.01	0.21
	2	4,664	2,902	89	1,673	0.56	0.06	0.44	5.70	5.78	0.22	0.01	0.17
	3	3,651	2,234	74	1,343	0.50	0.12	0.45	1.98	4.25	0.14	0.02	0.15
	4	2,834	1,722	58	1,054	0.48	0.13	0.46	0.71	3.68	0.13	0.02	0.15
Σ LT Debt Reduction	1	4,215	2,801	65	1,349	0.20	0.11	0.21	-0.57	2.81	0.07	0.03	0.09
	2	3,526	2,311	54	1,161	0.31	0.18	0.29	1.42	2.17	0.16	0.08	0.16
	3	2,779	1,777	45	957	0.45	0.27	0.40	2.40	1.73	0.25	0.13	0.24
	4	2,194	1,377	35	782	0.58	0.35	0.50	2.99	1.46	0.35	0.21	0.32

Table IV

The Effect of IPO Offer Type on Subsequent Increases in Assets and Expenditures

The dependent variable for asset-based variables (total assets, inventory, net PPE, cash) is $Y = \ln[(V_t - V_0)/total\ assets_0 + 1]$, and for expenditures (CAPEX, R&D, reduction in long term debt) is $Y = \ln[(\sum_{i=1}^t V_i / total\ assets_0) + 1]$. In panel A, the independent variables are primary capital, secondary capital, both of which are normalized by total assets, and $\ln[total\ assets]$. In panel B, they are proportion of primary shares out of total shares, total proceeds over total assets, and $\ln[total\ assets]$. All regressions include year, country, and industry (2 digit SIC) fixed effects (not reported). p-values are from testing $\beta_1 = \beta_2$. Dollar changes are the implied change in the variable considered (Δ Total Assets, etc.) when new capital is increased by \$1 (for a median-sized firm in 1996 in the U.S. with 2 digit SIC 73: business services) Bold letters indicate statistical significance at 5%, using heteroscedasticity-consistent standard errors. The sample period for this table is from 1990 to 2001.

Panel A: $Y = \beta_1 \ln\left[\left(\frac{\text{primary capital}}{\text{total assets}_0}\right) + 1\right] + \beta_2 \ln\left[\left(\frac{\text{secondary capital}}{\text{total assets}_0}\right) + 1\right] + \beta_3 \ln[total\ assets_0] + FE + \varepsilon$

<i>V</i>	<i>t</i>	N	$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		p-value		R ²
			β_1	t-stat	β_2	t-stat	β_3	t-stat	$\beta_1 = \beta_2$	\$change	
Δ Total Asset	1	5,475	0.951	63.20	0.180	8.66	0.00	0.42	0.000	0.951	0.90
	2	4,678	0.857	34.08	0.265	7.53	-0.01	-1.73	0.000	1.107	0.81
	3	3,664	0.737	18.34	0.369	6.93	-0.02	-2.07	0.000	1.131	0.74
	4	2,845	0.709	13.88	0.376	5.18	-0.03	-2.16	0.000	1.234	0.72
Δ Inventory	1	5,329	0.046	6.59	0.001	0.13	-0.01	-5.57	0.000	0.023	0.30
	2	4,529	0.076	6.13	-0.003	-0.20	-0.02	-7.95	0.000	0.038	0.39
	3	3,551	0.092	5.22	0.006	0.27	-0.03	-7.26	0.004	0.049	0.41
	4	2,750	0.098	4.13	0.023	0.71	-0.04	-6.72	0.075	0.053	0.44
Δ Net PPE	1	5,453	0.166	14.38	0.000	0.02	0.00	1.16	0.000	0.093	0.42
	2	4,658	0.300	16.14	0.050	2.42	0.00	0.21	0.000	0.187	0.53
	3	3,644	0.300	11.59	0.083	2.58	0.00	-0.37	0.000	0.210	0.54
	4	2,826	0.332	8.78	0.081	1.73	0.00	-0.05	0.000	0.248	0.53
Σ CAPEX	1	5,021	0.145	14.81	0.017	1.60	0.00	0.46	0.000	0.083	0.54
	2	4,227	0.304	18.37	0.073	3.84	0.00	0.67	0.000	0.202	0.65
	3	3,266	0.374	15.44	0.097	3.30	0.00	0.60	0.000	0.302	0.69
	4	2,512	0.417	11.47	0.138	3.32	0.00	-0.08	0.000	0.387	0.71
Σ R&D	1	2,789	0.281	21.21	0.004	0.25	0.01	1.45	0.000	0.171	0.74
	2	2,373	0.519	22.80	0.022	0.83	0.01	1.51	0.000	0.399	0.82
	3	1,868	0.642	18.76	0.067	1.71	0.01	1.14	0.000	0.636	0.83
	4	1,453	0.699	14.58	0.109	1.98	0.00	0.06	0.000	0.882	0.84
Δ Cash	1	5,458	0.880	54.13	0.177	8.13	0.02	5.40	0.000	0.688	0.85
	2	4,664	0.744	32.50	0.213	6.59	0.04	6.07	0.000	0.578	0.69
	3	3,651	0.661	19.38	0.293	6.88	0.03	4.34	0.000	0.522	0.58
	4	2,834	0.604	13.48	0.279	5.34	0.02	1.77	0.000	0.500	0.53
Σ LT Debt Reduction	1	4,215	0.067	4.80	-0.019	-0.99	0.02	5.56	0.000	0.042	0.40
	2	3,526	0.082	4.14	-0.055	-1.93	0.02	3.84	0.000	0.056	0.45
	3	2,779	0.082	3.02	-0.136	-3.08	0.02	2.34	0.000	0.068	0.48
	4	2,194	0.111	2.87	-0.214	-3.61	0.02	1.51	0.000	0.104	0.51

Table IV — Continued

Panel B: $Y = \gamma_1 \cdot \left(\frac{\text{primary shares offered}}{\text{total shares offered}} \right) + \gamma_2 \ln \left(\frac{\text{total proceeds}}{\text{total assets}_0} \right) + \gamma_3 \ln[\text{total assets}_0] + \text{FE} + \xi$

V	t	N	$\left[\frac{\text{primary shares}}{\text{total shares}} \right]$		$\ln \left[\frac{\text{total proceeds}}{\text{total asset}} \right]$		$\ln[\text{asset}]$		R^2
			γ_1	t-stat	γ_2	t-stat	γ_3	t-stat	
Δ Total Asset	1	5,475	0.401	12.55	0.400	34.34	-0.030	-5.01	0.85
	2	4,678	0.336	8.02	0.406	27.37	-0.022	-2.55	0.79
	3	3,664	0.236	4.32	0.379	18.82	-0.014	-1.17	0.74
	4	2,845	0.187	2.73	0.372	14.98	-0.017	-1.04	0.71
Δ Inventory	1	5,329	0.023	3.26	0.022	7.23	-0.010	-5.63	0.29
	2	4,529	0.048	3.79	0.038	7.34	-0.024	-6.93	0.39
	3	3,551	0.058	3.03	0.046	6.16	-0.032	-6.08	0.41
	4	2,750	0.047	1.74	0.051	5.20	-0.041	-5.67	0.44
Δ Net PPE	1	5,453	0.093	7.24	0.068	13.22	-0.002	-0.61	0.40
	2	4,658	0.131	5.92	0.135	15.31	-0.005	-1.00	0.52
	3	3,644	0.128	4.25	0.146	12.12	-0.003	-0.38	0.53
	4	2,826	0.122	2.94	0.164	9.74	0.001	0.11	0.53
Σ CAPEX	1	5,021	0.064	5.13	0.065	13.43	-0.002	-0.86	0.52
	2	4,227	0.118	5.56	0.149	16.17	0.000	0.03	0.63
	3	3,266	0.156	5.13	0.187	14.12	0.004	0.54	0.68
	4	2,512	0.133	3.20	0.216	11.73	0.003	0.27	0.70
Σ R&D	1	2,789	0.115	5.63	0.129	16.75	-0.006	-1.25	0.70
	2	2,373	0.260	6.57	0.254	16.55	-0.003	-0.30	0.79
	3	1,868	0.313	5.48	0.329	14.70	0.003	0.24	0.81
	4	1,453	0.303	4.06	0.366	12.26	-0.008	-0.45	0.82
Δ Cash	1	5,458	0.308	10.83	0.351	32.97	-0.017	-3.05	0.77
	2	4,664	0.247	7.39	0.316	25.45	0.011	1.52	0.64
	3	3,651	0.178	4.59	0.288	18.28	0.015	1.65	0.54
	4	2,834	0.157	3.27	0.260	13.69	0.002	0.14	0.49
Σ LT Debt Reduction	1	4,215	0.101	5.10	0.038	5.45	0.025	5.79	0.40
	2	3,526	0.149	5.02	0.037	3.36	0.023	3.40	0.45
	3	2,779	0.235	5.20	0.027	1.78	0.019	1.83	0.48
	4	2,194	0.306	4.91	0.029	1.39	0.013	0.88	0.50

Table V

The Effect of IPO Offer Type on Subsequent increases in Assets and Expenditures:
Regional Analysis

The independent variables are primary capital and secondary capital normalized by total assets. The dependent variable for asset-based variables (total assets, inventory, net PPE, cash) is $Y = \ln\left(\frac{(V_t - V_0)}{\text{total assets}_0} + 1\right)$, and for expenditures (CAPEX, R&D, reduction in long term debt) is $Y = \ln\left(\frac{\sum_{i=1}^t V_i}{\text{total assets}_0} + 1\right)$. Panel A shows results for US & Canada, and Panels B and C represent Europe and Asia respectively. The results by legal origin are presented in Panels D(common) and E(civil). All regressions include year, country, and industry (2 digit SIC) fixed effects (not reported). p-values are from testing $\beta_1 = \beta_2$. Dollar changes are the implied change in the variable considered (Δ Total Assets, etc.) when new capital is increased by \$1 (for a median-sized firm in 1996 with 2 digit SIC 73: business services). The reference countries are US for US and Canada, France for Europe, and Japan for Asia) Bold letters indicate statistical significance at 5%, using heteroscedasticity-consistent standard errors. The sample period for this table is from 1990 to 2001.

Panel A: US and Canada

V	t	N	$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		p-value		R^2
			β_1	t-stat	β_2	t-stat	β_3	t-stat	$\beta_1 = \beta_2$	\$change	
Σ CAPEX	1	3,406	0.166	13.63	0.012	0.84	0.01	2.27	0.000	0.079	0.58
	2	3,038	0.353	16.78	0.056	2.27	0.02	3.03	0.000	0.201	0.68
	3	2,468	0.436	14.54	0.080	2.29	0.03	2.80	0.000	0.309	0.70
	4	1,955	0.472	10.73	0.116	2.49	0.03	1.72	0.000	0.394	0.71
Σ R&D	1	2,307	0.294	20.30	0.002	0.13	0.01	1.84	0.000	0.154	0.75
	2	2,052	0.539	23.10	0.020	0.67	0.02	2.40	0.000	0.372	0.82
	3	1,631	0.680	20.08	0.065	1.56	0.03	2.61	0.000	0.618	0.84
	4	1,264	0.740	16.00	0.105	1.82	0.02	1.21	0.000	0.872	0.84
Δ Cash	1	3,439	0.945	47.95	0.148	5.18	0.04	6.91	0.000	0.722	0.88
	2	3,087	0.812	27.67	0.256	5.95	0.07	7.38	0.000	0.593	0.72
	3	2,524	0.720	16.74	0.308	5.79	0.06	5.19	0.000	0.519	0.59
	4	2,012	0.628	11.47	0.325	5.09	0.04	2.76	0.001	0.465	0.54
Σ LT Debt Reduction	1	3,394	0.087	4.93	-0.055	-2.29	0.03	5.14	0.000	0.045	0.42
	2	3,004	0.109	4.66	-0.103	-3.04	0.03	4.37	0.000	0.062	0.46
	3	2,422	0.105	3.47	-0.162	-3.40	0.03	2.74	0.000	0.072	0.48
	4	1,901	0.132	3.01	-0.228	-3.52	0.03	1.64	0.000	0.102	0.51

Table V — Continued

Panel B: Europe

V	t	N	$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		p-value		R^2
			β_1	t-stat	β_2	t-stat	β_3	t-stat	$\beta_1 = \beta_2$	\$change	
Σ CAPEX	1	1,151	0.092	4.68	0.029	1.56	-0.01	-1.61	0.025	0.056	0.46
	2	900	0.160	5.91	0.085	2.92	-0.02	-2.87	0.064	0.114	0.61
	3	611	0.195	4.13	0.130	2.17	-0.04	-3.61	0.346	0.170	0.69
	4	401	0.324	4.03	0.199	2.09	-0.06	-3.12	0.290	0.308	0.77
Σ R&D	1	270	0.210	6.03	0.049	1.41	0.00	-0.46	0.001	0.133	0.71
	2	177	0.413	6.53	0.139	1.87	-0.02	-1.13	0.009	0.384	0.86
	3	125	0.467	3.82	0.024	0.20	-0.09	-3.00	0.011	0.632	0.87
	4	94	0.489	2.43	0.177	0.74	-0.16	-2.48	0.310	0.876	0.89
Δ Cash	1	1,243	0.708	21.43	0.247	6.84	-0.01	-1.12	0.000	0.541	0.81
	2	987	0.543	11.44	0.169	3.37	-0.02	-1.49	0.000	0.419	0.65
	3	682	0.498	6.75	0.278	3.22	-0.01	-0.49	0.017	0.425	0.59
	4	450	0.601	5.66	0.081	0.94	-0.03	-1.77	0.000	0.623	0.59
Σ LT Debt Reduction	1	536	0.030	1.58	0.041	1.26	0.02	3.73	0.762	0.016	0.40
	2	352	-0.009	-0.34	0.066	1.26	0.01	1.19	0.184	-0.006	0.52
	3	241	0.020	0.32	0.044	0.46	-0.01	-0.60	0.846	0.014	0.57
	4	193	0.046	0.48	-0.057	-0.53	0.00	-0.16	0.506	0.039	0.64

Panel C: Asia

V	t	N	$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		p-value		R^2
			β_1	t-stat	β_2	t-stat	β_3	t-stat	$\beta_1 = \beta_2$	\$change	
Σ CAPEX	1	355	0.152	2.20	-0.063	-1.17	0.00	0.80	0.058	0.142	0.64
	2	221	0.550	4.28	-0.042	-0.21	-0.01	-0.75	0.046	0.563	0.76
	3	143	0.826	3.09	-0.351	-1.09	-0.03	-1.58	0.028	0.950	0.85
	4	119	1.223	2.77	-0.627	-1.15	-0.06	-1.51	0.039	1.534	0.85
Σ R&D	1	178	0.023	0.89	-0.027	-0.73	0.00	-1.59	0.300	0.021	0.58
	2	130	-0.001	-0.08	0.087	1.38	0.00	-0.48	0.201	-0.001	0.69
	3	105	0.010	0.36	0.243	1.70	0.00	-0.66	0.141	0.009	0.75
	4	89	-0.014	-0.36	0.572	2.02	0.00	0.00	0.065	-0.014	0.78
Δ Cash	1	667	0.763	6.65	-0.058	-0.45	0.00	0.63	0.000	0.718	0.76
	2	522	0.509	3.87	0.025	0.11	0.00	-0.32	0.102	0.506	0.53
	3	401	0.562	3.38	-0.066	-0.26	-0.01	-0.64	0.069	0.571	0.56
	4	334	0.444	2.60	0.186	0.99	-0.02	-2.17	0.398	0.442	0.58
Σ LT Debt Reduction	1	180	0.095	2.10	-0.114	-1.39	0.00	-0.30	0.046	0.085	0.52
	2	107	0.192	2.90	-0.166	-1.20	0.00	0.16	0.043	0.176	0.73
	3	75	0.234	1.27	-0.235	-1.01	0.01	0.35	0.241	0.214	0.82
	4	67	0.693	2.16	0.095	0.19	0.05	1.43	0.232	0.577	0.83

Table V — Continued

Panel D: Common Legal Origin

V	t	N	$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		p-value		R^2
			β_1	t-stat	β_2	t-stat	β_3	t-stat	$\beta_1 = \beta_2$	\$change	
Σ CAPEX	1	3,916	0.157	14.12	0.010	0.77	0.01	1.72	0.000	0.078	0.57
	2	3,382	0.338	17.44	0.066	2.84	0.01	2.26	0.000	0.198	0.67
	3	2,708	0.413	14.76	0.087	2.51	0.02	1.97	0.000	0.298	0.70
	4	2,143	0.453	11.07	0.118	2.53	0.01	1.00	0.000	0.381	0.71
Σ R&D	1	2,506	0.290	21.42	0.003	0.15	0.01	1.74	0.000	0.156	0.75
	2	2,175	0.533	24.13	0.020	0.69	0.02	2.30	0.000	0.376	0.82
	3	1,717	0.677	20.84	0.057	1.40	0.03	2.56	0.000	0.629	0.84
	4	1,329	0.741	16.55	0.094	1.68	0.02	1.14	0.000	0.880	0.84
Δ Cash	1	3,960	0.910	48.77	0.160	5.70	0.03	5.58	0.000	0.698	0.86
	2	3,448	0.778	28.87	0.238	5.83	0.05	6.44	0.000	0.570	0.71
	3	2,789	0.707	17.68	0.300	5.97	0.05	4.76	0.000	0.515	0.60
	4	2,227	0.635	12.46	0.296	4.99	0.03	2.59	0.000	0.482	0.54
Σ LT Debt Reduction	1	3,782	0.077	5.00	-0.027	-1.26	0.03	5.64	0.000	0.041	0.41
	2	3,239	0.095	4.48	-0.073	-2.34	0.03	4.12	0.000	0.056	0.46
	3	2,575	0.092	3.20	-0.149	-3.28	0.03	2.50	0.000	0.066	0.48
	4	2,024	0.120	2.89	-0.215	-3.52	0.02	1.45	0.000	0.096	0.51

Panel E: Civil Legal Origin

V	t	N	$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		p-value		R^2
			β_1	t-stat	β_2	t-stat	β_3	t-stat	$\beta_1 = \beta_2$	\$change	
Σ CAPEX	1	1,105	0.105	4.71	0.026	1.31	-0.01	-1.54	0.012	0.086	0.44
	2	845	0.146	4.80	0.072	2.31	-0.03	-3.67	0.076	0.142	0.60
	3	558	0.159	3.07	0.067	1.20	-0.05	-3.97	0.135	0.172	0.69
	4	369	0.217	2.61	0.167	1.93	-0.06	-3.34	0.652	0.251	0.76
Σ R&D	1	283	0.133	4.11	0.016	0.44	-0.02	-2.39	0.002	0.109	0.71
	2	198	0.307	3.59	0.136	1.30	-0.04	-2.08	0.139	0.260	0.82
	3	151	0.265	1.79	0.057	0.24	-0.08	-3.11	0.316	0.269	0.82
	4	124	0.315	1.49	0.510	1.39	-0.13	-2.73	0.515	0.367	0.83
Δ Cash	1	1,498	0.712	21.38	0.227	6.90	-0.01	-1.39	0.000	0.646	0.83
	2	1,216	0.533	11.51	0.146	2.93	-0.02	-2.59	0.000	0.528	0.63
	3	862	0.363	6.22	0.214	2.25	-0.02	-1.96	0.090	0.382	0.52
	4	607	0.342	5.79	0.087	0.84	-0.04	-3.48	0.011	0.377	0.47
Σ LT Debt Reduction	1	433	0.021	1.04	-0.012	-0.56	0.01	1.46	0.288	0.017	0.49
	2	287	-0.006	-0.20	0.021	0.35	0.00	-0.33	0.707	-0.005	0.58
	3	204	0.123	1.63	0.104	0.61	-0.01	-0.36	0.906	0.098	0.66
	4	170	0.025	0.24	-0.262	-1.22	0.00	0.04	0.112	0.024	0.69

Table VI
Subsequent Equity Offerings following IPOs by IPO Offer Type

This table presents the total proceeds and new capital raised through SEOs within 2 years of an IPO. The table reports the amount separately for each of the 3 IPO types. The total proceeds and new capital from IPOs are also provided for comparison. The last 7 columns show the number of SEOs by SEO offer type and also by IPO offer type. The sample period is from 1990 to 2003.

IPOs				SEOs within 2 years									
IPO	Total	New		Total	New		Number of SEOs by offer type						
Offer Type	amount (A)	capital (B)	B/A	amount (C)	capital (D)	D/C	Total (N)	primary only (N _p)	N _p /N	secondary only (N _s)	N _s /N	combined (N _c)	N _c /N
primary only	371,115	371,115	100.0%	136,714	76,406	55.9%	2,386	1,542	65%	320	13%	524	22%
secondary only	42,526	-	0.0%	13,496	810	6.0%	56	15	27%	36	64%	5	9%
combined	207,368	122,054	58.9%	85,025	32,981	38.8%	983	312	32%	252	26%	419	43%
Total	621,009	493,169	79.4%	235,235	110,197	46.8%	3,425	1,869	55%	608	18%	948	28%

Table VII

The Effect of IPO Offer Type on Subsequent Issuances of Equity

This table presents logit and Tobit results measuring the effect of IPO offer type on subsequent issuances of equity. The independent variables are the same as in table IV. The dependent variable for Panel A-1 takes value 1 if there is at least 1 new capital raising activity within 2 years of an IPO, and 0 otherwise. In Panel A-2, the dependent variable is the amount of new capital raised within 2 years normalized by total assets, and in Panel A-3, the number of SEOs that raised new capital. Panels B-1, B-2, and B-3 correspond to Panels A-1, A-2 and A-3, where new capital is replaced with sale of secondary shares at SEOs. All regressions include year, country, and industry (2 digit SIC) fixed effects (not reported). p-values are from testing $\beta_1 = \beta_2$. Bold letters indicate statistical significance at less than 5%. Logit uses heteroscedasticity consistent standard errors. The sample period for this table is from 1990 to 2001.

Panel A-1(logit): Probability of Raising Fresh Capital within 2 years of an IPO									
		Explanatory Variables						p-value	Pseudo
		$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		$\beta_1 = \beta_2$	R^2
IPO type	N	β_1	t-stat	β_2	t-stat	β_3	t-stat		
all 3 types	5,797	0.045	0.56	0.031	0.25	0.061	2.18	0.926	0.07
combined only	2,024	0.437	2.67	-0.212	-0.99	0.057	1.05	0.035	0.06
		$\left[\frac{\text{primary shares}}{\text{total shares}}\right]$		$\ln\left[\frac{\text{total proceeds}}{\text{total asset}}\right]$		$\ln[\text{asset}]$			
all 3 types	5,797	0.552	3.21	0.007	0.16	0.064	2.24		0.07
combined only	2,024	1.098	3.37	0.143	1.77	0.075	1.29		0.06
Panel A-2(tobit): Amount of Fresh Capital raised within 2 year of an IPO									
		$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		p-value	Pseudo
		β_1	t-stat	β_2	t-stat	β_3	t-stat	$\beta_1 = \beta_2$	R^2
all 3 types	5,797	0.335	4.70	0.132	1.19	0.039	1.46	0.122	0.06
combined only	2,024	0.596	4.52	0.013	0.08	0.032	0.70	0.015	0.07
		$\left[\frac{\text{primary shares}}{\text{total shares}}\right]$		$\ln\left[\frac{\text{total proceeds}}{\text{total asset}}\right]$		$\ln[\text{asset}]$			
all 3 types	5,797	0.547	3.29	0.151	3.70	0.038	1.31		0.06
combined only	2,024	0.715	2.71	0.248	3.77	0.026	0.54		0.07
Panel A-3(tobit): Number of SEOs with Fresh Capital within 2 year of an IPO									
		$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$		$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$		$\ln[\text{asset}]$		p-value	Pseudo
		β_1	t-stat	β_2	t-stat	β_3	t-stat	$\beta_1 = \beta_2$	R^2
all 3 types	5,797	-0.007	-0.08	0.000	0.00	0.059	2.03	0.962	0.06
combined only	2,024	0.320	2.08	-0.122	-0.66	0.063	1.21	0.115	0.06
		$\left[\frac{\text{primary shares}}{\text{total shares}}\right]$		$\ln\left[\frac{\text{total proceeds}}{\text{total asset}}\right]$		$\ln[\text{asset}]$			
all 3 types	5,797	0.530	3.02	-0.032	-0.75	0.055	1.78		0.06
combined only	2,024	0.830	2.79	0.115	1.57	0.078	1.44		0.06

Table VII — Continued

Panel B-1(logit): Probability of Selling Secondary Shares within 2 years of an IPO									
		Explanatory Variables						p-value	Pseudo
IPO type	N	$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$	t-stat	$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$	t-stat	$\ln[\text{asset}]$	t-stat	$\beta_1=\beta_2$	R^2
		β_1		β_2		β_3			
all 3 types	5,797	0.263	2.94	0.763	6.28	0.348	11.29	0.001	0.10
combined only	2,024	0.322	1.89	0.320	1.57	0.293	5.19	0.995	0.08
		$\left[\frac{\text{primary shares}}{\text{total shares}}\right]$		$\ln\left[\frac{\text{total proceeds}}{\text{total asset}}\right]$		$\ln[\text{asset}]$			
all 3 types	5,797	-0.576	-3.44	0.310	6.20	0.412	12.15		0.10
combined only	2,024	-0.058	-0.19	0.331	3.96	0.350	5.69		0.08

Panel B-2(Tobit): Amount of Secondary Shares sold within 2 year of an IPO									
		$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$	t-stat	$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$	t-stat	$\ln[\text{asset}]$	t-stat	p-value	Pseudo
	N	β_1		β_2		β_3		$\beta_1=\beta_2$	R^2
all 3 types	5,797	0.399	5.71	0.721	7.46	0.267	10.10	0.006	0.09
combined only	2,024	0.528	4.37	0.409	2.88	0.222	5.32	0.580	0.09
		$\left[\frac{\text{primary shares}}{\text{total shares}}\right]$		$\ln\left[\frac{\text{total proceeds}}{\text{total asset}}\right]$		$\ln[\text{asset}]$			
all 3 types	5,797	-0.360	-2.67	0.353	8.60	0.321	11.07		0.09
combined only	2,024	-0.107	-0.47	0.405	6.53	0.243	5.51		0.09

Panel B-3(Tobit): Number of SEOs selling Secondary Shares within 2 year of an IPO									
		$\ln\left[\frac{\text{primary capital}}{\text{total asset}_0} + 1\right]$	t-stat	$\ln\left[\frac{\text{secondary capital}}{\text{total asset}_0} + 1\right]$	t-stat	$\ln[\text{asset}]$	t-stat	p-value	Pseudo
	N	β_1		β_2		β_3		$\beta_1=\beta_2$	R^2
all 3 types	5,797	0.185	2.25	0.654	5.71	0.330	10.90	0.001	0.08
combined only	2,024	0.204	1.43	0.307	1.83	0.273	5.76	0.684	0.07
		$\left[\frac{\text{primary shares}}{\text{total shares}}\right]$		$\ln\left[\frac{\text{total proceeds}}{\text{total asset}}\right]$		$\ln[\text{asset}]$			
all 3 types	5,797	-0.468	-3.05	0.254	5.49	0.388	11.72		0.09
combined only	2,024	-0.175	-0.67	0.250	3.60	0.308	6.17		0.08