Time for a change: Family firms and IPOs

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Abstract

This paper analyzes the timing of the going public decision of European family firms. We observe that operating performance substantially deteriorates after the IPO, and this deterioration worsens over time. Although the most frequent reason cited by controlling families to go public is to fund their firms' growth opportunities, we find that they sell an average 10% equity stake in the IPO, and investments decrease dramatically after the listing relative to both pre-IPO levels and a control sample of private family firms. We also document that IPO proceeds are not used to retire debt, and that dividend payout increases following the listing. Overall, our evidence indicates that families use IPOs to cash out of part of their investment at favorable conditions by taking their firms public in correspondence of a temporary performance peak, reached after exhausting the firm's growth opportunities.

JEL classification:

Keywords: Family firm, IPO, Investment, Performance, Listing status.

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1. Introduction

While the decision to go public is one of the most studied in empirical corporate finance (see, e.g., Pagano et al., 1998; Chemmanur et al., 2010), the role played by who takes this decision, namely firm owners, has been far less explored.[1] Since corporate policies are crucially shaped by a firm's ownership structure (see, e.g., Cronqvist and Fahlenbrach, 2009), owners' attributes and incentives are likely to affect the decision to take the firm public. Among the different types of controlling shareholders, families have attracted considerable attention in the academic debate. This attention has been primarily driven by the predominance of family ownership across different regions (see Barontini and Caprio, 2006 for Europe; Claessens et al., 2002 for Asia; Anderson and Reeb, 2003 for the U.S.), both among public (La Porta et al., 1999; Faccio and Lang, 2002) and private (Che and Langli, 2015) firms, but also by peculiar incentives that differentiate families from other types of shareholders when managing the firm (Bertrand and Schoar, 2006). This paper relates these two strands of literature by investigating how the incentives and motivations of family owners shape the going public decision of family firms.

Studying how family owners deal with the IPO decision is of interest because going public often entails a substantial dilution in the insiders' equity stake, both at the time of the listing and in the following years (Helwege et al., 2007). However, families are known to be reluctant to dilute control in their firms, due to their incentive to preserve the non-economic utility and private benefits deriving from owning the company (Gómez-Mejía et al., 2007, 2011; Leitterstorf and Rau, 2014).[2] Therefore, the traditional motivations pushing owners to take their firm public, such as raising capital to fund new investment opportunities (Brau and Fawcett, 2006; Kim and Weisbach, 2008), creating

[1] A partial exception are venture capitalists who, however, are typically non-controlling shareholders. See, e.g., Lerner (1994), Bayar and Chemmanur (2011), Ball et al. (2011).

[2] This reflects in the way families deal with a number of other corporate policies. For instance, firms controlled by families tend to be less acquisitive (Caprio et al., 2011), more leveraged (Croci et al., 2011) and opaque (Anderson et al., 2009) than other listed firms, and face a lower cost of debt (Anderson and Reeb, 2003).

publicly traded stocks to be used as acquisition currency (Hovakimian and Hutton, 2010; Celikyurt et al., 2010), or rebalancing the firm's capital structure (Pagano et al., 1998) may conflict with families' aversion to open the ownership base of the firm.

Another crucial driver of the IPO decision is the presence of a so-called window of opportunity. Loughran and Ritter (1995) document that firm owners tend to time the IPO decision during periods that allow them to cash out of the investment at favorable conditions. Consistent with this view, a relatively large body of literature has documented that operating performance decreases after going public (Jain and Kini, 1994; Mikkelson et al., 1997). Being insiders in control of the firm, family owners are likely to possess private information about its future profitability (Degeorge and Zeckauser, 1993), and therefore be able to effectively time the IPO decision. There are, however, theoretical arguments suggesting that families have conflicting incentives to fully exploit a window of opportunity by taking their firms public. For instance, families tend to consider firms as their own legacy and inheritance that needs to be handed on to the next generations, with firm reputation directly impacting the name of the dynasty (Bertrand and Schoar, 2006). Controlling families' investments are usually characterized by long horizons that generate the incentive to uphold their reputation and mitigate short-term market pressures (Stein, 1989). Thus, being aware of the consequences that the decision to go public engenders on the above non-financial dimensions, families may be reluctant to take advantage of a window of opportunity. While financial investors, such as venture capitalists, are known to effectively exploit these windows of opportunity thanks to their industry expertise and financial orientation (Lerner, 1994), it is not clear whether family owners share the same incentives.

This paper investigates whether families time the IPO decision of their firms. We first look at how firm performance evolves after the IPO. If families take their firms public in correspondence of a temporary performance peak, then we should observe a deterioration in post-IPO performance. Second, we analyze the impact of the IPO decision on the firm's ownership structure. If such decision

is made in an attempt to take advantage of a window of opportunity, then we should observe the sale of a significant fraction of shares by family owners either in the IPO or shortly thereafter.[3] Third, we assess the motivations leading family firms to go public along the following two dimensions. We first examine the reasons cited by the families in the official IPO prospectus. Then, we assess the ex-post allocation of IPO proceeds and verify whether this is coherent with the above cited motivations. If the IPO is aimed at financing growth opportunities or rebalancing the firm's capital structure, then we should observe increasing investments or decreasing leverage post-IPO.

We build our sample of family firm IPOs by starting from the population of 301 IPOs occurring between 2003 and 2009 on the main markets of the four largest stock exchanges in Europe, namely France (Euronext), Germany (Deutsche Börse), Italy (Borsa Italiana), and the United Kingdom (LSE).[4] After excluding IPOs by non-family firms and by firms without reliable data in the pre-listing period, we remain with a sample of 65 IPOs. Family control is determined by reconstructing the ownership and control chains of each firm following Faccio and Lang (2002). Different from their classification, however, we do not stop at unlisted firms along the control chain, but identify the controlling entity of these firms' in order to determine the type of ultimate owner. Since our interest lies in understanding why and when some controlling families decide to list their companies while others choose to stay private, our sample of IPO firms is matched with a control group of family firms from the same country and industry that remain private. By comparing the behaviour of IPO firms with that of a sample of control firms over the same period, we mitigate concerns arising from selection effects based on observable characteristics. This matching approach

[3] Controlling shareholders with large equity stakes may sell a small portion of cash flow rights to investors at the IPO and subsequently negotiate the sale of the controlling block with a large investor willing to pay for private benefits, thus maximizing the overall exit payoff (Zingales, 1995; Mello and Parsons, 1998).
[4] Our sample stops in 2009 because we need five years of post-IPO data.

also allows us to control for common trends affecting both listed and unlisted family firms like, for example, the onset of the financial crisis across European countries in 2008.

The evidence of our empirical analysis can be summarized as follows. First, we document that the operating performance of IPO firms is better than those of matched firms before going public, but it significantly deteriorates compared to that of the peer firms in the years following the IPO. This is a long-lasting effect, as we find the decline in performance to worsen rather than revert over the five years following the IPO. This evidence is consistent with families making use of inside information to time the IPO decision of their firms. Second, we show that families sell a significant fraction of their shares (10% of the firm's equity, on average) in the IPO. However, they do not use the IPO as the initial step of a process of transferring control rights, since they continue to retain a majority stake (above 50%) over the subsequent years. This is consistent with families' desire to preserve control of the firm through time. Taken together, this evidence shows that family firms partially cash out at the IPO but do not relinquish control neither at the IPO nor in subsequent years. This suggests that private benefits of control are important for family firms. Third, while only 9.2% of families cites cashing out as a motivation for going public, which is consistent with the evidence on post-IPO ownership evolution, 81.5% points at the need to raise funds aimed at financing firm growth as the main IPO motivation. However, our analysis on post-IPO investment dynamics documents a significant decrease relative to both pre-IPO levels and the control sample. This evidence differs from that associated with post-IPO corporate policies of U.S. firms (Kim and Weisbach, 2008), but is similar to the one documented by Pagano et al. (1998) for Italian firms.

After documenting that investments drop after going public, we investigate other possible uses of IPO proceeds, such as working capital financing, acquisitions, capital structure rebalancing, and payout policy. We find no significant changes in the net working capital of family firms that go public relative to both pre-IPO levels and the control sample. As for acquisitions, the acquisition volume

slightly increases only immediately after the IPO, while it is not statistically different from that of the control sample over longer time periods. Concerning financing choices, we find that the firm's capital structure is not affected, as leverage decreases immediately after the IPO (due to the fresh infusion of equity) but then quickly returns to pre-IPO levels. Thus, while Pagano et al. (1998) show that the reduction in leverage persists beyond the first three years after going public, such effect is short-lived in our sample. As for dividends, we observe an increase in the number of dividend-paying companies as well as an increase in the payout ratio after the IPO. This increase in dividends, jointly with the lack of new investments and the worsening of performance, suggests that newly listed family firms use, at least partially, IPO proceeds to remunerate shareholders.

This paper offers several contributions to the literature. First, we provide a careful look at the incentives of controlling families when facing the IPO decision. Overall, our evidence indicates that families use IPOs to partially cash out of their investment in the firm at favourable conditions, i.e. by taking the firm public in correspondence of a temporary performance peak. This evidence adds to both the IPO literature and the family firm literature. Second, while financial investors' ability to effectively time the IPO decision has been previously documented, we find that also families, despite facing different incentives, are careful in choosing the right time to take their firms public. Similar to LBO investors in Degeorge and Zeckauser (1993), they time the IPO at their firms' performance peak. Differently from these investors, though, families partly cash out but remain in control of the firm. Finally, we shed light on the behavior of family firms with respect to the usage of IPO proceeds. Put together, our evidence indicates that families decide to overcome their reluctance to open their firms' share capital in an IPO to exploit, at least partially, a window of opportunity rather than to fund new investments.

The paper is organized as follows. Section 2 describes the sample and the data. Section 3 presents the evidence on the variation in performance of family firms that go public relative to that

of family firms that remain private. Section 4 documents the impact of the IPO decision on firms' ownership structure. Section 5 presents the evidence on investment, financing, and payout policies around the IPO. Section 6 presents the results on performance, investments and financing patterns in a dynamic setting. Section 7 concludes.

2. Sample and Data

Our main source for IPO information is the EurIPO database.[5] EurIPO contains data and offering prospectuses on companies that went public in Europe since 1985 (Vismara et al., 2012) and is among the most reliable source of IPO data for European companies.[6] We build our sample starting from the population of 301 IPOs occurring between 2004 and 2009 on the main markets of the four largest stock exchanges in Europe, namely France (Euronext), Germany (Deutsche Börse), Italy (Borsa Italiana), and the United Kingdom (LSE). We stop our sample period in 2009 because we track our companies for five years after the IPO to document changes in the post-IPO period. We start in 2004 to avoid the dot.com bubble and the drought in the European markets that followed the bust of the bubble. Following Vismara et al. (2015), we focus on the main markets because they are characterized by stringent disclosure requirements, which permits a higher quality and availability of data. The main markets are: Official List (LSE); Euronext (Euronext); Regulated Market (Deutsche Börse); MTA (Borsa Italiana).

We eliminate 80 IPOs from the initial sample because these companies have sales less than €10 million in the pre-IPO year. We also drop seven IPO firms because they are incorporated in non-European countries, which prevents us from matching them with private firms. For the remaining 214 observations, we manually search ownership information before the IPO using several sources like

[5] www.euripo.it
[6] Chambers and Dimson (2009) and Vismara et al. (2015), among others, make use of EurIPO data.

Bureau Van Dijk's Orbis database, IPO prospectuses, and company's websites. Using ownership data, we identify 109 IPO firms that are controlled by families at the 20% voting rights threshold. While some U.S. studies identify controlling shareholders by setting a lower threshold of voting rights and adopting the concept of founding family (see, e.g., Anderson and Reeb, 2003), we adopted the same threshold as Faccio and Lang (2002) in their European study, since European firms are characterized by a relatively higher level of ownership concentration (La Porta et al., 1999). Furthermore, a threshold based on voting rights allows to consider possible discrepancies between cash flow and voting rights associated with the presence of control-enhancing mechanisms. Since we are focusing on private firms that are going public for the first time, we assume that the controlling family is also the one that founded the company.

We then match these 109 IPOs to family firms that remain private to compare the performance, investment, and financing behavior. To this extent, we adopt a matching procedure that allows us to correct for selection based on observable characteristics. For each IPO firm, we identify a private firm that (1) is incorporated in the same country; (2) operates in the same industry (at the 3-digit SIC level); (3) has the closest value of total assets to that of the sample firm at the last fiscal year before the IPO;[7] and (4) is ultimately controlled by a family. We use Bureau Van Dijk's Orbis database for total assets and industry classification, while we use both Orbis and internet searches for ownership information. Strictly following these criteria, we match 65 of the 109 IPO firms controlled by families. So, our final sample is composed of 130 family firms, 65 that went through an IPO and 65 that did remain private throughout our sample period.

Table 1 presents the sample of our family firm IPOs. Panel A shows the distribution based on the year in which the firm decided to go public. The majority of the IPOs of our sample occur in the years 2006 and 2007, in line with the stylized fact of IPO waves (Ritter, 1984). The peak in IPO

[7] The total assets of the matching firm must be in the -50%/+50% range with respect to those of the IPO firm.

activity also takes place immediately before the great financial crisis, a period characterized by high stock market valuations. Panel B reports the distribution across countries of listing, and documents that approximately two thirds of our sample firms go public in the stock exchanges of France and Italy. In Panel C, the industry distribution reveals that manufacturing sectors are the most represented, with 38.5% of our sample IPOs. Finally, Panel D documents that the most frequent motivation cited by the controlling families in the IPO prospectus is by far to sustain firm growth. This reason is indeed cited in the official prospectus of 81.5% of our sample IPOs. While often the statements reported are rather generic and vague, they still convey the message that families are raising capital mostly to finance expansionary projects. Capital structure rebalancing, cash out of existing shareholders, and working capital financing are the other (less frequent) motivations.

[Please insert Table 1 about here]

Table 2 reports summary statistics for the sample of the 65 family IPO firms and their matched firms at the last fiscal year before the IPO. Variables are defined in Appendix A. Controlling families own on average about 75% of the equity in both the IPO firms and the matching companies, even if there is more variability in the ownership stake of the matched firms (19% vs. 25%). Divergence between voting and cash-flow rights (the so-called wedge in the ownership literature) is negligible in our sample, as voting and cash flow rights are very close. IPO firms are on average larger both in terms of sales and total assets, but the median matched firm has larger sales and it is roughly the same size of the IPO firm. IPO firms are also younger than matched firms (23 years vs. 27 years), in line with the view that younger companies tend to be more entrepreneurial (Chavis et al., 2011).

Panel B documents that IPO firms outperform their counterparts in terms of the three proxies of performance we employ (return on assets (ROA), return on equity (ROE), and cash flow generated), lending preliminary support to the view that family firms list their companies when

performance is good. Panel C reveals that IPO firms invest significantly more than comparable companies before going public, also in terms of acquisitions. IPO firms also divest less, confirming that these firms are in an expansionary phase before the listing. Panel D shows that cash holdings and leverage levels are similar between the two groups. Cash holdings in our sample is higher than that reported in Gao et al. (2013) and Brav (2009), who both find that private companies hold about 10% of their assets in cash in the US and in the UK, respectively. Finally, the average IPO firm distributes 21.9% of earnings to shareholders in the form of dividends at the last fiscal year before going public.[8]

[Please insert Table 2 about here]

3. Performance around the IPO: a matching approach

As previously discussed, taking advantage of a window of opportunity implies that after the IPO there is a decrease in performance. We test whether families take public their firms at the peak of their performance by examining the change in performance around the IPO of family firms in our sample relative to the control sample of private family firms. This permits us to carry out a test between two groups of family firms, one that decides to go through an IPO and the other that decides to remain private. While we cannot consider the IPO decision as an exogenous treatment for these firms, we account for potential omitted factors that are associated with family ownership by matching these firms with peers controlled by the same type of shareholder.

We start our analysis by presenting univariate statistics for the variation in performance from *year -1* to *year +1*, *+3*, and *+5*. Panel A of Table 3 provides some compelling evidence of a worsening of operating performance post-IPO. The average change in ROA between the pre-IPO year and the post-IPO is 7.53%. IPO firms report an even larger decrease with respect to the pre-IPO year if we

[8] Dividend payout is defined as common dividends divided by earnings, with the ratio being set to missing if earnings are negative, in line with Floyd et al. (2015). We are not able to report the dividend payout of matched firms because this information is not available in Orbis.

look at longer intervals (-1, +3) or (-1, +5). Matched firms do not exhibit a statistically significant change in ROA. The difference is statistically significant at 1% for both mean and medians. We find similar evidence for changes in return on equity as well as cash flow. In particular, while the cash flow produced by both the IPO and the control firms declines over the [-1, +5] period, indicating the possible presence of a common downward trend, the drop exhibited by IPO firms is statistically larger than that associated with matched firms. Overall, this preliminary evidence brings support to the view that families list their firms before a decline in performance. In other words, this univariate evidence is consistent with the view that families exploit their inside information to sell shares at the peak of their companies' performance.

[Please insert Table 3 about here]

The univariate evidence presented so far is summarized in Figure 1. For each of the performance variables used in the analysis, the graphs plot the average values associated with the sample of IPO firms and control firms (black and grey line, respectively) for each fiscal year of the window [-1, +5] around the IPO date, with 0 being the IPO year. The pictures provide further support to the idea that families take their firms public in correspondence of a temporary performance peak.

[Please insert Figure 1 about here]

In Panel B of Table 3, we present the results of cross-sectional OLS regressions on the changes in performance around the IPO. We benchmark the variations experienced by IPO firms with those associated with the control sample of private firms by including the IPO dummy, equal to 1 for family firms that go public. Since we are investigating a variety of corporate policies in the paper, we limit the set of control variable to firm size and age (both in logarithms). We also include year fixed-effects

to control for time trends, country fixed-effects and industry fixed-effects to control for differences at country and industrial level, respectively. Year fixed-effects are included also to capture the effect of the financial crises that hit Europe starting from 2008, i.e. the credit crisis of 2008 and the sovereign debt crisis of 2011.

The regression analysis supports the results of the univariate tests, confirming a strong decrease in ROA (Models 1-3), ROE (Models 4-6), and cash flow (Models 7-9) for IPO firms. This decrease is found to be significant at the 1% level across all the three event windows considered in the analysis. In particular, the coefficient of the IPO dummy reveals that IPO firms exhibit a decrease in ROA that is 6.88 percentage points worse than that of private firms, on average, over the [-1, +1] event window. This gap becomes more pronounced over longer event windows. With respect to ROE, the coefficient documents that the variation experienced by IPO firms is on average 4.38 worse than that of private firms over the [-1, +1] event window. Finally, cash flow deteriorates by an average of 4.61 percentage points compared to the control sample[9].

Overall, the evidence of the multivariate analysis confirms that family firms going public exhibit a significant decrease in performance compared to their matched private firms. This is consistent with families timing the IPO of their companies by taking their firms public before performance starts to deteriorate.

4. Evolution of ownership structure

In this section, we present some descriptive statistics on the evolution of ownership structure around the IPO. Although controlling families are known to be reluctant to give up control in the companies

[9] One could argue that earnings management may explain part of this difference. It is worth noting, however, that the results shown in this table are inconsistent with possible earnings management practices. In fact, the incentives for both listed and unlisted firms to manage earnings go in the opposite direction of the findings documented in Table 3. While listed companies have the incentive to manage upward their earnings to meet or even beat analysts' forecasts (Degeorge et al., 1999), unlisted firms do not have to worry about market pressure and, if they manage earnings, they tend to manage them downward to reduce taxes.

they run, we investigate whether they use the IPO to exit the company they owned. We have shown in the previous section that IPO firms exhibit a significant drop in performance following the listing, which is consistent with the window of opportunity story. However, to take advantage of this window, families have to sell their shares.

We start presenting information about the shares offered in the IPOs in Panel A of Table 4. The data indicate that on average the percentage of shares offered is important, with an offer volume of 38.55% of the number of pre-IPO shares outstanding. This high percentage suggests that the controlling family sustains a significant dilution of its shareholding even without selling shares. However, while the majority of the shares offered is newly issued (24.36% of the pre-IPO number of shares), there is a significant fraction of existing shares sold by the controlling family, which amounts to about 10% of the pre-IPO shares, on average. So family are selling on average more than one fourth (26.25%) of the shares available in the IPOs. This suggests that IPOs are used by families to partially liquidate their investment in the firm.

[Please insert Table 4 about here]

In Panel B, we show the evolution of voting rights and cash flow rights over five years after the IPO. As expected from the evidence shown in Panel A, around the IPO time, the ownership stake of the controlling families decreases substantially from about 75% (as documented in Table 1) to about 55% in year +1 on average. However, controlling families still hold a majority control stake. After the initial decrease, the controlling family maintains almost unchanged its voting and cash flow rights. Indeed, there are minimal ownership adjustments over the years following the IPO. There is no evidence of a growing wedge between voting and cash-flow rights in our IPO firms. At least in our sample, the dilution in the family's ownership stake is concentrated exclusively at the IPO of the firm. The stability of the ownership structure post-IPO is also confirmed by the last two columns of

Table 3, showing that the family that took the company public remains in control after 5 years in 61 out of 65 IPO firms. Thus, the IPO does not appear a first step in the sale of the company. The IPO motivations stated in the official prospectuses also support this view, as cash-out reasons were mentioned only by 6 firms (9.2%), as previously documented. Overall, controlling families in European markets hold a tighter grip on their companies (even after the listing) compared to insiders in the U.S. In fact, Helwege et al. (2007) document that insiders have an average (median) ownership of 27% (21%) 5 years after the IPO.

Overall, the evidence provided in this section suggests that family firms do not use the IPO as a first step towards a complete exit. Indeed, after the IPO, family ownership remains stable. While maintaining a considerable equity stake does not support the view that families completely exploit a window of opportunity to list the company they run, there is some evidence that families partially use their inside information to reduce their investment in their firms at the peak of performance.

5. Investments, financing, and dividends around the IPO

So far, we have documented a substantial drop in performance after the IPO and a stable ownership structure. Using the same empirical strategy employed in Section 3, we examine the change in investments and financing around the IPO of family firms in our sample by comparing it with a control sample of private family firms.

5.1 Investments

Panel A of Table 5 presents univariate evidence regarding changes in investments in fixed assets, net working capital, and acquisitions. Again, we do not find any significant change for the sample of matching firms. However, IPO firms reduce their capital expenditures after the IPO year, which contrasts with the U.S. evidence of Kim and Weisbach (2008). Thus, despite the claims that the proceeds are needed to foster growth, IPO firms do not seem to use them to invest more in fixed

assets. Newly listed firms increase their acquisition spending in the immediate aftermath of the IPO, consistent with Hovakimian and Hutton (2010) and Celikyurt et al. (2010). This increase, however, is short-lived: we do not observe significant changes over longer event windows. We summarize this evidence in Figure 2, which strengthens the finding of a decline in capex investment after the IPO.

[Please insert Table 5 about here]

[Please insert Figure 2 about here]

Panel B of Table 5 reports the results of the multivariate analysis of the variation in investment patterns of IPO vs. private firms. OLS regressions in Panel B document a significant decrease in investments by IPO firms compared to the matched private firms (Models 1-3). While statistical significance is weak (10% level) over the [-1, +1] event window, it becomes stronger as the considered period widens. The coefficient of the IPO dummy reveals that, over the longest event window, IPO firms decrease their investments by 5.16 percentage points relative to their peers. Models 4-6 do not report any significant result indicating that IPOs affect the net working capital policy of family firms. Regarding the variation on the volume of acquisitions completed around the IPO, Models 7-9 report a weak statistical significance for the shortest event window, while no significant differences emerge across wider event windows. This indicates that acquisition activity slightly increases immediately after the IPO, but does not significantly differ if we consider longer time horizons. Thus, differently from the U.S. literature where it appears that IPO firms list themselves to actively engage in acquisitions (Hovakimian and Hutton, 2010; Celikyurt et al., 2010), family firms in Europe do not appear to behave as such. This evidence is also consistent with that of Caprio et al. (2011), who document that European family firms are reluctant acquirers.

5.2 Financing and dividends

As a final step in the analysis of the post-IPO behavior of newly listed family firms, we investigate their financing and dividend policies. One of the motivation of doing an IPO is indeed to facilitate further rounds of financing thanks to the access and the visibility provided by the listing.

Panel A of Table 6 documents that IPOs also generate a short-term effect in the leverage and cash holdings ratios of IPO firms. The infusion of fresh equity capital associated with the listing results in a significant decrease in leverage, by more than 10% of the initial debt level on average (3.13/26.65=11.74%). At the same time, the cash held by the firm experiences an increase of 3.81 percentage points. However, both these changes appear to be temporarily due to the accounting effects of IPO proceeds, since our sample firms return to pre-IPO levels after a few years. We then investigate these variations in a multivariate settings in Panel B, where estimates of cross-sectional OLS regressions on the change in Leverage (Models 1-3) and Cash holdings (Models 4-6) are reported. The insignificant coefficients of the IPO dummy documents that the decision to go public does not affect leverage and cash holdings. A weak effect of IPO proceeds on cash holdings is documented in Model 4, but it seems to be mainly due to the initial increase associated with the receipt of IPO proceeds.

[Please insert Table 6 about here]

We provide a graphical representation of the financing patterns in Figure 3. The IPO firms series experiences a discontinuity in correspondence of the IPO, when the fresh infusion of equity capital causes a temporary decrease in leverage and increase in cash holdings. However, the values of both variables quickly reverse to their pre-IPO situation and stabilize on levels that are close to those of the private firms.

[Please insert Figure 3 about here]

Finally, we report evidence on dividend policy in Table 7. The number of firms that pay dividends in the last fiscal year before going public is 28, accounting for 43.1% of the sample. This number increases to 32 (49.2%) in the IPO year, and to 39 (60%) in the year following the IPO, suggesting that a firm's propensity to pay dividends increases after going public. The fraction of dividend payers slightly decreases afterwards, but remains persistently larger than its pre-IPO level across all the five years following the listing. A similar pattern is associated with the dividend payout ratio, whose average value, equal to 21.89% before the IPO, increases to 25.06% and 29.1% in the two subsequent years, and keeps increasing up to 37.5% in the third year post-IPO. Overall, this evidence is consistent with the idea that both the likelihood of paying dividends and the amount of dividends paid by firms increase after going public. This might suggest that part of the proceeds raised in the IPO are allocated to strengthen the firms' payout policy. Since, however, we do not have information about the payout policy of the control sample, we cannot isolate the effect associated with the IPO decision from other potentially confounding effects.

[Please insert Table 7 about here]

6. Dynamic patterns of performance, investments and financing post-IPO

Our evidence so far has indicated that performance and investments decline, dividends increase, and the effects on financing appears to be modest for family firms that decide to go public. However, we have no information about the persistence of the above documented impacts of the decision to go public throughout each of the years following the IPO. Therefore, in this section, we compare the performance, investment, and financing behavior of IPO firms with that of private firms in a dynamic

setting.[10] Drawing from previous literature (Jain and Kini, 1994; Mikkelson et al., 1997; Chemmanur et al., 2010), we take a closer look at how performance, investment and financing variables change in each post-IPO year with respect to the pre-IPO value. To achieve this goal, we employ a regression framework similar to the one used by Chemmanur et al. (2010) who investigate firm dynamics around IPO decisions. The model is the following:

$$\psi_{it} = \alpha_i + \beta_t + \sum_{s=0}^{5} \gamma_s IPO\ year_{it}^{s} + \delta Size_{it} + \varepsilon_{it} \qquad (1)$$

where ψ_{it} denotes the dependent variable; α_i represents firm fixed effects; β_t represents calendar-year dummies as IPOs are spread over time in our sample; and $IPO\ year_{it}^{s}$ is a binary variable equal to 1 (0) if the firm goes public (is private) and the observation is *s* years after the IPO, where *s*= 0, 1, 2, 3, 4, or 5 years. We use family firms that remain private as a benchmark. For these firms, $IPO\ year_{it}^{s}$ variables are always set to zero. Finally, we add the firm size as additional control. Differently from previous models, we do not include the control variable *Age* here because of the inclusion of firm fixed effects.

Results are reported in Table 8. Models 1-3 document the dynamic variation in firm performance of family firms that go public relative to those that remain private. The coefficients of all the explanatory variables are negative and significant across the three performance measures, starting from the IPO year to the fifth-year post-IPO. Furthermore, the magnitude of the coefficients suggests that the deterioration in the performance of IPO firms becomes more pronounced with time. For instance, Model 1 documents that, while the average ROA for IPO firms at the end of the fiscal year including the IPO date is approximately 4 percentage points lower than its pre-IPO value, this decline becomes sharper by 8.5 and 10.2 percentage points two and three years after the IPO, respectively. The performance differential is significant also in terms of ROE (up to 7.8 percentage points 3 years after the IPO) and cash flow (up to 5.5 percentage points 5 years after). Thus, such a

[10] Due to the lack of data for non-IPO firms, we cannot perform this analysis for dividends.

considerable performance drop is not easily reversible. This evidence shows that families tend to list their firms when performance are high and unlikely to be repeated in the future.

Models 4-6 document the dynamics of investment decisions. Similar to the above discussed evidence on performance, the decrease in capital expenditure is not concentrated in one single year, but it takes place in every year after the IPO. While the amount of investments in the fiscal year including the IPO date is not significantly different from their pre-IPO values, it progressively reduces over time till reaching its minimum 5 years after the IPO. In this year, investments (expressed in percentage of total assets) are 8.1 percentage points lower than the pre-IPO level. The increasingly lower investment rate is consistent with fewer investment opportunities for the listed companies. Consistent with previous evidence, we do not observe any significant change in net working capital and acquisition volume after the listing. Finally, models 7-8 present the results on financing dynamics, that confirm the previously documented evidence about the short-term effect that the fresh infusion of equity capital associated with IPO proceeds exerts on leverage and cash holdings. In particular, leverage decreases in the IPO year but then starts to revert to the pre-IPO level. This difference is indeed already dissolved two years after the IPO. Similarly, cash holdings increase in correspondence of the IPO, but start reverting to the pre-IPO level already from the following year. Overall, these tests about the post-IPO dynamics of performance, investments and financing choices document that the performance deterioration of IPO firms is unlikely to reverse in the short-term, providing further evidence of families exploiting the window of opportunity with respect to the going public decision.

[Please insert Table 8 about here]

7. Conclusions

While the trade-off faced by a firm in the going public decision has been extensively studied by prior literature, the implications generated by the ownership structure of the firm on this choice have been far less explored. This paper investigates how family owners deal with the IPO decision. While financial investors are known to effectively time their exit via IPO during favorable periods to maximize the return from their investments, families are subject to different, non-economic incentives that may prevent them from using inside information to fully exploit these windows of opportunity. Nevertheless, we find that families take their firms public in correspondence of a temporary performance peak. We document a progressive and substantial decline in the operating performance of family firms that go public, compared both to their pre-IPO levels and a control group of family firms that decide to remain private. This is a long-lasting effect that worsens over time. This evidence is consistent with families timing the IPO decision of their firms.

We also assess the reasons pushing families to take their firms public by investigating the ex-post allocation of IPO proceeds. We first exclude the possibility that families use the IPO as an initial step of an exit process by showing that they sell a significant fraction of their equity stake at the IPO, but remain in control of the firm over the following years. Then, we document that proceeds are neither used to fund growth opportunities, as investments significantly decrease following the listing, nor to rebalance capital structure, as the impact of the IPO on leverage is modest and short-lived. Overall, our evidence indicates that families time the IPO decision of their firms in correspondence of a temporary performance peak to partly divest their position in the firm at favorable conditions.

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Table 1. Sample composition. Sample of 65 family firm IPOs. Panel A reports the sample distribution by IPO year, Panel B by country of listing, Panel C by industry (1-digit SIC classification), and Panel D by IPO motivation stated in the official prospectus. The number of firms in Panel D does not add up to 65 because some firms cite more than one motivation in the prospectus.

Panel A. IPO year	no.	%
2004	1	1.5
2005	9	13.8
2006	26	40.0
2007	24	36.9
2008	4	6.2
2009	1	1.5
Panel B. Country		
France	24	36.9
Italy	20	30.8
Germany	12	18.5
United Kingdom	9	13.8
Panel C. Industry		
Manufacturing	25	38.5
Transportation	5	7.7
Wholesale Trade	7	10.8
Holding companies	17	26.2
Services	11	16.9
Panel D. IPO motivation		
Growth	53	81.5
Capital structure rebalancing	8	12.3
Cash out of existing shareholders	6	9.2
Working capital	5	7.7
Total	65	100.0

Table 2. Descriptive statistics. Sample of 65 family firm IPOs and private matched firms. All variables are measured at the last fiscal year before IPO. In Panel A, voting (cash flow) rights is the percentage of voting (cash flow) rights held by the controlling family. Age is the difference between the firm's IPO year and foundation year. In Panel B, ROA is EBIT divided by total assets. ROE is net earnings divided by total shareholders' equity. Cash flow is net earnings + depreciation and amortization, divided by total assets. In Panel C, capex is the annual variation in tangible fixed assets. NWC is net working capital, defined as inventories + accounts receivables – accounts payables. Acquisition is the value of acquisitions completed in the current year. All variables in Panel C (except asset sale) are divided by total assets. In Panel D, leverage is the sum of long term debt, loans, and other non-current liabilities, divided by total assets. Cash holdings is cash and cash equivalents divided by total assets. Dividend payout is common dividends divided by net earnings. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively, of the t-test and Wilcoxon signed-rank test for the difference in means and medians between IPO and matched firms.

	IPO firms			Matched firms			Difference	
Panel A. Firm characteristics	mean	median	std dev	mean	median	std dev	mean	median
Voting rights (%)	75.53	75.00	18.72	76.02	85.00	25.27	-0.49	-10.00
Cash flow rights (%)	74.67	75.00	19.03	76.02	85.00	25.27	-1.35	-10.00
Sales (€m)	86.49	34.72	146.65	68.75	42.04	115.84	17.74**	-7.32
Total assets (€m)	74.14	29.89	94.33	60.21	27.59	85.21	13.93***	2.30*
Age (yrs)	23.18	17.00	20.52	27.31	24.00	18.16	-4.13***	-7.00***
Panel B. Performance								
ROA (%)	14.93	13.70	13.08	7.31	5.02	8.10	7.62***	8.68***
ROE (%)	9.25	8.40	8.43	4.80	3.00	5.37	4.45***	5.40***
Cash flow (%)	13.21	12.72	8.09	8.50	8.53	5.96	4.71***	4.19***
Panel C. Investments								
Capex (%)	6.46	1.01	14.19	0.76	-0.12	6.24	5.70***	1.13***
NWC (%)	23.37	22.37	18.32	20.51	19.70	23.53	2.85	2.67
Acquisition (%)	1.84	0.00	10.33	0.00	0.00	0.00	1.84***	0.00***
Panel D. Financing								
Leverage (%)	26.65	24.95	19.04	28.24	25.10	21.69	-1.58	-0.15
Cash holdings (%)	15.45	11.42	16.21	13.19	6.78	15.85	2.26	4.64
Dividend payout (%)	21.90	0.00	34.03	-	-	-	-	-

Table 3. Performance of IPO vs. matched firms. Panel A reports the mean and median variation of the performance variables (ROA, ROE, Cash Flow) around the IPO, i.e. from year -1 to year +1, +3, and +5, with 0 being the IPO year. For instance, ΔX in [-1, +5] is defined as $X_{+5} - X_{-1}$. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively, of the t-test and Wilcoxon signed-rank test for the difference between the two groups. Panel B reports cross-sectional OLS regressions with ΔROA (Models 1-3), ΔROE (Models 4-6), and ΔCash Flow (Models 7-9) over the [-1,+1], [-1,+3], and [-1,+5] period around the IPO as dependent variables. The IPO variable equals 1 for IPO firms. Firm size (total assets) and age are in logarithm. Standard errors are clustered at the firm level. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Panel A.			IPO firms		Matched firms		Difference	
Univariate analysis	window	obs	mean	median	mean	median	mean	median
ΔROA	[-1, +1]	65	-7.53***	-3.37***	-0.67	-0.84	-6.86***	-4.23***
	[-1, +3]	65	-10.65***	-7.59***	-2.14	-0.64	-8.49***	-6.44***
	[-1, +5]	62	-11.22***	-7.34***	-2.93	-2.21	-8.57***	-5.93***
ΔROE	[-1, +1]	65	-5.11***	-2.37**	-0.40	0.03	-4.22***	-2.61***
	[-1, +3]	65	-7.24***	-5.40***	-1.08	-0.70	-6.13***	-3.32***
	[-1, +5]	64	-7.45***	-4.49***	-1.44**	-1.36**	-5.84***	-3.23***
ΔCash Flow	[-1, +1]	65	-5.48***	-2.72***	-0.75	0.00	-4.73***	-3.48***
	[-1, +3]	65	-6.05***	-4.53***	-1.51*	-0.87*	-4.42***	-2.80***
	[-1, +5]	62	-6.76***	-4.56***	-2.06***	-2.16***	-4.44***	-2.24***

Panel B.	ΔROA			ΔROE			ΔCash Flow		
Multivariate analysis	[-1, +1]	[-1, +3]	[-1, +5]	[-1, +1]	[-1, +3]	[-1, +5]	[-1, +1]	[-1, +3]	[-1, +5]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IPO	-6.8804***	-8.3363***	-7.8726***	-4.3812***	-6.0681***	-5.3169***	-4.6096***	-4.5965***	-4.4545***
	[1.7598]	[2.4208]	[2.1513]	[1.2423]	[1.7588]	[1.5425]	[1.2303]	[1.2953]	[1.3749]
Firm size	1.3790*	-0.121	0.6324	1.0803*	0.0468	0.2938	0.8611**	0.2885	0.5033
	[0.7332]	[0.6463]	[0.6429]	[0.5752]	[0.4626]	[0.4983]	[0.3893]	[0.3847]	[0.4818]
Firm age	0.7905	0.7866	1.7406	1.4986	0.4233	1.9834	1.0846	-0.0559	0.8113
	[1.5407]	[1.7750]	[2.2952]	[1.1846]	[1.3658]	[1.7976]	[1.0887]	[1.2504]	[1.6655]
Constant	-19.622	8.5832	-7.8206	-21.3434*	7.0983	-6.3021	-16.6484**	-1.6637	-8.6624
	[14.8028]	[15.7692]	[14.8991]	[11.2256]	[11.4279]	[10.1090]	[8.0343]	[9.8776]	[9.0831]
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.1269	0.0526	0.0799	0.1394	0.0743	0.1056	0.1255	0.0444	0.0168
Observations	130	129	118	130	129	118	130	129	118

Table 4. Offer structure and post-IPO evolution of ownership. In Panel A, offer volume is the number of shares offered in the IPO. Primary (secondary) shares is the number of newly issued shares (existing shares) offered in the IPO. Shares sold by family is the number of secondary shares sold by the controlling family. All measures in Panel A are divided by pre-IPO shares outstanding. In Panel B, voting (cash flow) rights is the percentage of voting rights held by the controlling family. Family firms reports the number of firms that keep being controlled by the same family that was controlling the firm at the IPO. Change of control reports the number of firms in which the family cedes control to another entity.

Panel A. Offer structure	mean	median
Offer volume (%)	38.55	37.24
Primary shares (%)	24.36	24.83
Secondary shares (%)	14.19	12.7
Shares sold by family (%)	10.12	7.34

	Voting rights		Cash flow rights		Family firms		Change of control	
Panel B. Ownership	mean	median	mean	median	no.	%	no.	%
IPO year + 1	55.31	57.20	53.36	54.83	64	98.5	1	1.5
IPO year + 2	55.55	56.16	53.60	53.08	63	96.9	1	1.5
IPO year + 3	54.52	55.50	52.68	53.19	62	95.4	1	1.5
IPO year + 4	53.44	54.84	51.43	52.00	62	95.4	0	0.0
IPO year + 5	50.78	52.34	48.86	51.01	61	93.8	1	1.5

Table 5. Investments of IPO vs. matched firms. Panel A reports the mean and median variation of the investment variables (Capex, NWC, Acquisitions) around the IPO, i.e. from year -1 to year +1, +3, and +5, with 0 being the IPO year. For instance, ΔX in [-1, +5] is defined as $X_{+5} - X_{-1}$. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively, of the t-test and Wilcoxon signed-rank test for the difference between the two groups. Panel B reports estimates of cross-sectional OLS regressions with ΔCapex (Models 1-3), ΔNet Working Capital (Models 4-6), and ΔAcquisitions (Models 7-9) over the [-1,+1], [-1,+3], and [-1,+5] period around the IPO as dependent variable. The IPO variable equals 1 for IPO firms. Firm size (total assets) and age are in logarithm. Standard errors are clustered at the firm level. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Panel A.			IPO firms		Matched firms		Difference	
Univariate analysis	window	obs	mean	median	mean	median	mean	median
ΔCapex	[-1, +1]	65	-3.01**	0.37	1.11	0.63	-4.12*	-1.67
	[-1, +3]	65	-5.37***	-0.83***	1.02	-0.20	-6.41***	-0.91**
	[-1, +5]	62	-5.57***	-0.59***	-0.35	0.29	-5.17**	-1.30*
ΔNWC	[-1, +1]	65	-0.46	0.00	1.30	1.05	-1.76	-0.56
	[-1, +3]	65	-1.09	-2.00	0.26	0.02	-1.26	-1.57
	[-1, +5]	62	-3.35	-2.94	-2.27	-0.95	-0.72	-1.04
ΔAcquisitions	[-1, +1]	65	5.25	0.00	0.00	0.00	5.25*	0.00
	[-1, +3]	65	-0.74	0.00	0.00	0.00	-0.74	0.00
	[-1, +5]	64	0.32	0.00	0.02	0.00	0.32	0.00

Panel B.	ΔCapex			ΔNWC			ΔAcquisitions		
Multivariate analysis	[-1, +1]	[-1, +3]	[-1, +5]	[-1, +1]	[-1, +3]	[-1, +5]	[-1, +1]	[-1, +3]	[-1, +5]
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
IPO	-4.3931*	-5.9897**	-5.1569**	-2.0981	-1.3634	-0.9221	5.1367*	-0.6534	0.5260
	[2.2814]	[2.4656]	[2.1175]	[1.5299]	[1.8375]	[2.2889]	[3.0038]	[1.2608]	[2.1834]
Firm size	0.0457	0.5878	-0.0697	0.4595	-0.0367	-0.3391	-0.3848	0.0524	-0.2646
	[0.5128]	[0.5751]	[0.6135]	[0.5733]	[0.6718]	[0.8465]	[0.5374]	[0.3359]	[0.4167]
Firm age	-1.1867	2.0415	0.897	-1.2071	0.0968	1.5163	-0.7707	0.4014	0.7279
	[2.0684]	[1.7034]	[1.9305]	[1.5563]	[1.7362]	[2.7086]	[2.1362]	[1.2292]	[1.1356]
Constant	17.2776	-14.0514	11.0024	-0.145	0.5298	-2.1696	8.693	-4.0661	-0.2377
	[14.2541]	[14.7957]	[15.5953]	[12.7564]	[13.9656]	[14.4342]	[16.2091]	[6.8109]	[8.0403]
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.0925	0.0975	0.0418	0.0227	-0.0712	-0.0719	0.0264	0.0052	0.0048
Observations	130	129	117	130	129	118	130	130	128

Table 6. Financing of IPO vs. matched firms. Panel A reports the mean and median variation of the investment variables (Leverage, Cash Holdings) around the IPO, i.e. from year -1 to year +1, +3, and +5, with 0 being the IPO year. For instance, ΔX in [-1, +5] is defined as $X_{+5} - X_{-1}$. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively, of the t-test and Wilcoxon signed-rank test for the difference between the two groups. Panel B reports estimates of cross-sectional OLS regressions with ΔLeverage (Models 1-3) and ΔCash Holdings (Models 4-6) over the [-1,+1], [-1,+3], and [-1,+5] period around the IPO as dependent variable. The IPO variable equals 1 for IPO firms. Firm size (total assets) and age are in logarithm. Standard errors are clustered at the firm level. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

Panel A.			IPO firms		Matched firms		Difference	
Univariate analysis	window	obs	mean	median	mean	median	mean	median
ΔLeverage	[-1, +1]	65	-3.13**	-3.88**	0.85	-0.11	-3.98**	-5.40**
	[-1, +3]	65	-0.89	-0.20	0.88	0.66	-2.07	-1.51
	[-1, +5]	62	-1.11	-2.73	0.59	0.00	-3.51	-5.42
ΔCash Holdings	[-1, +1]	65	3.81**	-0.11	0.54	0.40	3.27**	1.13*
	[-1, +3]	65	1.16	0.29	1.47	0.29	-0.37	1.38
	[-1, +5]	62	0.55	0.22	1.56	0.39	-0.84	0.52

Panel B.	ΔLeverage			ΔCash Holdings		
Multivariate analysis	[-1, +1]	[-1, +3]	[-1, +5]	[-1, +1]	[-1, +3]	[-1, +5]
	(1)	(2)	(3)	(4)	(5)	(6)
IPO	-3.6503	-1.1544	-1.4428	3.2509*	-0.8003	-1.7185
	[2.2591]	[2.7830]	[3.6706]	[1.7413]	[1.9304]	[2.1689]
Firm size	-1.4417	-0.7001	-1.8049	-1.1815	0.2435	0.2859
	[0.8861]	[1.0464]	[1.2075]	[1.0048]	[0.8281]	[1.0235]
Firm age	0.5225	2.2841	1.1439	-0.8433	-1.5561	-2.5550
	[1.8390]	[2.1360]	[3.4927]	[1.2655]	[1.1679]	[1.6391]
Constant	17.0846	-25.8477	-4.3625	24.959	2.4485	9.5335
	[21.2279]	[23.4291]	[30.0552]	[24.0392]	[19.2878]	[23.0316]
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industry fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.1173	0.1643	0.1000	0.0378	0.0747	0.0567
Observations	130	128	116	130	129	118

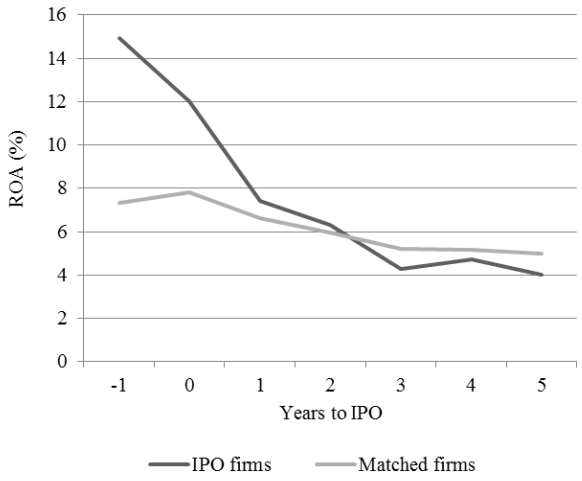
Table 7. Dividends. The table reports the number and percentage of firms that pay dividends and the average and median values of the dividend payout ratio, defined as common dividends divided by net earnings (the ratio is set to missing in case of negative earnings).

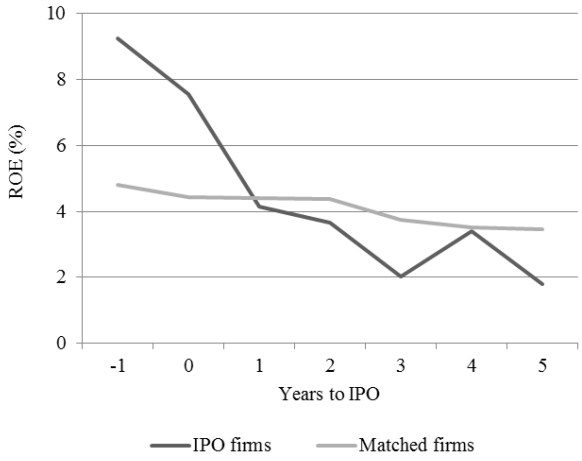
Years relative	Dividend payers		Dividend payout	
to IPO	no.firms	%	mean	median
-1	28	43.1	21.89	0.00
0	32	49.2	25.06	0.00
+1	39	60.0	29.10	15.22
+2	37	56.9	32.88	16.65
+3	35	53.8	37.50	0.00
+4	36	55.4	31.77	9.35
+5	33	50.8	54.09	0.00

Table 8. Post-IPO dynamics. Dynamic patterns of performance, investment, and financing variables after the IPO. The dynamic pattern of these variables in family firms going public is benchmarked against that of family firms that remain private. After^n is a dummy variable that, only for firms that go public, takes value 1 *n* years after the IPO, where *n* = 1, 2, 3, 4, or 5 years. Firm size is the log of total assets. All regressions are estimated with an intercept term. Standard errors are clustered at the firm level. ***, **, and * indicate significance at the 1, 5, and 10 percent levels, respectively.

	Performance			Investment			Financing	
	ROA	ROE	Cash Flow	Capex	NWC	Acquisitions	Leverage	Cash Holdings
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
IPO year 0	-4.0536***	-2.8466***	-2.8613***	-2.9551	-1.5756	4.4104	-8.0947***	9.3679***
	[1.2853]	[0.9179]	[0.9707]	[2.6071]	[1.5257]	[3.4470]	[1.6528]	[1.8684]
IPO year 1	-8.3282***	-6.3163***	-5.4234***	-5.8286**	-1.5081	5.8008*	-4.4841**	3.8040*
	[2.0694]	[1.6347]	[1.5462]	[2.3082]	[1.8033]	[3.3096]	[2.0610]	[2.0123]
IPO year 2	-8.5271***	-6.2865***	-5.3141***	-5.7823**	-1.656	3.0565	-2.6344	0.4686
	[2.2178]	[1.6980]	[1.7213]	[2.3359]	[2.0473]	[2.7244]	[2.4813]	[2.0920]
IPO year 3	-10.1513***	-7.7921***	-5.3452***	-7.8756***	-1.0423	-0.9622	-1.8275	-0.1787
	[2.4357]	[1.8841]	[1.7356]	[2.4338]	[2.1014]	[1.9823]	[2.6485]	[2.2264]
IPO year 4	-9.4729***	-6.2269***	-4.5364**	-7.9613***	-1.6105	-0.2719	-2.3517	0.1702
	[2.6784]	[2.3611]	[2.1968]	[2.3269]	[2.0769]	[3.5478]	[2.8786]	[2.4840]
IPO year 5	-10.1319***	-7.4165***	-5.4689***	-8.1223***	-2.0195	-6.8877	-1.7319	-1.3381
	[2.5128]	[2.0827]	[1.9547]	[2.4418]	[2.2979]	[6.2502]	[3.1219]	[2.4064]
Firm size	2.1876	1.5602	0.5125	3.0991***	0.9194	-0.2338	0.9747	0.0532
	[1.3766]	[1.2873]	[1.3381]	[1.1279]	[2.1076]	[1.3084]	[2.6015]	[1.4001]
Firm fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Adjusted R-squared	0.6295	0.5353	0.5733	0.1577	0.1849	0.0171	0.8146	0.8243
Firm-year observations	887	887	887	886	887	887	887	888

Figure 1. Performance patterns around IPO. The graphs report the mean values of the performance variables for the sample of IPO firms and matched firms, from year -1 to +5, with 0 being the IPO year.





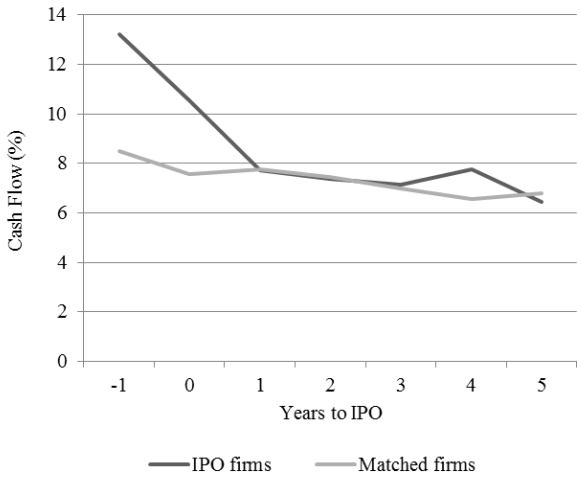


Figure 2. Investment patterns around IPO. The graphs report the mean values of the investment variables for the sample of IPO firms and matched firms, from year -1 to +5, with 0 being the IPO year.

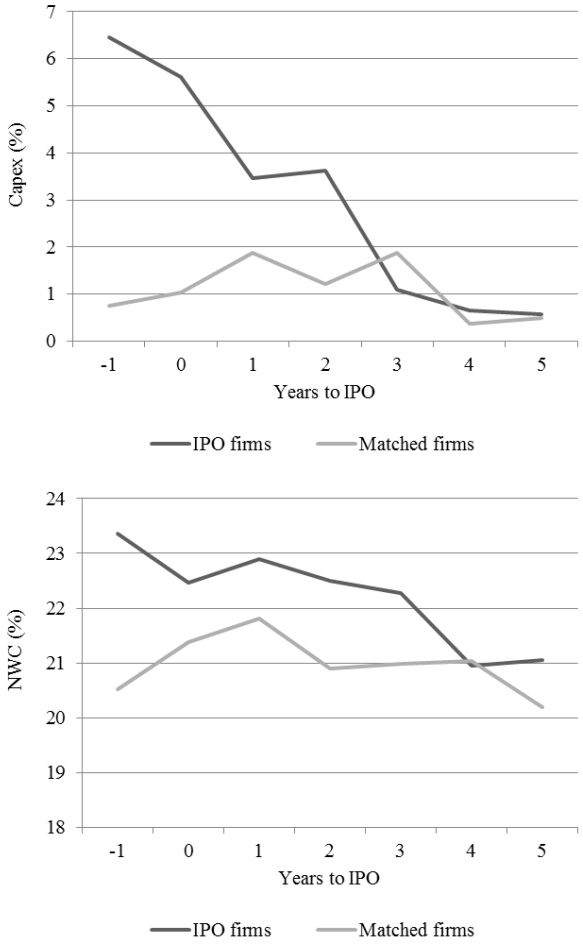
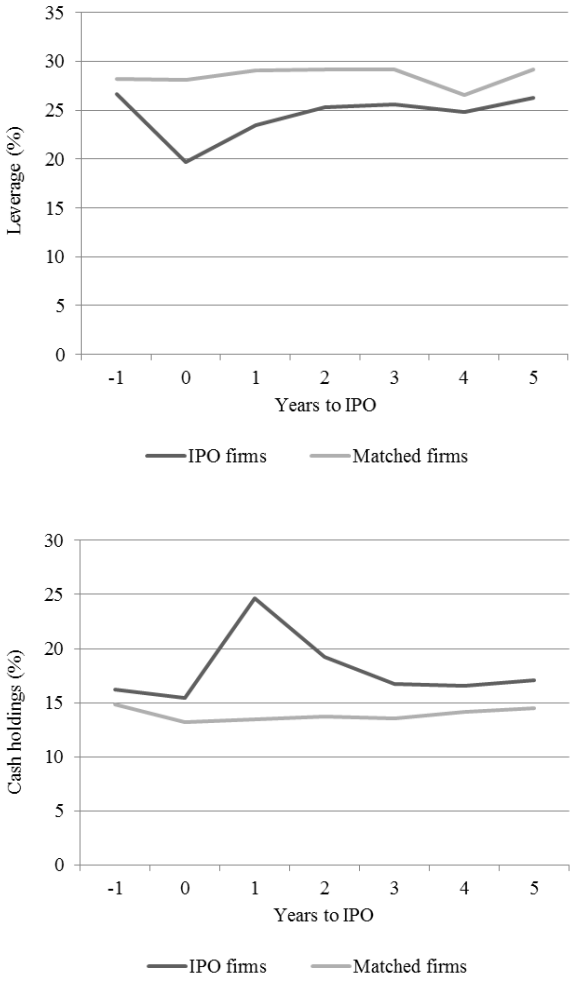


Figure 3. Financing patterns around IPO. The graphs report the mean values of the financing variables for the sample of IPO firms and matched firms, from year -1 to +5, with 0 being the IPO year.



Appendix A. Variables definition.

Variable	*Definition*
Panel A. Firm and IPO characteristics	
Voting rights	Percentage of voting rights held by the controlling family
Cash flow rights	Percentage of cash flow rights held by the controlling family
Sales	Firm's annual sales
Total assets	Firm's total assets
Age	Difference between the firm's IPO year and foundation year
Offer volume	No. shares offered in the IPO / no. pre-IPO shares outstanding
Primary shares	No. newly issued shares offered in the IPO / no. pre-IPO shares outstanding
Secondary shares	No. existing shares offered in the IPO / no. pre-IPO shares outstanding
Shares sold by family	No. secondary shares sold by the controlling family
Panel B. Performance	
ROA	EBIT / total assets
ROE	Net earnings / total shareholder's equity
Cash flow	(Net earnings + depreciation and amortization) / total assets
Panel C. Investments	
Capex	Variation in tangible fixed assets / beginning-of-year total assets
Net Working Capital	Inventories + accounts receivables – accounts payables
Acquisitions	Value of acquisitions completed in the current year of at least 1 €m in deal value / total assets
Panel D. Financing	
Leverage	(Long term debt + loans + other non-current liabilities) / total assets
Cash holdings	Cash and equivalents / total assets
Dividend payout	Common dividends divided by net earnings (missing in case of negative earnings)