Political Money Contributions of U.S. IPOs

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Abstract

We produce the first study to explore the effect of political money contributions on IPOs. Exploiting a hand-collected database, we show that both lobbying and PAC expenditure pay off on issue day as donors incur less underpricing, an effect that can be amplified by contribution size and strategic targeting of recipients. Investigating the causes in multiple channels, we also associate donor IPOs with negative offer price revisions and lower aftermarket volatility. Collectively, our results offer new empirical grounding to the information asymmetry theory.

Keywords: initial public offerings; IPO underpricing; political connections

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IN THE LAST WEEK of October 2013, with barely 15 days remaining to the planned IPO, Twitter Inc was intensifying its effort to finalize a price range for its offering. Interestingly, the firm chose this week to file its first-ever lobbying report. The issues lobbied for comprised a long agenda, mainly pertinent to consumer matters, foreign relations, technology and copyright. This expenditure came complementary to Twitter's newly formed political action committee (PAC) in an effort to reach Washington just before the company's equity reached the New York Stock Exchange. Twitter hardly pioneered the practice of political money contributions (PMC) in light of an imminent IPO. The rival social network, Facebook, initiated its own PMC within the year prior to going public, and Google, in 2004, launched lobbying campaigns in a similar time frame.

While the list of prospective issuers with a PMC record goes on, the corporate finance literature has yet to investigate an apparent paradox. The main purpose of an IPO is to raise funds for the issuing firm. The listing process itself entails substantial expenses (marketing, auditing, legal etc.). If so, under which economic rationale would issuers engage in PMC before the IPO cash enters the corporate coffer?

In spite of the prolific literature on information asymmetries and agency conflicts in the process of going public (e.g. Beatty, 1989; Megginson and Weiss, 1991; Carter et al., 1998; Certo, 2003; Chemmanur and Paeglis, 2005; An and Chan, 2008; Chang et al., 2016), PMC have been overlooked as a strategy to assuage this type of problems. Research centering on the interplay of business with politics mainly draws evidence from established public corporations that have developed their political connections over time (Faccio, 2006; Cooper et al., 2010; Ramanna and Roychowdhury, 2010; Chaney et al., 2011; Yu and Yu, 2011). Contributing to both strands of literature, this study explores the possibility that PMC contain the foremost cost of listing, IPO underpricing[2].

A priori several lines of argument support our conjecture. First, a politically connected firm may possess bargaining power in pricing negotiations with the lead underwriter. Second, PMC are likely to structure a network facilitating information flow among the principal IPO participants. Third, access to the highest echelon of government, as a signaling mechanism, could mitigate concerns on the liquidity or price level of the new shares. Fourth, PMC may buy implicit insurance against IPO-related litigation.

To investigate for a causal effect, we assemble a unique U.S. IPO database by manually searching firms in the archives of the U.S. Federal Election Commission (FEC) and Center for Responsive Politics (CRP) for PAC and lobbying contributions, respectively. Correcting for self-selection bias, we find that lobbying, PAC and any combination of the two results in less money left on the table. The effect is of high economic significance: *ceteris paribus*, an additional 10% PMC expenditure reduces IPO underpricing by 2.5%.

To disentangle the channels leading to the inverse association, we hand-collect additional information on underwriters' PMC and IPO-related litigation. Through a series of tests, we show that underwriters value PMC clients in themselves, rather than as a means to reach their connections, and assign a higher valuation. In addition, PMC shares trade with less volatility than their non-PMC counterparts so that the appeal of an issuer's political

[2] 'Underpricing' is the prevailing jargon for the large positive returns that IPO shares typically realize on the first day of trading. Hereafter, we use the terms 'underpricing' and 'first-day return', interchangeably.

strategy extends to aftermarket investors. By contrast, there is insufficient evidence of a networking or insurance channel.

Exploiting the traceable nature of PAC contributions, we reveal a differential effect on IPO return by type of recipient candidates. Our findings dispel the notion attaching special prestige to U.S. Senators; supporting campaigns for the House of Representatives generates a stronger effect. Splitting across party lines, we show that a Democratic bias in contributions results in the least underpricing. Finally, following Cooper et al. (2010), we construct indexes for candidate 'strength,' 'power' and 'ability.' These cross sections reveal an incremental effect for home state candidates and lengthy tenures of accomplishment as well as the need for committing to a recurring and uninterrupted PMC pattern.

In an extended sensitivity analysis, we introduce alternative time cutoffs and estimate the baseline specifications for lobbying and PAC in isolation. The need for timely contributions is highlighted. In addition, the least underpriced IPOs are shown to have employed some blend of lobbying and PAC, whereby lobbying caters for the size factor by being uncapped and PAC for the personalized dimension by entering into candidates' coffers.

Together, our findings have important implications for prospective issuers. We show how a firm's political donations, commonly associated with remote and indirect benefits, translate into an immediate and measurable gain on the IPO day. Firms which are less known to the market and vulnerable to underwriters' attempt to extract rents from underpricing could benefit substantially from PMC. Given the cash-scarcity prior to an IPO, our insight facilitates the efficient appropriation of an issuer's political budget.

This work makes several contributions to IPO and corporate finance literature addressing a topic of public interest such as the symbiotic relation between the corporate world and politics. A focal point in IPO studies is issuers' effort to overcome moral hazard and adverse selection by signaling quality. A non-exhaustive list shows issuers targeting prestige spillovers by: (1) hiring reputable auditors (Beatty, 1989), (2) inviting VCs with a proven record of successful IPOs (Megginson and Weiss, 1991), (3) employing top-notch underwriters (Carter et al., 1998), (4) infusing management teams with prestigious executives (Certo, 2003), and (5) seeking a credit rating (An and Chan, 2008). Expanding this list, we introduce PMC as a new mechanism for attaining legitimacy. Compared to the above strategies, the advantage is likely to be twofold as: (1) with a median of $71,500, PMC plausibly entail a lower cost; and (2) the benefits are expected to extend over well beyond the IPO event.

Research on political connections mainly revolves around whether PMC constitute investment or a form of perquisites consumption (Ansolabehere et al., 2003; Aslan and Grinstein, 2012; Skaife et al., 2013). In the first work to draw evidence from IPOs, we lend support to the former framing by showing how such cash flows assist in the transition to a public domain. In this regard, our empirical evidence adds to the recent studies supporting the value-relevance of corporate political connections (Faccio et al., 2006; Fan et al., 2007; Boubakri et al., 2008, 2012; Chen et al., 2010; Chaney et al., 2011; Houston et al., 2014). Extending Cooper et al. (2010), we gauge the political and partisan preferences of market participants and show that candidate fixed effects do matter in the

primary as well as secondary market. In a final contribution, we complement established PMC determinants with novel ones, tailored to IPOs, and, thus, update the studies investigating incentives for political involvement (Masters and Keim, 1985; Zardkoohi, 1985; Grier et al., 1994; Hart, 2001; Faccio, 2006).

The remainder of the paper has the following structure. Section 2 reviews selected studies of IPO and political connections literature. Section 3 develops our hypothesis. We describe our sample and contrast the two PMC types in Section 4. Section 5 outlines our methodology. The empirical analysis is in Section 6. We test the robustness of our results in Section 7. Finally, Section 8 concludes the paper.

2. Related Literature

2.1. Theoretical Framework

Price discovery for new equity offerings is an inherently uncertain process. The relevant literature invariably captures this uncertainty by means of listing day aftermarket performance. Since the seminal works of Logue (1973) and Ibbotson (1975) have revealed a robust pattern of abnormal positive returns, a plethora of theories attempt to explain the conundrum of IPO first-day return, which is appropriately referred to as underpricing. The asymmetries in information among the various parties involved in an IPO deal serve as a focal point for most explanations offered. For example, Rock (1986) and Beatty and Ritter (1986) maintain that in light of a de facto informational disadvantage, risk-averse investors are naturally inclined to pressure for a discount price. In parallel, effective price discovery requires unbiased feedback from engaged investors and, if possible, their proprietary insight. But since private information comes at a cost, the underwriter is likely to adjust the offer price downwards in order to provide compensation at the issuer's expense (Benveniste and Spindt, 1989; Benveniste and Wilhelm, 1990; Spatt and Srivastava, 1991). Accordingly, the need to underprice lies at the intersection of demand-side and bookbuilding factors.

Another strand of literature, also stemming from the asymmetric information framework, assigns value to underpricing and illustrates circumstances under which an issuer would concede to a large first-day return. Far from the market friction view, Welch (1992), Habib and Ljungqvist (2001) and Demers and Lewellen (2003) regard a reasonably low offer price as an effective marketing tool for appealing to an extended base of uninformed investors. The implicit assumption is that the firm will be able to capitalize in due course on the enhanced attention drawn from a euphoric IPO, recouping more wealth than what was given up at listing. Chemmanur (1993) adds increased analyst coverage to the benefits of a high initial return while a number of studies pertinent to the legal implications of IPOs highlight the lawsuit deterrence effect of a strong first-day close (Hughes and Thakor, 1992; Drake and Vetsuypens, 1993; Lowry and Shu, 2002).

Lastly, Loughran and Ritter (2002), in a notable turn from asymmetric information to prospect theory, portray underpricing as a rather harmless vice, suggesting that initial investors, already being in a prosperous state through the amassment of IPO proceeds, rarely reckon the marginal utility foregone on the first day of trade. Yet, it is Jay Ritter who estimates on his website the cost of global IPO underpricing to be $135.12 billion. And

this only captures the period 1998–2012.

Plausibly, money left on the table would not add up to this amount without the intrusion of agency costs. Issuers' management and prominent investors frequently secure allocations of underpriced shares by purchasing additional underwriting (Liu and Ritter, 2010) and brokerage services (Ritter and Loughran 2002, 2004), respectively. The pervasiveness of agency conflicts becomes apparent through a quasi-natural experiment conducted by Chang et al. (2016) in Taiwan, the country which hosts the world's only mandatory pre-IPO market. In this environment of low valuation uncertainty, the pre-market price comprises an important predictor of IPO offer price, yet the average fist-day return is a sizeable 55% strongly correlating with investment banking revenues and other underwriters' incentives to underprice.

2.2. Political Connections as a Value Adding Strategy

The value adding component of corporate political connections is explored in literature via two main routes; these either involve scrutiny of company insiders' proprietary network or, alternatively, apply a 'follow-the-money' approach going after cash flows directed from corporate coffers to politics.

Within an international or cross-country context, poor data availability and, on occasion, deliberately opaque interrelations between the business world and local governments typically leave no option but to directly investigate the individual profiles of corporate officials. In these cases, companies derive their connections through directors and executives who either actively engage in politics or remain closely related to others who do. Faccio (2006) applies this identification method in a comparative study of 47 countries and finds that connected firms are able to sustain larger market shares without this feature to reflect proportionately on the accounting bottom line (see also Boubakri et al., 2008). The study observes further that connected firms have more levered capital structures as they enjoy preferential access to debt financing (e.g. lenient debt covenants), although there is no evidence of incurring a smaller interest expense than their peers. Chaney et al. (2011) assess the reporting quality of more than 4,500 firms in 19 countries and reach the conclusion that politically connected firms are not penalized for consistently underperforming in this field. Apparently, in light of political reach, accounting data shrinks in value relevance.

Tracing political connections in the U.S. at the director's level, similarly to the above studies, would likely produce less enlightening results. In the Faccio (2006) database, out of a total of 6,007 U.S. firms examined, only 13 of them qualify to be classified as politically connected. U.S.-centered literature circumvents this limitation by recognizing corporate expenditure for political purposes (overwhelmingly, lobbying and PAC) as a valid proxy for political connections. Notably, within this methodological framework, the particular PMC type appears of minor importance. For example, even though Chen et al. (2010) and Cooper et al. (2010) concentrate on lobbying and PAC contributions, respectively, they draw a common conclusion: donor firms realize superior financial and accounting returns. Besides performance, political money has been documented to facilitate more questionable ends. Correia (2014) finds that PMC lower the probability of an SEC enforcement action and, even if the firm is

subjected to one, the financial penalty is expected to be moderate. Yu and Yu (2011) take this argument one step further stressing the immunity to fraud that lobbying can provide. Interestingly, "firms that lobby on average have a significantly lower hazard rate of being detected for fraud, evade fraud detection 117 days longer, and are 38% less likely to be detected by regulators."

2.3. Political Connections in the Going-Public Process

Recent studies on China show that political connections can play a decisive role towards a successful IPO. Fan et al. (2007), drawing evidence from the (partial) privatizations of Chinese state-owned enterprises (SOEs), attest to the limited underpricing that these firms incur when headed by incumbent or past government officials. Corroborating this research, Francis et al. (2009) discuss the threefold benefit that a strong association with the government entails by supporting premium valuations, imposing discipline on first-day returns and reducing costs throughout the entire issuance process. Yet, the distinct character of the Chinese capital markets casts doubt on the applicability of this insight into a cross-country framework. More importantly, these connections, largely an inheritance from the past economic model, entail no cost and, therefore, may not be considered as an issuer's political strategy.

Resorting to the international privatization literature, the studies of Jenkinson and Mayer (1988) and Perroti and Guney (1993) meet on the excessive underpricing of SOEs compared to non-SOE IPOs, a finding that is challenged in Dewenter and Malatesta (1997). But again, any inferences to be drawn from SOEs to the typical corporate issuer remain, at best, dubious as the *ex ante* uncertainty is fundamentally different when the state is a counterparty.

In a U.S. setting, Ritter and Welch (2002), within a line that has escaped attention, raise the speculation that underwriters employ the allocation of (discounted) IPO shares as a tool for influencing politicians. Logically, the alignment of incentives should be revised when the issuer, rather than standing between the investment banker and the sought-after connections, assists in bridging the distance. We develop this proposition in the next section.

3. Hypothesis Development

The incremental value accruing to a firm soliciting equity capital 'connected' can draw support from multiple lines of argument. Without ruling out additional interpretations, we herein identify the following:

A bargaining power channel conferring an edge in the negotiations with the lead underwriter. Agency costs are commensurate with underwriters' bargaining power and their incentives to profit at issuers' expense (Chang et al., 2016). A PMC setting is likely to mitigate these costs as: (1) the de facto esteem of connected firms simplifies the marketing effort and typifies offerings which enhance an underwriter's reputational capital, rather than those relying on it for certification (as in Carter and Manaster, 1990); (2) the preferential access to alternative means of financing (Faccio, 2006; Boubakri et al., 2008; Houston et al., 2014) allows for the possibility of either

waiting until a satisfactory negotiated outcome arises or cancelling the deal altogether; and (3) the rent-extracting capacity attributable to connections (Hart, 2001; Faccio, 2006; Cooper et al., 2010) reinforces expectations of a recurring business relationship with the underwriter (e.g. follow-on offerings, M&A activity and trading revenue for the brokerage arm).

A networking channel capable of mitigating information asymmetries for market participants. Pan et al. (2012) confirm this proposition using the cross section of IPO returns and directors' social networks. A more level playing field is likely within a niche network of politically connected people or entities. Institutional investors, without precluding other economic agents (underwriters, retail investors, financial and legal intermediaries), should be central to such an association by virtue of an advanced sophistication level.

A signaling channel whereby issuers with access to the elites influence the political processes, and through them, performance outcomes. Let one of our opening examples, Facebook, illustrate this notion. With infringement of intellectual property representing a major threat, viability remains conditional on the protection of proprietary rights. The firm's IPO prospectus (S-1 document) declares: "If we are unable to protect our intellectual property, the value of our brand and other intangible assets may be diminished, and our business may be adversely affected." The company's PMC reveal an ongoing lobbying effort on issues of copyright, patent and domain name protection, a campaign that was complemented by PAC contributions towards the leadership of the relevant Congressional committees[3]. Because IPOs commonly underperform (Ritter, 1991) or fail (Jain and Kini, 2008), investors actively pursue clues capable of reducing issuer-specific uncertainty.

An insurance channel protecting from IPO-related lawsuits. A low offer price limits settlement amounts as well as issuers' likelihood of being sued in the first place (Lowry and Shu, 2002). PMC can substitute for underpricing in deterring litigation as: 1) plaintiffs risk causing discontent among the issuer's political contacts and 2) links to politics benefit firms facing legal action by means of increased tolerance and milder penalties (Yu and Yu 2011; Correia, 2014).

The above channels converge on the disciplinary role of PMC on first-day returns and lead to a testable hypothesis: *Ceteris paribus, underpricing is inversely related to political money contributions of IPO firms.*

4. Data and Sample

4.1. Sample Selection Criteria – IPO

We retrieve from the Securities Data Company (SDC) the population of IPOs that have been floated on

[3] The election cycle 2010–2011 saw substantial PMC activity for Facebook Inc. In detail, lobbying expenditure reached $ 1,701,390 and total PAC contributions $ 270,000. Among PAC recipients we note Bob Goodlatte ($ 2,000) and Mel Watt ($ 2,000) as the chairman and ranking member, respectively, of the Intellectual Property, Competition, and the Internet committee of the House of Representatives. In the Senate, PAC recipients include John Kerry ($ 2,500) and Jim DeMint ($ 2,500) as the chairman and ranking member, respectively, of the Communications, Technology and the Internet committee.

U.S. exchanges for the period 1 January, 1998 to 30 June, 2013. Consistent with previous literature (e.g. Loughran and Ritter, 2002), we eliminate IPOs priced at less than $5 per share, limited partnerships, reverse LBOs, ADRs and foreign issuers whose shares may be trading in local markets. While allowing for financial firms, we exercise caution to exclude closed-end funds, REITs, royalty trusts and special purpose investment vehicles (SIC 6723–6999). Finally, we exclude corporate spin-offs; these firms have been part of larger businesses and, hence, entail less uncertainty. The remaining sample is merged with the databases of Compustat and Center for Research in Security Prices (CRSP) from which we obtain accounting and aftermarket data, respectively. These interventions generate a sample of 1,578 IPOs.

4.2. The Two Alternate Routes to PMC: Lobbying & PAC

Lobbying and PAC comprise the two main avenues for U.S. corporations to reach out to the Congress chambers. Setting a time frame of up to five years before the IPO, our special sample of interest comprises 273 IPOs with PMC.

Lobbying is the prevalent means, in terms of frequency and size, by which U.S. companies interfere in the making of politics (de Figueredo and Richter, 2014). Contributions of this type (publicly disclosed under the Lobbying Disclosure Act of 1995) are uncapped and aim to advance a firm's perspective of the institutional framework within which it operates. Rather than being directed at specific politicians, lobbying pertains to the essence of the legislative process. Lobbyists typically are political insiders with extended networks of contacts. Our source is the Center for Responsive Politics (CRP) which collects information directly from the semi-annual lobbying reports filed with the secretary of the Senate's Office of Public Records (SORP). CRP initiates coverage from the year of 1998, inclusively. Matching our IPO sample with the CRP database, we identify 245 firms with lobbying experience.

PACs (political action committees), established by firms and other special groups, have the explicit purpose of supporting or fighting against a candidate's election. The corporate treasury is eligible to provide for a PAC's operating expenses but is prohibited from granting additional support. The funds need to originate from third-party sources for which a firm routinely resorts to its key constituents (employees, shareholders etc.). Being fully traceable, PAC contributions are a popular proxy for corporate America's political connections (Milyo et al., 2000). We rely for PAC data on the Federal Election Commission's (FEC) electronic archive. We manually investigate each firm in the 'Candidate Master' and 'Contributions to Candidates from Committees' files so that we obtain the detailed profiles of PAC recipients (party affiliation, House membership, representing state and more). This search yields 89 PAC-active IPOs.

4.3. Descriptive Statistics & Sample Identification

Table 1 provides a description of the full sample (N=1,578) vis-à-vis the subsamples of firms with (N=273) and without (N=1,305) PMC. The period from 1 January, 1998 to 30 June, 2013 spans 8 election cycles, which we use as time frames for the IPOs. PMC IPOs need not fluctuate in proportion with overall listings. For

example, 2004–2005 was the election cycle with the most PMC firms (60); yet the total IPOs (271) accounted for almost half of those in the 1998–1999 cycle (465). Interestingly, even though the latter period coincided with the late 90s' bubble and, hence, gave rise to the majority of IPOs (29.47% of the full sample), the number of PMC firms (30) exactly equals that of the most recent election cycle of 2012 – 30 June, 2013. Evidently, the frequency of prospective issuers resorting to PMC is on the rise.

Next, we array IPOs into the divisions of the Standard Industrial Classification (SIC) code. Most PMC firms fall within the manufacturing division (34.8%) followed by the service division (26.74%) and finance, insurance and real estate division (15.02%). The findings appear plausible in light of the heavy regulatory frameworks accompanying a lot of industries within these divisions (see Appendix A for an identification of regulated industries). In contrast, divisions experiencing minimal regulations exert frugality on PMC activity (e.g. the wholesale and retail trade division accounts for a mere 5.49% of total PMC firms). Consistent with this notion, 29.30% of PMC firms come from regulated industries while the respective percentage for the non-PMC sample sharply drops to 19.70%. PMC IPOs are less likely to be associated with Internet or technology industries, venture capital financing and the NASDAQ exchange.

Table 2 presents descriptive statistics for the full sample as well for the PMC and non-PMC subsamples. We define all variables in Appendix A. Preliminary evidence in support of our hypothesis can be found in Panel A. First, PMC IPOs record an average first-day return of a modest 19%. This accounts for a good ten percentage points decline compared to the 29% return of non-PMC IPOs. Second, a pattern of downward offer price revisions appears compatible with the need to 'leave money on the table' so as to compensate informed investors for disclosing proprietary information (Hanley, 1993; Loughran and Ritter, 2002). Alternatively, it may suggest an initial overvaluation of donor IPOs and the need for subsequent correction. Notably, it is within the PMC sample where the mean value of revisions (-2%) obtains a negative sign. The mean differences in returns and revisions are significant at the 1% and 5% level, respectively.

Panel B analyzes IPO characteristics to be used as control variables in subsequent regressions. PMC firms are considerably larger than their non-PMC counterparts as demonstrated by the average proceeds raised: $ 354 million for the former and $ 92 million for the latter IPOs. They also deliver superior profitability (captured by an earnings per share dummy) and rely less on leverage. In addition to stronger fundamentals, PMC firms possess more years of operational experience with a mean age approximating 25 years; that is about 10 years older than the average of the non-contributing sample. Consistent with the quality image, PMC IPOs are less likely to resort to venture capital financing and are mainly taken public by top-ranked underwriters. In contrast, stocks from the Internet or the broader technology sector, which usually have IPOs at infant stages (so as to fuel further growth), are relatively underrepresented in the PMC sample. This may also explain their relative absence from NASDAQ, technology issuers' favorite listing platform. Interestingly, the dotcom period of 1999–2000, for all of its record-high IPO activity, gave rise to fewer PMC IPOs, in proportion terms, than the credit crunch crisis of 2007–2008. Finally, there is no significant difference in the percentage of retained ownership.

For communicating the essence of contributions in a visual way, we refer the reader to Figure 1. Over the eight election cycles under research, the 273 identified PMC firms have channeled $74,286,745 and $6,751,262 towards lobbying and PAC contributions, respectively. Apart from dollar intensity, lobbying also prevails in frequency. Specifically, 184 IPOs (i.e. 12% of the total; 67% of the PMC sample) have practiced lobbying but not PAC contributions, whereas 28 firms (i.e. 2% of the total; 10% of PMC) exhibit PAC-only activity. The remaining 61 IPOs (i.e. 4% of the total; 22% of PMC) have stayed active in both PMC types.

The descriptive statistics of contributions are reported in Table 3. The mean (median) political money, a construct for aggregating lobbying and PAC amounts, equals $296,843 ($ 71,500). Partitioning by contribution type, IPOs disburse about 1 dollar in PAC for every 4 lobbying dollars. The respective means are $75,857 for PAC contributions and $303,211 for lobbying. Tracing PACs to the recipient level, IPO firms provide campaign financing to a mean (median) of 41 (10) candidates. Consistent with Milyo et al. (2000) showing firms to spend primarily for access, with little or no interest in the outcome of elections, the lion's share of the funds is targeted at incumbents

5. Methodology

To relate PMC involvement to IPO pricing, we specify a treatment effects model as follows[4]:

$$Ln\,(1+underpricing)_i = a + \beta\, X_i + \gamma\, PMC_i + \varepsilon_i \qquad (1)$$

where X_i encompasses a vector of firm- and IPO-specific characteristics, PMC enters the model as a dichotomous variable, and ε stands for the residual term. Further, letting Z be a set of measurable determinants of PMC, we can define accordingly the selection equation as:

$$PMC_i^* = \omega Z_i + \eta_i \qquad (2)$$

$$where\ PMC_i = \begin{cases} 1, & if\ \ PMC_i^* > 0 \\ 0, & if\ \ PMC_i^* \leq 0 \end{cases}$$

Firms placing the legislative framework among key operational risks are inclined to self-select themselves into the PMC practice. Unobservable determinants of PMC such as a firm's extant political network and overall exposure to the institutional environment are also susceptible to influence pricing. We expect these elements to enter equations (1) and (2), through ε and η, respectively. Heckman (1979) proves how selection bias cripples the reliability of OLS estimates and, ultimately, comes down to an omitted variables problem. In a setting that diverges from Heckman (1979) only in that the outcome equation regressand (underpricing) assumes a value for every observation in the sample, we can apply the proposed two-stage procedure to account for the bias.

[4] Due to the shape of underpricing distribution (right-tail skewness and leptokurtosis), we use the natural logarithm of the variable (as in Willenborg, 1999; Willenborg and McKeown, 2000; Leone et al., 2007). The transformation improves the explanatory power of the model with no effect on the inferences.

Econometrically, we can make a case for the need for selectivity correction by rewriting equations (1) and (2) in an augmented model as shown below:

$$E\,[Ln(+underpricing)|PMC=1]=\beta'X+\gamma+\;E\,[\varepsilon|PMC=1]$$
$$=\beta'X+\gamma+\rho\;\sigma_{\varepsilon}\;\frac{\varphi\,(\omega'\mathrm{Z})}{\phi\,(\omega'\mathrm{Z})} \qquad (3)$$

Respectively, the model for the non-PMC IPO becomes:

$$E\,[Ln(1+underpricing)|PMC=0]=\beta'\mathrm{X}+\;\rho\;\sigma_{\varepsilon}\;\frac{-\varphi\,(\omega'\mathrm{Z})}{1-\phi\,(\omega'\mathrm{Z})} \qquad (4)$$

Subtracting equation (4) from (3), we derive the incremental expectation due to PMC:

$$E\,[Ln(1+underpricing)|PMC=1]-\;E\,[Ln(1+underpricing)|PMC=0]$$
$$=\;\gamma+\rho\;\sigma_{\varepsilon}\;\frac{\varphi\,(\omega'\mathrm{Z})}{\varphi\,(\omega'\mathrm{Z})(1-\phi\,(\omega'\mathrm{Z})} \qquad (5)$$

where Φ and ϕ refer to the cumulative and density distribution function, in this order, of the standard normal distribution.

Modeled as such, the incremental expectation coincides with the OLS estimate of (γ), which distorts the actual effect on underpricing to a direction determined by the sign of the terms in equation (5). This bias can be dispelled by the inclusion of the *inverse Mills ratio (λ)*, which is hypothesized to be the omitted variable in equation (1). The selectivity correction, conditional on PMC, obtains then the form:

$\lambda=\frac{\varphi\,(\omega'Z)}{\Phi\,(\omega'Z))}$ if PMC=1 or $\lambda=\frac{-\varphi\,(\omega'Z)}{1-\Phi\,(\omega'Z))}$ $\lambda=\frac{-\varphi\,(\omega'\mathrm{Z})}{1-\phi\,(\omega'\mathrm{Z})}$ if PMC=0

An alternative estimation approach that we employ is *full information maximum likelihood (FIML)*. Making a stronger assumption about the bivariate normality of the residual terms in equations (1) and (2), we estimate the system simultaneously. Because it processes all available information at once, FIML is a more efficient estimation technique than the two-stage procedure described above (Nelson, 1984). In addition, the FIML estimates enable testing of residual independence by means of the Wald test.

Finally, we relax the assumption of the normal distribution of the residuals to challenge the results outside the Heckman framework. This is attainable with an *instrumental variables (IV)* approach (see Wooldridge, 2002, chapter 5), which instruments for PMC, in equation (1), via ω. The use of fitted probabilities as an instrument implies that the probit model can assume a suboptimal specification with minor effect on the IV estimates. This robustness property allows for flexibility in the selection of explanatory variables, a useful feature considering the discord about PMC determinants. IV facilitates an additional endogeneity control, the Hausman test.

6. Empirical Results

6.1. The Effect of PMC on IPO Underpricing

Table 5 reports our empirical results explaining the effect of PMC on underpricing for the full sample of firms (N=1,578). To demonstrate the robustness of findings, we tabulate the resulting coefficients from all three estimation methods[5]: the Heckman two-stage procedure (Column 2), the MLE two-equation treatment model (Column 3) and the instrumental variables method (Columns 4 and 5). We reserve Column 1 for the OLS estimates to facilitate benchmarking. The dependent variable remains in all specifications the first-day return estimated as the difference between the first aftermarket price and the IPO offer price divided by the IPO offer price. Among the regressors, we include variables that have been shown to account for much of the variability in returns. Specifically, we use:

Firm age set equal to the number of years elapsing from a firm's foundation to IPO. Previous literature employs age as a surrogate for risk (Ritter, 1984, 1991; Carter et al., 1998). The assumption is that firms with operations dating back longer have proven their resilience against market swings and thus constitute safer investments.

Venture capital. Reputable venture capital financiers with a proven record of successful IPOs can lend credibility to their portfolio firms. Megginson and Weiss (1991) note that they are typically involved in order to stay as opposed to cashing out at IPO. This vision implies caution against excesses on the amount of money to be left on the table. Loughran and Ritter (2004), based on the grandstanding hypothesis, describe, instead, a sense of urgency. VCs need to release funds towards the next IPO targets. We, therefore, leave the direction of the relationship up to empirical investigation.

IPO proceeds. We use this item as a proxy for size. Increased visibility causes larger companies to leave a proportionately bigger footprint within the investor community. As a result, the latter can relate with clarity to the firm and issuer-specific uncertainty diminishes.

Earnings per share (EPS) is a dichotomous variable capturing issuers with gains in the year trailing the IPO. On the one hand, a positive accounting return should alleviate uncertainty. On the other, profitability comes second to a convincing vision for sustainable profitability in the post-IPO period. Trueman et al. (2000) find that, for Internet stocks, nonfinancial measures of performance such as unique visitors and page views, dominate net income in value relevance. We maintain mixed expectations about the sign of the EPS coefficient.

Leverage. We estimate this ratio as total liabilities over total assets before the IPO. A reasonably high level of leverage imposes discipline on management (Jensen, 1986). *Ceteris paribus*, firms relying on debt financing should leave less money on the table.

[5] In Appendix B, we present the first-stage results and discuss how we satisfy the exclusion restriction through an instrument, *Bills introduced*, which is novel to the literature.

Credit crunch and *dotcom period* capture the 2007–2008 turbulence in financial markets caused by the subprime mortgage crisis and the overheated period of 1999–2000 (thoroughly described in Ljungqvist and Wilhelm, 2003), respectively. Both are in the form of indicator variables.

Industry controls enter our model by means of indicator variables for *technology* and *Internet firms* to account for the excessive underpricing that these IPOs typically entail (e.g. Aggarwal, 2002). Additionally, we include a *NASDAQ* dummy for being the preferred marketplace of IPOs.

Underwriter rank captures the perceived quality of the agent underwriting the issue. Carter and Manaster (1990) evidence significant underpricing by firms engaging prestigious underwriters and interpret it as a means to signal quality (only strong issuers are capable of bearing the cost). Arguably, an established underwriter would not risk impairing reputational capital by facilitating an offering of dubious quality.

Share overhang, defined as the ratio of shares retained by pre-IPO shareholders to the equity given up in IPO (Bradley and Jordan, 2002), reflects the natural dilution caused by the issuance. This cost is incurred proportionately by all shareholders retaining equity post-offering. With a large number of new shares (low overhang) the losses escalate, making underpricing costlier.

Market return is the compounded daily return on the CRSP value-weighted index over the 20 trading days preceding the offering. As a measure of the market sentiment (Logue, 1973; Hanley, 1993; Loughran and Ritter, 2002; Lowry and Schwert, 2004), it is expected to positively associate with IPO return.

Revisions refer to the change of the IPO offer price from the midpoint of the initial filing price range reflecting all public and private information that becomes available to the underwriter by the time of listing (Hanley, 1993; Cornelli and Goldreich, 2001, 2003). As a complementary pricing metric, we use revisions as an outcome variable in subsequent investigation. To address omitted variables concerns, we employ this covariate as a robustness exercise in Column 5.

Invariably, the three estimation methods in Columns 2, 3 and 4 generate highly significant (at the 1% level) coefficients on the PMC variable and confirm the predicted negative sign. Furthermore, the coefficient magnitudes are consistent with each other. They sharply contrast the OLS benchmark, in Column 1, which even though attests to the negative relation (at the 5% level), it comes out less than a fourth of the other estimates. Augmenting the baseline specification to account for revisions, in Column 5, confirms the incremental explanatory power of this covariate, yet the effect of PMC remains intact[6]. In sum, the inverse association between PMC involvement and IPO underpricing appears robust across different specifications and estimation methods.

The findings pertaining to the control variables are interesting in their own right. We obtain a positive and highly significant coefficient on proceeds raised while presumably size should lead to less, rather than more, underpricing; this may hint at the need to attract more uninformed investors via a discount. The coefficient on

[6] The 1% threshold of statistical significance for the PMC coefficient is marginally missed. We reiterate the Heckman and MLE estimations, including the revisions variable, and attain the 1% level of significance for both methods. For simplicity, we report in Column 5 the most conservative estimate.

age (significant and negative) corroborates previous research showing long-lived companies to be associated with more chances of survivorship, and thus less uncertainty. Consistent with Bradley and Jordan (2002), we attain a significantly positive coefficient on share overhang; dilution costs are greater in issues with lower overhang suggesting a lower underpricing and vice versa. In contrast, underpricing significantly increases with Internet and technology stocks as per Ljungqvist and Wilhelm (2003). This explanation may extend to the coefficient (positive and significant) on NASDAQ for being the preferred listing platform for technology issuers. Expectedly, the coefficient on the dotcom period is positive and highly significant, evidencing the excessive funds that were left on the table in the bullish period of 1999–2000. The fact that the market sentiment reflects on initial returns is also captured by the coefficient on market return (positive and significant at all levels). The positive and significant values on venture capital and underwriter rank contradict the findings from Carter and Manaster (1990) and Megginson and Weiss (1991), though they are strongly aligned with Beatty and Welch (1996) and Loughran and Ritter (2004). Notably, we register no relation for a firm's leverage and earnings per share, confirming the mixed signals that both disseminate. Finally, the credit crunch crisis of 2007–2008, in spite of the heavy shadow on IPO volume, leaves underpricing unaffected.

To establish the endogenous nature of PMC, we look for separate evidence in each estimation method. First, the coefficient on the inverse Mills ratio exhibits high statistical significance (p=1%), lending support to firms' self-selection into PMC. Second, the Wald test, based on the maximum likelihood estimators, attests to the correlation of residual terms in the selection and outcome equations at the 1% level. Third, the Hausman test, from an instrumental variables framework, strongly indicates the presence of feedback effects (p=5%). Evidently, latent determinants of the PMC decision are also impounded into first-day returns. Taken together, these findings lead to the rejection of the null hypothesis of no endogeneity.

In Table 6, we focus on the PMC sample (N=273) in order to assess the effect of *PMC (dollar) level*, rather than simple *PMC involvement*, on underpricing. Including the same covariates as previously, we now use as variables of interest: (1) *political money* (Specification 1) to capture any combination of lobbying and PAC contributions; (2) *lobby money* (Specification 2) to concentrate on lobbying IPOs; and (3) *PAC money* (Specification 3) to account for PAC IPOs. Invariably, the coefficients on these variables attain significance, at all conventional levels, while maintaining their negative sign. Consequently PMC, far from a nominal value proxy of 'connectedness' or a good faith gesture (in the case of PAC), proves its investment character with an incremental effect for each dollar disbursed. All else being equal, a modest 10% increase in PMC spending accounts for a 2.5% reduction in underpricing.

6.2. Strategic Targeting for Less Money Left on the Table

With PAC being the traceable element of PMC, we now explore the type of candidates that market investors want issuers to connect to. In Specifications 1 through 4 of Table 7, we view candidates solely as structural units of their basic affiliations and aggregate contributions towards the House of Representatives (Specification 1), U.S. Senate (Specification 2), Democratic party (Specification 3) and Republican party

(Specification 4). This generic treatment of recipients provides insight into the relative dynamics that candidates obtain simply by virtue of their chosen Congressional or partisan sideline. While all regressions result in negative and significant coefficients, the House of Representatives dominates the Senate in terms of both coefficient magnitude and level of statistical significance. Similarly, Democratic candidates have a clear advantage over Republicans. These findings cast doubt upon the value relevance of two popular beliefs. First, the extra prestige accruing to the Senate appears less conducive to a firm's effort to preempt the political agenda. A plausible reason lies within the constitutional command for all revenue and appropriation bills to be originated in the House of Representatives. Consequently, support for the House (as opposed to the Senate) comprises a prompt interference in the chain of the legislative process. Second, we provide new evidence refuting a Republican bias among market participants. We, thus, extend the work of Cooper et al. (2010) who document higher abnormal returns with the cross section of contributions to Democratic rather than Republican candidates; as we show, the latter also fall short in the mitigation of *ex ante* uncertainty.

To exploit more of the informational wealth of PAC, we abandon the 'follow-the-money' approach and replace the variables of interest with comprehensive measures of candidate characteristics. Following the recent literature (e.g. Aslan and Grinstein, 2012; Correia, 2014), which increasingly resorts to the constructs of Cooper et al. (2010), we introduce the following indexes:

1) The first index, $PI^{STRENGTH}$, is expressed as follows:

$$PI_{it}^{strength} = \sum_{j=1}^{J} Candidate_{jt,t-5} \times I_{jt} \times \frac{NCV_{jt}}{NOV_{jt}} \times rellength_{jt,t-5}$$

where $Candidate_{jt,t-5}$ is a binary variable assuming the value of 1 if the firm has raised PAC money in support of candidate j over the period t−5 to t; I_{jt} is a binary variable set to 1 if candidate j has been an incumbent at time t, and 0 otherwise; NCV_{jt} is the number of votes that candidate j's party holds in office at time t; NOV_{jt} is the number of votes that candidate j's opposing party holds in office at time t; and $rellength_{jt,t-5}$ is the number of months that the relationship between firm i and candidate j spans assuming uninterrupted PAC contributions until time t.

2) The second index, PI^{POWER}, is defined as follows:

$$PI_{it}^{power} = \sum_{j=1}^{J} Candidate_{jt,t-5} \times I_{jt} \times \left[\sum_{m=1}^{M} \frac{Committee\ rank_{mt}}{Median\ Committee\ rank_{mt}} \right]$$

where Committee $rank_{mt}$ is the reciprocal of candidate j's rank on committee m; Median committee $rank_{mt}$ is the median number of members on a given committee m of which candidate j is a member; and the rest of the variables are defined as above.

3) The third index, $PI^{ABILITY}$, is expressed as follows:

$$PI_{it}^{ability} = \sum_{j=1}^{J} HomeCandidate_{jt,t-5} \times I_{jt} \times \frac{NCV_{jt}}{NOV_{jt}}$$

where $HomeCandidate_{jt,t-5}$ is a binary variable set to 1 for contributions supporting candidacies from the state of a firm's headquarters, and 0 otherwise. All other variables are defined as above.

We present the results of this last set of regressions in Specifications (5), (6) and (7). The coefficient signs are invariably negative with $PI^{STRENGTH}$ and PI^{POWER} attaining statistical significance at the 5% and 1% levels, respectively. $PI^{ABILITY}$ is significant at the 10% level. Accordingly, the candidate characteristics that we have assumed to instill confidence are valid: (1) veteran Congress members with a proven record of career progression and (2) local politicians, to a lesser extent, are conducive to maintaining first-day returns within range. Therefore, candidates scoring highly in the three indexes merit priority in PAC funds appropriation compared to other colleagues in Congress or new challengers. A caveat is in order: a firm's political capital is subject to all challenges residing in intangible assets valuation (e.g. lack of measurement scale or absence of control over future benefits).

6.3. A Closer Look at the Causes of the Limited Underpricing of PMC IPOs

Given the strength of the relationship, we investigate for a causal effect in each of the channels we have identified developing our hypothesis.

6.3.1. Signaling Channel

Could an extant PMC record impose discipline on subsequent returns realized on PMC shares in the same manner that it does on first-day returns? If so, PMC IPOs can be less underpriced because of fewer concerns among investors relating to liquidity or the level at which a politically connected stock will trade.

To trace the aftermarket volatility, we measure the standard deviation of daily returns (Ritter 1984) over three distinct time intervals. Due to a likely roller coaster course of share prices within the first trades, we start recording returns at day 8. Panel A of Table 8 reports summary statistics and univariate mean comparison results for PMC and non-PMC IPOs. In the 60-day interval, the mean volatility of the former sample (2.9%) is 22% lower than that of the latter sample. The effect is accentuated by the number of days elapsing: PMC IPOs are 24% and 25% less volatile when measured over the 120 and 365 days, respectively.

To assess the observed differences, we resort to propensity score matching (PSM)[7]. Rosenbaum and Rubin (1983) show that, when units receiving a treatment share as many characteristics as possible with non-treated units, their between outcome comparisons are least affected by self-selection. Employing the same set of PMC determinants we used in the selection equation of the treatment effect models, we calculate the PMC likelihood

[7] Originally developed for clinical trials and economic policy evaluation, PSM features widely in corporate finance. In the IPO context, examples can be found in the analysis of venture capital decisions (Lee and Wahal, 2004; Lee and Masulis, 2011), underwriter choice (Lee and Masulis, 2011) and disclosure practices (Boubaker et al., 2016) among other studies.

for each IPO firm (propensity score). Subsequently, we match PMC IPOs (treatment sample) to non-PMC IPOs (control sample) by means of the nearest neighbor, stratification and kernel methods[8]. This procedure results in 3 treatment and control samples for each of the intervals. Panel B of Table 8 summarizes the estimates of the average treatment effect on the treated (ATT), i.e. the difference in mean volatility that is attributable to PMC. As shown, the effects remain negative and statistically significant (at the 1% level) across time and matching methods. Consistent with our descriptive analysis, ATT magnitudes increase in the longer intervals.

Overall, the aftermarket evidence suggests considerably less discord on the value of PMC shares.

6.3.2. Bargaining Power, Networking and Insurance Channels

A smooth ride of PMC equities on the first day of trade, and beyond, invites debate as to whether it reflects the outcome of an equally smooth bookbuilding period. To the extent that political connections facilitate information flow, they are expected to obviate, to a significant degree, the need for subsequent information production and interventions in pricing. Alternatively, in line with the bargaining power channel, political connections are a notion potent enough to constitute the underwriter more conceding to management's value claims. There is, thus, increased likelihood of the former agent producing a price range inflated by an implicit PMC premium and eliciting investor bids from a high stating point.

Relevant studies operationalize bookbuilding turbulence in terms of the offer price deviation from the midpoint of the initial filing price range (Benveniste and Spindt, 1989; Benveniste and Wilhelm, 1990; Spatt and Srivastava, 1991; Hanley, 1993; Cornelli and Goldreich, 2001, 2003). Because of its comprehensive nature, we expect this metric to lend itself well in describing bookbuilding under a PMC regime. We explore this cross-section in Table 9. All covariates of the earlier specifications retain their place in the new regressions as pricing for bookbuilding participants and aftermarket investors is driven by the same factors (refer for a proof to Lowry and Schwert, 2004). We, thus, leave the right-hand side of the equation unchanged, adjusting only for *market return*, which now captures the holding period return from filing to IPO day.

Due to the endogeneity concerns previously discussed[9], Columns 1 and 2 present the instrumental variables estimates of the model with the dependent variables to be absolute filing price revisions (*Absolute revisions*) and filing price revisions (*Revisions*), respectively. Investigating the magnitude of revisions vis-à-vis their sign reveals a distinct pricing pattern for connected equities. The insignificant coefficient on PMC in Column 1 indicates that connected equities are generally not any easier to value than other IPOs. As shown in Column 2, the average revision in the PMC regime comprises a sizeable (13%) downward adjustment, fulfilling all conventional levels of statistical significance. Therefore, the monotonically negative effect lends support to

[8] Zhao (2004), through a series of Monte Carlo experiments, associates each matching algorithm with distinct tradeoffs. In the absence of a single 'best-practice', the use of multiple methods becomes a necessary robustness exercise.

[9] In a methodologically similar manner to the first-day return equation of Table 5, we conduct the Hausman test and reject the null of no endogeneity. In the interest of space, these statistics and the first-stage results of Table 9 regressions are not reported. They are available from the authors upon request.

issuers' bargaining power for attaining an initial valuation that is ultimately proven overoptimistic. At the same time, this finding casts doubt on the networking effect of PMC.

Second, we consider the possibility that the underwriter is also connected. If underwriters with no traceable links to politics perceive clients' connections as substitutes, they are incentivized to exert more effort towards retaining connected issuers. Consequently, this subsample could overstate the overall PMC effect. Collecting data on lead underwriters' PMC, our baseline model is augmented by the interaction of PMC with an *unconnected* dummy variable (Column 3). In an alternative definition, whereby connectedness arises indirectly through a PMC clientele, the *unconnected* dummy is set to 1 for underwriters facilitating no more than 1 PMC IPO in any given year (Column 4).

Two conclusions can be drawn from the resulting estimates. First, with the PMC coefficient maintaining the negative sign (at the 5% level of significance) across both specifications, an IPO firm can expect to benefit from a political strategy regardless of the chosen underwriter; issuer's and investment banker's PMC do not cancel each other out. Second, with the interaction term statistically significant (at the 5% level) for indirectly connected underwriters only, we show that attracting PMC IPOs comprises an end in itself as opposed to a means for establishing ties to politicians. This is in line with evidence from Houston et al. (2014) showing lower spreads on connected firms' loans as a result of their perceived creditworthiness rather than bankers' attempt to cajole the borrower's network.

Column 5 tests the insurance channel in a sample of firms (N=95) which became target of IPO-related litigation under Section 11 of the 1933 Securities Act. Following Lowry and Shu (2002), we use lawsuits as a proxy for legal risk. PMC feature in 19 issuers, or 20% of the sued firms, exceeding the respective proportion in the full sample. However, these IPOs match full sample underpricing with an average of 27%. The insignificant coefficient on the PMC dummy fails to support differential valuations. Politically connected issuers exhibit no defiance towards legal implications and refrain from setting a higher offer price under these circumstances.

Taken together, the findings in Table 8 and Table 9 associate PMC IPOs with less valuation uncertainty and increased bargaining power, respectively. Chang et al. (2016) caution that underwriters can extract economic rents even under minimal valuation uncertainty if the issuer is perceived of low bargaining power. By aiding in fulfilling both conditions, PMC combat prime causes of underpricing and increase efficiency in the IPO process.

7. Additional Robustness Tests

7.1. Sensitivity Analysis

In this section, we conduct a sensitivity analysis based on PMC time and type. To facilitate comparison, Panel A of Table 10 recaps the instrumental variable estimates γ_1 and γ_2 for the effect of PMC on initial return and offer price revisions, respectively.

Based on time from IPO, we stratify PMC IPOs into three subsamples: (i) 119 firms exerting PMC within a period of 6 months or less; (ii) 120 IPOs with PMC older than 6 months and up to a year; and (iii) the remaining

34 IPOs with PMC dating older than one and up to five years. In each subsample, we reiterate the baseline regressions and report findings in Panel B. As shown, time undermines γ_1 and γ_2 in magnitude and statistical significance. In the return equation, beyond the 6 months cutoff, PMC dating no longer than a calendar year prior to the IPO results in an almost identical effect to PMC that is up to five years old. In parallel, the statistical significance of the coefficients descends the conventional levels, fulfilling, however, the 10% threshold even for the earliest cash flows. The sensitivity to time extends to the revisions equation and coefficient γ_2. Notably, the coefficient magnitude for the 12-month period preceding the IPO shrinks nearly by half beyond the second cutoff and abolishes the high statistical significance.

Next, we assess the possibility that externalities of either PMC type flow into, and inflate, the effect of the alternate type. Therefore, we split the sample further into: i) 61 firms which have employed both PMC methods; ii) 184 which have lobbied; and iii) 28 PAC sponsors. As shown in Panel C, the effect on initial return and price revisions is robust to PMC type with γ_1 and γ_2 significant at the 5% level or higher. Notably, significance is maximized when '*Both lobby-PAC*' is used, for no other sample attains the 1% level in both equations. This highlights a complementary nature: the personalized dimension of PAC enables effective lobbying by creating more 'eager ears', yet, malleable policymakers are of little use without the strategic communication element of a lobbying campaign.

7.2. Alternative Specifications, Sampling, and Measurements

Additional robustness exercises include the following: (1) measuring underpricing to the end of the 11th trading day and 1st trading month (Chambers and Dimson, 2009); (2) excluding all IPOs in industries with SIC codes 6 (Lowry and Shu, 2002); (3) winsorizing returns and contributions at the 1st and 99th as well as 5th and 95th percentiles; (4) scaling PMC amounts by IPO proceeds; (5) including dummy variables for IPOs occurring within years of Congressional and presidential elections; and (6) specifying the Heckman model without exclusion restrictions so that it is identified solely by the nonlinearity of the inverse Mills ratio. In all tests, the results remain qualitatively similar and, in the interest of brevity, are suppressed.

8. Summary and Conclusion

In the first study to relate political donations to IPOs, we argue that such cash flows do matter as they can alter the dynamics to the issuer's advantage. Our empirical evidence lies at the intersection of demand and supply side reasons: (1) market investors are shown to confide in a connected firm's ability to maneuver in the institutional environment and (2) the underwriter systematically commences the price-discovery process from a high starting point as evidenced by a pattern of downward offer price revisions. The opportune setting for maintaining first-day returns within range entails substantial implications; all else being equal, an additional 10% PMC expenditure reduces IPO underpricing by 2.5%. With a median contribution of $71,500, PMC comprise a surprisingly cost-effective strategy.

In devising the optimal spending pattern, we establish the complementary nature of lobbying and PAC contributions. At the candidate level, incremental value lies in affiliating with the Democratic Party and House of Representatives. At the level of individual characteristics, lengthy tenures of accomplishment and home state candidacies maximize the effect. The challenge for issuers rests in synchronizing PMC with the listing endeavor; our sensitivity analysis reveals the urgency for fulfilling a 6-month threshold trailing the IPO.

We pave the way for follow-up investigation by offering a glimpse of the PMC-driven sentiment past the IPO event. Tracing the trades of PMC shares deeply into the aftermarket period, we document significantly lower volatility than a matched portfolio of non-PMC IPOs. A limitation pertains to lobbying contributions that, subsequent to the Lobbying Disclosure Act of 1995, are available in databases from 1998 onwards. A study on the long-term performance and survivorship is currently constrained by sample size. In the near future, we anticipate research from this alternate horizon.

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Appendix A

Variable	Definition
	Panel A: IPO pricing
First-day return	The difference between the first secondary market closing price available on CRSP and IPO offer price, divided by IPO offer price. This variable is transformed into the regression models by adding 1 and taking the natural logarithm.
Revisions	The difference between IPO offer price and midpoint of initial filing price range, divided by the midpoint of initial filing price range.
Absolute revisions	The absolute magnitude of the *Revisions* variable.
	Panel B: Contributions
PMC	Dummy variable set to 1 for IPOs with lobbying or PAC contributions, else 0.
Political money	The natural logarithm of all lobbying and PAC contributions made in the election cycle most closely preceding the IPO with an oldness cutoff set at 5 years.
Lobby money	The natural logarithm of total lobbying dollars in the year most closely preceding the IPO, with an oldness cutoff set at 5 years.
PAC money	The natural logarithm of total dollar contributions towards candidates in the election cycle most closely preceding the IPO, with an oldness cutoff set at 5 years.
House money	The natural logarithm of total dollar contributions towards House of Representatives candidates in the election cycle most closely preceding the IPO, with an oldness cutoff set at 5 years.
Senate money	The natural logarithm of total dollar contributions towards Senate candidates in the election cycle most closely preceding the IPO, with an oldness cutoff set at 5 years.
Democrat money	The natural logarithm of total dollar contributions towards Democratic candidates in the election cycle most closely preceding the IPO, with an oldness cutoff set at 5 years.
Republican money	The natural logarithm of total dollar contributions towards Republican candidates in the election cycle most closely preceding the IPO, with an oldness cutoff set at 5 years.
Both lobby - PAC	Dummy variable set to 1 for IPOs with both lobby and PAC contributions, else 0.
Just lobby	Dummy variable set to 1for IPOs with lobbying contributions only, else 0.
Just PAC	Dummy variable set to 1 for IPOs with PAC contributions only, else 0.
	Panel C: IPO characteristics
Firm age	The number of years elapsed since firm's foundation to IPO date, using foundation dates from the Field-Ritter database. The variable is transformed into the regressions by adding 1 and taking the natural logarithm
Venture capital	Dummy variable set to 1 for venture capital-backed firms, else 0.
Proceeds	Gross proceeds, in millions of U.S. dollars, raised by the IPO. The variable is estimated as shares offered times the offer price.
Dotcom period	Dummy variable set to 1 for IPOs within the 1999-2000 period, else 0.

Internet firm	Dummy variable set to 1 for IPOs of Internet firms, else 0. As Internet firms are classified those with business description sections in Thomson Financial SDC containing any of the words "Internet", "Online", "eBusiness", "eCommerce", and "Website".
Technology firm	Dummy variable set to 1 for IPO firms with SIC codes 3571, 3572, 3575, 3577, 3578 (i.e. computer hardware); 3661, 3663, 3669 (i.e. communications equipment); 3671, 3672, 3674, 3675, 3677, 3678, 3679 (i.e. electronics); 3812 (i.e. navigation equipment); 3823, 3825, 3826, 3827, 3829 (i.e. measuring and controlling devices); 3841, 3845 (i.e. medical instruments); 4812, 4813 (i.e. telephone equipment); 4899 (i.e. communications services); and 7371, 7372, 7373, 7374, 7375, 7378,7379 (i.e. software), else 0.
Underwriter ranking	Dummy variable set to 1 for IPOs engaging underwriters of the highest prestige ranking (a value of 9) in the Loughran and Ritter (2004) database, else 0.
Share overhang	The ratio of shares retained by the pre-IPO shareholders over shares issued in the offering.
Credit crunch	Dummy variable set to 1 for IPOs within the financial ('credit crunch') crisis of 2007–2008, else 0.
NASDAQ	Dummy variable set to 1 for NASDAQ-listed IPOs, else 0.
Market return	The compounded daily return on the CRSP value-weighted index over the 20 trading days trailing the IPO.
Panel D: Firm fundamentals	
Assets	The trailing book-value of annual assets in millions of U.S. dollars.
Earnings per share	Dummy variable set to 1 for positive earnings per share in the last fiscal year prior to IPO, else 0.
Leverage	Defined as the ratio of total liabilities over total assets in the last fiscal year prior to IPO.
Panel E: PMC determinants	
Regulated industry	Dummy variable set to 1 for IPO firms with SIC codes of 4900–4939 (electric and gas), 1300 (oil and gas extraction), 4000– 4700 (transportation), 4800 (telecommunications), 4950–4959 (sanitary services) and all 6000s (financial companies), else 0.
Pre-IPO mgt ownership	Percentage of total shares held by executive officers & directors prior to IPO, with hand-collected data from the IPO prospectuses.
Bills introduced	The number of bills and joint resolutions introduced in each 2-year Congress.
Electoral College	The electoral college votes corresponding to IPO firm's headquarters state.
Cash flow	The natural logarithm of net income before extraordinary items plus depreciation and amortization minus dividends on common and preferred stock. The data comes from the last fiscal year prior to IPO with all amounts in millions of dollars.
Industry PMC	The number of firms in industry (at the 4-digit level of SIC code) with a traceable PMC record.
R&D	Dummy variable set to1 for IPO firms reporting an R&D figure, else 0.
HHI	The Herfindahl -Hirschman index (HHI) of industry concentration constructed with net revenues from Compustat.
Business segments	The number of firm's business segments as given by the Compustat segment file.
Geographic segments	The number of firm's geographic segments as given by the Compustat segment file.
Media coverage	Dummy variable: 1 for IPOs within the top 25th percentile of results returned by the LexisNexis database n the year prior to PMC, else 0.
Government purchases	Dummy variable set to1 for the five sectors topping the Economic Census list of U.S. public spending i.e. the sectors of defense, heath, energy, transportation and education, else 0.
Unionized employees	Percentage of industry-wide (at the 4-digit level of SIC code) participation of employees in labour unions as reported in Hirsch and Macpherson (2003).

Appendix B

Appendix B reports the first-stage results for each specification of Table 5. Following the literature (Masters and Keim, 1985; Zardkoohi, 1985; Hart, 2001; Cooper et al., 2010; Skaife et al., 2013), we model a firm's PMC likelihood in terms of: assets, cash flow, percentage of unionized employees, industry PMC, the Herfindahl -Hirschman index (HHI) of industry concentration, electoral college votes, the number of business and geographic segments and dummy variables to capture R&D expenditure, regulated industries and dependence on government purchases (see Appendix A for detailed definitions). Additionally, we use variables tailored to IPOs:

Media coverage. Given the information scarcity prior to IPO, media can promulgate issuers' PMC and, therefore, maximize the return on their political investment.

Pre-IPO management ownership. Management and other stakeholders compete over the available PMC budget (Hart, 2001). To the extent that contributions comprise perquisite consumption, the PMC likelihood should increase with management owning a larger stake in the company.

To satisfy the exclusion restriction, we specify *Bills introduced* to capture ideas for legislation which have received adequate support to become a bill. While it is unlikely that this variable affects first-day returns, incentives for PMC increase with a longer agenda of issues brought before Congress. For incumbent officials, a heavier workload consumes resources either as inputs into the legislative process (i.e. lobbying) or in the effort to reconcile the policy making consequences with the chances for reelection (i.e. PAC), so that the demand for either type of contributions escalates.

The findings are in line with the above studies: the PMC likelihood increases with size, resource availability, operational complexity and government purchases. Our new covariates of media coverage, pre-IPO management ownership and bills introduced are also highly conducive with statistical significance at 1% level.

Table B1: Determinants of PMC Involvement for IPO firms

This table reports the first-stage results of Table 5 regressions. The probability of PMC involvement is regressed on all Table 5 covariates and a list of PMC determinants. The sample consists of U.S. IPOs (N=1,578) announced over the period 1 January, 1998 to 30 June, 2013. The first column reports the resulting coefficients and the second the z-Statistics. All variables are defined in Appendix A. ***, **, and * denote statistical significance at the 0.01, 0.05, and 0.10 level, respectively.

1st stage regressions	*IV method*		*Heckman*		*MLE*		*IV method (with revision)*	
	Coef.	*z-Stat.*	*Coef.*	*z-Stat.*	*Coef.*	*z-Stat.*	*Coef.*	*z-Stat.*
Proceeds	0.044***	3.61	0.197***	2.86	0.168**	2.51	0.051***	3.31
Earnings per Share	-0.057***	-2.56	-0.305**	-2.10	-0.349**	-2.41	-0.046*	-1.67
Leverage	-0.001	-0.77	-0.026	-0.68	-0.008	-0.29	0.000	-0.19
Firm age	-0.000	-0.04	-0.014	-0.29	-0.024	-0.52	-0.003	-0.28
Venture Capital	-0.020	-0.98	0.026	0.22	-0.003	-0.03	-0.006	-0.25

Dotcom period	-0.092***	-4.72	-0.620***	-4.9	-0.651***	-5.08	-0.080***	-3.4
Financial crisis	0.090***	2.57	0.413***	3.25	0.391***	3.1	0.079**	2.07
Internet firm	0.072***	2.99	0.277*	1.76	0.259*	1.66	0.060**	2.1
Tech firm	-0.016	-0.79	-0.111	-1.05	-0.082	-0.78	-0.015	-0.6
Underwriter rank	0.024	1.28	0.125	1.1	0.099	0.88	0.032	1.41
Share Overhang	0.005*	1.74	0.025**	2.08	0.026**	2.01	0.003	1.01
NASDAQ	-0.038*	-1.75	-0.037	-0.33	-0.045	-0.41	-0.035	-1.34
Market Return	0.113***	2.91	0.609***	2.51	0.627***	2.62	0.152***	3.17
Assets	0.023***	3.13	0.129***	3.08	0.154***	3.77	0.020**	2.34
Cash flow	0.019**	2.12	0.094**	2.06	0.098**	2.17	0.025**	2.32
Bills introduced	0.063***	2.53	0.355***	2.96	0.346***	2.97	0.057**	2.16
Pre-IPO mgt ownership	0.182***	7.56	0.889***	6.75	0.819***	6.3	0.200***	7.06
Electoral College	-0.000	-0.12	-0.001	-0.28	-0.001	-0.54	0.000	0.53
Industry PMC	0.000	1.14	0.000	1.41	0.000**	2.24	0.000	0.6
Regulated industry	0.093***	3.49	0.434***	3.94	0.408***	3.79	0.118***	3.59
R&D	0.175***	7.79	0.914***	7.64	0.850***	7.18	0.180***	6.87
HHI	-0.136	-0.97	-0.680	-1.05	-0.818	-1.29	-0.295*	-1.73
Business segments	0.030***	2.8	0.090**	1.96	0.091**	2.02	0.025**	2.04
Geographic segments	0.000	-0.04	-0.008	-0.33	-0.007	-0.27	-0.005	-0.98
Media coverage	0.053***	3.08	0.252***	2.71	0.241***	2.68	0.054***	2.63
Government purchases	0.060**	2.06	0.292***	2.29	0.336***	2.69	0.027	0.79
Unionized employees	0.095	0.82	0.127	0.22	0.160	0.28	0.198	1.27
Revisions							-0.151**	-2.12
N	1,578		1,578		1,578		1,578	
Pseudo-R^2	0.2361		0.2850		0.2850		0.2347	

Table 1: Summary Statistics

This table presents statistics for a sample of 1,578 U.S. IPOs from 1 January, 1998 to 30 June, 2013 along with the sub-samples of IPOs with and without PMC activity. The IPOs are described by (1) the election cycle in which they occur, (2) the Standard Industrial Classification (SIC) division, (3) company specific information, and (4) market value measures. All variables are defined in Appendix A. IPO deals are retrieved from the Securities Data Company (SDC) Database with aftermarket data obtained from CRSP. PMC data comes from the OpenSecrets website for lobbying and the Federal Election Commission (FEC) archive for PAC contributions.

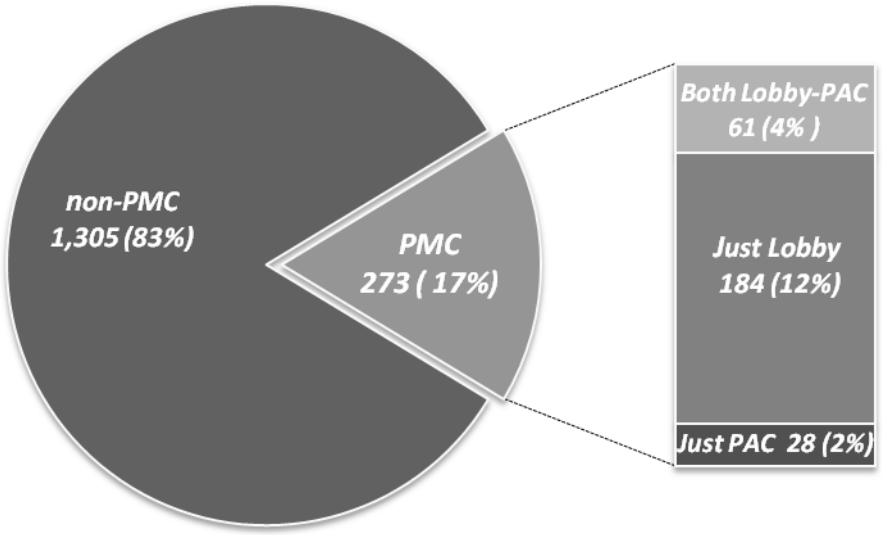
	Full sample (N= 1,578)		IPOs with PMC (N = 273)		IPOs without PMC (N=1,305)	
Election cycle	No.	%	No.	%	No.	%
98-99	465	29.47	30	10.99	435	33.33
00-01	160	10.14	24	8.79	136	10.42
02-03	94	5.96	15	5.49	79	6.05
04-05	271	17.17	60	21.98	211	16.17
06-07	247	15.65	52	19.05	195	14.94
08-09	56	3.55	20	7.33	36	2.76
10-11	151	9.57	42	15.38	109	8.35
12-13	134	8.49	30	10.99	104	7.97
SIC division	No.	%	No.	%	No.	%
Agriculture, Forestry and fishing	4	0.25	1	0.37	3	0.23
Mining and construction industries	49	3.11	13	4.76	36	2.76
Manufacturing	535	33.90	95	34.80	440	33.72
Transp., commun., and utilities	122	7.73	35	12.82	87	6.67
Wholesale and retail trade	122	7.73	15	5.49	107	8.20
Finance, insurance and real estate	185	11.72	41	15.02	144	11.03
Service industries	559	35.42	73	26.74	486	37.24
Public administration	2	0.13	0	0.00	2	0.15
Company specifics		%		%		%
Regulated industry IPOs		21.4		29.3		19.7
Internet IPOs		12.6		9.5		13.9
Technology IPOs		37.9		27.8		40.1
VC Backed IPOs		47.2		35.5		49.7
NASDAQ IPOs		69.4		49.8		73.5

Table 2: Descriptive Statistics of IPO firms

This table reports descriptive statistics for a sample of 1,578 U.S. IPOs from 1 January, 1998 to 30 June, 2013 along with the sub-samples of IPOs with and without PMC activity. All IPOs come from the Securities Data Company (SDC) database. The statistics provided include the mean, median, minimum, maximum and standard deviation for the dependent variables and all control variables used in the subsequent regressions. The presentation of each variable concludes with a test for difference in the sub-sample means. Panel A describes our main measures of IPO pricing, i.e. *underpricing* and *revisions.* Panel B describes the IPO and firm-characteristics which we control for in our analysis. Share price data is from CRSP; accounting data is from Compustat. Proceeds are in millions of U.S. dollars. All variables are defined in Appendix A

	Full Sample (N= 1,578)				IPOs with PMC (N = 273)				IPOs without PMC (N=1,305)				P-value
	Mean	Median	Min	Max	Mean	Median	Min	Max	Mean	Median	Min	Max	of T -Diff
	s.d.				s.d.				s.d.				
Panel A – IPO pricing													
First-day return	0.27	0.12	-0.71	6.84	0.19	0.09	-0.70	4.83	0.29	0.12	-0.37	6.84	0.01
	0.58				0.43				0.60				
Revisions	-0.01	0.00	-0.54	1.10	-0.02	0.00	-0.50	0.50	0.00	0.00	-0.54	1.10	0.02
	0.15				0.15				0.15				
Panel B– IPO characteristics													
Proceeds	137.66	66.04	0.86	11,805	354.11	121.36	9.35	11,805	92.39	60.81	0.86	14,266	0.00
	465.40				1,065				114.44				
Earnings per share	0.47	0.00	0.00	1.00	0.56	1.00	0.00	1.00	0.45	0.00	0.00	1.00	0.00
	0.50				0.50				0.50				
Leverage	1.50	0.94	0.00	81.50	1.17	0.91	0.00	6.78	1.56	0.95	0.00	81.50	0.05
	3.11				0.96				3.39				
Firm age	16.37	8.00	0.00	165.00	24.89	11.00	0.00	165.00	14.58	8.00	0.00	45.00	0.00
	23.15				32.05				20.39				
Venture capital	0.47	0.00	0.00	1.00	0.36	0.00	0.00	1.00	0.50	0.00	0.00	1.00	0.00
	0.50				0.48				0.50				
Underwriter ranking	0.62	1.00	0.00	1.00	0.82	1.00	0.00	1.00	0.58	1.00	0.00	1.00	0.00
	0.49				0.38				0.49				
Internet IPOs	0.13	0.00	0.00	1.00	0.10	0.00	0.00	1.00	0.13	0.00	0.00	1.00	0.10
	0.33				0.29				0.34				
Technology IPOs	0.38	0.00	0.00	1.00	0.28	0.00	0.00	1.00	0.40	0.00	0.00	1.00	0.00
	0.49				0.45				0.49				
NASDAQ	0.69	1.00	0.00	1.00	0.50	0.00	0.00	1.00	0.74	1.00	0.00	1.00	0.00
	0.46				0.50				0.44				
Dotcom period	0.37	0.00	0.00	1.00	0.15	0.00	0.00	1.00	0.42	0.00	0.00	1.00	0.00
	0.48				0.36				0.49				
Credit crunch	0.11	0.00	0.00	1.00	0.20	0.00	0.00	1.00	0.09	0.00	0.00	1.00	0.00
	0.31				0.40				0.29				
Share overhang	3.53	2.88	0.00	80.75	3.70	2.97	0.00	50.34	3.49	2.87	0.00	80.75	0.35
	3.41				3.67				3.35				

Figure 1: Breakdown of IPO PMC expenditure by type. This chart portrays IPOs with political money contributions (PMC) as a fraction of a total sample of 1,578 U.S. IPOs announced from 1 January, 1998 to 30 June, 2013; and contribution combinations as fractions of the PMC sample. *Both Lobby-PAC* refers to IPOs practicing both lobbying and PAC contributions; *Just Lobby* and *Just PAC* refer to IPOs practicing exclusive lobbying and PAC contributions, respectively. IPOs come from the Securities Data Company (SDC) Database. The lobbying data is from the OpenSecrets website; the PAC data is from the Federal Election Commission (FEC) archive.



Total: Lobbying: $ 74,286,745; PAC: $ 6,751,262

Table 3: Descriptive Statistics of Contributions

This table reports statistics of the annual political money contributions made by a sample of of 1,578 U.S. IPOs announced from 1 January, 1998 to 30 June, 2013. The contributions correspond to the recent-most year to IPO, with an oldness cutoff set at 5 years. The data for lobbying contributions is from the OpenSecrets website; the data for PAC contributions is from the Federal Election Commission (FEC) archive. *Political money* measures the aggregate annual contributions regardless of contribution type; *Lobby money* and *PAC money* measure the annual contributions for lobbying and PAC, respectively; *No. of candidates* corresponds to the number of candidates that received PAC money; *Incumbents* and *Challengers* measure the annual contributions targeted at incumbent and challenger candidates respectively; *House*, *Senate*, *Democrats* and *Republicans* refer to contributions targeted at House, Senate, Democrats and Republicans, respectively; *Committee chairs* and *Ranking members* refer to contributions targeted at candidates who have been committee chairs and ranking members in Congressional committees, respectively; *Home state candidates* refers to contributions targeted at candidates representing the state of firm's headquarters.

	Variable	N	Mean	Median	Std Dev	Minimum	Maximum
	Political money	273	296,843	71,500	863,193	1,500	9,854,500
	Lobby money	245	303,211	80,000	869,379	5,000	9,570,000
	PAC money	89	75,857	18,075	135,969	1,000	780,000
PAC specifics	No. of candidates		41	10	77	0	530
	Incumbents		69,762	16,000	128,980	500	775,000
	Challengers		6,095	1,000	12,808	0	78,207
	House		38,988	7,000	87,462	0	625,000
	Senate		36,869	10,000	67,992	0	780,000
	Democrats		33,121	10,000	49,841	0	299,730
	Republicans		42,489	4,000	101,464	0	600,000
	Committee chairs		17,278	3,500	36,581	0	282,500
	Ranking members		13,967	4,000	23,014	0	138,500
	Home state candidates		9,425	2,000	17,074	0	92,701

Table 4: Correlation Matrix

This table reports pairwise correlations of variables used in the study. The sample includes 1,578 U.S. IPOs from 1 January, 1998 to 30 June, 2013. Panel A presents correlations of control variables; Panel B presents correlations of the PMC variables. IPO deals are retrieved from the Securities Data Company (SDC) Database with aftermarket and accounting data obtained from CRSP and Compustat databases, respectively. PMC data comes from (1) the OpenSecrets website for lobbying contributions and (2) the Federal Election Commission (FEC) archive for PAC contributions. All variables are defined in Appendix A.

	Panel A: IPO variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
1.	Proceeds												
2.	Earnings per share	0.08											
3.	Leverage	-0.04	-0.18										
4.	Firm age	0.19	0.24	-0.08									
5.	Venture capital	-0.09	-0.39	0.08	-0.29								
6.	Dotcom period	-0.06	-0.18	-0.03	-0.14	0.08							
7.	Credit crunch	0.02	0.06	-0.01	0.03	-0.01	-0.27						
8.	Internet firm	0.01	-0.19	0.04	-0.16	0.20	0.22	-0.06					
9.	Technology firm	-0.05	-0.22	-0.01	-0.20	0.32	0.21	-0.02	0.16				
10.	Underwriter	0.14	0.04	-0.05	0.10	0.06	-0.18	0.13	-0.02	0.04			
11.	Share overhang	0.03	-0.07	-0.04	-0.08	0.13	0.14	-0.05	0.12	0.13	0.11		
12.	NASDAQ	-0.16	-0.22	0.06	-0.23	0.32	0.14	-0.02	0.14	0.19	-0.19	-0.01	
13.	Market return	-0.02	-0.02	0.03	0.05	0.01	-0.01	-0.04	-0.04	-0.02	-0.04	-0.03	-0.01

	Panel B: PMC variables	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
14.	Political money									
15.	Lobby money	0.90								
16.	PAC money	0.45	0.36							
17.	House money	0.29	0.21	0.91						
18.	Senate money	0.53	0.47	0.86	0.59					
19.	Democrat money	0.52	0.46	0.82	0.95	0.89				
20.	Republican money	0.35	0.27	0.95	0.62	0.73	0.63			
21.	$PI^{ABILITY}$	0.30	0.27	0.38	0.23	0.48	0.50	0.26		
22.	$PI^{STRENGTH}$	0.69	0.65	0.60	0.50	0.59	0.63	0.50	0.59	
23.	PI^{POWER}	0.66	0.63	0.58	0.47	0.57	0.61	0.48	0.40	0.83

Table 5: Effect of PMC Involvement on IPO Underpricing

This table reports results of regressions of IPO underpricing (dependent variable) on a PMC dummy variable and other control variables for a sample of U.S. IPOs (N=1,578) over the period 1 January, 1998 to 30 June, 2013. The PMC variable assumes the value of 1 for any level of PMC activity, otherwise it is 0. All variables are defined in Appendix A. Four estimation procedures are used: Ordinary least-squares (column 1), Heckman two-stage (column 2), Maximum likelihood estimation (column 3) and generated IV approach (columns 4 and 5). The first-stage results are reported in Appendix B. The t-statistics in parentheses are based on standard errors adjusted for heteroskedasticity. The dependent variable is trimmed at the 1st and 99th percentiles. The lower part of the table provides the Wald and Hausman statistics based on the MLE and IV estimations, respectively. All regressions include industry (at the 2-digit level of SIC code) and calendar year dummies. An asterisk indicates significance at the 10% level; two at the 5% level; and three at the 1% level.

	OLS (1)	Heckman (2)	MLE (3)	IV (4)	IV (5)
PMC	-0.033**	-0.135***	-0.161***	-0.141***	-0.143**
	(-2.08)	(-3.09)	(-4.65)	(-2.58)	(-2.49)
Firm age	-0.014**	-0.013*	-0.012*	-0.012**	-0.011
	(-2.55)	(-1.80)	(-1.74)	(-2.20)	(-1.64)
Venture capital	0.058***	0.055***	0.054***	0.055***	0.059***
	(3.60)	(3.58)	(3.52)	(3.37)	(3.17)
Proceeds	0.041***	0.051***	0.053***	0.051***	0.058***
	(5.31)	(5.87)	(6.36)	(5.54)	(5.00)
Earnings per share	0.016	0.014	0.014	0.014	0.026
	(1.24)	(0.97)	(0.93)	(1.07)	(1.64)
Leverage	0.001	-0.000	-0.001	-0.000	-0.001
	(0.13)	(-0.03)	(-0.07)	(-0.05)	(-0.77)
Dotcom period	0.166***	0.156***	0.154***	0.156***	0.198***
	(10.79)	(10.06)	(9.99)	(9.59)	(9.31)
Credit crunch	-0.013	-0.005	-0.003	-0.004	0.005
	(-0.69)	(-0.22)	(-0.12)	(-0.22)	(0.24)
Internet firm	0.097***	0.100***	0.101***	0.100***	0.070**
	(3.37)	(4.85)	(4.87)	(3.48)	(2.22)
Tech firm	0.077***	0.074***	0.073***	0.073***	0.062***
	(4.83)	(5.07)	(5.00)	(4.53)	(3.34)
NASDAQ	0.073***	0.067***	0.066***	0.067***	0.067***
	(5.40)	(4.21)	(4.12)	(4.81)	(4.05)
Underwriter rank	0.061***	0.063***	0.064***	0.064***	0.057***
	(3.76)	(4.12)	(4.15)	(3.89)	(3.04)
Share overhang	0.013***	0.013***	0.014***	0.013***	0.016**
	(3.01)	(6.82)	(6.87)	(3.00)	(2.42)
Market return	0.225***	0.237***	0.240***	0.238***	0.246***
	(5.78)	(7.14)	(7.22)	(6.04)	(5.03)
Revisions					0.315***
					(3.81)
Inverse Mills ratio		0.068***			
		(2.59)			
N	1,578	1,578	1,578	1,578	1,578
R-squared (OLS)	0.27				
Wald test			17.55***		
Hausman test				4.75**	

Table 6: Effect of PMC Level on IPO Underpricing

This table reports results of the cross-sectional OLS regression analysis of IPO underpricing (dependent variable) on PMC level and other control variables. PMC level is defined as the aggregate U.S. dollar contributions resulting from: any combination of lobbying and PAC (Column 1), lobbying (Column 2), and PAC (Column 3). Our sample consists of U.S. IPOs over the period 1 January, 1998 to 30 June, 2013 with PMC activity. All variables are defined in Appendix A. The dependent variable and aggregate dollar contributions variables are trimmed at the 1st and 99th percentiles. The t-statistics in parentheses use standard errors adjusted for heteroskedasticity. All regressions include industry (at the 2-digit level of SIC code) and calendar year dummies. An asterisk indicates significance at the 10% level; two at the 5% level; and three at the 1% level.

	(1)	(2)	(3)
Political money	-0.025***		
	(-3.60)		
Lobby money		-0.026***	
		(-3.25)	
PAC money			-0.040***
			(-4.83)
Proceeds	0.017	0.015	0.014
	(0.99)	(0.84)	(1.32)
Earnings per share	0.062**	0.064**	0.054***
	(2.29)	(2.22)	(2.71)
Leverage	-0.039***	-0.038**	-0.047
	(-2.61)	(-2.46)	(-1.00)
Firm age	-0.001	0.002	0.010
	(-0.08)	(0.25)	(1.30)
Venture capital	0.115***	0.122***	0.053
	(2.70)	(2.73)	(1.33)
Dotcom period	0.197***	0.227***	0.034
	(3.49)	(3.67)	(1.04)
Credit crunch	-0.055*	-0.058*	-0.069**
	(-1.87)	(-1.85)	(-2.42)
Internet firm	0.078	0.072	0.004
	(1.21)	(1.12)	(0.07)
Tech firm	0.038	0.029	0.039
	(1.26)	(0.93)	(0.85)
NASDAQ	0.102***	0.090**	0.037
	(2.93)	(2.34)	(1.08)
Underwriter rank	0.091**	0.102**	-0.024
	(1.99)	(2.16)	(-0.55)
Share overhang	0.007	0.005	0.003
	(1.44)	(1.22)	(1.52)
Market return	0.174**	0.213***	0.058
	(2.55)	(2.81)	(0.92)
N	273	245	89
R-squared	0.351	0.363	0.462

Table 7: Underpricing and PAC Recipient Characteristics

The table reports results of the cross-sectional OLS regression analysis of IPO underpricing (dependent variable) on key recipient characteristics for a sample of U.S. IPOs with a record of PAC activity announced over the period 1 January, 1998 to 30 June, 2013. The variables of interest in Columns 1, 2, 3 and 4 are the aggregate dollar contributions towards the House of Representatives, Senate, Democratic party and Republican party, respectively. Columns 5, 6 and 7 use the Cooper et al. (2010) measures for candidate strength, power and ability, respectively. In all regressions, the control variables of Tables 5 and 6 retain their position and are suppressed for simplicity. The dependent variable and aggregate dollar contributions variables are trimmed at the 1st and 99th percentiles. The t-statistics reported in parentheses are based on standard errors adjusted for heteroskedasticity. All regressions include industry (at the 2-digit level of SIC code) and calendar year dummies. All variables are defined in Appendix A. An asterisk indicates significance at the 10% level; two at the 5% level; and three at the 1% level.

	Congress chamber		*Partisan identity*		*Candidate profile*		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
House money	-0.0139**						
	(-2.35)						
Senate money		-0.0090*					
		(-1.76)					
Democratic money			-0.0218***				
			(-2.65)				
Republican money				-0.0069*			
				(-1.77)			
$PI^{STRENGTH}$					-0.0245**		
					(-2.10)		
PI^{POWER}						-0.0476***	
						(-4.79)	
$PI^{ABILITY}$							-0.0178*
							(-1.76)
N	89	89	89	89	89	89	89
R-squared	0.398	0.342	0.447	0.339	0.363	0.470	0.333

Table 8: Volatility Profile of PMC and non-PMC IPOs

This table compares the aftermarket volatility of PMC IPOs (N=273) and non-PMC IPOs (N=1,305) measured as the standard deviation of daily returns over the intervals of 60, 120 and 365 days. All returns are estimated from the 8th trading day following the IPO and onwards with data from the CRSP database. Panel A presents the minimum, maximum, standard deviation and mean statistics. A t-test is employed to compare the differences in means. Panel B reports the average treatment effects on the treated (ATT) using the nearest neighbor, Kernel and stratification matching methods. The coefficients and t-statistics feature in the first and second row, respectively. The matching allows for replacement and bootstrapped standard errors are used (100 replications). The symbol *** denotes statistical significance at the 1% level.

Panel A: Summary statistics and univariate analysis

Variable	Sample	Min	Max	Std. dev.	Mean	Diff. in means
60-day volatility	PMC IPOs	0.009	0.078	0.010	0.029	-0.008***
	Non-PMC IPOs	0.010	0.098	0.013	0.037	
120-day volatility	PMC IPOs	0.010	0.097	0.016	0.034	-0.011***
	Non-PMC IPOs	0.013	0.098	0.015	0.045	
365-day volatility	PMC IPOs	0.011	0.094	0.016	0.036	-0.012***
	Non-PMC IPOs	0.013	0.112	0.016	0.048	

Panel B: Propensity-score matching

Variable	Nearest neighbor	Kernel	Stratification
60-day volatility	-0.007***	-0.007***	-0.006***
	(-4.97)	(-6.74)	(-7.56)
120-day volatility	-0.009***	-0.009***	-0.009***
	(-4.60)	(-6.12)	(-5.01)
365-day volatility	-0.009***	-0.009***	-0.009***
	(-4.61)	(-5.74)	(-5.14)

Table 9: Bargaining Power, Networking and Insurance Channels

Columns 1 and 2 regress absolute offer price revisions and offer price revisions, respectively, on a PMC dummy and other covariates for a sample of U.S. IPOs (N=1,578) over the period 1 January, 1998 to 30 June, 2013. Columns 3, 4 and 5 use IPO first-day returns as the dependent variable. The unconnected dummy in Column 3 is set to 1 for underwriters which abstain from political contributions in the year that they underwrite a PMC IPO; in Column 4 the unconnected dummy is set to 1 for underwriters that underwrite no more than 1 PMC IPO in any given year. Column 5 comprises a sample of 95 firms which triggered IPO-related lawsuits within 2 years of the IPO. All variables are defined in Appendix A. The estimation procedure used is the generated instrumental variables method. T-statistics in parentheses are based on standard errors adjusted for heteroskedasticity. The dependent variable is trimmed at the 1st and 99th percentiles. All regressions include industry (at the 2-digit level of SIC code) and calendar year dummies. An asterisk indicates significance at the 10% level; two indicate significance at the 5% level; three indicate significance at the 1% level.

	Absolute revisions	*Revisions*	*First-day return*		
			Direct connections	*Indirect connections*	*Sued IPOs*
	(1)	(2)	(3)	(4)	(5)
PMC	0.013	-0.131***	-0.132**	-0.107**	-0.021
	(0.06)	(-4.30)	(-2.39)	(-2.48)	(-0.12)
PMC*unconnected			-0.071	-0.133**	
			(-1.31)	(-2.04)	
Firm age	-0.001	-0.004	-0.013**	-0.011**	0.037
	(-0.40)	(-0.97)	(-2.23)	(-1.98)	(1.00)
Venture capital	0.009	0.029***	0.053***	0.054***	-0.031
	(1.28)	(2.85)	(3.27)	(3.30)	(-0.45)
Proceeds	-0.003	0.048***	0.051***	0.051***	-0.014
	(-0.72)	(8.42)	(5.54)	(5.70)	(-0.37)
Earnings per share	-0.014**	0.025***	0.013	0.011	-0.011
	(-2.08)	(2.70)	(0.98)	(0.85)	(-0.18)
Leverage	-0.001	-0.001	-0.001	-0.001	0.028
	(-0.03)	(-0.55)	(-0.11)	(-0.11)	(0.71)
Dotcom period	0.002	0.051***	0.154***	0.156***	0.317***
	(0.32)	(4.83)	(9.63)	(9.67)	(3.21)
Credit crunch	-0.014*	0.020*	-0.002	-0.002	0.004
	(-1.76)	(1.65)	(-0.13)	(-0.10)	(0.03)
Internet firm	0.002	0.044***	0.101***	0.097***	0.065
	(0.24)	(3.22)	(3.51)	(3.36)	(0.90)
Tech firm	0.018***	0.038***	0.072***	0.071***	-0.052
	(2.73)	(3.98)	(4.48)	(4.36)	(-0.68)
NASDAQ	0.004	0.002	0.067***	0.068***	0.091
	(0.67)	(0.21)	(4.84)	(4.89)	(1.24)
Underwriter rank	0.015**	0.008	0.063***	0.058***	0.081
	(1.97)	(0.77)	(3.83)	(3.48)	(0.93)
Share overhang	0.001	0.005***	0.013***	0.013***	0.051***
	(0.45)	(2.65)	(2.96)	(2.96)	(3.25)
Market return	0.023	0.131***	0.240***	0.240***	0.078
	(1.43)	(5.77)	(6.12)	(6.08)	(0.45)
N	1,578	1,578	1,578	1,578	95

Table 10: Sensitivity Analysis

This table provides a sensitivity analysis for the effect of PMC time and type on initial return and filing price revisions. We use the generated instrumental variables method and report in Panels A, B, and C the resulting coefficients, γ_1 and γ_2, for the return and revisions equations, respectively, along with the heteroskedasticity-robust standard errors. Panel A gives the resulting coefficients from the full PMC sample (i.e. any PMC combination with a cut-off at 5 years prior to IPO). Panel B limits the time window to subsamples of firms engaging in PMC i) within 6 months ii) older than 6 months and up to a year, and iii) older than 1 year and up to 5. Panel C distinguishes by PMC type in the subsamples of firms engaging in PMC via i) a combination of lobby and PAC contributions '*Both lobby – PAC*' ii) exclusive lobbying contributions '*Just lobby*', and iii) exclusive PAC contributions '*Just PAC'*. In all regressions, the control variables of Table 5 retain their position and are suppressed for simplicity. The dependent variables are trimmed at the 1st and 99th percentiles. All regressions include industry (at the 2-digit level of SIC code) and calendar year dummies. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

	Coefficient (γ_1, γ_2) standard error	
	Underpricing equation	Revisions equation
	$(UND= \beta_1 X + \gamma_1 PMC + \varepsilon_1)$	$(REV= \beta_2 X + \gamma_2 PMC + \varepsilon_2)$
Panel A: PMC full sample		
Any PMC type within 5 years	-0.141***	-0.131***
	0.055	0.030
Panel B: PMC subsamples *by time*		
6-months or less	-0.361***	-0.339***
	0.136	0.094
Older than 6-months and up to a year	-0.302**	-0.293***
	0.139	0.080
Older than 1 and up to 5 years	-0.300*	- 0.177*
	0.180	0.097
Panel C: PMC subsamples *by type*		
Both lobby - PAC	-0.365***	- 0.376***
	0.119	0.092
Just lobby	-0.200**	- 0.124**
	0.102	0.055
Just PAC	-0.578**	- 0.722***
	0.289	0.236