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A Rent-Protection Explanation for SEO Flotation-Method Choice

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Abstract

We model how a rent-protection motive drives the choice of flotation method in new equity issuance between two polar cases: rights issues and cash offers. Unexpected new blockholders would emerge in control-diluting cash offers and share in jealously guarded control benefits. But rights issues help the incumbent controlling shareholders avoid control dilution and safeguard their private benefits. Under asymmetric information about private benefits, the choice of flotation method can convey information about hidden private benefits and hence firm value. Our model can explain even a negative announcement effect of rights issues, and it supports not just one but three important equilibriums.

I. Introduction

In seasoned equity offerings (SEOs) around the world, there are usually two major flotation methods: rights issues and cash offers. Cash offers are usually underwritten offers to new investors or public offers; in some markets, such as in Hong Kong and the United Kingdom, underwritten offers to outside investors are called "placing," which is not necessarily private placement (Wu, Wang, and Yao (2005)). In contrast, rights issues are new equity sales to existing shareholders made on a pro rata basis. In the United States, rights issues dominated among listed industrial firms from the 1930s to the 1950s, but since the 1960s rights issues have been on the wane and are rarely used today (Eckbo and Masulis (1995)). Despite their rarity in the United States, rights issues are widely adopted and even used as the only flotation method in many other important markets.

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This phenomenon gives rise to a question: Why is the flotation-method choice so different across countries?

The extant literature is largely based on the U.S. context, with at least two classic views. First, if managers or corporate decision makers maximize the existing shareholders' wealth, rights issues do not give rise to conflict of interest because there will be no new shareholders involved (Smith (1977)). The adverse-selection model of Myers and Majluf (1984) also implies that rights issues do not convey asymmetric information on firm valuation. The empirical results in the United States, which on average show that the announcement effects of rights issues are not pronounced, seem to fit well in the prediction of the Myers–Majluf model (see Eckbo and Masulis (1995) for a summary). Second, Hansen and Pinkerton (1982) and Hansen (1988) argue that if large shareholders renounce their rights of subscription in rights issues, then adverse selection occurs. This view can explain Smith's (1977) rights-issue paradox, which questions why U.S. managers prefer underwritten cash offers to rights issues given that the underwritten cash offers seem to have higher flotation costs (including the adverse-selection discount in the announcement). Hansen and Pinkerton (1982) and Hansen (1988) suggest that firms with dispersed ownership structures, common in the United States, would incur high costs for rights issues if they used them; the hidden costs of rights issues can be substantially high because only firms with concentrated ownership, as they find, use rights issues where the subscription commitment by large shareholders lowers the flotation costs of the rights issues. This subscription commitment produces high take-up ratios in rights issues, and the resulting low floatation costs are also consistent with the take-up model of Eckbo and Masulis (1992). (More explanations in the literature regarding the rarity of rights issues in the United States are detailed in Section II.)

This paper suggests that even if large shareholders or controlling shareholders fully commit to subscribe to their entitled rights, rights issues still cannot avoid conflicts of interest between large shareholders and uninformed small shareholders because of private benefits of control. Although the average private benefits of control are widely different across countries (Dyck and Zingales (2004)), the private benefits of the firms in a particular legal environment can also vary considerably in view of heterogeneity in firm-level contracting conditions and differences in individual corporate governance quality (which may not be easily observable in general; see Himmelberg, Hubbard, and Palia (1999)). In general, private benefits of control are intrinsically difficult to measure publicly because their true value is largely inside information and also, by definition, hardly provable in court (Zingales (1994)).

Recognizing asymmetric information about private benefits, this paper models how the controlling shareholders' rent-protection motive plays a role in explaining why almost all firms in the United States are willing to choose cash offers rather than rights issues; why almost all firms in most European and Pacific Basin countries do the opposite; and why some firms choose rights issues and other firms choose cash offers within a particular market, such as in Hong Kong and the United Kingdom.

One may quickly attribute the flotation-method choice to regulatory arrangements. For example, corporate charters usually include existing shareholders'

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preemptive rights, which are deemed to prevent unfair wealth transfers. Because cash offers to outside investors are in principle against the preemptive rights, firms with the preemptive rights must choose rights issues. U.S. firms, however, are largely free to choose between cash offers and rights issues because shareholders of most U.S. firms have waived the preemptive rights to subscribe to new equity issues. In contrast, shareholders in most European and Pacific Basin counties are reluctant to give up their preemptive rights. Thus rights issues have been the only flotation method used in these countries (see the survey paper by Eckbo and Masulis (1995)).

It is true that regulatory details vary across countries. Yet the regulatory constraints with respect to the preemptive rights may to a great extent reflect controlling shareholders' optimal responses to economic fundamentals. Unless we understand these optimal responses, it is difficult to judge how crucial the regulatory details are as a direct reason. The extant literature (mostly in the U.S. context) has offered important insights into rights issues in detail, but we believe that how and what conflicts of interest arise in SEOs is important for understanding the rights issues in general. The rent-protection motive under asymmetric information about private benefits, however, is best understood in a worldwide perspective.

In the rent-protection theory that this paper proposes, controlling shareholders' concern about a significant loss of part of their private benefits of control (or control benefits) affects the choice of SEO flotation method. The status of controlling shareholders can be fairly stable over time because the incumbent coalition can be in equilibrium after the playing out of the strategic game between large shareholders. But private benefits sharing among the controlling and other block shareholders can be sensitive to changing contracting conditions, especially during new equity issues. Rights issues seldom change ownership structures to the detriment of the incumbent controlling shareholders; in the case of U.K. rights issues, for example, renounced rights are usually sold to passive investors and other existing shareholders (Armitage (2007)).

By contrast, control-diluting cash offers tend to increase the probability for the emergence of new blockholders. For example, Armitage (2010) empirically shows that underwritten offers to new investors in the United Kingdom facilitate block sales. Allotment of new shares is largely at the discretion of the underwriter in underwritten public offers. As a result, considerable shares may be allotted to investors who are keen to buy blocks of new shares without pushing up purchase prices. Brennan and Franks (1997) explain that a deep offer-price discount in initial public offerings (IPOs) is deliberately used to create oversubscription to prevent aftermarket ownership concentration (a situation to the benefit of managerial control, especially in the U.S. context). By implication, because offer-price discounts are usually much deeper in rights offers than cash offers, it is much harder for unexpected new blockholders to emerge after rights offers.

Although ownership structure usually becomes more dispersed after public offers in the United States, things can be totally different in ownership-concentrated markets where controlling ownership and especially control benefits are jealously guarded. In the worst scenario feared by the incumbents, control dilution in public offers weakens the control and, at the same time, tends to give unexpected new blockholders the upper hand.

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Compared with the more costly block purchases directly from the market (a move would push up the share prices considerably, especially in ownership-concentrated markets), coveted new blockholders are happy with the cost-effective opportunity through cash offers (often coming with some offer-price discount), which facilitates their plan to become active in the sense of rent seeking. They act as intruders, unable to take over the firm but able to upset the incumbents or the controlling coalition of existing large shareholders to share in the control benefits.[1] Once such intruders get in, it can be more costly for the incumbents to drive them out. For one thing, a newly emergent (intrusive) blockholder can create enough noise to make the incumbents compromise in exchange for his or her silence. Even in the United States, there have been cases of greenmail and targeted share repurchases (Dann and DeAngelo (1983), Bradley and Wakeman (1983)).

Sharing in private benefits is common among large shareholders. Blockholders can help managerial entrenchment, indicating their private benefits sharing (Borokhovich, Brunarski, Harman, and Parrino (2006)). In markets with concentrated ownership structures where large private benefits of control are prevalent, it is common for large shareholders as a clique to share in connected business transactions or self-dealings. But the issue here is whether these clique members are willing to let new blockholders share in their jealously guarded private benefits.[2]

Intruders are more likely to go after a target with large control benefits. Consequently, when coming to raise new equity, the controlling shareholders of firms with large private benefits may prefer rights issues to control-diluting cash offers to safeguard their control benefits.[3] Thus the choice of flotation method has implications for hidden private benefits.

The rent-protection theory of this paper supports three important equilibriums. The amount of the incumbent's expected loss of control benefits, or simply the intrusion-induced loss of control benefits, is the standard signaling cost. In a separating equilibrium, (low-quality) firms with high control benefits choose rights issues, and (high-quality) firms with low control benefits go for cash offers. But this is not the only equilibrium.

[1]New blockholders are expected to emerge in private placements mostly used by smaller firms. But these new blockholders are often strategic business partners who are expected to bring positive synergies to the placing firms. This positive valuation effect may sufficiently offset the loss of private benefits due to control dilution. Nevertheless, Cronqvist and Nilsson (2005) show that family-controlled Swedish firms are more likely to choose rights issues than private placements to prevent control dilution.

[2]Bennedsen and Wolfenzon (2000) argue that control dilution due to new blockholders reduces the incumbents' private benefits. Our rent-protection argument is not at odds with this monitoring effect because control-diluting cash offers would cause the controlling shareholders to lose some private benefits of control anyway. A loss of part of private benefits in our model, described later, is the signaling cost.

[3]Rights offers in this paper do not explicitly include the rights with special strings attached. For example, as a means of payment in acquisitions, contingent value rights (CVRs) are given only to shareholders of acquired firms (Chatterjee and Yan (2008)). Also, in shareholder rights plans, better known as poison pills, contingent rights are granted to all shareholders except raiders. But implications for hidden control benefits often loom large in contingent rights as well. For example, the poison pills (rights) are designed to be activated during a hostile takeover in order to dilute the voting power of raiders. Although almost none of the hostile takeovers in the United States have actually activated these poison pills (which would certainly complicate the revaluation process for the target firms), many believe these poison pills mainly help entrench incumbent management in firms that should otherwise have faced takeover bids.

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If the loss of control benefits remains small even for firms with the largest control benefits, or if large control benefits are simply unlikely to occur in a market with strong investor protection, all firms will choose cash offers (a pooling equilibrium). This can explain the phenomenon most apparent in the United States today that almost all firms choose cash offers rather than rights issues. Because it is not through concentrated ownership that a U.S. manager controls the firm, equity ownership dilution due to cash offers does not really threaten the managerial control. As a result, the intrusion-induced loss of control benefits due to managerial ownership dilution can be viewed as trivial.[4] Perhaps U.S. managers are more concerned about takeovers, as described by Stulz (1988), for example, than new share dilution.

In sharp contrast, if the loss of control benefits is high across the board, all firms will choose rights issues (the other pooling equilibrium). This is an equilibrium explanation of the phenomenon that rights issues are used as the only flotation method in many markets, as is the case in most European and Pacific Basin countries. Although rights issues seem to be the direct result of the preemptive rights in these countries, there must be good economic reasons behind the incentive of controlling shareholders who are lukewarm about waiving the preemptive rights (which may also impose the one-share-one-vote rule). If firms were able to benefit from cash offers as the alternative flotation method, the preemptive rights as a regulatory constraint on these firms could hardly be maintained. In effect, the concentrated ownership structures that are associated with large control benefits are ubiquitous in these countries (Shleifer and Vishny (1986), (1997)); one could imagine that most controlling shareholders there would suffer a significant loss of control benefits if controlling-ownership dilutions occurred easily.

Because the choice of flotation method conveys hidden private benefits, our rent-protection argument also sheds light on some puzzling announcement effects of SEOs documented in the literature, especially where rights issues are involved. For example, rights issues can cause a negative announcement effect, given that underwritten offers to new investors can even produce a positive announcement effect in the same market (see Suzuki (1999), Slovin, Sushka, and Lai (2000) for evidence from the United Kingdom; see Wu and Wang (2002) for evidence from Hong Kong).[5] This phenomenon, especially the negative announcement effect of rights issues, gives rise to a question: Why do controlling shareholders choose value-destroying rights issues when offers to new investors seem to be a better alternative? A clear answer lies in our rent-protection argument that rights issues

[4]Smith (1977) suggests that U.S. managers enjoy personal benefits from using underwriters (a result of possible collusion with investment banks). Although not contradictory to this position, our rent-protection argument can further explain the choice of flotation method used outside the United States.

[5]Cash offers are often expected to produce a negative announcement effect due to the adverse-selection problem (Myers and Majluf (1984)). Myers (2003), however, emphasizes that the adverse-selection effect comes mainly from asymmetric information about assets-in-place. In effect, the generalized Myers and Majluf model of Wu and Wang (2005) suggests that asymmetric information about firm valuation that comes mainly from growth opportunities rather than assets-in-place does not necessarily inhibit new equity issuance; this generalized model can accommodate a positive announcement effect (see Wu et al. (2005) for empirical evidence from Hong Kong). It also helps explain firm growth type and capital structure persistence in the United States (Wu and Au Yeung (2012)).

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do not necessarily protect the interest of all existing shareholders; the incumbents would tolerate a loss of entire firm value as long as their marginal gain in control benefits overcompensates for the loss of security benefits from their own equity holdings.

The remainder of the paper is organized as follows: Section II shows how the work in this paper is related to the existing literature in more detail. Section III develops a rent-protection model that predicts three important equilibriums in a unified framework to characterize the choice of SEO flotation method worldwide. Section IV further develops the model to produce empirical implications for announcement effects of SEOs, especially when rights issues are involved. Section V concludes.

II. Relevance to the Literature

The work in this paper is closely related to the literature on both the choice of flotation method and corporate governance. Conflicts of interest or wealth transfers in corporate events are a major source of concern to shareholders at large. But conflicts of interest arise in different ways. In the SEO literature, the adverse-selection effect described by Myers and Majluf (1984) arises from the conflicts of interest between the existing and new shareholders, mainly regarding the assets-in-place valuation under asymmetric information, and this is well received for understanding cash offers to outside investors. In rights issues, however, active shareholders such as controlling shareholders and managers are deemed to be unlikely to sell themselves and existing shareholders overvalued new equity because their interests are assumed to be well aligned with those of the existing shareholders in the Myers and Majluf framework. As a result, one may view rights issues as a method to overcome the adverse-selection problem. Additionally, in view of rights issues in the United States rebounding somewhat in the 1990s, Heron and Lie (2004) suggest that rights issuers may signal their undervaluation (in contrast to overvaluation of cash offers). But Ursel (2006) points out that the recent U.S. rights issuers are mostly in financial distress. Thus the use of rights issue as a last resort limits its usefulness in general, and this is consistent with the rarity of rights issues still found in the United States.

This situation may explain why the academic focus had been mainly on cash offers to outside investors in the United States. The literature has identified specific conflicts of interests in cash offers beyond what is analyzed by Myers and Majluf (1984). The free-cash-flow problem described by Jensen (1986) can also tarnish cash offers to outside investors. Jung, Kim, and Stulz (1996) argue that the managerial agency problem plays an important role in cash offers and helps explain a negative announcement effect of cash offers as well. But these authors do not consider rights issues. Smith (1977) considers the managerial agency problem for cash offers versus rights issues, and suggests that managers' personal benefits from using underwriters explain why most U.S. firms prefer cash offers to rights issues. But Smith does not consider the phenomenon that rights issues are usually more popular in many other countries. Wu and Wang (2005) consider private benefits of control in a Myers–Majluf framework that generates overinvestment as well as underinvestment concerns at the same time. That analysis, however, treats

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private benefits of control as public knowledge and cannot effectively examine rights issues.

Rights issues simply cannot avoid conflicts of interest. Like cash offers to outside investors, rights issues without full take-up by existing shareholders also suffer from adverse selection. The take-up ratio model of Eckbo and Masulis (1992) predicts that adverse selection occurs if expected take-up ratios are low. As a result, unlike uninsured rights offers where full take-up is deemed to happen (implying unnecessary underwriter certification), partial take-up ratios are expected in underwritten rights issues and the lowest take-up ratios in cash offers. Because firm valuation is assumed to increase with take-up ratio, the take-up model predicts the best valuation effect of uninsured rights issuers. But unlike underwritten cash offers, underwritten rights issues can theoretically have a better market reaction than do uninsured rights issues due to underwriter certification, as noted in the model of Heinkel and Schwartz (1986). Nevertheless, Balachandran, Faff, and Theobald (2008) empirically show both the certification and take-up effects in rights issues in Australia.

High take-up ratios in rights issues may underestimate conflicts of interest between participating and nonparticipating shareholders. Holderness and Pontiff (2016) argue that participation rate is different from take-up rate where high take-up ratios (with the existing shareholders as a whole) do not necessarily reflect high participation by uninformed existing shareholders due to oversubscription by informed shareholders. Holderness and Pontiff find significant wealth transfers from nonparticipating to participating shareholders in valuable rights issues in the United States as a result of the former's confusion and ignorance.

In the literature, the choice of rights issue is found to be explicitly related to ownership structures as well as the behavior of large shareholders. As mentioned in the Introduction, Hansen and Pinkerton (1982) and Hansen (1988) find that only firms with concentrated ownership in the United States use a rights issue, where the subscription commitment by large shareholders lowers the flotation costs of the rights issue. They suggest that firms with dispersed ownership structures, common in the United States, would incur high costs if they used rights issues because there are no large shareholders for the subscription commitment in the first place. This argument is consistent with the take-up model because lack of subscription commitment tends to result in low take-up ratios.

If private benefits of control are large, as is the case in many markets around the world, even the commitment to rights subscription by large shareholders may not necessarily solve the conflicts of interest between large shareholders and uninformed investors at large. Private benefits of control are responsible for insiders' expropriation from outside shareholders, giving rise to conflicts of interest between large shareholders/managers and dispersed outside investors.[6] This type

[6]Private benefits of control arise when control and ownership do not fully coincide. In reality, cash-flow rights never fully coincide with control rights. In a dual-class ownership structure with superior voting rights for one class of shares, or in a pyramid structure, the deviation is obvious. In the one-share-one-vote structure advocated by Grossman and Hart (1988) and Harris and Raviv (1988), as is common in most listed firms, there is also a de facto deviation. Unlike the cash-flow rights, the value of voting rights from the same shares is always asymmetric between large shareholders (or managers in a coalition with other blockholders) and dispersed shareholders.

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of agency problem is pronounced in concentrated ownership structures (Shleifer and Vishny (1997), La Porta, Lopez-de-Silanes, and Shleifer (1999)).

Rights issues are also related to stock liquidity and corporate control because of ownership structure changes. Using a well-controlled sample of 85 U.S. firms, Kothare (1997) finds that in sharp contrast with cash offers, rights issues strengthen ownership concentration but widen bid–ask spreads of issuing firms' traded stocks as a negative effect on stock liquidity. The liquidity argument is consistent with Holmstrom and Tirole (1993), who suggest that more shares falling in the hands of outside investors during control-diluting cash offers enhances outside monitoring through an increased liquidity of shares. In an IPO context, however, Zingales (1995) suggests that corporate control is also an important aspect of new equity issues (see also Pagano and Roell (1998), Myers (2000)). The bottom line is that despite reducing stock liquidity, rights issues help the incumbent to avoid control dilution.

All of this is consistent with the incumbent insiders' concern about the emergence of unexpected new blockholders. As a result, the incumbent controlling shareholders of firms with large private benefits (especially in ownership-concentrated markets) would like to keep this possibility low. This makes the incumbent insiders often walk on a tightrope in SEOs. Unlike rights issues, control-diluting cash offers can significantly increase this possibility because new equity sales to outside investors suddenly reduce the incumbents' voting power significantly in the first place. For example, Kothare (1997) reports that whereas rights issues slightly increase insider ownership, cash offers on average reduce it by more than 10%. Thus, the existing literature supports the notion that rights issues have a potential function of rent protection.

III. The Model: Equilibrium Regarding the Choice between Cash Offer and Rights Issue

In this section, we develop a rent-protection model to analyze possible equilibriums regarding the flotation-method choice under asymmetric information about control benefits. Section III.A introduces the setup. Section III.B characterizes the equilibriums and proves their existence. Section III.C shows our theory's empirical relevance in a worldwide perspective. Section III.D discusses some validity issues in the analysis.

A. The Setup

Consider a firm with an investment opportunity that needs equity financing. The value of the firm's assets-in-place is a. The investment opportunity has a net present value (NPV), b. To facilitate our analysis, we assume that the values of a and b are known to both insiders and the market. We assume away the asymmetric information about assets-in-place and investment opportunities because such asymmetric information in a Myers–Majluf framework does not help generate interesting results for rights issues. We show in later discussion that it is asymmetric information about private benefits of control that critically contributes to the understanding of the choice between rights issues and cash offers.

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We assume that the firm's controlling shareholder receives private benefits of control, c, from the ongoing business. If a new project is undertaken, the controlling shareholder also obtains additional private benefits arising from the new investment. The additional private benefits are positively correlated with the existing private benefits. For simplicity, we let the new benefits amount to a proportion of old ones, namely, $g \times c$, where g is a constant percentage. Corporate insiders (including potential large shareholders) in our model know the true value of private benefits of control, c, and the market does the guesswork (see Gomes (2000) for a similar assumption in an IPO study). To impose a workable structure on this information asymmetry, we assume that there are only two types of firm in the market: one with low private benefits, c_L, and the other with high private benefits, c_H ($c_L < c_H$). High firm quality is characterized by low control benefits obtained by controlling shareholders, c_L, from both the ongoing business and new investment, whereas low firm quality means high control benefits, c_H, ceteris paribus. Note that in terms of total private benefits, we have $(1 + g)\, c_L < (1 + g)\, c_H$, where g is public knowledge (so that we can concentrate on the asymmetric information on c).

The time line in our model is the same as that used by Myers and Majluf (1984). At $t = 0$, the incumbent controlling shareholder maximizes his or her entitled equity claim (security benefits) and private benefits of control at $t = 1$. As in the work of Zingales (1995), security benefits are enjoyed by all shareholders in proportion to their holdings in the firm, but private benefits are obtained only by the controlling shareholder. It should be noted that this self-interested objective function is different from the traditional assumptions of Myers and Majluf (1984) and Daniel and Titman (1995), where managers maximize all existing shareholders' wealth (security benefits) in the firm. We also assume that all investors are risk neutral, and the interest rate is 0. The cost of the new investment, E, is public knowledge, as is the present value of the new project, $b + E$. The firm has no financial slack, and the firm has to issue equity equal to E.

Firm Value. Consider the choice of floatation method. Decisions, when announced, have valuation effects because they may signal the size of hidden control benefits, which is the only variable under information asymmetry in the model described herein. Let V_{rights} ($V_{\text{cash_offer}}$) be the conditional expected firm value, and c_{rights} ($c_{\text{cash_offer}}$) be the investors' estimate of, or the market's belief about, the extent of private benefits upon a rights offer (a cash offer) announcement at $t = 0$. Because private benefits are a value loss to the entire firm, the investors' estimate of private benefits is a relevant determinant of firm value. The firm's expected value after the announcement of a rights offer is $V_{\text{rights}} = a + b - (1 + g)c_{\text{rights}}$; and the firm's expected value after the announcement of a cash offer is $V_{\text{cash_offer}} = a + b - (1 + g)c_{\text{cash_offer}}$. The firm may skip the new project. If so, the expected firm value is $V_{no} = a - c_0$, where $c_L < c_0 < c_H$, depending on the market's estimate of the composition of the two types of firm in the population that skips the new investment. We assume $(1 + \mathrm{g})c_H < a + b$.

Payoff. We assume a full subscription commitment by the incumbent controlling shareholder in rights issues. This makes rights issues seemingly impeccable. We do not explicitly consider underwritten rights because, like uninsured rights

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issues, underwritten rights issues also cannot prevent conflicts of interest due to nonparticipation of uninformed existing shareholders (Holderness and Pontiff (2016)). We do not consider private placement because private placing firms are mostly small firms, and this limits the use of private placement in general (Eckbo and Masulis (1995)). Keeping simplicity helps focus on the choice of flotation method between the two polar cases of rights offer and cash offer.

In our model, the payoff to the controlling shareholder also includes his or her concern on the market value of the shareholder's equity holdings before $t = 1$. For example, controlling shareholders often use their equity holdings as collateral to secure personal loans. Pledging of shares by controlling shareholders is popular in many markets, such as in Hong Kong and Taiwan. The size and terms of these personal loans depend on the expected market value of the pledge. As a result, the controlling shareholder would be happier with a higher market value of the equity holdings. The marginal gain or loss of the market value of the security benefits is a function of privately observed over- or undervaluation of the firm value: $f(\hat{V} - V)$, where $\hat{V}$ is the firm's expected market value and V is the true value. Note that the true value at $t = 1$ is $V + E$. For simplicity, we use a linear specification for the marginal gain or loss: $f(\hat{V} - V) = h[w(\hat{V} - V)]$, where h is a positive coefficient ($0 < h \leq 1$) and w is the percentage equity ownership of the incumbent controlling shareholder. Both h and w are known to the public (see the detailed discussion of h in Section III.D).

Conditional on the issue-to-invest decision, the payoff to the incumbent controlling shareholder following a rights offer is:

$$
\begin{aligned}
(1) \qquad P_{\text{rights}}(c, c_{\text{rights}}) &= w(V+E) + (1+g)c + h[w(V_{\text{rights}} - V)] - wE \\
&= w[a+b-(1+g)c] + (1+g)c \\
&\quad + h[w(1+g)(c - c_{\text{rights}})] \\
&= w(a+b) + (1-w)(1+g)c \\
&\quad + h[w(1+g)(c - c_{\text{rights}})],
\end{aligned}
$$

where w is the preissuance percentage equity ownership of the incumbent (with no insider ownership change), E is the issue size (the cost of new investment), and c is the true value of private benefits and is known only to the insiders. The incumbent's payoff, P_{rights}, depends on the true value, c (the first argument), as well as the market's estimate of the private benefits, c_{rights} (the second argument). Note that in a sequential equilibrium, insiders know the market's belief about the true private benefits and hence the payoff in equation (1).

In the last part of equation (1), $w(1+g)c$ represents the own expropriation cost to the cash-flow rights of the incumbent for expropriating private benefits, $(1+g)c$, from outside investors. For example, if the incumbent has equity ownership of 45%, his or her own expropriation cost will be 0.45 dollars for every dollar of private benefits he or she "steals" from outside shareholders (e.g., through self-dealing transactions). The net private benefit here, $(1-w)(1+g)c$, is 0.55 dollars. The marginal gain or loss of security benefits to the incumbent due to privately observed market over- or undervaluation, namely, $h\{w(1+g)[(a+b-c_{\text{rights}}) - (a+b-c)]\} = h[w(1+g)(c - c_{\text{rights}})]$, as shown in the last term in the payoff in

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equation (1), is also a valuation consequence of this shareholder's expropriation of outside investors.

If the incumbent chooses a cash offer, new equity is sold to outside shareholders, and the incumbent's controlling ownership will be diluted. Unlike rights offers, control-diluting cash offers weaken the incumbent's control of the firm in the sense of losing some control benefits. Such a loss can happen under either monitoring or private-benefits sharing due to new blockholders in general, which can emerge during control-diluting cash offers.

In concentrated ownership structures where the largest shareholder (or the coalition of large shareholders) is already in control, an unexpected newcomer blockholder is more likely to engage in private-benefits sharing than to impose additional monitoring on the incumbent. If the private benefits of control are large, the incumbent cares about exposing his or her control benefits to intruders. We define intruders as newly emergent substantial shareholders who are unable to take over the firm (unlike raiders) but intend to share in the private benefits with the incumbent. Intruders with sufficient votes can exert pressure on the incumbent for his or her shares of rent seeking. Like the incumbent insider, after getting in, an intruder can influence corporate business transactions. In our model, intruders are fundamentally different from portfolio investors at large, and they know the true value of private benefits, c, as does the incumbent.

It is possible that an intruder can get in at any time and join the incumbent coalition to share the control benefits. But the incumbent coalition can be stable for a long time because no new intruder has the incentive to join if buying a block of shares in the market will push up the stock prices dramatically and increase the membership cost substantially. Market liquidity is often a problem for closely held firms. On the other hand, there is a window of opportunity for a new intruder. An ideal situation is that the new intruder's voting power cost-effectively and substantially increases and at the same time the incumbent (or a coalition of large shareholders) faces insider ownership dilution. This situation is most likely to occur in an underwritten cash offer that suddenly causes control dilution and where considerable new shares are allotted to the new intruder, previously hidden to the incumbent. If private benefits are large, the incumbent's choice of flotation method has implications on the redistribution of control benefits, and hence rent protection becomes important to the incumbent.

To reflect such a threat of intrusive rent-seeking behavior, we assume that the incumbent has an expected loss of some private benefits of control, $T(c)$, as a result of control-diluting cash offers; this marginal intrusion-induced loss of control benefits, $T(c)$, is known to the insiders and potential intruders. Recall that there is no such marginal loss in a rights offer because there is no share dilution, and any attempt by a new intruder to buy a block of rights in the market to break the incumbent coalition equilibrium would face the same situation as buying a block of shares that would push up prices dramatically, making the intrusion unattractive. We further assume that it is common knowledge that $T(c)$ is positive and $T'(c) > 0$. In other words, the larger the private benefits involved, the bigger is the intrusion-induced loss of control benefits expected in control-diluting cash offers. In Section III.D, we discuss $T(c)$ in detail.

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The payoff to the incumbent with a cash offer is as follows:

$$
\begin{aligned}
(2) \qquad & P_{\text{cash_offer}}(c, c_{\text{cash_offer}}) \\
&= \frac{wV_{\text{cash_offer}}}{V_{\text{cash_offer}} + E}(V + E) + (1 + g)c \\
&\quad + h\left[\frac{wV_{\text{cash_offer}}}{V_{\text{cash_offer}} + E}(V_{\text{cash_offer}} - V)\right] - T(c) \\
&= \frac{w[a + b - (1 + g)c_{\text{cash_offer}}]}{a + b - (1 + g)c_{\text{cash_offer}} + E}(h - 1)(1 + g)(c - c_{\text{cash_offer}}) \\
&\quad + w(a + b) + (1 + g)c - w(1 + g)c_{\text{cash_offer}} - T(c).
\end{aligned}
$$

In the payoff in equation (2), there is a dilution in the incumbent's equity holdings, and the explicit marginal loss of private benefits, $T(c)$, is expected as a consequence. We show in the following discussion how the incumbent's choice between the two payoffs in equations (1) and (2) depends on the signaling cost structure.

B. Three Important Equilibriums

In this section, we show the firm's choice of equity flotation method under asymmetric information about private benefits of control. In the signaling game we present herein, the signaling cost, $T(c)$, is the extent of the incumbent's conditional loss of control benefits as a result of control-diluting cash offers. This can lead to three meaningful equilibriums rather than just one. Before we prove their existence, we first characterize the three equilibriums, as follows:

Equilibrium 1. Separating Equilibrium. In this equilibrium, low-quality firms (with c_H) choose rights offers, and high-quality firms (with c_L) choose cash offers. As the market believes, rights offers signal high private benefits, and cash offers signal low private benefits (i.e., $c_{\text{rights}} = c_H$ and $c_{\text{cash_offer}} = c_L$). Given the specific signaling cost structure, namely, that $T(c)$ is high only for low-quality firms, there is separation because low-quality firms cannot mimic high-quality ones.

Equilibrium 2. Cash-Offer-Pooling Equilibrium. In this pooling equilibrium, both low-quality firms (with c_H) and high-quality firms (with c_L) choose cash offers. The possible out-of-equilibrium belief is $c_{\text{rights}} = c_H$, but given the signaling cost structure, namely, that $T(c)$ is low in any case, low-quality firms are better off by choosing cash offers. Because even low-quality firms can signal, the market cannot infer firm type (i.e., $c_{\text{cash_offer}} = \bar{c}$, where $c_L < \bar{c} < c_H$).

Equilibrium 3. Rights-Pooling Equilibrium. This is the other pooling equilibrium in which both low-quality firms (with c_H) and high-quality firms (with c_L) choose rights offers. The reasonable out-of-equilibrium belief is $c_{\text{cash_offer}} = c_L$, but even high-quality firms cannot afford to signal by choosing a cash offer, given the signaling cost structure, namely, that $T(c)$ is high in any case. Because no firm can signal, the market again cannot infer firm type (i.e., $c_{\text{rights}} = \bar{c}$, where $c_L < \bar{c} < c_H$).

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Formally, we have the following proposition:

Proposition 1. Given that the controlling shareholders/managers maximize their self-interested objective function, which includes private benefits of control and the security benefits affected by the market value of their equity holdings, and given that asymmetric information about firm value arises only from private benefits of control, one of the three equilibriums will exist in the market, as follows:

(a) The separating equilibrium (Equilibrium 1) is supported only if

$$(3)\qquad \begin{aligned} T(c_L) &< h[w(1+g)(c_H - c_L)] \\ &< \left[h + \frac{(1-h)E}{a+b-(1+g)c_L+E}\right][w(1+g)(c_H - c_L)] \\ &< T(c_H). \end{aligned}$$

(b) The cash-offer-pooling equilibrium (Equilibrium 2) is supported only if

$$(4)\quad T(c_L) < h[w(1+g)(c_H - \bar{c})] - \frac{(1-h)E}{a+b-(1+g)\bar{c}+E}[w(1+g)(\bar{c} - c_L)]$$

and

$$(5)\qquad T(c_H) < \left[h + \frac{(1-h)E}{a+b-(1+g)\bar{c}+E}\right][w(1+g)(c_H - \bar{c})].$$

(c) The rights-pooling equilibrium (Equilibrium 3) is supported only if

$$(6)\qquad T(c_L) > h[w(1+g)(\bar{c} - c_L)]$$

and

$$(7)\quad T(c_H) > h[w(1+g)(\bar{c} - c_L)] + \frac{(1-h)E}{a+b-(1+g)c_L+E}[w(1+g)(c_H - c_L)].$$

Proof. (a) The separating equilibrium in which low-quality firms (with c_H) choose rights offers and high-quality firms (with c_L) choose cash offers requires $P_{\text{rights}}(c_L, c_H) < P_{\text{cash_offer}}(c_L, c_L)$ and $P_{\text{rights}}(c_H, c_H) > P_{\text{cash_offer}}(c_H, c_L)$. Replacing c_{rights} and $c_{\text{cash_offer}}$ in the payoffs in equations (1) and (2) with the market's belief accordingly (i.e., $c_{\text{rights}} = c_H$ and $c_{\text{cash_offer}} = c_L$) produces equation (3). (b) Both high- and low-quality firms choose cash offers in the cash-offer-pooling equilibrium. This sequential equilibrium requires $P_{\text{rights}}(c_L, c_H) < P_{\text{cash_offer}}(c_L, \bar{c})$ and $P_{\text{rights}}(c_H, c_H) < P_{\text{cash_offer}}(c_H, \bar{c})$. Inserting the market's belief into c_{rights} and $c_{\text{cash_offer}}$ in the payoffs in equations (1) and (2) (i.e., $c_{\text{rights}} = c_H$ and $c_{\text{cash_offer}} = \bar{c}$) yields equations (4) and (5). (c) The rights-pooling equilibrium in which both high- and low-quality firms choose rights offers requires $P_{\text{rights}}(c_L, \bar{c}) > P_{\text{cash_offer}}(c_L, c_L)$ and $P_{\text{rights}}(c_H, \bar{c}) > P_{\text{cash_offer}}(c_H, c_L)$. Considering the market's belief in the payoffs in equations (1) and (2) (i.e., $c_{\text{rights}} = \bar{c}$ and $c_{\text{cash_offer}} = c_L$) gives equations (6) and (7). □

The conditions in equation (3) read that the signaling cost, $T(c_L)$, of high-quality firms (with c_L) is smaller than the marginal loss of security benefits due

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to privately observed market undervaluation, $h[w(1+g)(c_H - c_L)]$, to the firm's incumbent who would have chosen rights instead of cash offers; alternatively, it is also the h proportion of the expropriation cost differential for choosing rights instead of cash offers. On the other hand, the signaling cost, $T(c_H)$, of low-quality firms (with c_H) is larger than a higher-than-h proportion of the expropriation cost differential to the firm's incumbent. This contrast suggests that high-quality firms are better off by signaling, but low-quality firms find their signaling too costly. In short, the conditions in equation (3) suggest that a separating equilibrium will prevail only if the signaling cost, $T(\cdot)$, is sufficiently high for low-quality firms, but becomes sufficiently low for high-quality firms.

The conditions in equations (4) and (5) suggest that the intrusion-induced cost, $T(c_L)$, for high-quality firms (with c_L) is capped at a smaller-than-h proportion of the expropriation cost differential, $[w(1+g)(c_H - \bar{c})]$, and the intrusion-induced cost for low-quality firms (with c_H) is capped at a higher-than-h proportion of the expropriation cost differential for not breaking the pooling. Thus even low-quality firms can signal and choose cash offers. Because the market cannot infer firm type, the cash-offer-pooling equilibrium prevails.

Finally, the conditions in equations (6) and (7) imply that the intrusion-induced cost for high-quality firms (with c_L) is higher than the h proportion of the expropriation cost differential to the firm's incumbent who stays with the rights pooling instead of cash offers, $[w(1+g)(\bar{c} - c_L)]$, and the intrusion-induced cost for low-quality firms (with c_H) is higher than a higher-than-h proportion of this expropriation cost differential. All of this means that even high-quality firms find the signaling cost too high. As a result, no type of firm can signal to choose cash offers, and hence the rights-pooling equilibrium prevails.

Under the original concept given by Kreps and Wilson (1982), each of the three equilibriums in Proposition 1 is a sequential equilibrium. For some parameter space, however, the rights-pooling equilibrium (Equilibrium 3) may not satisfy the intuitive criterion of Cho and Kreps (1987) because high-quality firms have the incentive to make an out-of-equilibrium move by choosing a cash offer. If low-quality firms find it difficult to mimic high-quality firms, a unique separating equilibrium is supported instead. Unlike Equilibrium 1, this unique separating equilibrium does not coexist with a rights-pooling equilibrium. We present the unique separating equilibrium as a refinement to Equilibriums 1 and 3 using Proposition 2, as follows:

Proposition 2. Under reasonable beliefs, the rights-pooling equilibrium, like Equilibrium 3, may be upset. As a result, a unique separating equilibrium in which high-quality firms (with c_L) choose cash offers and low-quality firms (with c_H) remain better off by choosing rights offers is supported if and only if

$$T(c_L) \quad < \quad h[w(1+g)(\bar{c} - c_L)] \tag{8}$$

and

$$T(c_H) \quad > \quad \left[h + \frac{(1-h)E}{a+b-(1+g)c_L + E}\right][w(1+g)(c_H - c_L)]. \tag{9}$$

Proof. We elaborate how an out-of-equilibrium belief is more reasonable as follows. If some issuers decide to choose cash offers (as an out-of-equilibrium

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move), the market tends to judge which type of firm signals by choosing a cash offer. We can quickly rule out $c_{\text{cash_offer}} = c_H$ because we can show that $P_{\text{cash_offer}}(c_H, c_H) < P_{\text{rights}}(c_H, \bar{c})$ according to the payoffs equations (1) and (2). In other words, low-quality firms remain better off in the rights-pooling equilibrium and have no incentive to make the move.

The analysis of firm type is slightly complicated if the out-of-equilibrium belief is $c_{\text{cash_offer}} = c_L$. In this case, although this belief is in favor of high-quality firms, both low- and high-quality firms are likely to signal. First, we consider high-quality firms. The fact that low-c firms are better off by making the move means $P_{\text{cash_offer}}(c_L, c_L) > P_{\text{rights}}(c_L, \bar{c})$, or the condition in equation (8) holds.

The condition in equation (8) alone, however, does not guarantee that a separating equilibrium occurs because high-c firms may mimic low-c firms and hence undermine the separation. Under the same belief, $c_{\text{cash_offer}} = c_L$, high-$c$ firms may follow the out-of-equilibrium move by choosing a cash offer. Conversely, high-c firms have no incentive to choose a cash offer if $P_{\text{cash_offer}}(c_H, c_L) < P_{\text{rights}}(c_H, \bar{c})$ (i.e., the condition in equation (6)). Combining this condition and the condition in equation (8), the rights-pooling equilibrium is broken under a reasonable out-of-equilibrium belief if (and only if)

$$
\begin{aligned}
(10)\quad T(c_L) &< h[w(1+g)(\bar{c}-c_L)] \\
&< h[w(1+g)(\bar{c}-c_L)] + \frac{(1-h)E}{a+b-(1+g)c_L+E}[w(1+g)(c_H-c_L)] \\
&< T(c_H).
\end{aligned}
$$

The conditions in equations (3) and (10) taken together yield the conditions in equations (8) and (9). □

C. Empirical Relevance: A Worldwide Perspective

The three equilibriums *in the same framework* summarize important variations in the choice between rights issues and cash offers (or placements to new investors) worldwide as empirically observed. In a survey paper, Eckbo and Masulis (1995) document that listed U.S. industrial firms had gradually switched their favorite flotation method from rights issues to cash offers before the early 1980s. Since then, almost all U.S. firms have used cash offers rather than rights issues (as in Equilibrium 2). The trend of using more cash offers as the flotation method has also been observed in other important markets. For example, Slovin et al. (2000) and Armitage (2010) show that listed firms in the United Kingdom used to use rights issues only, but since 1986 they have used cash offers as well as rights issues (as in Equilibrium 1). But in most European and Pacific Basin countries, as surveyed by Eckbo and Masulis (1995), rights issues remain as the only flotation method (as in Equilibrium 3).

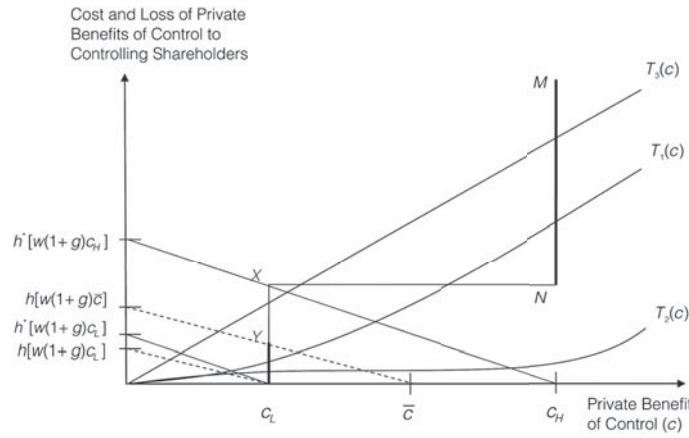
The analysis of this paper shows that the choice of flotation method in a market can be largely an economic equilibrium outcome. The choice hinges on the signaling cost structure. To better understand the conditions for the three equilibriums (including the refinement), we show their graphical presentations in Figure 1. The top end, labeled Y, of the short vertical bar at c_L marks the value of

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FIGURE 1

Intrusion-Induced Loss of Private Benefit of Control, $T(c)$

Figure 1 shows some typical structures of $T(c)$ and the corresponding values for high and low private benefits, c_H and c_L. Corporate insiders know the true value of the existing private benefits, c, and the market does the guesswork. Additional private benefits arising from the new investment are positively correlated with c; namely, they are equal to $g \times c$, where g is a constant (percentage). The standard signaling cost, $T(c)$, is the intrusion-induced loss of the incumbent's private benefits of control. The incumbent controlling shareholder has current equity ownership, w, in percentage; $w(1 + g)$ times the market's estimate about c is the conditionally expected expropriation cost to the incumbent; h $(0 < h \leq 1)$ is the coefficient of the incumbent's marginal gain or loss of security benefits due to privately observed market over- or undervaluation; and $h^* = h + (1 - h)E/[a + b - (1 + g)c_L + E]$. The values of a (assets-in-place), b (NPV of investment opportunities), and E (investment size) are public information, and $T(c)$ is an increasing function of c. The average value of the private benefits in a pooling equilibrium is $\bar{c}$ $(c_L < \bar{c} < c_H)$.



$h[w(1 + g)(\bar{c} - c_L)]$, and the bottom end, labeled N, of the hanging long vertical bar at c_H marks the value of $h^*[w(1 + g)(c_H - c_L)]$, where $h^* = h + (1 - h)E/[a + b - (1 + g)c_L + E]$. An important component of these numbers is the expropriation cost differential to the incumbent controlling shareholder who chooses a rights offer instead of a cash offer given the market beliefs.

Only T_1, the intrusion-induced cost function, which cuts through both short and long vertical bars, satisfies the conditions in equations (8) and (9); that is, on curve T_1, the T-cost is sufficiently low at low c, but sufficiently high at high c. In the other two cases, T_2 and T_3, neither satisfies these conditions because on these curves either the T-cost is not prohibitively high even at high c, namely, $T_2(c_H)$, or the T-cost is already sufficiently high at low c, namely, $T_3(c_L)$. In other words, a unique separating equilibrium is viable if the intrusion-induced loss of private benefits is sufficiently big only at high c. Note that these conditions for a unique separating equilibrium are tighter than the conditions in equation (3). Thus the theory here can explain the U.K. findings noted by Slovin et al. (2000) that high-quality firms choose cash offers and low-quality firms choose rights issues (see also Wu and Wang (2002) for similar evidence from Hong Kong).

As shown in Figure 1, T_2 is consistent with a cash-offer-pooling equilibrium because the conditions in equations (4) and (5) are satisfied; that is, when the upper bound of the loss of private benefits is small enough, all issuers choose cash offers. We do observe that almost all U.S. industrial firms choose cash offers. It is well known that in the United States, managers rather than large shareholders play an important role in controlling firms. Because U.S. managers are

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somehow able to control firms without exerting extensive managerial ownership, the intrusion-induced loss of control benefits through managerial ownership dilution is, of course, of little concern to them. Another related reason is that because of the way in which the U.S. legal environment has evolved to date, control benefits of the type under consideration in this paper may simply remain low due to the high degree of statutory protection of minority shareholders and high degree of law enforcement (Dyck and Zingales (2004)).

In contrast, T_3 produces a unique rights-pooling equilibrium. Thus when the lower bound of the intrusion-induced loss of private benefits of control in a market is big enough, no issuer has the incentive to choose a cash offer. In many markets, such as in most parts of Europe, rights offers are the only flotation method used. In view of the conditions for the rights-pooling equilibrium here, perhaps control benefits or the intrusion-induced loss of them are generally so large in these markets that few issuers are comfortable with control-diluting cash offers. This can explain why, unlike in the United States, the waiving of preemptive rights in these markets is not desirable to controlling shareholders; indeed, we do not observe its occurrence in such markets.

D. Some Validity Issues about h and $T(c)$

Both h and $T(c)$ are parameters that reflect the incumbent's concern about his or her payoffs. The validity of our model depends on a positive value of h $(0 < h \leq 1)$ as the coefficient of the incumbent's marginal gain or loss of the market value of security benefits, which we specify as $h[w(\hat{V} - V)]$. If the incumbent is not concerned about the privately observed market over- or undervaluation before $t = 1$, we equivalently have $h = 0$. But this is unlikely. As we have argued, for example, pledging of shares for personal loans directly benefits from a higher market value of the pledge. Share pledge is allowed in almost any market. The pledging of shares by the controlling shareholders is disclosed in Taiwan, for example, and can have adverse implications on corporate governance (Ko, Ding, Liu, and Yeh (2001)). Note that in many markets, such as in Hong Kong, a disclosure is not typically mandatory, aggravating the information asymmetry about hidden private benefits.

Personal benefits to corporate insiders due to their privately observed market overvaluation of their equity holdings are prevalent. Even in the United States, managers can take advantage of this overvaluation by excising their stock options and selling the underlying shares. In short, the incumbent, even as a manager who cannot easily derivate private benefits from connected business transactions as do controlling shareholders of firms with concentrated ownerships, is generally happier with a higher market value of the firm. This justifies a positive value for h in our model.

Liking market overvaluation is consistent with disliking undervaluation. The incumbent actually dislikes the privately observed market undervaluation for another reason. Because an intruder can also observe the undervaluation, the intrusion cost becomes lower if the undervaluation occurs. The playing out of a full-blown strategic game between the incumbent and a new intruder is likely to have stopped before the incumbent coalition reaches a stable equilibrium.

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We assume that the incumbent coalition is in equilibrium before the event of new equity issuance. Thus the intrusion cost in our model means a marginal cost due to this event that may significantly disturb this equilibrium. But the intrusion cost reduction not only is due to the undervaluation but also depends on the extent of the incumbent's ownership dilution in the event. The direct intrusion-induced loss of private benefits of control, T(c), due to the control-diluting cash offers is a more important concern to the incumbent and is at the core of our rent-protection story.

In our model, $T(c)$ is a function of c known to both the incumbent and potential intruders. $T(c)$ works as the main signaling cost for the incumbent. Thus the validity of our assumptions about $T(c)$ is crucial. The assumption of our model is that $T(c)$ arises due to rent-seeking behavior of substantial shareholders. The incumbent coalition shares the private benefits in equilibrium, but control-diluting cash offers can significantly disturb this equilibrium because new blockholders may take advantage of this event and emerge cost-effectively. We simply specify that the part of the incumbent's private benefits at stake is $T(c)$. How common is private benefit sharing? Would a lock on control make $T(c)$ have a value of 0? We address these two issues in the following discussion.

In the literature, many believe that large shareholders emerging from a diffuse ownership structure such as in U.S. firms have interests more closely aligned with those of outside investors than do managers who usually have only small managerial ownership. Thus large shareholders are able to discipline usually powerful but less incentive-aligned managers (Shleifer and Vishny (1986)).

But it is the long-term rather than short-term institutional investors who monitor (Chen, Harford, and Li (2007)); thus it is likely that firm valuation has already reflected this monitoring effect in the first place. In a concentrated ownership structure where the largest shareholder is already in control, firm valuation also has already reflected the significant incentive effect from the largest shareholder. New blockholders or short-term institutional investors can simply free-ride on the largest shareholder or long-term institutional investors in this regard. Thus new blockholders in general (especially those who are not expected to bring positive business synergies) tend to be marginalized in playing a further monitoring role, but their rent-seeking behavior is likely to be the focus of public attention, especially in countries where investor protection is weak. These large shareholders can share in the incumbent controlling shareholder's control benefits (e.g., by gaining part of the self-dealing transactions). Even in the U.S. context, the lure of private benefits can be high; greenmail and targeted share repurchases are viewed as examples of special deals for large investors (Dann and DeAngelo (1983), Bradley and Wakeman (1983)). In a survey paper, Holderness (2003) concludes that evidence on the relationship between blockholders and firm value in the United States is mixed and not pronounced. This is consistent with the view that active new blockholders may simply share in private benefits with the incumbent, and the resulting valuation effect tends to overwhelm any additional positive monitoring effect to the benefit of uninformed shareholders at large.

Can the incumbent keep intruders outside? The rent-protection theory of corporate ownership structure described by Bebchuk (1999) suggests that controlling shareholder tends to maintain a lock on control if private benefits are large. It follows that if a lock is uncontestable, there cannot be any takeover threat.

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Indeed, hostile takeovers are rare, for example, in most parts of Europe, where concentrated ownership structures are common. But this does not mean $T(c)$ is 0. An uncontestable lock can well deter raiders but may not be effective in preventing intruders from sharing in control benefits. For one thing, the intruders are willing to make and can make some noise that the incumbent does not like. As a result, the incumbent is willing to compromise with the intruders in exchange for the latter's silence. If the intruders succeed in grabbing some of the connected business transactions, some of the incumbent's private benefits will inevitably be lost. Of course, the redistribution of control benefits depends on the intruders' bargaining power. Underwritten cash offers simply facilitate the ability of the previously hidden intruders to obtain sufficient votes and emerge if private benefits are attractively high.

It is worth noting that for the issuing-to-invest decision, a good assumption is that the incumbent does not want to relinquish control. Thus control transfers that allow the incumbent to extract private benefits more efficiently, such as those discussed by Burkart, Gromb, and Panunzi (2000), are beyond the scope of this paper.[7] The concern about exposing and losing part of private benefits of control because of substantial control dilution, however, arises and enters the controlling shareholder's choice of flotation method naturally. The larger the private benefits a target has, the more attractive it is to potential intruders, and the more the incumbent of the target firm is concerned with how to safeguard his or her control benefits. Thus the incumbent's rent-protection motive is legitimately linked to the intrusion-induced loss of control benefits.

IV. Announcement Effects

The existing literature has documented SEO announcement effects in different countries. Some evidence, especially where rights issues are involved, remains puzzling. Section IV.A reviews these empirical results. Section IV.B extends the rent-protection model developed previously to explain SEO announcement effects in the separating equilibrium. Section IV.C analyzes rights issues in the rights-pooling equilibrium and explains why the announcement effects of rights issues can be positive as well as negative, a phenomenon that has not been examined in the literature within the same theoretical framework.

A. Related Literature

Empirical evidence from the United States shows that although the announcement effects of cash offers are on average significantly negative, the announcement effects of rights issues are not pronounced. Asquith and Mullins (1986), Masulis and Korwar (1986), and Mikkelson and Partch (1986) provide early studies that formally document the negative announcement effects of cash offers. In survey papers, Smith (1986) and Eckbo and Masulis (1995) both

[7]Empirical literature has shown evidence on premiums for block trades and shares with superior voting powers (e.g., Barclay and Holderness (1989), DeAngelo and DeAngelo (1985), Lease, McConnell, and Mikkelson (1983), and Zingales (1994)).

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document an average abnormal return of about −3.0% for U.S. industrial firms at a short announcement event window. In contrast, for rights issues, Smith (1977) reports zero abnormal performance in the announcement month, and Eckbo and Masulis (1992) document an average abnormal return of approximately −1.0% for both industrials and utilities in the United States.

Although the negative announcement effects of cash offers are well understood as an adverse-selection effect following Myers and Majluf (1984) or a free-cash-flow problem following Jung et al. (1996), the choice of SEO flotation method has puzzled researchers since Smith (1977). In the U.S. market, rights issues are rarely used today. This has been puzzling because despite rights issues having lower flotation costs, increasing numbers of firms have favored the more expensive underwritten cash offers (Smith (1977)).

Unlike in the United States, rights issues are frequently used in many other counties. In countries where both rights issues and cash offers (or placements) are used, the literature has documented various kinds of announcement effects that are even more perplexing. For example, Kang and Stulz (1996) find significantly positive announcement effects in Japan for both rights issues (0.45%) and cash offers (2.02%). Yet Slovin et al. (2000) in their study of the United Kingdom and Wu and Wang (2002) in their study of Hong Kong find, on average, significantly negative announcement effects for rights issues (−3.09% in the United Kingdom and −7.64% in Hong Kong), in contrast with significantly positive announcement effects for placements (3.30% in the United Kingdom and 3.14% in Hong Kong). Recently, Lee, Poon, and Sinnakkannu (2014) confirm that the large negative effect of rights issues in Hong Kong stands the test of time and also typically occurs in 2003–2011. The evidence of the negative announcement effects of rights issues and positive announcements of underwritten offers to outside investors poses a new puzzle: Why are firms willing to choose value-destroying rights issues instead of value-enhancing offers to new investors?

To explain this phenomenon, Slovin et al. (2000) resort to the underwriter certification hypothesis. They argue that high-value firms choose offers to new investors through underwriter certification to signal firm type, and low-value firms are left to choose rights issues in which the (often observed) deep subscription price discount is a sign of weak underwriter certification. Thus the opposite announcement effects reflect a separating equilibrium regarding the choice of rights issues versus cash offers through a certification effect.[8] Underwriter certification, however, can give a different prediction in this context. For example, it can work in favor of underwritten rights issues (more than cash offers), as suggested by Heinkel and Schwartz (1986). In the take-up model of Eckbo and Masulis (1992), however, underwriter certification is noisy (their assumption A.4) and tends to send a signal of weakness.

In many markets, such as in most European and Pacific Basin countries where rights issues are nearly the only SEO flotation method used, announcement

[8]Underwriter certification helps improve valuation uncertainty in new equity issues (Booth and Smith (1986)). The literature for private placements often interprets offer discounts as a certification cost for compensating private investors for positive signaling or certification. Barclay, Holderness, and Sheehan (2007), however, provide evidence that questions the certification or monitoring hypotheses premised on the active involvement of new investors (see also Wu (2004), Wu et al. (2005)).

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effects of rights issues also appear mixed, as documented in the literature. For example, significantly negative average announcement returns of rights issues are reported in some markets (e.g., Balachandran et al. (2008) note −1.74% in Australia, Gajewski and Ginglinger (2002) note −2.84% in France, Kabir and Roosenboom (2003) note −2.80% in the Netherlands, and Marsden (2000) notes −1.01% in New Zealand). In other markets, positive, and sometimes significant, average announcement returns are also documented (Bigelli (1998), Italy; Bohren, Eckbo, and Michalsen (1997), Norway; Dhatt, Kim, and Mukherji (1996), Korea; Hietala and Loyttyniemi (1991), Finland; Loderer and Zimmermann (1988), Switzerland; and Tsangarakis (1996), Greece). Given the mixed evidence, the existing literature has been unable to explain, within the same theoretical framework, why rights issues are expected to produce positive announcement effects in some markets and negative ones in others.

In the next two sections, we argue that our rent-protection argument with asymmetric information about private benefits of control is able to facilitate our understanding of the announcement effects of rights issues in different contexts but within the same framework. We show that it is possible that rights issues produce negative announcement effects and cash offers create positive announcement effects in our separating equilibrium. We also analyze rights issues in a rights-pooling equilibrium. This investigation helps address, without any interaction with cash offers, the concerns why rights issues are good news in some cases and bad news in others.

B. Announcement Effects of Rights Issues versus Cash Offers in the Separating Equilibrium

In the separating equilibrium (as described in Proposition 2) in which high-c firms choose a rights issue and low-c firms choose a cash offer, the announcement signals the hidden value of private benefits of control. Conditional on issuing to invest, the difference in expected firm value between a rights issue and a cash offer after the announcement is $V_{\text{rights}} - V_{\text{cash_offer}} = (1+g)(c_L - c_H)$, according to Section III.A. This value differential is negative. Simply put, relative to a cash offer, a rights issue is expected to have an adverse differential effect at the announcement, other things being equal. (Note that in our private-benefits-sharing scenario, $T(c)$ influences the incumbents' payoff but not the firm's value directly.)

The negative value differential is a prediction conditional on the decision of issuing to invest. The announcement effects, however, also depend on the market expectation that firms may pass up new investment (or do nothing). At $t = 0$, when the separating equilibrium prevails, the conditional firm values are $V_{\text{no}} = a - c_0$ (where $c_L < c_0 < c_H$) for doing nothing, $V_{\text{rights}} = a + b - (1+g)c_H$ for making a rights issue, and $V_{\text{cash_offer}} = a + b - (1+g)c_L$ for making a cash offer.

In our separating equilibrium, low-quality firms find that rights issues always dominate cash offers. But these firms will not necessarily make rights issues because they may find the new investment unattractive.[9] The payoff from

[9]The choice of floatation method is embedded in the decision between issuing to invest and doing nothing. The decision process, based on backward induction, goes as follows: First, controlling

doing nothing is $w(a - c_H) + c_H + h[w(c_H - c_0)]$. If a rights issue is chosen, the incumbent's payoff in equation (1) must be greater than the payoff from doing nothing; namely, $wb + gc_H > w[gc_H + h(c_H - c_0)]$. Intuitively, this means that, given that a rights issue is an optimal flotation method, the incumbent's gain from the new project (namely, his or her fair share of the NPV and his or her new private benefits) must together overwhelm his or her new expropriation cost and the marginal loss in security benefits by choosing the rights issue rather than doing nothing.

On the other hand, if a cash issue is chosen, the incumbent's payoff in equation (2) must be greater than the payoff from doing nothing; namely, $wb + gc_L > w[gc_L + h(c_L - c_0)] + T(c_L)$. This is equivalent to saying that, given that a cash offer is an optimal flotation method, the incumbent's fair share of the new investment's NPV and his or her new private benefits together must overwhelm the sum of the new expropriation cost, the marginal gain in security benefits if he or she chooses the cash offer rather than do nothing, and the intrusion-induced loss of control benefits, namely, the T-cost.

The issue-to-invest decisions can be formally summarized in the following proposition:

Proposition 3. In a separating equilibrium in which low-quality firms (with c_H) choose rights issues and high-quality firms (with c_L) choose cash offers, a firm takes an issue-to-invest decision if

$$b > \left(g + h - \frac{g}{w}\right) c_H - hc_0 \tag{11}$$

in the case of a rights issue, or if

$$b > \left(g + h - \frac{g}{w}\right) c_L - hc_0 + \frac{T(c_L)}{w} \tag{12}$$

in the case of a cash offer.

Proof. The conditions in equations (11) and (12) hold following the comparison of the payoffs in equations (1) and (2) with the payoff of doing nothing, $w(a - c_H) + c_H + h[w(c_H - c_0)]$, respectively. Note that because the right-hand side of the inequality in equations (11) and (12) can be negative, a new project would be undertaken even if its NPV is negative. □

Now assign a probability to each of the firms' decisions: doing nothing, rights issue, and cash offer. Let the probabilities be π_0, π_1, and π_2 ($\pi_0 + \pi_1 + \pi_2 = 1$), respectively. Just before the announcement at time $t = 0$ (or at $t = -1$), the market evaluates all the future states and hence reaches the (preannouncement) equilibrium firm value:

$$\begin{aligned} V_b &= \pi_0 V_{\text{no}} + \pi_1 V_{\text{rights}} + \pi_2 V_{\text{cash_offer}} \\ &= a + (\pi_1 + \pi_2)b - \pi_1(1 + g)c_H - \pi_2(1 + g)c_L - \pi_0 c_0. \end{aligned} \tag{13}$$

shareholders/managers identify the optimal floatation method (rights offer vs. cash offer) given that an issuance decision is made. Second, the remaining decision is simplified as one between issuing to invest with the optimal floatation method versus doing nothing (i.e., skipping the new investment).

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The announcement effects of rights issues and cash offers are as follows:

$$(14) \qquad V_{\text{rights}} - V_b = \pi_0 b - (1-\pi_1)(1+g)c_H + \pi_2(1+g)c_L + \pi_0 c_0$$

and

$$(15) \qquad V_{\text{cash_offer}} - V_b = \pi_0 b - (1-\pi_2)(1+g)c_L + \pi_1(1+g)c_H + \pi_0 c_0.$$

Corollary 1. In a separating equilibrium in which low-quality firms (with c_H) choose rights issues and high-quality firms (with c_L) choose cash offers, the signs of the announcement effects depend largely on the new investment's NPV, namely, b, in relation to the other parameters, as follows:

(i) The announcement effect of a rights issue is negative if

$$(16) \quad \left(g + h - \frac{g}{w}\right) c_H - hc_0 < b < (1+g)c_H - c_0 + \frac{\pi_2(1+g)(c_H - c_L)}{\pi_0};$$

(ii) the announcement effect of a rights issue is positive if b becomes sufficiently large so that the second inequality in equation (16) is reversed;

(iii) the announcement of effect of a cash offer is negative if

$$(17) \quad \left(g + h - \frac{g}{w}\right) c_L - hc_0 + \frac{T(c_L)}{w} < b < (1+g)c_L - c_0 - \frac{\pi_1(1+g)(c_H - c_L)}{\pi_0}; \quad \text{and}$$

(iv) the announcement effect of a cash offer is positive if b becomes sufficiently large so that the second inequality in equation (17) is reversed.

Proof. (i) The first inequality in equation (16) is the same as that in equation (11), and the second inequality holds if the valuation effect in equation (14) is negative. (ii) The second inequality in equation (16) is reversed if the valuation effect in equation (14) is positive. (iii) The first inequality in equation (17) is the same as that in equation (12), and the second inequality holds if the valuation effect in equation (15) is negative. (iv) The second inequality in equation (17) is reversed if the valuation effect in equation (15) is positive. □

Corollaries 1(i) and 1(iii) predict negative announcement effects. Given private benefits, the new investment quality is the driving force; if the new investment's NPV is low enough, outside investors are likely to incur net losses due to the private benefits, and hence the market is likely to react negatively to the announcement of the issue-to-invest decisions by both rights issuers and cash-offering firms. Note that b cannot be too small because it would be optimal to skip the new project.

Now concentrate on the second inequality in the conditions in equations (16) and (17). The upper bound in equation (16) is higher than that in equation (17). This means that rights issues with the rent-protection motive are more likely to have negative announcement effects. In addition, when the variation in control benefits across types, $c_H - c_L$, is big, the negative reaction (given b)

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is more likely to happen to a rights issue than a cash offer. This is mainly because a rights issuer's revealed control benefits are larger in our separating equilibrium (recall that the valuation differential is in favor of cash offers; that is, $V_{\text{rights}} - V_{\text{cash_offer}} = (1 + g)(c_L - c_H) < 0$). But to see a negative announcement effect, the negative valuation effect from large control benefits revealed in the separating equilibrium must overwhelm any value-added effect of new investment. Of course, if a loss-making new investment is undertaken, the negative valuation effect will be more pronounced. On the other hand, cash offers may not necessarily lead to negative announcement effects because the second inequality in equation (17) can be more easily reversed if $(c_H - c_L)$ becomes bigger. This can explain the negative announcement effects of rights issues in contrast with valuation-preserving cash offers, as documented by Slovin et al. (2000) and Wu and Wang (2002).

Corollaries 1(ii) and 1(iv) predict positive announcement effects, indicating that as long as the new project's NPV is large enough, the announcement effects, regardless of the flotation method, should be positive. This is because the new investment can add more value to the firm than compensates for the controlling shareholder's gain in pursuing private benefits, even in a rights issue.[10] Thus this corollary also helps explain the results documented by Kang and Stulz (1996).

C. The Rights-Pooling Equilibrium and Announcement Effects

In this paper, rights issues do not necessarily protect the interests of outside shareholders. The market is ready to weigh the valuation effects from both private benefits of control and investment opportunities, and it responds to a firm's issue-to-invest decisions accordingly. Rights issues often produce mixed announcement effects, as we have already confirmed analytically in our separating equilibrium. In this section, we focus on the rights-pooling equilibrium. Except for changes we make in some assumptions, we basically follow the analytical approach of Myers and Majluf (1984), which is confined to cash offers only (as in a cash-offer-pooling equilibrium).

We start with assumptions that are basically the same as those we have used so far. First, the controlling shareholder/manager maximizes the sum of the security benefits of his or her equity holdings and private benefits of control. This is the objective function we use throughout the paper. More precisely, the private benefits consist of the existing private benefits, c, and additional private benefits from new investment if undertaken. The additional private benefits are positively correlated with the existing ones, and they are assumed to be equal to a proportion of the latter, $g \times c$, where g is a positive constant (percentage) as public knowledge. The incumbent's pursuit for the private benefits also affects the marginal gain or

[10]This can happen even when control benefits are large. In a market without effective legal institutions, controlling shareholders may have double benefits. Poor legal protection of shareholder rights allows them to expropriate large control benefits from outside investors, and widespread corruption also provides them with unfair opportunities to grab lucrative (monopoly) business, often controlled by local governments. Good investment opportunities and large private benefits can go hand in hand in such a market (see Khanna and Palepu (2000) for the case of India).

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loss in the security benefits due to privately observed market over- or undervaluation. Second, there is asymmetric information about the NPV of new investments as well as about private benefits of control.[11] At $t = 0$, the market knows the distributions of the NPV and the private benefits, $\tilde{B}$ and $\tilde{C}$, whereas insiders know their true values, b and c. These true values become fully known to the market at $t = 1$ (similar to the setting used by Myers and Majluf (1984)). We still assume that the true value of assets-in-place, a, is known to both insiders and the public. Finally, there is no financial slack, and issue size, E, is fully known to both the insiders and the market, following Myers and Majluf (1984).

At time $t = 0$ (the event time), if the incumbent controlling shareholder decides to issue and invest, his or her expected payoff is $w[a + b + E - (1 + g)c] + (1 + g)c + h[w(1 + g)(c - \bar{c})] - wE$, where w is the incumbent's current ownership that will not be diluted after a rights issue (with the assumption of full subscription commitment) and $\bar{c}$ is the market's estimate of the average private benefits involved. The first term in this payoff is the incumbent's share of the firm's true value at $t = 1$, that is, the sum of assets-in-place and the present value of new investment, net of his or her total private benefits of control. The second is the true private benefits. The third, where h ($0 < h \leq 1$) is a coefficient known to the public, is the marginal gain or loss in the security benefits that matters before $t = 1$ due to privately observed market over- and undervaluation. The fourth is his or her share of the cost of the new investment. On the other hand, the incumbent may skip the new investment. Then, the incumbent's payoff becomes $w(a - c) + c + h[w(c - c_0)]$, where c_0 is the market's estimate of private benefits conditional on the firm's decision to skip the new investment (i.e., doing nothing). The firm's decision on whether to issue and invest or whether to skip the new project is summarized in the following proposition:

Proposition 4. In a market in which rights issues are the only flotation method used (as in Equilibrium 3) and where asymmetric information about firm value comes from the new investment's NPV as well as private benefits of control, separation occurs such that a firm issues new equity (rights) and undertakes the new investment if the true values, b and c, satisfy

$$b + \left(\frac{1 - w}{w} + h\right) gc - h[(1 + g)\bar{c} - c_0] \quad > \quad 0. \tag{18}$$

Otherwise, the firm foregoes the new investment.

Proof. Compare the incumbent's payoffs of doing nothing versus issuing to invest. The incumbent prefers issuing to invest if

$$\begin{aligned} w[a + b + E - (1 + g)c] + (1 + g)c + h[w(1 + g)(c - \bar{c})] - wE \\ > \quad w(a - c) + c + h[w(c - c_0)]. \end{aligned} \tag{19}$$

Reorganizing the condition in equation (19) yields equation (18). □

[11] The assumption that the NPV is also under asymmetric information does not prevent our analysis here from being theoretically tractable.

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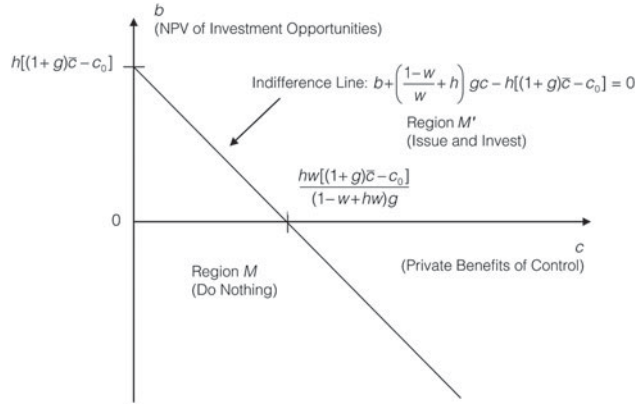
Note that assets-in-place, a, does not appear in the issue-to-invest condition in equation (18). The adverse-selection problem arising from managers selling overvalued assets-in-place to new investors as originally analyzed by Myers and Majluf (1984) is not a relevant concern in the rights-offering decision.[12] That is why we can simply treat the true value of assets-in-place, a, as common knowledge here.

Figure 2 depicts the decision-making scenarios for the controlling shareholder. Under asymmetric information about private benefits and investment opportunities, separation occurs. When (c, b) falls into region M', the condition in equation (18) is satisfied and the firm conducts a rights issue. When (c, b) falls into region M, the firm passes up the new investment.

FIGURE 2

A Firm's Issue-to-Invest Decisions in a Rights-Pooling Equilibrium

Figure 2 shows whether a firm decides to go ahead with a rights issue or not, when only rights issues are used as the flotation method. If the inside information about the existing private benefits of control, c, and about growth prospects, b, or (c, b), falls in region M', the firm issues to invest. If (c, b) falls in region M, the firm skips the new investment (i.e., does nothing). Additional private benefits arising from the new investment are positively correlated with c; namely, they are equal to $g \times c$, where g is a constant (percentage). The term w represents the controlling equity ownership, in percentage, before the issue; the indifference line marks the separation; $\bar{c}$ and c_0 are the market's estimates of the existing private benefits conditional on regions M' and M, respectively; and h $(0 < h \leq 1)$ is the coefficient of the incumbent's marginal gain or loss of security benefits due to privately observed market over- or undervaluation.



Interestingly, underinvestment may occur even when the Myers and Majluf (1984) adverse-selection effect is completely absent. Myers and Majluf argue that managers will pass up positive-NPV projects if they anticipate more value dilution than the gain from the new projects for existing shareholders. In our model, rights issues do not involve any share dilution, but underinvestment may still occur because a positive-NPV project may not be attractive enough to the incumbent when c is small and $h[(1 + g)\bar{c} - c_0]$ is high. This corresponds to (c, b) falling in the top triangle area under the indifference line in region M of Figure 2. Note that

[12] If the incumbent large shareholders take up fewer rights than they are together entitled to, the adverse-selection problem creeps back in (Eckbo and Masulis (1992)). This effect depends on how the market weighs the importance of the large shareholders who renounce their subscription rights. The adverse-selection problem certainly constitutes an additional effect, but this is outside our model.

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$\bar{c}$ and c_0 may not necessarily be equal, given the probability distribution of private benefits across firms; these expectations on private benefits are conditional on the decisions of issuing to invest and doing nothing (i.e., $\bar{c} = \bar{C}(M')$ and $c_0 = \bar{C}(M)$), respectively.

Conversely, a rights issue may go ahead even when b is negative. This overinvestment favors the incumbent because the incumbent can gain more from his or her private benefits than his or her share of the loss of firm value caused by a negative-NPV new project. But the possibility of overinvestment cannot be rampant because the incumbent does have a large insider ownership. As shown in Figure 2, given c and the market expectations, $\bar{c}$ and c_0, when the new investment is very bad (i.e., b is very negative), it is more likely to fall in region M, where the firm will not launch a loss-making project. The incentive-alignment role of insider ownership works after all.

Taken together, our analysis shows that asymmetric information about control benefits and investment opportunities jointly affect corporate investments through rights issues.

What is the announcement effect of a rights issue? At time $t = 0$, the market will update its estimate of the firm's value conditional on new information. If the firm undertakes the new investment, the equilibrium firm value is

$$V_{\text{is}} = a + \bar{B}(M') - (1+g)\bar{c} > 0, \tag{20}$$

where $\bar{B}(M')$ and $\bar{c}$ are the conditional expected values of $\tilde{B}$ and $\tilde{C}$ on region M', respectively, as shown in Figure 2. If the firm passes up the investment, the firm value is

$$V_{\text{no}} = a - c_0 > 0. \tag{21}$$

Note that the positive firm value constraints in equations (20) and (21) implicitly limit the distributions of $\tilde{B}$ and $\tilde{C}$, and hence the seemingly unbounded regions M' and M in Figure 2. Thus $\bar{B}(M')$, $\bar{c}$, and c_0 jointly determine the indifference line. Numerical computations through iterations, such as those by Myers and Majluf (1984) and Wu and Wang (2005), can exactly pin down the valuation effects. In principle, however, we can describe the announcement effects of rights offers using the following corollary:

Corollary 2. In the same setting as in Proposition 4, if a firm's expected NPV of a new investment (conditional on the decision of issuing to invest) is larger than the difference in the market-expected private benefits to the incumbent controlling shareholder who makes the decision of issuing to invest instead of doing nothing, that is,

$$\bar{B}(M') > (1+g)\bar{c} - c_0, \tag{22}$$

the announcement effect of the firm's rights issue is positive. Otherwise, the announcement effect is negative.

Proof. Just before the announcement at $t = 0$ (or at time $t = -1$), the market will evaluate all the scenarios for time $t = 0$ to reach a preannouncement equilibrium

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value. This preannouncement firm value lies between the two values, V_{is} and V_{no}, depending on the probability the market assigns to the rights-issuing decision. As a result, according to equations (20) and (21), if $V_{is} > V_{no}$, we have the condition in equation (22); otherwise, the condition in equation (22) is reversed. □

To summarize, as in the separating equilibrium, rights issues in the rights-pooling equilibrium can produce negative as well as positive announcement effects. When both private benefits and investment opportunities are under asymmetric information, the valuation effects from private benefits of control and investment opportunities jointly determine the announcement effects for rights issues. This provides a coherent framework for understanding the mixed announcement effects of rights issues, especially those documented in markets where rights issues are the only flotation method.

V. Conclusion

We model how a rent-protection motive drives the choice between rights issues and cash offers in seasoned equity offerings. The framework described in this paper supports not just one but three important equilibriums that help explain why i) firms with large control benefits choose rights issues and firms with small control benefits choose cash offers, as in Hong Kong and the United Kingdom; ii) why almost all firms in the U.S. market choose cash offers; and iii) why almost all firms in many other markets, as is the case in most European counties, choose rights issues. In the literature, the two extreme cases of ii) and iii) have almost never been analyzed together in the same framework. This paper, however, shows that the choice of the two flotation methods in the United States (cash offer dominating) and in most European countries (rights dominating), although sharply contrasted, can be explained by the rent-protection argument; namely, unlike U.S. managers, controlling shareholders of most European firms would suffer a significant loss of control benefits after control-diluting cash offers and hence have to resort to rights issues to safeguard their large control benefits.

Although specific security designs/mechanisms and liquidity problems as described in the literature can sometimes better explain the choices of SEOs in much detail in individual countries, our rent-protection argument has no conflicts with these detailed explanations. In effect, our model is best understood beyond the U.S. context in a more general sense. First, concentrated ownership structures and jealously guarded large private benefits of control are prevalent in many important non-U.S. markets. Second, the choice of flotation method between two polar cases, rights issues and cash offers, varies puzzlingly across countries. On the surface, these variations are related to regulatory details. The theoretical analysis of this paper, which is able to preserve internal consistency, shows that regulatory constraints may well be an equilibrium result in disguise. Third, our model is able to produce predictions that are consistent with the announcement effects of rights issues versus cash offers in many countries as documented in the literature. Fourth, consistent with our model, the interaction of control protection and corporate financial restructuring seems to have played a role in the increase in the use of rights issues worldwide, possibly also as a last resort in the dire financial conditions of the recent global financial crisis.

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