



# Shareholder nonparticipation in valuable rights offerings: New findings for an old puzzle<sup>☆</sup>



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## ABSTRACT

Shareholder participation in valuable domestic rights offerings averages only 64%, which is considerably lower than previously asserted. This causes wealth transfers from nonparticipating to participating shareholders that average 7% of the offering. Wealth transfers are larger in nontransferable and bigger offerings. The stock market reacts more negatively to larger wealth transfers. Offerings with lower shareholder participation also fall short in raising publicly stated capital goals. Rights offerings are far more common in countries with institutional practices that limit nonparticipating shareholders' wealth losses. These findings suggest that agency conflicts influence the use of rights offers.

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## 1. Introduction

A rights offering is one of three major ways for a public corporation to issue securities, with the other ways being a public sale or a private placement. In a rights offering, shareholders are given the right, but not the obligation, to purchase newly issued securities that are proportional to their fractional ownership in the firm. To provide incentives for shareholders to participate, a rights offering is typically priced at a substantial discount to the exchange price.

Rights offerings are a frequent method for raising capital although there is substantial variation across countries. For example, they are rarely used in the United States, Israel, and Canada. On the other hand, in Italy, 85% of all seasoned equity issuances by value and 63% by numbers are via rights offerings, whereas seasoned public equity offerings account for only 5% and 16%, respectively.<sup>1</sup> In Sweden, rights offerings account for 85% of seasoned issuances by value and 53% by numbers, while public offerings constitute less than 1% by both measures.<sup>2</sup> In many other countries, including such diverse markets as Singapore and the United Kingdom, seasoned equity is far more likely to be raised via a rights offering than a public offering.

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<sup>1</sup> Italian Stock Exchange Website for 2005–2011; [http://Table5.borsaitaliana.it/borsaitaliana/statistiche/mediaitaliano/statistiche/mercatoprimary/2011/aumentipagamento.en\\_pdf.htm](http://Table5.borsaitaliana.it/borsaitaliana/statistiche/mediaitaliano/statistiche/mercatoprimary/2011/aumentipagamento.en_pdf.htm).

<sup>2</sup> Cronqvist and Nilsson (2005). We thank Professors Cronqvist and Nilsson for confirming that although legal, public offerings of seasoned equity in Sweden are rare.

Financial economists have long argued that rights offerings are an attractive way to raise equity capital. Because both public offerings and private placements are typically sold to outside investors at a discount to the exchange price, this discount is a cost to the current shareholders. As Brealey, Myers, and Allen (2014, p. 390) explain, “this cost can be avoided completely by using a rights issue.” This conclusion is echoed by Berk, DeMarzo, and Harford (2012, p. 430) who write, “rights offerings protect existing shareholders from underpricing.” In addition, Smith (1977) documents that the direct costs of rights offerings are lower than either public offerings or private placements. The term “the rights puzzle” refers to the difficulty financial economists have reconciling these benefits to shareholders with the infrequent use of rights offerings in some countries, notably, the United States.

The conventional wisdom is that virtually all shareholders exercise their rights and purchase stock in a rights offering. For instance, Ross, Westerfield, and Jaffe (2010, p. 637) report that only “a small percentage of shareholders (less than 10%) fail to exercise valuable rights.” To the extent researchers contemplate the possibility of significant nonparticipation, it is seen as not mattering for the firm undertaking the rights offer. As Smith (1977, p. 281) writes, shareholder nonparticipation “affects the distribution of wealth among the owners, but it does not impose costs on owners as a whole.”

Although it is assumed that the vast majority of shareholders participate in valuable rights offerings, the basis for this belief is unclear. Firms are under no legal obligation to report the participation of shareholders in rights offerings, and many firms do not voluntarily reveal this information. We are aware of no existing reliable data on shareholder participation in rights offerings. In this paper we present such data.

To obtain reliable data on shareholder participation, we contacted domestic companies that had conducted rights offerings. Using hand-collected data from 179 rights offerings from 1988 to 2009, we find that on average only 64% of all rights are exercised. Only 22% of our offerings have participation rates that are consistent with the conventional wisdom of 90% or greater participation. By design, all of the rights offerings we study are in-the-money, so the nonparticipating shareholders are, by definition, leaving money on the table.

We find that shareholder participation tends to be lower for nontransferable offerings, non-pure-stock offerings, and flexible-price offerings that sell stock at a price that is mechanically guaranteed to be at a discount to the exchange price. Shareholder nonparticipation leads to wealth transfers that average almost 7% (median 2.7%) of the capital raised by the rights offering. We also document that the fractional ownership of institutions increases between the announcement and expiration of an offering, suggesting that institutional shareholders fully participate and perhaps even oversubscribe. This mirrors Kothare's (1997) finding that blockholder and insider ownership increase around rights offerings. It appears that rights offerings tend to transfer wealth to blockholders, insiders, and

institutions at the expense of other, typically smaller, individual shareholders.<sup>3</sup>

We also find that shareholder nonparticipation has implications beyond the wealth transfers among shareholders. Offerings with low shareholder participation are less successful in raising the stated funds sought than are offerings with high shareholder participation. We also find, as others have found, that the stock-price reaction to the announcement of a rights offering is mildly negative. What we report for the first time is that larger expected wealth transfers among shareholders are associated with a more negative stock-price reaction. We explore several avenues for the apparent connection between the wealth transfers and stock-price reaction.

Finally, we investigate whether shareholder wealth losses might help explain the widely varying frequency of rights offers around the world. Ideally, we would do so by replicating our study for other countries, but this is not practical. Instead, we survey the practice of rights offerings around the world to see if there are protections for nonparticipating shareholders. We find this to be the case, but primarily only in those countries where rights offerings are common. In some instances following the major offering an investment bank sells any unexercised rights through a rump offering. In other instances, brokers automatically sell rights that shareholders do not exercise. In both cases the proceeds are credited to the nonparticipating shareholders. The United States and other countries that have few rights offerings typically offer neither protection. Furthermore, in most countries by law rights offerings must be transferable. This is telling because our findings show that wealth transfers among shareholders are lower in transferable offerings. Yet in the United States only half of all rights offerings are transferable, and many of these rights do not trade on exchanges. Thus, in countries where rights offerings occur more frequently, the expected wealth transfers among shareholders—and the related conflicts among shareholders and with management—are likely to be lower than in the United States. Although we are unable to say whether the popularity of rights offerings is a response to these investor protections or whether the investor protections are a response to the frequency of rights offerings, it is clear that they occur hand-in-hand and that these protections reduce the heretofore under-appreciated conflicts created by shareholder nonparticipation in valuable rights offerings.

## 2. Overview of rights offerings

An overview of key dates and institutional details is helpful for understanding our evidence on shareholder nonparticipation. Table 1 is a timetable and discussion of important dates in a representative domestic rights

<sup>3</sup> If equity is mispriced, underwritten public equity issuance can cause wealth transfer between current shareholders and future shareholders. Kim and Weisbach (2008) present international evidence that is consistent with this type of wealth transfer. This differs from rights offerings where wealth transfers are purely among current shareholders.

**Table 1**

Timetable for rights offerings.

Entries are left blank if there is no pertinent exchange regulation.

NYSE	Nasdaq
<b>Adoption date</b>	
1. The board of directors must formally authorize a rights offering. The deliberations leading to this decision are seldom made public. Hence, this date is seldom publicly observable.	
<b>Notification date</b>	
1. All known terms and information of a proposed rights offering must be released to the NYSE and the public “immediately” after the company’s board of directors has approved the rights offering.	1. All known terms and information of a proposed rights offering must be released to Nasdaq and the public “immediately” after the company’s board of directors has approved the rights offering.
2. There must be at least ten calendar days advance notice of any record date for a rights offering.	2. There must be at least ten calendar days advance notice of the record date for a rights offering.
	3. The notice must include the subscription price.
<b>Notice to shareholders</b>	
1. Issuer must send written notice to its shareholders at least ten calendar days before the proposed record date of a rights offering.	
2. The notice to the shareholders must include the subscription price and other key details.	
<b>Ex-rights date</b>	
1. For nontransferable offerings, the stock typically starts to trade ex-rights on the second business day prior to the record date. In other words, as with cash dividends it generally takes three trading days to record a change in stock ownership.	1. The Nasdaq sets the ex-date depending on how much definitive information is received in advance of the registration statement.
2. For transferable offerings, the NYSE determines the ex-date.	2. If this information is received sufficiently in advance of the effective date of the registration statement, then the ex-rights date will be the first business day after the effective date of the registration statement.
3. If the registration statement is not effective prior to the record date, however, the NYSE may allow for a deferred ex-date.	3. If this information is not received sufficiently in advance of the effective date of the registration statement, then the ex-rights day will be the first business day after the date that Nasdaq counsel deem to be reasonable under the circumstances.
<b>Record date</b>	
1. If practicable, the SEC Form S-3 registration statement should be effective at least six business days prior to the record date. The record date determines who will receive the option to participate in the rights offering.	
2. If this timeframe is not practical, the NYSE may allow for a deferred ex-date. Under normal circumstances, the NYSE will not allow the record date to occur prior to the effectiveness of the registration statement.	
<b>Expiration date</b>	
1. The expiration date may be no soon than 16 calendar days after the rights certificates have been mailed to the shareholders. Most rights offers are open for a period of 16 to 30 days, usually starting with the day the issuer’s registration statement becomes effective. There is no federal securities requirement that a rights offer be open for a given time period.	
2. If certain mailing conditions are met and the NYSE approves, companies may shorten this to 14 calendar days.	
3. Transferable “rights are traded only up to the close on the business day preceding the expiration date.”	

offering. Table 2 reports key summary statistics for our sample of rights offerings.

The timetable for a rights offering is similar to other distributions to shareholders (such as cash dividends), but with a few additional considerations. Few domestic rights offerings are conditional on a shareholder vote; instead they typically commence with a formal resolution by the board of directors (Adoption Date in Table 1).<sup>4</sup> For firms whose

shares are listed on the respective exchange, both the NYSE and Nasdaq require that key information about a rights offering be conveyed to the exchanges shortly after the board acts. With most rights offerings, there is also a public announcement by the firm followed shortly by a filing of Securities and Exchange Commission (SEC) Form S-3.

Rights offerings give shareholders the right but not the obligation to purchase newly issued securities from the

<sup>4</sup> Holderness (2016) discusses the requirements for shareholder approval of equity issuances both in the United States and around the world. In an Internet Appendix we discuss the legal requirement that certain

rights offerings in the United States by closed-end funds are conditional on mandatory shareholder approval. This applies to only two of our observations.

**Table 2**

Summary statistics of rights offerings.

Summary statistics on 179 U. S. domestic rights offerings between 1983 and 2009. This sample does not include 19 common stock offerings that were priced at a premium to the exchange price. There are shareholder participation data for all observations (“Shareholder participation”). The number of observations for the other variables varies with the data item.

	Mean	Median	Standard deviation
Shareholder participation	64%	71%	28%
Take-up	95%	100%	17%
Offer discount to exchange price			
As of announcement day (145 obs)	18%	15%	29%
As of cum day (147 obs)	21%	15%	19%
As of ex day (148 obs)	18%	12%	17%
As of expiration day (147 obs)	13%	8%	15%
Flexible pricing of offering	27%		
Shares issued as percent (177 obs)	57%	33%	72%
Stated funds sought (178 obs)	\$113 Million		
Issue is transferable	51%		
Issue has oversubscription	77%		
Issue has overallotment	16%		
Issue has standby buyer	25%		
Funds raised/Stated funds sought	93%	100%	31%
Funds raised more than 100% of Stated funds sought	67%		
Firm size	\$457 Million	\$137 Million	\$1,016 Million
Firm is a mutual fund	39%		
Offer exclusively for issuer's common stock	84%		
Institutional ownership before announcement (169 obs)	22%	13%	25%
Change in institutional ownership between announcement and expiration (166 obs)	4%	2%	14%
Number of analysts (excluding mutual funds) (110 obs)	2.1	0	4.1

corporation itself. In 84% of our observations, the security the shareholders may purchase is exclusively the firm's common stock (Table 2). In the other observations, shareholders may purchase bonds, preferred stock, stock in a spun-off subsidiary, or (occasionally) stock from a large block that the firm owns in another firm.<sup>5</sup> Sometimes shareholders can purchase bundles of more than one security that are commonly called “units.”

A key administrative task with any corporate distribution, including a rights distribution, is identifying which shareholders will receive the distribution. In the initial public announcement and SEC filings, firms identify a Record Date for their rights offer. All those who are shareholders at the close of trading on the Record Date will receive the right to participate in the offering. Because stock trades do not settle instantaneously (even in this day of computerized trading), it takes time to identify exactly who owns stock at the close of trading on any given day. Consequently, the stock will normally trade without the right for a short time before the Record Date. For nontransferable offerings by NYSE-listed firms, since June 1995, the Ex-Rights Date is two business (trading) days before the Record Date. For transferable offerings and offerings by Nasdaq-listed firms, the Ex-Rights Date is determined by the exchange, and the timing relative to the Record Date varies. In our sample, we designate the initial public announcement date as the first date that a newspaper covered by Factiva reports that the firm is contemplating a rights offering or has decided to conduct an offering. In our sample, there are on average 77 days (median 52 days)

between the initial public announcement of a rights offer and the Ex-Rights Day.

Shortly after the Record Date, the rights certificates are conveyed to those who were shareholders on the Record Date. Receipt of these certificates begins the Subscription Period. Although there is no federal law requiring that the Subscription Period be open for any minimum time period, the NYSE requires that the Subscription Period be open for at least 16 calendar days after the shareholders receive their rights certificates. In our sample, the average subscription period is 35 calendar days (median 33 days).

Any rights not exercised by close of trading on the Expiration Day expire worthless. As is widely noted in both academic and practitioner circles, it makes sense for shareholders to exercise or sell their subscription rights whenever the subscription price is lower than the exchange price. In most instances the exercise price is substantially below the exchange price. But in ten of the 189 common stock offerings for which we initially collected information, this was not the case. Given the discretion of management to set the exercise price or to cancel or modify offerings, these observations might appear perplexing. We investigated each case and found that in most instances the rights offering was intended to give small shareholders the opportunity to purchase stock on the same terms as was afforded to a group of large shareholders. Some of the transactions with the large shareholders had already concluded and the firm's stock price had declined in the interim, so the small shareholders' option was no longer in-the-money. In other cases, the large shareholders had purchased stock at a premium to the exchange price, so again there was no reason for smaller shareholders to participate. Because most rights offerings are priced at discounts to the exchange price and because we are interested in shareholder participation in valuable rights offerings, we

<sup>5</sup> Our sample contains six offerings for which a rights offering is used to distribute shares of a subsidiary. For this subsample, 55% of rights are exercised.

exclude from Table 2 and our subsequent analyses the ten transactions that are priced at premiums to the exchange price on the Ex Day. That is to say, all of the offerings we study going forward in this paper are in-the-money.

Table 2 presents the discounts in our offerings at a variety of points in time. We see that they average 18% of both the Announcement Day and Ex Day stock prices. In most cases the discount varies during the subscription period as the firm's stock price varies. Suggestive of poor share price performance during the offering, the average discount on the Expiration Day is 13%.

Bacon (1972) points out that managers are naturally concerned about an offering failing because the stock price might fall below the subscription price. Duong, Singh, and Tan (2014) in a more recent paper explain why managers may shy away from a rights offering for this reason.<sup>6</sup> A recent innovation, however, eliminates this cause of a rights offer failing. In 49 of our offerings, the firm does not set an explicit exercise price but instead sets an explicit discount. More precisely, it announces that the exercise price will be a specific discount to the exchange price on some future day, usually the Expiration Date. With such flexible pricing, a firm can mechanically determine that its rights offering will always be in-the-money. We are unaware of any academic research on the flexible pricing of rights offerings, perhaps because it is a recent innovation. Several models of security issuance, including Heinkel and Schwartz (1986), rely on the crucial assumption that rights offerings have a risk of failure because the market price of the stock may dip below the exercise price of the rights. Flexible rights offerings eliminate this risk and thus pose a challenge to these models.

Another important feature is whether rights are transferable or whether they must be exercised by whoever is the shareholder of record on the cum day. We report in Table 2 that only 51% of our offerings involve transferable rights. This proportion is roughly in line with the findings of Massa, Vermaelen, and Xu (2013), who find that in countries where rights transferability is not legally mandated, as with the United States, that 62% of the offerings are transferable. In many countries, however, by law rights must be transferable.

Another key (and often under-appreciated) aspect of rights offerings is whether there is an oversubscription provision. This provision, found in 77% of our offerings, allows but does not compel shareholders to buy more than their pro rata share of newly issued stock to the extent that other shareholders do not exercise their rights during the primary (first) round. Typically, oversubscription shares are allocated pro rata to the number of shares purchased in the initial round of the offering. Another way for shareholders to buy more than their simple pro rata share is through overallotment provisions, which are found in 16% of our offerings. This gives the issuing corporation the option to raise more than the initially sought capital.<sup>7</sup> If all

shareholders participate in the initial round, the oversubscription provision would not be triggered but an overallotment provision could be.

There are further steps firms can take to ensure a successful rights offering. The firm can hire an investment bank or engage a standby purchaser to buy shares not taken up by shareholders. This happens in 25% of our offerings. Others have documented the use of investment bankers in rights offerings has declined over time (for example, Ursel, 2006). Investment bankers tell us that they are reluctant to underwrite rights offerings because the long duration of the subscription period forces them to bear too much uncertainty. Moreover, many firms have large-percentage shareholders who exercise significant control over the board. It is unlikely they would assent to a rights offer and then not participate. Their anticipated participation lessens the need for an underwriter (Smith, 1977). These blockholders sometimes act as a standby purchaser by committing to buy unexercised rights. Other times their intentions to participate are recorded in the SEC prospectus.

Starting with Eckbo and Masulis (1992), several studies have argued that expected shareholder take-up is an important factor in a firm's decision to undertake a rights offering. Shareholder participation and shareholder take-up are two different concepts. Shareholder take-up describes the proportion of a rights offering that is sold to current shareholders as opposed to outsiders. We measure this variable in the same way as Bohren, Eckbo, and Michalsen (1997) and Cronqvist and Nilsson (2005). It is computed as number of shares (or units of security being issued) sold to current shareholders as a fraction of the total shares issued. We calculate the number of shares sold to current shareholders as the total number of shares sold minus the number of the shares sold to outsiders. We compute the number of shares sold to outsiders as the number of shares purchased by underwriters or non-current-shareholder standbys, plus the number of shares that are purchased from rights that trade on the exchange. (This final step in the computation assumes that traded rights are sold only once to outsiders who eventually exercise them. This seems reasonable given the apparent illiquidity of most rights.) Our take-up figure of 95% is higher than Cronqvist and Nilsson's average of 84%. The difference likely reflects institutional differences between the United States and Sweden.

An offering could have low shareholder participation but high shareholder take-up if some shareholders purchase more than their pro rata share. This is possible in offerings with oversubscription provisions, which are found in 77% of our offerings. Similarly, an offering could have high participation but low take-up if the offering is transferable and the shareholders sell their rights to outsiders who then exercise them.

It is impossible for us to pinpoint which shareholders do not participate in valuable rights offering. Using Thom-

<sup>6</sup> Standard executive stock option and restricted stock plans adjust for the split effect of an in-the-money rights offering.

<sup>7</sup> This is analogous to a Green Shoe provision in an initial public offering (IPO) with some differences. In a rights offering overallotment provision, existing shareholders are the ones purchasing the stock; in a Green

Shoe provision, the underwriter purchases the stock. Green Shoe provisions for IPOs are limited to no more than 15% of the newly issued stock, while rights offering overallotment provisions sometimes exceed this level.

son Reuter's institutional holdings data, however, we can compare institutional holding from the last filing before the announcement of a rights offering to the first filing after the expiration of the offering. As Table 2 shows, firms that conduct rights offering have an average of 22% institutional ownership before the offering. Between the announcement day and the expiration, institutional ownership increases by four percentage points (*t*-statistic 3.72).<sup>8</sup> This suggests that as a group institutional owners either oversubscribe or fully subscribe and purchase additional shares. This echoes Kothare (1997) who finds remarkably similar increases in the stock ownership of blockholders and firm insiders around rights issues. Kothare shows that post-rights ownership by blockholders increases by 3.9% while inside ownership increases by 3.4%. (Later in the paper we discuss an Australian rights offering where institutional investors likewise participated at significantly higher levels than retail investors, 92% versus 64%.)

Rantapuska and Knupfer (2008) have individual-level data for 18 rights offerings in Finland. They find that individual investors are the most likely to allow their subscription rights to lapse, while financial institutions are the least likely to do so. Among financial institutions, mutual funds never allow their rights to expire unexercised. Among individual investors, those whose native language is one of the two official languages of Finland are more likely to participate than those who speak another language. Also among individual investors, the probability of participation increases with financial net worth. These findings combined with our findings and Kothare's findings suggest that it is small retail investors who are the least likely to participate in valuable rights offerings.

### 3. Capital raised and shareholder participation

#### 3.1. Confusion over capital raised and shareholder participation

As noted earlier, the conventional wisdom is that the vast majority of shareholders exercise their valuable rights. Papers often report specific findings that appear to confirm this. For instance, Eckbo and Masulis (1992, p. 316) report that "actual subscription rates in uninsured rights offers average 99% for industrial issuers and 93% for public utilities." Hansen (1988, p. 294) similarly reports that "historical subscription rates appear to average from 90 to 95% (Bacon, 1972; Hansen, Pinkerton, and Ma, 1986), and for firms in this study that reported a subscription rate in newspaper or news service that is covered by Factiva,

the average subscription rate was 96%." We suspect that these are not shareholder participation figures but figures on capital raised as a percent of capital initially sought.

We know of no legal obligation that compels firms to publicly disclose shareholder participation rates, and most do not voluntarily do so. Some readers have expressed surprise at this, suggesting that there must be a SEC disclosure requirement. We investigated this possibility both with securities attorneys and individuals at the SEC and confirmed this is not the case. Most SEC filings are forward looking. When a firm files for a rights offering, it does not know what the shareholder participation rate will eventually be. After the offer has expired, the company knows the participation rate but is under no legal obligation to disclose the information.

Although a few firms issue press reports with actual shareholder participation rates, most do not. Instead, a firm typically announces that it has successfully completed its right offering by raising most, if not all, of the capital initially sought. We discovered that although it is true that many rights offerings raise most, if not all, of the stated capital sought, shareholder participation is sometimes quite low. This discrepancy arises because some shareholders purchase more than their pro rata share by participating in an oversubscription round. In fact, in 10% of our offerings where the firm raised all of the funds it sought, less than a quarter of the shareholders participated in the offering. In these offerings in the oversubscription round the few participating shareholders bought all of the shares of those who did not participate in the primary round.

Many of these points can be illustrated by a recent offering. The company sold units of new shares and warrants to shareholders at a 27% discount to the exchange price (assuming the warrants had no value). The offering was nontransferable and had oversubscription privileges. Upon completion of the offering, the company announced that 100% of the shares and warrants were sold. The company's press release touted "the successful and fully subscribed closing" of the rights offering. An executive of the company was reported as saying "shareholders responded very favorably to our recent rights offering. We are thrilled by the response from our existing shareholders in committing to purchase additional shares.... We see this support as continued confidence of our stockholders and management that we are executing on our strategies to build the strength and profitability of our company." We called a representative of the company who told us that only 46% of the offering was sold in the primary round. In other words, only 46% of the shareholders (by value) participated in the rights offering. Most shareholders chose not to participate, and their shares, 54% of the total offering, were sold via oversubscription.

#### 3.2. Data on shareholder participation

To obtain data on rights offerings and shareholder participation, we first identified domestic firms that had conducted rights offerings. As with most research on rights offerings, we started with Center for Research in Security Prices' (CRSP) rights offering distribution codes.

<sup>8</sup> For ten offerings, pre-offering institutional holdings data are unavailable. These offerings are not included in the Table 2 institutional ownership data. Two other offerings have pre-offering institutional ownership that is greater than one. We winsorize these offerings at one. This does not affect any of the institutional ownership statistics in Table 2. The change in institutional ownership mean in Table 2 also does not include three firms that have pre- but not post-offering institutional ownership data. Seven of the post-offering institutional ownership observations are greater than one. We winsorize these offerings at one. Not winsorizing does not alter the mean change in institutional ownership reported in Table 2, although it does lower the median to 1% and the standard deviation to 12%.

We soon discovered, however, that many rights offerings were either missed completely or miscoded by CRSP.<sup>9</sup> We identified additional rights offerings through a variety of sources, primarily keyword searches of Factiva and the SEC Electronic Data Gathering, Analysis, and Retrieval (EDGAR) database. We also searched the Internet for company press releases announcing rights offerings. We eliminated foreign companies and domestic companies that were not exchange listed.

In some instances we were able to determine actual shareholder participation rates by carefully reading press releases issued at the conclusion of the offerings. In other instances, however, we had to contact Chief Financial Officers (CFOs) and investor relations officers to obtain this information. We contacted officials at 110 companies that had conducted completed rights offerings between 1988 and 2009. Of these companies, 54 eventually gave us information on shareholder participation. In virtually all cases, company representatives told us the exact number of primary shares issued or the percentage of primary shares issued to the first decimal place.

We are aware that, as with any survey, our data on shareholder participation are subject to potential biases. We believe that if there is a bias, it is to overstate shareholder participation levels. We say this because some companies refused to provide us with any information about shareholder participation. Given that companies typically tout how much money they raised in a rights offering, one would think that they would equally tout a high shareholder participation level if the participation levels were in fact high. Other companies provided us with information on shareholder participation only after we signed a confidentiality agreement. A low participation rate could also be seen as a sign that some, perhaps many, shareholders did not want management to raise new equity. A low shareholder participation rate also results in wealth transfers among shareholders. Managers may not want to be publicly associated with either phenomenon.<sup>10</sup>

The simplest measure of shareholder participation is the percent of rights that are exercised in the primary round before any oversubscription or overallotment. This is the measure we use in our empirical investigations. Shareholders who do not participate in the primary round inevitably are not allowed to participate in the subsequent oversubscription or overallotment rounds. These “Shareholder participation” data are summarized at the top of Table 2 and plotted in Fig. 1. We see that the average participation rate in our rights offering is 64% (median 71%). That is to say, only 64% of the rights are exercised. Given the variety of evidence that large shareholders and institutional shareholders tend to fully participate and given that they often own a large percentage of the stock and hence of the rights, this means that significantly less than 64% of all shareholders participate in the representative domestic rights offering. Indeed, although we lack the data to make a precise calculation, it is likely that less than half of all

small, retail shareholders participate. Only 22% of our offerings have participation rates that are consistent with the conventional wisdom of 90% or greater participation. These data also suggest that earlier papers were in all likelihood not reporting shareholder participation figures but capital raised as a percentage of capital sought.

#### 4. Does shareholder nonparticipation matter?

When shareholders let their rights expire unexercised, there will be wealth transfers from them to the participating shareholders and standby buyers or underwriters (in those few offers that are underwritten). The null hypothesis in the literature is that these wealth transfers are either trivial, because virtually all shareholders are assumed to participate, or if more substantial that they do not matter. Smith, in an influential article, writes (1977, p. 281): “One other argument involving shareholder-borne costs has been offered by Weston and Brigham (1975). They argue that in a rights offer some stockholders may neither exercise nor sell, and by allowing their rights to expire unexercised they incur a loss. However, if an oversubscription privilege is employed with the offering, current owners in the aggregate receive full market value for the shares sold. Admittedly, the oversubscription privilege affects the distribution of wealth among the owners, but it does not impose costs on owners as a whole.” Shareholder nonparticipation and any resulting wealth transfers among shareholders are likewise irrelevant in another influential article, Eckbo and Masulis (1992). What is pivotal for their model is whether the original shareholders as a group purchase an offering. They are concerned with wealth transfers to outsiders, not with wealth transfers among existing shareholders.<sup>11</sup>

In this section we investigate the relation, if any, between shareholder participation and three potentially important dimensions of any rights offering: funds raised as a fraction of the funds the firm announces it will seek in the rights offering (“stated funds sought”), wealth transfers among shareholders, and the stock-price reaction to the initial announcement of an offering.

##### 4.1. Raising stated funds sought

Before turning to whether low shareholder participation is associated with offerings that fail to raise the stated funds sought, we caution that our sample is limited to completed rights offerings. As with most studies of corporate finance transactions, we are unable to study those transactions that never see the light of day. Presumably, management decides to proceed with a rights offering only when it is reasonably confident of raising the stated funds sought. The question becomes: is this impeded when shareholder participation is low?

Some readers have suggested that if shareholder participation is expected to be low, management can simply increase the stated funds sought to reach the desired

<sup>9</sup> We brought these problems to CRSP's attention. Recent versions of the CRSP database incorporate our corrections.

<sup>10</sup> Edmans, Heindle, and Huang (2015) address voluntary disclosures of soft information more broadly.

<sup>11</sup> We thank Espen Eckbo for clarifying this point.

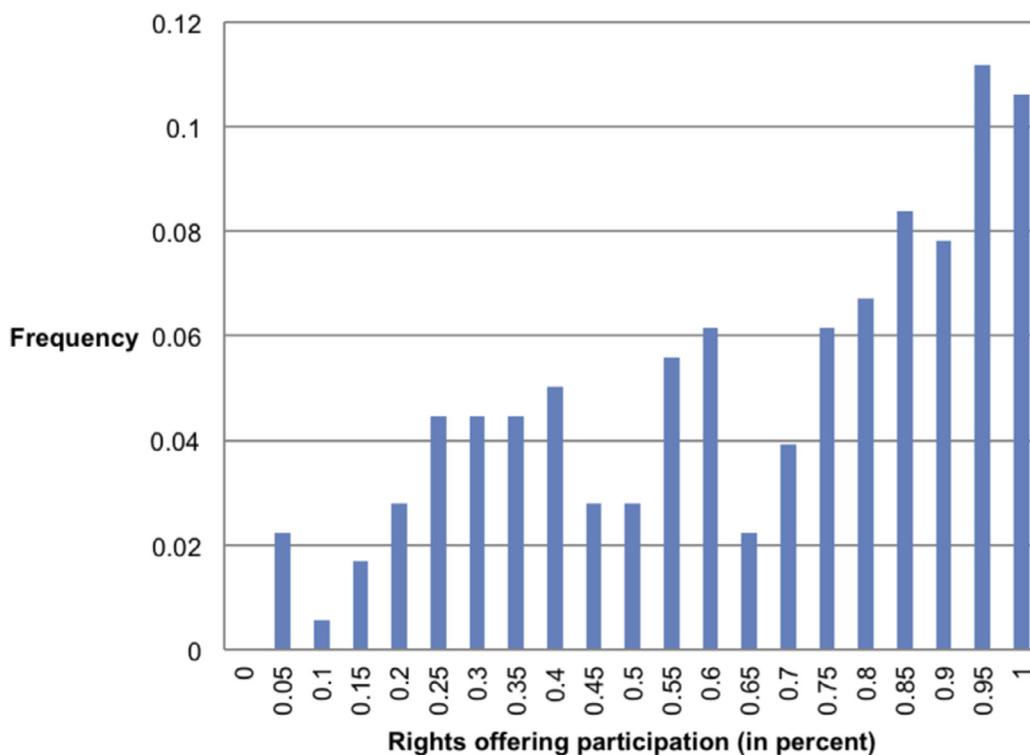


Fig. 1. Shareholders participation (fraction of rights that are exercised in the primary round) in 179 domestic rights offerings between 1983 and 2009.

level. While this is true, it is a limited option. With rights offerings by closed-end funds (39% of our observations), if management increases the number of rights per share in an effort to increase the funds eventually raised, under the Investment Company Act of 1940 shareholders must approve the offering. A majority of shares outstanding must approve the offering, not just a majority of shares voting. Lawyers have told us that securing such approval is often problematic. Lawyers have also told us that if managers (in a rights offering by any type of firm) adjust the stated funds sought in anticipation of low shareholder participation and do not reveal this in SEC filings, they open themselves to potential personal liability. Finally, firms tout when they have raised all of the funds they publicly announced they would seek to raise. When they fall short, press releases are reserved or even nonexistent. In short, managers apparently do not like to be associated with rights offers that fall short of their publicly stated goals.

The summary statistics in Table 2 suggest that most rights offerings succeed because on average they raise 93% of the stated funds sought with the median figure being 100%. This does not paint a complete picture, however. Because of overallocation provisions, some rights offerings raise more funds than initially sought, and these offerings are incorporated in our success measure. In 23% of our rights offerings, the firm raises less than 90% of the stated funds sought. Whether such a level constitutes “failure” is left for the reader to decide, but it does raise the issue of whether low shareholder participation ultimately affects how much capital is raised in a rights offering.

In Table 3 we estimate an offering’s public success as a function of firm and offering characteristics, includ-

ing shareholder nonparticipation rates.<sup>12</sup> We define public success in two ways: first, funds ultimately raised as a fraction of stated funds sought; second, the minimum of either 100% or the funds ultimately raised as a percent of the stated funds initially sought. We see in Panel A that the right-hand-side variable with the strongest statistical significance is shareholder nonparticipation, with less successful offers having lower shareholder participation. In all four specifications the coefficient for shareholder nonparticipation is highly significant.<sup>13</sup> Surprisingly, higher take-up is associated with lower success. Flexible pricing is associated with offerings that raise approximately 10–20% more funds as a percent of stated funds sought. Institutional ownership does not seem to be related to the funds raised as a fraction of the funds the firm publicly announces it seeks to raise.<sup>14</sup>

<sup>12</sup> Table 3 uses 176 of the 179 observations from Table 2. Two offerings from Table 2 are eliminated because we cannot determine the firms’ market capitalization; a third offering is eliminated because it involves preferred shares and we do not know the subscription price.

<sup>13</sup> This is not a mechanical relation. We define shareholder participation as the percentage of shareholders (percentage of outstanding shares) who participate in the first round of the offering. These participating shareholders may then participate in the subsequent oversubscription round. In theory there could be very low shareholder participation in the first round, but these few shareholders could then buy all of the unsubscribed shares (from the first round) in the oversubscription round. Shareholders who do not participate in the first round are inevitably not allowed to participate in subsequent rounds.

<sup>14</sup> We do not have data for pre-announcement institutional holdings for ten firms. For all regressions that include institutional ownership (both in Tables 3 and 5), we assign these firms an institutional ownership value of zero. We include, but do not report, a dummy variable that is assigned

**Table 3**

Shareholder participation and funds raised in rights offerings.

Regression analyses of the funds raised as a fraction of the stated capital sought and the minimum of this ratio and one. There are 176 observations in both specifications. Panel B uses predicted values of shareholder nonparticipation and take-up. (t-statistics from robust standard errors that are clustered by firm are in parentheses.)

<b>Panel A</b>				
	<i>Funds raised to stated capital sought</i>		<i>Funds raised to stated capital sought (&gt;1 set to 1)</i>	
Offer is transferable	0.00 (0.04)	-0.03 (-0.79)	-0.02 (-0.46)	-0.03 (-1.02)
Discount to exchange price	-0.08 (-0.67)	-0.02 (-0.15)	-0.11 (-1.06)	-0.08 (-0.80)
Offer has oversubscription	0.02 (0.31)	0.07 (1.28)	0.10 (2.57)	0.13 (3.28)
Offer has overallocation	0.22 (4.38)	0.21 (4.50)	0.02 (0.61)	0.02 (0.48)
Standby	0.24 (4.46)	0.11 (2.67)	0.19 (5.72)	0.13 (3.66)
Flexible pricing of offer	0.17 (2.30)	0.19 (2.76)	0.11 (2.30)	0.12 (2.59)
Percent of equity raised	-0.01 (-0.40)	-0.03 (-1.00)	0.00 (0.13)	-0.01 (-1.19)
Firm size	-0.00 (-0.14)	-0.00 (-0.68)	0.00 (0.59)	0.00 (0.33)
Offer is for issuer's common stock	-0.06 (-0.66)	-0.05 (-0.66)	0.03 (0.71)	0.04 (0.90)
Institutional ownership	-0.08 (-1.12)	-0.04 (-0.98)	-0.03 (-0.61)	-0.01 (-0.31)
Nonparticipation	-0.61 (-4.46)	-0.75 (-4.79)	-0.46 (-4.66)	-0.52 (-5.12)
Amihud measure	0.00 (0.30)	0.00 (0.13)	-0.00 (-0.01)	-0.00 (-0.13)
Log of number of analysts	0.01 (0.21)	-0.02 (-0.56)	-0.02 (-0.74)	-0.03 (-0.13)
Take-up		-0.81 (-2.94)		-0.41 (-4.29)
Constant	1.08 (7.21)	1.90 (4.95)	0.90 (14.95)	1.32 (10.98)
Adjusted R <sup>2</sup>	0.35	0.48	0.39	0.45
<b>Panel B</b>				
	<i>Funds raised to stated capital sought</i>		<i>Funds raised to stated capital sought (&gt;1 set to 1)</i>	
Predicted nonparticipation	-0.24 (-1.95)	-0.24 (-2.19)	-0.32 (-3.17)	-0.32 (-3.12)
Predicted take-up		-0.17 (-1.29)		-0.19 (-1.60)
Constant	1.03 (30.44)	1.19 (9.36)	1.02 (40.43)	1.20 (10.33)
Adjusted R <sup>2</sup>	0.03	0.03	0.08	0.09

Some theories of rights offerings (Eckbo and Masulis, 1992) and more general models of security issuance (Myers and Majluf, 1984) are driven by information asymmetries about firm value. To test for this possibility, the Table 3 regressions include two proxies for information asymmetries. First, from the Institutional Brokers' Estimate System (IBES) data, we include the natural log of one plus the number of sell-side equity analysts who cover the firm. Greater analyst coverage is generally seen to decrease information asymmetries. Second, we include the Amihud Illiquidity

measure. This measure is calculated using volume and return data from the previous calendar year as specified by Amihud (2002). The presence of information asymmetries cause buy orders to move stock prices up and sell orders to move stock prices down. The Amihud measure is larger for stocks that exhibit more variation with share volume and are thus subject to more information asymmetries.

Inclusion of these two information-asymmetry proxies has remarkably little impact on any of the regressions. The slope coefficients of both proxies are small and statistically insignificant. In untabulated tests, we find that inclusion of these information-asymmetry proxies causes the Adjusted R<sup>2</sup>'s to fall in all Panel A regressions.

One potential issue with Panel A is that shareholder nonparticipation and shareholder take-up are not realized until after the offer has concluded. These two factors are

a value of one for these firms, and a value of zero for firms for which we have institutional holdings data. This allows us to use all of the data while not distorting the regression results. For all specifications, the constructed dummy variable is insignificant. This method follows Pontiff and Woodgate (2008) and Holderness and Pontiff (2012).

**Table 4**

Shareholder wealth transfers and rights offerings.

Summary statistics on wealth transfers from nonparticipating shareholders to participating shareholders (or standby buyers) in rights offerings between 1983 and 2009.

	Mean	Median	Maximum	Minimum	SD
Wealth transfers as percent of stated capital sought in the offering (146 observations)	7.3%	2.7%	72%	0%	13%
Wealth transfers as percent of firm value on ex day (148 observations)	4.5%	0.6%	100%	0%	14%

also likely to be influenced by events that transpire during the subscription period, notably, the underlying stock performance. These considerations may affect the association between shareholder nonparticipation and funds raised.

Panel B of Table 3 addresses this issue by using predicted values of both shareholder nonparticipation and take-up. These values are created by regressing each variable on the offering characteristic variables in Panel A that were known at the time of the initial announcement of the offering. We see that in all four specifications, (predicted) shareholder nonparticipation continues to have a negative and significant association with funds raised relative to stated funds sought. Take-up, however, loses significance. Overall, Table 3 is consistent with the proposition that lower shareholder participation negatively affects whether a rights offering raises the stated funds sought.

## 5. Wealth transfers among shareholders

*Magnitude of wealth transfers.* If rights are priced at a discount to the exchange price, there will be wealth transfers from those shareholders who do not participate to those shareholders who do participate. This is why the typical recommendation is for shareholders to participate in a rights offering by exercising their rights; by selling their rights if the offering is transferable; or, if the offer is nontransferable and they do not want to participate, then by selling their stock before it goes ex rights.

Any wealth transfers will be a function of not only shareholder nonparticipation rates but also the discount of the offering to the exchange price and the number of shares being offered. The larger are any of these variables, the larger will be the resulting wealth transfers, *ceteris paribus*. We measure these wealth transfers in two ways.

First, we measure the wealth transfers as a percent of the funds that are sought to be raised in the offering:

Wealth transfer as percent of funds sought

$$= \frac{\text{Percent NonPart} \times \text{Total subscription shares} \times (\text{Price}_{\text{ex}} - \text{SubPrice}_{\text{ex}})}{\text{Shares offered} \times \text{SubPrice}_{\text{ex}}}$$

*Percent NonPart* is the percentage of nonparticipating shares. *Total subscription shares* is the number of shares sold in the offering. *Price<sub>ex</sub>* is the share price at the Ex Date, and *SubPrice<sub>ex</sub>* is, for flexible offerings, the subscription that would be paid if the price at expiration were the Ex Date price, otherwise it is the actual subscription price. *Shares offered* is the total number of shares sought in the basic subscription (not including any overallotment).

Second, we measure the wealth transfers as a percent of firm value on the day that the stock trades ex rights:

Wealth transfer as percent of firm value:

$$= \frac{\text{Percent NonPart} \times \text{Total subscription shares} \times (\text{Price}_{\text{ex}} - \text{SubPrice}_{\text{ex}})}{\text{Market capitalization}}$$

*Percent NonPart* is the percentage of nonparticipating shares. *Total subscription shares* is the number of shares sold in the offering. *Price<sub>ex</sub>* is the share price at the Ex Date, and *SubPrice<sub>ex</sub>* is, for flexible offerings, the subscription that would be paid if the price at expiration were the Ex Date price, otherwise it is the actual subscription price.

Table 4 presents summary statistics of the wealth transfers measured in these two ways. The number of observations used in this table is lower than Table 3 because we are unable to calculate wealth transfers for non-common stock offerings as we lack the data to value securities other than common stock.

The amount of money effectively transferred from the nonparticipating to the participating shareholders averages 7.3% (median 2.7%) of the stated funds sought. To put this into context, investment banks typically charge 7% of funds raised in initial public offerings, a fee which is often described as excessive.<sup>15</sup> The wealth transfers constitute 4.5% (median 0.6%) of firm value. To put this into context, on average the stock price of domestic firms announcing a public seasoned equity offering declines by 2.2%.<sup>16</sup>

*Determinants of wealth transfers and shareholder participation.* In Table 5 we investigate the determinants of how much money is transferred between shareholders; the percent of shareholders who do not participate in an offering; and the take-up in an offering (that is, the fraction of the funds raised that are purchased by the original shareholders). These three figures are related but they are not identical. For instance, it may be rational for shareholders not to incur the transaction costs to participate in an offering that is only slightly in-the-money. Similarly, wealth transfers will be low when take-up is high if most shareholders exercise their rights.

Columns 1 and 2 of Panel A estimate the association between shareholder nonparticipation and various offering characteristics. The strongest association is between nonparticipation and whether the offering is transferable. Transferable offerings are associated with a reduction in nonparticipation of about 25%. This supports the proposition that there are costs (or constraints) with participation, and some shareholders who would not have exercised their rights instead sell them. This finding parallels a conclusion reached by Massa, Vermaelen, and Xu (2013) using different data, namely, nontransferable offerings fail to protect shareholders. Similarly, offerings with bigger discounts have less nonparticipation. This suggests that shareholders (rationally) are more likely to participate when the value of participation is higher. Institutional ownership has a strong, negative association with nonparticipation. This

<sup>15</sup> Chen and Ritter (2000).

<sup>16</sup> Eckbo, Masulis, and Norli (2007, Table 13).

**Table 5**

Determinants of shareholder participation and wealth transfers in rights offers.

Regression analyses of the percentage of shareholders who do not participate in rights offerings and the money that is transferred as a percent of the stated capital sought from nonparticipating shareholders. There are 176 observations in the nonparticipation and take-up specifications and 146 observations in the wealth transfer specifications. (t-statistics from robust standard errors that are clustered by firm are in parentheses.)

<i>Panel A</i>						
	1	2	3	4	5	6
	<i>Non-participation</i>	<i>Non-participation</i>	<i>Wealth transfer</i>	<i>Wealth transfer</i>	<i>Wealth transfer</i>	<i>Take-up</i>
Offer transferable	-0.24 (-6.09)	-0.24 (-6.31)	-0.04 (-2.69)	-0.03 (-2.20)	-0.03 (-2.79)	0.00 (0.15)
Discount to exch. price	-0.48 (-3.69)	-0.43 (-3.17)	0.10 (1.66)	0.11 (1.84)	0.14 (2.44)	0.16 (1.70)
Over-subscription	-0.11 (-2.07)	-0.08 (-1.57)	-0.01 (-0.32)	-0.01 (-0.28)	0.00 (0.16)	0.08 (2.62)
Overallotment	0.03 (0.66)	0.02 (0.58)	-0.01 (-0.49)	-0.01 (-0.48)	-0.01 (-0.88)	-0.02 (-0.56)
Standby	0.01 (0.12)	-0.06 (-1.13)	-0.03 (-1.07)	-0.03 (-1.06)	-0.06 (-2.54)	-0.16 (-5.59)
Flexible pricing	0.10 (1.85)	0.10 (2.00)	0.00 (0.19)	0.00 (0.11)	0.01 (0.54)	0.01 (0.15)
Percent sought	0.07 (2.11)	0.06 (1.81)	0.14 (4.77)	0.14 (4.68)	0.13 (4.81)	-0.04 (-1.89)
Firm size	0.00 (0.57)	0.00 (0.50)	0.00 (0.84)	0.00 (0.84)	0.00 (1.14)	-0.00 (-1.12)
Issuer's common	-0.06 (-0.90)	-0.05 (-0.78)				0.03 (0.72)
Institutional ownership	-0.22 (-2.70)	-0.19 (-2.89)	-0.06 (-1.08)	-0.05 (-1.10)	-0.05 (-1.14)	0.09 (1.62)
Amihud measure	0.00 (0.65)	0.00 (0.61)	-0.00 (-0.69)	-0.00 (-0.70)	-0.00 (-0.56)	-0.00 (-0.55)
Log number of analysts	-0.01 (-0.17)	-0.02 (-0.58)	0.01 (1.13)	0.01 (1.11)	0.01 (0.68)	-0.03 (-1.57)
Take-up		-0.37 (-3.09)			-0.22 (-1.13)	
Non-participation				0.01 (0.25)		
Constant	0.66 (9.12)	1.00 (8.16)	-0.02 (-0.88)	-0.03 (-1.13)	0.19 (0.95)	0.90 (23.93)
Adjusted R <sup>2</sup>	0.41	0.44	0.66	0.66	0.69	0.29
<i>Panel B</i>						
	<i>Nonparticipation</i>	<i>Take-up</i>	<i>Wealth transfer</i>	<i>Wealth transfer</i>		
Predicted nonparticipation		0.02 (0.36)			0.10 (1.47)	
Predicted take-up	-0.01 (-0.03)			-0.37 (-1.82)	-0.37 (-1.86)	
Predicted wealth transfer			-0.30 (-1.68)			
Constant	0.36 (1.43)	0.97 (48.91)	0.40 (1.97)	0.37 (2.00)		
Adjusted R <sup>2</sup>	-0.01	0.06	0.06	0.07		

reiterates the result from Table 2 that institutional ownership increases around rights offerings. Institutions seem to fully participate and perhaps even oversubscribe. Lastly, we find that flexible-priced offerings have more shareholder nonparticipation. This is contrary to our initial expectation as these offerings are mechanically always in-the-money. The novelty of such offerings, however, may be too confusing for some, perhaps unsophisticated investors.<sup>17</sup>

<sup>17</sup> Logue and Seward (1992) explain how the novel and complicated Time Warner rights offering in 1991 confused many investors.

Column 2 adds take-up (the participation variable featured in the rights literature to date) as an explanatory variable for shareholder nonparticipation. As one might expect, when a higher percentage of an offering is sold to outsiders (a lower take-up in other words), shareholders tend to have higher nonparticipation. Although take-up is important, the small change in the Adjusted R<sup>2</sup> from column 1 to column 2 implies that most of the variation in nonparticipation is explained by an offering's other characteristics.

Columns 3 through 5 relate offering characteristics to the wealth transfers as a percentage of market

capitalization. The strongest determinant of the wealth transfers is the size of the offering as a percent of a firm's market value. Bigger offerings are associated with bigger wealth transfers from nonparticipating shareholders to participating shareholders. This finding is economically significant as well. For example, a firm seeking funds equal to an extra 20% of its market capitalization is associated with an additional wealth transfer equal to 2.8% of its market capitalization ( $0.14 \times 0.20$ ).

The second strongest determinant of the wealth transfer is whether the offering is transferable. The slope coefficient is both statistically and economically significant. Recall from Table 4 that the average wealth transfer is 7.3%. The slope on the transferability variable ranges from negative 3% to negative 4%; thus, about half of the wealth transfer in a representative rights offering is attributable to whether the rights are transferable. This result will have important implications when later in the paper we document the frequency of rights offerings around the world. In an Internet Appendix we investigate why approximately half of our rights offerings are nontransferable.

Offerings with larger discounts to the exchange price tend to have higher wealth transfers, implying that the increased participation associated with larger discounts (column 1) is more than offset by the direct wealth transfers implied by bigger discounts. Again, offerings with higher take-up have lower wealth transfers, although most of the wealth transfers are explained by other offering characteristics.

Column 6 of Table 5 estimates take-up as a function of offering characteristics. The result of this estimation is used in Panel B. Whether or not an offering has a standby investor has a strong association with take-up. Contrary to our expectation, whether or not an offering is transferable has little relation to take-up.

Shareholder nonparticipation, wealth transfers from nonparticipating shareholders, and shareholder take-up are not realized until the end of an offer. All of these characteristics will, in turn, be influenced by factors that occur during the offering, such as the underlying stock's performance. As explained earlier, this may produce a different association between these variables than the ex ante association. Panel B of Table 5 considers this possibility with estimated predicted values of each of these three variables. We find a slightly positive but insignificant association between predicted take-up and shareholder nonparticipation. Predicted take-up, however, has a negative association with wealth transfers.

### 5.1. Shareholder nonparticipation and announcement returns

The predominant view in the literature is that any wealth transfers among shareholders during rights offerings should not matter to the firm itself. This implies that the stock-price reaction to the announcement of a rights offering should be invariant to any wealth transfers among shareholders.

Table 6 reports abnormal stock returns for various windows surrounding the initial public announcements of our rights offering. We report wider windows because key information about the offering, such as whether there will

**Table 6**

Event study results.

Mean, median, and the percent of abnormal stock returns that are positive associated with various event windows surrounding the initial public announcement of 164 rights offerings between 1983 and 2009. Day 0 is the day of the initial public announcement. Abnormal returns are the difference between the compound stock return and the compounded return of the CRSP value-weighted index. (t-statistics in parentheses report whether the mean return is different than zero.) [p-Values in brackets report whether the median return or the percent positive is different than zero.]

Event window in trading days	Mean return	Median return	Percent positive
-1 to 1	0.0% (0.09)	-0.5% [0.15]	43% [0.05]
-2 to 2	-1.3% (-1.34)	-1.2% [0.02]	40% [0.01]
-1 to 10	-0.68% (-0.55)	-1.3% [0.06]	35% [0.01]

be oversubscription, is often released in the days immediately following the initial announcement. Thus, although the noise in the returns increases with the event window, so does important information about the offerings. We see in Table 6 that rights offerings are associated with mildly negative abnormal stock returns. This parallels what others have found about domestic rights offerings.<sup>18</sup>

In Table 7 we estimate regressions of the abnormal stock returns from four different event windows on the wealth transfers (money transferred as a percentage of firm value). This table utilizes fewer observations than the other tables because we rely on common stock offerings with non-missing CRSP return data. Our goal is to determine if the amount of money that is transferred from the nonparticipating shareholders is associated with different stock return reactions. Because some papers focus on shareholder take-up, we use it as a control variable in some specifications.

In Panel A of Table 7 we see that the wealth transfers from nonparticipating shareholders are always negatively associated with the announcement returns. The statistical significance increases as the event study window increases. These results are robust to the inclusion of take-up, which is always negative but statistically insignificant.

Panel B uses predicted levels of wealth transfers and predicted levels of take-up. Similar to earlier tables, this avoids using information that might not be fully available during the announcement window. This specification produces similar results to Panel A. Predicted wealth transfers from nonparticipating shareholders are negatively associated with stock reactions. This finding is statistically significant for the four longer event windows.

<sup>18</sup> Eckbo, Masulis, and Norli (2007, Table 13), who summarize a large number of published studies, report that the initial announcement effects of rights offerings in the United States average -1.23%. In comparison, they report that the initial announcement of public offerings of seasoned equity in the United States average -2.22%.

**Table 7**

Announcement return analysis.

Regressions of the abnormal stock returns associated with the initial public announcement of 139 rights offerings between 1983 and 2009. The returns are from various event windows where Day 0 is the initial announcement of the rights offering. (t-statistics are in parentheses.)

<b>Panel A</b>						
<i>Event window</i>	<i>-1 to 1</i>	<i>-1 to 1</i>	<i>-2 to 2</i>	<i>-2 to 2</i>	<i>-1 to 10</i>	<i>-1 to 10</i>
Wealth transfers	-0.16 (-1.78)	-0.16 (-1.78)	-0.20 (-2.26)	-0.20 (-2.26)	-0.40 (-2.52)	-0.41 (-2.57)
Take-up		-0.02 (-0.26)		-0.02 (-0.28)		-0.11 (-0.74)
Constant	0.00 (0.08)	0.02 (0.27)	-0.01 (-0.81)	0.12 (1.48)	-0.00 (-0.09)	0.10 (0.72)
Adjusted R <sup>2</sup>	0.02	0.01	0.03	0.02	0.04	0.04
<b>Panel B</b>						
	<i>-1 to 1</i>	<i>-1 to 1</i>	<i>-2 to 2</i>	<i>-2 to 2</i>	<i>-1 to 10</i>	<i>-1 to 10</i>
Predicted wealth transfers	-0.14 (-1.49)	-0.14 (-1.41)	-0.24 (-2.73)	-0.25 (-2.61)	-0.37 (-2.79)	-0.34 (-2.50)
Predicted take-up		0.01 (0.09)		0.00 (0.03)		0.12 (0.77)
Constant	0.00 (0.03)	-0.01 (-0.09)	-0.01 (-0.56)	-0.01 (-0.08)	-0.00 (-0.05)	-0.11 (-0.77)
Adjusted R <sup>2</sup>	0.01	0.00	0.05	0.04	0.05	0.05

## 5.2. Explanations of the stock-price reaction

How can wealth transfers impact stock prices if the information needed to calculate the magnitude of the transfer is not fully available until after the rights offering closes and may never be fully known by market participants? We consider two non-mutually exclusive explanations. First, market participants could use publicly available information to predict which offerings will result in larger wealth transfers and infer bad news about the firms that conduct offerings with large wealth transfers. Second, some portion of the shareholders who would be on the losing side of the wealth transfer sell their shares upon the announcement of the offering; this trading, in turn, induces negative price pressure.

The first explanation requires that shareholders are able to anticipate the eventual wealth transfers. The event study results in Table 7 support this assumption. The variable *Predicted wealth transfer* is generated from column 3 in Table 5, Panel A and utilizes only right-hand-side variables that are in the public information set at the time of the initial announcement of the offering. In the regressions of the abnormal announcement returns on the actual wealth transfers and (alternatively) on the predicted wealth transfers, the wealth transfer coefficients have similar *t*-statistics. In fact, for half of the specifications, the predicted wealth transfer coefficient produces a higher *t*-statistic.

We cannot definitively identify the negative information that the market infers from rights offerings having large wealth transfers, but several possibilities emerge. In particular, a variety of evidence suggests that small individual shareholders are the most likely not to participate in a rights offering and thus suffer wealth loss. There is also a variety of evidence that these are the very shareholders who generally are the most supportive of man-

agement, often through their passivity.<sup>19</sup> Accordingly, the market may view a high-wealth-transfer offering as a last resort method to raise funds. Along these lines, a banker who advises firms on rights offerings told us (under the condition of anonymity) that he advises cash-poor firms to pre-announce a high-wealth-transfer offering with the expectation that his investment bank will be able to drum up new investors to buy shares before the ex-date. These investors are drawn to the offering as they expect low shareholder participation will allow them to buy discounted shares in the oversubscription round. Similarly, a firm may be able to secure a standby agreement only if the backstop expects nonparticipation to generate sufficient profit.

Market participants may also infer negative news from an offering that is made nontransferable by management. This would be known when the offering is initially announced and characterizes half of our offerings. Recall from Table 5 that nontransferable offerings are highly correlated with greater wealth transfers. This finding is consistent with Massa, Vermaelen, and Xu (2013) who examine differences between transferable and nontransferable rights offerings internationally. They find that nontransferable offerings have lower announcement returns and lower post-offering operating performance. Both findings

<sup>19</sup> Hartzell and Starks (2003), for example, show that firms with low institutional ownership tend to have higher levels of executive compensation. Similarly, Ertimur, Ferri, and Oesch (2013) show that the percent of votes against proposed executive pay packages (a “say on pay” vote) increases with the level of institutional ownership. Institutional ownership is also associated with higher levels of forced executive turnover (Helwege, Intintoli, and Zhang, 2012). Chen, Harford, and Li (2007) show that firms with high levels of long-term institutional ownership are also more likely to withdraw bad takeover bids. Edmans (2009) illustrates how blockholders can constrain management through their trading of stock even when they do not formally participate in firm governance. Institutions and large shareholders, thus, seem to restrain managers at least compared with small retail investors.

**Table 8**

Change in stock-trading volume around rights offerings.

Change in volume is computed as the natural log of one plus the sum of stock trades from the one day before the initial announcement of rights offering to ten days after, minus the natural log of one plus the sum of volume from 13 days before the announcement to two days before the announcement. A comparison sample is selected by either picking the security with the closest return over the -1 to 10-day window or the firm with the closest return standard deviation over this window. Wealth transfer is the money that is transferred as a percent of the funds raised from nonparticipating shareholders. Medians are in brackets and t-statistics are in parentheses. 127 Observations.

Panel A: Change in the trading volume of stock of firms conducting rights offerings					
	(1)	(2)	(3)		
	Rights sample	Return match sample	Difference (1)-(2)	Standard deviation match sample	Difference (1)-(3)
Change in volume	43.66 [28.65] (5.37)	4.80 [-12.01] (0.52)	38.86 [26.48] (3.24)	1.49 [-7.17] (0.17)	42.18 [39.50] (3.73)
Panel B: Regression analyses of the change in volume relative to the change in volume of a matched sample, on the rights offering's wealth transfer					
	Change in volume relative to return match sample		Change in volume relative to standard deviation match sample		
Constant	0.29 (2.28)		0.40 (3.28)		
Wealth transfer	3.52 (2.42)		0.88 (0.63)		
Adjusted R <sup>2</sup>	0.04		-0.00		

support the proposition that the market rationally infers negative information about a firm conducting a nontransferable rights offering.

One such inference could be that the market infers significant agency problems at the offering firm. In the Internet Appendix we explore possible reasons for making domestic rights offers nontransferable. To summarize briefly, in the United States the transferability of a rights offering in most cases requires only board of director approval. Even after extensive investigations and discussions with lawyers and investment bankers, we have been unable to identify many non-agency explanations for nontransferable offerings. Nontransferable offerings are associated with greater wealth transfers and a more negative stock-price reaction. Market participants, therefore, could reasonably infer agency problems given that management does not take a simple step that in most instances it could take and would benefit many shareholders—make the offer transferable.

An alternative but not mutually exclusive explanation to such information-based explanations is that selling pressure from the negatively affected clientele is more acute in offerings with greater wealth transfers. This selling pressure, in turn, lowers stock prices.

There is considerable evidence of downward sloping supply curves for shares of stock (for example, [Shleifer, 1986](#)). This may occur for rational or irrational reasons and is likely to be accentuated for stocks that are more expensive to trade. Consider investors with utility functions that are increasing in next period's expected wealth who face a convex cost of holding a position in the stock. The source of this convex cost may be risk aversion or it may result from the opportunity cost of not owning alternative investments. This opportunity cost might be caused by limited access to capital. For example, increasing ownership in the firm may force the investor to take on a margin loan, or it may force the investor to realize capital gains prematurely

on other securities. In a similar vein, retirement accounts impose strict limits on the contribution of new capital to the account.

Consider two investors with the same utility functions and the same wealth. For exogenous reasons one of the investors participates in rights offerings and the other does not. In the absence of an expected rights offering, all investors will hold identical positions in the firm. This outcome allows for efficient sharing of the convex cost. If a rights offering is announced, the marginal benefit of holding the stock is relatively lower for the non-participant. This implies that before the ex-rights date, the non-participant will sell a portion of his shares to the participant. Because both investors face convex costs of holding shares, the non-equal "sharing" of the convex cost lowers the marginal value of the shares, and the equilibrium price of the stock falls. This pressure is likely to be greater in offerings where the wealth transfers are larger.

This explanation implies that following the announcement of a rights offering but before the ex-day, trading volume in the stock of firms conducting a rights offering should increase. It is well established that shocks to trading volume and shocks to return volatility are positively correlated (for example, [Lamoureux and Lastrapes, 1990](#)). As such, we want to examine changes in trading volume around rights offerings while controlling for contemporaneous changes in the distribution of stock returns. We do this through two alternative matched samples: First, we match each of our firms with that CRSP-listed firm having the closest stock return from the day before the announcement to ten days after the announcement. Second, we match each of our firms with that CRSP-listed firm having the closest standard deviation of stock returns over the same period.

The results of our investigations are dramatic and support a price pressure (selling) explanation. We compare the difference of the natural log of one plus the log volume

over the event window and the 13 days before the event window. We see in column 1 of Panel A of Table 8 that on a stand-alone basis, trading volume in our firms increases by 43.66% (log) following the announcement of a rights offering. Relative to the return-matched sample, share trading volume in our firms increases during the announcement period by 38.9% (log). Relative to the volatility-matched sample, trading volume increases by 42.2%. All three measures are highly significant.

Panel B estimates whether the change in volume relative to the matched samples is associated with the future wealth transfers. We find evidence of a positive association between wealth transfers and changes in volume for both matched samples, albeit this result is statistically significant for the return-matched sample but not for the volatility-matched sample.

## 6. International evidence on wealth transfers

United States firms use rights offerings far less than firms from most other countries. Smith (1986, p. 24) makes this point in a comparison with England: “In 1975, 99% of the new equity in England was raised through rights offers. Why is there the dramatic difference in use of rights between the United States and the United Kingdom?”

Commentators sometimes attribute the paucity of rights offerings in the United States to the pre-emptive rights of shareholders in other countries. This alone, however, cannot explain the rights puzzle because shareholders in countries with pre-emptive rights often waive their rights and their firms issue equity to outsiders through public offerings or private placements.

One possible explanation for the paucity of rights offerings in the United States could be that wealth transfers in rights offerings are lower in other countries, and this in turn makes rights offerings more attractive either to management or shareholders. It is beyond the scope of this paper to replicate our analyses for other countries. We can, however, survey other countries to determine if they have mechanisms that limit wealth transfers due to shareholder nonparticipation. This turns out to be case.

Electronic issuance data providers such as Security Data Corporation, Global New Issues, or Bloomberg often confuse rights offerings and public offerings. As in Holderness (2016), we collect international data directly from local exchanges, from reported statistics in published papers, and from interviews with local investment professionals and academics. We see in Table 9 that in most countries rights offerings are transferable. Often this is required by law or exchange regulations; sometimes there is an additional legal requirement that the rights be traded on national exchanges for a specified period of time. This is noteworthy because we find that in the United States the transferability of rights both increases shareholder participation and reduces wealth transfers by about half (Table 5). Yet fully half of the United States offerings are not transferable (Table 2).

Most nations also have institutional protections that further limit wealth transfers in a rights offering. This takes one of two forms. The first is the practice of stockbrokers automatically selling rights when clients do not

**Table 9**

Protections for nonparticipating shareholders in rights offerings.

The first column of data is the approximate frequency of rights offerings of seasoned equity as opposed to public offerings on an equal-weighted basis. As in Holderness (2016), we collect international data directly from local exchanges, from reported statistics in published papers, and from interviews with local investment professionals and academics. The next column is whether the national practice is for unexercised rights to be sold and the shareholder's account credited either through a “rump offer” by an investment bank or by retail brokers selling unexercised rights when they do not hear from the client. The last column is whether rights must be transferable either by national law or exchange rules. A blank cell means that the practice is unknown. Information for the last two columns comes from investment bankers and researchers familiar with the practices of a given country.

	Ratio of rights to public offers	Rump offer or broker sale	Mandatory transferability
United States	0.01	No	No
Israel	0.02	No	No
Japan	0.03	No	Yes
Canada	0.10	No	Yes
Hong Kong	0.37	No	Yes
United Kingdom	0.64	Yes	Yes
France	0.74	No	Yes
Netherlands	0.75	Yes	Yes
Italy	0.80	Yes	Yes
India	0.86		Yes
Australia	0.94	Yes	No
Sweden	0.98	Yes	Yes
Singapore	0.99	Yes	Yes
Spain	0.99	Yes	Yes
Finland	0.99	Yes	Yes
Malaysia	0.99		Yes
New Zealand	0.99	Yes	Yes
Norway	0.99	No	Yes
Germany	Most	Yes	Yes
Greece	Most		Yes
Switzerland	Most	Yes	Yes

respond to an invitation to participate in a rights offering. This, for instance, is the practice in Sweden and Italy (among other countries).

In other countries there is a “rump offering” whereby an investment bank sells unexercised rights after the rights offering has concluded. The proceeds (minus a fee to the investment bank) are credited to the nonparticipating shareholders' accounts. An example of a rump offering involved the “bookbuild” with the 2008 Leighton Holdings \$700 m rights offering in Australia. The institutional part of this offer took place first. Existing institutional investors took up 92% of their allotment. The remaining 8% was put into a bookbuild open to new and existing institutional investors. The market price on the ex-day was \$41, and the exercise price was \$35.35. Institutions that did not exercise their rights (or were ineligible because of securities laws) received \$5.65 per share. Five days later the retail part of the rights offering took place. The retail investors (in contrast to the institutional shareholders) subscribed to only 64% of their allotted shares, which interestingly is the very figure we document for the United States. The 1.66 million shares not taken up under the retail offer were sold to institutional investors under the Retail Entitlement Bookbuild. The market price on the ex-day of the retail rights offering was \$38.00, and the exercise price was the same as for the institutional investors

or \$35.35. Those retail shareholders who did not take up their rights (or were ineligible to participate under securities laws) received \$2.65 per share, or the full difference between the exchange price and the exercise price.<sup>20</sup>

If the Leighton Holdings rights offering had occurred in the United States, all of the nonparticipating shareholders, institutional as well as retail, would have received nothing. Rump offerings following rights offerings are (to the best of our knowledge) nonexistent in the United States. Indeed, a NYSE official told us that rump offerings are illegal under United States securities laws. In addition, stockbrokers in the United States seldom have arrangements with clients to automatically sell unexercised rights. Among the countries we surveyed, only Israel seems to offer so little protection for nonparticipating shareholders. It is interesting that rights offerings are as rare in Israel as they are in the United States.

The importance of these protections for nonparticipating shareholders is also evident in a major reform of securities laws in Bulgaria intended to protect small shareholders. Among the reforms is the requirement of rump offerings of all unexercised rights. This law, which is based on a similar United Kingdom law, requires that “five days after the end of the period for transfer of rights, the issuer will through its investment intermediary offer any unexercised rights using an open auction. The proceeds from this auction after all expenses will be distributed pro rata to the rights owners.”<sup>21</sup> Bulgarian law now further requires that all rights be transferable and that they trade for at least 30 days on the national stock exchange. The evidence is that these reforms succeeded in their stated goal of protecting minority shareholders from over-reaching managers and large shareholders (Atanasov, Black, Ciccotello, and Gyoshev, 2010).

The lack of protections for nonparticipating shareholders should not necessarily be seen as a cause of the paucity of rights offerings in some countries, including the United States. Perhaps the institutional protections documented in Table 9 were the result of and not a cause of the widespread use of rights offerings in many countries. Nevertheless, the fact remains that the United States is an outlier among nations in both the infrequency of rights offerings and the lack of protections for nonparticipating shareholders.

Some readers have asked why United States firms do not voluntarily provide these protections. The one protection that firms could provide is to make an offer transferable. Yet approximately half of all domestic rights offerings are nontransferable. In the Internet Appendix we investigate why rights offerings might be nontransferable. Although we can identify why a few of our offerings might be nontransferable, for most we are unable to identify why management has chosen to make the offers nontransferable. This raises the possibility of agency conflicts, at least

between management and those shareholders who do not participate.

Beyond making offerings transferable, it is not clear how management could provide the other protections for nonparticipating shareholders. As noted earlier, an official for the NYSE told us that rump offerings are illegal under United States securities laws. The relationship between a shareholder and the custodian of his stock is a matter between those two parties; a private company would appear to be powerless to shape that relationship to include the automatic sale of unexercised rights.

## 7. Conclusion

Financial economists have long extolled the advantages of rights offerings as a way to raise equity capital. One of the underpinnings of this attraction is the broadly held assumption that virtually all shareholders participate in valuable rights offerings. In fact, we document that only 64% of shareholders on average participate in valuable rights offerings. Nonparticipation causes wealth transfers from those shareholders who do not participate to those who do participate that average almost 7% of the capital being raised. It is also widely assumed that “as long as the company successfully sells the new shares, the issue price in a rights offering is irrelevant.”<sup>22</sup> In fact, we find that the larger is the issue discount, the larger are the wealth transfers between participating and nonparticipating shareholders. Nonparticipation is also associated with less successful fund-raising relative to publicly stated goals and a more negative stock price reaction. These findings in aggregate suggest that the overly mechanical view of rights offerings found in textbooks needs to be modified.<sup>23</sup>

The conventional view also holds that agency conflicts are absent in rights offerings. Myers (2000), however, notes that it would be surprising if agency issues were present with so many major decisions of public corporations but absent with something as fundamental as the issuance of common stock. Smith (1977) is one of the few papers to raise agency conflicts as a possible explanation for the paucity of rights offerings in the United States. Our findings support both analyses. There are conflicts or at least wealth transfers between the two-thirds of shareholders who participate in domestic rights offers and the one-third who do not participate. There are also conflicts between managers who initiate rights offers and the one-third of their shareholders who, for whatever reason, do not participate and thus suffer significant wealth losses.

An agency perspective also offers insights into the stark cross-country differences in the use of rights offerings, an issue that perplexes financial economists. Managers often prefer small investors over institutional investors because smaller investors tend to be more passive and supportive of management. But it is small investors who are the least likely to participate in a rights offering and thus

<sup>20</sup> We thank Jo-Ann Suchard for this example and for helping us to understand rights offers in Australia.

<sup>21</sup> Article 112b (7) of the (Bulgarian) Law of Public Offerings of Securities (last amended in 2012). We thank Vladimir Atanasov for these insights into Bulgarian law.

<sup>22</sup> Brealey, Myers, and Allen (2014, p. 381).

<sup>23</sup> Brealey, Myers, and Marcus (2012, p. 436), for instance, write: “The shares [in a rights offering] are priced at a substantial discount to current market value, which ensures that the shareholders will either exercise the rights themselves or sell them to other investors.”

suffer wealth losses. When there are institutional safeguards for nonparticipating shareholders, managers contemplating a rights offering need not worry about attracting institutional shareholders (attempting to capture unexercised rights) and alienating small shareholders (due to their failure to exercise valuable rights). In these countries, rights offerings are common. But when there are no such safeguards, managers might reasonably worry that a rights offering could attract institutional shareholders and antagonize small shareholders. These considerations might lead managers to prefer other methods to raise equity capital, even though they ultimately might be more costly to shareholders in the form of underpricing and higher fees. Such a decision would fit within a broader pattern of managers making decisions that favor small shareholders.<sup>24</sup> In this way, shareholder nonparticipation may help explain the puzzling paucity of rights offerings in some countries, notably, the United States.

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<sup>24</sup> For instance, Becker, Ivkovic, and Weisbenner, (2011) show that firms that are expected to have a higher percentage of shareholders who are senior citizens pay higher dividends. This result contrasts with Barclay, Holderness, and Sheehan (2009) who, despite a significant tax advantage for the payment of dividends to corporations, fail to find any relation between corporate block ownership and the payment of dividends.