

Why do companies include warrants in seasoned equity offerings?

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Abstract

We analyze the reasons why companies issue units when they raise additional capital. We find that, in contrast to previous evidence, units are not offered to mitigate the agency conflicts or to signal security mispricing as they are predominantly issued during cold periods, in public rather than in rights offerings, and when the issue is underwritten. In addition, the results indicate that companies choose to offer units to increase their offer price flexibility and to underprice their seasoned equity offering so as to minimize the issue cost and the risk of failure of the issue. These results provide support for the net proceeds maximization hypothesis. © 2006 Elsevier B.V. All rights reserved.

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1. Introduction

A number of companies choose to come to the market to raise equity in the form of unit offerings. This method consists of bundles of common stock and warrants, sold together as a package, but traded separately in the aftermarket. Although units are more common in initial public offerings, they are still sometimes used in seasoned equity offerings (Byoun and Moore, 2003). This method of raising capital is debatable. On the one hand, units offer a number of advantages to both shareholders and the company. In particular, by offering units, firms pre-commit to yet another seasoned offering at the exercise price of the warrants, thus giving the subscriber the right

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to buy further shares at the exercise price within a defined time period. In addition, by issuing units, companies can effectively have equity financing in stages, which, under certain conditions, results in higher proceeds. This sequential financing may reduce agency costs resulting from potential free cash flow (e.g., [Schultz, 1993](#)), and can be used to signal the issuers' confidence in their future performance because the second stage financing is conditional on stock price appreciation (e.g., [Chemmanur and Fulghieri, 1997](#)). Finally, unit offerings can be used to increase the probability of success of a seasoned offering as the warrants can be considered as a sweetener, i.e., an incentive to raise interest in new offerings when issuers obtain indications of a low demand for the offering to increase the rate of subscription. However, despite these benefits, warrants are likely to complicate the offering and may lead to higher flotation expenses and adjustments, and firms are likely to lose control of the choice of the issue price and the timing of the second equity offering, resulting from the exercise of the warrants. Given these drawbacks, it is not clear why firms choose unit seasoned offerings rather than a typical common stock offering.

The purpose of this paper is to shed some light on the reasons for issuing units and assess the extent to which they depend on firm and issue characteristics as well as the institutional framework. We focus on the French setting where units come with seasoned equity offerings, the warrants are not callable, and the conversion cannot be forced, unlike in the US where they are often associated with initial public offerings and the warrants are callable. In addition, we extend the previous evidence on unit issues in initial public offering to equity offerings in the secondary market.¹ We test the agency costs ([Jensen, 1986](#)) and the signalling hypotheses ([Chemmanur and Fulghieri, 1997](#)) as well as the net proceeds maximization hypothesis ([Yeoman, 2001](#)). The first hypothesis suggests that unit offerings are likely to be issued by small and risky firms to mitigate their agency costs. The signalling hypothesis predicts that firms that face high information asymmetry because of their high risk will issue units. These two hypotheses imply that unit offering is driven by the firm's underlying risk characteristics.

In contrast, the net proceeds maximization hypothesis relates the decision to issue units to the characteristics of the offer. According to [Yeoman \(2001\)](#) the issuer maximises the net proceeds of the offering which depend on the offer price and the underwriter spread. Some firms may prefer to lower the offer price in order to support a reduced spread. Units are likely to increase the flexibility in defining the issue price and mitigate the risk borne by the underwriter. The French regulation of seasoned equity offerings allows us to provide a first direct test of this hypothesis, for two main reasons. First, in France, the flotation fees are very sticky, and much lower than in the US. The total issue costs in France amount to 2.4% of the gross proceeds compared to 5.49% in the US ([Yeoman, 2001](#)). Large banking fees are very rare. Until the mid-eighties, underwriting fees are set at a virtually fixed percentage of 2.5% of the gross proceeds. Although the growing competition among banks caused the flotation costs to be a function of the level of the offering risk, this variation is still limited. Second, on the French market, when firms decide to waive the subscription right, the offer price has to be greater or equal to the average share price of ten amongst twenty days prior to the announcement date. This constraint is likely to prevent companies from issuing equity in depressed markets, or the underwriter to bear a high risk which leads the bank to increase the banking fees or give up underwriting the issue.² This rule doesn't

¹ There is little evidence on U.S. seasoned unit offerings. [Byoun and Moore \(2003\)](#) document that a significant number of firms issue unit seasoned equity. We rely on the hypotheses developed in the case of unit IPOs under the US institutional setting to explain the reasons for unit SEOs, although these two methods of raising capital may be different. Where necessary, we discuss the caveats regarding the appropriateness of this comparison.

² The firm may also issue common stocks with rights in a bearish market. However, this is likely to be difficult because selling rights is very hard in a depressed market as the current shareholders may not want to subscribe to the issue.

exist in the case of unit issues. Therefore, when French firms have decided on the public flotation method, they may find some flexibility in issuing units.

Our analysis is based on a sample of 370 offerings over the period from 1986 to 2000. For the sample as a whole we find that 23% of these offerings include warrants. We show that the fundamental characteristics of companies that issue units and those that opt for shares are relatively similar but the characteristics of their offers differ significantly. In particular, we report that units are predominantly popular during cold periods. They are also issued in public rather than in rights offers to circumvent the offer price regulation, to allow for more underpricing, and to minimize their issue cost and the risk of failure of the offer. The analysis of the flotation costs reveals that the use of units in public offerings decreases the total and banking fees. These results are not consistent with previous evidence (e.g., [Schultz, 1993](#)) that units are mainly issued by small and risky firms to reduce the agency costs. They are also not consistent with the signalling of security mispricing ([Chemmanur and Fulghieri, 1997](#)). In contrast, our results provide support for the hypothesis that units are offered to maximise the net proceeds as suggested by [Yeoman \(2001\)](#). During the bearish periods, this constraint is expected to increase the costs and the risk incurred by a firm issuing without warrants. Similarly, companies chose units in public offers to overcome the offer price regulation and increase their probability of success. However, if firms decide to make unit public offerings to bypass the regulation, they could also issue common stocks with rights rather than units. We test for the arbitrage between these two financing options. We find that the total (direct and indirect) fees borne in the case of common stock issues with rights do not differ significantly from those observed in the case of unit public offerings, all else being equal. This is particularly true for issues that are largely subscribed by outside investors.

To our knowledge, previous studies have focussed predominantly on unit initial public offerings and have not tested directly these hypotheses in seasoned equity offerings. The exceptions are [Byoun and Moore \(2003\)](#) and [Byoun \(2004\)](#). In the former, they use 6018 share and 409 unit seasoned equity offerings in the US over the period of 1980–1997. Unlike our results, they find that firm specific characteristics such as size, age, stock price volatility, leverage, and managerial ownership explain the likelihood of issuing units and conclude that their findings are consistent with the hypothesis that units are used as a mechanism to reduce the agency costs or signal the firms' good future prospects. However, [Byoun \(2004\)](#) contradicts these results because unit-offering firms underperform similar share offering and matching firms using a relatively similar sample than [Byoun and Moore \(2003\)](#). In line with our results, these findings are not consistent with the hypotheses that units are used to reduce the agency costs or signal future prospects.

In addition to providing evidence that French firms use these offerings to circumvent the specific offer price regulation in France, our findings are important to non-French firms because units increase flexibility in seasoned equity offerings and can lead to an optimal combination of the best offer price and fees that maximises the net proceeds. For example, according to [Eckbo et al. \(2005\)](#), issuing units could result in an optimal offering price when the risk of failure is difficult to assess. In this case, companies are ready to accept a discount on the share component, because they can get a higher value for their warrant. Units can also mitigate the disagreement between the firm and the underwriter and increase the likelihood of the offer as the negotiation will relate not only to the discount of the share component but also to the price of the warrant, its exercise price, its maturity and the number of warrants per unit. This may in particular be important during bearish market periods when the level of underpricing is likely to be high³ and when the offering

³ [Corwin \(2003\)](#) shows that SEO underpricing differs significantly across years and is positively related to the magnitude of underpricing in the IPO market, which is known to be closely linked to the fact the market is bullish.

becomes more difficult to place and a higher discount is needed to pay for attracting capital suppliers (e.g., Altinkiliç and Hansen, 2003). When companies are constrained to issue only shares, they may have to choose between renouncing to issue or accepting a large discount. In contrast, with units they can negotiate the offer price of the share and the terms of the warrant to maximise the proceeds. This could result in an increase in the volume of equity issues. Consistent with these arguments, we show that, in line with Byoun and Moore (2003), units are common during cold periods. Finally, our paper contributes to the large number of studies that provide evidence on the determinants of the underwriter compensation, and suggest that unit offering is an additional variable that can explain some issues raised in seasoned equity offerings.⁴

The paper proceeds as follows. Section 2 discusses the French institutional framework and presents the hypotheses to be tested. Section 3 describes the data and methodology. Section 4 presents our empirical results. Summary and conclusions are in Section 5.

2. Institutional framework and hypotheses tested

2.1. French institutional framework

In line with the practice in many other countries, the seasoned equity offerings in France have to be approved by the general shareholder meeting. The shareholders have the right to purchase new shares, but the general shareholder meeting may waive this pre-emptive right. The approval of the issue may be given for a maximum amount to be raised within five years in the case of rights, three years for issues without rights, and 26 months if the type of security and flotation method is not specified. Pre-emptive rights cannot be permanently waived by means of charter amendment.⁵

Throughout the paper, we refer to issues without rights as public offerings. The French institutional setting for public offerings differs from U.S. setting in three ways. First, in most cases, shares are first offered to current shareholders, on a pro-rata basis, for an average of ten days, but this priority cannot be traded like a right.⁶ Second, there is a regulation constraining the issue price. Before 1994, the issue price cannot be less than the average price over twenty consecutive days chosen among forty daily share prices before the issue. After 1994, the respective periods are ten out of twenty daily share prices before the issue. This constraint is only prevalent in France. In other European countries, such as, for example, Germany, companies are free to set their offer price as long as the dilution is lower than 10% per year. In practice, firms set their prices at around 3% to 5% below the price 3 days before the announcement, in line with the UK where the offer price discount should not exceed 5%.⁷

Third, if there is a priority period, public offers are often underwritten through a standby underwriting contract, otherwise firm commitment method is used. In the French public offerings, the offer price and the size of the issue are set at the latest on the *Autorité des Marchés Financiers* (AMF)⁸ date, which is on average four days before the beginning of the issue period. The underwriter incurs the risk of adverse changes in share prices from the AMF

⁴ See Eckbo et al. (2005) and Ritter (2003) for extensive reviews on security issuance.

⁵ For a description of the French institutional setting, see Gajewski and Ginglinger (2002).

⁶ Outside investors can subscribe only to the part of the issue that is not reserved to current shareholders. However, the initial part offered to external investors can be increased if current shareholders do renounce their allocation.

⁷ A new regulation that altered the constraints on issue prices has been adopted in France on June the 24th of 2004.

⁸ The AMF plays the same role as the SEC in the US.

date to the end of the priority period. The French constraints on the issue price increase the risk for the underwriters, who will only accept to enter a public offering if they assess that the true value of the stock is higher than the offer price. As a result, underwriter certification associated with French public offerings may be stronger than in the U.S. firm commitments. In particular, firms cannot issue public offers during bearish periods, because the average of ten prices just before the issue is generally greater than the issue price. In this case, firms are likely to attach warrants if they want to issue without rights, as the offer price rule is less stringent, because the valuation of warrants depends largely on the estimation of stock price volatility.

2.2. Hypotheses tested

In this section we analyze the signalling, the agency and the net proceeds maximization hypotheses within the French institutional framework.

2.2.1. Signalling hypothesis

Previous studies have analyzed the signalling characteristics of a two-stage financing in, predominantly, the case of IPOs where high-quality firms are considered to underprice their IPO in order to obtain a higher price at a subsequent seasoned offering (see for instance Welch, 1996; Chemmanur, 1993; Allen and Faulhaber, 1989). Chemmanur and Fulghieri (1997) develop a theory of unit IPOs based on asymmetric information. Their model allows for the firms to differ in both the mean and the riskiness of their future cash-flows. At time 0, the firms' insiders know the true mean and the variance of the future cash-flows, but they do not know the exact value that will occur at time 1. In this setting, the good-type firms may use three types of signal that will deter mimicking by the bad-type firms, namely, the fraction of equity retained, the degree of underpricing, and the number of warrants. Chemmanur and Fulghieri (1997) develop a separating equilibrium, in which high-risk firms issue underpriced units, and lower risk firms issue underpriced common stock alone. Their model provides several testable predictions. First, unit IPOs should be associated with greater ex-post variance compared with common stock IPOs. Second, for firms that have made unit IPOs, the fraction of firm value sold as warrants will be increasing in firm riskiness. Third, in unit IPOs, the percent of underpricing will be increasing in firm riskiness. Fourth, in unit IPOs, the fraction of equity retained by insiders will be decreasing in firm riskiness. Fifth, the exercise price of the warrants will be set equal to the expected stock price. These predictions may also be valuable for seasoned equity issues. Chemmanur and Fulghieri (1997) suggest that the impact of asymmetric information should be expected to be less severe for seasoned equity issues than for IPOs, resulting in a less pronounced modelled phenomenon.

Empirically, How and Howe (2001) analyze 369 IPOs in Australia, among which 134 are unit IPOs. Their results provide support for Chemmanur and Fulghieri (1997) predictions. In particular, they find that unit issuers are riskier than non-unit issuers, underpricing increases with firm riskiness, and that, after controlling for the fraction of equity retained by insiders, the proportion of the firm sold as warrants increases with firm riskiness. Lee et al. (2003) find similar results for Australian IPOs and Jain (1994) for US IPOs. Byoun and Moore's (2003) results also support signalling predictions for US SEOs. In France, Chollet and Ginglinger (2001) find that SEO units underpricing increases with riskiness and with the proportion of the firm sold as warrants. Overall, these signalling arguments imply that units are likely to be offered by firms that face high information asymmetry.

2.2.2. Agency costs hypothesis

Companies are not normally expected to issue units when equity is used to finance an investment with a positive net present value. However, if outsiders cannot determine the value of the potential investments, they may be reluctant to subscribe to an equity offering, because of the potential risk of the free cash flow problem as managers may have an incentive to invest in negative present value projects for their own personal benefit, particularly when ownership is dispersed and firms' monitoring is reduced (Jensen, 1986). In this situation, in line with sequential venture capital financing (e.g., Sahlman, 1990), unit issues are a form of multi-stage equity financing. They reduce the agency costs of free cash flow by providing equity financing in two stages and bond managers to undertake only positive NPV projects as the second financing is conditional on stock price appreciation and the management has to prove that the firm has worthwhile projects to obtain the second round financing. The agency cost hypothesis predicts that firms will issue units if there is a doubt on the quality of their investments and on their growth opportunities. It also suggests that units will be issued by smaller, younger and riskier firms. As units have to motivate managers to disclose the presence of profitable investments, the exercise price of the warrants should be set above the expected stock price.

Consistent with these predictions, Schultz (1993) shows that unit IPOs are issued by smaller and younger firms that are mainly from high-tech or services industries. Unit IPOs also support higher fees and greater underpricing than share only IPOs. Schultz (1993) also finds that firms issuing unit IPOs are more risky as they are far more likely to fail than those issuing shares alone. However, Jain (1994), Lee et al. (2003) and How and Howe (2001) find that the probability of failure is independent of whether the IPO is a unit or not for firms of similar characteristics. Since these agency concepts are also likely to apply to seasoned equity offerings, we expect firms with high potential agency conflicts to issue units.

2.2.3. Net proceeds maximization hypothesis

Following Yeoman (2001), we relate in this paper the decision to choose unit offerings to an arbitrage between the offer price and the flotation fees. In his model, an issuer seeks to maximise the net proceeds of the offering, i.e., the difference between the offering price and the issuing fees. The fees are proportional to the offering price and represent the spread between the offering price and the net proceeds. The underwriter operates in a competitive environment that requires that the revenues (underwriting fees) of an offering equal the expected costs. The optimal spread and the offer price are determined sequentially by maximising the issuer's net proceeds under the underwriter's constraint. In the case of seasoned equity offerings, if the initial return is positive, investors may have an incentive to short sell the shares before the offering. Consequently, the net proceeds are maximised by reducing the incentive to short sell and this is accomplished by limiting the expected initial return. This model implies that the optimal offer price and the net proceeds are a decreasing function of price uncertainty and an increasing function of the underwriting fees. In the case where fees are fixed, underpricing is expected to increase with the riskiness of the issue and with the dilution factor. These results are established for seasoned equity offerings or unseasoned offerings when there is no possibility of short selling. In unit SEOs, short-selling is not a constraint as the warrant, and not the share, is underpriced. This case is comparable to IPOs where there is no possibility of short-selling because the shares are not listed.

Since the valuation of warrants may not be unique, units made the determination of the offer price more flexible. The issue price can be lower than the sum of market values, common stock and warrants. Unit offering allows firms to make an arbitrage between the offer price and the flotation fees. In some cases, this is the only solution to issue shares. In addition, the main motive

for issuing units is not exactly the type of equity financing but the opportunity to underprice the warrant initially. Overall, we expect companies to issue units to increase the offer price flexibility, to bypass the regulatory constraint in France, to minimize the issue costs and the risk of failure, and, therefore, to maximise their net proceeds.

3. Data and methodology

3.1. Sample selection

We identify all equity issues undertaken by French firms over the period of 1986–2000 using the annual reports of the AMF. Our initial sample includes 473 equity issues. We exclude all issues that involve other security than common stock or units of common stock and warrants, or a common stock reduction or a restructuring plan, and come with a stock dividend. We also exclude any confounding events such as earnings announcements and other issues. This screening resulted in a final sample of 370 offerings, which consists of 264 (71%) rights offers and 106 (29%) public offers. Over our sample period, companies are more likely to offer units in public rather than rights issues. On average, 65 units (76%) are in public and 21 (24%) are in rights offers. However, while the proportion of companies offering rights with units varies between 0% and 40%, the vast majority of public offers is in the form of units.

We collect by hand most data from the registration statement filed with the AMF. The filing covers the proceeds from the offer, the subscription price, the number of current shares, the underwriters' name, the ownership structure, and the flotation costs estimated by the company. Prices are extracted from the Euronext database. Other data are collected from Extel Financial and Datastream. The announcement dates are identified in the Europresse database.

3.2. Definition of variables

We use a number of proxy variables to test the aforementioned hypotheses. We expect the decision to issue units to be related to the firm's specific characteristics and to the features of the offering. In terms of the firm's specific characteristics, we use the following variables. The three hypotheses predict that the decision to issue units will be positively related to the firm's risk, Risk, defined as stock returns volatility, calculated on the 90 days before the announcement of the issue.⁹ Firm size is also expected to affect the decision to issue units. We use market value, Size, defined as the log of the firm's market value of equity in million euros. The agency hypothesis predicts that firms with strong growth prospects will use stage financing, and therefore issue units rather than shares alone. We define Growth as the market to book ratio at the year-end preceding the offering. Finally, we include in the characteristics of the firm the level of managerial ownership. According to the agency hypothesis (e.g., Schultz, 1993), unit offerings are expected to be issued when managers own a small portion of the firm's equity and thus bear fewer of the costs of making poor investments. In France the concentration of ownership is very high, especially amongst small firms. Thus, the agency conflicts are likely to occur between these majority shareholders (blockholders) and minority shareholders, rather than between managers and shareholders. We use two variables to measure ownership: insider (a dummy equals to one if

⁹ We test for robustness of our results using equity beta, specific risk, calculated as the residual volatility of the firm equity. These proxies for risk lead to the same results.

the largest shareholder is a family or the managers) and blockholders (% of shares owned by the largest shareholder). We expect both variables to be negatively related to the probability of issuing units.

The characteristics of the issue are measured using the following variables.

Issue method

Dummy equals to one if the issue is a rights. The net proceeds maximization hypothesis predicts that unit offerings will depend on the issue method. In rights offering, given that the arbitrage between the net proceeds and the flotation costs can be made without regulatory constraints, firms are not expected to issue units. However, in a public offering, since regulation limits share underpricing, companies can underprice indirectly their offers by issuing units. Thus we expect companies that need to underprice their offer to opt for public offerings.

Hot issue

Bayless and Chaplinsky (1996) provide evidence that there are windows of opportunity (hot markets) when companies prefer to come to the market to raise funds. During these periods, information asymmetry is likely to be low, reducing the risk for an investor of being misinformed in acquiring issued shares (see Booth and Chua, 1996). The risk for an underwriter would also be lower in hot markets. We measure Hot issue period using the number of equity offerings during month $t-3$ to month of the offering. According to the signalling and net proceeds maximization hypotheses, this variable is expected to be negatively related to the probability of issuing units.

Prior performance

The prior performance of the firm is calculated by the mean of abnormal returns over 200 days before the announcement date. According to Lucas and McDonald's (1990) model, overvalued firms issue equity as soon as the opportunity arises, while undervalued firms postpone the equity issue until the stock price is higher. The various costs (fees, abnormal returns, underpricing) may therefore be increasing with prior performance, because of increased adverse selection, whether units or shares offerings.

Issue size

This variable is likely to be highly correlated to the size of the firm, and we expect a negative relation between the probability of issuing units and the size of the offering. We use log of gross proceeds in millions of Euros to measure this variable.

Free cash flow

Dummy equals to one if the issue is for acquisition or investment in a specific project. If the firm specifies the precise use of the proceeds, the risk of negative NPV projects decreases and so does the need for units.

External investors

Proportion of the issue not taken up by existing shareholders. In an agency perspective, if current shareholders renounce to subscribe, the agency costs may increase, resulting in a preference for units. In a net proceeds perspective, the risk for the underwriter will be greater. As a result, firms will prefer to issue units and to underprice the issue to reduce the flotation costs.

Underwriters

We use two variables to link the presence of underwriters to the decision to issue units. The first is the proportion of the offer that is underwritten or a dummy equal to one if the offering is underwritten. The second measure is the underwriter reputation, a dummy variable which is equal to one if the underwriter has underwritten at least 1% of the total seasoned equity offerings in 1986–2000. The arbitrage between the net proceeds and the banking fees is only relevant for underwritten offers. Therefore, we expect the probability of issuing units to increase when the offer is underwritten. We also expect the underpricing to increase with the underwriter reputation, as part of the total cost of the issue. The agency and signalling hypotheses provide no prediction for the percentage underwritten. They both imply that the probability of issuing units will decrease with bank reputation.

Issue costs

We use three measures of issuing costs. First we compute the total flotation costs as the sum of the banking fees and the legal and administrative fees. Second, we estimate the level of the underpricing, measured by the difference between the unit offer price and the current market price of the two securities included in the package. This requires an estimation of the value of the warrant. This value cannot be observed because warrants are not traded immediately. We therefore calculate it using the option pricing model as in Galai and Schneller (1978). Third we measure the loss in firm value on the announcement date. We use the standard event study methodology to assess the market reaction to the announcement of SEOs. We compute the coefficients of the market model over the period –220 to –21 days relative to the announcement date 0 after correcting for thin trading using Dimson's (1979) methodology. Our event period covers –20 to +20 days. The signalling hypothesis predicts that unit issues have both larger flotation costs and greater underpricing than share offerings.

However, the net proceeds maximization hypothesis implies that underpricing is a decreasing function of banking costs. We expect unit issues to incur lower flotation costs if they allow more underpricing than share offerings.

3.3. Methodology

From our sample, the probability of offering units depends on the issue method, i.e., companies that have rights issues are less likely to offer units, suggesting that both decisions (rights and units) are likely to be initiated jointly. Thus, we cannot consider the probability of offering units in isolation because in a single equation model, the probability of issuing rights would be correlated with the disturbance term. We overcome this problem by estimating the two probabilities together in a simultaneous equation model and consider the probability of issuing rights as an endogenous variable and the other determinants of issuing units are exogenous. A general method of obtaining consistent estimates of the parameters in such a case is a two-stage least squares method. We first run a set of logit regressions to determine the probability of opting for rights or public offers. Then, we use this probability as an explanatory variable in a regression to estimate the probability of issuing units or shares.¹⁰

¹⁰ We checked for robustness of this method by using the instrumental variable method. The results from this alternative methodology are qualitatively similar to those obtained by the two-stage least squares method.

4. Empirical results

In this section we present the results of the various tests. First, we assess the likelihood of a unit offering. Then we analyze the impact of issuing costs on the decision to issue units. In the last section we attempt to answer the question of why firms still choose unit public offerings instead of common stock rights issues.

4.1. The likelihood of issuing units

Table 1 provides a descriptive analysis of the characteristics of companies that issued units and shares in public and rights offers. Panel A reports the differences in firm characteristics. Unlike previous studies (Byoun and Moore, 2003) the differences in means and medians between firms that issue shares and those with unit offers are rarely statistically significant. These results do not provide support for the agency costs hypothesis or the signalling hypothesis. They suggest that firm specific characteristics are not the main drivers of unit offering, and that any quoted company in France can issue units. Table 1 Panel B reports differences in the characteristics of the offers between units and shares issues for rights and public offers. The results indicate that all the unit offerings, whether rights or public, are less likely to be issued in hot periods, suggesting that companies prefer to issue units in cold periods, i.e., when the risk of failure is high. The results also show that units are significantly more underpriced than common stock offerings in both public and rights issues.

In Table 2 we test for the choice of the financing method. Panel A shows that the decision to issue rights is largely explained by external, insider and issue size. The results imply that small firms controlled by a main shareholder (different from a family) and those that come to the market with small issues are likely to choose rights issues. The results also indicate that companies with low growth and high underpricing will opt for rights issues.

Table 2 Panel B reports the logit regression of the decision to issue units. The results indicate that the likelihood of issuing units is negatively related to the probability of issuing rights, $Pr(\text{rights})$ and to the hot issue period, *Hot issue*. Neither agency costs nor signalling hypothesis puts forward a prediction about the flotation method. In contrast, the net proceeds maximization hypothesis predicts a negative relationship between the probability of issuing units and the decision to issue rights because in a rights issue, more underpricing leads to a larger value for rights. Thus, firms do not need to issue units to underprice their offers. Since public offerings only allow limited underpricing because of the price regulation constraint, firms are inclined to bypass this legislation by offering units. In addition, this constraint is less stringent in hot markets. When prices are rising, the average of 10 among 20 prices before the issue still allows underpricing. However, when prices are decreasing, this rule prevents from issuing new shares. This may explain why units are more frequently issued in cold markets. Furthermore, consistent with the net proceeds maximization hypothesis, the likelihood of issuing units is positively related to the presence of underwriters, whatever their reputation.

The agency and signalling hypotheses predict that riskier firms are expected to issue units. Our results show that neither volatility, nor the other measures of risk (not reported), are significantly related to the probability of issuing units. The free cash flow variable (if funds are raised for a specific project) is positively related to the probability of issuing units, the

Table 1
Descriptive statistics

Variables	Rights (N=264)			Public (N=106)		
	Units	Shares	p-value	Units	Shares	p-value
	Mean (Median)	Mean (Median)	for mean/ median difference	Mean (Median)	Mean (Median)	for mean/ median difference
Number of observations	21	243		65	41	
<i>Panel A — firms' characteristics</i>						
Volatility	0.42 (0.34)	0.37 (0.32)	0.51 0.48	0.45 (0.32)	0.57 (0.38)	0.09* 0.16
Size	426.00 (270.00)	814.00 (77.00)	0.26 0.01***	903.00 (264.00)	984.00 (283.00)	0.81 0.62
Growth	1.50 (1.42)	2.29 (1.74)	0.01*** 0.43	3.15 (2.23)	4.78 (2.13)	0.11 0.89
Insider	0.14 (0.00)	0.19 (0.00)	0.58 0.60	0.40 (0.00)	0.41 (0.00)	0.88 0.88
Blockholders	0.45 (0.51)	0.45 (0.42)	0.82 0.82	0.45 (0.49)	0.45 (0.51)	0.94 0.84
<i>Panel B — issue specifications</i>						
Hot issue	9.19 (8.00)	11.68 (10.00)	0.07* 0.20	9.26 (9.00)	12.00 (13.00)	0.03** 0.09*
Prior performance	22.35 (26.02)	30.03 (25.28)	0.45 0.59	42.31 (31.00)	34.39 (20.38)	0.54 0.11
Proceeds	63.00 (31.00)	88.00 (17.00)	0.26 0.01***	119.00 (32.00)	128.00 (45.00)	0.86 0.84
Free cash flow	0.71 (1.00)	0.60 (1.00)	0.28 0.00***	0.75 (1.00)	0.59 (1.00)	0.07* 0.00***
External	0.53 (0.48)	0.45 (0.42)	0.22 0.11	0.69 (0.70)	0.66 (0.77)	0.70 0.84
% Underwritten	67.00 (100.00)	60.00 (100.00)	0.50 0.20	79.00 (100.00)	66.00 (100.00)	0.10 0.20
Reputation	0.52 (1.00)	0.56 (1.00)	0.79 0.20	0.57 (1.00)	0.49 (0.00)	0.42 0.20
Total costs	2.75 (2.40)	2.20 (1.89)	0.18 0.35	2.72 (2.49)	3.20 (3.23)	0.18 0.09*
Banking fees	2.45 (2.02)	1.81 (1.60)	0.12 0.35	2.52 (2.40)	2.90 (3.15)	0.27 0.20
Underpricing	−0.40 (−0.32)	−0.22 (−0.22)	0.00*** 0.04**	−0.18 (−0.16)	−0.07 (−0.04)	0.00*** 0.00****

The sample includes 370 equity issues on the French Stock Exchange from 1986 to 2000. For growth variable we have only 229 observations. The table reports the mean and below in parentheses the median and the *p*-value for differences in means and medians between units and shares. In Panel A., Volatility is the annualised volatility of the stock calculated on the 90 days preceding the announcement of the issue; Size is equity market value (Euro m); Growth is market to book ratio at year-end; Insider is a dummy equal to one if the largest shareholder is a family or the managers; Blockholders is % of shares owned by the largest shareholder. In Panel B., Hot issue is number of equity offerings during month *t*-3 to month of the offering. Prior performance is CAR_{−200, −1} days relative to issue date 0. Proceeds is gross proceeds in millions of Euros. Free cash flow is a dummy equal to one if the issue is for acquisition or investment in specific project. External is the proportion of the issue not taken up by existing shareholders. % Underwritten is the proportion of the offer that is underwritten. Reputation is a dummy equal to one if the underwriter has at least 1% of the total SEOs in 1986–2000. Total cost is total cost of the issue over gross proceeds; Banking fees is banking fees over gross proceeds. Underpricing is offer price less warrant value less price on day *t*-1 at offer price.

Table 2
Determinants of unit issues

Variables	Panel A — rights issues versus public offerings					Panel B — unit issues versus common stock issues		
	Model 1	Model 2	Model 3	Model 4	Model 1	Model 2	Model 3	Model 4
<i>N</i>	370	370	370	229	370	370	370	229
Issue size	−0.314*** (0.00)	−0.3*** (0.00)	−0.284*** (0.00)	−0.23** (0.02)				
External	−0.02*** (0.00)	−0.016*** (0.00)	−0.024*** (0.00)	−0.018*** (0.00)				
Insider	−0.926*** (0.00)	−0.905*** (0.00)	−1.09*** (0.00)	−0.897** (0.01)				
Probrights					−2.903*** (0.00)	−2.563*** (0.00)	−2.617*** (0.00)	−3.029*** (0.01)
Volatility	−0.565 (0.18)				−0.204 (0.65)			
Hot issue	0.028 (0.19)	0.023 (0.26)	0.01 (0.63)	0.028 (0.27)	−0.055** (0.02)	−0.059** (0.01)	−0.069*** (0.00)	−0.042 (0.12)
Free cash flow	0.086 (0.76)	0.017 (0.95)	0.099 (0.74)	0.199 (0.56)	0.499* (0.09)	0.671** (0.03)	0.563* (0.06)	0.343 (0.32)
Blockholders	−0.006 (0.24)				0.001 (0.79)			
Underwritten	−0.443 (0.21)	−0.398 (0.29)	−0.498 (0.17)	−0.198 (0.65)	0.678* (0.01)	0.729* (0.09)	0.537 (0.17)	0.735 (0.14)
Reputation	0.412 (0.13)				0.113 (0.67)			
Banking fees		−17.88 (0.12)				0.76 (0.95)		
Underpricing			−4.682*** (0.00)				−3.28*** (0.00)	
Growth				−0.091** (0.03)				−0.053 (0.14)
Constant	8.043*** (0.00)	7.668*** (0.00)	6.792*** (0.00)	5.946*** (0.00)	0.398 (0.65)	0.074 (0.94)	0.183 (0.78)	0.708 (0.407)
Cox and Snell R^2	0.175	0.169	0.227	0.182	0.112	0.115	0.119	0.103
Classification %	77.1	77	76.7	72.1	74.7	74.8	75.6	69.4

The table reports the 2-stage least squares regression results. The dependent variable is a dummy equal to one if the company issues units and zero otherwise. *N* is the number of observations. Probrights is the predicted probability of issuing rights as opposed to public issues which is a function of the following variables included into models 1 to 4. In panel A, we first estimate the probability of having rights issues as follows:

$$\text{Pr}(\text{rights}) = f(\text{Size, External, Insider, variables in models 1 to 4})$$

where $\text{Pr}(\text{rights})$ is a dummy variable equal to one if the firm issues rights and zero if the issue is public. Issue size is the log of the proceeds in million of Euros, External is the fraction of the issue not taken up by blockholders, and Insider is the familial or management ownership. In panel B., we use the residuals from this equation in estimating the probability of issuing units. We assume that the choice between units and shares is taken after deciding on whether the companies will opt for rights and public offers. The sample includes 370 equity issues on the French Stock Exchange from 1986 to 2000 except for model 4 because of the Growth variable. *p* values are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels respectively.

growth variables and blockholders are not significant, in contrast to the agency conflicts predictions.

4.2. Issuing costs of seasoned offerings

In the case of a seasoned equity offering, firms face three types of cost: fees (underwriting and legal fees), underpricing and the negative reaction following the announcement of

the offering. The univariate results (Table 1, Panel B) indicate that the total costs of unit offers with rights of 2.75% are not statistically different from the 2.20% for share offers. In public offers, the respective costs are 2.72% and 3.20% ($p=0.18$). Table 2, Panel B, tests for the direct impact of issuance costs as measured by the banking fees and underpricing on the likelihood of units. The banking fees are not significant. Table 1, Panel B shows that the level of underpricing is statistically higher for unit offerings, suggesting that companies that issue units are much more likely to face higher costs than companies that issue shares. For public offerings (rights issues), the average underpricing is 18% (40%) for units and 7% (22%) for shares. These results provide support for the net proceeds maximization hypothesis as they suggest that units are offered to decrease the risk of failure of the offering.

Table 3 reports the stock price reaction to SEOs announcements. In the case of shares, stock market reaction to the announcement of rights issues is significantly negative but not statistically negative to the announcement of public offers. In contrast, for unit issues with rights, the abnormal returns are not statistically significant. For public offerings, the abnormal returns are negative and significant for units over the first two and first five days. There are no statistical differences in market reaction between units and shares, whether rights or public. These results are consistent with Byoun and Moore's (2003) and suggest that the information content of unit and share offer is similar.

Table 4 presents the cross-sectional regressions of flotation costs, underpricing and market reaction on the use of warrants in seasoned equity offering. We distinguish the four ways of issuing shares: common stock public offering (which is the reference situation), share rights issues, unit rights issues, and unit public offerings. The results indicate that the banking and total fees decrease with the issue size, but increase with the percent of the issue which is guaranteed (% Underwritten), the proportion of the offer that is subscribed by external investors (External), the prior performance, and volatility. These results suggest that the higher the level of the firm's risk, the higher the amount of fees. The coefficient of unit rights issues dummy is positive but insignificant. The coefficient of *Unit public*

Table 3
Stock market reaction to unit and common stock issues

Variables	Rights			Public			
	Units (1)	Shares (2)	(1)–(2)	Units (3)	Shares (4)	(3)–(4)	(3)–(2)
<i>N</i>	21	243		65	41		
AR_0	0.11 (0.87)	−0.44** (0.02)	0.55 (0.19)	−0.36 (0.41)	−0.77 (0.22)	0.41 (0.59)	0.08 (0.86)
$CAR_{[0,1]}$	0.61 (0.49)	−0.52* (0.05)	1.13 (0.14)	−1.75*** (0.00)	−0.65 (0.47)	−1.1 (0.32)	−1.23** (0.04)
$CAR_{[0,5]}$	0.77 (0.62)	−0.81* (0.08)	1.58 (0.33)	−2.45*** (0.02)	−1.36 (0.37)	−1.09 (0.48)	−1.64* (0.05)

The table reports the announcement date abnormal returns and cumulative abnormal returns in % over the first two days and the first five days following the announcement. The mean excess returns are based on Dimson (1979) methodology. The whole sample includes 370 equity issues over the period from 1986 to 2000. The event date is the first date of announcement (either financial press or AMF release date). Columns entitled “(1)–(2)” and “(3)–(4)” give the mean differences and the associated tests between the abnormal returns obtained at unit announcements and share announcements. Column (3)–(2) is the difference between the abnormal returns of unit public offerings and common stock rights issues. *p*-values are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels respectively.

Table 4

Cross-sectional regression model of issue costs for 370 equity issues between 1986 and 2000

Variables	Banking fees	Total fees	Underpricing	CAR _{0,1}
Constant	0.051*** (0.00)	0.069*** (0.00)	−0.153*** (0.00)	0.086** (0.00)
Volatility	0.01*** (0.00)	0.009*** (0.00)	−0.059** (0.04)	−0.01 (0.24)
Prior performance	0.003*** (0.00)	0.003** (0.04)	−0.095*** (0.00)	−0.012** (0.04)
External	0.0002*** (0.00)	0.0002*** (0.00)		
Issue size	−0.003*** (0.00)	−0.004*** (0.00)		−0.005** (0.00)
Reputation			−0.046*** (0.01)	
% Underwritten	0.0007*** (0.00)	0.0008*** (0.00)		
Share rights issue	−0.006*** (0.00)	−0.006** (0.01)	−0.162*** (0.00)	−0.005 (0.58)
Unit rights issue	−0.001 (0.83)	−0.01 (0.80)	−0.353*** (0.00)	0.008 (0.53)
Unit public offering	−0.004* (0.07)	−0.005** (0.04)	−0.117*** (0.00)	−0.011 (0.25)
Adjusted R ²	44.8%	40.3%	23.7%	4.5%

The dependent variables Banking fees and Total fees are scaled by the gross proceeds. Unit public offering is a dummy variable equal to one if it is a public offering of units. Unit rights issue is a dummy variable equal to one if it is a rights issue of units. Share rights issue is a dummy variable equal to one if it is a rights issue of shares alone. *p*-values are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels respectively.

offering is significantly negative. That is also the case for the coefficient of share rights issues. These results suggest that unit public offerings and share rights issues are less expensive than share public offerings suggesting that the use of warrants in a public offering is a way to incur lower flotation fees.

Similar results can be inferred from the level of underpricing. Table 4 indicates that, consistent with the signalling hypothesis, underpricing increases significantly with firm riskiness, as measured by firm's stock volatility, and prior performance, and underwriter reputation, while the coefficient of units, whether rights of public offerings, is negative and significant indicating that, after controlling for risk, underpricing is still larger for unit issues. In the case of rights issues, the underpricing of shares or units is totally compensated by the value of the rights, while for public unit issues, there is no compensation, and the underpricing is a cost supported by current shareholders if they do not subscribe to the offering. The average undervaluation for public units (shares) offerings is 18% (7%). The average (median) loss for current shareholders, which corresponds to the value of the rights, if it would exist, is 1.24% for shares and 2.22% for units. Thus, the difference in current shareholders' loss of about 1% for units is comparable to the reduction in flotation costs highlighted in Table 4 (0.5%).¹¹ These results provide further support for the net proceeds maximization hypothesis

¹¹ The difference in flotation costs as a percentage of market value is of 0.6% (significant at the 10% level).

implying that firms arbitrage between the offer price and the flotation costs when they negotiate with their underwriters.

Finally, we use the announcement date market reaction ($CAR_{0,1}$) as an alternative measure of costs. We consider that these abnormal returns will measure the investors' reaction to the offering and, if negative, an additional cost. The results reported in Table 4 indicate that the announcement date abnormal returns are only negatively related to the issue size and to prior performance. The coefficients of the dummy variables for the flotation methods are not significantly different from zero, suggesting that the market does not appear to value more one flotation method rather than another.

Overall, our results suggest that units are more underpriced than share offers, whereas the fees are lower in public issues. These findings provide support for the net proceeds maximization hypothesis. One argument against this hypothesis could be that the difference in underpricing is larger than the reduction in fees. However, public share offerings are in some circumstances impossible, especially in declining markets, due to the French price constraint. In that case, firms have to choose between unit public offerings and share rights issues.

4.3. The choice between common stock rights issues and unit public offerings

The preceding results show that firms have a great incentive to issue units in the case of a public offer because during cold periods, attaching warrants makes the placement easier. However, common stock rights issues may be less costly than unit public offerings. Moreover, issuing common stocks with rights also allows for underpricing, which reduces the risk of failure. So why do the firms still choose unit public offerings instead of common stock rights issues? To answer this question, we compare the determinants of choosing a unit public offer instead of a common stock rights offer. Then, we analyze the differences in issuing costs between the two issue types. We examine these issues on a reduced sample (308 offerings), composed of the shares rights issues and the unit public offerings.

The logit regression results in Table 5 indicate that the main determinants of the choice between unit public offerings and common stock rights issues are issue size, external, hot issue, insider, underwritten and underpricing. Size, external and insider already explain the choice between rights offers and public issues. When the issue is large and insiders do not want to subscribe (or there is high external participation), there is a great incentive to opt for public offers. Thus, the only variables that explain the choice of a unit public offering versus a common stock rights issue are hot issue, underwritten and underpricing. Firms choose units instead of common stocks with rights during cold periods and they prefer to opt for an issue which is underwritten and more underpriced at the same time in order to make the issue successful. These results provide further support for the net proceeds maximization hypothesis.

When we control for issue size, volatility, prior performance and outsiders' participation, we find that the flotation costs (banking and total fees) are not significantly different for unit public offerings than for common stock rights issues (Table 6). Underpricing is 4.7% lower for unit public offerings than for share rights issues. The difference in stock price reactions disappears when we control for issue size and prior performance. These results indicate that unit public offerings are preferred to common stock rights issues when the current shareholders' subscription is low, and during cold periods. The direct costs are comparable but the underpricing of unit public offerings is lower. Even if underpricing is not directly comparable because in rights issues the value of the right compensates shareholders for their loss, several indirect costs may be associated with rights issues as reported by Eckbo and Masulis (1992).

Table 5

Explaining factors of unit public offering versus common stock rights issues

Variables	Model 1	Model 2	Model 3	Model 4
Issue size	0.187* (0.06)	0.287*** (0.00)	0.349*** (0.00)	0.279*** (0.01)
Blockholders	0.01 (0.11)	0.008 (0.21)	0.012* (0.08)	0.007 (0.29)
External	0.027*** (0.00)	0.023*** (0.00)	0.02*** (0.00)	0.025*** (0.00)
Free cash flow	0.495 (0.15)	0.429 (0.23)	0.539 (0.15)	0.348 (0.33)
Underwritten	1.031** (0.03)	0.92* (0.06)	1.202** (0.04)	1.036** (0.04)
Hot issue	−0.057** (0.03)	−0.055** (0.04)	−0.061** (0.03)	−0.047** (0.08)
Insider		0.994** (0.01)	0.838** (0.03)	0.939** (0.01)
Banking fees			17.988 (0.26)	
Underpricing				2.066* (0.07)
Constant	−7.103*** (0.00)	−8.733*** (0.00)	−10.472*** (0.00)	−8.303*** (0.00)
Cox and Snell R^2	0.158	0.177	0.197	0.186
Classification %	79.9	80.8	79.8	78.7

The table reports the results of a logit regression. The dependent variable is a dummy equal to one if the firm makes a unit public offering and zero if the firm makes a common stock rights issue. The sample includes 308 equity issues on the French Stock Exchange from 1986 to 2000. 243 are common stock rights issues and 65 are unit public offerings. p -values are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels respectively.

Table 6

Comparison of issuing costs between common stock rights issues and unit public offerings

Variables	Banking fees	Total fees	Underpricing	CAR _{0,1}
Constant	0.045*** (0.00)	0.065*** (0.00)	−0.14*** (0.00)	0.089*** (0.00)
Volatility	0.006*** (0.00)	0.005** (0.042)	−0.05* (0.098)	−0.004 (0.71)
Prior performance	0.141 (0.14)	0.02 (0.16)	−0.115*** (0.00)	−0.13** (0.044)
External	0.0001*** (0.00)	0.0001*** (0.00)		
Issue size	−0.03*** (0.00)	−0.004 (0.00)		−0.005*** (0.002)
Reputation			−0.041*** (0.015)	
% Underwritten	0.00007*** (0.00)	0.00008*** (0.00)		
Unit	0.002 (0.126)	0.001 (0.65)	0.047** (0.022)	−0.007 (0.34)
Adjusted R^2	0.40	0.36	0.17	0.05

The dependent variables Banking fees and Total fees are scaled by the gross proceeds. Unit is a dummy variable equal to one if it is a unit issue. p -values are in parentheses. *, **, *** denote significance at the 10%, 5% and 1% levels respectively. The number of observations is 308.

Overall, our results show that the variable hot issue is the main driver of the decision to issue units in the French context, providing further support for the net proceeds maximization hypothesis. During hot periods, firms do not need to attach warrants to common stocks, because a high level of underpricing is not needed. The investors are confident in the firms' future projects and they do not require attached warrants. This confirms the opinion of professionals that consider units as sweeteners when they are not incited to subscribe to common stocks only. Our results are consistent with [Byoun and Moore \(2003\)](#) but they relate the significance of hot issue dummy to the signalling hypothesis. They argue that in hot periods there is less asymmetric information and firms do not need to signal by using units. We do not rule out this interpretation. However, given our results above, we relate the significance of the hot issue variable to the net proceeds maximization hypothesis under which banks bear a lower risk during hot periods, and are able to accept an issue price nearer to the market prices. Thus, the units that entail greater underpricing are not required any more.

5. Conclusions

The purpose of the paper is to contrast the three main hypotheses – signalling, agency and net proceeds – developed in the literature on the motives for the choice of units when companies raise additional equity capital. We use a sample of 370 equity offerings in the French market, over the 1986 to 2000 period. We show that the issue characteristics rather than firm's specificities explain a large proportion of the decision to opt for units, suggesting that, unlike previous predominantly US evidence, the signalling and the agency costs hypotheses do not lead companies to opt for unit offerings. Instead, our results provide support for the net proceeds maximization hypothesis, and suggest that companies arbitrage between the offer price and the flotation costs when opting for units versus share offers. We show that units are predominantly issued in public rather than rights offers, in cold periods and when the offering is underwritten. Rights issues are chosen when current shareholders intend to subscribe to the new shares.

Since the French regulation of SEOs contains an explicit price constraint, which is less stringent for unit issues, we are able to test directly the net proceeds maximization hypothesis. This regulation allows us to link units to the risk around the offering. We expect our results to apply also to countries without this price regulation. Since the offer price for firm commitment is set before the distribution of shares, if the market is strongly bearish, the risk of failure, even if it is much lower, still exists for the firm or the underwriter, and units may help to mitigate the probability of failure in any institutional setting. For example, [Byoun and Moore \(2003\)](#) find that unit issues are common during cold periods, when the price flexibility is likely to be a key issue for the success of the offering. Likewise, they find that units are more underpriced than common stock offerings. Units may therefore be chosen because the increased flexibility they offer is very important during bearish periods.

Our analysis is also based on the three main hypotheses that are predominantly developed in the IPO literature. We applied these arguments to the case of SEOs. Since these two methods of raising capital are different, our results should be interpreted with caution. Where necessary, we tried to discuss the limitations of the applicability of these hypotheses to the case of SEOs. The extent to which other theoretical factors affect the decision of companies to issue units and the degree of applicability of our results to other countries is a subject of further research.

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References

- Allen, F., Faulhaber, G., 1989. Signalling by underpricing in the IPO market. *Journal of Financial Economics* 23, 303–323.
- Altinkiliç, O., Hansen, R.S., 2003. Underpricing and discounting in seasoned equity offers. *Journal of Financial Economics* 69, 285–323.
- Bayless, M., Chaplinsky, S., 1996. Is there a window of opportunity for seasoned equity issuance? *Journal of Finance* 51, 253–278.
- Booth, J.R., Chua, L., 1996. Ownership dispersion, costly information and IPO underpricing. *Journal of Financial Economics* 41, 291–310.
- Byoun, S., 2004. Stock performance following seasoned stock-warrant unit offerings. *Journal of Business* 77, 75–100.
- Byoun, S., Moore, W.T., 2003. Stock vs. stock-warrant units: evidence from seasoned offerings. *Journal of Corporate Finance* 9, 575–590.
- Chemmanur, T., 1993. The pricing of initial public offerings: a dynamic model with information production. *Journal of Finance* 48, 285–304.
- Chemmanur, T.J., Fulghieri, P., 1997. Why include warrants in new equity issues? A theory of unit IPOs. *Journal of Financial and Quantitative Analysis* 32, 1–24.
- Chollet, P., Ginglinger, E., 2001. The pricing of French unit seasoned equity offerings. *European Financial Management* 7, 23–38.
- Corwin, S.A., 2003. The determinants of underpricing for seasoned equity offerings. *Journal of Finance* 58, 2249–2279.
- Dimson, E., 1979. Risk measurement when shares are subject to infrequent trading. *Journal of Financial Economics* 7, 197–226.
- Eckbo, B.E., Masulis, R.W., 1992. Adverse selection and the rights offer paradox. *Journal of Financial Economics* 32, 293–332.
- Eckbo, B.E., Masulis, R.W., Norli, O., 2005. Security offerings: A survey, Working paper Tuck School of Business, Dartmouth College.
- Gajewski, J.-F., Ginglinger, E., 2002. Seasoned equity issues in a closely held market: evidence from France. *European Finance Review* 6, 291–319.
- Galai, D., Schneller, M., 1978. Pricing of warrants and the value of the firm. *Journal of Finance* 33, 1333–1342.
- How, J.C., Howe, J.S., 2001. Warrants in initial public offerings: empirical evidence. *Journal of Business* 74, 433–458.
- Jain, B.A., 1994. The underpricing of unit initial public offerings. *The Quarterly Review of Economics and Finance* 34, 309–325.
- Jensen, M., 1986. The agency cost of free cash flow, corporate finance, and takeovers. *American Economic Review* 76, 323–329.
- Lee, M., Lee, P., Taylor, S., 2003. Unit initial public offerings: staged equity or signalling mechanisms? *Accounting and Finance* 43, 63–85.
- Lucas, D.J., McDonald, R.L., 1990. Equity issues and stock price dynamics. *Journal of Finance* 45, 1019–1043.
- Ritter, J., 2003. Investment banking and securities issuance. In: Constantinides, G.M., Harris, M., Stulz, R. (Eds.), *Handbook of Economics and Finance*. Elsevier B.V., North Holland.
- Sahlman, W., 1990. The structure and governance of venture-capital organizations. *Journal of Financial Economics* 27, 473–524.
- Schultz, P., 1993. Unit initial public offerings: a form of staged financing. *Journal of Financial Economics* 34, 199–229.
- Welch, I., 1996. Equity offerings following the IPO: theory and evidence. *Journal of Corporate Finance* 2, 227–259.
- Yeoman, J.C., 2001. The optimal spread and offering price for underwritten securities. *Journal of Financial Economics* 62, 169–198.