

Why do Companies Include Warrants in Seasoned Equity Offerings: The case of French Unit Offerings¹

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Abstract

We analyse the reasons why companies issue units when they raise additional capital. In contrast to previous evidence, our results show that 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 contrast, the results indicate that companies choose to offer units to circumvent the offer price regulation and to underprice their seasoned equity offering so as to minimise the issue cost and the risk of failure of the issue. These results provide support for the net proceeds maximization hypothesis.

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Why do Companies Include Warrants in SEOs: The case of French Unit Offerings

1. Introduction

Over the last few years, a large number of French companies have come to the market to raise equity in the form of unit offerings. These unit issues consist of bundles of common stock and warrants, sold together as a package. In the aftermarket the stocks and warrants are traded separately. Unlike the US where units are often associated with initial public offerings (IPO) and the warrants are callable,¹ in France they come only with seasoned equity offerings, the warrants are not callable, and the conversion cannot be forced.

This method of raising capital is controversial. 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 a seasoned offering at the exercise price of the warrants, thus giving the subscriber the right 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, and may, under certain conditions, allow firms to raise higher proceeds. Furthermore, since unit offerings bring sequential financing, they may reduce agency costs resulting from potential free cash flow (e.g., Schultz, 1993).² Additionally, unit offerings are thought to be used as a signal of 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 seen as an incentive to raise interest in new offerings when issuers obtain indications of a low demand for the offering, i.e., a *sweetener* 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. In addition, companies 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 do 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 the institutional framework. We focus on the French setting where the issuance of units with the seasoned equity offerings is relatively common and extend the previous evidence on unit issues in initial public offering to equity offerings in the secondary market. We test the agency costs (Jensen, 1986) and the signalling hypotheses (Chemmanur and Fulghieri, 1997) as well as the arbitrage between the net proceeds and the banking fees 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 and banking fees 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. But, at the same time, they will receive a lower amount of cash. We argue that, when French firms decide to waive the subscription right, the offer price has to be greater or equal to the average share price of 10 amongst 20 days prior to the announcement date and the underwriter has to bear a high risk which leads the bank to increase the banking fees or give up underwriting the issue. This rule doesn't exist in the case of unit issues. When French firms have decided on the public flotation method, they may find some flexibility in issuing packages of stocks and warrants.

Our analysis is based on a sample of 370 offerings over the period 1986 to 2000. We contrast the above three main hypotheses developed in the previous literature to explain why companies opt for units. For the sample as a whole we find that 23% of these offerings include warrants. The unit offerings are more pronounced in the case of public offers (61%) compared to rights offerings (8%). 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, are issued in public rather than in rights offers, and allow for underpricing. The analysis of the flotation costs reveals that the use of units in public offerings does not significantly increase the total and banking fees.

Overall, the results suggest that French companies choose to offer units to circumvent the offer price regulation, to underprice their SEOs so as to minimise their issue cost and the risk of failure of the offer. Our results illustrate the effects of the regulatory constraints on firms' choices of equity financing. If firms decide to make unit public offerings to bypass the regulation, they could also prefer to issue common stocks with rights rather than units. The arbitrage between these two financing options is also studied. 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. Overall, our 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 circumvent the offer price regulation for public offerings and 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.

To our knowledge, previous studies have focussed predominantly on unit initial public offerings. The exceptions are Byoun and Moore (2003) and Byoun (2004). The former is closer to our analysis. They use 6018 share SEOs and 409 unit SEOs issued in the US over the period 1980-1997. They show that firm specific characteristics such as size, age, stock price volatility, leverage, and managerial ownership explain the likelihood of issuing units. They conclude that their results are consistent with the hypotheses that stock-warrant units are used as mechanisms for reducing agency costs or signalling firms' good future prospects as a form of sequential equity financing. We do not provide support for these results. In addition, these results are contradicted in Byoun (2004) who finds that unit offering firms underperform significantly similar share offering firms and matching firms using a relatively similar sample than Byoun and Moore (2003). These findings are not consistent with the theories suggested for the roles of unit financing in reducing agency costs or signalling.

The paper proceeds as follows. Section 2 discusses the 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. *Institutional framework*

A large number of French firms issue units, i.e., attach warrants to their ordinary shares when they have seasoned equity offerings. The warrants and the shares are traded separately in the aftermarket. These seasoned offerings (unit or common stock) have to be approved by the general shareholder meeting. French law grants the shareholders 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.³

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.⁴ 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, closer to the UK where the offer price discount should not exceed 5%.⁵ 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)*⁶ 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 date to the end of the priority period. In the U.S., the offer price for firm commitments is set at the closing transaction price on day t and the distribution of shares occurs at day $t+1$ (e.g., Corwin, 2003). 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 be incited to attach warrants if they want to issue without rights, as the offer price rule is less stringent, because the valuation of warrants in the units depends largely on the estimation of stock price volatility.

2.2. *Hypotheses tested*

In this section we analyse the three main hypotheses developed in the previous predominantly initial equity offering literature, namely the signalling, the agency and the net proceeds. We also introduce the specificities of the French institutional framework and set up our testable hypotheses.

2.2.1. Signalling hypothesis

In an environment of information asymmetry, firm insiders have private information about the mean of their future cash flows. They know if the firm is a good firm (high expected future cash flow) or a bad firm (low expected future cash flow), while outsiders cannot distinguish between these two types of firms. In this setting, good firms have a greater incentive to signal their quality. In the seminal paper of Leland and Pyle (1977), the risk-averse insiders of the good firm choose to signal their quality by retaining a large fraction of the equity issued. Their model is developed in the case of a one-shot equity offering.

The signalling characteristics of a two-stage financing have been mainly underlined in the case of IPOs. In this case, high-quality firms underprice their IPO in order to obtain a higher price at a subsequent seasoned offering (see for instance Allen and Faulhaber, 1989, Grinblatt and Hwang, 1989, Welch, 1996 and Chemmanur, 1993). 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 future cash-flows. At time 0, the firm 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 firm may use

three types of signal that will deter mimicking by the bad-type firm: 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) analyse 369 IPOs in Australia, among which 134 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, Lee and Taylor (2000) 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. We, therefore expect a positive relationship between the fraction of the firm's value sold as warrants, and the firm's level of risk, the level of underpricing and the proportion of equity offered to external investors. Overall, these signalling arguments lead us to set up the following testable hypothesis:

H_{01} : 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 issued to finance an investment with a positive net present value. However, if the 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 free cash flow (Jensen, 1986). According to this theory, managers 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. 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 unit IPOs 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 IPOs that come up with shares only. Since unit IPOs are characterised by greater uncertainty, they often lead to a stage financing under which managers obtain the second portion of the total cash needed to fund the firm only if the firm has valuable investment, and if the warrants can be exercised. 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, Lee and Taylor (2000) 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. These arguments lead us to test the following agency conflict hypothesis:

H₀₂: Firms with high potential agency conflicts are more likely to issue units.

2.2.3. *Net proceeds maximization hypothesis*

This hypothesis is introduced to explain why firms choose unit offerings. It is inspired from Yeoman's (2001) model which puts forward an arbitrage between the net proceeds and the flotation fees. Legally, the French issuing rules prevent firms from decreasing the issue price of a public offering. We consider that unit offerings are likely to be used as a means of

reducing the issue price, in order to minimise the issue costs and the risk of failure of the seasoned equity offering.

The net proceeds maximisation hypothesis has not been fully tested in the previous literature. Yeoman (2001) developed this theory to explain how the spread and the offering price are determined in the case of an underwritten offering. In the 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 its expected costs. By maximising the issuer's net proceeds under the underwriter's constraint, Yeoman determines sequentially the optimal spread and the offering price in the case of seasoned equity offerings. In this case, 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.

The model leads to several predictions. The optimal offer price and the net proceeds are a decreasing function of price uncertainty and an increasing function of the underwriting fee. 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. The situation is then comparable to IPOs where there is no possibility of short selling because the shares are not listed. The issue costs are also low in France compared to the US. On average, the total issue costs in France amount to 2.4% of the gross proceeds compared to 5.49% in the US (Yeoman, 2001). Furthermore, in France, 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. The growing competition among banks caused the flotation costs to vary with the level of offering risk, but this variation is still limited.

Under the French rules, in a common stock public offering, the offer price has to be greater or equal to the average share price of 10 amongst 20 days prior to the announcement

date. This constraint is likely to prevent companies from issuing equity in depressed markets.⁷ The French firms may find some flexibility in issuing packages of shares and warrants. As the valuation of warrants may not be unique, especially when the estimation of stock price volatility may differ from one investor to another, the firm gets some flexibility in the determination of the offer price. 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 net proceeds 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 underevaluate the warrant initially. The exercise price of the warrants may be set above the expected stock price at maturity. Thus, overall, we expect companies to issue units to bypass the regulatory constraint and to minimise the issue costs and the risk of failure. We therefore, set the following testable hypothesis:

H₀₃: Units are issued by companies 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 1986-2000 using the annual reports of the AMF. Our initial sample includes 473 equity issues. We exclude all issues that do not meet the following criteria:

- The issue involves a single type of security (common stock or units of common stock and warrants) and does not come with a stock dividend;
- The issue does not involve a common stock reduction or a restructuring plan;
- The firm does not publish important information, such as earnings, at the same time as the issue announcement.⁸

This screening has resulted in a final sample of 370 offerings, which consists of 264 (71%) rights offers and 106 (29%) public offers. Table 1 presents the annual distribution of our sample. The results indicate that companies are more likely to offer units in public rather than right issues. On average, 65 units (76%) are in public offers and 21 (24%) are in rights

offers. The annual distribution of unit offering is not homogeneous in the case of rights offerings. The proportion of companies offering units ranges between 0% in 1991, 1992 and 1997 to 40% in 1993. In contrast, the vast majority of public offers is in the form of units, with the exception of 1986 where no units were issued, 1987 (33%), 1991 (27%), and 2000 (44%). In 1988, 1995 and 1999, all the French public offers are in the form of units.

[Insert Table 1 here]

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. 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 the 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 the firm market value, *Size*, defined as the log of equity market value 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 developed by 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 one if 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 hypothesis predicts that unit offerings will depend on the issue method. In rights offering, given that the arbitrage net proceeds/flotation costs can be made, 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 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.

Proceeds: 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 Euro to measure this variable.

Dilution: We use two variables to capture dilution resulting from the issuance of new shares. The first is *Immediate dilution*. According to the agency hypothesis of a stage financing, the immediate dilution should be lower for units than for shares because unit-

issuing firms receive the proceeds in two stages. This variable is defined as the ratio of the new shares over old *plus* new shares at the unit issue. The second is *Total dilution*, defined as the ratio of new shares *plus* shares from exercise of warrants over old *plus* new shares *plus* shares from exercise of warrants. We expect stage financing to be effective when the total issue is large relative to current size of the firm to mitigate the free cash flow problem.

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 three variables to link the presence of underwriters to the decision to issue units. The first is the proportion of the offer that is underwritten. The second is a dummy variable set to be equal to one if the offer is underwritten. The third 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 net proceeds/banking fees is only relevant for underwritten offers. Therefore, we expect the probability of issuing units to increase when the offer is underwritten. Further, the underpricing will increase with underwriter reputation, as part of the total cost of the issue. 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. The methodology is described in the appendix. 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 (1977) 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 hypothesis implies that underpricing is a decreasing function of banking costs. If unit offerings allow more underpricing than share offerings, then we should observe that unit issues incur lower flotation costs.

Warrant characteristics: We use a number of variables to describe the characteristics of the warrant. We define *Relative Price* as the exercise price of the warrant over the share price before the offering P_{t-1} ; *Maturity* as the number of year of the life of the warrant; the *Relative Value* as the warrant value based on Options pricing model over P_{t-1} . We have also used but not report *Dilution*, defined as the ratio of shares from exercise of warrants over old, new and shares from exercise of warrants. The agency hypothesis predicts that the exercise price of the warrants is set above the expected stock price, to motivate managers to disclose their profitable prospects. The signalling hypothesis predicts that the exercise price of the warrants is set equal to the expected stock price, and that the proportion of firm value sold as warrants (dilution) increases with firm riskiness. The net proceeds hypothesis has the same prediction as the agency one, but for a very different reason. If the firm needs underpricing and issues units in this aim and not to obtain a second round of financing, then the exercise price may be lower than the expected stock price at the warrant's maturity.

3.3. Methodology

We use a set of logit models to test the hypothesis that companies issue units to mitigate their agency costs, decrease their information asymmetries and to reduce their issue costs by relating the unit issue dummy to the explanatory variables defined above. Table 1, however, indicates that the probability of offering units depends on the issue method, i.e., companies that have rights issues are less likely to offer units. These results suggest 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 square method. We proceed as follows. We first run a set of regressions to explain the decision to opt for rights or public offers. We estimate this probability through logit regressions with the dependent variable equal to one for a rights issues and zero for public offers. Then the predicted probabilities from this model are used as explanatory variable in a regression to estimate the probability of issuing units or shares.¹⁰

4. Empirical results

In this section we present the results of the various tests. First, we assess the likelihood of a unit offering through a univariate analysis and by running a set of regressions with a dummy variable set equal to 1 for unit offering against a number of explanatory variables. Then we analyse the impact of issuing costs on the decision to issue units. In the last section we attempt to answer the question of why do firms still choose unit public offerings instead of common stock rights issues.

4.1. The likelihood of issuing units

4.1.1. Univariate analysis

Table 2 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 not statistically significant. The only exception is in the median size and average growth of companies that had rights and volatility for public offers. These results do not provide support for the agency conflicts hypothesis which predicts that high growth companies are expected to issue units. They also indicate that firm specific characteristics are not the main drivers of unit offering, suggesting that any company in France can issue units.

Table 2 Panel B. reports differences in the characteristics of the offers between units and shares issues for rights and public offers. The first and second rows report the mean and median values of the number of equity offerings during the three months preceding the issue. 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. Similarly, prior performance is positive and significant for all issues indicating that companies come to raise equity after stock price run up. The next two rows report the mean and median gross proceeds. While the differences in means between units and shares are not significant, the differences in medians are only significant for the sample of rights offers. The agency-cost hypothesis predicts that small companies are likely to issue units. Previous studies show that in the US units are chosen by small firms, and the gross proceeds are three times lower for unit IPOs (Schultz, 1993) and seven times lower for unit SEOs (Byoun and Moore, 2003) than for shares offerings. Our results are not consistent with these findings. The size does not appear to be a determinant of the choice of issuing units. Similarly, the agency hypothesis of a stage financing predicts that the immediate dilution should be lower for units than for shares because unit-issuing firms receive the proceeds in two stages. Our results show that the immediate dilution is lower for unit public offerings compared to common stock public offerings whereas the total dilution is not significantly different. In contrast, for rights issues, immediate dilution is comparable for units and shares, whereas total dilution is larger for units. In rights offering, the proceeds of warrants are added to the total dilution, whereas the effect of substitution is observed in the case of public offerings.

The differences in means and medians of the *free cash flow* variable are significant suggesting that unit offerings are more likely to be accompanied by the disclosure of the use of the proceeds. Although these results suggest that firms issue units to mitigate the agency conflicts, they are also consistent with the proposition that units are issued to mitigate the risk of failure. In rights or public, the part of the issue offered to outside investors is not significantly different between unit offers and common stock issues. The agency-cost hypothesis predicts that the fraction of equity retained by insiders is lower for unit offerings. Our results are not consistent with these arguments.

A large number of the remaining results provide support for the argument that units are offered to decrease the risk of failure of the offering. For example, unit offerings are more likely to be underwritten, suggesting either that the units are more risky than shares and/or units are offered to maximise the chances of success. On average 91% (81%) of units in public offerings (rights issues) are underwritten compared to 78% (70%) for the shares. These results are only weakly significant for public offerings. However, the reputation of the underwriters does not appear to push firms to opt for units, suggesting that, in France, units are slightly more likely to be guaranteed than shares and that companies that issue units are less likely to take the risk of failure. These findings are also consistent with the prediction of the net proceeds hypothesis.

The next three variables measure the differences in transaction costs between units and shares. The total costs of unit offers with rights of 2.75% are larger but not statistically different from the 2.20% for share offers. The unit public offers exhibit lower costs, but the differences in means and medians between units and share offers are not statistically significant. We also measure issuing costs by the level of underpricing. For public offerings (rights issues), the average underpricing is 18% (40%) for units and 7% (22%) for shares. This variable indicates that companies that issue units are much more likely to face higher costs than companies that issue shares. In the US Byoun and Moore (2003) find that the level of underpricing for unit offerings is 1.74% compared to 1.08% for shares. Recent studies show that SEOs underpricing increases over time. For instance, Corwin (2003) shows that underpricing was 2.21% over 1980-1998, and 3.06% over 1993-1998, whereas Altinkiliç and Hansen (2003) find 2.58% over 1990-1997. Further, Corwin (2003) finds that SEO underpricing is significantly related to the concurrent level of underpricing in the IPO market (conditions that affect both IPOs and SEOs).

In the last three rows, we analyse the characteristics of the warrants. On average, the exercise price is 14% above the price at the issue date. The average maturity is 3.19 years and the average relative warrant value is 23%. The agency costs and the net proceeds (signalling) hypotheses predict that the exercise price is above (equal to) the expected stock price. We looked at the maturity stock price for the 50 offerings for which we had the data. Out of these 50, only 14 warrants have been exercised at maturity. These finding do not provide support for the signalling hypothesis.

[Insert Table 2 here]

4.1.2. *Multivariate analysis*

The identification of the determinants of issuing units is more complex in the French context, because of the simultaneous and dependant decisions to issue through public or rights offerings and to select the type of equity, units or common stocks. We account for the endogeneity effects of all these decisions by running a set of 2-stage least square regressions. We first estimate the probability of issuing rights versus public offers. Then, we estimate the probability of choosing units instead of common stocks by keeping the predicted probabilities of the first equation.

Panel A. of Table 3 reports that the decision to have a rights issue 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 3 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 put forward a prediction about the flotation method. In contrast, the net proceeds 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, companies will be 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 hypothesis, the likelihood of issuing units is positively related to the presence of underwriters, whatever their reputation. We also test the direct impact of banking fees and underpricing on the likelihood of units. Banking fees are not significant, while underpricing appears to provide an incentive for firms to issue units.

The agency and signalling hypotheses predict that riskier firms are expected to issue units. Our results indicate 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) has a positive impact on the probability of issuing units. Although this result is consistent with the free cash flow hypothesis as when the managers state the use of the proceeds, they are more likely to issue units, it also provides support for the reduction in the risk of failure. The blockholders and the growth variables are also not significant, in contrast to the agency conflicts predictions. Overall, these results provide a weak support for the agency theory, but altogether reinforce the net proceeds hypothesis.

[Insert Table 3 here]

4.2. Issuing costs of seasoned offerings

In the case of a seasoned offering, the firm faces three types of cost: fees (underwriting and legal fees), underpricing and the reaction following the announcement of the offering. Table 2 provides some descriptive statistics for total and banking costs, as well as underpricing. The flotation fees do not change significantly when firms decide to issue units. However, they seem to bear higher underpricing in the case of unit offers.

Table 4 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 (0;1) and (0;5) periods. There are no statistical differences in market reaction between units and shares, whether rights or public. These results are not consistent with Byoun and Moore's (2003), who find a -1.98% reaction for unit issues and -2.67% for shares offerings in the US.

[Insert Table 4 here]

Table 5 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: public offering of shares (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 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 5 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. Finally, 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. Overall these results are consistent with the agency and the net proceeds hypotheses.

In the case of rights issues, underpricing of shares or units is totally compensated by the value of the rights. In the case of public unit issues, there is no compensation, and 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. Therefore, the difference in the loss for current shareholders of about 1% for units is comparable to the reduction in flotation costs highlighted in Table 5 (0.5%).¹¹ These results provide further support for the net proceeds hypothesis implying that companies arbitrage between underpricing and flotation costs when they negotiate with their underwriters.

Finally, we use the announcement date market reaction ($CAR_{0,t}$) 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 5 indicate that, for rights issues, 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, these results suggest that unit offerings are more underpriced than share offerings, whereas the fees are lower in public issues. These findings provide support for the net proceeds hypothesis. One argument against this hypothesis could be that the difference in underpricing is larger than the reduction in fees. But public offerings of shares 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 shares rights issues.

[Insert Table 5 here]

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 analyse 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.

[Insert Table 6 here]

From Table 6, the results of the logit regression with the dependent variable equal to one for a unit public offering and zero for a common stock rights issue, indicates that the main determinants of the choice between units public offering and common stock rights issues are *issue size, external, hot, insider, underwritten and underpricing*. *Issue 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 variables that only explain the choice of a unit public offering versus a common stock rights issue are *hot, underwritten* and

underpricing. Firms choose to issue 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 hypothesis.

When controlling for issue size, volatility, prior performance and outsiders' participation, flotation costs (banking and total fees) are not significantly different for unit public offerings than for stock rights issues (Table 7). Underpricing is 4.7% lower for unit public offerings than for share rights issues. When controlling for issue size and prior performance, the difference in stock price reactions disappears. Overall, these results indicate that unit public offerings may be preferable to common stock rights issues when the subscription of current shareholders is low, and during cold periods. The direct costs seem to be comparable, whereas underpricing of unit public offerings is lower. Even if underpricing is not directly comparable because in rights issues the value of the right will compensate shareholders for their loss, several indirect costs may be associated to rights issues as underlined by Eckbo and Masulis (1992). Therefore, the choice of unit public offerings may be the best choice for the managers given the characteristics of the offering.

[Insert Table 7 here]

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/arbitrage fees. 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 more the significance of the *hot issue* variable to the arbitrage hypothesis under which banks bear a lower risk during hot periods, and are able to accept an issue price nearer to the market prices. Therefore the units that entail greater underpricing are not required any more.

5. Conclusions

The purpose of the paper is to contrast three main hypotheses developed in the literature on the motives for the choice of units when companies raise additional equity capital: agency, signalling and net proceeds. We use a sample of 370 equity offerings in the French market, where the institutional framework is different from the US, over the 1986 to 2000 period. We find that the issue characteristics rather than firm's specificities explain a large proportion of the decision to opt for units. In particular, we show that units are predominantly issued in public rather than rights offers, in cold periods and when blockholders renounce to subscribe to the new issue. Rights issues are chosen when current shareholders intend to subscribe to the new shares.

We find a weak evidence to support the agency-costs hypothesis. Consistent with the agency hypothesis, immediate (total) dilution is lower (larger) in the case of unit issues and the likelihood of units decreases when the planned use of the funds is specified. However, the other implications of the agency hypothesis are clearly rejected by our evidence. In particular, we show that unit issuers are neither smaller nor riskier than share alone issuers. These results are not in line with the US evidence. The ownership structure and the underwriter reputation have no impact on the choice of units.

Our results do not also provide support for the signalling hypothesis as they are more consistent with the net proceeds hypothesis, suggesting that companies arbitrage the underpricing and their flotation costs when opting for units versus share offers. We find that the likelihood of unit offerings increases in cold periods, in public rather than in rights offerings, and when the issue is underwritten. The results also indicate that firms choose to offer units to circumvent the offer price regulation, to underprice their SEO so as to minimise the issue cost and the risk of failure of the issue. We also study the arbitrage between the preference of common stocks with rights over units to find that the direct and indirect fees, particularly true for issues that are largely subscribed by outside investors, are relatively similar in both methods. Overall, our results contribute to the previous predominantly US evidence of unit IPOs by documenting that French firms issue units not because of their specific characteristics but because of the characteristics of their offers and institutional regulatory constraints on their choice of equity financing.

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Table 1 – Annual distribution of equity issues in France

The total number of issues in France (*All*) of 370 over the period 1986 to 2000 is split into rights issues (*Rights*) when the issue is offered only to existing shareholders and public offers (*Public*).

Years	Rights			Public		
	Shares	Units	% Units	Shares	Units	% Units
1986	40	2	4.8	3	0	0.0
1987	36	1	2.7	2	1	33.3
1988	14	2	12.5	0	4	100.0
1989	28	3	9.7	1	7	87.5
1990	23	2	8.0	3	10	76.9
1991	23	0	0.0	8	3	27.3
1992	3	0	0.0	2	2	50.0
1993	3	2	40.0	1	5	83.3
1994	17	3	15.0	1	6	85.7
1995	2	1	33.3	0	2	100.0
1996	8	1	11.1	1	2	66.7
1997	10	0	0.0	1	3	75.0
1998	5	1	16.7	3	5	62.5
1999	11	2	15.4	0	3	100.0
2000	20	1	4.8	15	12	44.4
Total	243	21	8.0	41	65	61.3

Table 2 – Descriptive statistics of the sample firms

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 Euro. *Immediate dilution* is new shares over old plus new shares at the unit issue. *Total dilution* is new shares plus shares from exercise of warrants over old plus new shares plus shares from exercise of warrants. *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. *Underwritten* is a dummy that equals one if the offer is underwritten. *Reputation* is a dummy equal to one if the underwriter has at least 1% of the total SEOs in 1986-2000. *Total costs* 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. *Relative price* is the exercise price of the warrant over Pt-1. *Maturity* is warrant maturity in years. *Relative value* is warrant value based on Options pricing model over Pt-1. *, **, *** denote significance at 0.10, 0.05 and 0.01 levels respectively.

<i>Panel A - Firms' characteristics</i>						
<i>Variables</i>	<i>Rights</i>			<i>Public</i>		
	<i>Units</i> <i>Mean</i> <i>(Median)</i>	<i>Shares</i> <i>Mean</i> <i>(Median)</i>	<i>p value for mean/ median difference</i>	<i>Units</i> <i>Mean</i> <i>(Median)</i>	<i>Shares</i> <i>Mean</i> <i>(Median)</i>	<i>p value for mean/ median difference</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 (270)	814 (77)	0.26 0.01***	903 (264)	984 (283)	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>						
<i>Variables</i>	<i>Rights</i>			<i>Public</i>		
	<i>Units Mean (Median)</i>	<i>Shares Mean (Median)</i>	<i>p value for mean/ median difference</i>	<i>Units Mean (Median)</i>	<i>Shares Mean (Median)</i>	<i>p value for mean/ median difference</i>
Hot issue	9.19 (8.00)	11.68 (10.0)	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 (31)	88 (17)	0.26 0.01***	119 (32)	128 (45)	0.86 0.84
Immediate dilution	0.20 (0.17)	0.24 (0.20)	0.12 0.45	0.14 (0.12)	0.18 (0.15)	0.05** 0.06*
Total dilution	0.36 (0.35)	0.24 (0.20)	0.01*** 0.00***	0.22 (0.20)	0.18 (0.15)	0.11 0.23
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 (100)	60 (100)	0.50 0.20	79 (100)	66 (100)	0.10 0.20
Underwritten	0.81 (1.00)	0.70 (1.00)	0.31	0.91 (1.00)	0.78 (1.00)	0.07*
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***
Relative Price	1.12 (1.12)			1.15 (1.11)		
Maturity	3.26 (3.24)			3.17 (3.05)		
Relative value	0.25 (0.23)			0.23 (0.21)		

Table 3 – Determinants of unit issues

The table reports the 2-stage least square 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. $Pr(rights)$ 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:

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

where $Pr(rights)$ is a dummy variable equal to one if the firm issues rights and zero if the issue is public. $Size$ is the log of the proceeds in million 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 0.10, 0.05 and 0.01 levels respectively.

<i>Panel A – Rights issues versus public offerings</i>				
Variables	Model 1	Model 2	Model 3	Model 4
N	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)
Volatility	-0.565 (0.18)			
Hot issue	0.028 (0.19)	0.023 (0.26)	0.01 (0.63)	0.028 (0.27)
Free cash flow	0.086 (0.76)	0.017 (0.95)	0.099 (0.74)	0.199 (0.56)
Blockholders	-0.006 (0.24)			
Underwritten	-0.443 (0.21)	-0.398 (0.29)	-0.498 (0.17)	-0.198 (0.65)
Reputation	0.412 (0.13)			
Banking fees		-17.88 (0.12)		
Underpricing			-4.682*** (0.00)	
Growth				-0.091** (0.03)
Constant	8.043*** (0.00)	7.668*** (0.00)	6.792*** (0.00)	5.946*** (0.00)
Cox and Snell R ²	0.175	0.169	0.227	0.182
Classification. %	77.1	77	76.7	72.1

<i>Panel B – Unit issues versus common stock issues</i>				
Variables	Model 1	Model 2	Model 3	Model 4
N	370	370	370	229
Probrights	-2.903*** (0.00)	-2.563*** (0.00)	-2.617*** (0.00)	-3.029*** (0.01)
Volatility	-0.204 (0.65)			
Hot issue	-0.055** (0.02)	-0.059** (0.01)	-0.069*** (0.00)	-0.042 (0.12)
Free cash flow	0.499* (0.09)	0.671** (0.03)	0.563* (0.06)	0.343 (0.32)
Blockholders	0.001 (0.79)			
Underwritten	0.678* (0.01)	0.729* (0.09)	0.537 (0.17)	0.735 (0.14)
Reputation	0.113 (0.67)			
Banking fees		0.76 (0.95)		
Underpricing			-3.28*** (0.00)	
Growth				-0.053 (0.14)
Constant	0.398 (0.65)	0.074 (0.94)	0.183 (0.78)	0.708 (0.407)
Cox and Snell R ²	0.112	0.115	0.119	0.103
Classification. %	74.7	74.8	75.6	69.4

Table 4 – Stock market reaction to unit and common stock issues

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 (1977) methodology. The whole sample includes 370 equity issues over the period 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 0.10, 0.05 and 0.01 levels respectively.

<i>Variables</i>	<i>Rights</i>			<i>Public</i>			<i>(3) - (2)</i>
	<i>Units (1)</i>	<i>Shares (2)</i>	<i>(1) - (2)</i>	<i>Units (3)</i>	<i>Shares (4)</i>	<i>(3) - (4)</i>	
N	21	243		65	41		
AR0	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)

Table 5 – Cross-sectional regression model of issue costs for 370 equity issues between 1986 and 2000

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 0.10, 0.05 and 0.01 levels respectively.

Variables	All			
	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%

Table 6 – Explaining factors of unit public offering versus common stock rights issues

The table reports the results of a logit regression. The dependent variable is a dummy equals 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 0.10, 0.05 and 0.01 levels respectively.

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

Table 7 – Comparison of issuing costs between common stock rights issues and unit public offerings

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 0.10, 0.05 and 0.01 levels respectively. The number of observations is 308.

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

Appendix 1: Computation of the value of the warrant

A way of appreciating the price of warrants at issue is to focus on their market price after the issue and to measure the excess return achieved by an investor who had bought units on the issuing date. One of the difficulties related to this measure is linked to the period existing between the issue and the first quotation of the warrants, which is more than 30 days on average. As we cannot observe the real value of the warrants at the issue date, we have chosen to calculate it.

The unit's underpricing is measured by the difference between the current market price of the two securities included in the package (S for stock, W for warrant), and the issue price P. In relative value, underpricing (UP) is:

$$UP = \frac{P - W - S}{P} \quad (1)$$

The warrants pricing is based on an option-pricing model and takes into account the specific difficulties related to the dilution and volatility estimation. We suppose that:

- The warrants are exercised only at maturity.
- The value of the firm follows a stationary lognormal distribution with a constant variance rate¹².
- The firm is a pure equity firm; this latest hypothesis can easily be taken away.

Galai and Schneller (1978) show that, under these hypotheses, the warrant can be priced:

- Either as a proportion $(N+n)/(N + n + n')$ of a call option on a share in a completely similar firm without warrants, where N' is the number of shares before the exercise of warrants and n' is the number of shares to be created from the exercise of warrants.

- Or as a call option on a share of a firm with warrants, without adjustment for dilution; in that case the stock market price reflects the dilution factor but cannot follow a log-normal distribution if the value of the firm without warrants follows a log-normal distribution itself.

We use the former model. We apply the analysis to the day before the offering. The warrants have not yet been issued. The Black-Scholes model with a dilution factor is used. The stock volatility is calculated before the issue. This approach is not completely consistent with the model of Galai and Schneller (1978) which assumes a similar firm without warrants, but it gives a first approximation of the warrant's value. Indeed, the units issue leads to a seasoned equity issue on the day of the issue, that is to say a modification of the capital structure: the risk of each stock will decrease and then this model tends to overprice the warrants.

In that case, the warrant's value is:

$$W = \frac{N + n}{N + n + n'} \frac{1}{y} \left[SN(d_1) - Xe^{-rT} N(d_2) \right] \quad (2)$$

With:

N = number of shares before the issue of units of equity and warrants

n = number of issued units of equity and warrants

n' = numbers of shares to be created from warrant exercise

y = number of warrants needed to purchase a share

$$d_1 = \frac{\log \frac{S^*}{X} + (r + 0.5 \sigma^2)T}{\sigma \sqrt{T}}$$

$$d_2 = d_1 - \sigma \sqrt{T}$$

X = exercise price per share of a warrant

T = time to maturity of a warrant

r = continuously compound risk-free interest rate

σ = represents the annualized volatility of the stock calculated on the 90 days preceding the announcement of the issue. The return is based on an adjusted market price and takes dividends into account;

S = represents the stock price the day after the announcement of the issue (opening stock price).

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.

² Consistent with this hypothesis, Schultz (1993) finds that the probability of unit offerings decreases with the proceeds of the offering, the ratio of assets to proceeds, the age of the firm, the ratio of income to proceeds, and the ratio of sales to assets, but increases with the percentage of equity sold, the aftermarket variance, and the use of low prestige underwriters. These (and the remaining arguments) are based on the US institutional environment where units are issued in the initial rather than secondary offerings. In this paper, we adapt these explanations to seasoned equity offerings.

³ For a description of the French institutional setting, see Gajewski and Ginglinger (2002).

⁴ In these conditions, at first glance, outside investors can subscribe only to the part of the issue that is not reserved to current shareholders. Nevertheless, if current shareholders do renounce their allocation, the initial part offered to external investors can be increased. The rate of increase depends on shareholders' renouncement.

⁵ AMF (2002), report on the new types of SEO - www.amf-org.fr. A new regulation that cancels the constraints on issue prices has been adopted in France on June the 23rd of 2004.

⁶ The AMF plays the same role as the SEC in the US.

⁷ Obviously, the firm may also issue common stocks with rights in a bearish market. However, this is not a better opportunity when the current shareholders do not want to subscribe to the issue. Actually, selling rights could be very hard in a depressed market.

⁸ French firms quite often announce equity issues at the same time, or immediately after earnings publications. This evidence is consistent with Korajczyk, Lucas and McDonald (1991), who find that equity issues follow shortly after earnings publications.

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.

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.

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

¹² This hypothesis is open to criticism. Indeed, the warrants issue leads to the transfer of a part of the risk from shareholders to warrants holders. The share-out of a part of the risk depends at any time on the stock value and on the time to maturity of warrants.