WHICH FACTORS AFFECT BOND UNDERWRITER FEES?

THE ROLE OF BANKING RELATIONSHIPS

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ABSTRACT

The question of which factors are relevant in determining bond underwriting fees is empirically investigated by analyzing 2547 bond issues completed by European firms during the 1993 – 2003 period. Four major results emerge from the analysis. First, the introduction of the single currency in 1999 has generated an increase in the competition among banks, and, as a result, a reduction in the underwriting fees. Second, a strong relationship with the issuer's main bank reduces the level of the underwriting fees. Third, new issuers are charged with lower underwriter fees relative to firms that have completed issue without building any strong relationship with a bank. Fourth, higher reputation banks charge lower underwriting fees. The implications of these findings are also discussed.

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1. INTRODUCTION

In the last decade the European financial system has experienced a considerable expansion of capital markets, while the importance of traditional banking intermediation has gradually diminished. The main force driving this evolution has been the process of integration: both monetary integration, with the launch of the European Monetary Union (EMU) and financial integration at a worldwide level.

In particular, numerous academics and regulatory economists regard the evolution of the corporate bond market as the most striking change in the European financial system. Till the late '90's the European bond markets were largely domestic and remarkably smaller than the US one. The introduction of the single currency in 1999 corresponded with a dramatic increase in corporate bond issuance (Hartmann, Maddaloni, and Manganelli (2003) and Pagano and Von Thadden (2001)). Moreover, while before 1999 the non-banks bond issues were practically not existent compared to bank issues, in the year 2001 bonds issued by non-banks surpassed issuances by banks. Before the launch of EMU, national currencies segmented the corporate bond market in Europe. On the supply side, firms were reluctant to issue bond denominated in foreign currency because of the exchange risk. Similarly, on the demand side, the exchange risk limited the base of potential investors in bonds denominated in foreign currency. Eliminating the exchange risk, the introduction of the euro has removed the national segmentation of the bond markets[1]. Further than eliminating the exchange risk, the introduction of the euro produced a significant decrease of underwriting fees. Before EMU, firms willing to issue in a foreign country would have selected an investment bank with sales expertise in the currency of that country. With monetary integration the underwriting activity became a more

[1] It should be noted that 1999-01 period coincides with a significant corporate restructuring activity which has been mostly financed by bond issues. Hence, it is not obvious that the corporate bond "boom" in Europe can be attributed to the launch of EMU. Nonetheless, corporate restructuring activity has declined in 2002, but the amount of bond issues has remained at sustained levels (Hartmann, Maddaloni, and Manganelli (2003)). Rajan and Zingales (2003) provide further evidence about the effect of the euro on the corporate bond market. Using data on corporate bonds in both euro area countries and non-euro area countries, they regress the amount of bond issues on country and year dummies, as well as on an indicator variable for countries which joined the single currency. They find the euro has positive and significant effect on the amount of bond issues.

contestable business, thus increasing the level of competition among investment banks. Furthermore, the introduction of the single currency, by eroding the barriers that segmented the European bond markets, introduced opportunities for economies of scale in bond issuance. Santos and Tsatsaronis (2002) find that the advent of euro led to a reduction in the underwriting fees for eurobonds[2] denominated in the new currency[3].

The competition among investment banks is not the only factor affecting the level of underwriting fees. The bank – client relationship is another one. Rajan (1992) and James (1992) referred to the durable bank-client relationship as "relationship specific capital", meaning that the relationship can be a valuable asset that lowers the cost of intermediation services or improve their quality. In the case of underwriting activity, closer bank-client relationship should be associated with lower fees because the bank develops deeper knowledge of its client firm, thus lowering the bank's cost of underwriting and certifying the client's quality. If the client firm can get at least part of the cost savings, lower fees would result. Nonetheless, in an efficient market such relationships are at risk because of competition from other banks offering the same services at a lower price. Using a sample of both equity and bond issues completed over the 1975-2001 period, Burch, Nanda, and Warther (2005) examined the relation between loyalty to an investment bank and the fees charged. Surprisingly, they found that loyalty is associated with higher fees for bond issues, but they document the opposite pattern for equity offers. According to the authors, these results are consistent with the hypothesis that relationship specific capital is more valuable when underwriter certification is more important, i.e. equity offers relative to debt offers, for which independent ratings are available.

This paper investigates the effect of prior banking relationships on the underwriting fees for bonds issued by European firms. This study extends the existing literature in three directions. First, we empirically analyze data on bond issues completed by firms from 14 European countries during the 1993-2003 period. Despite the growing importance of the European issuers only two studies on bond underwriting fees consider European firms: Santos and Tsatsaronis (2002) and Melnik and Nissim (2004). However, none of them

[2] An eurobond is a bond issued simultaneously to investors in several countries outside the jurisdiction of any single country.

[3] Hartmann, Maddaloni, and Manganelli (2003) report that with EMU the underwriting fees went down to the levels of the US corporate bond market, while in 1994 the average fee for bonds denominated in European currencies was twice as large as the corresponding figure in the US.

include prior banking relationship as an explanatory variable[4]. Second, differently from Burch, Nanda, and Warther (2004) we consider several kinds of bank relationship, including prior loan syndication activity. This is important because in Continental Europe bank loans traditionally play a dominant (although decreasing) role in debt financing. Moreover, previous lending relationship might be particularly relevant in building "relationship specific capital". Bank-client relationship emerges as a valuable asset if the bank, when providing intermediation services, obtains private information about a client firm. Banks can obtain private information in underwriting as well as in lending activities. However, underwriting services are provided intermittently and during a relatively short period (corresponding to issue registration and the offering period). In contrast, lending relationships are continuously provided and often on a long standing basis. Indeed bank lending requires the ongoing monitoring of the borrower's activities, hence it is possible that the lending relationships significantly affect the level of underwriting fees[5]. Finally, we analyze the effect on fees of the relationships with both the underwriter (following Burch, Nanda, and Warther (2005)) and the issuer's main bank, defined as the bank with the strongest relationship with the issuing firm.

Four major results emerge form the analysis. First, the introduction of the single currency in 1999 has generated an increase in the competition among banks, and, as a result, a reduction in the underwriting fees. Second, a strong relationship with the issuer's main bank reduces the level of the underwriting fees. Third, new issuers are charged with lower underwriting fees relative to firms that have completed issues without building any strong relationship with a bank. Fourth, higher reputation banks charge lower underwriting fees.

This paper proceeds as follows. Section 2 presents the methodology of the empirical analysis. Section 3 describes the data sources. Section 4 presents the empirical results. Section 5 concludes.

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[4] Other studies analyze the factor affecting underwriting fees, but they either focus on US domestic bonds, like Livingston and Miller (2000), or on eurobonds issued by US firms (Esho, Kollo, and Sharpe (2004)).

[5] However a potential conflict of interests arises when the underwriter is a bank with lending relationships to the issuers. For example, when the proceeds of a bond issue are used to refinance a bank loans and the underwriter is the lending bank, the underwriter might misrepresent the quality of the issue.

2. DATA SOURCES AND SAMPLE CHARACTERISTICS

The data are from Security Data Corporation (SDC). SDC reports information on issuer (CUSIP, nationality, industry, etc.) and issue (underwriter identity, fees, rating, years to maturity, face value, currency of denomination, issue type, etc.). We collect fees and other issue characteristics for all European issues of fixed rate, non-convertible, non perpetual bonds during the 1993-2003 period. This sample has 2,547 bonds issued by 722 firms from 21 European countries. This sample suffers from a potential selection bias. More bonds are issued during the second part of the '90's than during the first part. This is mostly the consequence of a general increase in the number of issues. However, this bias should not limit the adequacy of the empirical sample as a basis for answering the key question of this study. If underwriting fees are affected by previous bank relationships, then this result should hold independently of the above mentioned potential bias.

Detailed information on sample characteristics is provided in Table 1.

In order to measure prior bank relationships we use the CUSIPs of the 722 issuers and select from SDC all debt (both bonds and loans) and equity transactions which were completed by those issuers in the five preceding years. The database that we use to measure prior relation has 7,952 transactions from 1988 to 2003. Of these 5,291 are bond issues, 1,706 loan syndications and 955 equity IPOs.

[INSERT TABLE 1 ABOUT HERE]

3. RESEARCH METHODOLOGY

We model the underwriting spread as a linear function of four groups of variables:

$$Fee = f\left(relationship, underwriter\ reputation, issuer\ characteristics, issue\ characteristics\right)$$

Fee is the gross underwriting spread (including lead-management fees, co-management underwriting fees, and selling concessions) expressed as a percentage of the gross proceeds. In this paragraph we will briefly outline the *raison d'être* and the definition of each explanatory variable.

3.1. Relationship

A possibly relevant variable previously tested in empirical research on the pricing of financial services is the strength of the relation that exists between the client company and the financial institution that provides the service. In their seminal work on credit relationship Petersen and Rajan (1994) find that the strength of

the relationship can affect the availability of credit, but does not influence the pricing in a relevant way. Burch, Nanda, and Warther (2005) find a negative effect on common stock issues (a stronger relation generates a lower fee) and a positive effect on debt issues. Both signs of the coefficient can be rationally forecasted: if the relation generates a reduction in the marginal cost for providing new services, because the bank gests to know the company and this reduces the cost of reducing asymmetric information, the degree of competition in the financial industry will determine how this benefit is divided among the players. In a non-competitive market customers' mobility is low and the bank can be expected to earn a large portion of the efficiency gain. According to Farrell and Shapiro (1989) this expectation will generate the incentive for the bank to practice a discounted price to a new customer in order to start a profitable relation. This behavior will generate a positive relationship between the loyalty measure and the cost of the service provided. On the other hand, in a highly competitive market, mobile customers should be able to internalize the efficiency gain thus generating a negative relation between loyalty and cost.

A key point in the measurement of the effect of bank – customer relationship on the cost of services provided is how we measure this relationship. An important issue, in this sense, is the choice of the past transactions that have contributed to the relationship building:

a. we can assume that a relevant relation between the issuing company and the underwriting bank is built only through past bond issues or we can state that also other kind of fund raising transactions (equity IPOs and loan syndications) helped to build the relationship;
b. we can assume that a bank is able to build a relationship with a company only when it acts as the leader of the underwriting group or also when it participates to the transaction as a joint book runner.

Since, to the best of our knowledge, no previous research has analyzed the role of relationship between underwriting banks and European bond issuers, we prefer to keep our ex ante assumptions at a minimum level and let the empirical results to tell the right story, so we build a number of relationship measures and run separate regressions on each of them.

In general terms we measure previous banking relationship as follows: at the time of a given deal we examine the history of the issuer's transactions over the previous 5 years. For any given transaction type (i.e. bond, stock, loan), relationship intensity is defined as the ratio of two values. The denominator is the total

dollar value (time weighted) of all transactions of the given type completed by the firm over the previous 5 years[6]. The numerator is the sum of the dollar value of all transaction of the same type where the issuer's bank was employed[7]. Thus, relationship intensity measure will always lie between zero and one. A value of one indicates the strongest possible intensity and a value of zero indicates no relationship.

The precise definition of intensity of relationship between the issuing company and its undewriter is given by:

$$D\_x_i = \frac{\sum_{j=1}^{i-1} value_j^D \cdot (date_i - date_j)^{-1} \cdot I}{\sum_{j=1}^{i-1} value_j^D \cdot (date_i - date_j)^{-1}}$$

Here, D_x_i is the relationship intensity between *the issuing company and its bank advisor* at the time of deal *i* for transactions of type *D*. Subscript *j* indicates the acquirer's *D*-type transactions over the previous 5 years; *I* is an indicator variable which takes the value one when the bank advisor/lead manager for these previous transactions is the same as deal *i*. $date_i$ and $date_j$ are the dates (expressed in years) of issue *i* and issue *j*.

We identify the following potential relationship types: i) D = BOND, that is bond issues; ii) D = STOCK, that is initial public offerings or seasoned offerings; iii) D = LOAN, that is loan syndications; vii) D = TOTAL, that is all previous transactions, indistinctively. x is the role of banks that we consider in the calculation: x=LU means that we only consider leading underwriters while x=JB means that we also consider joint book runners.

[6] The current issue is excluded in all calculations of relationship intensity.

[7] When we measure the relationship considering not only lead managers but also joint book runners, we attribute to each bank a portion of the issue equal to the underwritten amount.

Following Nanda and Warter (1998) we also define a slightly different measure of relationship where we will not consider the link between the issuing company and the bank that is managing the present offer, but the relation established by the company with its main bank, that is, the bank that has coordinated the largest portion of past issues. The new formulation is the following:

$$Max\_D\_x_i = \underset{k=1,\ldots,K}{Max}\left\{\frac{\sum_{j=1}^{i-1} value_j^D \cdot (date_i - date_j)^{-1} \cdot I_{\{und\ j=k\}}}{\sum_{j=1}^{i-1} value_j^D \cdot (date_i - date_j)^{-1}}\right\}$$

In this case *k* indexes the company's previous *K* underwriters and $I_{\{und\ j=k\}}$ is an indicator variable that takes the value 1 when the underwriter of offer *j* is underwriter *k*.

There are many reasons why the intensity of the relationship of *the issuing company with its primary underwriter* should be relevant even if the current issue is managed by a different bank: for example there could be a sort of "certification effect" that lowers the risk of underwriting bonds issued by a company that usually manages this kind of transaction with a well known bank, or we could say that the primary underwriter, due to his prior knowledge of the company, could quote a price for the transaction that becomes a sort of reference price that has to be (at least) matched by other banks in order to induce the company to switch to a new underwriter.

Mean values for the different relationship measures across our sample are reported in Table 2. The main evidence is a trend of growth in the intensity of the average relationship through time: the difference between the average relationship coefficient before 1999 (included) and after 1999 is highly significant for every measure.

Our relationship variables are not defined when the company has not issued any security during the last five years. In order to preserve a significant number of observations we conventionally give a value equal to zero to these cases and introduce a dummy variable D_NEW that is equal to 1 for these observations. In this way we will be able to distinguish between firms that have a relationship variable equal to 0 because have not issued before (they are "new entries" in the market) from firms that have issued changing a large number of underwriters (also in this case our relationship variables would go down near zero).

Our last variable related to the relationship is a dummy variable called D-SWITCH that has a value equal to 1 if the issue is not underwritten by the primary bank of the issuing company.

[INSERT TABLE 2 ABOUT HERE]

3.2. Reputation

Following Livingston and Miller (2000) we proxy the reputation of a bank with its market share in bond issues over the entire sample.

From the economic point of view no clear expectation can be formulated about the sign of this coefficient: a positive coefficient can be expected if we assume that banks with a higher reputation can practice a premium price capitalizing on their notoriety. On the other hand if we consider the causality the other way around we could also expect a negative coefficient: banks can obtain a high market share by practicing discount prices to issuing companies.

3.3. Issuer Characteristics

To control for effects related to the specific issuer we use the following variables:

LOG_N_ISS is the natural logarithm of the number of issues completed by the company from the beginning of our dataset to the day before the current transaction. This variable has been introduced to proxy the "experience" of the issuer.

COUNTRY is a set of fourteen dummy variables defined for Austria (D_AUS), Belgium (D_BEL), Denmark (D_DEN), France (D_FRA), Germany (D_GER), Greece (D_GRE), Italy (D_ITA), Luxemburg (D_LUX), Netherlands (D_NET), Norway (D_NOR), Spain (D_SPA), Sweden (D_SWE), Switzerland (D_SWI). A residual variable has been defined for other European countries (D_OTHERCOU). The null case for this set of dummy variables is the UK.

INDUSTRY is a set of nine dummy variables defined according the NAIC code of the issuing company. The null case is manufacturing and dummy variables have been created for commercial (D_COMM), construction (D_CONS), mining (D_MINE), public sector (D_PUBL), retail distribution (D_RETA), non financial services (D_SERV), transportation (D_TRAN), utilities (D_UTIL) and wholesale distribution (D_WHOL).

3.4. Issue Characteristics

It is reasonable to think that the price of the underwriting service may change according to the main characteristics of the issued bond. We explicitly consider the following variables:

LOG_YEARS is the natural logarithm of the bond maturity.

D_R2,...D_R10 are ten dummy variables that are equal to 1 if the bond is issued with a given rating. The rating that we consider is the average between S&P and MOODY's ratings for the issues rated by both agencies or the single rating if only one agency has covered the issue. In order to calculate the average we have used the usual numerical conversion (1=AAA/Aaa and 10=BBB-/Baa3). Averages have been rounded toward the bottom.

D_NR is a dummy variable with a value equal to 1 if the bond is not rated by neither of the two main agencies.

CURRENCY is covered with nine dummy variables. The null case is the US Dollar; specific variables are defined for Euro (D_EUR), Japanese Yen (D_YEN), British Pound (D_STG), Swiss Franc (D_SFR), Deutsche Mark (D_DM), Dutch Guilder (D_DF), Italian Lira (D_ITL) and French Frank (D_FFR). A residual dummy variable has been defined for other European currencies (D_OTHERCURR).

D_CALL is a dummy variable that has a value equal to 1 if the bond is callable.

D_94,...,D_03 are dummy variables related to the year of the issue. The null case is 1993.

LOG_SIZE is the natural logarithm of the size of the issue.

NUM_BOOK is the number of joint book runner involved in the transaction.

D_EUROBOND is a dummy variable that has a value equal to 1 for eurobonds.

D_PUBL is a dummy variable for public placements as opposite to private placements.

4. EMPIRICAL RESULTS

4.1. Issue Characteristics

Considering the variables related to the characteristics of the specific issue we find that the natural logarithm of the maturity of the bond is positive and significant at the 1% level, meaning that placing a longer term bond is more difficult, and so more expensive, given the higher market risk of the instrument. Looking at the effect of the size of the issue we see that the coefficient of the logarithm of the total proceeds

of the issue is not significant. This result is not consistent with previous literature, where a negative coefficient is usually used as a signal of the existence of scale economies. In interpreting our result we have to take into account the fact that the logarithmic size of the issue is strongly correlated (0.57) with the number of joint book runners involved in the operation. The negative coefficient of this last variable, not used in previous literature, probably captures at least part of the negative size effect.

As far as ratings are concerned the main empirical result of our study is that for European issuers the specific bond rating seems to be non relevant for the pricing of the underwriting service. This result should be interpreted together with the positive and highly significant coefficient of the "not rated" dummy variable. The European market has been characterized by a relatively large number of non rated issues, 22% in our sample. It is reasonable that the placing of one of these issues is more expensive for the underwriter for the high degree of uncertainty on the financial soundness of the company. The presence of a rating reduces this uncertainty regardless the specific credit risk level of the company. In order to assess the robustness of this results we've tried different specifications of credit risk measures: we have used the S&P and the Moody's ratings alone, or the higher of the two. None of these specifications sensibly alters the results of the analysis.

Looking at the currency of denomination of the issue we chose as null case for our dummy variable the USD and the main findings can be summarized as follows:

1. The pre – euro European currencies are usually associated with higher fees. This result is significant for the Deutsche Mark, the Dutch Guilder and the other currency variable[8].
2. The euro denominated issues are significantly cheaper than the USD denominated issues.
3. The issues denominated in Japanese Yen and UK pound are significantly cheaper than the issues denominated in US dollars while Swiss Frank denominated issues tend to be more expensive.

The first two findings are entangled with the time factor. To test for the consistence of the effects we run separate regressions for issues before and after the introduction of the euro. All the results are

[8] The other currency variable includes issue denominated in Australian Dollar, Austrian Schelling, Belgian Franc, Canadian Dollar, Danish Krown, ECU (European Currency Unit), Hong Kong Dollar, Norwegian Krown, Polish Zloty, Portuguese Escudo, Singapore Dollar, Slovakian Koruna, Spanish Peso, Swedish Krown.

confirmed and so we can state that they are not generated by the change in the competitive level of the market after the introduction of the euro but to proper currency effects.

4.2. The euro and the efficiency of the European financial industry

Consistently with previous literature we find that the adoption of the euro as the common currency for twelve European countries has generated an increase in the competition inside the financial industry and, as a consequence, a reduction in the prices for financial services. For clarity of exposure results for the years dummy variables have not been reported in Table 3, but from the results of the regressions we see that the coefficients for year dummy variables (the null case is 1993) become negative and statistically significant at the 1% level after 1999. The magnitude of this effect is also highly relevant: the value of the coefficient for the year 1999 is -0.287% and falls in the range -0.483% to -0.646% for the following years up to 2003. In order to get a feeling of the magnitude we should confront those numbers with an average fee, in our sample, equal to 0.983%. If we consider the average cost of the issuances before 1999 we can conclude that the introduction of the euro, and the subsequent increase in the competition level, has generated an average reduction of fees between 35.4% and 47.4%.

In order to check the robustness of this result against possible changes in the characteristics of the average issue we have included in the regression a wide range of control variables regarding the issuer company (dummy variables for industry and country and the log of number of issues as a proxy for experience), the issued security (rating, currency and callability dummy variables and the log of issue size and maturity) and the issue type (dummies for euro *vs* domestic issues, public *vs* private placement and the number of joint book-runners involved in the operation). Neither of these variables seems to be able to explain the reduction of fees observed after 1999.

4.3. Issuer Reputation

In Model 2 we add a variable designed to capture the effect on the cost of the issue of the reputation of the lead manager of the operation. Our empirical results seem to support this second hypothesis introduced in the methodological section: the reputation coefficient is negative and statistically significant at the 1% level. A coefficient value of -0.00973 means that a bank with a market share of 12.8% (the 95th percentile in our

sample) will practice, for the same issue, a 12.4 b.p. price discount in comparison with a bank with a 0.04% market share (5th percentile in our sample).

If our economic interpretation of this negative reputation effect is correct, the significance (and the magnitude) of the coefficient should be higher in highly competitive environments. In order to test for this joint effect we run separate regressions on two subsamples of data. In the first subsample we consider issues made before 1999 (as we have seen in the previous paragraph in that period currency segmentation generated a relatively non-competitive market), while in the second we consider issues made after the introduction of the common currency . The reputation coefficient is positive, but not significant, in the first regression, but it is negative and significant at the 5% level in the second. This evidence supports our interpretation of an highly competitive industry where players can achieve relevant market shares only practicing discount prices.

This evidence could also be seen as a very preliminary and rough proof of the existence of scale economies: banks that issue high volumes of bonds can afford lower prices. This additional view does not weaken our previous explanation: the high degree of competition in the market forces banks to pass the benefit on to customers.

4.4. Does relationship matter?

The effect of the relationship between the issuer and its underwriter on the fees changes according to the measure of relationship that we use. In Models 3 to 6 we use as a measure of relationship the market share (time and proceeds weighted) that the *underwriting bank* has on the total of offers made by the issuing company over the last five years. None of these measures seems to be significant regardless of the type of issues included in the measure (bonds only *vs* bonds *plus* loans *plus* stocks) and of the role of the bank (lead underwriter only *vs* joint book runner also). In Models 7 to 10 we use a different variable that measures the strength of the relation of the company with its main bank. In this case, if we consider only the relation built on past bond issues (Models 7 and 9) we don't get significant coefficient, but if we consider the relationship through any kind of offer (bonds, loans, and stocks) we get a negative and significant coefficient (Models 8 and 10). Moreover we also see that the significance of the coefficient increases consistently if we measure

the strength of the relation not only on past issues where the bank was the leader of the underwriting group but also the issues where it played the minor role of a simple joint book runner (Model 10).

These results lead us to three major conclusions:

1. relevant economies of scope seem to exist in the underwriting business: the participation to an IPO or to the syndication of a loan allows the bank to collect useful information on the company that can be used to lower the marginal cost for providing bond underwriting services. This seems to be quite reasonable if departments that run the different type of operations share information on the customers;
2. useful information on the issuing company can be collected not only from the lead manager but also from the other banks that participate to the underwriting group. Of course given the nature of our variable the amount of the information that is shared with the bank is proportional to the relevance of the bank in the underwriting group in term of amount subscribed;
3. the relevant relation is not the one that the firm has with the current underwriter but the one that it has with its main bank: it does not matter if a firm is issuing a bond with the help of an underwriter with which it didn't have any prior relation, if this firm has got a strong relation with another bank it will still the same receive a discounted price;
4. the negative coefficient is consistent with a highly competitive market where the high mobility of customers allows them to internalize the majority of the marginal cost reduction generated by the loyalty of a firm to a given underwriter.

The third evidence seems to be a little puzzling: why the relation with a bank that is not involved in the current issue should be relevant in the pricing decision made by underwriter? In our opinion two possible explanations can be found to this empirical evidence: the first one is related to a possible "certification effect" that comes from having managed the vast majority of previous fund raising operations with the same bank: this institution would have accepted to work repeatedly with the same company only after a positive judgment over its creditworthiness and correctness. If this is the case we could talk of a public value of the private information developed by the main bank.

A second possible explanation to the puzzling evidence analyzed above is focused again on the competitiveness of the European market: if the issuing company is entitled to receive a relevant portion of

the savings generated by the established relation with a given underwriter, it will accept to arrange an issue with a different bank only if the new underwriter is willing to offer a price lower than (or at least equal to) the one that would be offered by the main bank. This interpretation is coherent with the negative coefficient for the reputation variable that we have seen before: both cases talk about a highly competitive environment with a tough price competition where new customers can be attracted (and market share can grow) only by offering discounted prices.

Distinguishing between these two hypotheses is not an easy task. We try to do this by considering that under the "certification" assumption the spillover effect should be positively related to the reputation of the main bank while under the second assumption this should not be true. We have than built a variable that capture the reputation (again measured as the market share over the whole sample) of the main bank and interacted it with the relation variable. This interaction variable turns out to be non significant[9] and this is a positive verification (albeit tentative and non definitive) of our second hypothesis.

[INSERT TABLE 3 ABOUT HERE]

4.5. Non linearity in the relationship effect

In order to test for non linearity in the effect of relationship on the pricing of bond underwriting services we run a piecewise regression where the relationship variable is decomposed into four variables defined over four different regions of the original variable domain. Following Sirri and Tufano (1998) we define the new variables as follows:

REL_{LOW} is equal to Min (REL_i , 0.25) and capture the effect of the relationship when this is in the range between 0 and 0.25;

$REL_{(0.25 - 0.5)}$, captures the effect of the relation when this is in the range between 0.25 (excluded) and 0.5 (included), and it is equal to Min (0.25 , REL_i - REL_{LOW}).

$REL_{(0.5 - 0.75)}$, is defined in order to capture the effect of the relation when this is in the range (0.5 , 0.75], and it is equal to Min (0.25 , REL_i - REL_{LOW} - $REL_{(0.25 - 0.5)}$).

[9] The results of this regression are not reported in the paper but are available from the authors upon request.

REL_{HIGH}, is the last variable and captures the effect of relation when it is in the range (0.75 , 1], and it is equal to Min (0.25 , REL_i - REL_{LOW} - $REL_{(0.25-0.5)}$ - $REL_{(0.5-0.75)}$).

The results of this test are reported in Table 4 and show two major evidences:

1. The relationship has a significant (and negative) influence on the pricing only in the first sub range, that is when the relationship goes from zero, no previous relation with any bank, to 0.25, the main bank has underwritten a quarter of the previous five years issues (always considering proceeds and time weighting). This means that the acquisition of valuable information on the issuing firm does not require a tightness of the relationship above the level of 0.25. Remember that our relationship measure is not defined over the number of issues managed by the underwriter, so we cannot interpret this result as a consequence of a "fast" information acquisition process. We can only say that all the useful information on the issuing firm can be acquired by managing a relatively small portion of its issues. Being the unique partner of an issuing firm does not provide any additional advantage useful to reduce the marginal cost of the service.
2. Analyzing the relationship effect in this more accurate way we see that also the relationship generate only on previous bond issues (excluding IPOs and loan syndication) become highly significant. This shed a new light on our previous evidence on the building of a relevant relationship.

[INSERT TABLE 4 ABOUT HERE]

4.6. The "new entry" effect

As we have seen in the methodological section, our relationship measure by construction does not distinguish between a new issuer (a company that has not issued any bond in the previous 5 years will conventionally get a relationship value equal to zero) and a company that has issued bonds in the previous years but using a wide number of different banks (in this case every bank will have a relationship value very close to zero). Since we think that these two cases are economically very different we have defined a dummy variable that has the value equal to one if the issuing firm is a new entry in the market.

The coefficient estimated for this variable is negative and significant at the 1% level, meaning that a new entry in the market will get a price that is lower than that provided to a firm that has issued bonds in the last years but without building a relevant relationship with any bank.

The sign of the coefficient is somewhat surprising: we would expect companies without reputation and not known by the banking system (and so with higher information acquisition costs) charged with higher fees. A possible interpretation of this coefficient may be found remembering that it captures the difference between a company that has not issued any security in the last 5 years and a company that has previously issued with a very large number of banks: if issuing companies in this market capture a relevant portion of the value of the relationship with an underwriter, the only reason why a firm should issue bonds continuously changing the underwriting banks is because no bank is interested in building a relationship with this given issuer and this, of course, is not a very good information for the market. The -16 basis points implied by the value of the coefficient in model 10 of Table 3 is the difference in the price that the market will apply to a firm for which there is no available information (a new entry) with respect to the price that will be applied to a firm for which there is a negative information implied in the previous issuing behavior[10].

Of course it is possible that the new entry variable captures some other effect that we have not be able to control for: new entry issuers and experienced issuers may differ in many (measured and unmeasured) characteristics. If some unmeasured characteristics are related to underwriting fees, the coefficient of the D_NEW dummy variable may catch up these effects and be biased. If, for example, the bond market "insists" on greater quality from new issuers (e.g. greater transparency or better financial conditions) in order to compensate for the lack of reputation and prior knowledge, the finding of smaller underwriting fees would be biased.

[10] A different explanation of this puzzling evidence could rest on a "scarcity effect": bond issued by new entries hold a high diversification power because they are not present in investors' portfolios. This may increase the demand and reduce the placing effort. In a competitive market the issuing firm should be entitled to (at least) a portion of this cost reduction in terms of a lower underwriting fee.

To control for this possibility we use a Heckman[11] (1976, 1979) selection model to control for unmeasured characteristics of the new entry issues. The result (not reported) confirm that new entry issuers (compared to experienced issuers) have unmeasured characteristics which are *negatively* related to the level of underwriting fees. This result is consistent with the assumption that bond market set higher "hurdles" for new entrants. Most importantly, after controlling for this selection bias the coefficient of D_NEW is positive and significant, thus indicating that, once these unmeasured elements are factored in the analysis, new entrants actually pay higher underwriting fees consistently with traditional wisdom. The actual value of the coefficient would imply a cost increase from 33 to 42 basis points across different relationship measures. All the other results of our work are confirmed.

5. CONCLUSIONS

This paper empirically investigates the main factors affecting underwriting fees paid by European bond issuers. Five major results emerge form the analysis. First, the introduction of the single currency in 1999 has generated an increase in the competition among banks, and, as a result, a reduction in the underwriting fees. Second, a strong relationship with the issuer's main bank reduces the level of the underwriting fees, proving the relevance of the "relationship specific capital". Banks build the relationship to their clients through different kind of offers and not only as leaders of the underwriting group, but also as joint bookrunners. Third, new issuers are charged with lower underwriter fees relative to firms that have completed issue without building any strong relationship with a bank. Fourth, higher reputation banks charge lower

[11] In the "standard version" of the Heckman procedure the dependent variable for part of the observations is missing. In another version (that fits in this case) information on the dependant variable (FEE) is available for all observations, but the distribution of observations over categories of the relevant independent variable (D_NEW) has taken place "selectively" (i.e. only high quality new issuers are accepted by the markets). In this case the dependent variable in the (probit) selection model is D_NEW, while the independent variables are the relevant issue and issuer characteristics (rating, maturity, size, year, currency, market type, country, and industry). The Inverse Mill's Ratio is then used to control for the bias.

underwriting fees, consistently with attempting to increase market share. Fifth, although rated issues are associated with lower fees, the specific rating is of less importance.

Our results have implication for both the firms wishing to raise funds on the bond market and for the banks competing in the underwriting business. As far as the issuing firms are concerned, the evidence proves that building a relationship with a main bank is valuable, lowering the cost of underwriting services. A bank can collect useful information about a firm, managing a relatively small portion of its issues. Hence, it is not really important to build a tight relationship with a single bank; rather, issuing bonds repeatedly without building any relationship (i.e. switching bank at any issue) increases the level of the underwriting fees. As far as banks are concerned, relevant economies of scope seems to exist in the underwriting business: an IPO or a loan syndication can produce important information for the bank, improving the relationship with its client and thus lowering the underwriting fees. As a result, commercial banks, being involved in several underwriting activities, seem to benefit from a competitive advantage relative to “pure” investment banks. Moreover, it is not crucial for the bank to be the leader of the underwriting group. The simple participation as a joint book runner seems to improve the bank - client relationships.

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Table 1 – Sample Descriptive Statistics – Distribution by Year

Year	Number of Issues	Average Spread	Average Maturity	Average Principal	Number of Book-runners	Average Rating*	Non-rated Issues
1993	155	1.55%	8.2	193.1	1.06	2.9	64
1994	155	1.42%	7.2	182.0	1.13	3.4	51
1995	184	1.24%	8.4	162.5	1.16	3.5	83
1996	222	1.32%	7.6	155.0	1.17	3.1	87
1997	215	1.29%	7.7	216.0	1.24	3.8	50
1998	204	1.37%	10.7	307.1	1.32	4.0	50
1999	306	0.95%	9.3	366.1	1.58	4.2	67
2000	277	0.64%	7.7	1172.2	1.71	5.0	28
2001	325	0.54%	9.2	1027.6	1.80	5.5	39
2002	279	0.60%	9.3	573.9	1.91	5.3	30
2003	225	0.62%	10.8	652.5	2.33	5.5	12
Total	2547	0.98%	8.8	514.0	1.55	4.5	561

*The Rating considered is the simple average between Moody's and Standard & Poor's ratings (were both are available) or the single available rating. In order to calculate the average rating a number has been assigned to each credit risk level from 1 for AAA/Aaa to 10 for BBB-/Baa3.

Table 2 – Sample Descriptive Statistics for relationship variables*

	MAX_TOTAL_JB	MAX_BOND_JB	MAX_TOTAL_LU	MAX_BOND_LU	TOTAL_JB	BOND_JB	TOTAL_LU	BOND_LU
1993	0.37	0.38	0.37	0.39	0.10	0.11	0.10	0.11
1994	0.37	0.37	0.38	0.38	0.10	0.09	0.10	0.09
1995	0.35	0.35	0.35	0.35	0.10	0.10	0.10	0.10
1996	0.39	0.39	0.40	0.39	0.11	0.12	0.12	0.13
1997	0.37	0.38	0.37	0.38	0.09	0.10	0.09	0.10
1998	0.44	0.50	0.43	0.51	0.14	0.15	0.14	0.16
1999	0.45	0.52	0.46	0.52	0.19	0.22	0.19	0.22
2000	0.44	0.47	0.43	0.46	0.16	0.16	0.17	0.16
2001	0.47	0.49	0.49	0.51	0.14	0.15	0.15	0.16
2002	0.49	0.49	0.51	0.51	0.16	0.18	0.17	0.18
2003	0.44	0.46	0.48	0.49	0.16	0.15	0.17	0.16
Total	0.42	0.45	0.43	0.46	0.14	0.14	0.14	0.15
≤ 1999	0.396	0.421	0.400	0.427	0.123	0.134	0.124	0.137
> 1999	0.460	0.480	0.477	0.495	0.155	0.158	0.164	0.167
t-stat for difference	-5.26	-4.40	-6.38	-5.19	-2.99	-2.01	-3.66	-2.55

*The table reports mean values for different measures of relationship. In measuring the relationship we consider either: i) previous BOND transactions or ii) TOTAL previous transactions (including bond, stock and loan transactions). The relationship is measured considering only previous transactions where the bank is the leading underwriter (LU) or also transactions where it plays the role of joint bookrunner (JB). MAX_ indicates the relationship between the issuer and its main bank, that is, the bank that has coordinated the largest portion of past transactions. New issuers have been excluded from the calculation.

Table 3 – OLS Regressions of FEE on Relationship and Reputation

Reported are regression coefficients and p-value (in parenthesis). The dependent variable is the gross underwriting spread (including lead-management fees, co-management underwriting fees, and selling concessions) expressed as a percentage of the gross proceeds. Equations are estimated with standard OLS. F denotes the p-value of the F test for the null hypothesis that all the coefficients jointly equal zero.

Explanatory variables are defined as follows. RELATION is the measure of relationship intensity between the issuer and its underwriter. We consider either: i) previous BOND transactions or ii) TOTAL previous transactions (including bond, stock and loan transactions). The relationship is measured considering previous transactions where the bank is either in the role of the leading underwriter (LU) or in any role (JB). MAX_ indicates the relationship between the issuer and its main bank, that is, the bank that has coordinated the largest portion of past transactions. D_NEW is a dummy variable that equals 1 if the issuer has not issued any security during the previous five years and 0 otherwise. D_SWITCH is a dummy variable that equals 1 if the issue is not underwritten by the issuer's main bank and 0 otherwise. REP_TOT is the underwriter's market share in the bond issue market over the entire sample. LOG_N_ISS is natural log of the number of previous bond issues completed by the issuer. LOG_YEARS is the natural log of the bond maturity. LOG_SIZE is the natural log of the size of the issue. NUM_BOOK is the number of joint book runners involved in the transaction. D_EUROBOND is a dummy variable which equals 1 for Eurobonds and 0 otherwise. D_PUBL is a dummy variable for public placement (*vs* private placements). D_CALL is a dummy variable which equals 1 if the bond is callable and 0 otherwise. We also include a variable defined as the natural log of the total number of issues made by the issuer in our sample, a dummy variable that is equal to one if the current underwriter is not the main banker of the issuer and dummy variables for year, industry, country, rating, currency and callability. We do not report these variables' coefficients for ease of exposition.

	1	2	3	4	5	6	7	8	9	10
			BOND_LU	TOTAL_LU	BOND_JB	TOTAL_JB	MAX_BOND_LU	MAX_TOTAL_LU	MAX_BOND_JB	MAX_TOTAL_JB
						1993-2003				
Constant	0.012***	0.012***	0.011***	0.012***	0.012***	0.013***	0.012***	0.013***	0.013***	0.013***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
RELATION			0.001*	0.000	0.001	-0.001	0.000	-0.001*	-0.001	-0.001**
			(0.081)	(0.778)	(0.138)	(0.520)	(0.457)	(0.092)	(0.175)	(0.024)
D_NEW			0.000	-0.001	0.000	-0.001*	-0.001	-0.001**	-0.001	-0.002***
			(0.715)	(0.128)	(0.844)	(0.070)	(0.278)	(0.010)	(0.125)	(0.003)
REP_TOT		-0.010***	-0.010***	-0.010***	-0.010***	-0.010***	-0.009***	-0.010***	-0.009***	-0.010***
		(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.007)	(0.005)	(0.007)	(0.005)
LOG_YEARS	0.000***	0.001***	0.001***	0.001***	0.001***	0.001***	0.001***	0.000***	0.001***	0.000***
	(0.009)	(0.007)	(0.009)	(0.008)	(0.009)	(0.008)	(0.008)	(0.009)	(0.008)	(0.009)
LOG_SIZE	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.272)	(0.156)	(0.108)	(0.122)	(0.117)	(0.126)	(0.159)	(0.137)	(0.161)	(0.141)
NUM_BOOK	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**
	(0.017)	(0.037)	(0.035)	(0.040)	(0.039)	(0.039)	(0.042)	(0.047)	(0.040)	(0.044)
D_EUROBOND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.243)	(0.211)	(0.208)	(0.204)	(0.211)	(0.203)	(0.194)	(0.185)	(0.189)	(0.179)
D_PUBL	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R^2	0.533	0.534	0.535	0.535	0.535	0.535	0.534	0.535	0.535	0.536
F	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N.	2,557	2,557	2,557	2,557	2,557	2,557	2,557	2,557	2,557	2,557

***, **, * indicate statistical significance at the 1%, 5%, and 10% level, respectively

Table 4 – OLS Piecewise Regressions of FEE on Relationship

Reported are regression coefficients and p-value (in parenthesis). The dependent variable is the gross underwriting spread (including lead-management fees, co-management underwriting fees, and selling concessions) expressed as a percentage of the gross proceeds. Equations are estimated with OLS piecewise regression. F denotes the p-value of the F test for the null hypothesis that all the coefficients jointly equal zero.

Explanatory variables are defined as follows. REL are measures of relationship intensity between the issuer and its underwriter. We consider either: i) previous BOND transactions or ii) TOTAL previous transactions (including bond, stock and loan transactions). The relationship is measured considering previous transactions where the bank is either in the role of the leading underwriter (LU) or in any role (JB). MAX_ indicates the relationship between the issuer and its main bank, that is, the bank that has coordinated the largest portion of past transactions. The REL variable is decomposed into four variables defined over the following regions the original variable domain: i) REL_{LOW} for the range 0.00 – 0.25, ii) $REL_{(0.25 - 0.50)}$ for the range 0.25 – 0.50, iii) $REL_{(0.50 - 0.75)}$ for the range 0.50 – 0.75, and iv) REL_{HIGH} for the range 0.75 – 1.00. D_NEW is a dummy variable that equals 1 if the issuer has not issued any security during the previous five years and 0 otherwise. D_SWITCH is a dummy variable that equals 1 if the issue is not underwritten by the issuer's main bank and 0 otherwise. REP_TOT is the underwriter's market share in the bond issue market over the entire sample. LOG_N_ISS is natural log of the number of previous bond issues completed by the issuer. LOG_YEARS is the natural log of the bond maturity. LOG_SIZE is the natural log of the size of the issue. NUM_BOOK is the number of joint book runners involved in the transaction. D_EUROBOND is a dummy variable which equals 1 for Eurobonds and 0 otherwise. D_PUBL is a dummy variable for public placement (*vs* private placements). D_CALL is a dummy variable which equals 1 if the bond is callable and 0 otherwise. We also include a variable defined as the natural log of the total number of issues made by the issuer in our sample, a dummy variable that is equal to one if the current underwriter is not the main banker of the issuer and dummy variables for year, industry, country, rating, currency and callability. We do not report these variables' coefficients for ease of exposition.

	1	2	3	4	5	6	7	8
	BOND_LU	TOTAL_LU	BOND_JB	TOTAL_JB	MAX_BOND_LU	MAX_TOTAL_LU	MAX_BOND_JB	MAX_TOTAL_JB
	1993-2003							
Constant	0.011***	0.012***	0.011***	0.012***	0.014***	0.014***	0.015***	0.015***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
REL_{LOW}	0.002	0.002	0.003	0.001	-0.008**	-0.007**	-0.010***	-0.009***
	(0.265)	(0.426)	(0.204)	(0.579)	(0.015)	(0.019)	(0.002)	(0.004)
$REL_{(0.25 - 0.5)}$	0.000	-0.003	-0.001	-0.001	0.003*	0.003*	0.001	0.002
	(0.994)	(0.304)	(0.794)	(0.865)	(0.057)	(0.080)	(0.430)	(0.218)
$REL_{(0.5 - 0.75)}$	0.007	0.009**	0.006	0.003	-0.001	-0.001	0.001	-0.001
	(0.172)	(0.045)	(0.217)	(0.498)	(0.665)	(0.677)	(0.668)	(0.824)
REL_{HIGH}	-0.006	-0.010**	-0.005	-0.007	-0.002	-0.004	-0.003	-0.004
	(0.211)	(0.023)	(0.268)	(0.135)	(0.458)	(0.142)	(0.224)	(0.125)
D_NEW	0.000	-0.001	0.000	-0.001	-0.002**	-0.003***	-0.003***	-0.003***
	(0.656)	(0.268)	(0.766)	(0.235)	(0.025)	(0.003)	(0.001)	(0.000)
REP_TOT	-0.010***	-0.010***	-0.010***	-0.010***	-0.009***	-0.010***	-0.009***	-0.010***
	(0.003)	(0.003)	(0.004)	(0.004)	(0.008)	(0.006)	(0.007)	(0.005)
LOG_YEARS	0.000***	0.000***	0.000**	0.000***	0.001***	0.001***	0.001***	0.001***
	(0.009)	(0.009)	(0.010)	(0.009)	(0.005)	(0.008)	(0.004)	(0.006)
LOG_SIZE	0.000*	0.000*	0.000	0.000	0.000	0.000	0.000	0.000
	(0.092)	(0.088)	(0.102)	(0.116)	(0.151)	(0.125)	(0.147)	(0.137)
NUM_BOOK	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**	0.000**
	(0.035)	(0.033)	(0.044)	(0.041)	(0.038)	(0.046)	(0.034)	(0.038)
D_EUROBOND	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
	(0.189)	(0.172)	(0.199)	(0.191)	(0.209)	(0.191)	(0.179)	(0.168)
D_PUBL	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***	-0.002***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
R^2	0.535	0.536	0.535	0.536	0.536	0.537	0.536	0.537
F (p-value)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N.	2,557	2,557	2,557	2,557	2,557	2,557	2,557	2,557

***, **, * indicate statistical significance at the 1%, 5%,and 10% level, respectively