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THE EUROBOND MARKET AND CORPORATE FINANCIAL POLICY
A Test of the Clientele Hypothesis*

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On average, significant positive abnormal returns are associated with Eurobond issues during the period 1975–1985. The cross-sectional and time-series distributions of the abnormal returns are consistent with the hypothesis that impediments to the adjustment of asset supplies to new demand conditions are large enough to create profitable financing opportunities for firms. Our analysis demonstrates how profitable financing opportunities can persist on the Eurobond market and when they are most likely to arise.

1. Introduction

Can corporations obtain lower cost funds by catering to investors with unique demands? If every new security can be costlessly duplicated through a portfolio of existing securities, the answer is no. In this case, new securities are mainly, as Miller (1977) puts it, 'neutral mutations that serve no function, but do no harm'. Whether the costs of adjusting asset supplies to new demand conditions are large enough to create profitable financing opportunities is an empirical question. We call the hypothesis that firm value can be increased by exploiting such financing opportunities the clientele hypothesis.[1]

We test the clientele hypothesis by examining borrowing by American corporations on the Eurobond market. In perfect markets, U.S. firms must be

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[1]See Brealey and Myers (1984, p. 370). They argue that 'smart financial managers ... look for an *unsatisfied* clientele, investors who want a particular kind of financial instrument but because of market imperfections can't get it or can't get it cheaply'.

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indifferent between borrowing in dollars abroad or at home. If the supply of dollar-denominated bonds issued abroad is not perfectly elastic in the short run, however, an unexpected increase in the demand for these securities creates profitable financing opportunities. Our evidence is consistent with this view; on average, firms that issued fixed-rate debt on the Eurobond market increased their shareholders' wealth during a portion of our sample period. The cross-sectional distribution of stock-price reactions supports the hypothesis that these firms' success lies in their ability to supply dollar bonds with low default risk to a particular clientele of foreign investors when its demand for these securities is unexpectedly large.

Although both the financial press and textbooks argue that foreign financing is at times cheaper than issuing debt in the U.S.,[2] they say little about what produces such opportunities. Typically, finance analyses start from the presumption that markets are efficient and bargains ephemeral. We argue, however, that bargains are not instantly arbitraged away on the Eurobond market because the supply of securities on that market is not perfectly elastic in the short run, leading investors to accept a lower yield than would prevail with a perfectly elastic supply curve. Although U.S. firms can exploit differences in yields across markets, there are limits to acting quickly. If, as we argue, a firm must have a reputation for presenting little risk of default to take advantage of these yield differences, then it can act only insofar as selling more debt does not damage that reputation. This places a natural limit on each firm's ability to benefit from Eurobond financing opportunities. Firms without such a reputation can only acquire it over time. Further, bargains are often small enough that only firms with the requisite reputational capital that have already planned to issue debt can profit.

Existing empirical work on the Eurobond market focuses on comparisons of yield indices or of yields for specific new issues.[3] Although such comparisons are informative, they are not a direct test of the clientele hypothesis. Because of differences in risk, tax treatment, issuance procedures, floatation costs, indentures, and legal remedies in the event of default between Eurobonds and bonds issued in the U.S. (domestic bonds), yields on these two types of bonds can differ in the absence of profitable financing opportunities. In this case, lower yields on Eurobond debt do not imply that firms can increase shareholder wealth by borrowing in that market.

[2] For instance, Brealey and Myers (1984, p. 748) write that 'sometimes it is cheaper to borrow in one (bond market) than in the other'. Eurobonds can be denominated in a wide variety of currencies. In this paper, we restrict our attention to dollar-denominated Eurobonds.

[3] Throughout the paper yields are understood to be promised yields to maturity. For comparisons of yields or yield indices, see Finnerty, Schneeweis, and Hedge (1980), Finnerty and Nunn (1985), Finnerty (1985), Kidwell, Marr, and Thompson (1985), Bodurtha and Valnet (1987), and Kidwell, Marr, and Trimble (1987).

A more direct approach is required to examine whether shareholders benefit from Eurobond issues. Event-study methods allow us to investigate the stock-price reaction to the announcement of these issues. If bargains exist in the Eurobond market, a firm's shareholders should gain. A positive stock-price reaction to a Eurobond issue does not prove the existence of bargains, however. For example, if only firms with low default risk can issue Eurobonds, a firm that announces such an issue may convey information to the market about its reputation as a debtor. We argue, however, that the default-risk information conveyed by issue announcements cannot by itself explain the average positive stock-price reaction we document.

For a sample of 183 Eurobonds issued by U.S. corporations between 1975 and 1985, we find a positive average abnormal stock return associated with the offering announcement. This result differs from the literature on the stock-price effect of domestic bond issues, which reports a negative or zero wealth effect.[4] Most of the positive abnormal stock returns, however, occur between 1979 and 1984, when the yield spread between domestic and offshore bonds was exceptionally large. Since the abnormal returns are positively related over time to the yield spread, we attribute them to the ability of firms with a reputation for low default risk to exploit temporary financing opportunities.

The paper is organized as follows. In section 2. we explain why profitable financing opportunities may arise on the Eurobond market. Section 3 shows that, on average, Eurobond issues increase shareholder wealth during our sample period. In section 4, we investigate the extent to which the positive abnormal returns reported in section 3 are explained by the clientele hypothesis. Concluding remarks are offered in section 5.

2. The determinants of Eurobond yields

In this section, we first show why foreign investors may prefer to hold Eurobonds even when these bonds have lower yields than domestic bonds with similar risks. We then explain the differences between the two types of bonds from the perspective of issuing firms. Since, as a result of these differences, the supply of new Eurobonds is not perfectly elastic, inframarginal firms that borrow offshore earn economic rents and thus increase their share price. These rents are discussed more fully at the end of this section.

Because of political and purchasing power risks at home and the benefits of diversifying their portfolios internationally, foreign investors want to hold dollar-denominated bonds. Dollar-denominated bonds issued offshore[5] and

[4]See Smith (1986) for a review of the literature on stock-price reactions to the announcement of new issues.

[5]The term 'offshore' is generally used to indicate that, while Eurobonds are issued abroad, they are not subject to the laws and regulations of a particular foreign country. See Magraw (1983) for a review of these issues.

sold to foreign investors are generally bearer bonds. Unlike domestic bonds, which are usually registered, bearer bonds enable their holders to remain anonymous and thus escape detection by fiscal authorities. The coupon payments on Eurobonds issued by U.S. corporations are not subject to withholding taxes. In contrast, coupon payments made on domestic bonds issued before July 1984 held by foreigners are subject to a tax of 30%.[6] The privacy and tax advantages of Eurobonds make foreign investors willing to hold them even when they have a lower expected return than domestic bonds with comparable risk.

Since foreign investors compete for Eurobonds, the borrowing cost for a U.S. firm in the Eurobond market depends on the elasticity of the supply of these Eurobonds. If this supply is perfectly elastic in the short run, U.S. firms always issue enough Eurobonds so that they are indifferent between borrowing the next dollar at home or abroad. In this case, assuming away transaction costs, foreign investors obtain the advantages of Eurobonds without having to pay for them in the form of a lower expected return. Alternatively, if the supply of Eurobonds is not perfectly elastic in the short run, some U.S. corporations can borrow more cheaply in the Eurobond market than at home following an unexpected increase in the demand for dollar-denominated bonds abroad.

For U.S. corporations, contracting and issuing costs are higher for Eurobonds than for domestic bonds. Consequently, when yields on the two markets are identical, these corporations prefer to issue bonds domestically. The higher contracting and issuing costs of Eurobonds can be explained as follows.

Contracting costs. Since Eurobonds are issued offshore by subsidiaries of U.S. corporations, the enforceability of bond indentures is unclear.[7] Which law applies and which court can be used have to be settled first. Once these questions are answered, bondholders have claims against a subsidiary. Even if the debt is guaranteed by the parent, legal remedies must be pursued first through the subsidiary. Consequently, restrictive bond covenants have less value when attached to Eurobonds than to domestic bonds. This explains why typical Eurobond issues have few restrictive covenants. One expects, therefore, that firms for which the bondholder–shareholder conflict is controlled through

[6]Further, domestic bonds issued since July 1984 would become subject to a withholding tax if such a tax is reintroduced for bonds. Eurobond investors are almost always protected by an unusual bond covenant stating that the promised coupon is net of withholding taxes. See Magraw (1983) and Mendelson (1983).

[7]These subsidiaries are typically finance subsidiaries located in tax havens. See Magraw (1983) for a review of the legal issues surrounding Eurobonds and for further references.

reputation rather than restrictive covenants are more likely to borrow on the Eurobond market.[8]

Issuing costs. Eurobonds cost more to issue than domestic bonds, according to published estimates. The underwriting spread is typically in excess of 2% of the net proceeds of a Eurobond issue, versus less than 1% for a domestic issue of comparable size.[9] Eurobonds are not listed on a major exchange and do not have to be rated. Borrowers can therefore choose to avoid the listing and rating expenses. Further, Eurobond issuers do not have to register their issues with the SEC. These savings are not usually enough, however, to offset the higher underwriting spread.

The contracting- and issuing-cost differences between domestic bonds and Eurobonds therefore depend on the characteristics of the borrower. Firms for which restrictive covenants are valuable have to offer a higher yield on Eurobonds than on domestic bonds to compensate investors for the reduced effectiveness of such covenants when attached to Eurobonds. Similarly, firms that benefit from the certification given by regulatory authorities have to offer a higher yield on Eurobonds to compensate for the absence of such certification.[10] Consequently, firms for which restrictive covenants and/or certification by regulatory authorities have the least value are the most likely to issue Eurobonds. Since firms with good reputations find restrictive covenants and regulatory certification less valuable, the difference between the contracting and issuing costs of Eurobond and domestic bond issues is negatively related to the borrower's reputation.

The reputation of the marginal borrower on the Eurobond market is determined by the yield spread between the two markets, defined as the difference between the yield-to-maturity of domestic bonds minus the yield-to-maturity of Eurobonds for bonds of comparable maturity and risk. In

[8]See Jensen and Meckling (1976), Myers (1977), and Smith and Warner (1979) for analyses of the role of bond covenants in controlling the bondholder–shareholder conflict. Diamond (1986) provides a model in which a borrower builds a reputation as a high-quality borrower. Once that reputation is established, the borrower has incentives not to take advantage of bondholders, since by doing so reputational rents would be lost. Evidence on the strength of the reputation effect for Eurobonds is that from the origin of the Eurobond market to 1984 only three American firms defaulted on straight Eurobonds [see Kerr (1984)]. Of these three firms, only Itel issued bonds during our sample period. The other two firms issued their bonds at the beginning of the 1970s when the market was less well established.

[9]For a comparison of underwriting spreads across markets, see Levich (1985). A fraction of the spread for Eurobond new issues is often rebated to the buyer of the bond and hence does not accrue to the underwriters.

[10]Alternatively, these firms could purchase such certification from private firms. For example, a firm could buy insurance for the debt it sells. The purchase of insurance or other forms of certification would increase the cost of issuing Eurobonds.

equilibrium, the yield spread must be large enough to enable the marginal borrower to recover the extra costs incurred when borrowing on the Eurobond market. For an issuer with default-free debt, these extra costs comprise only higher issuing costs. Risky issuers see the value of their Eurobond debt discounted to compensate for the relative ineffectiveness of restrictive bond covenants attached to foreign debt and the absence of regulatory oversight. The yield spread must therefore offset, for the marginal Eurobond issuer, the yield gain due to the more effective debt covenants and the lower issuing costs associated with borrowing on the domestic market.[11]

An increase in the yield spread induces borrowers with less valuable reputations to enter the Eurobond market. For a given yield spread, firms that borrow in the Eurobond market and have a better reputation than the marginal borrower earn economic rents. This induces inframarginal firms to borrow even more abroad, but their ability to do so is limited because increases in leverage progressively increase default risk. Although firms can increase their borrowings in the Eurobond market without changing the risk of their debt, it is costly to do so, especially in the short run. For instance, it is costly for a firm selling Eurobonds to repurchase enough of its domestic debt to keep its leverage constant. Further, domestic debt can increase the value of Eurobonds, since it is generally more efficient for domestic bondholders to monitor and enforce debt contracts than it is for foreign bondholders. Although some firms have issued Eurobonds and invested the proceeds in Treasury securities, such direct arbitrage appears only rarely worthwhile.[12] Unless financing bargains in the Eurobond market are large enough to justify direct arbitrage, the supply of Eurobonds increases mainly because firms raise required funds in the Eurobond market rather than at home. Over time, however, the available quantity of Eurobonds must increase following an unexpected increase in demand up to the point at which no firm earns rents by borrowing offshore.

3. Stock-price reactions of new Eurobond issues

Whether financing bargains on the Eurobond market are economically significant is an empirical issue to which we now turn by examining the impact of new Eurobond issues on the wealth of the issuing firms' shareholders. With financing bargains, one expects the announcement effect to be significantly

[11]The available evidence suggests that the noninterest costs of a bond issue are higher on the Eurobond market. If this is not the case, the equilibrium yield spread must be negative to make the marginal American firm indifferent between borrowing at home and abroad.

[12]See Finnerty (1985). One might have expected financial intermediaries to sell Eurobonds and buy low-risk domestic bonds or money-market instruments. However, such intermediaries would have had either to pay withholding taxes or sell domestic registered bonds.

higher for Eurobonds than for domestic bond issues, assuming that the announcement is indeed unexpected.

3.1. The data

To examine the stock-price effect of straight-debt Eurobond issues, we use a sample of fixed-rate Eurobond issues.[13] The sample includes 183 issues and is constructed as follows:

(1) Data on the characteristics of individual issues are obtained from the World Bank's *Foreign and International Bonds* from 1975 to 1982. For 1982 to 1985, we use the newer, but more comprehensive Standard & Poor's *International Credit Week*. Some issues found through a systematic search of the *Wall Street Journal Index* are used in the event study, even though they were listed in neither of the above publications.
(2) The announcement date of each issue is obtained by first checking the *Wall Street Journal Index*. For the issues mentioned in the *Index*, the *Journal* itself is checked and only the issues announced in the *Journal* are retained. The *Financial Times* is then consulted for each issue, and the announcement date retained is the earlier date on which the issue is mentioned in one of these two daily publications. We consult the *Financial Times* because typically it follows new developments on the Eurobond market more extensively than the *Wall Street Journal*.
(3) Eurobond issues accompanied by equity issues or other significant announcements (dividends or earnings, for instance) are excluded.

For purposes of comparison, a sample of domestic bond issues is constructed. The *Wall Street Journal Index* is checked for domestic bond issues by firms that issued Eurobonds from 1975 to 1985. Only issues for which the announcement date can be found by reading the *Journal* are retained. Issues accompanied by an equity issue are excluded, as well as those that are part of an exchange of securities. The domestic straight-debt sample comprises 82 issues. Table 1 offers information about the number of each type of issue for each year in the sample, together with the average maturity and amount of these issues. In general, Eurobond issues are smaller and have a shorter maturity than domestic bonds. The size of the Eurobond issues increases steadily during the sample period, however.

3.2. Estimates of the stock-price reaction

We measure a firm's stock-price reaction to the announcement of a Eurobond issue as the abnormal return over a two-day period that includes the

[13] This sample is a subset of the sample constructed in Kim (1987).

Table 1

Comparison of the average net proceeds and maturity by year for Eurobond and domestic bond issues in the sample. All bonds are straight fixed-rate bonds.

The amounts are in million U.S. dollars.[a]

	Eurobonds			Domestic bonds		
Year	Average net proceeds	Average maturity	*N*	Average net proceeds	Average maturity	*N*
1975	24.9	8.0	1	145.0	8.3	5
1976	26.0	7.0	5	160.0	24.3	5
1977	56.6	7.2	9	162.3	22.7	14
1978	58.3	7.3	7	173.2	23.1	12
1979	73.5	7.9	17	196.2	14.3	7
1980	89.4	6.6	11	188.9	13.0	15
1981	83.2	6.6	12	200.4	9.8	13
1982	80.3	9.0	44	156.3	3.3	6
1983	119.6	7.6	5	74.9	30.0	1
1984	120.6	7.1	12	224.4	30.0	2
1985	150.0	7.8	60	124.7	7.0	2
Average	103.1	7.8		175.4	16.4	
Total			183			82

[a]*N* is the number of observations. Average net proceeds corresponds to the average of the issuers' net proceeds from the debt issues, and average maturity is the average time to maturity. As the time to maturity was not available for five issues, the average time to maturity is sometimes computed with fewer observations than *N*.

announcement day and the preceding day.[14] This definition is particularly appropriate because an announcement could be made on day −1 in London, before the close of trading in the U.S. but too late to be published in that day's *Financial Times*. Table 2 shows that, for the whole sample, the two-day average abnormal stock return associated with the announcement of Eurobond fixed rate issues equals 0.46% and has a *Z*-statistic of 3.38. This result contrasts with the existing literature on domestic straight-public-debt issue announcements. Eckbo (1986), using a sample of 459 straight-debt issues from 1964 to 1981, finds a negative stock-price announcement effect of −0.11% with a *Z*-statistic of −0.96. Mikkelson and Partch (1986), using a sample of 171 straight bond issues from 1972 to 1982, find a negative

[14]Abnormal returns are computed as market-model residuals. The parameters of the market model for a firm are estimated by regressing the daily rate of return of that firm from the Center for Research in Security Prices (CRSP) daily stock-return file on a constant and the daily rate of return of the CRSP equally-weighted index over the period. The test statistics are the same as in Mikkelson and Partch (1985), who also use days −1 and 0 to compute the stock-price reaction to offering announcements.

Table 2

Two-day average abnormal stock returns associated with the announcement of new public debt issues and average yield spread for various subperiods in the interval 1975-1985.

Subperiod[a]	Average abnormal returns[b]			Average yield spread[c]
	Eurobonds	Domestic bonds	Difference[d]	
1. January 1975 to December 1985	0.46%	−0.29%	0.77%	0.30%
Z-statistic[e]	3.38	−0.74	2.55	4.10
% of positive abnormal returns	60%	47%		
Sample size	183	82		
2. January 1975 to December 1978	0.27%	0.00%	0.27%	−0.13%
Z-statistic	0.09	0.57	−0.28	−2.04
% of positive abnormal returns	50%	53%		
Sample size	22	36		
3. January 1979 to March 1982	1.12%	−0.48%	1.62%	1.10%
Z-statistic	4.76	−1.39	4.07	8.16
% of positive abnormal returns	73%	38%		
Sample size	57	36		
4. April 1982 to June 1984	0.54%	−0.89%	1.20%	0.16%
Z-statistic	1.98	−0.85	1.48	1.35
% of positive abnormal returns	65%	50%		
Sample size	37	6		
5. July 1984 to December 1985	−0.09%	−0.83%	0.75%	−0.27%
Z-statistic	−0.33	−0.13	0.05	−2.24
% of positive abnormal returns	51%	50%		
Sample size	67	4		

[a]The subperiods are separated by important events that should have integrated the Eurobond market more closely with the domestic bond market: January 1979 corresponds to the introduction of the bought deal underwriting technique whereby the lead manager of an issue commits to the terms of an issue before organizing an underwriting syndicate; shelf registration was introduced in March 1982 in the U.S.; there are no withholding taxes on domestic bonds issued after July 4, 1984 held by foreign investors.

[b]The average abnormal returns correspond to market-model residuals over days 0 and −1. The estimation period is from day −244 to day −11. Daily returns are obtained from the CRSP daily stock-return file and the equally-weighted index is used.

[c]The yield spread is the difference between the yield to maturity in percent of the domestic medium-term AAA bond index obtained from Salomon Brothers and the yield to maturity in percent of the Eurobond index published by Morgan Guaranty Trust.

[d]The difference equals the average abnormal return associated with Eurobond new issues minus the average abnormal return associated with domestic bond new issues.

[e]The null hypothesis for an average abnormal return is that it is equal to zero. The null hypothesis for an average yield spread is that it is equal to zero, and the statistic used is a *t*-statistic.

announcement effect of −0.23% with a Z-statistic of −1.40. The only evidence we are aware of a positive average stock-price reaction to the announcement of new debt issues that are not part of exchange offers is the evidence provided by James (1987) and Mikkelson and Partch (1986) on bank credit agreements. In particular, James finds the average announcement effect for a sample of 80 bank loan agreements to be 1.93% with a Z-statistic of 3.96.

For purpose of comparison and to ensure that we are not dealing with an atypical sample of firms, we compute the average stock-price announcement effect for straight domestic bond issues by our sample firms from 1975 to 1985. This effect is reported in table 2 and is similar to those reported in earlier studies. Hence we do not believe that the stock-price effect of domestic bond issue announcements by Eurobond issuers is different because firms that issue abroad differ in some systematic way from those that do not.

To check whether the differences in size and maturity between Eurobond and domestic issues explain the abnormal returns, we use a cross-sectional regression of the abnormal returns of all issues (both domestic and offshore) on a dummy variable that takes value one if the issue is a Eurobond and zero otherwise, the amount of the issue, and its maturity. An F-test cannot reject the null hypothesis that the regression coefficients for the amount of the issue and its maturity are both equal to zero. The same result holds if we run the same cross-sectional regression but divide the amount of the debt by the value of the issuing firm's equity. In these regressions, the dummy variable has a positive regression coefficient with a t-statistic in excess of two. This means that the cross-sectional variation in abnormal stock returns seems to be explained by where debt is issued rather than by variation in (i) the size of the issue, (ii) the size in relation to the value of the issuing firm's equity, or (iii) the maturity of the issue.

4. Interpretation of the stock-price reaction

We argue that differences in contracting and issuing costs between the Eurobond and the domestic bond markets make the supply of Eurobonds imperfectly elastic. Consequently, following an unexpected increase in demand, the yield spread widens and highly reputable firms that can borrow on the Eurobond market earn rents when they do so. We also show that, on average, the announcement of Eurobond issues increases shareholder wealth. We now demonstrate that this shareholder-wealth effect can be, at least partly, explained by the existence of financing bargains. It follows from our analysis in section 2 that, for a given supply curve, the rents that accrue to reputable firms increase with the yield spread. This suggests that, on average, the announcement effect of Eurobond issues should be positively related to the yield spread.

4.1. The time series of the yield spread and abnormal returns

To investigate the stationarity of the announcement effect, we provide in table 2 stock-price reactions for four subperiods separated by important events in the history of the Eurobond market. All these events should have integrated the Eurobond and domestic bond markets more closely. The second subperiod starts with the introduction of the bought deal, an issuing technique whereby the lead manager commits to the terms of the issue before organizing an underwriting syndicate. This technique significantly shortens the time it takes to issue a Eurobond. The third subperiod starts with the introduction of shelf registration in the U.S. which makes domestic bond issues cheaper. The final subperiod starts with the removal of the withholding tax on newly issued domestic bonds in July 1984, which makes domestic bonds more attractive to foreign investors. The stock-price reactions reported in table 2 differ clearly across subperiods. Because of the presumed integration effect, one would expect the average stock-price reaction either to be less for each successive subperiod or to stay unchanged in the absence of changes in the demand for Eurobonds. Instead, it is highest for the second subperiod and second-highest for the third subperiod.

If the changes in the average stock-price reaction across subperiods can be attributed to unexpected changes in demand, our analysis would suggest that a high average reaction is accompanied by a high average yield spread. Fig. 1 plots the yield spread and the Eurobond and domestic yields.[15] Inspection of the figure shows that the yield spread is small and mostly negative before the end of 1978. It then increases and stays substantial until the beginning of 1982. Between the start of 1982 and 1984, the spread is smaller and mostly positive. After the middle of 1984, it is mostly negative.

When examining fig. 1, it is important to remember that there are significant issuing-cost differences for Eurobonds and domestic bonds. These differences are such that a positive yield spread does not necessarily mean that firms can increase their shareholders' wealth by raising funds on the Eurobond market

[15]The indices used are Salomon Brothers' medium-term AAA bond index and Morgan's Eurodollar index. Neither index uses yields of newly issued bonds. Both reflect yields on seasoned issues collected at or near the end of the month. The medium-term bond index has a maturity of ten years, whereas the Eurodollar index incorporates bonds whose maturity varies between seven and twelve years. To eliminate term-structure effects arising from differences in maturities, we developed an alternative measure of the spread by subtracting from bond indices yields on a matching government bond portfolio constructed using the CRSP bond tape. The adjusted spread obtained this way was extremely similar to the spread plotted in fig. 1. Data construction underwent two changes over the period under study. First, in 1980, Salomon switched from offer to bid yields for its medium-term index. Second, beginning in January 1985, Morgan's Eurodollar index has been constructed from data published in OECD's Financial Statistics monthly. Hence, even though both indices pertain to what amounts to AAA bonds, the risk of the bonds in the Eurodollar index may have changed around January 1985.

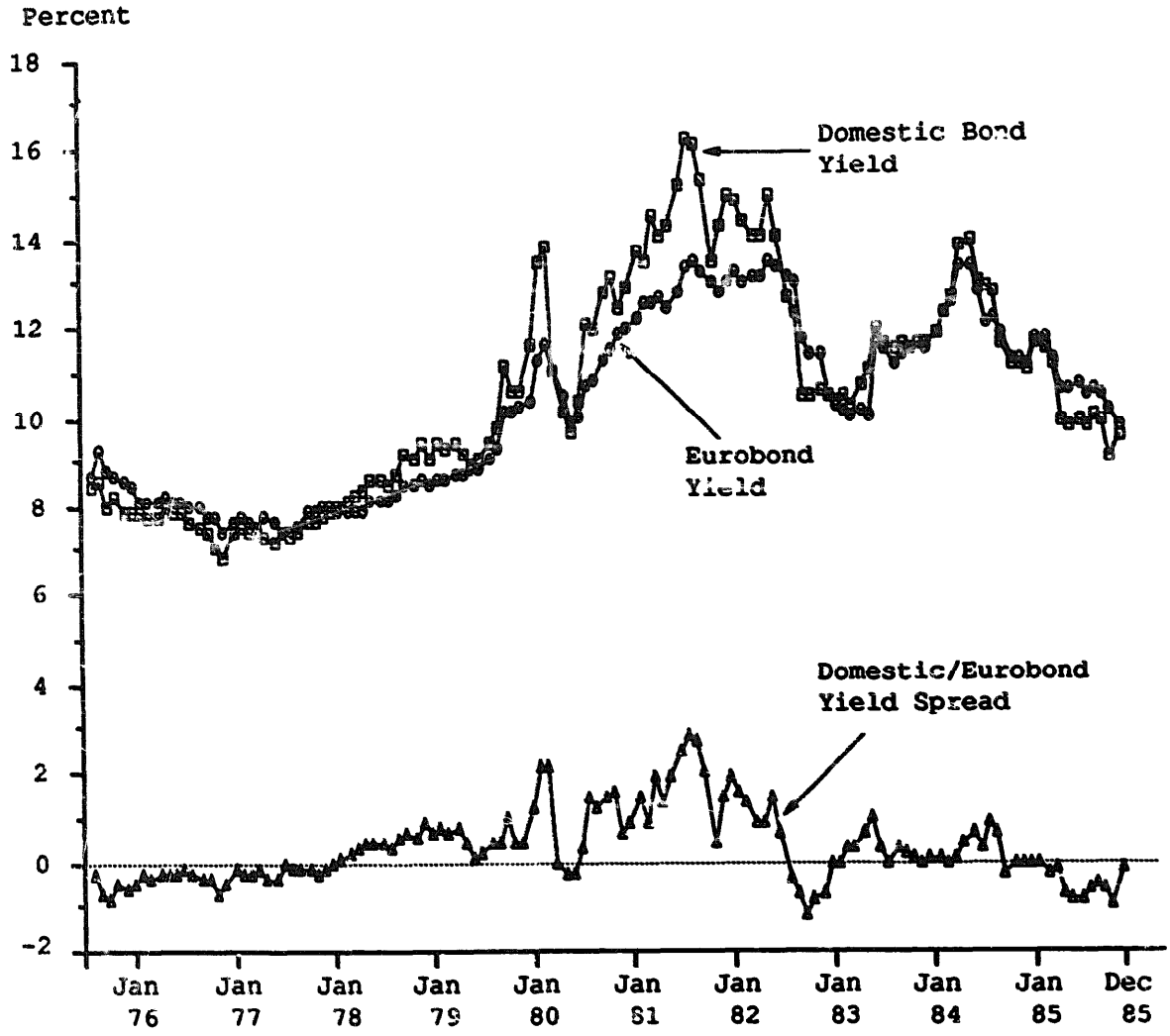

Fig. 1. Plot of the domestic bond yield (□), the Eurobond yield (○), and the yield spread (△) in the period 1975–1985.

The data for the yield to maturity of domestic bonds are from the medium-term AAA bond index in the Analytical Record of Yield Spreads from Salomon Brothers. The data for the yield to maturity of Eurobonds are from Morgan Guaranty Trust. The yield spread is defined as the domestic yield minus the Eurobond yield.

rather than at home. The yield spread, while positive, could still be too small to offset the higher issuing costs on the Eurobond market. Large yield spreads are more likely to signal financing bargains, so one would expect bargains to be largest during the 1979–1982 period. Whereas there might be bargains during the 1982–1984 period, one would not expect abnormal returns to be significantly greater than zero for firms issuing on the Eurobond market during either the first or the last subperiod.

Inspection of table 2 reveals that stock-price reactions are indeed related to the size of the yield spread. The difference in the wealth effect between domestic bond and Eurobond issues in our sample is mainly due to the

subperiod from 1979 to March 1982. During that time, the average spread is larger than in any other subperiod in our sample. For the three other subperiods, the announcement effect of Eurobond issues is not different from the announcement effect of domestic bond issues at conventional levels of statistical significance. There are so few domestic bond issues in our sample after March 1982, however, that one should be cautious when comparing the announcement affects of domestic bond and Eurobond issues after that date.

That the average yield spread and wealth effect are large for parts of our sample period and negative for other is not surprising in light of our earlier theoretical analysis. One expects financing bargains to arise following unexpected increases in the demand for Eurobonds. Over time, the supply of Eurobonds increases to match the increase in demand and bargains disappear. Although institutional developments may tie the two markets more closely together, Eurobonds will probably never become perfect substitutes for either investors or issuers. Hence, one would expect bargains to arise in the future whenever the demand for dollar-denominated securities grows unexpectedly.

4.2. A direct test of the clientele hypothesis

We now test the clientele hypothesis directly by estimating a cross-sectional regression of the abnormal returns on a measure of the size of the financing bargain. To measure the bargain, we estimate for each issue the present value to the issuing firm of the gain from being able to borrow at a lower yield in the Eurobond market. To compute the present value of the yield advantage for a particular issue, we use the yield spread rather than the yield of the issue, which is generally not available to us. The yield spread has the advantage of being a market price that applies independently of the risk characteristics of the issue and that, consequently, does not capture information about the issuing firm. We then multiply the yield spread by the net proceeds from the bond issue to get an estimate of the annual gain from issuing the Eurobond instead of the domestic bond. The gain for each year of the life of the debt is then discounted using the domestic bond yield to obtain its present value, and these present values are summed to obtain an estimate of the total gain associated with the issue. Finally, this estimate is divided by the value of the firm's common stock to obtain an estimate of the predicted abnormal return.

Table 3 provides descriptive statistics on our estimate of the gain made by firms issuing Eurobonds. As expected, the mean value of the gain varies widely over time. The highest mean value is in 1981 and amounts to 0.428% of the market value of equity. The average value for the whole sample is positive and significantly different from zero. Interestingly, the distribution of the gains is skewed. When the average gain is positive, the mean is always greater than the median. The numbers in table 3 suggest that, most of the time, no gains can be made by issuing debt in the Eurobond market because issuing costs are higher

Table 3

Annual statistics for the present value of the estimated gain as a percentage of the market value of their common stock that firms earn by issuing Eurobonds rather than domestic bonds.[a]

	Mean	Median	Maximum
1976	−0.232	−0.102	−0.044
1977	−0.134	−0.115	0.038
1978	0.115	0.107	0.281
1979	0.191	0.033	1.223
1980	0.024	0.014	0.276
1981	0.428	0.319	1.330
1982	0.114	0.101	1.056
1983	0.051	0.011	0.183
1984	0.030	0.028	0.081
1985	−0.057	−0.034	−0.001
Whole sample	0.058	0.002	1.330

[a]The present value of the estimated gain is defined as the product of the yield spread, a discount factor, and the ratio of the net proceeds from the bond issue divided by the value of the issuing firm's equity. The estimated gain therefore corresponds to a percentage gain for shareholders. The discount factor is equal to $\sum_{i=1}^{M} 1/(1+R)^i$, where M is the number of years to maturity of the bond issue and R is the yield during the month of issue on domestic bonds taken from Salomon Brother's medium-term AAA bond index. The yield spread is the difference in 1/100s of basis points between the yield on domestic bonds and the yield on Eurobonds during the month of issue, using the Morgan Guaranty Trust Eurodollar index and the Salomon Brothers' medium-term AAA bond index.

there. These numbers may significantly understate the gain to issuing Eurobonds, however. The indices used to compute the yield spread use end-of-month yields on seasoned issues rather than the yield on new issues on the day an issue is offered. The observed yield spread should narrow following an especially profitable period for issuers.

Because we do not take into account the noninterest costs of a debt issue, our estimate is likely to perform well in our cross-sectional regression only if it is uncorrelated with these costs within our sample. If this is the case, the clientele hypothesis predicts that the estimated regression coefficient for our gain estimate will be insignificantly different from one. The noninterest costs should be captured by a negative constant term, since in the absence of a yield advantage firms would lose by borrowing in the Eurobond market.

The first entry in table 4 provides estimates of our cross-section regression model. The estimated slope coefficient on the gain variable is significantly different from zero at the 0.05 level but not from one. Hence we cannot reject the clientele hypothesis. The estimate of the constant in that regression is positive and significantly different from zero, however, at the same confidence level. This suggests there is a systematic component to the abnormal returns that our analysis fails to explain. An obvious candidate to explain this component is an information effect. Since only highly reputable borrowers issue Eurobonds, demonstration of an ability to issue offshore could convey

Table 4

Cross-sectional tests of the clientele hypothesis.

The dependent variable is the abnormal return for days −1 and 0 associated with the announcement of new Eurobond issues. The sample uses 178 observations from 1976 to 1985 (*t*-statistics are given in parentheses) [a]

	Const.	Gain[b]	Mat.[c]	Ratio[d]	Amnt[e]	*p*-values[f]	*R*-squared
(1)	0.341	1.410				0.019	0.031
	(2.236)	(2.362)					
(2)	0.156	1.428		0.005		0.053	0.035
	(0.569)	(2.153)		(0.691)			
(3)	0.409	1.268	0.000		0.000	0.065	0.040
	(0.767)	(2.087)	(0.494)		(−1.161)		

[a] The sample is smaller than the sample used for the event study because the time to maturity was not available for some issues.

[b] Gain is our estimate of how much a firm should have gained from issuing Eurobonds. It is the discounted value of the yield spread earned over the life of the bond times the net proceeds from the issue for the issuing firm divided by the value of the firm's equity. The discount rate is the yield during the month of issue on domestic bonds. The yield spread is the difference in 1/100s of basis points between the yield on domestic bonds and the yield on Eurobonds during the month of issue, using the Morgan Eurodollar index and the Salomon Brothers' medium-term AAA bond index.

[c] Mat. is the number of years to maturity of the bond.

[d] Ratio is the ratio of the book value of the issuer's long-term debt to the market value of its equity.

[e] Amnt corresponds to the net proceeds of the issue for the issuing firm in million of dollars.

[f] For each regression, the *p*-value is associated with the *F*-statistic when the null hypothesis is that all regression coefficients are zero.

useful information about the firm. One would expect a firm to benefit more from this certification effect the first time it issues Eurobonds than subsequently. In twelve cases, the *Wall Street Journal* stated that a Eurobond issue in our sample is the first such issue for a particular firm. The average abnormal return for these issues is 0.64% with a *Z*-statistic of 1.21. We also compute the abnormal return for the first time a firm issues a Eurobond in our sample, but the result is similar to the one for the sample as a whole. These results make it less likely that a certification effect can explain much of the abnormal returns.

As a further test, we add a variable reflecting the firm's capital structure in the second regression in table 4. This variable, ratio, is the ratio of the book value of the issuing firm's long-term debt to the market value of its equity. A firm with a low ratio would not be expected to find restrictive covenants valuable and hence would be expected to find it advantageous to issue in the Eurobond market. A firm with a high ratio that demonstrates an ability to issue debt without restrictive covenants by issuing Eurobonds could increase in value. This is because it was not expected to find it advantageous to issue Eurobonds rather than domestic bonds. Consequently, if there is a certification effect, it should be increasing with the ratio variable. The regression reported

in the second row of table 4 shows that the regression coefficient for ratio is positive but not significant. The regression with both the gain and the ratio variables, however, does not have a significant constant.

Another possible explanation for the size of the constant in our regression estimate is that we estimate imperfectly the gain from borrowing in the Eurobond market because noninterest issuing costs of Eurobonds are related to the issue's maturity, size, or other characteristics. To check this, regression (3) includes the maturity and the net proceeds to the issuing firm. With these variables added the constant is no longer significant, but the coefficient estimates for the additional variables are not significantly different from zero. More firm- and issue-specific data might make it possible to identify whether these additional variables influence the constant because of mismeasurement of the gain variable or because they serve as proxies for a certification effect related to issue size and maturity.

5. Conclusion

We show that there is a significant positive stock-price reaction to the announcement of Eurobond issues. On average, however, firms gain from issuing Eurobonds only during the subperiod from January 1979 to June 1984, and the stock-price reactions are strongest from January 1979 to March 1982. The pattern of abnormal returns over time seems to be best explained by what we call the clientele hypothesis. This hypothesis states that firms can increase shareholders' wealth by exploiting their comparative advantage in providing securities that are in high demand by a financial clientele. This hypothesis implies that, for periods of time, some firms can borrow at lower costs in the Eurobond market than in the domestic bond market. Bargains survive because, when the demand for dollar securities from foreign investors is high, foreign investors compete for Eurobonds and hence bid up their price. These bonds have the advantage of being well suited to escape the attention of foreign governments and tax authorities. U.S. firms cannot, in the short run, supply enough Eurobonds to bring their yield in line with the yield on domestic bonds because the Eurobond market is accessible only to firms that have good credit-market reputations. We construct an estimate of the gains that accrue to firms from issuing debt in the Eurobond market and show that this estimate is helpful in explaining the cross-sectional variation in the stock-price responses to announcements of Eurobond offerings.

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