

Is Universal Banking Justified? Evidence from Bank Underwriting of Corporate Bonds in Japan

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Abstract

As the Glass-Steagall restrictions on bank underwriting were relaxed in the U.S. during the 1990s, the Financial System Reform Act of 1993 in Japan allowed commercial banks to underwrite securities. We examine the controversy that universal banking creates conflicts of interest. We find that upon entry into securities business, banks excessively discount the price of the corporate bonds they underwrite in an effort to attract investors, thereby creating conflicts of interest that are harmful to issuers. Competition from investment houses limits but does not eliminate these conflicts. Our results contrast sharply with much of the evidence in the U.S., which documents a certification role for banks.

The relaxation of the Glass-Steagall Act of 1933 in the U.S. allowed commercial banks to participate in securities underwritings. Echoing the deregulation process in the U.S., Japan took similar steps to remove restrictions that separated commercial and investment banking. The passage of the Financial System Reform Act (FSRA) in 1993 opened up investment banking for Japanese commercial banks. This drive towards universal banking in both the U.S. and Japan has stirred up much debate about its potential benefits and costs, as well as its impact on the stability and the safety of the banking system.¹ A major issue in this debate centers on commercial banks' role in underwriting securities of firms with which they maintain lending relationships. Two opposing views—certification and conflicts of interest—have been expressed. According to the certification view, combining commercial banking and securities underwriting benefits banks' client firms. Since commercial banks (hereafter referred to as banks) provide their client firms with loans and other diverse financial services on the basis of continuing relationships, they have an advantage over investment houses (hereafter referred to as houses) when it comes to collecting private information about the firms. This information advantage allows banks to help their client firms by mitigating the information asymmetry problem, by monitoring corporate decisions, and by reducing the costs of financial distress (Ramakrishnan and Thakor, 1984; Fama, 1985; Sharpe, 1990; Diamond, 1991; Hoshi, Kashyap, and Scharfstein, 1991). Therefore, proponents of the certification view argue that banks can provide more certification than investment houses when they underwrite securities of their client firms.

However, the significant information advantage that banks enjoy can create conflicts of interest. The previous literature on conflicts of interest focuses on the potential friction between bank underwriters and investors. It posits that banks underwrite securities of firms they know having poor prospects and require the offering proceeds to be used for repaying their own loans. In this process, banks misrepresent the true quality of the issues. If investors are naive and cannot correctly anticipate the banks' incentives, they will be fooled into buying securities that are of poor quality. Even if investors are rational and can understand the banks' motives, conflicts of interest can still arise provided that not all the banks are dishonest. Since

¹ Many Continental European countries and Israel also adopt a universal banking system.

investors cannot precisely identify the banks that misrepresent their private information, some banks can still engage in the misuse of their private information while pretending to be honest. This is what is called the “information-misrepresentation” form of conflicts of interest.

There is yet another form of conflicts of interest that may arise because of the potential friction between bank underwriters and issuers. As Rajan (1992) and others have pointed out, banks’ information advantage may enable them to exercise a significant influence over borrowing firms, which allows them to extract rents from the firms. Upon entry into securities underwriting business, banks that are rapidly ramping up market shares may have strong incentives to attract potential investors by offering high-reward investment opportunities. To achieve this goal, the banks excessively discount the prices of the securities they underwrite, thereby imposing high financing costs on the issuers.² While none of the previous studies has investigated this type of conflicts of interest (hereafter called the “price-discount” form of conflicts of interest), a similar line of reasoning is invoked to explain the underpricing of Initial Public Offerings (IPOs). For instance, Loughran and Ritter (2002) argue that underwriters use low offering prices to make it easy to find potential buyers for IPOs.

In this paper, using a large sample of unsecured corporate bond issues in Japan after the passage of the FSRA in 1993, we examine the debate around these three views. We choose Japan because the most important element underlying this debate is bank-firm relationships, and in Japan, these relationships differ markedly from those in the U.S. In bank-centered financial systems such as Japan’s, firms have traditionally had a greater reliance on bank financing than those in the capital-market-centered systems of Anglo-Saxon countries. Furthermore, although a typical Japanese firm maintains relationships with several banks, its largest lender, the main bank, is particularly knowledgeable about the firm’s prospects. Reflecting the benefits of close bank ties, prior studies show that the advantages of relationship banking are much greater in bank-centered financial systems than in capital-market-centered systems (Aoki, 1990; Hoshi, Kashyap, and Scharfstein, 1991; Kaplan and Minton, 1994; Kang and Shivdasani, 1995). In

contrast, close bank-firm ties tend to give Japanese banks substantially more power over client firms than U.S. banks, making the former more influential than the latter in extracting rents from client firms (Weinstein and Yafeh, 1998; Morck and Nakamura, 1999). Thus, if a certification or a conflicts-of-interest effect exists, it should be more pronounced in the Japanese financial system than in the U.S. financial system, making Japan particularly suited to our investigation.

In evaluating the competing views on the role of banks as underwriters, we extend the existing literature by simultaneously examining ex ante bond pricing, ex post bond performance measured by post-issuance credit rating changes, and changes in lending relationships between bank underwriters and issuers subsequent to the bond offerings. This integrated approach provides a rich setting for the investigation of the role of banks in corporate securities underwritings. For example, Puri (1996) points out that examining only ex post performance is inadequate for reaching a conclusion regarding the role of banks if bank-underwritten securities defaulted more often but investors paid substantially less for these issues. Our paper avoids this problem by examining simultaneously both ex ante yields and ex post performance. Furthermore, by extensively utilizing information about the changes in lending relationships between bank underwriters and issuing firms, our analysis furnishes a direct test for the information-misrepresentation form of conflicts of interest.

Most of the previous studies treat all banks as a single homogeneous group and assume that they perform the same role as underwriters. One notable exception is Gande, Puri, Saunders, and Walter (1997) who differentiate banks by the extent of their prior lending relationships with issuers. In this paper, we explicitly recognize the heterogeneity in bank-firm relationships by measuring such relationships in terms of both total and relative amounts of borrowings from different banks. In particular, for each issuer, we distinguish its largest bank lender (i.e., the main bank) from other bank lenders and examine whether the role performed by the main bank is different from that performed by other banks.

² Another way for banks to extract rents from the issuers with prior lending relationships is to charge high underwriting fees. However, this is not feasible as the underwriting fees charged to the firms were regulated in

Our paper also contributes to the literature by examining the effects of competition between banks and houses on the prices of the securities they underwrite. Proponents who are in favor of the repeal of the Glass-Steagall Act argue that allowing banks to enter into securities underwriting business enhances competition, thereby lowering the financing costs of issuers. They also argue that the extent of conflicts of interests the banks create should not be large since competition from houses can impose significant market disciplines on banks, which mitigates the banks' incentives to create such conflicts (Santomero and Eckles, 2000). Our analysis provides an empirical assessment of these arguments. In particular, we examine whether prior lending relationships banks have with their client firms can prevent houses from being able to compete with them on equal footings.

Most of the previous studies using U.S. or Japanese data show results that are largely in support of the certification view. For example, for bonds issued during the pre-Glass-Steagall period in the U.S., Kroszner and Rajan (1994) find that among unrated issues, those that were underwritten by bank affiliates are less likely to default than those that were underwritten by independent houses. Puri (1996) also finds that during the pre-Glass-Steagall period, investors paid higher prices (i.e., lower yields) for industrial bonds and preferred stocks underwritten by banks than those underwritten by investment houses. Gande, Puri, Saunders, and Walter (1997) examine the yield spreads of bonds issued over the 1993-1995 period in the U.S. They find that bank-underwritten issues have lower yields than do house-underwritten issues, particularly among the issues with a low credit rating. Moreover, they show that pre-established lending relationships between the issuer and the parent bank of the Section 20 underwriting subsidiary help to lower the bond yield. Drucker and Puri (2003) use a large sample of seasoned equity offerings (SEOs) in the U.S. and find that the tying of lending and underwriting reduces issuers' financing costs, as tied issuers pay a lower underwriter fee and a discounted yield spread on the tied loans. Using a sample of 317 Japanese firms from the pre-war period (1919-1927), Konishi (2002) examines the pricing and long-term default performance of industrial bonds. He finds no statistical difference in yields between issues underwritten by investment houses and those underwritten by banks. However, the mortality and the

Japan during our sample period.

default probability of bonds underwritten by banks are significantly lower than those underwritten by houses, supporting the certification view.³

We find that the issues underwritten by banks derive significantly lower prices (i.e., higher yields) than do those underwritten by houses. However, after the offerings, bank-underwritten issues do not experience as high a probability of credit rating downgrades as do house-underwritten issues. Taken together, these results strongly reject the certification view and suggest that the differences in ex ante yields are attributable to conflicts of interest. Further analysis reveals that conflicts of interest are not due to banks' incentives to misrepresent the true quality of issuers, but are due to their incentives to excessively discount the prices of issues they underwrite. We find that the yield spreads of bonds are positively related to the market share of bank underwriters. Since banks that are more rapidly expanding their underwriting business face a greater need to provide investors with high-reward investment opportunities, our result suggests that banks excessively discount the prices of bonds in order to attract potential investors, supporting the price-discount hypothesis. Furthermore, we find that the lending relationships between bank underwriters and issuers weaken significantly more for issues with a better post-issuance rating performance. This result contradicts the information-misrepresentation view that banks underwrite poor-quality securities in order to use the proceeds from the issues to pay off loans. Rather, it is consistent with the price-discount view since bank underwriters who want to increase their market share in bond underwritings need to provide investors with profitable investment opportunities and thus have an incentive to extend credit to poor-quality issuers so that these issuers can maintain sufficient liquidity for future financial needs.

³ In contrast, Ber, Yafeh, and Yosha (2001) show that there is a conflict of interest in combining bank lending, underwriting, and fund management. Using Israeli IPOs, they show that the average post-issue accounting performance is higher when bank affiliates who are also the creditors of the firms underwrite the issues, but that these issues exhibit negative stock excess returns during the first year following the IPO, as well as negative first day returns. For firms whose shares are purchased by an investment fund affiliated with the bank underwriter, their post-stock returns are even lower.

We also find that competition from houses significantly reduces the extent of the price discount by bank underwriters, thereby mitigating conflicts of interest. However, our evidence suggests that such competition does not fully eliminate the conflicts between banks and issuers.

The magnitude of conflicts of interests the banks create also turns out to be different for main-bank underwriters and other-bank underwriters. Although the main-bank- and other-bank-underwritten issues are on average priced similarly, the former exhibit a significantly lower probability of ex post rating downgrades than do the latter. This result suggests that in their effort to attract more investors, the main banks discount the prices of issues they underwrite more aggressively and thus create more conflicts of interest than do the other banks.

The rest of the paper is organized as follows. In Section I, we discuss the main hypotheses and the importance of competition between banks and houses in bond pricing. Section II describes the data and summary statistics. In Section III, we examine ex ante pricing of the bond issues and their post-issuance performance. We also discuss the results from tests of two different forms of conflicts of interest. In Section IV, we discuss alternative interpretations of the results. Section V provides the results from the robustness tests. Section VI summarizes and concludes the paper.

I. Main Hypotheses and the Effects of Competition on Bond Pricing

A. Main Hypotheses

A.1. The Certification View

According to the certification view, previous lending relationships allow a bank to acquire private information about its client firms that is not generally available to the capital markets. In contrast, since a house does not maintain such relationships with the issuers, it is less likely to be informed about them than is the bank. This information advantage enables the bank to perform a more credible certification role than the house when it serves as an underwriter. As a result, the certification view predicts that, *ceteris paribus*, the bank-underwritten issue should command a higher price (i.e., a lower yield) than the house-underwritten issue. Since the benefits of bank certification are likely to be especially valuable for

firms that are perceived by the market as having relatively high credit risks, the difference in yields between bank- and house-underwritten issues is expected to be particularly pronounced when they have relatively low credit ratings. Moreover, if the low yields of the bank-underwritten issues are due to certification, the post-issuance bond performance should reflect the banks' private information about the issuers. Therefore, in comparison to the house-underwritten issues with similar observable characteristics, the bank-underwritten issues should have a lower probability of rating downgrades after the offerings.

The certification view, however, does not provide any clear predictions regarding the changes in the lending relationships between bank underwriters and issuers after the bond offerings. If banks bring to the bond market only firms that they privately know are of high quality and provide certification in this process, they should be willing to lend more to these firms after the offerings. However, since high-quality firms tend to have less demand for bank monitoring and to attach less value to the flexibility of bank financing, they may desire to become less reliant on bank borrowing after the bond offerings.

A.2. The Conflicts-of-Interest View: The Information-Misrepresentation Hypothesis

The information-misrepresentation hypothesis emphasizes the potential friction between bank underwriters and investors. It argues that banks have strong incentives to underwrite the issues by their client firms with impending financial problems, and to require the proceeds from the issues be used to pay off their loans. In this process, they exploit their informational advantage by misrepresenting the true quality of these firms so as to increase the proceeds from the offerings.

Rational investors, however, correctly anticipate banks' incentives to inflate the quality of issues they underwrite and demand high yields for these issues. Therefore, bank-underwritten issues are expected to be priced lower than house-underwritten issues with similar observable characteristics. Since the information asymmetry between bank underwriters and outside investors is likely to be more severe for riskier firms, investors will be particularly suspicious of the true quality of bank-underwritten issues

that have low credit ratings. Consequently, we expect the difference in the yield spreads between bank- and house-underwritten issues to be more pronounced for the issues with a low rating than for those with a high rating. Furthermore, the information-misrepresentation hypothesis predicts a negative relationship between the yield spreads of bank-underwritten issues and the market share of bank underwriters. When a bank misrepresents the true quality of the issues it underwrites, it runs the risk of being caught later by the investors. This can have an adverse effect on the sale of bonds the bank underwrites in the future. Moreover, regulatory oversight can impose a credible threat of severe sanctions against dishonest banks. The risk of losing investors and the threat of sanctions are particularly serious concerns for banks that are actively involved in the underwriting business, since these banks place significant value on their reputational capital.⁴ Therefore, for issues by banks with a relatively high market share, the investors tend to demand low yields.

As Kroszner and Rajan (1994) argue, the information-misrepresentation hypothesis implies a lower probability of post-issuance rating downgrades for bank-underwritten issues than for house-underwritten issues. Since investors cannot precisely identify the banks that misuse private information, they tend to evaluate the pool of all the bank-underwritten issues based on the average quality of these issues. To the extent that only a small portion of banks misrepresents the true quality of securities they underwrite, this argument suggests that the market assesses the quality of the majority of bank-underwritten issues to be lower than their true one. Consequently, if we compare bank-underwritten issues with house-underwritten issues with the same initial credit ratings, the number of good quality issues is larger in the former than in the latter, and thus, ex post, as the true quality of issues is revealed, the former should perform better than the latter.

The information-misrepresentation hypothesis also predicts that after the bond offerings, lending from the bank underwriters declines substantially more for firms that experience rating downgrades than for those whose ratings remain unchanged or improve. If banks' private information produces unbiased

⁴ Kroszner and Rajan (1994), Puri (1996), and Gande, Puri, Saunders, and Walter (1997) also use underwriters' market share as a measure of their reputational concerns.

forecasts of the issuers' future prospects, firms that experience post-issuance rating downgrades tend to be those about which banks have unfavorable information at the time of the offerings. Therefore, banks should have strong incentives to require these firms to repay their loans, especially when these loan amounts are large. Consequently, we expect larger declines in underwriters' lending amounts to firms with poorer post-issuance rating performance if their prior lending exposure to these firms is large.

A.3. The Conflicts-of-Interest View: The Price-Discount Hypothesis

Unlike the information-misrepresentation hypothesis, the price-discount hypothesis focuses on the potential conflict between bank underwriters and issuers. It suggests that as new entrants into the bond underwriting business, banks have strong incentives to quickly establish a new customer base by providing investors with high-return investment opportunities. To achieve this goal, the banks force the issuers to make concessions on the bond prices, using the influence they derive from the prior lending relationships. Therefore, the price-discount hypothesis predicts that, *ceteris paribus*, the bank-underwritten issues will be priced lower (i.e., have higher yields) than the house-underwritten issues. To the extent that bank-firm relationships are more important for riskier firms, the banks can exercise more influence on these firms and thus are able to discount the prices of their bonds more aggressively. This argument suggests that the difference in the yields between bank- and house-underwritten issues is larger for issues with lower ratings.

Furthermore, since the banks that are more rapidly making inroads into the bond underwriting business face a greater need to quickly build up their customer base, they have stronger incentives to provide investors with profitable investment opportunities, and therefore will more aggressively discount the prices of the bonds they underwrite. As a result, the yields of the bank-underwritten issues will be positively related to the bank underwriters' market shares in the bond underwriting business. Banks' incentives to offer profitable investment opportunities also mean that they are more inclined to underwrite

the issues that they privately know are of high quality. Therefore, the ex post performance of bank-underwritten issues is expected to be better than that of house-underwritten issues.

The price-discount hypothesis also predicts that after the offerings, bank underwriters have strong incentives to continue lending to firms they know having poor prospects. Since cutting loans can create more financial constraints for these firms, which may adversely affect the return to investors, bank underwriters who are rapidly expanding their underwriting business have strong incentives to maintain lending relationships with these issuers. Therefore, we would expect the changes in loans from bank underwriters to be negatively related to the post-issuance rating performance of the issuers.

B. The Effects of Competition on Bond Pricing

Since our sample period marks the initial stage of banks' entry into the bond underwriting business, they inevitably face stiff competition from houses. Such competition can have a significant effect on the price of the bonds a bank underwrites. For example, if the bank acts as a certifier, competition from the houses pressures the bank to provide more certification than when there is no such competition. This competitive force pushes the yields of bank-underwritten issues facing intense competition further down, making yields of such issues to be lower than those of bank-underwritten issues facing less competition.

When banks create conflicts of interest, competition can still affect the yields of bank-underwritten issues by mitigating the extent of the conflicts. Suppose that banks have the incentive to engage in information misrepresentation. In this case, as discussed in the previous section, investors will require high yields on all bank-underwritten issues. Consequently, the issues by firms with true high quality are underpriced if they use the banks as underwriters. Competition from the houses, however, can alleviate this problem by providing these issuers with an option to choose the houses as underwriters, thereby allowing them to avoid paying high yields. Therefore, the competitive pressure from the houses constrains the banks' incentives to misrepresent information and forces the banks to underwrite bonds at a competitive price. Similarly, if the banks excessively discount the prices of issues they underwrite,

competition from the houses can limit the extent of such discounts since the possibility of losing deals to the houses mitigates the banks' incentives to sell bonds at low prices.

Although the competitive pressure from the houses results in more favorable bond prices for issuers than if there is no such pressure, competition may not be able to eliminate all conflicts. Leveraging on the information advantage and having an influence on the issuers derived from prior lending relationships, the banks can erect a barrier to competition and continue to create conflicts of interest, albeit at a modest level.

These arguments about the effects of competition on conflicts of interest provide the following predictions about ex ante bond pricing. First, when there is intense competition in bond underwriting, the competitive bids from both banks and houses should leave the issuers indifferent in their choice of underwriters. Thus, among issues that feature intense competition between banks and houses, the yield spreads are expected to be similar for those underwritten by banks and those underwritten by houses. Second, among the bank-underwritten issues, those that face a lot of competition from the houses pay lower yields than those that face less competition. Third, the bank-underwritten issues with little competition exhibit the highest yield among all types of issues since conflicts between bank underwriters and issuers are likely to be most pronounced in this case.

II. Data and Summary Statistics

A. Data

Our sample consists of domestic unsecured straight bonds issued by Japanese firms listed on the Tokyo Stock Exchange from January 1995 to June 1997.⁵ We start the sample period from 1995 because prior to 1995, the banks underwrote a very small number (only five) of corporate straight bond issues. We end the sample period in June 1997 because our search process for ex post credit rating changes requires a five-year period after the bond offerings. June 1997 is also the time when the financial crisis hit the Asian region, which substantially changed the macroeconomic environment. Restricting the

sample period before the Asian financial crisis ensures uniformity in bank incentives in bond underwriting and homogeneity in overall economic environments. The length of our sample period is roughly the same as the length of those of Puri (1996) and Gande, Puri, Saunders, and Walter (1997). We compile our sample issues from the *Dow Jones Interactive Service* by conducting extensive searches for announcements of bond issues in Japan. The key words used in our search include “Japan and bond,” “Japanese bond,” “Japan and bond issue (offering),” “Japanese firm and issue (offer),” and “Japan and issue (offer) and bond.”

For an issue to be included in our sample, it should not be accompanied by a warrant, it should be publicly placed, and it should be rated by at least one of the major domestic rating agencies. To unambiguously ascertain the relationship between the issuer and the lead underwriter, we eliminate issues where the lead underwriters are foreign investment houses and for which both investment houses and banks jointly serve as the lead underwriters. Finally, for the reasons described below, we delete issues with maturities longer than 10 years. This screen yields a final sample of 439 issues.

For each issue announcement, we also collect from the *Dow Jones Interactive Service* information on offering date, amount offered, maturity, credit rating, coupon rate, issue price, and the names of the lead underwriter and the rating agency. We use *Industrial Groupings in Japan* published by Dodwell Marketing Consultants to determine the *keiretsu* affiliation of the issuers. We consider a firm to have a *keiretsu* membership if it belongs to one of the six bank-centered groups (Mitsubishi, Mitsui, Sumitomo, Fuyo, DKB, and Sanwa). We obtain data on previous lending relationships such as total bank loans, loans from the main bank, and loans from the lead bank underwriter from annual issues of *Kogyo Keiretsu Soran*. We define the main bank as the firm’s largest lender. We obtain the stock price and financial data of the issuing firms from the Pacific-Basin Capital Market (PACAP) Research Center database.

Ex ante bond pricing is measured by the yield spread. We compute the yield spread as the difference between the ex ante yield on a corporate bond and the implied ex ante yield on a government bond of the

⁵ During our sample period, the number of secured bonds in Japan was negligible.

same maturity. To obtain the implied ex ante yield on the government bond, we construct the yield curve for each month during our sample period using the quoted yields on the government bonds auctioned in that month. For example, if two- and six-year government bonds were issued in a particular month, using the yields quoted at the auctions for these bonds, we compute the forward rate for the four years from year two to year six. Together with the yield on the two-year bond, we calculate the yields for all maturities from year two to year six. The infrequent issuance of government bonds with maturities beyond 10 years, however, not only makes yield data on these bonds questionable, but also does not allow us to extrapolate the yield curve beyond 10 years for some months. We therefore eliminate from the analysis bonds with maturities beyond 10 years and constructed the yield curves up to 10 years only for each month. The implied ex ante yield on the government bond is the one from the yield curve for the same maturity as the corporate bond. We collect information on the yields at the auction for government bonds by searching the *Dow Jones Interactive Service*, and if possible, double check with the auction results posted on the Bank of Japan's home page.⁶

B. Summary Statistics

Table I presents the frequency distribution of issues for each half year during our sample period. It shows that the yen volume of bond issues increases substantially over time. Over the two and half years of our sample period, the yen volume increases from 692 billion to 1,657 billion, a more than 2-fold increase. The increase is even more dramatic when the frequency is measured in number of issues. Over the same period, the number of bond issues tripled, rising from 37 to 122. Out of 439 issues, 46 percent is underwritten by bank-owned subsidiaries and the remaining by houses. A further breakdown of the bank-underwritten issues shows that 32 percent is underwritten by main banks and 14 percent by other banks. In comparison, Kroszner and Rajan (1994) report that during the period 1921-1929, U.S. banks

⁶ Puri (1996) estimates the yield spread as the difference between the ex ante yield of the bond at the time of the issue and the ex ante yield of a government bond of nearest maturity issued in the same month. We re-estimate the analyses below using her measure of yield spreads and obtain qualitatively similar results. However, we find that the spreads calculated using her approach are negative for some of our sample issues.

underwrote 29 percent of total corporate bond issues in the U.S. For a sample of 670 U.S. debt issues from 1993 to the first quarter of 1995, Gande, Puri, Saunders, and Walter (1997) show that only 12 percent of total issues was underwritten by banks. These results suggest that Japanese banks bring a substantially larger proportion of the debt issues to the bond market than do their U.S. counterparts. Furthermore, the time series profile in Table I suggests that in terms of both number and yen volume of issues, the Japanese banks were able to quickly ramp up their market share once they were allowed into securities underwriting. For example, the proportion of bank underwriting rises from 23 percent of the total yen volume in the first half of 1995 to 52 percent in the first half of 1997, an increase of almost 126 percent. In comparison, Gande, Puri, and Saunders (1999) show that in 1991, the proportion of corporate debt underwriting by Section 20 subsidiaries of commercial banks was only 4.4 percent of the total dollar volume. Even after the 10 percent revenue cap was raised to 25 percent in 1996, the percent of dollar volume underwritten by the U.S. banks remained at 16.28. Therefore, the Japanese banks enjoyed a substantially larger market share upon their entry into bond underwriting.

Table II presents the summary statistics of a sample of 439 issues. All firm-specific variables are measured at the fiscal year-end that comes immediately before the issue date. The total value of assets (the sum of the market value of equity and the book value of debt), leverage (ratio of the book value of debt to total assets), and operating performance (ratio of operating income to total assets) for issuers are not significantly different among the three groups (main-bank underwritten issues, other-bank underwritten issues, and house-underwritten issues). Significant differences, however, emerge when we compare the issuers' bank relationships across the three groups. We find that the median ratio of total bank loans to total debt for the issuers who use other banks as the lead underwriters is 37.08 percent. For the issuers who use houses as the lead underwriters, it is 26.85 percent. This difference in bank loan ratios is statistically significant at the 10 percent level. We also find that the issuers who use main banks as the lead underwriters tend to borrow more from the main banks than do those who use houses as the underwriters. As expected, the mean and median ratios of loans from the bank underwriters to total debt

are significantly larger when the main banks rather than other banks serve as underwriters. These results suggest that Japanese banks are more likely to underwrite issues by the firms that have maintained close bank ties before the offerings.

The issue characteristics also exhibit significant variations across the three groups. The yield spreads of both main-bank- and other-bank-underwritten issues significantly exceed those of house-underwritten issues. For main-bank-underwritten (other-bank-underwritten) issues, the mean and median yield spreads are 0.65 (0.68) percent and 0.63 (0.62) percent, respectively. The corresponding figures for house-underwritten issues are 0.58 percent and 0.55 percent. These results indicate that investors pay lower prices (higher yield spreads) for issues underwritten by banks than for those underwritten by houses, supporting the conflicts-of-interest view on the role of bank underwriters. When we compare main-bank-underwritten issues to other-bank-underwritten issues, however, the yield spreads of these two groups do not show any significant difference.

In contrast to the findings in the U.S. (Puri, 1996), the average size of the bank-underwritten issues is significantly smaller than that of the house-underwritten issues. This result suggests that the houses in Japan may have more distributional power than the banks so they can attract the larger issues. When we scale the issue size by the market value of equity, the median is also significantly larger for the issues underwritten by houses than it is for the issues by main banks and other banks. We also find that the main banks are more likely to underwrite issues with shorter maturities than are the houses. This result is similar to that of Gande, Puri, Saunders, and Walter (1997) who show that U.S. banks also tend to underwrite issues with short maturity. Therefore, Japanese banks are more likely to bring small issues and issues with short maturity to the market.

Finally, both main banks and other banks bring a larger portion of issues with a low rating to the bond market than do houses. For the main-bank- and other-bank-underwritten issues, the proportions of issues with ratings of AA (the highest rating in our sample) are, respectively, 23.94 percent and 22.95 percent. The figure is 29.24 percent for the house-underwritten issues. These differences in the

proportion of high-grade issues, however, are not statistically significant among the three groups. This result is in contrast to the findings in the U.S. (Kroszner and Rajan, 1994; Puri, 1996), which show that banks are more likely to underwrite issues with a high rating.

III. Empirical Results

A. Ex Ante Bonds Pricing

To examine whether the banks as lead underwriters certify firm value or create conflicts of interest, we compare the yield spreads of bank- and house-underwritten issues across different categories. The bank-underwritten issues are further divided into main-bank-underwritten issues and other-bank-underwritten issues. Panel A of Table III shows the comparison of yield spreads by credit ratings of the issues. We separate those issues with a rating of AA (117 issues), high rating issues, from those with a rating of A (273 issues) and below A (49 issues), low rating issues. Given that the number of issues with a rating below A is relatively small, this classification scheme makes the comparison of yields by credit rating statistically meaningful. We find that only issues with a low rating exhibit a significant difference in the yield spreads between bank and house underwritings. The mean and median yield spreads for issues underwritten by main banks (other banks) are 0.70 (0.76) percent and 0.69 (0.76) percent, respectively. For issues underwritten by investment houses, the corresponding yield spreads are both 0.64 percent. Although the mean and median tests of differences between main-bank (other-bank) underwritings and house underwritings are statistically significant, those between main-bank and other-bank underwritings are not significant. Among issues with a high rating, the yield spreads are statistically indistinguishable across all underwriter types. These results for Japanese issues contrast with those for U.S. issues. Evidence from the U.S. shows that for issues with a low rating, the yield of bank-underwritten issues is considerably lower than that of house-underwritten issues (Puri, 1996), suggesting that bank's certification effect is higher for low-grade issues. In contrast, our results suggest that conflicts of interest created by banks are more severe for low-grade than for high-grade issues.

Though informative, the comparison based on the whole sample masks the potential effects of the competition between banks and houses on the yield spread. To gain further insights into this issue, we divide our sample issues into two subgroups based on the degree of competition between bank and house underwriters. We consider those issues by a firm wherein some are underwritten by the bank and the others are underwritten by the house during the sample period as competitive issues, and those by a firm wherein all are exclusively underwritten by either the bank or the house during the sample period as noncompetitive issues. We further divide the competitive (noncompetitive) issues into bank-underwritten-competitive (bank-underwritten-noncompetitive) issues and house-underwritten-competitive (house-underwritten-noncompetitive) issues. To illustrate this classification, consider a firm that issued unsecured bonds three times during our sample period. If all of these issues were underwritten by the bank (house), we classify them as bank-underwritten-noncompetitive (house-underwritten-noncompetitive) issues. Instead, if the firm chooses a bank as the underwriter for the first and third issues and a house for the second issue, the first and third issues are considered as the bank-underwritten-competitive issues and the second as the house-underwritten-competitive issue. Since consistent use of a bank (house) underwriter by an issuer over time is indicative of less competition, the competitive issues as defined here are likely to feature more competition between the banks and the houses relative to the noncompetitive issues.

Panel B of Table III presents the yield spreads for the subsample of competitive issues by credit ratings. The yield spreads are statistically indistinguishable across all categories. For issues with both high and low ratings, we find no differences in the yield spread between those underwritten by banks and those by houses. The spreads of main-bank- and other-bank-underwritten issues also do not show any significant differences.

Panel C shows the yield spreads for the subsample of noncompetitive issues by credit ratings. For the issues with a high rating, there are no statistical differences in the yield spread across all underwriter types. However, significant differences exist among the issues with a low rating. For the bank-

underwritten issues, the mean and median yield spreads are both 0.88, which are the highest among all underwriter types, and for the house-underwritten issues, they are, respectively, 0.65 and 0.63. The tests of equal spreads between the two groups are rejected at the 1 percent level. Similar patterns hold when we compare the main-bank- and other-bank-underwritten issues with the house-underwritten issues. The differences in the yield spread between main-bank- and other-bank-underwritten issues, however, are not significant. The finding that the yield spreads of bank-underwritten-noncompetitive issues are highest among the issues further supports the view that the banks create conflicts of interest.

Panel D compares the yield spreads of competitive and noncompetitive issues by credit ratings. For the issues with a high rating, the differences in the yield spreads between competitive and noncompetitive issues are statistically indistinguishable across all underwriter types. For the issues with a low rating, however, these differences are statistically significant. The yield spreads of the bank-, main-bank-, and other-bank-underwritten-noncompetitive issues are all significantly higher than those of the corresponding competitive issues. In contrast, the differences in the yield spreads between competitive and noncompetitive issues are small and insignificant for the house-underwritten group.

Overall, our results indicate that the yield spreads of the bank-underwritten issues are higher than those of the house-underwritten issues, suggesting that the banks create conflicts of interest that are harmful to issuers. These conflicts are more severe for low-grade issues, particularly when banks face less competition from houses in bidding for such issues. Among all banks, issuers' main banks appear to neither provide more credible certification nor create more conflicts of interest than other banks.

To understand better the cross-sectional variation in yield spreads, we present the estimates from multivariate regressions. Since the univariate results above show that the initial credit rating is an important determinant of yield spreads, we include a dummy variable that equals one if an issue carries a high rating. We also control for firm size (log of total value of assets), leverage (total debt / total assets), bank loan ratio (bank loans / total debt), issue size (issue amount / market value of equity), maturity (log of the maturity of the issue), and *keiretsu* membership (a dummy variable that equals one if the issuer

belongs to a *keiretsu*). Since large firms generally find it easier to secure external finance and face less adverse selection problems in bond offerings, we expect such firms to pay lower spreads on their bonds. We would expect highly leveraged firms to have more difficulty obtaining external financing and face a greater probability of financial distress. Therefore, leverage should have a positive effect on yield spreads. The bank loan ratio captures the closeness of an issuer's relationship with its private lenders. A priori, its effect on the yield spread is unclear. If the close relationship with private lenders provides the firms with flexibility in their capital structure decisions and mitigates problems associated with information asymmetries (Hoshi, Kashyap, and Scharfstein, 1991), it could have a negative effect on the yield spread. On the other hand, to the extent that bank loans are typically senior to public bonds (Carey, 1995) and tend to be short-term, a large amount of bank borrowing makes unsecured bond issues in our sample riskier, thereby pushing the yield spreads higher. Issue size and maturity can also be important determinants of the yield spread. Larger issues tend to produce higher liquidity and greater economy of scale in the issue costs, so the yield spreads of such issues are expected to be lower. In general, the longer the maturity of an issue, the higher the uncertainty of the likelihood of principal and interest repayments, implying a higher yield spread for such an issue. The *keiretsu* affiliation reflects the characteristics of business groups in Japan, such as extensive arrangements of reciprocal shareholding agreements, substantial business ties among affiliated firms, and sometimes bailouts of financially distressed affiliated firms by member banks (Hoshi, Kashyap, and Scharfstein, 1990; Berglof and Perotti, 1994). The close relationship among *keiretsu* firms can thus reduce informational asymmetries and the costs of financial distress for them. These arguments suggest that the *keiretsu* affiliation has a negative effect on the yield spreads of the bonds. We also include two dummies for the years (1996 and 1997).

Table IV reports the regression estimates. The first regression in Table IV regresses the yield spread on the bank underwriting dummy and the above control variables. The results show that bank-underwritten issues offer significantly higher yield spreads than do house-underwritten issues. The coefficient on the dummy variable for bank underwriting is 0.047. This coefficient suggests that the yield

spread of the bank-underwritten issue is higher than the yield spread of the house-underwritten issue by 4.7 basis points.

In the second regression, to examine if this difference in the yield spread between bank- and house-underwritten issues applies to issues of all rating categories, we divide our sample issues into four subgroups according to whether they are underwritten by banks or not and whether they have a high rating or not. We set the house-underwritten issues with a high rating as the reference group for comparison. The result shows that among the issues with a high rating, the yield spreads of bank-underwritten issues are basically the same as those of house-underwritten issues. This result implies that the difference in the yield spread between bank- and house-underwritten issues in the previous regression is mainly due to the issues with a low rating.

Regression (3) examines the effect of competition between banks and houses on the yield spreads. To address this issue, we add three dummy variables representing bank-underwritten-noncompetitive issues, house-underwritten-competitive issues, and house-underwritten-noncompetitive issues to the regression. In other words, we use the bank-underwritten-competitive issues as the reference group for comparison. The coefficient on the dummy for bank-underwritten-noncompetitive issues is significant and positive at the 1 percent level. In contrast, the coefficient on the dummy for house-underwritten-noncompetitive issues is significant and negative at the 5 percent level and the coefficient on the dummy for house-underwritten-competitive issues is not significant. Since the banks are best able to fend off competition from the houses when they have a significant influence over the issuers through prior lending relationships, bank-underwritten-noncompetitive issues are likely to correspond to instances where such influence is strong. The finding of higher yield spreads of the bank-underwritten-noncompetitive issues than the bank-underwritten-competitive issues, therefore, suggests that in an effort to attract investors, the banks discount the prices of the bonds they underwrite more aggressively when they have a greater influence over the issuers. Alternatively, the competitive pressure from the houses limits the extent of price discount by bank underwriters, so within bank-underwritten issues, the yield spreads of competitive

issues are lower than those of noncompetitive issue. The absence of any significant difference in the yield spreads between bank-competitive underwritings and house-competitive underwritings further confirms the importance of competition in restricting the yield spreads of bank-underwritten issues. The finding of higher yield spreads of the bank-underwritten-competitive issues than the house-underwritten-noncompetitive issues, coupled with the above findings, suggests that competition from the houses reduces the extent of price discount by bank underwriters but does not fully eliminate it. Therefore, having an influence on the issuers derived from lending relationships, the banks seem to effectively erect a barrier to competition in some instances and continue to create conflicts of interest.

In the fourth regression, we compare the yield spreads of house-underwritten-competitive issues with house-underwritten-noncompetitive issues by setting the former as the reference group for comparison. The coefficient on the dummy for house-underwritten-noncompetitive issues is significant and negative at the 5 percent level. Unlike the banks, because of the lack of any prior lending relationships, the houses tend to have little influence over the issuers. This result, therefore, indicates that in contrast to the banks, the houses are best able to attain competitive advantages over the banks through offering the issuer with favorable prices on their bonds.

In unreported tests, we re-estimate regressions (3) and (4) by dividing the sample into two subgroups based on the credit rating of the issue: a subsample of issues with a high rating and a subsample of issues with a low rating. We find that the above results are entirely driven by the second subsample, suggesting that the effect of competition on the yield spreads is particularly strong for low-rating issues.

To examine whether the yield spreads are different between issues underwritten by main banks and those by other banks, in the fifth regression, we differentiate the dummy for bank underwritings into two dummies: one for main-bank underwritings and the other for other-bank underwritings, omitting the latter variable in the regression. We find that the coefficient on the dummy for house underwriting is negative and significant, but the coefficient on the dummy for main-bank underwriting is insignificant. These results suggest that other banks discount the prices of the bonds they underwrite more excessively than

houses, but determine the extents of discounting in a similar manner to the main banks. In unreported tests, we examine the differences in the yield spreads between main-bank and other-bank underwritings for high and low credit rating groups and for competitive and noncompetitive groups. We find no significant differences in yield spreads between main-bank and other-bank underwritings for these subgroups. Thus, main banks and other banks appear to price the issues they underwrite similarly.

Most of the control variables have the expected signs, although not all of them are significant. Specifically, the coefficients on firm size, issue size, high credit rating, and membership in a *keiretsu* are all negative and significant, while the coefficient on leverage is positive and significant. The coefficient on the bank loan ratio, however, is positive, but not significant, reflecting the potentially ambiguous effect it has on the yield spreads. The only variable that is not consistent with our prediction is the maturity, which is significantly negative.

In summary, both univariate and multivariate analyses suggest that for issues with a low rating, the bank underwritings pay significantly higher yields than do the house underwritings. The competitive pressure from the houses helps to reduce the excess yields of the bank underwritings but does not fully eliminate them. These results strongly reject a certification role for banks. They indicate that upon entry into the securities underwriting business, the banks create conflicts of interest, thereby imposing significant financing costs on the issuers.

B. Ex Post Performance of the Issues: Do Banks Really Create Conflicts of Interest?

The systematic difference in yield spreads between bank and house underwritings documented in the previous section is informative, but it alone is not enough to reach an affirmative conclusion on the existence of conflicts of interest. For example, although regressions in Table IV use extensive control variables that can have an effect on the credit risks of the issuers, we cannot be sure whether the finding of high yield spreads of bank-underwritten issues is not due to credit risks that our empirical models fail

to capture. In this section, we further confirm the existence of conflicts of interest by examining the ex post performance of the issues.

We measure the ex post performance of bonds by their credit rating changes over the five years following the offering. This approach differs from that of Kroszner and Rajan (1994) who use the default rate as a measure of ex post performance. The choice of our measure is based on the following reasons. First, a default on debt obligations typically represents a rather dramatic corporate event. It often is the result of the convergence of many factors, some of which may be hard to foresee long before their occurrence when the bonds were issued. In contrast, rating changes are relatively more sensitive to the changes in the issuers' credit standings. This difference is important for our investigation since the performance measure should be not only useful for detecting any systematic differences in financial performance between bank and house underwritings, but also reflective of any private information the banks may have at the time they underwrite the bonds. Second, if an issuer ever ends up in default, it is highly likely that its credit rating will have experienced downgrades before the actual default, so the set of issues that experience downgrades is inclusive of the set of issues that eventually default. Consequently, the systematic differences in default rates between bank and house underwritings should also show up in those in rating changes.

Table V compares the probability of rating downgrades between competitive and noncompetitive issues over the five years following the offerings by initial credit ratings. Reflecting the general decline of the Japanese economy during the late 1990s and the first few years of this century, particularly the adverse effect of the Asian crisis that started in mid-1997, 65 percent of the total issues experienced downgrades over the five years following the offerings. The most important finding from Table V is that among the issues with a low rating, the house-underwritten-noncompetitive issues show the largest frequency of downgrades. Out of 57 issues, 77.19 percent experienced downgrades during the five years after the issuance. This figure is much higher than the proportions of issues downgraded for bank-underwritten-competitive issues and bank-underwritten-noncompetitive issues: 60 percent and 57.78

percent, respectively. When we further divide bank underwritings into main-bank and other-bank underwritings, we find that both competitive and noncompetitive issues by main banks experienced less downgrades than those by other banks (58.75 percent and 63.33 percent compared to 46.43 percent and 76.47 percent). In contrast, the house-underwritten-competitive issues show the smallest frequency of downgrades over the five years (47.27 percent). We also find that the issues with a high rating are more likely to experience downgrades than those with a low rating (82.05 percent compared to 55.28 percent). The house-underwritten-noncompetitive issues have the lowest probability of downgrades (64.29 percent) among the issues with a high rating. The finding that bank-underwritten issues with a low rating have higher yield spreads at the offerings than house-underwritten issues, but do not experience a higher probability of credit downgrades over the five years following the offerings, strongly rejects the certification view and suggests that the differences in ex ante yields are attributable to conflicts of interest. The finding that the house-underwritten-noncompetitive issues pay lower yield spreads than do both types of bank-underwritten issues, but exhibit a higher probability of credit deterioration, further confirms the existence of conflicts of interest.

To more closely examine the factors that influence the likelihood of rating changes, in Table VI, we present the logit regression results. The probability we model is the likelihood of an issue experiencing a downgrade over the five years after the issuance. Following Kroszner and Rajan (1994), the regressions control only for leverage and initial bond rating. In tests not reported here, we also include the control variables used in the previous spread analysis and obtain results that are qualitatively similar. In regression (1), we estimate the likelihood of downgrades as a function of underwriter type (1 if an issue is underwritten by a bank), leverage, and initial ratings (1 if an issue is of high rating). The coefficient on the dummy for bank underwritings is not significant, suggesting that the ex post performance of bank- and house-underwritten issues is statistically indistinguishable. Leverage is positively and statistically significant at the 1 percent level, suggesting issues by firms with higher leverage are more likely to experience rating downgrades. Confirming the univariate results that the issues with a higher initial

rating downgrade more frequently than those with a low rating, the coefficient on the dummy variable for a high-grade issue is positive and significant.

In regression (2), motivated by the findings described in the previous section, we compare the ex post performance of the issues with a low rating across different subgroups. We separate the issues with a low rating into four subgroups according to whether they are house- or bank-underwritten and whether they are competitive or noncompetitive underwritings. We set the house-underwritten-noncompetitive issues with a low rating as the reference group for comparison. The results show that among the issues with a low rating, the house-underwritten-noncompetitive issues significantly underperform the other three types of underwritings. These results suggest that the higher yield spreads of bank-underwritten-issues compared to those of the house-underwritten-noncompetitive issues described in the previous section cannot be attributable to the differences in their credit risks. Rather, the results indicate that the banks create conflicts of interest. In tests not reported in Table VI, we also perform the same exercise for the issues with a high rating and find that the post-issuance performance is not significantly different across the four subgroups.

In regression (3), we further investigate the joint effect of underwriter type and the degree of competition on the likelihood of rating downgrades by setting the bank-underwritten-competitive issues with a low rating as the reference group. The coefficient on the dummy for bank-underwritten-noncompetitive issues with a low rating is negative but insignificant. This result suggests that among the bank-underwritten issues with a low rating, the risks of future credit deteriorations for competitive issues are similar to those for noncompetitive issues. Therefore, among the low-grade issues, lower yield spreads of bank-underwritten-competitive issues compared to bank-underwritten-noncompetitive issues are not due to the difference in their risk profiles, but are due to the competitive pressure from the houses.

To examine the difference in the ex post performance of issues underwritten by main banks and those by other banks, in regression (4), we divide bank-underwritten issues into main-bank-underwritten issues and other-bank-underwritten issues, using the latter as the reference group. The coefficient on the

dummy for main-bank underwriting is negative and significant, suggesting that the issues underwritten by main banks significantly outperform those underwritten by other banks. Thus, compared to other banks, main banks are more likely to underwrite issues that are of high true quality. Given that ex ante yields of these two types of underwritings are statistically indistinguishable, this result suggests that for issues of similar quality, the extent of the price discount is more severe when the main banks serve as underwriters. To the extent that the main banks are well informed about the firm's prospects and this informational advantage allows the main banks to exercise a substantial influence on issuers, our result implies that the main banks earn more quasi-rents from their existing borrowers than other banks (Rajan, 1992). In a similar vein, Weinstein and Yafeh (1998) also find that Japanese firms with a main bank have higher costs of funds during their sample period.

C. Where Do Conflicts Come From? Information-Misrepresentation versus Price-Discount Hypotheses

The previous section showed that the participation of banks in securities underwriting creates conflicts of interest. In this section, we identify the form of such conflicts. We distinguish between the information-misrepresentation and price-discount forms of conflicts of interest developed in Section I. We perform two tests. First, we examine the relation between the yield spreads of bank-underwritten issues and the market shares of banks in bond underwritings. Second, we examine the relation between the bonds' ex post performance and the change in bank underwriters' loan amounts to the issuers after the bond offerings.

As a measure of the market share, we use the forward-looking figure. We focus on the forward-looking market share because banks that want to increase their market share in the future need to build up a strong customer base now by providing investors with issues at discounted prices. Therefore, the forward-looking market share measures the extent of banks' incentives to offer investors high-reward investments. Alternatively, as in Kroszner and Rajan (1994), Puri (1996), and Gande, Puri, Saunders, and Walter (1997), market share can measure the reputational concerns of bank underwriters. In this case,

market share captures the extent of banks' incentives to refrain from engaging in opportunistic behaviors in bond underwriting.

We compute each underwriter's forward-looking market share as follows. For each of the nine quarters starting from the second quarter of 1995, we calculate an underwriter's market share as the ratio of the yen volume of the issues it underwrites to the total yen volume of all the issues in that quarter.⁷ We then use the market share of the underwriter in the subsequent quarter as the forward-looking market share. Because we cannot calculate the forward-looking market share for the issues in the final quarter of our sample period, our tests that employ this variable are conducted over a slightly smaller sample of 360 issues.

The results for the first test are reported in Table VII. We use the yield spread as the dependent variable. All regressions include the control variables used in the previous spread analysis. The first model examines the relation between the yield spreads and market share. The result shows that the coefficient on market share is positive but insignificant, suggesting that the underwriter's market share on average has little statistically discernible effect on yield spreads. We also find that the coefficient on the dummy for house-underwritten issues is negative and significant. This result is consistent with that of regression (1) in Table IV, suggesting that bank-underwritten issues offer higher yield spreads than do house-underwritten issues.

The second model distinguishes the effect of market share on yield spreads between banks and houses. To address this issue, we include a dummy for house-underwritten issues and an interaction term between this dummy and market share. The market share variable, therefore, measures the effect of banks' market share on the yield spread. We find that the coefficient on market share is positive and significant. This result suggests that banks with a high market share excessively discount the price of

⁷ In comparison, Kroszner and Rajan (1994), Puri (1996), and Gande, Puri, Saunders, and Walter (1997) calculate each underwriter's market share as the ratio of the dollar volume it underwrites to the total dollar volume of all underwriters during either the whole or a part of the sample period. While their static measures allow them to use only one single number for market share for each underwriter during their sample periods, our measure enables the market share to change over time. We use the dynamic measures of market share since the level of bank participation in bond underwriting increased significantly over our sample period.

bonds they underwrite. Since a bank that wants to bring a large portion of the issues to the market needs to attract many investors by providing them with high-reward investment opportunities, our result supports the price-discount form of conflicts. The interaction term between the house-underwritten issues and market share is negative and significant. Thus, relative to the bank underwriters, the houses that are active in bond underwriting tend to place the bonds they underwrite at significantly higher prices, thereby reducing the financing costs of issuers.

To separately examine the effect of houses' market share on the yield spread, in the third model, we perform the same analysis as in the second model with house-underwritten issues as the reference group. The coefficient on market share is negative and insignificant. This result again strongly suggests that market share plays a different role in determining the price of bonds underwritten by banks and houses.

Overall, these results are not consistent with the information-misrepresentation hypothesis, which predicts that banks with higher reputational concerns have less incentive to misuse private information regarding the issuers and hence are able to place issues at higher prices. Rather, our results support the price-discount hypothesis, which suggests that banks having strong incentives to attract more investors price the issues at a larger discount.

The last model examines whether the effect of market share on yield spread is different for issues underwritten by main banks, by other banks, and by houses. To make a comparison, we omit the dummy for main-bank-underwritten issues in the regression. We also include two interaction terms: an interaction term between the dummy for house-underwritten issues and market share, and an interaction term between the dummy for other-bank-underwritten issues and market share. The yield spreads display a positive association with the market share, suggesting that a higher market share of the main bank results in a lower bond price. The interaction term between the dummy for other-bank underwritings and market share is negative but insignificant. In a test not reported here, instead of omitting the dummy for main-bank-underwritten issues in the regression, we use the dummy for other-bank-underwritten issues as the reference group. We find that the coefficient on market share is not significant. Therefore, unlike the

other banks, the main banks that have strong incentives to increase their market share appear to be able to apply deeper discount to bonds they underwrite.⁸

To further show that information misrepresentation is not the driving force behind the conflicts of interest we document, we examine the relation between the bonds' ex post performance and the change in bank underwriters' loan amounts to the issuers immediately after the bond offerings. According to the information-misrepresentation hypothesis, the banks are more likely to misrepresent the quality of the issues that they privately know are poor and require the issuers to use the offering proceeds for the repayment of loans. To the extent that issuers that experience rating downgrades are more likely to be those about whom bank underwriters have unfavorable information, we expect that the changes in loan amounts by bank underwriters after the offerings are positively related to the changes in the post-issuance credit rating of the issuers. Since this prediction is applicable to issues in which the banks serve as underwriters, our tests that employ the change in bank underwriters' loan amounts after the offerings are conducted using only a subsample of bank-underwritten issues.

Table VIII reports the results of this test. In the first model, we regress the changes in bank underwriters' loan amounts to the issuers (the difference in loan balance from the year preceding the offerings to the year subsequent to the offerings scaled by total debt in the year preceding the offerings) on the lending amount from the bank underwriters prior to the offerings, on the dummy for issues that experience downgrading over the five years following the offerings, and on the interaction term between these two variables. The results show that the coefficient on the prior lending amount is negative and significant at the 1 percent level, suggesting that for issuers who do not receive post-issuance rating downgrades, larger prior lending amounts from the bank underwriter generally lead to more significant

⁸ In unreported tests, we also examine whether the relations between market share and yield spread are different between the issues with a high rating and those with a low rating and between competitive and noncompetitive issues. We find that among the bank-underwritten issues, the positive effect of market share on yield spread is most pronounced in the low-grade group. For house-underwritten issues, market share does not have any statistically significant effects on the yield spreads of both high- and low-grade groups. When we compare the bank-underwritten-competitive issues with the bank-underwritten-noncompetitive issues, we find that there is no significant difference in the effect of market share between them. We obtain similar results for house-underwritten-competitive issues and house-underwritten-noncompetitive issues.

declines in the lending amounts after the bond offerings. The coefficient on the interaction term, however, is positive and significant at the 5 percent level. Thus, relative to firms whose ratings remain unchanged or improve, those that experience rating downgrades obtain more loans from the bank underwriters if they have large prior borrowing amounts from these banks. To the extent that the firms that experience post-issuance rating downgrades are those about which the banks have unfavorable information at the time of the offerings, our result contrasts with the prediction of the information-misrepresentation hypothesis. Rather, it is consistent with the price-discount hypothesis since in order to provide profitable investment opportunities to the investors, bank underwriters have incentives to provide more loans to firms facing greater risk of rating downgrades. These additional loans ensure that low-quality issuers face less of a liquidity problem when they pay interest on their bonds and thus reduce banks' risk of losing potential future customers in the bond market.

The second model examines the effect of pre-issuance rating status on changes in loan amounts by including the interaction term between the lending amount from the bank underwriters prior to the offerings and the dummy for low-grade issues that experience downgrading. The coefficient on the interaction term is positive and statistically significant at the 1 percent level. Again, this result contradicts the information-misrepresentation hypothesis.

In the third model, we include as the explanatory variables the lending amount from the bank underwriters prior to the offerings, the dummy for main-bank-underwritten issues that receive post-issuance rating downgrades, and the interaction term between these two variables. We find that the coefficient on the interaction term is positive and significant. In contrast, the coefficient on the lending amount from the bank underwriters prior to the offerings is negative and significant. These results suggest that lending from the bank underwriters declines substantially less for main-bank underwritten issues that experience rating downgrades than for other types of issues.

In the fourth model, we replace main-bank-underwritten issues that receive post-issuance rating downgrades in the third model with other-bank-underwritten issues that experience rating downgrades.

The coefficient on the interaction term is negative and significant. Taken together, the results in the third and fourth models clearly suggest that relative to other banks, main banks have less incentive to reduce lending to issuers about which they have unfavorable information at the time of the offerings.

In unreported tests, we also check the robustness of the results by including other issue and firm characteristics used in Table IV as additional control variables and obtain results very similar to those reported here.

Overall, our results suggest that relative to healthy firms, firms with poor post-issuance performance experience a significant increase in lending from the bank underwriters. This effect is particularly pronounced when main banks are underwriters or when issuers carry a low credit rating. These results strongly reject the information-misrepresentation hypothesis but support the price-discount hypothesis.

IV. Alternative Interpretation of the Results: Conflicts of Interest or Insurance?

The result in the previous section that indicates a negative relation between the issuers' post-issuance performance and the change in loan amounts from the bank underwriters raises the possibility that the high yields of bank-underwritten issues do not necessarily reflect conflicts of interest but represent premiums for the bank-insurance service inherent in bank relationships. In other words, the issuers pay high yields *ex ante* in return for assistance from the banks when they face financial problems in the future. Although this insurance-based explanation is generally consistent with our findings, the results from the following three tests suggest that an insurance effect is unlikely to be the whole story behind the high yields of bank-underwritten issues.

Of particular importance to the insurance effect is that the issuers who face more uncertainty in the future need to pay higher premiums (i.e., higher yields) today. For example, in order to access capital markets, issuers who are otherwise not able to obtain financing from the bond market may need to pay high insurance premiums to bank underwriters. One type of such issuers is the low-rating firms that want to place unsecured straight bonds for the first time. These issuers are likely to face a significant adverse

selection problem in bond markets because of the absence of an existing market for their bonds, and therefore should have a strong demand for bank insurance to facilitate their bond offerings. Consequently, the bank-insurance effect predicts that among the issuers who use bank underwriters, the premiums (yields) are higher for low-quality first-time issuers than for other types of issuers. To test this prediction, using the multivariate regressions we first compare the yield spreads between first and non-first issues underwritten by banks. We find that the difference in yield spreads between the two groups of issues is negative but insignificant. We then conduct this comparison among the issues with a low rating and find that the difference is again insignificant. These results suggest that the high spreads of bank-underwritten issues do not represent premiums for the potential insurance services the banks provide for the firms.

Another type of issuers that need more bank insurance is the firms that are expected to receive post-issuance rating downgrades *ex ante*. Since these firms have a strong demand for bank insurance, the yields of issues by these firms are expected to be higher than those of the issues that do not experience post-issuance rating downgrades. For the total sample, we find that the difference between the yields of these two groups is statistically insignificant after controlling for firm and issue characteristics, as in Table IV. Furthermore, among the issues with a low rating, the yields of the issues experiencing post-issuance rating downgrades are significantly lower than those of the issues that do not receive downgrades.

Firms may need to pay a higher insurance premium to the banks in circumstances when there is greater uncertainty in the financial markets. Japanese firms started facing serious problems from the early 1990s because of the collapse of the bubble economy. They became progressively weaker during the 1990s and suffered particularly in 1997 due to the Asian financial crisis. Although the Asian crisis was a largely unanticipated event (Radelet and Sachs, 1998), as we get closer to the point where the crisis hits the region, the firms might have started to face more severe financial difficulty and therefore needed more insurance from the banks when they issue bonds. Thus, we would expect the high yields of bank-

underwritten issues to be most pronounced in 1997. When we compare the yield spreads of bank-underwritten issues in 1997 with those of bank-underwritten issues in 1995 and 1996, we find that the differences are not significant.⁹ As an alternative test, we re-estimate the regressions by deleting the issues in 1997 and find that the differences in yield spreads between bank- and house-underwritten issues persist even for this subsample.

In sum, although bank insurance may be a part of the benefits that the firms obtain from close bank relationships, our evidence indicates that it is not the entire story behind the high yield spreads of bank-underwritten issues.

V. Robustness Tests

In this section, we briefly discuss the results of two additional tests that are not reported in the paper's baseline tables.

A. Competitive and Noncompetitive Issues

According to our classification scheme, if a firm floats only one issue over our sample period, this issue is considered as a noncompetitive issue.¹⁰ One concern with this classification is that the case of a single issue does not provide enough information to judge the extent of competition in the deals. To investigate if treating the single issues in a different way changes our results in Table IV, we perform three additional tests. In the first test, we eliminate all the firms that issue bonds only once during the sample period and estimate the results again. In the second test, we classify all single issues as competitive issues and re-estimate the regressions. In the third test, we directly control for the number of

⁹ To account for time variation in yields, we adjust the yield spread of the bank-underwritten issues each year by subtracting the median yield of house-underwritten issues in that specific year.

¹⁰ In our sample, the mean and median numbers of competitive (noncompetitive) issues per firm are 5.08 (3.84) and 4.50 (3.00), respectively.

bond issues the firm places by including a dummy variable for the single issue in the regressions. We obtain results similar to those reported in this paper.

B. Self-Selection Bias

In the regression analysis of the ex ante bond pricing, we use a few dummy variables indicating the underwriter types such as bank, main-bank, and other-bank underwriters. However, if the choice of underwriters itself was endogenous, the regression models we used in the pricing analysis would be subject to the well-known self-selection bias. We correct this problem by following the procedure described in Puri (1996). We find that selectivity bias adjustments do not alter the nature of the results we document.

VI. Summary and Conclusions

In this paper, we examine the role of Japanese commercial banks in securities underwriting. The results based on ex ante pricing and ex post long-term credit rating performance of bond issues strongly reject the certification view and indicate the existence of conflicts of interest. Further analysis shows that such conflicts are not due to banks' incentives to misrepresent the true quality of the issuers, but are instead due to banks' incentives to excessively discount bond prices in order to attract investors.

Previous studies on securities underwriting by U.S. commercial banks show evidence that is largely in favor of the repeal of the Glass-Steagall Act. They find that the banks do not fool outside investors into purchasing overpriced securities. Instead, as informed underwriters, the banks serve a valuable certification function. The findings of our study, however, cast doubt on this view. Our findings suggest that the influence banks derive from lending relationships with their client firms enables them to price corporate bonds at a discount, thereby imposing significant financing costs on the issuers.

We also find that the extent of these conflicts differs depending on the amounts of debt claims bank underwriters hold in the issuers. The main banks more aggressively discount the prices of issues they

underwrite than do the other banks. To the extent that the main bank, as the firm's largest lender, is in the best position to take advantage of the alleged benefits of information scope resulting from combining commercial banking with investment banking, our results suggest that this informational advantage endows it with substantial power that can be used ex ante to appropriate surplus from client firms.

Our paper also contributes to the literature by examining the effect of competition on conflicts of interest. We show that the market force - that is, competition from houses - alleviates the conflicts of interest created by banks but does not fully resolve them: although competition significantly reduces the price discount of bank-underwritten issues, it does not fully eliminate it. Thus, banks' influence on issuers resulting from prior lending activities appears to allow them to erect barriers against competition from the houses.

Overall, our findings from the Japanese data suggest that it is premature to generalize the U.S. experience with universal banking to economies that have different traditions in their bank relationships. To the extent that many emerging economies typically do not have well-developed capital markets but rely extensively on bank-centered financial systems, our results call for careful reassessments of the merits of universal banking in such economies. Since the benefits of universal banking occur only when the advantage of informational economies of scope from combining underwriting and lending activities exceeds the potential costs of conflicts of interests, universal banking may not be justified for all countries as the level of bank dependence varies from one country to another.

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Table I
Frequency Distribution of Issues over Time and by Underwriter Type

The sample includes 439 domestic unsecured straight bond issues by Japanese firms listed on the Tokyo Stock Exchange from January 1995 to June 1997. We compile our sample issues from the *Dow Jones Interactive Service*. We exclude offerings by firms belonging to either the financial or utilities industries. The main bank is a firm's largest lender. Numbers in parentheses are percentages of issue activities.

Year	Total sample		Bank underwriting				Investment-house underwriting	
			Main-bank underwriting		Other-bank underwriting		Number of issues	Yen volume (billions)
	Number of issues	Yen volume (billions)	Number of issues	Yen volume (billions)	Number of issues	Yen volume (billions)		
1 st half of 1995	37 (100)	¥692 (100)	11 (30)	¥155 (22)	1 (3)	¥7 (1)	25 (68)	¥530 (77)
2 nd half of 1995	95 (100)	¥1,508 (100)	30 (32)	¥431 (29)	9 (9)	¥118 (8)	56 (59)	¥959 (64)
1 st half of 1996	77 (100)	¥1,147 (100)	27 (35)	¥348 (30)	10 (13)	¥112 (10)	40 (52)	¥687 (60)
2 nd half of 1996	108 (100)	¥1,543 (100)	29 (27)	¥403 (26)	21 (19)	¥248 (16)	58 (54)	¥892 (58)
1 st half of 1997	122 (100)	¥1,657 (100)	45 (37)	¥577 (35)	20 (16)	¥275 (17)	57 (47)	¥805 (49)
January 1995- June 1997	439 (100)	¥6,547 (100)	142 (32)	¥1,914 (29)	61 (14)	¥760 (12)	236 (54)	¥3,873 (59)

Table II
Descriptive Statistics of Issuer and Issue Characteristics

The sample includes 439 domestic unsecured straight bond issues by Japanese firms listed on the Tokyo Stock Exchange from January 1995 to June 1997. We compile our sample issues from the *Dow Jones Interactive Service*. We exclude offerings by firms belonging to either the financial or utilities industries. The total value of assets is the sum of the market value of equity and the book value of debt. The main bank is a firm's largest lender. We consider a firm to have a *keiretsu* membership if it belongs to one of the six bank-centered groups (Mitsubishi, Mitsui, Sumitomo, Fuyo, DKB, and Sanwa). The yield spread is the difference between the ex ante yield on a corporate bond and the ex ante yield on a government bond of the same maturity as implied by the yield curve extrapolated from the yields of government bonds issued in the same month. Issues with a high rating are those that have ratings of AA at the time of the bond issuance. Numbers in the test-of-difference columns are *t*-statistics for the test of equality of means and Wilcoxon Z-statistics for the test of equality of medians. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A: Issuer and issue characteristics

Variables	All issuers [N=439]		Main-bank underwriting (A) [N=142]		Other-bank underwriting (B) [N=61]		House under- writing (C) [N=236]		Test of difference (A-B)		Test of difference (A-C)		Test of difference (B-C)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median	t-test	Wil- Coxon Z-test	t-test	Wil- Coxon Z-test	t-test	Wil- Coxon Z-test
<i>Issuer characteristics:</i>														
<i>Total value of assets (in billions of yen)</i>	1406.91	933.01	1390.75	833.89	1601.33	1117.62	1366.38	950.39	0.97	0.52	0.17	0.04	1.17	0.59
<i>Market value of equity (in billions of yen)</i>	610.45	385.82	595.13	370.64	666.53	400.71	605.17	385.82	0.79	0.50	0.16	0.11	0.73	0.28
<i>Debt / total assets (%)</i>	51.61	50.91	51.88	51.69	52.07	52.74	51.32	50.66	0.08	0.26	0.34	0.32	0.34	0.49
<i>Operating income / total assets (%)</i>	2.09	2.02	2.08	2.01	1.94	1.83	2.13	2.06	0.66	0.78	0.38	0.38	0.96	1.12
<i>Borrowings from the bank / total debt (%)</i>	30.01	28.53	31.37	29.08	32.68	37.08	28.51	26.85	0.50	0.72	1.53	1.59	1.56	1.64*
<i>Borrowings from the main bank / total debt (%)</i>	4.22	3.61	4.53	3.76	4.14	3.50	4.05	3.51	0.76	1.36	1.36	1.68*	0.17	0.27
<i>Borrowings from the bank underwriter / total debt (%)</i>	1.88	0.00	4.53	3.76	2.94	2.38	0.00	0.00	3.44***	3.94***	21.7***	18.7***	18.0***	15.5***
<i>Fraction of issuers belonging to a keiretsu</i>	64.69	-	69.72	-	57.38	-	63.56	-	1.71*	-	1.22	-	0.89	-
<i>Issue characteristics:</i>														
<i>Yield spread</i>	0.62	0.59	0.65	0.63	0.68	0.62	0.58	0.55	0.66	0.63	2.18**	1.96**	2.36**	2.10**
<i>Issue size (in billions of yen)</i>	14.91	10.00	13.48	10.00	12.46	10.00	16.41	10.00	-0.71	0.39	2.42**	3.05***	2.35**	3.10***
<i>Issue size / market value of equity (%)</i>	5.57	3.27	4.26	3.07	6.77	2.16	6.04	3.63	1.23	0.98	1.61	1.91*	0.32	2.22**
<i>Issues with a high rating (%)</i>	26.65	-	23.94	-	22.95	-	29.24	-	0.15	-	1.12	-	0.97	-
<i>Maturity (year)</i>	6.10	6.00	5.86	6.00	5.97	6.00	6.28	6.00	0.45	0.70	2.20**	2.20**	1.20	1.01

Table III
Yield Spreads Classified by Underwriter Type and Initial Credit Rating of Issuers

The sample includes 439 domestic unsecured straight bond issues by Japanese firms listed on the Tokyo Stock Exchange from January 1995 to June 1997. We compile our sample issues from the *Dow Jones Interactive Service*. We exclude offerings by firms belonging to either the financial or utilities industries. The yield spread is the difference between the ex ante yield on a corporate bond and the ex ante yield on a government bond of the same maturity as implied by the yield curve extrapolated from the yields of government bonds issued in the same month. The main bank is a firm's largest lender. Issues with a high (low) rating are those that have ratings of AA (A or below A) at the time of the bond issuance. Competitive issues are those by a firm wherein some are underwritten by the bank and the others are underwritten by the house during the sample period. Noncompetitive issues are those by a firm wherein all are exclusively underwritten by either the bank or the house during the sample period. Numbers in brackets denote the number of observations. Numbers in the test-of-difference columns are *t*-statistics for the test of equality of means and Wilcoxon Z-statistics for the test of equality of medians. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

Panel A: Yield spreads for the total sample

<i>Bond rating</i>	Bank underwriting				Investment-house underwriting (D)				Test of difference (A-D)		Test of difference (B-C)		Test of difference (B-D)		Test of difference (C-D)	
	All banks (A)		Main banks (B)		Other banks (C)				t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test
Issues with a high rating	0.44	0.41	0.46	0.41	0.40	0.37	0.44	0.41	0.03	0.02	0.94	0.83	0.35	0.38	0.70	0.60
	[48]		[34]		[14]		[69]									
Issues with a low rating	0.72	0.69	0.70	0.69	0.76	0.76	0.64	0.64	2.67***	2.49***	1.07	1.14	1.96**	1.75*	2.70***	2.54***
	[155]		[108]		[47]		[167]									

Panel B: Yield spreads for the subsample of competitive issues

<i>Bond rating</i>	Bank underwriting				Investment-house underwriting (D)				Test of difference (A-D)		Test of difference (B-C)		Test of difference (B-D)		Test of difference (C-D)	
	All banks (A)		Main banks (B)		Other banks (C)				t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test
Issues with a high rating	0.44	0.38	0.47	0.41	0.38	0.32	0.46	0.42	0.28	0.59	1.12	1.13	0.25	0.03	1.16	1.27
	[42]		[30]		[12]		[55]									
Issues with a low rating	0.65	0.64	0.64	0.64	0.70	0.64	0.63	0.64	0.68	0.53	1.08	0.77	0.19	0.18	1.27	0.92
	[110]		[80]		[30]		[110]									

Panel C: Yield spreads for the subsample of noncompetitive issues

	Bank underwriting				Investment-house underwriting (D)				Test of difference (A-D)		Test of difference (B-C)		Test of difference (B-D)		Test of difference (C-D)	
	All banks (A)		Main banks (B)		Other banks (C)				t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test	t-test	Wil-Coxon Z-test
Bond rating	Mean	Median	Mean	Median	Mean	Median	Mean	Median								
Issues with a high rating	0.45	0.50	0.42	0.50	0.50	0.50	0.34	0.41	0.29	1.28	0.64	0.23	0.10	0.80	0.36	1.19
	[6]		[4]		[2]		[14]									
Issues with a low rating	0.88	0.88	0.90	0.88	0.87	0.88	0.65	0.63	3.72***	3.65***	0.25	0.22	3.24***	3.10***	2.60**	2.69***
	[45]		[28]		[17]		[57]									

Panel D: Comparison of yield spreads between competitive and noncompetitive issues

		All banks		Main banks		Other banks		Investment houses	
		Mean	Median	Mean	Median	Mean	Median	Mean	Median
Issues with a high rating	Competitive	0.44	0.38	0.47	0.41	0.38	0.32	0.46	0.42
	Noncompetitive	0.45	0.50	0.42	0.50	0.50	0.50	0.34	0.41
Test of difference									
t-test	Wilcoxon Z-test	0.04	0.56	0.37	0.00	0.84	1.00	0.72	1.39
Issues with a low rating	Competitive	0.65	0.64	0.64	0.64	0.70	0.64	0.63	0.64
	Noncompetitive	0.88	0.88	0.90	0.88	0.87	0.88	0.65	0.63
Test of difference									
t-test	Wilcoxon Z-test	4.71***	4.05***	4.32***	3.47***	1.93*	1.76*	0.43	0.07

Table IV

Regression of Yield Spreads on Underwriter Type, Issuer Characteristics, and Issue Characteristics

The sample includes 439 domestic unsecured straight bond issues by Japanese firms listed on the Tokyo Stock Exchange from January 1995 to June 1997. We compile our sample issues from the *Dow Jones Interactive Service*. We exclude offerings by firms belonging to either the financial or utilities industries. The yield spread is the difference between the ex ante yield on a corporate bond and the ex ante yield on a government bond of the same maturity as implied by the yield curve extrapolated from the yields of government bonds issued in the same month. Competitive issues are those by a firm wherein some are underwritten by the bank and the others are underwritten by the house during the sample period. Noncompetitive issues are those by a firm wherein all are exclusively underwritten by either the bank or the house during the sample period. The main bank is a firm's largest lender. Issues with a high (low) rating are those that have ratings of AA (A or below A) at the time of the bond issuance. We consider a firm to have a *keiretsu* membership if it belongs to one of the six bank-centered groups (Mitsubishi, Mitsui, Sumitomo, Fuyo, DKB, and Sanwa). Numbers in parentheses denote *t*-statistics. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

Independent variables	(1)	(2)	(3)	(4)	(5)
<i>Intercept</i>	2.214*** (11.07)	2.165*** (10.21)	2.214*** (11.07)	2.330*** (11.84)	2.32*** (11.77)
<i>Dummy for bank-underwritten issues</i>	0.047** (1.95)			0.022 (0.84)	
<i>Dummy for bank-underwritten-noncompetitive issues</i>			0.112*** (2.74)		
<i>Dummy for house-underwritten issues</i>					-0.074** (2.07)
<i>Dummy for house-underwritten-competitive issues</i>			0.002 (0.08)		
<i>Dummy for house-underwritten-noncompetitive issues</i>			-0.072** (1.97)	-0.083** (2.30)	
<i>Dummy for main-bank-underwritten issues</i>					-0.039 (1.03)
<i>Dummy for high rating issues</i>	-0.082*** (2.51)		-0.084*** (2.59)	-0.080*** (2.45)	-0.081*** (2.48)
<i>Dummy (high rating issues / bank-underwritten issues)</i>		0.000 (0.00)			
<i>Dummy (low rating issues / house-underwritten issues)</i>		0.055 (1.38)			
<i>Dummy (low rating issues / bank-underwritten issues)</i>		0.119*** (2.95)			
<i>Log of total value of assets (sum of the market value of equity and the book value of debt)</i>	-0.103 *** (6.77)	-0.103*** (6.78)	-0.100*** (6.39)	-0.109*** (7.10)	-0.104*** (6.82)
<i>Debt / total assets</i>	0.230** (2.35)	0.235** (2.40)	0.237** (2.43)	0.260*** (2.64)	0.233** (2.38)
<i>Bank loans / total debt</i>	0.100 (1.25)	0.098 (1.22)	0.082 (1.03)	0.107 (1.33)	0.097 (1.21)
<i>Dummy for keiretsu affiliation</i>	-0.062** (2.44)	-0.062** (2.43)	-0.064** (2.48)	-0.073*** (2.83)	-0.061** (2.36)
<i>Issue size / market value of equity</i>	-0.337*** (3.28)	-0.335*** (3.26)	-0.318*** (3.11)	-0.349*** (3.41)	-0.345*** (3.35)
<i>Log of maturity</i>	-0.191 *** (4.46)	-0.188*** (4.39)	-0.189*** (4.48)	-0.191*** (4.48)	-0.192*** (4.49)
<i>Year dummies</i>	Yes	Yes	Yes	Yes	Yes
Adjusted R^2 (%)	30.59	29.03	30.72	29.67	28.98
F-value	18.86***	17.29***	17.19***	17.80***	17.25***
Number of observations	439	439	439	439	439

Table V
Ex Post Performance (Rating Downgrades) Classified by Competitiveness of Issues, Underwriter Type, and Initial Credit Rating of Issuers

The sample includes 439 domestic unsecured straight bond issues by Japanese firms listed on the Tokyo Stock Exchange from January 1995 to June 1997. We compile our sample issues from the *Dow Jones Interactive Service*. We exclude offerings by firms belonging to either the financial or utilities industries. The ex post performance of each category is measured by the ratio of the number of issues that experience downgrades over the five years following the offerings to the total number of issues in that category. Numbers in parentheses denote the total number of observations in each category. Competitive issues are those by a firm wherein some are underwritten by the bank and the others are underwritten by the house during the sample period. Noncompetitive issues are those by a firm wherein all are exclusively underwritten by either the bank or the house during the sample period. The main bank is a firm's largest lender. Issues with a high (low) rating are those that have ratings of AA (A or below A) at the time of the bond issuance.

	Competitive issues (317)				Noncompetitive issues (122)			
	Bank underwritings	Main-bank underwritings	Other-bank underwritings	House underwritings	Bank underwritings	Main-bank underwritings	Other-bank underwritings	House underwritings
Issues with a high rating	85.71% (42)	83.33% (30)	91.67% (12)	83.64% (55)	83.33% (6)	75.00% (4)	100% (2)	64.29% (14)
Issues with a low rating	60.00% (110)	58.75% (80)	63.33% (30)	47.27% (110)	57.78% (45)	46.43% (28)	76.47% (17)	77.19% (57)

Table VI
Logistic Regression Estimates of the Probability of an Ex Post Rating Downgrade

The sample includes 439 domestic unsecured straight bond issues by Japanese firms listed on the Tokyo Stock Exchange from January 1995 to June 1997. We compile our sample issues from the *Dow Jones Interactive Service*. We exclude offerings by firms belonging to either the financial or utilities industries. The dependent variable takes a value of one if an issue experiences a downgrade over the five years after the offering. The main bank is a firm's largest lender. Issues with a high (low) rating are those that have ratings of AA (A or below A) at the time of the bond issuance. Competitive issues are those by a firm wherein some are underwritten by the bank and the others are underwritten by the house during the sample period. Noncompetitive issues are those by a firm wherein all are exclusively underwritten by either the bank or the house during the sample period. Numbers in parentheses denote p-values. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively

Independent variables	(1)	(2)	(3)	(4)
<i>Intercept</i>	-2.915*** (0.00)	-1.996*** (0.00)	-2.726*** (0.00)	-2.280*** (0.00)
<i>Dummy for bank-underwritten issues</i>	0.146 (0.51)			
<i>Dummy for house-underwritten issues</i>				-0.672* (0.06)
<i>Dummy for main-bank-underwritten issues</i>				-0.728** (0.05)
<i>Dummy for high rating issues</i>	1.483*** (0.00)	0.578 (0.18)	1.347*** (0.00)	1.500*** (0.00)
<i>Debt / total assets</i>	6.284*** (0.00)	6.384*** (0.00)	6.289*** (0.00)	6.354*** (0.00)
<i>Dummy (low rating issues / house-underwritten issues)</i>			-0.169 (0.530)	
<i>Dummy (low rating issues / bank-underwritten-competitive issues)</i>		-0.776** (0.05)		
<i>Dummy (low rating issues / bank-underwritten-noncompetitive issues)</i>		-1.036** (0.03)	-0.258 (0.51)	
<i>Dummy (low rating issues / house-underwritten-competitive issues)</i>		-1.35*** (0.00)		
Pseudo- R^2	15.07	17.29	15.09	15.75
Number of observations	439	439	439	439

Table VII
Regression of Yield Spreads on the Underwriters' Forward-Looking Market Shares and Other Issuer/Issue Characteristics

The sample includes 360 domestic unsecured straight bond issues by Japanese firms listed on the Tokyo Stock Exchange from January 1995 to March 1997. We compile our sample issues from the *Dow Jones Interactive Service*. We exclude offerings by firms belonging to either the financial or utilities industries. The yield spread is the difference between the ex ante yield on a corporate bond and the ex ante yield on a government bond of the same maturity as implied by the yield curve extrapolated from the yields of government bonds issued in the same month. We calculate an underwriter's market share as the ratio of the yen volume of the issues it underwrites to the total yen volume of all the issues in each quarter. We then use the market share of the underwriter in the subsequent quarter as the forward-looking market share. Issues with a high (low) rating are those that have ratings of AA (A or below A) at the time of the bond issuance. We consider a firm to have a *keiretsu* membership if it belongs to one of the six bank-centered groups (Mitsubishi, Mitsui, Sumitomo, Fuyo, DKB, and Sanwa). Numbers in parentheses denote *t*-statistics. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

Independent variables	(1)	(2)	(3)	(4)
<i>Intercept</i>	1.940*** (7.47)	2.031*** (7.93)	2.046*** (7.75)	2.018*** (7.89)
<i>Market share: (a)</i>	0.113 (0.58)	0.810** (2.05)	-0.133 (0.58)	0.825* (1.67)
<i>High rating issues</i>	-0.081** (2.37)	-0.077** (2.28)	-0.077** (2.28)	-0.075** (2.19)
<i>Dummy for bank-underwritten issues</i>			-0.016 (0.34)	
<i>Dummy for bank-underwritten issues * (a)</i>			0.942** (2.03)	
<i>Dummy for house-underwritten issues</i>	-0.0544* (1.83)	0.016 (0.34)		0.038 (0.78)
<i>Dummy for house-underwritten issues * (a)</i>		-0.942** (2.03)		-0.963* (1.75)
<i>Dummy for other-bank-underwritten issues</i>				0.082 (1.37)
<i>Dummy for other-bank-underwritten issues * (a)</i>				-0.123 (0.15)
<i>Log of total value of assets (sum of the market value of equity and the book value of debt)</i>	-0.082*** (4.13)	-0.085*** (4.31)	-0.085*** (4.31)	-0.086*** (4.33)
<i>Debt / total assets</i>	0.121 (1.02)	0.121 (1.02)	0.121 (1.02)	0.115 (0.96)
<i>Bank loans / total debt</i>	0.140* (1.65)	0.135 (1.60)	0.135 (1.60)	0.131 (1.55)
<i>Dummy for keiretsu affiliation</i>	-0.035 (1.27)	-0.029 (1.07)	-0.029 (1.07)	-0.024 (0.89)
<i>Issue size / market value of equity</i>	0.324 (0.77)	0.202 (0.48)	0.202 (0.48)	0.227 (0.54)
<i>Log of maturity</i>	-0.199*** (4.41)	-0.209*** (4.61)	-0.209*** (4.61)	-0.211*** (4.67)
<i>Year dummies</i>	Yes	Yes	Yes	Yes
Adjusted R^2 (%)	29.78	30.40	30.40	30.70
F-value	14.84***	14.07***	14.07***	12.36***
Number of observations	360	360	360	360

Table VIII
Regression of the Changes in Loan Amounts from Bank Underwriters on an Ex Post Rating
Downgrade and Other Issuer/Issue Characteristics

The sample includes 200 domestic unsecured straight bond issues by Japanese firms in which banks serve as underwriters from January 1995 to June 1997. We compile our sample issues from the *Dow Jones Interactive Service*. We exclude offerings by firms belonging to either the financial or utilities industries. The change in loan amounts from the bank underwriters is measured by the difference in loan balance from the year preceding the offerings to the year subsequent to the offerings scaled by total debt in the year preceding the offerings. The dummy for downgrade issues takes a value of one if an issue experiences a downgrade over the five years after the offering. The main bank is a firm's largest lender. Issues with a low rating are those that have ratings of A or below A at the time of the bond issuance. Numbers in parentheses denote *t*-statistics. ***, **, and * denote significance at the 0.01, 0.05, and 0.10 levels, respectively.

Independent variables	(1)	(2)	(3)	(4)
<i>Intercept</i>	0.004*** (1.48)	0.006** (2.44)	0.006 (1.33)	0.000 (0.22)
<i>Borrowings from bank underwriters prior to offerings / total debt: (a)</i>	-0.197*** (3.77)	-0.200*** (4.26)	-0.228*** (5.19)	-0.081** (2.29)
<i>Dummy for downgrade issues</i>	-0.004 (1.18)			
<i>Dummy for downgrade issues * (a)</i>	0.151** (2.23)			
<i>Dummy (main-bank-underwritten issues / downgrade issues)</i>			-0.009*** (2.62)	
<i>Dummy (main-bank-underwritten issues / downgrade issues) * (a)</i>			0.251*** (3.88)	
<i>Dummy (other-bank-underwritten issues / downgrade issues)</i>				0.009** (2.10)
<i>Dummy (other-bank-underwritten issues / downgrade issues) * (a)</i>				-0.257** (2.42)
<i>Dummy (low rating issues / downgrade issues)</i>		-0.008** (2.31)		
<i>Dummy (low rating issues / downgrade issues) * (a)</i>		0.176*** (2.68)		
Adjusted R^2 (%)	6.76	7.30	11.04	6.69
F-value	5.81***	6.22***	9.23***	5.75***
Number of observations	200	200	200	200