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Abstract

We study the role of banking relationships in IPO underwriting using a sample of 484 Japanese IPOs. Among other issues, we consider whether bank relationships lead to increased access to public equity markets, especially for smaller, lesser-known firms. When a firm in Japan goes public, it can engage an investment bank that is related through a common main bank, or can select an alternative investment bank. The main bank relationship can be an efficient way for the investment bank to acquire information generated by the main bank, but may give rise to conflicts of interest. We use data from two different investment banking regimes in Japan (a hybrid auction-method regime and a book-building regime) and find that main bank relationships give small issuers increased access to equity capital markets, but that issuers of large IPOs switch to non-related investment banks that are capable of managing large offerings. While we find evidence that investment banks seek to exploit bargaining power with related issuers, we also find that issuers respond to expected high issue cost by switching to non-related investment banks. The net result is that total issue costs through related and non-related investment banks are similar. With respect to aftermarket performance and use of offer proceeds, we find no evidence of conflict of interest or self-dealing for either the main bank or the investment bank.

Comments welcome.

Key Words: Main Bank, Banking Relationships, Capital Market Access, IPOs, Underwriting, Japanese Economy

JEL codes: G21, G24, L22, L51

Banking Relationships and Access to Equity Capital Markets:
Evidence from Japan's Main Bank System

I. Introduction

For years, policy makers in many countries have grappled with whether integration of commercial banking and investment banking services is likely to benefit or harm corporate clients and investors. If commercial banks are integrated into investment banking the banks might engage in "self-dealing" by underwriting public offerings of client companies to effect wealth transfers from their clients and/or investors to themselves. Further, integrated banks may gain bargaining power over their commercial clients who seek investment-banking services. On the other hand, by using the commercial bank's experience with its credit clients, integration could reduce information costs and result in increased access to public capital markets for corporate clients and possibly lower issue costs.

In the US, early controversy concerning participation of commercial banks in corporate securities underwriting resulted in the Glass-Steagall Act (The Banking Act of 1933). The Act, which effectively prohibited commingling of investment and commercial banking functions, was enacted in the context of allegations of conflicts of interest and abuse by commercial banks that were integrated into investment banking. Sixty-six years later, Congress reversed this policy and repealed the Act's restrictions on affiliations between securities firms and commercial banks. The reversal signaled that US policy makers had accepted the view that potential benefits of improved access outweigh the potential conflicts of interest when banks provide both lending and underwriting services.[1] One argument in favor of repeal was to increase public capital market access for small, young, and/or relatively

[1] The Gramm-Leach-Bliley Act (The Financial Services Modernization Act of 1999) repeals provisions contained in Sections 20 and 32 of the Glass-Steagall Act.

unknown firms; such firms could rely on their commercial banking relationships, and the information generated from them, to gain better access to public credit and equity markets.

Extant empirical literature on banking relationships and integration of commercial and investment banking functions generally does not support the conflict of interest hypothesis.[2] However, as described below, the studies usually focus on debt and preferred or seasoned equity underwriting. A stronger test of the conflict of interest hypothesis would examine, as we do, those securities for which informational asymmetries are likely to be very large, such as initial public offerings (IPOs). Furthermore, there is little modern evidence on how relationships between commercial and investment banks may facilitate market access for firms that desire to go public.

In this paper we examine the Japanese IPO underwriting market. Our study contributes to the literature in three ways. First, we examine the pricing and performance of information-intensive securities and do so in a period of extreme financial system stress for Japan (1995-1999); both of these conditions increase incentives for bankers to behave opportunistically. Thus, we "stack the deck" in favor of finding evidence of conflicts, thereby addressing a gap in empirical research that, to date, has focused on debt and preferred or seasoned equity issues. An additional advantage of the time period is that our study spans two different underwriting regimes—a hybrid auction regime (variants of which are in use in several countries) and a book-building regime (similar to the US method).[3] This feature allows us to contrast the importance of main bank relationships across two very different underwriting processes.

[2] See, for example, Ang and Richardson (l994), Kroszer and Rajan (l994, l997) Puri (1994, l996). We review the literature below in Section II.
[3] See Sherman (2002) for documentation on IPO methods used internationally.

Second, we consider alternative organizational approaches for dealing with the two basic economic issues in underwriting: generating information about the issuing firm and mitigating investor concerns about self-dealing and conflict of interest. In Japan, the *keiretzu* structure allows main banks to hold equity interests in its commercial banking clients, including investment banks.[4] Issuing firms can choose whether to engage an investment bank that is related to the issuer's main bank. Hence, we model the issuing firm's choice to engage a related investment bank to underwrite its IPO. Other things constant, those firms that are the most difficult to value because of informational asymmetry can be expected to select related investment banks.

Third, we look at a spectrum of underwriting outcomes to evaluate whether close banking relationships lead to conflicts of interest. We examine the impact of relationships on the initial pricing of the IPO, issuing firm access to public equity markets, and aftermarket performance of issues.

Conflicts of interest can be manifested in two ways when an IPO issuer and an `underwriter are related through a common main bank. First, by underwriting a questionable issue and misleading investors about its value, a related underwriter can attempt to use its reputation to effect a wealth transfer from investors to the issuer and/or the main bank.[5] Second, if the main bank's lending activities give the related investment bank bargaining power, the underwriter can attempt to exploit its information advantage by charging higher fees or underpricing more than would be possible in a market where no underwriter has an information advantage. In this case, the wealth transfer is from the issuer to the underwriter

[4] Section 65 of Japan's Securities and Exchange Law (l948) describes the requirement that banking firms be separate from securities firms. The l965 amendment to the Law prohibits the establishment of securities firms without the approval of the Ministry of Finance. After April 1933, the Financial System Reform Act allows for banks to establish securities subsidiaries, but still prohibits banks from issuing or trading securities.

and IPO investors (which may indirectly benefit the underwriter).[6] Hence, the conflict of interest hypothesis is that when an issuer is related to an investment bank through a common main bank (a *keiretzu* relationship), the investment bank may seek to deceive investors into overvaluing the issue and/or may cause the firms to issue for the benefit of the investment bank or main bank.

Alternatively, when an issuer is related to an investment bank through a common main bank, the relationship may lower the costs of obtaining information or improve information quality. The information hypothesis suggests that relationships between commercial banks and investment banks benefit issuers and increase access to equity capital markets. To test these alternative hypotheses, we assume that issuing firms seek to minimize total issue cost by their selection of the investment bank. When firms in Japan go public, they can engage a related investment bank, or can select an alternative investment bank. Correspondingly, by examining aftermarket performance, we test whether investment banks' due diligence and pre-marketing activities lead investors to make unbiased assessments of issuers' aftermarket values.

Our findings demonstrate that small firms that undertake small IPOs tend to engage their related investment banks. Large issuers are more likely to select a non-related investment bank, particularly when the related investment bank is small and/or the offering is large. Controlling for other factors, total issue cost (including underwriter fees and underpricing), does not depend significantly on whether the firm uses a related investment

[5] For discussion of the types of conflicts of interest that may arise in this setting, see Benston (l990)
[6] Total issue cost includes underpricing, which benefits investors directly. However, underwriters may expect to be compensated in indirect ways for allocating underpriced shares to favored investors. See Loughran and Ritter (2003) who discuss allocations of "hot" IPOs to the personal brokerage accounts of issuing firm executives.

bank. We find no evidence that aftermarket performance is significantly different when the issuer is related to the underwriter through a common main bank.

The evidence suggests that integration of commercial banking and investment banking increases access to equity capital markets for small, less well-known firms. This is a useful finding, as one of the objectives of the repeal of Glass-Steagall was to benefit such firms by increasing their abilities to rely on banking relationships to gain better access to the capital markets. While we also find evidence of an inherent conflict of interest when the parties are related, issuers in Japan are able to respond to the conflict by selecting non-related investment banks. The result is that issue costs are no higher for issuers who elect to use a related investment bank. In summary, we find no significant evidence that issuers or capital market investors in Japan are harmed by relationships between main banks and investment banks.

II. Banking Relationships and Credit Markets

The effects of banking relationships on access to capital and borrowing cost have been subject to extensive theoretical and empirical study. One stream of literature concerns the effects of commercial banking relationships on access to credit. A second stream concerns the conflicts of interest that arise when commercial banks integrate into investment banking. A third concerns how organizational choices can mitigate investor concerns with conflicts.

A. Banking Relationships and Access to Credit

Stiglitz and Weiss (1981) observe that market frictions related to information asymmetry and agency costs can impede the flow of capital to attractive investments. Leland and Pyle (1977), Campbell and Kracaw (1980), Diamond (1984, 1991), and Fama (1985) all suggest that firms with close ties to financial institutions should have access to lower cost funds.

Consistent with these theoretical studies, Petersen and Rajan (1994) hypothesize that institutional creditors can partially overcome market frictions by producing information about firms and using the information in their credit decisions. They note that competitiveness of the credit markets and transferability of information about a borrower's quality determine whether the savings of information costs are passed on to borrowers or are extracted as rents by lenders. They find that close ties with creditors have a small effect on the cost of credit, but that availability of credit financing increases for firms with ties to creditors. Hoshi, Kashyap, and Scharfstein (1991) study credit relationships in Japan and find that firms with close ties to commercial banks are less likely to be liquidity constrained.[7]

There are several reasons for expecting that banking relationships may facilitate access to capital markets. Recognizing banks that related to issuers have an information advantage, James (1987) provides empirical evidence of a certification role of banks and James and Weir (1990) demonstrate that the existence of a banking relationship results in less IPO underpricing. Diamond (1987) observes that, in conjunction with providing credit, banks also perform a monitoring function and that the full cost of bank credit must compensate the lender for monitoring costs. Diamond argues that monitoring costs can function as a bonding investment. Firms can use bank-monitored debt to build reputation. Those with good reputations can switch to arms-length sources of credit and save monitoring costs.

B. Commercial Bank Integration into Investment Banking

Rajan (1992) models the choice between informed bank debt and arms-length public debt as an aspect of the firm's effort to offset the benefits of the related lender's ongoing monitoring against the lender's bargaining power. If banking relationships yield information

[7] Berger and Udell (l995) study bank relationships and their importance to small firms. They find evidence that such relationships are a likely mechanism for solving asymmetric information problems and that they provide

advantages, then integration of commercial banking and investment banking in a single institution may enhance a lender's bargaining power. In addition, a lender that is integrated into investment banking is faced with a conflict of interest, in that the proceeds of capital market financing may be used to extinguish bank debt.

Puri (1999), in a model that is focused on public credit markets, contrasts the certification capabilities of commercial banks that are integrated into investment banking to the certification capabilities of investment banks. On the basis of access to information that is derived through pre-existing lending relationships, she concludes that commercial banks are able to certify higher values than are investment banks. She also concludes that a commercial bank's ability to certify is reduced when issue proceeds are used to extinguish debt that is owed to the bank and that equity ownership in the issuer also reduces ability to certify. Puri recognizes the tension between the commercial bank's greater ability to certify and its conflict of interest.

Several empirical studies have tested the conflict of interest hypothesis by examining the US experience in the pre-Glass-Steagall era when commercial banks could legally make loans to firms and also underwrite their securities. An implication of the hypothesis is that default rates could be higher for commercial-bank-underwritten debt than for investment-bank-underwritten debt. Ang and Richardson (1994), Kroszer and Rajan (1994) and Puri (1994) examine the *ex post* default performance of debt securities underwritten by commercial banks and by investment banks and Puri (l996) examines the pricing of the debt issues, arguing that looking only at *ex post* performance is incomplete because pricing should reflect expected default rates on the security. Collectively, the results suggest that concerns

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valuable information about firm quality. For a survey of the literature on relationship banking, see Boot (l999).

about conflicts of interest were misplaced. Contrary to the conflict of interest hypothesis, all three studies find evidence that commercial-bank-underwritten issues have lower default rates.

As a further test of the conflict of interest hypothesis, Puri (l996) compares the pricing of commercial-bank-underwritten debt with the pricing of investment-bank-underwritten debt and preferred stock. Consistent with Puri (1999), she finds that banks are able to certify higher values, particularly for securities where information costs are high. Her evidence is consistent with the hypothesis that integrated investment banks have an information advantage that benefits issuers through higher net proceeds.

C. Choice of Organizational Structure

Given the tension between information cost savings and conflict of interest, the structure of banking organizations can be expected to reflect efforts to realize information cost savings while mitigating conflicts of interest. Kroszner and Rajan (l997) study pre-Glass-Steagall data and estimate how the degree of integration affects issue quality and pricing. They find that the market imposed a higher risk premium on issues underwritten by investment banking internal departments (compared to separately incorporated affiliates) and that internal departments responded to the higher premium by focusing on higher quality issues. They conclude that market pressures induce commercial banks to adopt investment banking structures that address concerns related to conflict of interest.

There are a few studies that examine US experience in the years since Glass-Steagall was repealed. While data are limited, the studies indicate that commercial banks seeking to integrate underwriting activities have responded to potential concerns about conflict of interest though their choices of organizational form. Using reasoning similar to Kroszner and Rajan, Narayanan, Rangan and Rangan (2001) argue that commercial banks can use

underwriting syndicates to militate against opportunism. They find that syndicate arrangements are rewarded with better prices for seasoned equity issues compared to prices obtained when such issues are underwritten by a commercial bank that has a lending relationship with the issuer.[8] Chaplinsky and Erwin (2001) also study structural change in US equity underwriting since deregulation. They find that commercial banks have made inroads into investment banking, but mainly through acquisition of independent investment banks. Average investment banking market shares of commercial banks do not increase after mergers with investment banks. The aggregate market share of merging firms declines significantly following merger and the decline is more pronounced for IPOs than seasoned offerings. This finding suggests that concern about conflicts of interest is an important consideration to bank organizational structure and raises questions about the importance of information acquisition economies.

Overall, the evidence from previous research suggests that elimination of regulatory constraints on the integration of lending and underwriting is not harmful to investors, but that success at integration depends on governance structure. In particular, it appears that an organization that does both lending and underwriting must address potential conflicts of interest, and, at the same time, realize the informational advantages from the lending function.

III. Investment Banking Institutions in Japan

During the period of our study, commercial banks in Japan were prohibited from direct involvement in investment banking.[9] However, unlike in the US, commercial banks,

[8] Also see Gande et al. (l997) who examine debt issues by commercial banks that set up Section 20 subsidiaries subject to "firewalls" that limit information and financial linkages between them and their respective parent holding companies. They find that, with these protections in place, in-house underwriting does not lead to greater conflicts.

[9] Section 65, Securities and Exchange Act of l948.

investment banks, and other firms could be involved in long-term main-bank-centered relationships.

A. Japan's Main Bank System

The post-war Japanese financial system was bank-dominated because of a combination of strong government favoritism of bank financing and tight regulation of securities markets. Hoshi and Kashyap (2001) note that within the banking system, firms developed a particularly tight relationship with a specific bank, often identified as a "main bank" relationship. In a comprehensive study, Aoki and Patrick (1994) describe the main-bank system as an "informal set of regular practices, institutional arrangement, and behavior that constitute a system of corporate finance and governance…" (p. xxxi). They state, "The main bank not only provides loans, it holds equity, and, in the eyes of the capital market participants and regulators, is expected to monitor the firm and intervene when things go wrong. (p. 2). Hoshi and Kashyap note that, by definition, a main bank has "close ties to its customers through lending, shareholding and (often) board representation and other personnel placement."(p. 190).

Some recent literature challenges the economic significance of these *keiretsu* relationships.[10] The evidence from these studies suggests that the costs of the *keiretsu* system, and the attendant main bank relationships, are growing while the benefits are declining. Further, this literature suggests that the weakening of *keiretsu* ties has been more pronounced during the last decade as financial deregulation in the l990s took hold, and as firms matured and capital markets deepened. Therefore, our analysis also is an implicit test of whether these informal networks continue to be economically significant. Our data allow us to examine the

[10] See Miwa and Ramseyer (2002) and Okumura (2000).

strength of main bank relationships in a market where moral hazard and adverse selection problems are likely to be important, the market for IPOs.

The late 1990s was a period of turmoil for Japan's financial system. The system's solvency was jeopardized by a common practice of banks over-extending credit to existing clients and making new loans to problem customers to disguise and postpone defaults.[11] During this period, Japan was aggressively restructuring, deregulating, and opening its financial system and markets through a series of changes, culminating in the later part of the l990s in what has been referred to as the Big Bang.[12]

B. Regulation of Initial Public Offerings in Japan

During the l995 to 1999 period, two different regulatory regimes governed the initial public offering process. From l995 though late l997, IPO issuers were required to use a hybrid auction method. Since late l997 issuers have been permitted to select either the auction method or a book-building method similar to the US method. Since shortly after its introduction, all issuers in Japan have selected book building. Additionally, equity capital market behavior over the period was tumultuous. Coinciding with the auction portion of our sample period, the equity market in Japan declined steadily. Between January 1995 and the end of September 1997, the JASDAQ Index lost 45 percent of its value. During the book-building portion of our sample period, the JASDAQ index appreciated by 139 percent. Hence, for both reasons, the environments for security offerings were very different between the two regimes.

[11] See Brewer et al. (2003) who examine the failure of three Japanese banks during this period and the accompanying stock market reactions.

[12] Restrictions that separate commercial and investment banking were not lifted until October 1999. Hoshi and Kashyap (2001) note at p. 291 that restrictions that separate banking, securities business, and insurance were completely lifted by April 2001.

Previous research (Kutsuna and Smith, 2003) documents significant differences in the outcomes of the IPO process under these two regimes. In particular, they find that the auction method reduced capital market access for younger and riskier firms. Compared to auctioning, book building, enabled smaller, younger, less financially mature firms to go public. While most firms that did issue during the period would have had higher total issue cost with book building, well-established firms were able to place larger issues and complete them at lower cost than would have been possible in the auction regime.

The Auction Regime: Under the auction procedure, in place in Japan from l989 until late 1997, the issuer designated a portion of the issue (usually 50 percent) to be offered via discriminatory auction. The firm's underwriter issued a preliminary prospectus that specified a minimum bid. Regulations precluded insider participation in the auction and limited the maximum number of shares any single participant could bid to acquire. After the auction was complete, the underwriter would conduct a formal firm-commitment offering of remaining shares.

The underwriter's role in an auction method IPO is extremely limited. The underwriter sets the minimum bid price, conducts the auction, sets the firm-commitment price based on the auction results, and conducts the firm-commitment offering. In addition, the underwriter conducts due diligence on the issuer and prepares the preliminary and final prospectuses used in the offering and effectively guarantees the firm commitment offer price to the issuer. During the auction regime, underwriter fees were fixed by informal agreement at artificially low levels of 3.1 to 3.5 percent of gross proceeds.

The Book-building Regime: The book-building method, introduced in Japan in late l997, is modeled after the US system. Under this system, underwriters and issuers use road

shows and other pre-marketing methods to assess indications of interest, and determine offer price. There is no requirement that the offer price be linked by formula to values of comparable firms and there is no limit on the number of shares that any one investor can purchase. The underwriter can allocate shares of over-subscribed offerings in a manner similar to in the US.

Under the book-building method, as in the US, the underwriter establishes a filing range that appears in the preliminary prospectus. The filing range is set based on the underwriter's due diligence and examination of market valuations of other issues.

The two underwriting approaches encompass very different roles for underwriters. In the auction regime, the underwriter's role is more passive, and issue pricing is determined mainly by the results of the auction. In the book-building regime, the underwriter establishes the filing range based on its due diligence and valuation efforts, and pre-sells the issue. Our evidence reflects the underwriter's different roles in the two regimes.

IV. Data

Our data include all JASDAQ IPOs over the period l995 through 1999, 484 total IPOs, including 321 from the auction regime and 163 from the book-building regime. While a few companies in Japan go public on the Tokyo Stock Exchange, the overwhelming majority of IPOs in Japan occur on JASDAQ.

A. Issue Characteristics

Table 1 provides descriptive statistics for characteristics of the IPO during both regimes. Panel (a) shows characteristics of the issuing firms. Consistent with the above discussion, firms going public during the auction regime are older and larger than are firms going public during the book-building regime. The relative proportions of firms in retailing,

manufacturing, service, and other industries are approximately the same over the two periods. The firm location variable measures the number of IPOs completed in the firm's prefecture during the sample period. Access to investment banks may depend on the level of IPO activity in the market where the issuing firm is located. Tokyo prefecture, for example, had the highest level of activity, with 241 IPOs (49.8 percent of the sample). Next were Aichi with 33, Osaka with 30, and Kanagawa with 29. Five prefectures of Japan's 47 prefectures had no IPOs during the period, 14 had only one IPO.

Panel (b) shows information on market-wide value changes or "runup" in the JASDAQ Index in the 20-day interval and 40-day interval before the IPO. Market-wide value change before the IPO are expected to affect realized total issue cost, as offer terms do not fully adjust to market-wide changes. Significant differences in market-wide value changes between the regimes are apparent in the averages. The table also shows market-adjusted 12- and 24-month returns following the IPO. Adjusting for the JASDAQ returns, returns during the book-building regime are considerably higher and more uncertain than returns during the auction regime. However, differences in market-adjusted aftermarket performance between regimes are not statistically significant.

Offer characteristics displayed in panel (c) indicate that offer size is more variable during the book-building regime and that average total issue cost is much higher than during the auction regime. Issue cost is measured as underwriting fee plus underpricing per share, divided by first aftermarket price. In part, the difference between regimes is attributable to the difference in market run-up documented in panel (b). This is because pricing of issues reflects information available 20 to 40 days prior to issue; hence, the greater the run-up the greater the underpricing will be. Run-up, however, does not account for the entire difference

in total issue cost. The panel also contains information on uses of proceeds. Use-of-proceeds percentages are based only on primary shares. On average, 40 percent of IPO proceeds in the auction regime, and 39 percent in the book-building regime, accrued to secondary-share sales. As shown, there are differences between regimes in the reported uses of primary-share proceeds. Most notably, during the book-building regime, use of proceeds to repay debt is lower and issuing firms report a higher percentage of proceeds not identified with any specific purpose. Conceivably, it is more important for a prospectus to specify proceed uses when shares are sold via auction as the underwriter's role in auction IPOs is more limited.

Finally, panel (d) contains information on main bank relationships and underwriter market share. The variable, "Related underwriter" indicates whether the investment bank and issuing firm are related through the same main bank. Consistent with the view that *keiretsu* main bank relationships are weak, the percent of issues that involve related underwriters is low during both regimes. In contrast, the percent of IPOs using underwriters with high IPO market shares is high in both regimes. The suggestion from this evidence is that issuers face tradeoffs between the potential benefits of main bank relationships and the potential benefits of using a large underwriter to conduct the IPO.

B. Main Bank Relationships

In Table 2, we identify the investment banks that underwrote IPOs during the study period and their affiliated main banks. For issuers, we rely on the Research Group for Disclosure's identifications of main banks, which is based on information from the issuer's prospectus. Main bank affiliations of investment banks are determined on the basis of the

commercial bank's holding of equity in the investment bank as of March l999.[13] Equity holdings are reported by Toyo Kezai DataBank on Kigyo Keiretsu (2000).

Figures in the Table 2 for "I-Bank Market Share" are the percentages of IPOs, during each regime, that are underwritten by the specified investment bank. For example, Nomura is the largest underwriter in Japan and, during both regimes; they underwrote approximately 33 percent of the IPOs. Similarly, figures for "Main Bank Market Share" are the percentages of issuers that are affiliated with a specified main bank. To illustrate, Sakura is the main bank of 8.1 percent of the sample firms that made an IPO during the auction regime. Figures in the "Related Market Share" column are the percentages of IPOs where the issuer and the underwriter have the same main bank. The column shows that, during the auction regime, for 2.5 percent of all issues, Nomura underwrote the issue and Sakura was the main bank of both the issuer and the Nomura. The bottom row of the table shows the percentages of IPOs for which the issuer's bank is not a main bank for any investment bank. As shown, during the auction period, 35.5% of issuers had main banks that were not main banks of any underwriter.

Table 2 shows a clear demarcation between the few investment banks with high IPO market shares and the larger number with low shares. In subsequent analysis, we classify investment banks with market shares above 10 percent as major underwriters. Nomura, Daiwa, and Nikko are classified as majors in both regimes. Yamaichi, which was a major during the auction regime, failed around the time of the change to book building. For major underwriters, the percentages of issues where the issuer and the investment bank are related are generally somewhat higher than what would be expected by chance assignment of issuers

[13] Because of the bankruptcy of investment bank, Yamaichi, in late l997, we use equity holdings as of March l995 to identify Yamaichi's main bank for those IPOs underwritten prior to bankruptcy. Also, due to the merger of Nikko Securities and Solomon in l998, we use equity holdings as of March l998 to identify the main bank for

to investment bank based on investment bank market share. Most small investment banks have lower than expected percentages of related issues. A few, Kankaku in particular, have higher levels of related IPOs than would be expected by chance. Overall, the evidence in Table 2 suggests that issuers sometimes migrate to large investment banks and other times they remain with their related investment bank.

In part, investment bank selection is related to the issuer's location and the amount of IPO activity in the location. In the Tokyo prefecture, for example, 42.7 percent of issuers were affiliated with major underwriters. In contrast, only 15.2 percent of issuers in other prefectures were affiliated with major underwriters. In areas other than Japan's main money center, issuers are more likely to have regional main banks that are affiliated with smaller investment banks. Regional banks may have correspondent relationships with money-center banks and issuers may use those relationships to increase access to a major investment bank. As we are unable to verify correspondent relationships or the issuer reliance on them, we classify IPOs as conducted by a "non-related" investment bank unless the issuer has a direct relationship to the investment bank through a common main bank.

C. Investment Bank Relationships and Use of Major Investment Banks

Table 3 presents comparative statistics on IPOs underwritten by investment banks that are related to the issuer and those that are not. In both regimes, IPOs of firms related to investment banks have lower mean total issue cost and lower underpricing. However, these issues also have more negative JASDAQ performance over the 40 days before the IPO. Thus, at least in part, differences in issue cost are attributable to differences in market-wide performance before the IPO

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all Nikko-backed IPOs prior to that date and use holdings as of March l999 for IPO observations dated from April l998 to the end of the sample period.

The difference in market run-up for IPOs using related versus non-related investment bank does not preclude the possibility that the observed cost difference results partly from using a related investment bank. The joint probability that, by chance, market run-ups of IPOs with related investment banks would be significantly lower at the observed levels in both regimes is less than one percent. However, we can find no obvious explanation for the difference. For example, in neither regime is there a secular timing difference between related and non-related IPOs that might produce a spurious result associated with the drift of the market. Conceivably, related investment banks are more willing to underwrite IPOs following declining or non-rising markets. Also, issues involving non-related investment banks may more likely be cancelled in the face of market declines. We tested for this indirectly, by comparing the percent of IPOs with zero or negative run-ups over the 40 days before the offering. Consistent with this possibility, the percentages of IPOs with non-positive run-ups were significantly higher for non-related investment banks in both regimes. Alternatively, investment banks may be better able to time the issues of related firms.[14] As we use market run-up as a control variable in subsequent empirical analysis, it is important to recognize that the analysis masks this possible benefit of using a related investment bank.

The underwriter market share evidence shows, generally, that when issuers use non-related investment banks, they tend to select investment banks with high market. Underwriter market share is significantly higher when the underwriter is not related to the issuer. In the auction regime, 259 issuers (80.7 percent) used major investment banks. Had all issuers used their related investment banks, only 101 issues (31.5 percent) would have been underwritten by majors. In the book-building regime, the shift was to 131 issues (80.4 percent) from a

[14] Or, if non-related investment banks have market timing ability, they may use it to increase *ex post* underpricing, to the detriment of issuers.

default level of 39 issues (23.9 percent). Consistent with this, issuers who used related investment banks were significantly more likely to be related to major underwriters.

The information on the percentage of deals consummated with a "default major underwriter" suggests a systematic pattern in underwriter selection. Default major underwriter is a binary variable that equals 1 if the issuer is related to an investment bank that is classified as a major underwriter; the variable equals 0 if the issuer's main bank does not have a relationship with a major underwriter.[15] The table shows that, during the auction regime, 62.2% of those issuing firms that selected a related investment bank were affiliated with a major investment bank; however, only 26.4% of those who selected a non-related investment bank were affiliated with a major investment bank. A similar pattern emerges during the book-building regime. The results suggest that the choice to use a non-related bank stems from the firm not having a relationship to a major underwriter. Also, if a firm uses a non-related investment bank that investment bank is more likely to be a major bank.

Table 3 also indicates that issuers who used non-related investment banks tend to be younger firms across both regimes. Issues underwritten by non-related investment banks are significantly larger that issues underwritten by related investment banks in the book-building regime, and issuers located in prefectures with low IPO activity are more likely to select non-related investment banks in both regimes.

Finally, in Table 3 we report mean and median JASDAQ-adjusted returns for various intervals after the IPO. The differences in one-month returns are not significant for either regime. We use one-month returns as an indicator of whether a difference exists in the

[15] If the main bank is related to both major and non-major investment banks, we classify the issuer as having a default major underwriter. This only applies to issuers whose main bank is Sakura, as Sakura Bank is affiliated with both Nomura and Kokusai. In the auction regime, all of the issuing firms with access to a default major

propensities for related and non-related investment banks to artificially support the issue prices. We examine returns over longer periods to test for the possibility that related investment banks are more likely to conceal negative information from investors and whether first aftermarket prices suggest that investors rationally provide for conflicts of interest in IPOs underwritten by related investment banks. Differences in mean 12-month returns are not significant. For 24 months, the differences are marginally significant. However, the differences are driven by a small number of extreme positive outliers. When median returns are compared between related and non-related groups, we find that the differences over 24 months are negligible. The evidence is not consistent with the hypothesis that related investment banks are able to mislead investors about the values of IPOs.

To further explore issuer and underwriter relationships, Table 4 compares IPOs underwritten by major investment banks and other investment banks. There are no significant differences in issue costs or market run-up for major versus other investment banks. The results do intimate the importance of relationships: the information on "underwriter market share" shows that major investment banks are significantly more likely to underwrite IPOs of non-related issuers in both regimes. To illustrate, during the auction regime, when the selected underwriter is *not* a major, the issuer and the investment bank are related 27.4 percent of the time. In contrast when the selected investment bank is a major, and the issuer and selected investment bank are related only 10.8 percent of the time.

The difference it importance of the underwriter in the two regimes is suggested by the contrasting findings for percent of IPOs using the default major underwriter. From Tables 1 and 2, we know that smaller and younger firms were more likely to issue during book

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underwriter did employ the default underwriter. However, in the book-building regime, there was one case where an issuing firm elected not to use the default major underwriter.

building than auction, suggesting a more important information-production role for the main bank and suggesting that banking relationships are more important in the book-building regime. The results show that, during book building, when a major investment bank is selected, 72.3 percent of the time the firm's default investment bank is a non-major (27.7 percent of the time the default is a major underwriter). In comparison, when a non-major is selected, 90.9 percent of the time the default is a non-major. During this period, issuers tend to stay with their related underwriters even if the related underwriter is not a major underwriter. In contrast, during the auction regime, when an issuer selected a non-major underwriter, the default underwriter was a non-major 67.7 percent of the time (default major underwriter is 32.3 percent). Issuing firms selecting non-major underwriters were more likely to stay with their related bank in the book-building regime than in the auction regime. The latter result suggests that during the auction regime it was relatively easy for issuers to select non-related underwriters.

V. Empirical Results

A. Overview

We use the combined results of three approaches to examine the effects of main banking relationships on access to equity capital markets and on issue cost. For each approach we estimate the model separately for both regimes and for the data pooled over both regimes. First, we use a Heckman two-step model to identify the determinants of the decision to use a related investment bank or one that is not related. The results suggest that issuers substitute away from related investment banks when they seek underwriters with larger market shares and when they seek to place large issues. We use estimates of the self-selection

effects from the first-stage model to estimate models of total issue cost for issues done with related and non-related investment banks. Because, in our sample, the number of observations of IPOs using related investment banks is small, the second-stage estimates are not sufficiently stable to be used for generating reliable estimates of expected total issue cost. Accordingly, we use the second stage estimates only to examine the determinants of total issue cost.

In the second approach, we estimate a simultaneous-equation system of total issue cost and the investment bank's relationship to the issuer. From this model, consistent with the conflict of interest hypothesis, we find that, for total issue cost, the partial effect of the investment bank's relationship to the issuer is positive: issue cost is higher when the investment bank is related to the issuer. However, the estimates of the investment bank relationship model indicate that issuers use related investment banks when total issue cost is low. As the total issue cost models do not control for the issuer's ability to select a non-related investment bank, they do not reveal whether, on net, issuers who use related investment banks are worse off. To assess the net effect of the investment bank relationship on total issue cost, we estimate an OLS model of total issue cost. We find that realized total issue cost is similar for issues involving related and non-related investment banks. However, these estimates do not reflect the possible advantages of using a related investment bank that are documented in Table 3. That is, related banks may be better at timing issues or better able to credibly underwrite issues following a market decline.

B. The Choice of Related or Non-Related Investment Bank

Table 5 shows estimates of a probit model of the decision to use a related investment bank. As explanatory variables of the choice, we include the selected investment bank's share

of IPO underwriting activity during the regime; a directional variable for whether the selected investment bank reflects a change in investment bank size relative to the size of the related investment bank: to a major underwriter (+1), away from a major underwriter (-1), or no change, including using the related investment bank (0); and a measure of issue size in logs. In the pooled data, we include a binary variable for regime, but restrict the other coefficient estimates to be fixed across regimes.

We expect issuers to switch from related investment banks when they seek to engage major underwriters and when they need the service of a major underwriter in order to accomplish a large IPO. Results in Table 5 are consistent with expectations, as the sign of the coefficients of the "change of major underwriter" variable is negative across both regimes. The lack of significance for the issue size variable in the auction regime reflects the restrictive regulations governing the regime. These restrictions effectively prevented very large and very small IPOs from occurring, limiting the cross-sectional variation in issue size.[16]

Table 6 contains second-stage Heckman estimates of total issue cost. Explanatory models of total issue cost generally are weak in the auction regime. This is symptomatic of the regulatory and other constraints of the auction regime. Among other things, investors had agreed to a very low percentage fee for IPO underwriting. With the issue price determined largely by the results of the initial auctioning of about half of the shares, the underwriter's ability to affect underpricing was limited. The net result is that, in the Table 6 models for the auction regime, JASDAQ run-up before the IPO is the most important explanatory variable. Firm size and age control variables sometimes are significant. For the auction observations, underwriter market share is significant in the non-related investment bank model, suggesting that when issuers shift to non-related underwriters, those banks with the larger market shares

tend to underprice more. This coefficient is not significantly different from the market share coefficient for the related investment banker model.

As a test of whether underwriters attempt to opportunistically over price IPOs of related issuers, we include the one-month market-adjusted return to proxy for expected mis-pricing. The fact that the return is positive in the related investment bank model but not in the non-related investment bank model suggests that, if anything, the market is overly concerned about the underwriter's possible conflict of interest. The Mills ratio, which reflects the effects of self-selection on the estimates, is marginally significant in the non-related investment bank model.

In the book-building regime, the underwriter's role is more active. As such, we expect total issue cost to reflect the underwriter's costs of certifying and pre-marketing the IPO. Consistent with this expectation, issue cost as a percentage of aftermarket value generally declines with various indicators of firm size and track record. In contrast to the auction-regime estimates, underwriter market share is not significant once the firm and issue characteristics are included in the model. JASDAQ run-up is, again, highly significant in the book-building regime. The one-month return after the IPO again suggests that, if anything, investors are overly concerned about the related underwriter's conflict of interest.[17]

When the two regimes are combined, the model estimates generally are strengthened. The binary indicator for the book-building regime is significant in both related and non-related issuer models.

[16] See Kutsuna and Smith (2003) for additional information of the effect of auction regulations on issue size.
[17] Relationships involving longer windows of JASDAQ-adjusted aftermarket returns are not significant in explaining total issue cost in the Heckman model or in any of the other models.

B. Simultaneous Equation Estimates

In principle, results of the second-stage models can be used to compare expected total issue cost for each issuer, of using either a related or non-related investment bank. However, as shown in Table 6, the numbers of observations of issues with related investment banks are very low in both regimes. As a result, the selectivity approach yields predictions that are not very stable and are highly sensitive to which variables are included in the first- and second-stage models.

As an alternative, in Table 7, we estimate a simultaneous system. While this method does not control for self-selection, the coefficient estimates reflect partial effects of the included variables. As most results are similar to results in Table 6, we focus discussion only on the new information. In contrast to the Heckman models, we are able to combine IPOs with related and non-related investment banks into a single model. We restrict most coefficients to be the same for related and non-related issues but include a binary variable reflecting whether the issuer and investment bank are related. The coefficient on this variable reflects the partial effect of the relationship on total issue cost. Thus, it serves as a test of the investment bank's effort to exploit a conflict of interest by offering a noncompetitive total issue cost. As total issue cost is only observable after the offering, the issuer would perceive the underwriter's efforts to exploit its bargaining power in the form of a low valuation of the issuer's shares and possibly (in the book-building regime) high fees for underwriting the issue. To test whether related investment banks attempt to exploit investors by concealing negative information or otherwise inducing investors to over-value the shares of related issuers, we include an interaction of the JASDAQ-adjusted one-month aftermarket return.

The positive and generally significant coefficient on the investment bank relationship in the total issue cost model is consistent with the conflict of interest hypothesis. However, the total issue cost model does not capture the issuer's ability to avoid the conflict by selecting a non-related investment bank. In the underwriter affiliation model, the negative and significant coefficient on total issue cost is evidence that issuers tend to stay with their related investment banks when they perceive that the related bank will offer a lower total issue cost, *ceteris paribus*. While total issue cost is not observable by the issuer at the time the investment bank is selected, we use the actual total issue cost to proxy for the issuer's estimate of expected total issue cost.

The coefficient on the interacted aftermarket return variable is significantly positive in both regimes, whereas the non-interacted variable is not significant. The result comports with the evidence in Table 6 and is inconsistent with hypothesis that related investment banks successfully lead investors to overvalue the shares of related issuers. Rather, it appears that, investors tend to undervalue the shares of related issuers. As the long-run median returns are virtually identical for related and non-related issues, we find no support for this aspect of the conflict of interest hypothesis.

C. Ordinary Least Squares Estimates of Net Effects

Do issuers benefit by using related investment banks or are they harmed? Given the partial effects in Table 7, the answer is not clear. It appears that related investment banks expect to exploit bargaining power, but issuers who are faced with attempts to exploit bargaining power use non-related investment banks. Table 8 reports the results of an ordinary least squares estimate of total issue cost. This model reveals the net effects of the investment bank's effort to exploit its bargaining advantage and the issuer's effort to shop for

underwriting services. We find no significant difference between total issue cost of issues using related and non-related investment banks. The estimated partial effect of the relationship is near zero in both regimes.

As noted previously, this estimate, as well as the estimates in Tables 6 and 7, does not take account of the evidence from Table 3, that related investment banks appear to be more likely to underwrite IPOs following periods when the market has not experienced a significant run-up in the 40 days before the offering. In contrast to non-related investment banks, related investment banks appear to go forward with plans for IPOs even if the market timing may suggest they postpone or withdraw the offering. Investor concern with adverse selection of such offerings appears to be solved with the certification that accompanies the banking relationship with the issuer.

For completeness, Table 8 includes OLS estimates of the investment bank relationship model. As should be expected, coefficients on total issue cost as explanatory factors are weaker than when the system is estimated simultaneously.

D. Use of Proceeds

As previously noted, in Table 3 we find no significant differences in JASDAQ-adjusted aftermarket returns between IPOs with related and non-related investment banks for one-month and 12-month intervals after the IPO. While 24-month mean adjusted returns are marginally higher for IPOs using related investment banks, the difference is driven by a small number of extreme positive outliers in the non-related IPOs. There are no material differences in median returns over any interval.

Further, in Table 6, we find that total issue cost of IPOs with related investment banks is positively related to abnormal returns in the month after the IPO. This result indicates that

investors in IPOs using related investment banks initially undervalue them in a way that is positively related to underpricing. There is no similar pattern for IPOs using non-related investment banks.

While these estimates suggest that investors are not misled into overvaluing issues using related investment banks, the models do not directly examine the issue of self-dealing. Main banks could engage in self-dealing either by participating as a selling shareholder in subsequent secondary offerings or by causing primary proceeds to be used to redeem debt owed to the main bank. Irrespective of whether self-dealing occurs, our previous evidence indicates that investors are not misled into overvaluing IPOs of issues where related investment banks are used. This, however, does not preclude the possibility that main banks may engage in self-dealing, even if the market correctly perceives their efforts. While self-dealing that is anticipated by the market does not harm new investors in the issuer, and does not harm the reputation of the investment bank, it could, by transferring wealth from stockholders to the main bank, harm existing investors in the issuer.

To test for self-dealing, we examine differences in uses of proceeds between related and non-related IPOs. Table 9 shows the percentage allocations of total net proceeds to secondary versus primary shares and the percentage allocations of primary net proceeds to specific uses. We find no significant differences in either regime in the percentages of total net proceeds allocated to secondary sales of shares. Nor, in either regime, are issuers who use related investment banks significantly more likely to use proceeds to redeem outstanding debt or to allocate proceeds to other unspecified uses than are issuers who used non-related investment banks.[18]

[18] We also estimated OLS models of the use of proceeds to redeem debt as functions of relationships to investment banks and the investment bank market share. None of these models produced significant results.

VI. Conclusions

In this paper we study the role of banking relationships in IPO underwriting. Among other issues, we are interested in whether such relationships lead to increased access to equity capital markets. In summary, main bank relationships to investment banks are valuable to IPO issuers in Japan. Main bank lending relationships appear to give small issuers greater assess to equity capital markets than they would have if commercial banks and investment banks were not related. Large issuers whose main bank relationships are with small investment banks appear to be able to switch to large non-related investment banks that are capable of managing larger offerings. The findings are important for policymakers who are concerned that problems with conflicts of interest and self-dealing by banks are most acute when financial markets are under stress and for those securities subject to significant informational asymmetries, like IPOs.

While we find evidence that related investment banks seek to exploit relationship-based bargaining power by charging higher fees and/or by underpricing more, our evidence indicates that the investment bank's bargaining power is limited and that issuers respond to high expected issue cost by using non-related investment banks. On average, holding other factors constant, issuers who use related banks have total issue costs that are comparable to total issue costs when issuers use non-related investment banks.

We find no significant evidence that IPOs underwritten by related investment banks are systematically over-valued by investors and no significant evidence that main banks attempt to exploit their relationships to issuers and underwriters by selling shares of overvalued issuers or using proceeds disproportionately to extinguish issuer's debt owed to the main bank.

References

Ang, James S., and Terry Richardson, 1994, "The Underwriting Experiences of Commercial Bank Affiliates Prior to the Glass-Steagall Act: A Re-examination of Evidence for Passage of the Act," *Journal of Banking and Finance* 18, 351-395.

Aoki, Masahiko and Hugh Patrick, 1994, *The Japanese Main Bank System: Its Relevance for Developing and Transforming Economies*," Published for the World Bank by Oxford University Press (Oxford).

Aoki, Masahiko, Hugh Patrick, and Paul Sheard, l994, "The Japanese Main Bank System: An Introductory Overview," in Masahiko Aaoki and Hugh Patrick, eds. *The Japanese Main Bank System: Its Relevance for Developing and Transforming Economies,* Published for the World Bank by Oxford University Press (Oxford).

Benston, George J., 1990, *The Separation of Commercial and Investment Banking* Oxford: Oxford University Press.

Berger, Allen and Gregory F. Udell, 1995, "Relationship Lending and Lines of Credit in Small Firm Finance," *Journal of Business* 68, 351-370.

Boot, Arnoud W., 2000, "Relationship Banking: What Do We Know?" *Journal of Financial Intermediation* 9, 7-25.

Brewer, Elijah, Hesna Genay, William Curt Hunter and George G. Kaufman, "Does the Japanese Stock Market Price Bank Risk? Evidence from Financial Firm Failures," *Journal of Money, Credit, and Banking*, forthcoming, 2003.

Campbell, Tim, and William Kracaw, 1980, "Information Production, Market Signalling, and the Theory of Intermediation," *The Journal of Finance* 35, 863-882.

Chaplinsky, Susan and Gayle Erwin, 2001, "Commercial Banks as Equity Underwriters," working paper, University of Virginia.

Diamond, Douglas, 1984, "Financial Intermediation and Delegated Monitoring," *Review of Economic Studies* 51, 393-414.

Diamond, Douglas, 1991, "Monitoring and Reputation: The Choice Between Bank Loans and Directly Placed Debt," *Journal of Political Economy* 99, 688-721.

Fama, Eugene, 1985, "What's Different About Banks?" *Journal of Monetary Economics* 15, 5-29.

Gande, A., M. Puri, A. Saunders, and I. Walter, l997, "Bank Underwriting of Debt Securities: Modern Evidence," *Review of Financial Studies* 10, 1175-1202.

Hoshi, Takeo, and Anil Kashyap, 2001, *Corporate Financing and Governance in Japan* Cambridge, Massachusetts: The MIT Press.

Hoshi, Takeo, Anil Kashyap, and David Scharfstein, 1991, "Corporate Structure, Liquidity, and Investment: Evidence for Japanese Industrial Groups," *Quarterly Journal of Economics* 106, 33-60.

James, Christopher, 1987, "Some Evidence on the Uniqueness of Bank Loans," *Journal of Financial Economics* 19, 217-235.

James, Christopher and Peggy Weir, l990, "Borrowing Relationships, Intermediation and the Cost of Issuing Public Securities," *Journal of Financial Economics* 28, 149,171.

Kutsuna Kenji and Richard Smith, 2003 "Why Does Book Building Drive Out Auction Methods of IPO Issuance? Evidence from Japan," working paper, Peter F. Drucker Graduate School of Management.

Kroszner, Randall S. and Raghuram G. Rajan, 1994, "Is the Glass-Steagall Act Justified? A Study of the U.S. Experience with Universal Banking Before l933," *American Economic Review* 84, 810-832.

Kroszer Randall S. and Raghuram G. Rajan, l997, "Organization Structure and Credibility: Evidence from Commercial Bank Securities Activities Before the Glass-Steagall Act," *Journal of Monetary Economics* 39, 475-551.

Leland, Hayne E., and David H. Pyle, 1977, Information Asymmetries, Financial Structure, and Financial Intermediation," *The Journal of Finance* 32, 371-387.

Loughran, Tim and Jay R. Ritter, 2003, "Why Has IPO Underpricing Changed Over Time?" working paper, University of Florida.

Miwa, Yoshiro, and J. Mark Ramseyer, 2002, "The Fable of the Keiretsu," *Journal of Economics & Management Strategy* 11, 169-224.

Narayanan, Rajesh and Kasturi P. Rangan and Nanda K. Rangan, 2001, "Commercial Bank Underwriting: Conflict of Interest and Credible Commitment," working paper, Ohio University.

Okumura, Hiroshi, 2000, *Corporate Capitalism in Japan*, London: Palgrave Macmillan.

Petersen, Mitchell A. and Raghuram G. Rajan, 1994, "The Benefits of Lending Relationships: Evidence from Small Business Data," *The Journal of Finance* 49, 3-37.

Puri, Manju, 1994, "The Long Term Default Performance of Bank Underwritten Security Issues," *Journal of Banking and Finance* 18, 397-418.

Puri, Manju, 1996, "Commercial Banks in Investment Banking: Conflict of Interest or Certification Role?" *Journal of Financial Economics* 40, 373-402.

Puri, Manju, 1999, "Commercial Banks as Underwriters: Implications for the Going Public Process," *Journal of Financial Economics* 54, 133-163.

Rajan, Raghuram, 1992, "Insiders and Outsiders: The Choice Between Informed and Arm's Length Debt," *The Journal of Finance* 47, 169-200.

Sherman, Ann, 2002, "Global Trends in IPO Methods: Book Building vs. Auctions," working paper, University of Notre Dame.

Stiglitz, Joseph, and Andrew Weiss, 1981, "Credit Rationing in Markets with Imperfect Information," *American Economic Review* 71, 393-410.

Table 1

Summary Statistics for Issuing Firms and IPO Attributes

Sample means (standard deviations) for 321 auction-method offerings and 163 book-building-method offerings by JASDAQ firms during 1995 through 1999.

Variable	Definition	Auction Regime	Book-building Regime	t-value
Panel (a) Issuing Firm Characteristics				
Firm Age	Age of firm in years, at time of issue	30.0 (13.1)	24.8 (26.8)	2.84***
Employees	Number of employees	465.0 (500.6)	374.3 (467.6)	1.40*
Sales	Annual sales prior to offering, in millions of yen	18,607 (22,035)	15,873 (15,017)	1.13
Commercial	Binary variable equals 1 if a retail enterprise	31.15%	30.06%	0.18
Manufacturing	Binary variable equals 1 if a manufacturing enterprise	34.89%	30.67%	0.67
Service	Binary variable equals 1 if a service enterprise	19.31%	23.93%	-0.83
Other	Binary, equals 1 if wholesalers, mining, or financial firm	14.64%	15.34%	-0.14
Firm Location	Number of firms in the issuing firm's prefecture that completed an IPO during the sample period, I995-I999	119.8 (111.9)	146.0 (111.5)	-1.75*
Panel (b) Pre- and Post-IPO Performance				
Runup 20	Run-up in the JASDAQ Index over 20 days prior to IPO	-2.4% (5.5%)	3.8% (10.3%)	-5.50***
Runup 40	Run-up in the JASDAQ Index over 40 days prior to IPO	-3.8% (9.0%)	6.7% (15.9%)	-6.00***
Return 12	Market adjusted return over 12 months after IPO	-1.8% (37.2%)	6.0% (301.9%)	-0.31
Return 24	Market adjusted return over 24 months after IPO	-5.3% (76.0%)	89.1% (1170.1%)	-0.98
Panel (c) Offer Characteristics				
Offer Size	In thousands of yen, based on offer price	2,726,934 (4,046,173)	2,877,350 (5,198,224)	-0.24
Total Issue Cost	Includes underwriting fees plus underpricing, as a percent of first after-market price	11.7% (11.8%)	28.0% (26.8%)	-5.93***
Working Capital	Percent of primary proceeds used for working capital	22.1% (34.6%)	21.8% (35.0%)	0.05
Long-term Investment	Percent of primary proceeds used for investment	38.4% (40.3%)	39.1% (43.4%)	-0.12
Repay Debt	Percent of primary proceeds used for debt repayment	34.3% (39.9%)	22. 9% (35.3%)	2.28**
Other Use	Percent of primary proceeds used for other uses	5.3% (17.7%)	16.2% (32.9%)	-3.05***
Panel (d) Relationships				
Related I-Bank	Binary variable, equals 1 if issuing firm and investment bank share the same "main bank"	14.0 %	14.1%	-0.02
Major Underwriter	Binary variable, equals 1 if the investment bank has market share > 10%, based on share of IPO business over sample period	80.7%	80.4%	0.17

Data sources: IPO Prospectus and Research Group for Disclosure. Research Group for Disclosure identifies the main bank of the issuer based on the prospectus of the issuing firm. Stock prices are from Toyo-Keizai Stock Price Data.

***significant at 1%; ** significant at 5%; *significant at 10%.

Table 2

Investment Bank and Main Bank Relationships

Table shows market shares of IPOs for investment banks, main banks, and for those IPOs conducted by an investment bank that has the same main bank as the issuing firm. Investment bank affiliations with main banks are identified on the basis of the main bank's ownership of investment bank equity. Research Group for Disclosure identifies issuing firm main banks. The table includes all investment banks that underwrote IPOs during the period of study and all related main banks. A main bank can be related to more than one investment bank. All figures in are percentages based on 321 auction-method IPOs or 163 book-building-method IPOs.

		Auction Regime			Book-building Regime		
Investment Bank	Main Bank	I-Bank Market Share	Main Bank Market Share	Related Bank Market Share	I-Bank Market Share	Main Bank Market Share	Related Bank Market Share
Nomura Securities	Sakura Bank	32.7	8.1	2.5	33.1	6.1	2.5
Daiwa Securities	Sumitomo Bank	17.4	5.3	0.9	20.9	8.0	3.1
Nikko Securities	Bank of Tokyo-Mitsubishi	17.4	9.3	3.4	25.8	9.8	3.1
Yamaichi Securities	Fuji Bank	13.1	8.1	1.9	0.6	9.2	0.0
Kokusai Securities	Sakura Bank	4.7	8.1	0.0	6.7	6.1	0.6
Kankaku Securities	Dai-Ichi Kangyo Bank	5.0	10.9	3.4	2.5	15.3	2.5
New Japan Securities	Industrial Bank of Japan	2.2	1.6	0.0	4.9	1.8	1.2
Wako Securities	Industrial Bank of Japan	1.9	1.6	0.6	1.8	1.8	0.0
Dai-Ichi Securities	Long-Term Credit Bank	1.2	1.6	0.3	0.6	0.0	0.0
Sanyo Securities	Daiwa Bank	1.2	2.8	0.0	0.0	1.2	0.0
Universal Securities	Long-Term Credit Bank	0.9	1.6	0.0	0.0	0.0	0.0
Okasan Securities	Industrial Bank of Japan	0.9	1.6	0.0	0.0	1.8	0.0
Cosmo Securities	Daiwa Bank	0.6	2.8	0.3	0.6	1.2	0.6
Tokai Maruman Sec.	Tokai Bank	0.6	10.3	0.6	0.6	4.9	0.6
Ichiyoshi Securities	Sanwa Bank	0.0	5.9	0.0	1.2	11.7	0.0
Marusan Securities	Industrial Bank of Japan	0.0	1.6	0.0	0.6	1.8	0.0
Others	Others	0.0	35.5	0.0	0.0	31.9	0.0

Table 3

Comparative Statistics for IPOs Using Related and Non-Related Investment Banks

Comparisons of issue cost, underwriter market share, issue characteristics, and aftermarket performance for 321 auction regime and 163 book-building regime IPOs. Table reports tests for differences in means between IPOs underwritten by related investment banks and by non-related investment banks. A "related" bank means that the underwriter and the issuer share the same main bank. The "Underwriter Market Share" panel shows: 1) for those firms that select a related (non-related) investment bank: a) the average market share of the underwriter; b) percent of the deals done by a major underwriter, where a major has a market share of 10% or more; and c) percent of the deals done by the issuing firm's default underwriter, where "default underwriter" is a binary variable that equals 1 if the issuer's main bank is related to an investment bank that is a major underwriter.

	Auction Regime			Book-building Regime		
	Related	Non-related	t-value	Related	Non-related	t-value
Issue Costs						
Total Issue Cost	8.1%	12.3%	1.50*	20.3%	29.3%	1.53*
Underwriter Fees	3.2%	3.1%	1.47*	4.7%	4.2%	1.34*
Underpricing	3.2%	9.2%	1.50*	15.6%	25.1%	1.52*
Run-up 40	-6.1%	-3.4%	1.51*	0.4%	7.8%	1.60*
IPOs with Positive Run-up 40	17.8%	35.1%	1.99***	47.8%	69.3%	1.45*
Underwriter Market Share						
Underwriter Market Share	14.3%	19.9%	2.48***	17.1%	23.7%	1.92**
Major Underwriter (% of obs)	62.2%	83.7%	2.23***	60.9%	82.9%	1.59*
Default Major Underwriter (% of obs)	62.2%	26.4%	3.56***	65.2%	17.1%	3.54***
Issue Details						
Firm Age	34.1	29.3	1.98***	29.6	24.1	1.33*
Employees	487.8	461.2	0.28	316.0	383.9	0.70
Sales	23546	17802	1.11	18239	15484	0.52
Shares Offered (thousands)	1258	1219	0.27	1029	1314	1.82**
Offer Size (millions yen)	2448.0	2772.4	0.58	1227.3	3148.4	2.70***
Location	148	115	1.40*	193	138	1.88**
Aftermarket Returns						
1 Month Mean Return	-2.0%	-2.9%	0.21	-17.4%	-6.9%	1.12
1 Month Median Return	-4.6%	-4.3%		-22.7%	-9.3%	
12 Month Mean Return	-4.2%	-1.5%	0.39	-42.8%	14.2%	1.02
12 Month Median Return	-13.5%	-8.8%		-29.9%	-31.5%	
24 Month Mean Return	-20.1%	-2.9%	1.37*	-60.3%	114.0%	1.28
24 Month Median Return	-19.9%	-19.9%		-58.6%	-56.4%	

***significant at 1%; ** significant at 5%; *significant at 10%.

Table 4

Comparative Statistics for IPOs Using Major and Non-Major Investment Banks

Comparisons of issue cost, underwriter market share characteristics for 321 auction regime and 163 book-building regime IPOs. Table reports tests for differences in means in characteristics of IPOs underwritten by major investment banks and smaller investment banks, where a "major" has a market share of 10% or more. The "Underwriter Market Share" panel shows: for those firms that select a major (non-major) investment bank: a) percent of the deals done by the issuing firm's default underwriter, where "default underwriter" is a binary variable that equals 1 if the issuer's main bank is related to an investment bank that is a major underwriter, and b) % of the deals done by a related underwriter (one who shares the same main bank as the issuer).

	Auction Regime			Book-building Regime		
	Major I-Bank	Other I-Bank	t-value	Major I-Bank	Other I-Bank	t-value
Issue Costs						
Total Issue Cost	12.1%	10.1%	0.80	28.8%	25.0%	0.53
Underwriter Fees	3.1%	3.1%	0.55	4.3%	4.3%	0.11
Underpricing	9.0%	7.0%	0.79	24.5%	20.7%	0.51
Run-up 40	-3.6%	-4.5%	0.53	7.7%	3.0%	1.11
Underwriter Market Share						
Default Major Underwriter (% of obs.)	31.3%	32.3%	0.11	27.7%	9.1%	2.04***
Related Underwriter (% of obs.)	10.8%	27.4%	2.16***	10.8%	27.3%	1.54*
Issue Details						
Firm Age	29.1	33.7	2.02***	24.4	26.4	0.56
Employees	467.4	454.7	0.14	394.8	293.6	0.92
Sales	18736	18069	0.18	16894	11852	1.41*
Shares Offered (thousands)	1270	1032	2.94***	1319	1093	1.10
Offer Size (millions yen)	2848.8	2218.0	1.24	3152.8	1792.2	1.21
Location	115	139	1.14	140	168	0.97

***significant at 1%; ** significant at 5%; *significant at 10%.

Table 5

Heckman Selection Model Estimates of Choice to Use the Underwriter Related to the Issuer's Main Bank

Probit first-stage selection estimates where the dependent variable equals one if the issuer uses a related investment bank and zero otherwise. Estimates are based on 321 IPOs during the auction regime, 163 IPOs during the book-building regime, and 484 total IPOs. "Change to major" is a directional variable: =1 if the issuer had a related underwriter that was not a major underwriter and switched to a major; =0 if the issuer had a related underwriter that was a major and chose to use that underwriter or switched to another major underwriter. Book Building Regime is a dummy variable that equals 1 for observations during the book-building period.

	Auction Regime		Book-Building Regime		Both Regimes	
	Coef.	z-value	Coef.	z-value	Coef.	z-value
Underwriter Market Share (Pct)	0.0005	0.05	0.0140	1.02	0.0044	0.54
Change to Major Underwriter	-0.9042	-4.86***	-1.9297	-4.71***	-1.1204	-6.79***
Issue Size (Ln thousands of yen)	-0.0059	-0.04	-0.3018	-2.09***	-0.1286	-1.41*
Book Building Regime					0.0389	0.22
Constant	-0.7387	-0.41	3.3967	1.71**	0.9961	0.76

***significant at 1%; ** significant at 5%; *significant at 10%.

Table 6

Heckman Selection Model Estimates of Total Issue Cost for Issuers Who Use Underwriters Who Are Related/Not-related to the Issuer's Main Bank

Heckman second-stage estimates are based on total issue cost as a percent of first aftermarket value. Estimates are based on 321 IPOs during the auction regime, 163 IPOs during the book-building regime, and 484 total IPOs. "Book-Building Regime" is a dummy variable that equals 1 for observations during the book-building period.

	Auction Regime		Book-Building Regime		Both Regimes	
	Coef.	z-value	Coef.	z-value	Coef.	z-value
Related Investment Bank						
Underwriter Market Share (Pct)	0.0019	1.00	-0.0007	-0.33	-0.0001	-0.04
Firm Age (Ln years)	0.1079	1.86**	-0.0203	-0.41	0.0438	1.06
Employees (Ln)	-0.0072	-0.25	-0.0787	-2.22***	-0.0259	-1.07
Offer Size (Ln thousands of yen)	-0.0277	-0.88	0.0161	0.33	0.0043	0.14
Market Run-up (Day –40 to -1)	0.5729	2.65***	0.9038	4.42***	0.7766	5.04***
Aftermarket Return (Month 1)	0.1321	1.43*	0.1271	1.58*	0.1195	1.78**
Book-Building Regime					0.0792	1.92**
Constant	0.0	0.0	0.4537	0.70	0.1914	0.50
Mills Ratio (lambda)	0.1141	0.32	0.0525	0.49	-0.0888	-0.48
Obs.	45		23		68	
Non-related Investment Bank						
Underwriter Market Share (Pct)	0.0024	3.23***	0.0005	0.26	0.0017	1.86**
Firm Age (Ln years)	-0.0163	-1.24	-0.1139	-3.56***	-0.0672	-4.57***
Employees (Ln)	-0.0152	-1.80**	-0.0358	-1.41*	-0.0230	-2.23***
Offer Size (Ln thousands of yen)	-0.0010	-0.11	-0.0140	-0.78	-0.0061	-0.64
Market Run-up (Day –40 to -1)	0.3787	5.28***	1.1159	9.60***	0.8279	12.35***
Aftermarket Return (Month 1)	-0.0030	-0.09	0.0015	0.03	0.0174	0.57
Book-Building Regime					0.0479	2.48***
Constant	0.0664	1.77**	0.9270	3.54***	0.5434	3.79***
Mills Ratio (lambda)	0.2268	1.62*	0.0130	0.17	0.0619	1.56*
Obs.	276		140		416	

***significant at 1%; ** significant at 5%; *significant at 10%.

Table 7

Simultaneous Estimates of Total Issue Cost and Investment Bank Relationship

Three-stage least squares estimates of total issue cost and investment bank relationship to the issuer are based on 321 auction-regime IPOs and 163 book-building-regime IPOs. "Book-Building Regime" is a dummy variable that equals 1 for observations during the book-building period. "Change to Major Underwriter" is a directional variable: =1 if the issuer had a related underwriter that was not a major underwriter and switched to a major; =0 if the issuer had a related underwriter that was a major and chose to use that underwriter or switched to another major underwriter.

	Auction Regime		Book-Building Regime		Both Regimes	
	Coef.	z-value	Coef.	z-value	Coef.	z-value
Total Issue Cost Model						
Related Investment Bank	0.1314	1.69**	0.1670	1.23	0.1624	2.14***
Underwriter Market Share (Pct)	0.0025	3.32***	0.0004	0.25	0.0015	1.94**
Firm Age (Ln years)	-0.0225	1.40*	-0.1096	-3.67***	-0.0711	-4.52***
Employees (Ln)	-0.0148	-1.63*	-0.0438	-1.90**	-0.0253	-2.49***
Offer Size (Ln thousands of yen)	-0.0079	-0.81	-0.0085	-0.51	-0.0070	-0.76
Market Run-up (Day –40 to -1)	0.4714	5.65***	1.1387	9.82***	0.8856	12.43***
Aftermarket Return (Month 1)	-0.0147	-0.39	-0.0009	-0.02	0.0114	0.36
(Related I-Bank) * (Aftermarket Return)	0.2546	2.42***	0.2917	1.30*	0.2260	2.02***
Book-Building Regime					0.0424	2.24***
Constant	0.3428	2.31***	0.8709	3.63***	0.5793	4.14***
Underwriter Affiliation Model						
Total Issue Cost (Pct of Market)	-1.1387	-2.38***	-0.2808	-1.91**	-0.4990	-3.16***
Underwriter Market Share (Pct)	0.0032	1.31*	0.0038	1.32*	0.0019	1.14
Change to Major Underwriter	-0.1966	-5.20***	-0.3425	-6.20***	-0.2298	-7.53***
Firm Age (Ln years)	0.0607	1.52*	0.0460	1.07	-0.0396	1.35*
Employees (Ln)	-0.0139	-0.53	-0.0139	-0.39	-0.0120	-0.58
Offer Size (Ln thousands of yen)	0.0076	0.28	-0.0233	-0.94	-0.0053	-0.29
Book-Building Regime					0.0960	2.37***
Constant	0.0808	0.20	0.5909	1.72**	0.2903	1.08
Obs	321		163		484	

***significant at 1%; ** significant at 5%; *significant at 10%.

Table 8

Ordinary Least Squares Estimates of Total Issue Cost and Investment Bank Relationship

OLS estimates of total issue cost and investment bank relationship to the issuer are based on 321 auction-regime IPOs and 163 book-building-regime IPOs. "Book-Building Regime" is a dummy variable that equals 1 for observations during the book-building period. "Change to Major Underwriter" is a directional variable: =1 if the issuer had a related underwriter that was not a major underwriter and switched to a major; =0 if the issuer had a related underwriter that was a major and chose to use that underwriter or switched to another major underwriter.

	Auction Regime		Book-Building Regime		Both Regimes	
	Coef.	z-value	Coef.	z-value	Coef.	z-value
Total Issue Cost Model						
Affiliated Underwriter	-0.0142	-0.77	0.0363	0.67	0.0051	0.24
Underwriter Market Share (Pct)	0.0018	2.93***	-0.0002	-0.12	0.0007	1.08
Firm Age (Ln years)	-0.0089	-0.67	-0.1030	-3.50***	-0.0587	-4.20***
Employees (Ln)	-0.0137	-1.63*	-0.0423	-1.82**	-0.0240	-2.47***
Offer Size (Ln thousands of yen)	-0.0047	-0.52	-0.0099	-0.58	-0.0058	-0.66
Market Run-up (Day –40 to -1)	0.4038	5.72***	1.0879	10.22***	0.8179	13.20***
Aftermarket Return (Month 1)	0.0032	0.09	0.0047	0.09	0.0215	0.72
(Related I-Bank) * (Aftermarket Return)	0.1750	1.98***	0.1251	0.82	0.1083	1.34*
Book-Building Regime					0.0548	3.14***
Constant	0.2773	2.07***	0.8931	3.70***	0.5493	4.13***
Underwriter Affiliation Model						
Total Issue Cost (Pct of Market)	-0.3241	-2.04***	-0.1027	-1.08	-0.1711	-2.07***
Underwriter Market Share (Pct)	0.0012	0.57	0.0038	1.30*	0.0015	0.87
Change to Major Underwriter	-0.1832	-5.08***	-0.3416	-6.11***	-0.2241	-7.42***
Firm Age (Ln years)	0.0613	1.58*	0.0607	1.43*	0.0535	1.88**
Employees (Ln)	-0.0020	-0.08	-0.0065	-0.18	-0.0034	-0.17
Issue Size (Ln thousands of yen)	0.0056	0.21	-0.0295	-1.20	-0.0118	-0.66
Book-Building Regime					0.0476	1.35*
Constant	-0.0245	-0.06	0.5439	1.58*	0.2564	0.96
Obs	321		163		484	

***significant at 1%; ** significant at 5%; *significant at 10%.

Table 9

Allocation of Proceeds

Simple averages of percentages of total proceeds net of fees secondary sellers of shares and simple averages of primary net proceeds based on uses as reported in the issuer's prospectus. Based on 321 auction-regime and 163 book-building-regime IPOs.

	Auction Regime			Book-building Regime		
	Related	Non-related	t-value	Related	Non-related	t-value
Allocation of Total Net Proceeds						
Secondary Proceeds to Total	41.1%	40.3%	0.24	34.3%	39.7%	0.87
Allocation of Primary Net Proceeds						
Working Capital	22.3%	22.0%	0.38	12.5%	23.4%	1.21
Capital Investment	45.3%	37.3%	0.93	47.9%	37.6%	0.73
Debt Retirement	29.7%	35.0%	0.64	24.2%	22.7%	0.13
Other Unspecified Uses	2.7%	5.7%	0.89	15.4%	16.4%	0.10

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