Why Hire Your Rival?
The Case of Bank Debt Underwriting

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ABSTRACT

This paper details the previously undocumented debt underwriting relationship for financial firms. Public investment and commercial banks ("banks") are unique in that they are the only ones capable of underwriting their own securities. These firms, however, hire a rival in nearly 30% of their debt issuances and do so extensively across bank size, quality, and type. The decision to use a rival is related to expertise, information sharing, as well as bank-specific (capacity, distribution networks, and reputation) motivations and is costly to issuers. These results provide new evidence of banks' underwriter choice and the pervasive use of rivals.

Keywords: Capital markets; debt issuance; banking; investment banks; underwriting
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The debt capital markets play a substantial role in the funding of U.S. public companies. From 1979 to 2014, U.S. firms raised $33 trillion in aggregate debt and $2.1 trillion in 2014 alone.[1] In nearly all of these debt issuances, public companies engaged a financial intermediary to underwrite and place their securities. These intermediaries perform a fundamental role, bringing together borrowers and investors as well as credibly reducing the transaction and information costs by putting their own reputations at stake (Fang, 2005). Little is known, however, about financial intermediaries' own debt issuances. Financial firms comprise over 30% of all debt issued by U.S. public firms between 1979 and 2014, yet most academic studies exclude financial firms when examining securities issuance and the role of underwriters.

Focusing on financial intermediaries is important because these firms have the unique ability to self-underwrite securities. If a financial intermediary employs a bank other than itself to underwrite its own debt, it is hiring a potential rival. Many investment and commercial banks (hereafter jointly referred to as "banks") choose to hire a rival to underwrite their debt offerings, and this is not concentrated in small or low-reputation banks. For instance, J.P. Morgan Chase (JPM) debt was underwritten by its competitors, including Merrill Lynch, Wachovia, Edward Jones, and others, in 26% of its 419 deals; in the remainder of its deals, JPM self-underwrites.

In this paper, we examine why public U.S. banks that have both the ability and capability to underwrite their own debt issuances choose to hire a rival instead. Historically, there has been variation through time regarding which financial firms are able and capable of underwriting debt. We define "ability" as a bank having the legal or regulatory approval to do so. All investment banks, by design, have this ability. U.S. commercial banks, however, faced restrictions on underwriting debt: prior to 1989 they could not, over the next decade they had limitations to do so,

[1] Aggregate U.S. debt proceeds are obtained from the Securities Data Corporation (SDC) League Tables.

but since 1999 all commercial banks have had this ability. This variation across time provides an opportunity to examine bank behavior in different regulatory environments.

Ability to underwrite debt does not mean that a bank is capable of doing so. For example, small, regional, or highly specialized banks are unlikely to have the expertise or network to self-underwrite. We define "capability" as banks that have underwritten at least one debt offering for another firm and focus on the 60 U.S. publicly traded banks both able and capable to underwrite debt. Nearly all of these capable banks, however, hire a rival to underwrite at least some of their own debt offerings. Rivals act as the lead or co-lead in 29% of all debt deals and in 92% of those deals, the issuing bank takes no role (even syndicate participation) in its own debt issuance.

Our objectives are twofold. First, we provide a base understanding of bank debt underwriting and the choice of advisor(s). Due to deregulation in the U.S. financial markets, the landscape of debt underwriting has changed drastically in the last two decades. How these changes have affected bank's own issuances or relative use of rivals compared to self-underwriting in those issuances has yet to be examined. Entry by commercial banks into debt underwriting has been shown to ease capital constraints and reduce the costs of issuing debt (Gande, Puri, and Saunders, 1999; Song, 2004). It is likely commercial banks would take advantage of deregulation by issuing more debt through self-underwriting or altering their capital structure. Although we find evidence that large commercial banks become more frequent issuers and increase leverage after regulatory changes, both large commercial and investment banks continue to frequently hire rivals.

The second objective is to understand why banks hire a rival even when they have the capability to underwrite their own debt. The motivations behind the choice of advisor for non-banks in capital market transactions have been extensively examined (Bharath, Dahiya, Saunders, and Srinivasan, 2007; Burch, Nanda, and Warther, 2005; Krigman, Shaw and Womack, 2001; and

Rau, 2000). With the exception of Muscarella and Vetsuypens (1989), which examines the self-underwriting role of investment banks in their IPOs, there is no evidence of what motivates commercial or investment banks to hire another bank as an underwriter.

We focus on several extant reasons for advisor choice, broadly categorized into expertise and information, and propose new motivations unique to banks. "Expertise" comprises different advisor choice determinants, including bank reputation and quality (Krigman et al., 2001; Yasuda, 2005) as well as experience and specialization (Fang, 2005). "Information"-based motivations propose that advisors may provide certification, while reducing information asymmetries between firms and investors. As relations between issuers and advisors strengthen, the cost of obtaining information becomes more important (Bharath et al., 2007; Yasuda, 2005), but can also lead to hold-up problems (Rajan, 1992) or revelation of proprietary information (Asker and Ljungqvist, 2010).[2] These potential costs are likely to be lower for banks than other firms given the bank's ability to self-underwrite. Expertise and information sharing, however, may be more valuable for lower-quality banks, which are more likely to require third-party reputation or outside certification.

We propose several unique "bank-specific" reasons to help explain a bank's advisor choice. Banks themselves may be capacity-constrained, either by issue size or number of deals currently on their books. Each self-underwritten deal not only affects a bank's capacity to work with clients, but potentially leads to conflicts of interest if a bank puts its own needs ahead of its clients. Some banks also may not have sufficient distributional ability to place an issue. Banks, however, are likely to care about their reputation as underwriters, and improvements in the League Tables have been shown to increase both reputation and subsequent underwriting market share (Rau, 2000). Thus, banks may try to influence their standing in these tables by increasing their self-underwritten

[2] A number of studies find that banking firms are relatively more opaque than other types of firms (e.g., Morgan, 2002; Flannery, Kwan, and Nimalendran, 2013).

debt issuances.[3] The explanations for advisor choice are unlikely to be mutually exclusive and often cross between our categories of expertise, information, and bank-specific reasons.

We find support for all of our three motivations. In general, our results show that as an issuer's expertise declines, the issuing bank is more likely to hire a rival. Rival usage increases in international and longer-maturity deals (proxies for specialized deals), and when an issuer's market share declines. Information-based reasons also affect the use a rival. Issuing banks that used rivals frequently in the past are more likely to use a rival on a given deal (particularly for lower quality banks). If an issuer used a particular rival more often than others in the past, however, they are less likely to use a rival on the current deal, suggesting that banks may try to alleviate potential hold-up problems (Rajan, 1992). Using numerous proxies for proprietary information, we find that issuers are less likely to use rivals in privately placed issues, as the relative deal size increases, or when they have proprietary or derivatives divisions. These findings are consistent with banks attempting to protect private information from their rivals (Asker and Ljungqvist, 2010).

We next examine the decision to use a rival based on bank quality. Lower-quality banks are significantly more likely to use rivals (67%) than high-quality ones (19%), which may be driven by lower-quality banks' limited expertise or need for reputational enhancement in some deals. In addition, rivals may help to reduce information asymmetries or provide certification of an issuer. Although we expected that lower-quality banks could benefit more from using rivals than high quality banks, we find that non-Top 10 banks are less likely to use a rival when they have high prior-year stock return volatility or lower average debt ratings compared to Top 10 banks. These results could signify that it is too costly for lower-quality banks to obtain certification from outside sources, so instead they self-underwrite.

[3] We do not argue that our bank-specific motivations are inclusive. Other potential rationales for hiring a rival could involve regulatory issues or quid pro quo relations between underwriters, which we discuss more in Section I.C.

We also explore bank specific motivations: capacity to underwrite their own debt, distributional network, and reputational concerns. Top 10 banks are more likely to hire a rival if they have capacity constraints (ratio of an issuer's financial to total underwritten debt increases). Top 10 banks may trade off their own underwriting for that of their clients. To proxy for distributional resources, we use the presence of an asset management arm. Both Top 10 and non-Top 10 banks with this division are less likely to hire a rival. As reputational concerns could affect bank underwriter choice, banks that decline in League Table rankings are more likely to use a rival. Further, banks on the threshold of moving into a higher (or lower) reputational category (i.e., firms ranked #10 and #11 are on the cusp of being Top 10 ranked) are less likely to use rivals. Threshold banks that have above average self-underwriting relative to all others increase their debt market share by nearly 22% in the following year, while those that rely more heavily on rivals experience a market share decline of approximately 17%. To understand further why firms hire a rival, we use odds ratio analysis. Top 10 banks are more likely to use a rival as they become riskier or are capacity constrained, while lower-quality banks hire rivals as deal size and past rival reliance increase. Our results hold when we restrict our sample to deals after the repeal of Glass-Steagall to account for commercial banks' regulatory ability to underwrite.

Lastly, we investigate whether the use of a rival affects an issuing firm's deal terms. When banks hire a rival, gross spreads (direct costs borne by issuer at the issuance) increase by 19 bps for all banks and 35 bps for Top 10 banks. As the unconditional average gross spread is 63 bps, these higher fees represent an increase of 30% and 56%, respectively. The decision to hire a rival appears to increase issue costs, particularly for Top 10 banks. This additional increase in spreads appears to be compensation to the rival for bearing the issuing bank's capacity shortfall as well as outside certification.

This is the first study, of which we are aware, that explores the direct use of a competitor to a firm's main line of business. In particular, we provide insight into banks' decision to use potential rivals as advisors in their debt issuances. Financials have been excluded from previous studies on debt underwriting and advisor choice due to their ability to self-underwrite; however, about 30% of these issuers' debt is underwritten by competing banks. Although there are substantial benefits to banks that self-underwrite (lower costs, reduced information leakage to rivals, and possible improvement in reputational rankings), in general, it appears that banks optimally choose between self-underwriting and hiring a rival.

Although our setting focuses on banks and their use of rivals with respect to their debt underwriting, our findings have broader implications for why firms might use direct competitors. An underlying tenet of economics is that firms generally desire greater market share. Thus, a firm should not voluntarily give up its direct business to a competitor. However, we identify a market (debt underwriting) where competitors pervasively yield market share to rivals, which could result in both the loss of reputation and other clientele. For instance, Rau (2000) shows that investment banks with more market share advance in League Table rankings and generate more future additional business, regardless of the quality of their deals. Given the paucity of research on the use of rivals in the finance literature, we put forth a number of plausible reasons why banks (and possibly other firms) could benefit from the periodic direct use of a rival.

I. Literature Review and Motivations for Advisor Choice

I.A Financial Firms and Regulatory Changes to the Industry

Financial firms issue a large fraction of U.S. total debt, averaging 32% of all new debt funding raised annually since 1979, based on SDC League Tables (Figure 1). Prior studies on debt underwriting, however, exclude financial firms in part due to their ability to underwrite their own

debt. Thus, we have no previous knowledge on the frequency with which banks self-underwrite relative to using another bank as the lead underwriter.

From 1979-2014, only 11.5% of all public U.S. banks that issue debt have both the ability and capability to underwrite their own debt, although there is variation across time due to both consolidations and regulatory changes (Figure 2).[4] In approximately 29% of all debt issues, able and capable banks choose to use a rival as the lead underwriter (Figure 3). This finding is not restricted to commercial banks; investment banks hire rivals nearly 30% of the time as well.

Before examining motivations for why banks might hire rivals, we first describe the regulatory landscape for commercial banks that, culminating in 1999, allowed their unrestricted entry back into the investment banking business. After the collapse of the financial system in the 1920s, commercial banks were prohibited from participating in any investment banking (underwriting) business as part of the U.S. Banking Act of 1933 (more commonly known as the Glass-Steagall Act). From the 1960s through 1980s, a few commercial banks were allowed to underwrite a limited array of securities. In the late 1980s, banks were given the ability to establish separate subsidiaries to underwrite securities, Section 20 subs, but were still restricted in the scope of activity (e.g., debt underwriting was allowed in 1989) and the percentage of revenue that these subs could generate. Over the next decade, additional revocations of the ban between investment and commercial banking activities were introduced, until the Gramm-Leach-Bliley Act of 1999 permanently removed restrictions for U.S. commercial banks to be fully involved in investment banking business. A timeline of the regulatory revisions is provided in Figure 4.

The effect of increased competition driven by commercial bank entry into the investment bank arena has been widely examined for non-bank debt issuers. Commercial banks charged lower

[4] Prior to widespread regulatory changes in the late 1980s, commercial banks were unable to underwrite their own debt, while investment banks always have had the ability to do so.

fees upon their entry into debt underwriting, perhaps to capture market share from investment banks (Gande et al., 1999; Kim, Palia, and Saunders, 2008; Song, 2004). Further, this entry affected syndicates, which reduced issuing costs (Narayanan, Rangan, and Rangan, 2004). Commercial banks also potentially have an informational advantage given their long-term lending relations (Boot and Thakor, 2000). Although commercial banks' ability to underwrite debt affected the landscape for non-banks in their advisor choice, how this change affected banks' own advisor choice has been unexplored. We use shifts in the regulatory environment as natural experiments to determine how exogenous shocks to the number and quality of advisors affects banks' likelihood of using a rival to underwrite its own debt offerings.

I.B Determinants of Advisor Choice: Expertise and Information

A broad literature explores determinants of advisor choice for non-banks. We categorize these existing motivations into "expertise" and "information" explanations. Expertise comprises a number of different, but highly related facets, including reputation, specialization, and underwriting experience. Krigman et al. (2001) find that non-banks often select highly reputable underwriters as they may provide better or more extensive services. There is some evidence that reputable banks obtain better prices and yield terms than lower quality ones (Datta, Iskandar-Datta, and Patel, 1997; Fang, 2005). Some banks, instead, specialize in certain deal types (Berger, Espinosa-Vega, Frame, and Miller, 2005). With debt underwriting, more reputable banks are more likely to underwrite larger, long-term, investment-grade debt (Fang, 2005).

Similar to non-banks, bank issuers may need to use more reputable or specialized competitors, regardless of bank quality. For example, since the formation of JP Morgan Chase (JPM) in 2001, this Top 10 bank has used rivals as lead underwriters in 26% of its debt issues; however, JPM selected another Top 10 bank in only a quarter of these deals. Thus, reputation

alone cannot fully explain the use of rivals. Bank issuers may instead require specialization; in several of JPM's international offerings, it uses an Italian universal bank, UniCredit, to facilitate its deals. Although we document that any bank, regardless of size or quality can benefit from a rival's expertise, we posit that lower-quality banks are more likely to use a rival to underwrite debt deals for expertise-related reasons than larger, more reputable banks.

Another determinant of underwriter choice is whether it affects a firm's information environment. With respect to "information," advisor choice may be related to deal or issuer certification, reduction in information asymmetry between issuers and investors, or relationship building. As many non-bank issuers infrequently access the capital markets, advisors may provide certification regarding offer or issuer quality (Booth and Smith, 1986; Puri, 1996; Ross, 2010). Further, underwriters can reduce the information asymmetries between firms and their investors, particularly when firms are more opaque (Bharath et al., 2007; Duarte-Silva, 2010; Ross, 2010).

Acquiring information, however, can be costly. Advisors would prefer to foster long-term relations to capitalize on the time and effort needed to provide certification and reduce information asymmetry (Bharath et al., 2007; Yasuda, 2005).[5] Benefits accrue to firms with stronger bank relations, including lower underwriting fees (Song, 2004; Yasuda, 2005), although the entry of commercial banks after deregulation decreased incentives to invest in firm-specific relations (Anand and Galetovic, 2006). Issuers bear additional costs related to information provided to advisors. Firms with long-term underwriters may face a hold-up problem (Rajan, 1992), where the bank attains monopoly power over a firm's financing and investment decisions. Hold-up problems can be mitigated by using many advisors; however, each time a new underwriter is used, sensitive information is revealed through due diligence, which could lead to information leakage

[5] Relationship strength has been shown to be a function of time, number of transactions, and product lines (e.g., lending and underwriting).

(Asker and Ljungqvist, 2010). By self-underwriting their own debt, banks are in the rare position to reduce both hold-up problems and possible information leakage to rivals.

The information dynamic within an issuer-advisor relationship lead to our second explanation for advisor choice, "information." By exploring issuer and deal characteristics as well as number of competitors hired, we identify reasons related to information that affect rival use. Although any bank could benefit from using rivals to certify offerings or reduce information asymmetries, these relations are likely more important for lower-quality banks.

I.C Determinants of Advisor Choice: Bank-Specific Reasons

There are a host of reasons for underwriter selection that are unique to banks, leading to our third set of "bank-specific" explanations. For capable banks, the advisor decision is between hiring a rival and hiring in-house. Banks, however, do not have an unlimited capacity to take on deals (Asker and Ljungqvist, 2010); each time a bank underwrites its own debt, the loss of a potential client emerges as an opportunity cost. Choosing to self-underwrite may strain a bank's capacity, but also may lead to conflicts of interest if a bank prioritizes its own deals ahead of its clients'. In addition, banks with larger distributional networks are more likely to be able to attract investors to new offerings (Huang, Shangguan, and Zhang, 2008). If an issuing bank does not have sufficient distributional ability, it may require a rival to help facilitate deal placement.

Banks may also be able to influence their reputation in the League Tables by underwriting more of their own debt, thereby adjusting their market share and rankings (Rau, 2000). Every time a bank hires a rival, it affects its own (and rival's) market share. The trade-off between self-underwriting and undertaking a client's deal could be costly; for instance, a client's deal is subject to more information asymmetry and there is potentially more reputation at stake than when self-

underwriting. This is likely to be more important for firms on the threshold of moving into a higher or lower reputational ranking category (e.g., moving from non-Top 10 to Top 10 ranking brackets).

Capacity constraints, distributional ability, and reputation enhancement are unique reasons applicable solely to banks, but may provide some explanation for their advisor choice. All banks, regardless of quality, are likely to be affected by bank-specific motivations. Lower quality banks are more likely to be capacity-constrained and have smaller distributional networks, requiring the use of a rival. However, reputational concerns may decrease lower-quality banks' decision to hire a rival. High-quality banks may also face capacity constraints, as these banks are likely to have clients that require larger transactions. This could strain a top-tier bank's distribution network. Thus, Top 10 banks may be more likely to hire a rival. Rankings also are likely to be important for top tier banks, reducing rival use in order to build market share and reputational status. Ex ante, it is not clear which predictions regarding the impact of bank quality are expected to emerge.

Finally, there could be other rationales for hiring a rival. First, certain regulations may require retaining a rival. FINRA 5121 mandates member firms hire a qualified independent underwriter for debt below investment-grade. Only seven issues (0.07%) in our sample are rated below investment grade; thus FINRA 5121 is non-binding. Second, either syndicate or quid pro quo relations could lead to increased rival usage. For our sample, syndicate relations do not appear to drive the use of rivals in debt underwriting. We find that banks hire on average 12 (five) different lead underwriters over time (per year). Further, in over 80% of the deals where rival banks are engaged as leads, the issuer does not work with its' lead advisor on debt syndicates in any capacity in the prior year. Lastly, we explore every possible pairing of issuer and lead banks (where the issuer has selected another bank as a lead) to identify if potential quid pro quo relations exist. We find in only one year of our sample an instance where an issuer-lead pair (Bank of

America and Morgan Stanley, 2009) hires *each other* as lead underwriters in the same year. These results make it unlikely that quid pro quo relations drive a bank's decision to use a rival.

II. Data and Methodology

II.A Data and Sample Selection

To construct our sample of financial firms we use the Thomson-Reuters Securities Data Corporation (SDC) Global New Issues database. We obtain all debt offerings issued by U.S. domiciled publicly traded commercial and investment banks from 1979 to 2014. This initial dataset consists of 17,311 deals by 1,117 banks. Matching the banks to the Center for Research in Securities Prices (CRSP) identifiers reduces the dataset to 15,983 deals for 782 firms.

From previous literature, we know that SDC sometimes records debt transactions in multiple steps, which may overstate a firm's relation with a given advisor. As such, we follow the methodology detailed in Burch et al. (2005) to consolidate similar transactions. Within a seven-day period, all debt issuances of the same type, coupon, maturity, and advisor are combined into a single, aggregate offering (799 deals). We then remove deals with missing transactions values and no advisors (35 deals) and match firms with Compustat, eliminating 428 deals (133 banks), yielding a sample of 14,721 deals for 643 banks. Appendix A details our sample construction.

We next identify banks that have both the ability and capability to underwrite debt offerings. As noted, commercial banks are "able" to underwrite debt once legal restrictions were removed whereas investment banks have had no restrictions on their ability. "Capable" banks are those that are both "able" (a necessary condition) and have acted as the lead underwriter for another firm's debt offering. The date of the bank's first external offering is used to define when the issuer is deemed capable of underwriting debt issuances. For example, First Union is "incapable" of underwriting its own debt prior to August 2, 1995, when First Union first underwrote debt for

another firm (Post Properties, Inc.). After this date, First Union is considered capable of self-underwriting. Our final sample of both able and capable banks contains 9,760 debt issuances for 60 investment and commercial banks.[6] Table 1 presents the sample of banks including their classification and the first capable date.

II.B Identification of Using a Rival

Competitive and regulatory changes have led to substantial consolidation in the banking industry. We track our sample banks' identities through time to account for any name changes or mergers. For instance, JP Morgan & Co. is separate from JP Morgan Chase.[7] We then classify all advisors used on a specific debt offering by their primary, mutually-exclusive roles into two main categories following Corwin and Stegemoller (2014). A *Lead* advisor is listed as the lead or joint-lead bookrunner, manager, or placement agent, as well as co-lead agent. An *Other* advisor is listed by SDC as an agent, a co-manager, a co-placement manager, or a member of the syndicate.

We classify a bank as using a rival on a debt offering when it hires another bank for the *Lead* advisor role and the issuer is not listed as its own advisor (solo or joint). Banks are classified as *Other* if the bank only participates in a non-lead capacity (i.e. syndicate member) on that deal. In general, non-managing ("other") advisors play a significantly reduced role in the underwriting process (Corwin and Schultz, 2005). If the firm does not have any role in the underwriting or placement of the deal, then the firm is classified as having *No Role* for that specific deal.

Table 1 shows the propensity of our sample banks to self-underwrite ("lead") compared to using a rival ("other" or "no role"). For example, JPM issues debt 419 times. In 74% of its debt

[6] We focus exclusively on debt deals due to the paucity of equity offerings by commercial and investment banks during our sample period. Our 60 banks access the equity capital markets only 388 times between 1979 and 2014.

[7] In 1996, Chase Manhattan Bank merged with Chemical Bank forming the new Chase Manhattan Bank, which was acquired by JP Morgan & Co. in 2000 and formed JP Morgan Chase. JP Morgan Chase acquired Banc One in 2004, but remained JP Morgan Chase following that acquisition. Table 1 provides merger completion dates (if applicable) as well as the bank status (i.e., whether it still exists or by whom it was acquired).

deals, JPM is the *Lead* advisor. In the remaining 26% of its deals, JPM does not participate in any capacity ("no role") and relies solely on rivals to facilitate the deal. In our sample, banks use a rival as the lead underwriter in 28.7% of their debt offerings, and in 92% of those deals the issuer plays no role in the offering, even though these issuing banks are both able and capable to do so.

II.C Data and Variable Construction

In this section, we describe the data sources for the variables used in our analyses. A comprehensive list of the variables is provided in Appendix B. From SDC, we obtain all deal-related variables, including the name and number of all advisors for each deal, advisory role (e.g., lead, manager, and syndicate), gross spreads as a percentage of principal, coupon rate, and yield to maturity. We collect offer maturity (denoted in years), principal value, and indicator variables for whether a deal is an international or private debt issuance. We also create indicator variables for whether a deal is rated high (AA rating or higher), mid (A rating), or low (BAA rating or lower) based on Moody's ratings in SDC (only 0.07% are rated below investment grade).

Market value of equity, prior returns, and stock return volatility are constructed from CRSP data. Relative deal size is computed as the principal value (SDC) scaled by a firm's market value of equity (CRSP). Cumulative abnormal returns are calculated using the Fama-French (1993) three-factor model based on daily returns for [-253,-1] trading days prior to the offer issue date. Volatility is the standard deviation of prior-year daily returns. Leverage, return on assets, and market-to-book ratio are constructed from Compustat data. Financial characteristics are winsorized at the 1% and 99% levels and collected for the year preceding each debt issuance.

We use Thomson Reuters SDC League Tables to obtain U.S. public debt market share for each issuer and advisor for the year prior to the debt issuance. In addition to market share, we obtain the total proceeds and total number of deals underwritten by each bank annually, as well as

the bank's League Table ranking. From these rankings, we create indicator variables classifying whether a bank (either issuer or advisor) is ranked in the Top 10 in the prior year.

To obtain variables related to expertise, we construct deal characteristic-specific market shares for each bank's fraction of the entire U.S. public debt issuances collected from SDC. The three market share variables are based on a bank's aggregate deal values for international, privately-placed, and long-term (>10 years maturity) debt over the prior five years, and compute a bank's rolling five-year market share in each of these categories. We also construct rolling six-month windows to identify the total and financial debt issues underwritten by each bank. Our capacity measure is the total amount of all financial firm debt underwritten by a bank scaled by the total debt underwritten by the same bank in the previous six-month period.

As advisor relationships may play a role in the propensity for a bank to hire a rival, we compute a number of relationship metrics for each bank. Using SDC data, we identify the percentage of a bank's self-underwritten offerings in the prior twelve months relative to the percentage of offerings underwritten by a rival bank. We also calculate the frequency that an issuer hires the same lead advisor (whether rival or self) over the prior twelve months.

From the Financial Industry Regulatory Authority's website (FINRA.org), we identify whether each of our banks has an asset management arm (proxies for the distribution network), a proprietary trading or derivatives trading division (proxies for proprietary information) and create three indicator variables.[8] We also create an indicator variable for whether the debt offer occurred after the repeal of the Glass-Steagall Act in 1999 to account for commercial banks' unrestricted ability to partake in investment banking activities.

[8] For non-banks, while proxies of proprietary information exist (i.e. R&D), similar proxies are more difficult to construct for banks. Biais and Germain (2002) suggest banks trade on private information through their proprietary trading arms. While we cannot capture the degree of proprietary trading, a proprietary trading arm is likely to proxy for a bank's needs to protect trading strategies. Similar arguments can be made for derivatives trading.

III. Analysis of Deregulation and the Determinants of Rival Use

IIIA. The Impact of Deregulation

Table 2 provides basic deal (Panel A) and firm characteristics (Panel B) for the 9,760 debt offerings from our sample of 60 U.S. investment and commercial banks. We also split the sample around the repeal of the Glass-Steagall Act (pre- and post-1999) and determine that there are significant changes to deal and firm characteristics following the regulatory shock. Prior to deregulation, it was costly for commercial banks to issue debt since they were required to use an investment bank to underwrite their offerings. Removal of regulatory restrictions led to significant changes in the characteristics of our sample banks and are consistent with the entry of commercial banks into the debt underwriting space following deregulation.

As shown in Panel A, on average, banks raise $286 million per debt issuance, similar in magnitude to non-financials of $263 million (unreported), although the average size has increased post-1999 (from $101 million to $467 million).[9] The offer relative to the firm's size, however, has declined over time (2.2% compared to 1.1%). The average maturity is slightly less than 6 years. The percentage of international deals has grown from 8.8% to 21.9%, while privately placed deals have significantly declined from 11.6% to 0.8% post-1999.[10] After the regulatory shift, the overall percentage of highly rated issues increased from 24.5% to 45.8%, driven by higher debt ratings of commercial banks. Further, the percentage of deals executed by rival banks declined from 37.3% to 20.4%, while Top 10 underwritten deals increased from 53.4% to 73.5%, and is related to the extensive industry consolidation. The proportion of deals done by investment banks has been relatively unchanged across time (56% pre-2000 compared to 58% post-1999).

[9] In unreported tests, the median value of either self-underwritten or rival deals is approximately $100 million, indicating that banks do not disproportionately hire rivals for small deals.

[10] Glass-Steagall allowed for several exemptions to bank underwriting restrictions, including the approval to underwrite private debt. Private placements declined once the regulatory bans were lifted.

Panel B highlights bank characteristics based on a firm-year level. Driven by the entry of large commercial banks, average firm size (market value of equity) significantly increases from $8 billion to $50 billion after deregulation. Banks have lower leverage post-1999, consistent with higher regulatory capital requirements, and higher valuations (market to book); profitability is relatively unchanged. On average, banks issue about 16 debt offerings per year.

Major regulatory shocks in 1996 (reduction in firewall restrictions and revenue limitations; see Neuhann and Saidi, 2014) and in 1999 (repeal of Glass-Steagall) changed the competitive landscape and reduced the overall costs associated with debt offerings (Gande et al., 1999; Kim et al., 2008; Song, 2004). Although these regulatory shifts likely impacted all firms, commercial banks were poised to take even greater advantage of the lower cost of debt due to their ability to self-underwrite, which could manifest in both changes to their offering behavior as well as shifts in capital structure. Our objective is to determine if commercial banks shifted their use of debt after the changes in regulation. We focus on four measures, three related to the offers themselves (number and average size of offers as well as total annual proceeds raised) and firm leverage (measured as long-term debt divided by total assets). We recognize, however, that this is only likely to be relevant for firms that are both able and capable of self-underwriting.

In Table 3, we explore whether large commercial banks (those in the top quartile) are different from all other debt issuing firms conditioning on changes in regulation.[11] We construct an interaction term between large commercial banks and indicators to control for deregulatory events (either August 1, 1996, shown in odd-numbered columns, or post-1999, shown in even-numbered columns). This allows us to capture the overall increase in debt issuances due to the reduced issuing costs driven by deregulation and isolate the effect for large commercial banks.

[11]The reference group in the regressions includes all other financials (small commercial banks, investment banks, and others) as well as non-financial firms.

Deregulation led large commercial banks to significantly increase their leverage (Columns 1 and 2) and the frequency (Columns 3 and 4) and size of their issues (total proceeds, Columns 5 and 6; average deal size, Columns 7 and 8) relative to other firms, suggesting that debt either became easier or less costly to issue, particularly for commercial banks that could now self-underwrite. As discussed above, however, both investment and commercial banks continue to hire rivals at high frequencies. In the remainder of the paper, we explore motivations for doing so.

III.B Analysis of Advisor Choice

In Table 4, we segment our sample by rankings and compare underwriting characteristics on a firm-year basis (all differences are significant at the 1% level).[12] We split bank into Top 10 and non-Top 10 based on their League Table rankings to construct quality measures. High quality banks are likely to overall as well as self-underwrite more, as the need for outside reputation or certification are likely to be lower as bank quality increases. Consistent with our predictions, Top 10 banks have a larger percentage of the overall and financial debt market share (4.82% and 4.60%, respectively) than non-Top 10 banks (0.17% and 0.21%, respectively). Top 10 banks self-underwrite nearly 81% of their debt, relative to 33% for non-Top 10 banks. Nearly 38% of the total financial debt underwritten by a Top 10 issuing bank is its own debt, compared to 22% for non-Top 10 banks. Conditional on using a rival (Panel B), Top 10 banks are less likely to use another Top 10 bank compared to non-Top 10 banks (32% versus 64%), and the average advisor League Table rank is of significantly lower quality (23 versus 7, rank = 1 is top-ranked).

In Table 4, Panel C, we explore when a rival is hired, and compare characteristics of issuers to their underwriters. Rivals that are hired tend to underwrite more debt than the issuers, both in

[12] We segment by rankings (Top 10 or non-Top 10) rather than type (commercial or investment bank). Prior to 1996, commercial banks were generally restricted from underwriting activities, while after the 2008 financial crisis, many investment banks reorganized as commercial banks. Prior to the financial crisis, the median market value of the banks is virtually identical ($6.2 billion for Top 10 banks compared to $6.1 billion for non-Top 10 banks).

terms of proceeds and number of deals, and have greater financial market share (1.9% versus 0.9%, respectively). Hired underwriters also tend to have higher League Table rankings (10 versus 27 for self-issuers), and are more likely to be Top 10 banks (60% versus 15%). Combined with the findings in Panel B, this suggests that banks may specifically avoid "direct" rivals, or those in close proximity in the League Table rankings, when hiring an underwriter. Consistent with the explanation that issuers might hire rivals to gain their expertise, issuers have significantly less experience in international, private, and long-maturity debt offerings than the rivals they hire. In Panel D, approximately 78% of rivals are ranked higher than the issuing bank, although this varies greatly when we segment into Top 10 and non-Top 10 banks (19% and 89%, respectively).

In the remainder of this section, we explore the expertise, information, and bank-specific motivations to determine why capable banks choose to hire a rival to underwrite their debt. We begin by focusing on deal- and bank-characteristics in our base model, and then construct a series of variables to capture our potential explanations for advisor choice. Further, since the importance of the explanations are likely to vary based on the quality of the issuing bank, we partition by whether the issuing bank was ranked in the Top 10 of the SDC League Tables at the time of the issue. Due to regulatory changes, culminating in the repeal of the Glass-Steagall Act in 1999, we include a post-1999 indicator variable to capture shifts driven by the exogenous shock to the competitive environment in all of our regressions.

As our primary objective is to determine why capable banks hire rivals, our dependent variable is an indicator equal to one if a rival bank is used on the current deal, zero if the bank self-underwrites. Typically logit or probit models are used for estimation when the dependent variable is dichotomous. To reduce any omitted variable bias between firm- or year-specific characteristics and the error term, it is necessary to control for year and issuer fixed effects in our estimations of

why a bank hires a rival. A logit or probit model with fixed effects cannot be used as it introduces biases in the coefficients and standard errors. Using a linear probability model (LPM) with fixed effects to estimate the marginal effects helps correct these biases. LPMs, however, do not impose the restriction that the estimated probability of the dependent variable is bounded between zero and one. Additionally, LPM regressions tend to be inherently heteroskedastic, which we correct for by estimating all of our models with robust standard errors.[13]

In Table 5, we explore why capable banks hire a rival to underwrite a debt offering, controlling only for bank and deal characteristics. Columns 1 and 2 focus on the combined sample of all banks, while Columns 3 and 4 (Columns 5 and 6) examine Top 10 (non-Top 10) banks. The explanatory variables include indicators for international and private deals, the relative deal size, the maturity of the issue (in years), and in specifications 2, 4, and 6, the issuer's prior-year debt market share and the post Glass-Steagall indicator variable. In unreported tests, we also include the log of deal size and obtain qualitatively similar results.

Table 5 provides some evidence of expertise, reputation, specialization, certification, and the protection of proprietary information as reasons for hiring a rival. In each column, banks are more likely to hire a rival when issuing international debt, suggesting that not all issuing banks have particular expertise in these deals. Longer maturity deals are likely to be riskier than short-term deals, so the positive coefficient suggests that issuers may use rivals to certify long-term offerings. Less reputable issuers are more likely to use rivals, indicating issuers are more likely to seek reputation from advisors when issuers themselves are lower quality. Issuers, however, are more likely to self-underwrite when deals are relatively larger or privately placed. Although these are imperfect proxies for proprietary information, both suggest that when information may be

[13] Results are robust if probit models are used instead or if we eliminate bank fixed effects or use two-way clustering of standard errors by year and issuer (Petersen, 2009).

costly to reveal (Asker and Ljungqvist, 2010), an issuer is less likely to hire a rival. For instance, larger deals may require rivals to disseminate more information, while privately placed deals provide less information in their filings to investors relative to public offerings. Consistent with Table 2, issuing banks are less likely to use rivals after the repeal of Glass-Steagall in 1999.[14]

III.B1 Expertise and Information

We next focus on how expertise (reputation, specialization, and experience) and information (certification, relationship building, and proprietary information) affect the issuer's decision to hire a rival (Table 6). The base specifications reported in Table 6 are the same as Table 5, augmented with additional expertise or information measures. We continue to partition banks by their rankings, and as our control variables are of the same signs and magnitudes as those reported in Table 5, we suppress these for expositional purposes.

Table 6, Panel A, reports results for expertise. In Table 5, we provided two measures designed to capture an issuer's expertise: an issuer's prior-year debt market share and whether an issuer is a Top 10 underwriter. We expand our definition to include market-share based measures for international, private, and long-maturity debt deals. The smaller an issuing bank's market share is in a particular category, the more likely it will hire a rival due to limited expertise or specialization. Regardless of bank quality, with lower prior experience or specialization in international offerings (Issuer: % International, Columns 1, 4, and 7), banks are more likely to hire a rival to underwrite their deal. This result carries through to private placement experience as well as specialization in long-term offerings, but is concentrated in only the Top 10 banks.

[14] In unreported tests, we exclude all deals pre-2000 to control for whether regulatory shifts affected either the propensity or the motivations for hiring a rival. Our results are qualitatively similar to using the entire sample.

Banks may also seek the use of rivals to help certify specific issues (or themselves) or to reduce the information asymmetry between themselves and investors. Instead, if banks are concerned about information leakage to rivals, it is more likely that they will self-underwrite. In Table 6, we broadly test the information hypothesis related to certification (Panel B), relationship building (Panel C), and proprietary information (Panel D). The base specifications include two somewhat noisy information proxies: an indicator for private placements and relative deal size.

The certification component of the information hypothesis is tested in Panel B of Table 6. While quality rankings could capture an issuer's need for certification and information asymmetries, we include two additional proxies: the prior-year stock return volatility and indicators for whether the issue is rated by Moody's AA and above (High Debt Rating) or BAA and below (Low Debt Rating). Firms with high stock market volatility or low-rated debt are likely to be riskier or have greater informational asymmetries with investors. These firms, therefore, may require a third-party certification from an outside underwriter to facilitate deal placement.

In Column 1 of Panel B, issuers with greater stock market volatility are significantly more likely to hire a rival, consistent with the prediction that riskier firms are more likely to need certification. When we control for debt ratings (Column 2), low-rated issues are more likely to be underwritten by a rival than high-rated issues, again suggesting rivals certify riskier issues. This difference, however, is not driven by variations in the overall quality of debt between Top 10 and non-Top 10 banks. Approximately 39% of both types of banks have High Debt Ratings, while 8% (10.5%) of debt by Top 10 (non-Top 10) banks have Low Debt Ratings. Top 10 issuing banks look very similar to the overall sample (Columns 4 and 5). Lower-quality banks, however, are less likely to use a rival as their debt ratings fall (Columns 7 and 8). As a lower quality bank's overall riskiness increases, it may become too costly to seek outside certification or rival banks

may be unwilling to work with these risky issuers, as this could potentially put the underwriter's own reputation at risk. Non-Top 10 banks with highly rated debt, instead, may be attractive to rivals in that their high-quality deals are relatively easy to place.[15]

Table 6, Panel C, examines the importance of prior relations on the decision to use a rival on a given deal. The first measure is the percentage of rival-underwritten deals for each bank in the past 12 months. Our prediction is that greater use of rivals in the past will lead to greater future rival usage. The second measure captures the strength of the relation with a particular advisor and is computed as the percentage of deals in the past 12 months where the current advisor (self or rival) was also used as an underwriter by the issuer. If relationships matter, then as the propensity to use a given advisor increases, the more likely the issuer will use the advisor on the current deal. If issuing banks are instead concerned about hold-up problems, they will be less likely to use a given rival on a current deal if they have repeatedly used the rival in the past.

Panel C shows that, as past rival usage increases (Columns 1, 4, and 7), banks are more likely to use rivals on the current deal, particularly for lower-quality banks. For Top 10 banks, the percentage of past rival usage does not impact the use of a rival on a current deal. For all banks, as the percentage of deals underwritten by the current advisor in the past year increases, the likelihood of using a rival on the current deal declines, which could be a function of more self-underwriting or avoiding potential hold-up problems associated with long-term rival relations. As shown in Table 4, banks use 10 to 13 advisors on average, suggesting that exclusive, long-term bilateral (i.e., quid pro quo) arrangements are not prevalent in banking.[16]

[15] As an alternative to deal credit ratings, we construct measures of issuer quality based on overall issuer credit ratings (Compustat). Using these issuer ratings, we find similar results to those in Table 6, Panel B. Alternatively, we examine whether the deal rating is above or below the issuer rating. In nearly 20% of all deals, the deal rating is greater than that of the issuer, and in 8.3% of deals, the deal rating is below the issuer rating. If we use these measures instead, we find that when the deal rating is greater than the issuer, issuers are less likely to use rivals; however, if the deal is rated below the issuer, then the issuer is more likely to use a rival, particularly if the issuer is a Top 10 bank.

[16] Similar to banks, non-financials that issue at least 25 debt deals engage 11 to 14 different advisors on average.

Lastly, in Panel D, we introduce two additional proxies for an issuing bank's private information environment: indicators for whether the bank has a proprietary trading desk or a derivatives trading division. Both of these proxies could indicate that the issuing bank has strategies that it would prefer to keep in-house rather than reveal to competitors. When the issuing bank has either a proprietary trading desk (Columns 1, 4, and 7) or a derivatives trading division (Columns 2, 5, and 8), they are more likely to self-underwrite their own debt. Although each is a noisy proxy, the results from Panel D provide some evidence that when banks may have proprietary trading strategies, they are less likely to hire a rival.

III.B2 Bank-Specific Explanations

As shown in Section III.B1, both expertise and information contribute to the decision to hire a rival, consistent with prior literature for non-banks. In this section, we explore new rationale pertinent only to bank issuers, focusing on a bank's underwriting capacity, its distributional network to aid in the placement of issues, and its reputational concerns. Our capacity measure is the percentage of financial deals underwritten by the issuing bank relative to its total underwritten deals. As this measure increases, banks are more likely to become capacity constrained. We proxy for distributional network with an indicator if an issuer has an asset management division.

Our last two bank-specific measures center on reputational concerns. The first is an indicator for whether a bank has a lower League Table ranking than the prior year. A bank's ranking in the League Tables is a function of either the number of deals or total proceeds underwritten and is strongly related to the probability of being selected as an underwriter on future deals (Rau, 2000). Through self-underwriting, banks can influence their own ranking and reputation. Further, this should matter more for firms near a qualitative ranking threshold (i.e. Top 10). Our second measure captures whether the amount of self-underwritten deals exceeds the

difference in proceeds raised between one bank and the next lowest ranked bank, and is an indicator equal to one if self-underwriting is greater than the difference in proceeds.

Our prediction is that as either a bank's capacity or distributional abilities increase, they are less likely to use a rival. Top 10 banks are more likely to become capacity constrained as they underwrite more deals, many of which are large, for external clients. These banks may forgo underwriting their own deals, thus increasing the likelihood that they need a rival for their own issuances. Further, if a bank's ranking declines from the prior year, it likely signals both a drop in quality and a greater need for certification causing the bank to more likely use a rival. If banks can influence their rankings by self-underwriting, however, we anticipate that banks near a threshold of a "ranked" category (Top 5, Top 10, or Top 20) are less likely to hire a rival.

We test these predictions in Tables 7 and 8. Table 7 provides capacity, distribution, and decline in rankings, while Table 8 details the influence of self-underwriting on threshold banks. Columns 1, 4, and 7 of Table 7 document the sign on capacity changes based upon an issuing bank's quality. For all banks (Column 1), the larger the issuing bank's capacity to underwrite financial debt, the less likely it is to use a rival. However, financial debt capacity appears to be a binding constraint for Top 10 banks. As the ratio of financial debt to total debt increases for these banks, they are more likely to hire a rival to mitigate capacity shortfalls. Capacity constraints, however, do not appear to affect non-Top 10 banks' rival usage. Top 10 banks, therefore, may trade-off underwriting their own deals for those of their clients as they reach the limits of their underwriting capacity. In Columns 2, 5, and 8, we observe that banks with their own asset management division are less likely to use a rival for a given deal, indicating that an increase in distributional abilities may affect the decision to hire a rival. Finally, as a bank's League Table

ranking from the prior year declines (Columns 3, 6, and 9), banks are more likely to use a rival to underwrite their debt offerings, regardless of bank quality.

In Table 8, we concentrate on "threshold" banks that are on the cusp of a particular ratings category, such as Top 5, Top 10, or Top 20. In each year, we isolate banks that are ranked 5 or 6, 10 or 11, and 20 or 21 in the League Tables. Our measure of influence (Self > Difference) is whether the self-underwriting proceeds exceed the difference in total proceeds underwritten between a bank and the next lowest ranked bank.[17] Examining all banks in Column 1, we find no relation between our measure and the likelihood of using a rival. Instead, when we examine threshold banks near the Top 5 (Column 2), Top 5 and 10 (Column 3), and Top 5, 10, and 20 (Column 4), these banks are significantly less likely to use a rival in their debt offerings.[18]

Self-underwriting by threshold banks appears to generate tangible long-term benefits as well. In unreported tests, banks that self-underwrite more in a given year are significantly more likely to increase in their overall debt underwriting market share in the next year (8.2% compared to a decline of 1.9% for those that use rivals). If we condition on whether a bank's rival usage is above or below average, the effects are magnified: market share increases by 22% for threshold banks that self-underwrite more than average, while threshold banks that rely heavily on rivals experience nearly a 17% decline in market share. Consistent with Rau (2000), we show that banks can potentially manage their reputation and future market share through self-underwriting their own deals. Banks are likely to hire rivals when faced with capacity constraints, a limited distributional network, and when their reputation declines. Banks near ranking thresholds are significantly more likely to self-underwrite and this appears to substantially benefit these banks.

[17] We also use the number of deals instead of proceeds raised, and obtain similar, albeit, stronger results.

[18] One concern is that banks, particularly those near ranking thresholds, may have seasonality in the proportion of self-underwritten deals in order to influence the League Table rankings. We find no evidence of seasonality in debt issues or the percentage of self-underwritten offers at any point during the year.

IV. Alternative Specifications

In the prior section, we find support for the expertise, information, and bank-specific motivations. In Table 9, we jointly investigate these explanations by combining variables that capture components of expertise (issuer's aggregate international market share), information (prior-year volatility; prior-year rival use; proprietary trading indicator), and bank-specific (percent of financial deals advised; decline in ranking). We continue to use a limited probability model (LPM) and jointly test the traditional and bank-specific motivations for hiring a rival underwriter (Columns 1, 3, and 5). Our results are generally consistent with those found when we examined each explanation separately, suggesting that all three motivations for hiring a rival are important for issuing banks.[19]

Although the joint tests in Table 9 suggest that expertise, information, and bank-specific rationales are all important for why a bank hires a rival, we cannot gauge the importance of each reason. To obtain a hierarchy of each variable's importance, we re-run the models in Columns 1, 3, and 5 as logistic regressions and calculate the odds ratios (Columns 2, 4, and 6). These odds ratios provide estimates of how a change in any independent variable impacts the likelihood a bank uses a rival, holding all other variables at a fixed value. A significant odds ratio greater (less) than one indicates that an increase in the variable increases (decreases) the likelihood that the bank uses a rival in a given deal. As shown in Table 9, banks are more likely to use rivals as past deal usage increases and for international deals (Column 2). Top 10 banks (Column 4) are most likely to use rivals as past stock volatility increases and when capacity to take on self-underwriting declines. Non-Top 10 banks (Column 6) are more likely to use rivals as both the relative deal size and past

[19] In unreported tests, we examine Top 10 issuers and their decision to use a rival also ranked in the Top 10. These banks are more likely to be seen as "direct" competitors since Top 10 banks are considered both highly prestigious and reputable, and likely offer similar services. When we limit our analysis to Top 10 banks and rivals, our results on why banks hire a rival are consistent with those reported in Table 9.

rival usage increase. Regardless of bank quality, issuers are more likely to use rivals for international deals and when the bank's reputation has declined from the prior year. Our results provide some explanation for why banks of differential quality are likely to use rivals.

Our prior analysis presents a number of explanations for why banks hire rivals when issuing debt. In Table 10, we explore how the use of a rival affects the direct costs of underwriting: gross spreads as a percentage of proceeds raised ("gross spreads"). The average gross spread for financial deals is 63 bps (61 bps and 68 bps for self- and rival-underwritten deals, respectively). We implement OLS models with year and issuer fixed effects and robust standard errors. Due to incomplete data, the number of observations is significantly smaller than for the full sample. We include controls from all previous tables, including explanatory variables from Table 9 (joint test), and augment the regressions with the issuer's prior year stock return and profitability (ROA). Our main explanatory variable is an indicator for whether a bank uses a rival on a given deal.

In general, we find that hiring a rival significantly increases gross spreads, even controlling for deal characteristics and proxies for our three reasons for hiring rivals. These costs are magnified for Top 10 banks. In aggregate, the use of a rival to underwrite debt increases fees paid by 19 bps, while for Top 10 banks, this nearly doubles to 35 bps. Given that the average fee paid to an underwriter is 63 bps, fees increase by an average of 30% to 56% when using a rival bank.

One concern that arises, however, is that a selection bias exists between deals where rivals are used compared to self-underwritten deals which may drive the differentials in gross spreads rather than the rival usage itself. We implement a two-stage Heckman correction model similar to that in McCahery and Schweinbacher (2010). In our case, we model the likelihood of using a rival in the first stage (Column 2 of Table 9), and obtain the inverse mills ratio to use as a regressor in the second stage. The second stage models the impact of using a rival on gross spreads (Columns

2, 4, and 6 in Table 10).[20] Unlike our base OLS regressions where rival use is associated with an increase in gross spreads, we find a negative sign on the inverse mills ratio. This suggests that after correcting for the differences in private information between issuers and rivals in the first stage, rivals would have charged between 8 bps and 19 bps less than self-underwriters. These results suggest that when rivals are hired, the issuing bank bears higher costs than it would have if it had self-underwritten its own debt in order to compensate the rival for the inherent information asymmetries between the issuer and the underwriter.

We perform a number of robustness tests to confirm the validity of our results. To alleviate concerns that hiring a rival is driven by international deals (the need or requirement to hire a "local" bank when issuing securities overseas), we remove these deals and re-run our analyses (15.4% of our sample). As noted in Section III.A, prior to the repeal of Glass-Steagall most commercial banks were restricted to underwriting privately placed securities (which fall to less than 1% of the sample in the post-1999 period). To ensure that these deals do not impact our analyses, we also remove all private placements (6.11% of our sample). As macroeconomic shocks could affect the decision to hire a rival, we also control for economic downturns with an indicator variable equal to one in the months for National Bureau of Economic Research (NBER) recessions. Consistent with our prior results on certification, Top 10 banks appear to seek certification from other banks in recessionary periods as captured by the significantly positive coefficient on the indicator. The inclusion of this variable, however, does not quantitatively affect any of our results.

An additional concern is that banks may be more (or less) likely to use a rival around information events, such as mergers or earnings announcements, where a firm's informational asymmetry is likely to be enhanced. We do not find any significant differences in either the

[20] McCahery and Schweinbacher (2010) examine the effect of underwriter reputation on gross spreads.

number of debt issues or the proportion of deals underwritten by rivals around these information events. Lastly, it may take newly-capable banks time to develop their underwriting skills. To alleviate concerns regarding learning by banks, we include an indicator for whether the deal occurs within the first three years of becoming capable, which is significantly related to the likelihood of using a rival. In addition, in alternative specifications, we remove these deals entirely. None of these alternate specifications qualitatively affects our main results.

V. Conclusions

In this paper we explore why able and capable U.S. commercial and investment banks hire rivals to underwrite their own debt offerings. Nearly 30% of our sample deals involve a competitor to facilitate deal placement. Moreover, this behavior is not limited to commercial banks or to lower-quality banks; both investment and commercial banks as well as Top 10 and non-Top 10 ranked banks use rivals extensively to underwrite their own debt issues. We test a number of existing motivations, including expertise and information sharing, and provide new explanations relating to a bank's reputation, as well as its own capacity to underwrite and place a given deal.

Our results provide support for all three motivations affecting advisor choice. When issuing banks seek reputation, experience, or specialization in particular deals, they are more likely to hire a rival. Banks may seek external underwriters to certify a given deal (or perhaps themselves) or to reduce information asymmetries between the issuing bank and its investors. While long-term relationships may amortize the cost of information sharing, using rivals can lead to both potential hold-up problems and proprietary information leakage. We find some evidence that banks seek to minimize these costs by strategically deciding to use a rival.

Further, bank-specific motivations matter. When banks are likely capacity constrained, particularly Top 10 banks, they are more likely to hire rivals (rather than losing potential clients to

competitors). Banks with less distributional resources are also more likely to seek external underwriting. In addition, reputational concerns impact the decision to hire a rival, particularly for banks near rank thresholds. These banks appear to benefit from self-underwriting as subsequent underwriting market share significantly increases compared to banks that use rivals.

The choice to hire rivals, however, is potentially costly to the issuing bank. We find that the use of rivals significantly increases the total fees paid by between 30% and 56% over the unconditional average fee. We find no difference in announcement returns or yields to maturity based on whether an issuer self-underwrites or uses a rival, suggesting that investors are relatively indifferent to who underwrites bank's debt. Although the fees are higher for banks when rivals are engaged, it does not appear to be a suboptimal decision by the bank.

By examining the previously undocumented debt underwriting relationship for banks, we contribute to the literature on advisor choice. Although banks can underwrite their own debt, they pervasively use competitors to underwrite these securities. Further, the use of rivals appears to be systematic as all banks regardless of size, quality, or type engage competing underwriters for at least some of their offerings. The motivations for doing so stem from bank-specific reasons as well as explanations relevant for non-bank firms. Collectively, these results expand our understanding of banks' underwriter choice and show that banks extensively hire their rivals.

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Appendix A: Dataset Construction

This appendix details the construction of our sample of U.S. publicly traded commercial and investment banks public and private debt issues obtained from the Securities Data Corporation (SDC) Global New Issues database. We collect all debt offerings from SDC between 1970 and 2014, and following the process below we match the dataset to CRSP and Compustat. We further eliminate observations due to lack of required data for our main analyses. The objective is to identify banks that are both "able" (legally permitted) and "capable" (a history of at least one external debt offering) that could possibly underwrite their own debt. Whether these capable banks do underwrite their own debt is not a requirement to classify banks. Our final dataset consists of 9,760 debt issues by 60 firms.

Step	Sample Construction Process	# Deals	# Firms
1	Obtain all debt issuances for U.S. publicly traded investment and commercial banks from SDC between 1970-2014	17,311	1,117
2	Use SDC firm cusip, date, and name information to match the firms to the Center for Research in Securities Prices (CRSP) to obtain firm permnos	15,983	782
3	Follow Burch et al. (2005), collapse all debt deals within a 7-day period of the same type, coupon, maturity, and advisor into a single aggregate offering	15,184	782
4	Remove deals with missing transaction values and with no listed advisors	15,149	776
5	Match firms to Compustat to obtain prior-year financial information	14,721	643
6	Identify and remove those firms that are *not* capable of self-underwriting their own debt issuances. This reduces the sample years to 1979-2014. (See below)	10,975	74
7	Eliminate deals with missing specific deal and firm characteristics (e.g., maturity, prior-year debt market share)	9,760	60

To classify whether a bank is capable of self-underwriting their own debt issuances, we perform the following with regards to Step #6 above:

- Obtain a listing of all debt issuances from U.S. publicly traded firms from 1970 through 2014 from SDC (58,936 deals for 7,939 firms)
- For each debt issuance, identify whether a bank is the lead underwriter for a deal
- For each banking firm in the universe, find the first deal where the bank acted as a lead underwriter for another firm
- Using the sample constructed in Step #5 above, cross-match the 643 banks to identify the first possible date (if any) it started underwriting debt deals; classify a bank as "capable" beginning with the data of the first external debt underwriting
- Remove any deals by the bank prior to the date it became "capable" of underwriting debt as well as any banks without external underwriting experience
- The procedure yields a sample of 74 capable banks

Appendix B: Variable Definitions

This table provides descriptions of the variables used in our analyses. Variables related to debt issuances are obtained from Securities Data Corporation (SDC) unless otherwise specified. Financial data are collected from Compustat and stock price data are collected from CRSP. All market ranking information is obtained from SDC League Tables for the year prior to the debt issuance. All firm financial data is for the fiscal year prior to the year of the debt issuance and is winsorized at the 1% and 99% levels.

Variable	Definition
Debt Characteristics	
Use Rival	Indicator equal to 1 if a bank uses a rival bank as the lead advisor in a deal
Deal Size	Principal amount (in millions)
Relative Deal Size	Deal size divided by market value of equity
Maturity	Length of time for the bond to mature (in years)
Coupon	Bond coupon (in percent)
International Deal	Indicator equal to 1 if the offering is done internationally (coded as AND, ASPD, ECD, ED, or IFD by SDC)
Private Deal	Indicator equal to 1 if the offering is privately placed (coded as PD, R144CD, or R144D by SDC)
Financial and Firm Characteristics	
Market Value of Equity	Year-end closing price per share times common shares outstanding (in millions)
Leverage	Total long-term debt divided by total assets
ROA	Operating income before depreciation divided by total assets
Market to Book	Market value of equity divided by common stockholder's equity
Number of Deals Per Year	Total annual debt offerings by the issuing bank
Q4 CB	Commercial bank in the largest quartile of firms based on assets
12-mo Prior Stock Return	Cumulative abnormal returns from three-factor model (Fama and French, 1993) based on daily returns (-253, -1) prior to issue date
% Issued by IBs	Fraction of total deals issued by an investment bank
% Issued by Top 10 Bank	Fraction of total deals issued by a Top 10 ranked bank (SDC League Tables)
Total Rival Leads	Total number of unique lead underwriters
Prior 6-mo Deals Advised, #	Prior 6-month percentage of total deals underwritten (all firms), based on number of deals
Prior 6-mo Deals Advised, $	Prior 6-month percentage of total deals underwritten (all firms), based on deal value
Average Deal Size Advised	Prior 6-month average deal size underwritten
% Self-Underwritten	Prior year percentage of deals self-underwritten scaled by total issuer financial debt deals
% Financial Mkt Share	Prior year percentage of financial debt scaled by total debt underwritten by the issuer

Appendix B: Variable Definitions (continued)

Reputation Measures from SDC League Tables	
Issuer Top 10 Rank	Indicator equal to 1 if issuer was ranked as a Top 10 debt advisor in prior-year
Advisor Top 10 Rank	Indicator equal to 1 if current advisor was ranked as a Top 10 debt advisor in prior-year
Advisor Ranked Higher	Indicator equal to1 if current advisor is ranked higher than issuer
Advisor Ranked Lower	Indicator equal to1 if current advisor is ranked lower than issuer
PY Debt Market Share	Prior-year issuer or advisor debt market share
Prior Year Financial Proceeds	Total financial firm debt proceeds underwritten in prior year
Prior Year Financial Market Share	Prior-year issuer financial firm debt market share
Prior Year # Financial Issues	Number of financial firm debt deals underwritten in prior year
Prior Year Financial Debt Ranking	Prior-year financial firm debt ranking
Lower Rank than PY	Indicator equal to 1 if issuing bank's reputation is lower than in prior year
Self > Difference	Indicator equal to 1 if an issuer's self-underwriting proceeds exceed the difference in total proceeds underwritten between a bank and next lowest ranked bank
Expertise Measures	
Issuer: % International	Issuer's market share of international debt offers over prior 5 years
Issuer: % Private	Issuer's market share of private debt offers over prior 5 years
Issuer: % Long Maturity	Issuer's market share of long-term (> 10 year maturity) debt offers over prior 5 years
Advisor > % International	Indicator equal to 1 if advisor international debt market share is larger than issuer's
Advisor > % Private	Indicator equal to 1 if advisor private debt market share is larger than issuer's
Advisor > % Long Maturity	Indicator equal to 1 if advisor long-term debt market share is larger than issuer's
Certification Measures	
High Debt Rating	Indicator equal to 1 if offering is rated AA or higher by Moody's
Mid Debt Rating	Indicator equal to 1 if offering is rated A by Moody's
Low Debt Rating	Indicator equal to 1 if offering is rated BAA or lower by Moody's
12-mo Prior Stock Vol	Standard deviation of daily stock returns twelve months prior to debt offer
Relationship Characteristics (based on deal value)	
Prior 12-mo Advisor Use	Prior 12-month percentage of issuer deals underwritten by current advisor
Prior 12-mo Rival Use	Prior 12-month percentage of an issuer's deals underwritten by other advisors
Capacity Measures (based on deal value)	
Financial Debt Capacity	Prior 6-month financial to total debt offerings underwritten by issuer
Other	
Post-1999	Indicator equal to 1 if offering occurred after repeal of Glass-Steagall in 1999
Asset Management	Indicator equal to 1 if issuer has an asset management division (FINRA.org)
Proprietary Trading	Indicator equal to 1 if issuer engages in proprietary trading (FINRA.org)
Derivative Trading	Indicator equal to 1 if issuer engages in derivatives trading (FINRA.org)

Figure 1: Percentage of Financial to Total Debt

This figure details the percentage of debt (based on aggregate dollar volume of proceeds offered) issued by all U.S. public financial firms scaled by total debt issued by all U.S. public firms on a yearly basis from 1979 to 2014. Source of data: SDC League Tables.

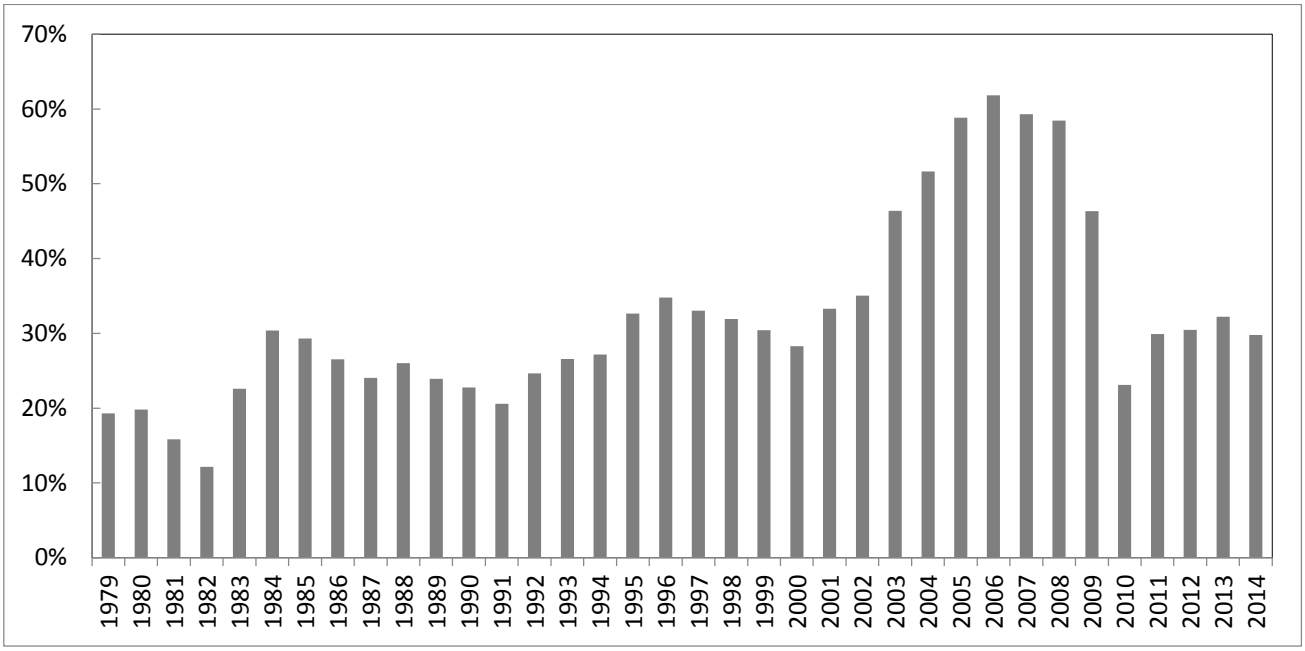

Figure 2: Number of Banks Capable of Underwriting Debt

This figure details the number of our 60 banks capable of underwriting debt yearly from 1979 to 2014. Appendix A provides details on bank selection criteria and defines capability.

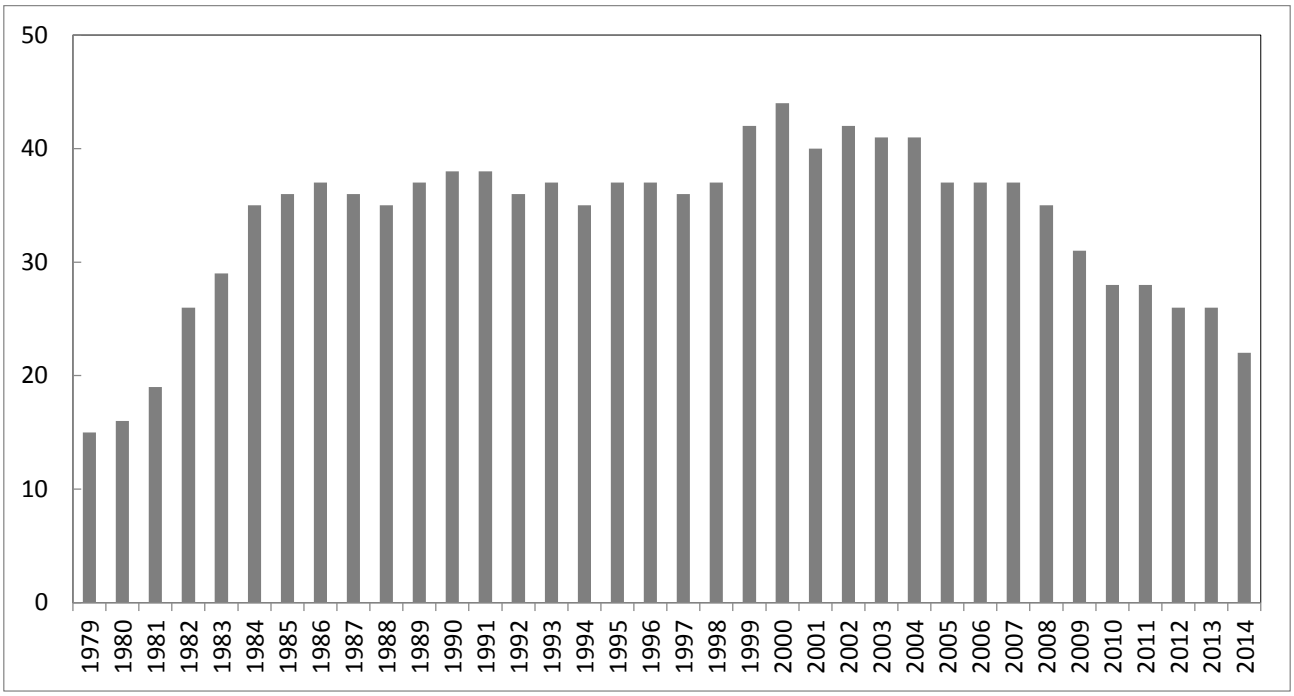

Figure 3: Fraction of Banks that Hire a Rival

This figure details the fraction of banks that use a rival as a lead underwriter on a yearly basis from 1979 to 2014. The left-hand side axis provides the percentage of issuing banks that use a rival bank as a lead underwriter each year. The right-hand side axis shows the number of debt issuances in that given year.

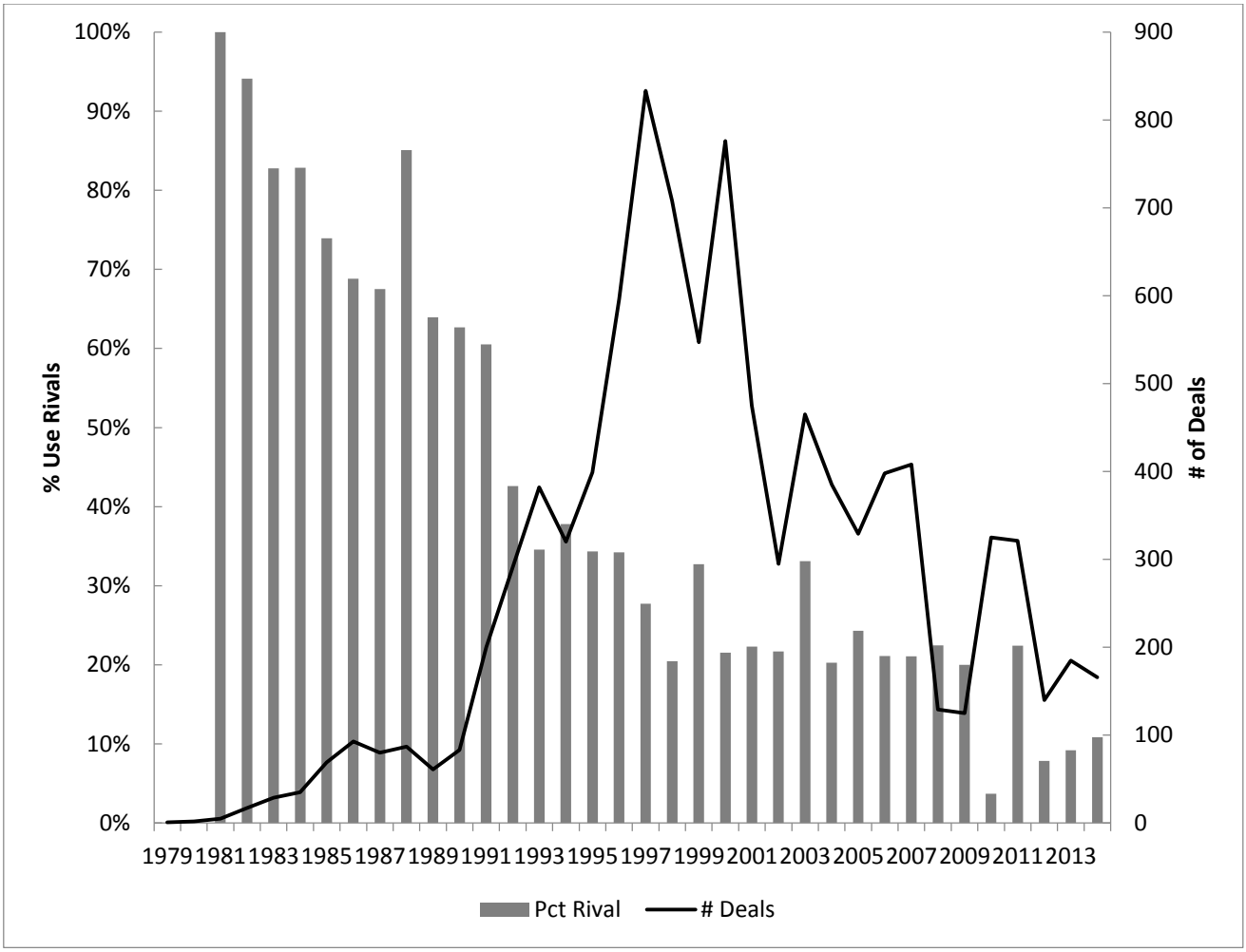

Figure 4: Regulatory Timeline

This figure details the timeline of regulatory events surrounding commercial banks' ability to underwrite securities. We track all major regulatory revisions pertaining to commercial banks' ability to participate in the securities business, which were prohibited by the Glass-Steagall Act of 1933. The first major expansion into debt underwriting occurred in 1989, and the Glass-Steagall Act of 1933 was finally repealed in 1999 following the passage of the Gramm-Leach-Bliley Act.

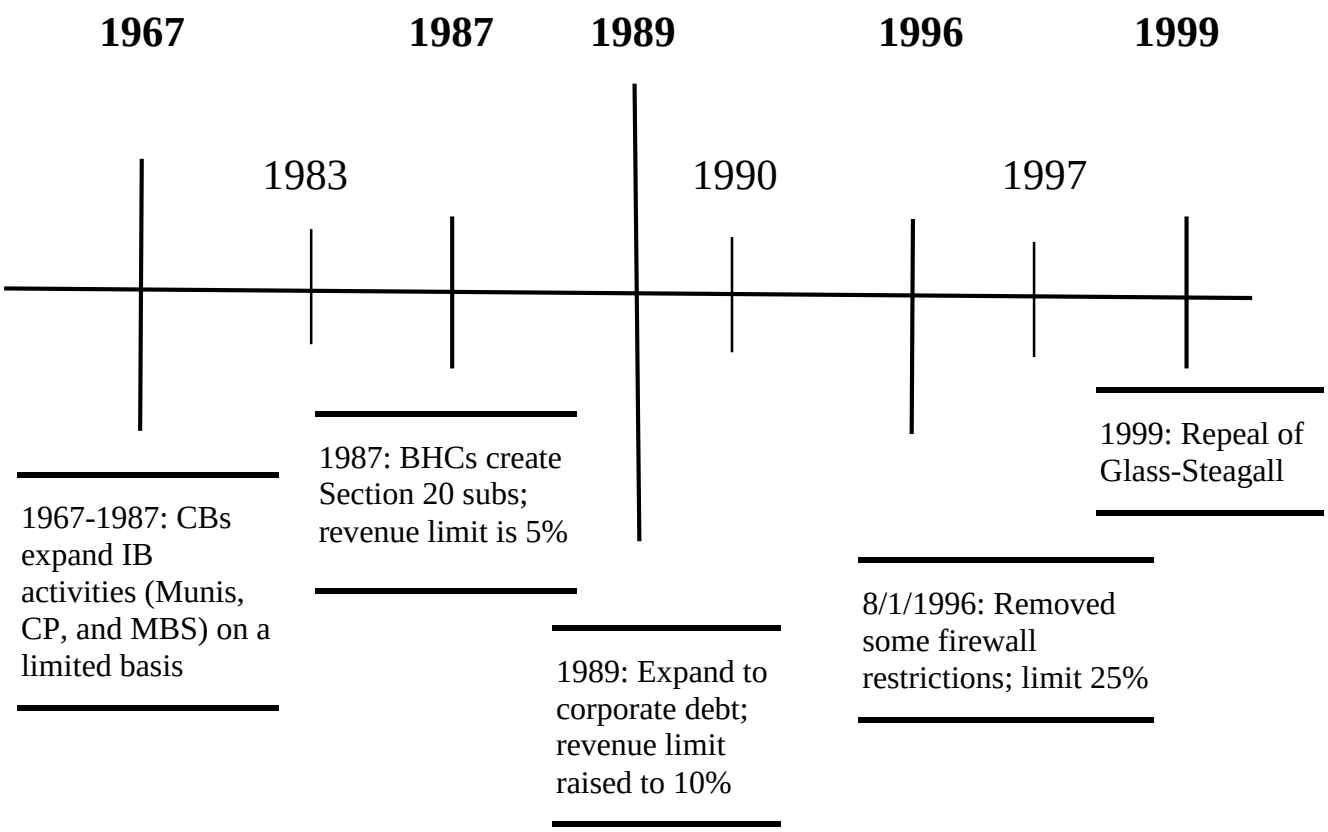

Table 1: Bank Sample

This table provides our sample of banks and their propensity to self-underwrite their debt issuances. *1st Lead* is the first date that a bank acted as a lead advisor to another firm, marking the date when it is considered capable of underwriting its own debt issuances. Other variables include the total number of debt issuances by each bank in our sample *(# deals*), as well as the percent of deals the banks use themselves as lead underwriter *(Lead*), the percent of deals the bank acts in a secondary role, such as a syndicate member *(Other*), and the percent of deals where the bank has no role in its own issuance (*No Role*). All banks are identified as commercial banks (CB) or investment banks (IB); the status column details the current state of the firm.

Firm Name	1st Lead	# Deals	Lead	Other	No Role	Type	Status
Alex Brown Inc.	10-Dec-70	1	100%	0.0%	0.0%	IB	Merged with Bankers Trust, 9-01-1997
Bank of America Merrill Lynch	16-Nov-98	472	78.6%	4.2%	17.2%	CB	Still exists
Bank of Boston	4-Aug-95	50	6.0%	0.0%	94.0%	CB	Acquired by Fleet Financial, 3-01-2000
Bank of New York	1-Sep-83	161	16.1%	0.6%	83.2%	CB	Still exists
Bank One Corp	20-Mar-97	136	30.9%	1.5%	67.6%	CB	Acquired by JPM Chase, 7-01-2004
BankAmerica Corp	1-Jun-81	157	7.6%	0.0%	92.4%	CB	Merged with Merrill Lynch to form BofA Merrill Lynch, 1-01-2009
Bankers Trust NY	29-Jun-81	173	24.9%	0.0%	75.1%	CB	Acquired by Deutsche Bank, 6-04-1999
BB&T Corp	25-May-00	31	77.4%	0.0%	22.6%	CB	Still exists
Bear Stearns	2-Jun-70	1039	98.9%	0.1%	1.0%	IB	Acquired by JPM Chase, 6-02-2008
Chase Manhattan Corp	15-Nov-82	198	37.9%	0.5%	61.6%	CB	Merged with JPM to form JPM Chase, 12-31-2000
Chemical Banking Corp	1-Oct-85	183	57.4%	0.0%	42.6%	CB	Acquired by Chase Manhattan, 3-31-1996
Citicorp	1-Jun-83	322	21.4%	0.0%	78.6%	CB	Merged with Travelers to form Citigroup, 10-09-1998
Citigroup Inc.	2-Nov-98	316	91.5%	3.2%	5.4%	CB	Still exists
Continental Bank	30-Nov-81	196	15.8%	0.0%	84.2%	CB	Acquired by NationsBank, 8-31-1994
Countrywide Financial	29-Apr-98	64	34.4%	0.0%	65.6%	CB	Acquired by Bank of America, 7-01-2008
Cowen Group	27-Apr-90	1	100%	0.0%	0.0%	IB	Still exists
Dean Witter	21-Jan-70	63	25.4%	0.0%	74.6%	IB	Acquired by Morgan Stanley, 5-31-1997
Donaldson Lufkin & Jenrette	29-Feb-72	70	100%	0.0%	0.0%	IB	Acquired by CSFB, 11-03-2000
EF Hutton Group	23-Apr-70	5	60.0%	40.0%	0.0%	IB	Merged with Shearson Lehman, 6-01-1988
Fifth Third Bancorp	1-Aug-00	23	30.4%	0.0%	69.6%	CB	Still exists
First Boston Inc.	8-Jan-70	3	100%	0.0%	0.0%	IB	Merged with Credit Suisse, 12-22-1988
First Chicago Corp	1-Jan-85	114	8.8%	0.0%	91.2%	CB	Acquired by Bank One, 10-02-1998
First Horizon National	25-Mar-98	1	100%	0.0%	0.0%	CB	Still exists
First Interstate Bancorp	1-Nov-84	34	5.9%	0.0%	94.1%	CB	Acquired by Wells Fargo, 4-01-1996
First Union Corp	2-Aug-95	57	73.7%	0.0%	26.3%	CB	Acquired by Wachovia, 9-01-2001
Fleet Boston Corp	1-Jul-84	109	3.7%	0.0%	96.3%	CB	Acquired by Bank of America, 4-01-2004
Goldman Sachs	20-Jan-70	669	89.2%	0.0%	10.8%	IB	Still exists

Table 1: Bank Sample (continued)

Firm Name	1st Lead	# Deals	Lead	Other	No Role	Type	Status
Hibernia Corp	2-Jul-02	1	0.0%	0.0%	100.0%	CB	Acquired by Capital One, 11-16-2005
Jefferies Group	16-Jun-83	15	93.3%	6.7%	0.0%	IB	Still exists
JP Morgan & Co	1-Aug-84	189	83.6%	0.0%	16.4%	IB	Merged with Chase to form JPM Chase, 12-31-2000
JPMorgan Chase & Co	25-Jan-01	419	74.0%	0.0%	26.0%	CB	Still exists
KeyCorp	22-Jul-99	49	20.4%	0.0%	79.6%	CB	Still exists
KKR Financial	2-Apr-08	2	0.0%	0.0%	100.0%	IB	Still exists
Legg Mason Inc.	28-Sep-70	8	12.5%	0.0%	87.5%	IB	Still exists
Lehman Brothers	15-Jan-70	522	94.1%	0.2%	5.7%	IB	Filed for bankruptcy; acquired by Barclays, 9-22-2008
Manufacturers Hanover Corp	9-Jul-82	42	2.4%	0.0%	97.6%	CB	Acquired by Chemical Bank, 1-01-1992
Mellon Bank Corp	1-Dec-86	18	0.0%	0.0%	100.0%	CB	Merged with Bank of New York, 7-02-2007
Merrill Lynch & Co	14-Jan-70	1797	96.7%	0.1%	3.2%	IB	Merged with BofA to form Bank of America Merrill Lynch, 1-01-2009
Morgan Stanley	9-Jan-70	849	95.3%	0.6%	4.1%	IB	Still exists
Moseley Hallgarten, Estabrook	20-May-75	2	50.0%	0.0%	50.0%	IB	Ceased to exist, 7-26-1988
NationsBank Corp	1-Jun-91	306	26.8%	0.0%	73.2%	CB	Merged with Bank of America to form BankAmerica, 9-30-1998
National City Corp	29-Jan-99	56	0.0%	0.0%	100.0%	CB	Acquired by PNC, 12-31-2008
NCNB Corp	13-Jan-84	19	5.3%	5.3%	89.5%	CB	Merged with C&S/Sovran to form NationsBank, 1-02-1992
Northern Trust Corp	7-Jun-89	33	0.0%	6.1%	93.9%	CB	Still exists
Paine Webber Inc.	17-Mar-70	54	90.7%	1.9%	7.4%	IB	Acquired by UBS, 11-03-2000
PNC Financial Services	19-Sep-02	4	25.0%	0.0%	75.0%	CB	Still exists
Raymond James	20-Oct-70	4	50.0%	0.0%	50.0%	IB	Still exists
Regions Financial Corp	22-Oct-91	10	0.0%	0.0%	100.0%	CB	Still exists
Salomon Brothers	12-Jan-70	212	98.6%	0.0%	1.4%	IB	Acquired by Travelers 11-28-1997
Shearson Lehman Brothers	30-May-80	4	75.0%	0.0%	25.0%	IB	Amex sells Shearson to Primerica, 7-31-1993; spinoff to form Lehman Bros., 5-31-1994
SouthTrust Corp	1-Sep-99	10	0.0%	0.0%	100.0%	CB	Acquired by Wachovia, 11-01-2004
Sovereign Bancorp	14-Dec-95	8	0.0%	0.0%	100.0%	CB	Acquired by Banco Santander SA, 1-30-2009
State Street Corp	9-Aug-82	10	0.0%	0.0%	100.0%	CB	Still exists
Sumitomo Bank of California	1-Aug-84	4	0.0%	0.0%	100.0%	CB	Acquired by Zions Bancorp, 10-01-1998
SunTrust Banks	11-Sep-96	78	33.3%	0.0%	66.7%	CB	Still exists
Charles Schwab Corp	3-Aug-93	43	4.7%	0.0%	95.3%	IB	Still exists
US Bancorp	20-Apr-99	72	25.0%	0.0%	75.0%	CB	Still exists
Wachovia Corp	15-Jun-99	55	90.9%	5.5%	3.6%	CB	Acquired by Wells Fargo, 12-31-2008
Wells Fargo & Co	21-May-82	195	35.4%	0.0%	64.6%	CB	Still exists
Zions Bancorp	25-Feb-99	22	59.1%	0.0%	40.9%	CB	Still exists

Table 2: Summary Statistics

This table details summary statistics for a sample of 60 financial firms that issued debt from 1979-2014. Panel A reports mean, median, and standard deviations for deal characteristics for all debt deals in the sample (9,760 deals). Mean summary statistics are further partitioned between deals pre-2000 and deals from 2000 onwards. Coupon, offer yield to maturity, and gross spread are only available for a subset of debt deals. Panel B reports firm characteristics based on a firm-year level. All financial data are for the fiscal year prior to the deal. Variable definitions are detailed in Appendix B. p-values report the significance of the difference between sample means of the two sub-samples using a difference of means test.

	Mean	Median	Std Dev	Pre-2000	2000-2014	p-value
Panel A: Deal Characteristics						
International Deal	15.39%	0%	36.09%	8.76%	21.90%	(0.00)
Private Deal	6.11%	0%	23.95%	11.55%	0.75%	(0.00)
Deal Size ($M)	285.70	93.31	521.83	101.22	467.03	(0.00)
Relative Deal Size	1.65%	0.56%	3.64%	2.20%	1.11%	(0.00)
Maturity (years)	5.70	4.00	5.74	4.87	6.51	(0.00)
Coupon	5.71%	5.88%	2.46%	6.80%	4.77%	(0.00)
High Debt Rating	35.27%	0%	47.78%	24.51%	45.84%	(0.00)
Mid Debt Rating	47.30%	0%	49.93%	52.77%	41.91%	(0.00)
Low Debt Rating	8.03%	0%	27.18%	10.15%	5.95%	(0.00)
12-mo Prior Stock Vol	3.28%	2.20%	4.81%	2.57%	3.96%	(0.00)
Use Rival	28.74%	0%	45.26%	37.25%	20.38%	(0.00)
% Issued by IBs	56.89%	100%	49.53%	55.73%	58.03%	(0.02)
% Issued by Top 10 Bank	63.51%	100%	48.14%	53.35%	73.51%	(0.00)
Panel B: Firm Characteristics						
Market Value of Equity ($M)	28,037	9,533	44,772	8,158	50,070	(0.00)
Leverage	34.67%	25.51%	23.43%	37.59%	31.43%	(0.00)
ROA	3.22%	2.82%	1.94%	3.33%	3.10%	(0.15)
Market-to-Book	1.68	1.47	1.02	1.48	1.90	(0.00)
Number of Deals Per Year	16.18	6.00	26.66	15.26	17.21	(0.37)
Proprietary Trading	78.34%	100%	41.23%	73.54%	83.22%	(0.00)
Derivative Trading	84.58%	100%	36.15%	83.51%	85.66%	(0.47)
Asset Management	81.28%	100%	39.04%	75.60%	87.06%	(0.00)

Table 3: Impact of Deregulation

This table details the impact of deregulation on the debt issuing behavior of commercial banks using all debt issuances by public firms (financials and non-financials). The two regulatory changes are post-August 1, 1996 (Models 1, 3, 5, and 7) and post-1999 (Models 2, 4, 6, and 8). The impact of deregulation is measured on commercial bank leverage (Columns 1 and 2) frequency of issues (Columns 3 and 4) and size of their issues (total proceeds, Columns 5 and 6; average deal size, Columns 7 and 8) relative to other firms. To examine the impact on commercial banks versus all other financial and non-financial firms, interactive terms are included for the largest commercial banks with each regulatory change (Q4 CB * ≤ 8/1/96, Q4 CB * post 8/1/96, Q4 CB * ≤ 1999, Q4 CB * post 1999). The final row in the table provides output from a t-test on the difference between pre-deregulation and post-deregulation coefficients. All regressions include year and issuer fixed effects. Variable definitions are detailed in Appendix B. p-values are listed in parentheses.

	Leverage		# Deals		Proceeds Raised		Avg Deal Size	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Intercept	0.366	0.406	0.084	0.125	3.818	3.897	3.734	3.772
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Q4 CB * ≤ 8/1/96	-0.057		0.987		2.288		1.300	-0.057
	(0.00)		(0.00)		(0.00)		(0.00)	(0.00)
Q4 CB * post 8/1/96	0.057		2.107		4.073		1.965	0.057
	(0.01)		(0.00)		(0.00)		(0.00)	(0.01)
All CB * ≤ 1999		-0.053		1.073		2.374		1.301
		(0.00)		(0.00)		(0.00)		(0.00)
All CB * post 1999		0.091		2.257		4.499		2.242
		(0.00)		(0.00)		(0.00)		(0.00)
Year and Issuer FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	9,760	9,760	3,561	3,561	6,199	6,199	6,199	6,199
Adjusted r^2	0.574	0.578	0.400	0.401	0.224	0.227	0.224	0.227
H_0: Pre-Deregulation = Post-Deregulation	23.93	26.67	32.83	36.68	51.60	73.12	11.14	14.97
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)

Table 4: Market and Deal Statistics

This table reports mean and median statistics for all debt deals separated by whether the bank is ranked in the Top 10 of the SDC League Tables in a given year. Panel A details statistics by firm-year observations (430 non-Top 10 and 177 Top 10), while Panel B details statistics for the subset of issuances where a rival bank is hired (2,377 non-Top 10 and 428 Top 10). Panel C presents comparisons between the issuing bank and which rival the bank chooses to hire as its lead advisor for a given deal, while Panel D provides statistics based on whether the issuer is a non-Top 10 or Top 10 Bank and a rival is hired. Variable definitions are detailed in Appendix B. p-values report the significance of the difference between sample means using a difference of means test. Wilcoxon rank p-values are reported for medians.

	Mean			Median		
	Top 10	Non-Top 10	p-value	Top 10	Non-Top 10	p-value
Panel A: Debt Issuance by Firm Year						
Prior Year Debt Market Share	4.82%	0.17%	(0.00)	3.90%	0.00%	(0.00)
Prior Year Financial Market Share	4.60%	0.21%	(0.00)	3.30%	0.00%	(0.00)
Prior Year Financial Debt Ranking	5.12	32.72	(0.00)	4.00	27.00	(0.00)
% Self-Underwritten	38.27%	21.82%	(0.00)	34.74%	0.00%	(0.00)
% Financial Mkt Share	47.66%	32.48%	(0.00)	47.32%	0.20%	(0.00)
Use Rival	10.04%	71.95%	(0.00)	0%	100%	(0.00)
Panel B: Debt Issuance Statistics When Rival is Hired						
Financial Debt Rank (Advisor)	23.28	7.25	(0.00)	15.00	4.00	(0.00)
Advisor Top 10 Rank	32.48%	64.49%	(0.00)	0%	100%	(0.00)
Total Rival Leads	13.00	10.00	(0.38)	13.00	9.00	(0.68)
Panel C: All Debt Issuances When Rival is Hired						
	Advisor	Issuer	p-value	Advisor	Issuer	p-value
Prior Year Financial Proceeds ($M)	5,868	3,861	(0.00)	2,728	60	(0.00)
Prior Year Financial Market Share	1.91%	0.91%	(0.00)	1.10%	0.00%	(0.00)
Prior Year # Financial Issues	44.02	14.40	(0.00)	29.00	1.00	(0.00)
Prior Year Financial Debt Ranking	9.68	27.02	(0.00)	5.00	18.00	(0.00)
% International	5.79%	1.11%	(0.00)	3.37%	0.00%	(0.00)
% Private	5.89%	2.33%	(0.00)	5.02%	1.22%	(0.00)
% Long Maturity	7.57%	1.52%	(0.00)	7.33%	0.18%	(0.00)
Prior 6-mo Deals Advised, #	65.33	16.04	(0.00)	60.00	7.00	(0.00)
Prior 6-mo Deals Advised, $	19,623	4,819	(0.00)	13,399	445	(0.00)
Average Deal Size Advised	273.601	264.593	(0.64)	218	114	(0.00)
Top 10 Rank	59.60%	15.26%	(0.00)	100%	0%	(0.00)

Panel D: Top 10 versus Non-Top 10 Advisors When Rival is Hired				
	Overall	Top 10	Non-Top 10	p-value
Advisor Ranked Higher	78.65%	19.39%	89.31%	(0.00)
Advisor Ranked Lower	21.36%	80.61%	10.60%	(0.00)
Advisor > % International	60.00%	24.30%	66.43%	(0.00)
Advisor > % Private	58.72%	21.50%	65.42%	(0.00)
Advisor > % Long Maturity	65.05%	22.90%	72.82%	(0.00)

Table 5: Probability of Hiring a Rival

This table presents estimations from a linear probability model (LPM) on whether a firm hires a rival for a given debt issuance. Deal characteristics in each regression including: indicators for international and private deals, the relative deal size, and the debt maturity. To provide a control for the reputation of the issuer, we also include the issuer's prior-year aggregate debt market share. Columns 1 and 2 are calculated using all deals in the sample. Columns 3 and 4 are limited to only those deals issued by Top 10 ranked banks. Columns 5 and 6 are those debt deals issued by non-Top 10 ranked banks. Rankings are identified in each year from the SDC League Tables. All regressions include year and issuer fixed effects. Variable definitions are detailed in Appendix B. p-values are listed in parentheses.

	All Banks		Top 10 Banks		Non-Top 10 Banks	
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6
Intercept	0.409	0.429	1.055	1.101	0.864	0.979
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
International Deal	0.075	0.076	0.066	0.065	0.072	0.072
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Private Deal	-0.148	-0.146	-0.039	-0.025	-0.207	-0.197
	(0.00)	(0.00)	(0.16)	(0.37)	(0.00)	(0.00)
Relative Deal Size	-0.470	-0.476	-0.785	-0.807	-0.398	-0.405
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.01)
Maturity	0.004	0.004	0.005	0.005	0.002	0.003
	(0.00)	(0.00)	(0.00)	(0.00)	(0.07)	(0.06)
Prior Year Debt Market Share (Issuer)		-0.005		-0.013		-0.088
		(0.05)		(0.00)		(0.00)
Post-1999		-0.189		-0.997		-1.067
		(0.01)		(0.00)		(0.00)
Year and Issuer FE	Yes	Yes	Yes	Yes	Yes	Yes
N	9,760	9,760	6,199	6,199	3,561	3,561
Adjusted r^2	0.574	0.578	0.224	0.227	0.400	0.401

Table 6: Probability of Hiring a Rival – Expertise and Information

This table presents estimations from a linear probability model (LPM) on whether a firm hires a rival for a given debt issuance while controlling for different types of expertise and information. Columns 1 and 2 include all deals in the sample. Columns 3 and 4 are limited to only those deals issued by -Top 10 ranked banks while Columns 5 and 6 are limited to non-Top 10 bank issued debt deals. Rankings are identified each year from the SDC League Tables. Panel A details measures of expertise (Issuer Percent International, Private and Long Maturity) while Panel B provides measures of certification (12-mo Prior Stock Vol and High or Low Debt Rating). Panel C outlines measures of relationship (Prior 12-mo Rival or Advisor Use) while Panel D details measures of information (Proprietary Trading and Derivatives Trading). Control variables are the same as those described in Table 5. All regressions include year and issuer fixed effects. Variable definitions are detailed in Appendix B. p-values are listed in parentheses.

	All Banks			Top 10 Banks			Non-Top 10 Banks		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Panel A: Expertise									
Issuer: % International	-0.233			-0.189			-3.867		
	(0.01)			(0.01)			(0.04)		
Issuer: % Private		-0.908			-1.690			-0.306	
		(0.00)			(0.00)			(0.78)	
Issuer: % Long Maturity			-1.021			-1.093			-0.748
			(0.00)			(0.00)			(0.56)
Year and Issuer FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	8,502	8,499	8,502	5,812	5,812	5,812	2,690	2,687	2,690
Adjusted r^2	0.598	0.600	0.601	0.236	0.254	0.243	0.410	0.409	0.409
Panel B: Certification									
12-mo Prior Stock Vol	0.390			0.466			-0.240		
	(0.00)			(0.00)			(0.40)		
High Debt Rating		-0.048			-0.094			0.049	
		(0.00)			(0.00)			(0.02)	
Low Debt Rating		0.070			0.089			-0.057	
		(0.00)			(0.00)			(0.08)	
Year and Issuer FE	Yes	Yes		Yes	Yes		Yes	Yes	
N	9,372	9,760		6,013	6,199		3,359	3,561	
Adjusted r^2	0.577	0.576		0.233	0.246		0.405	0.403	
Panel C: Relationship									
Prior 12-mo Rival Use	0.263			-0.006			0.160		
	(0.00)			(0.82)			(0.00)		
Prior 12-mo Advisor Use		-0.555			-0.609			-0.386	
		(0.00)			(0.00)			(0.00)	
Year and Issuer FE	Yes	Yes		Yes	Yes		Yes	Yes	
N	9,760	9,599		6,199	6,196		3,561	3,403	
Adjusted r^2	0.587	0.673		0.227	0.601		0.407	0.445	
Panel D: Information									
Proprietary Trading	-0.225			-0.187			-0.686		
	(0.00)			(0.00)			(0.00)		
Derivatives Trading		-0.188			-0.187			-0.644	
		(0.00)			(0.00)			(0.00)	
Year and Issuer FE	Yes	Yes		Yes	Yes		Yes	Yes	
N	9,515	9,515		6,193	6,193		3,322	3,322	
Adjusted r^2	0.566	0.565		0.228	0.235		0.415	0.412	

Table 7: Probability of Hiring a Rival – Bank Specific

This table presents estimations from a linear probability model (LPM) on whether a firm hires a rival for a given debt issuance while controlling for bank-specific aspects. Columns 1 - 3 include all deals in the sample. Columns 4, 5, and 6 are limited to only those deals issued by Top 10 ranked banks while Columns 7, 8, and 9 are limited to Non-Top 10 bank issued debt deals. Rankings are identified each year from the SDC League Tables. The first column of each group (Columns 1, 4, and 7) captures the issuer's capacity to underwrite its own debt by measuring the percentage of financial deals it has underwritten in the prior six months relative to total debt underwritten by the same bank (Financial Debt Capacity). The second set of columns (Columns 2, 5, and 8) proxies for the issuing bank's distributional network by including an indicator for whether the bank has an asset management arm. The third set of columns (Columns 3, 6, and 9) includes an indicator for whether the issuing bank's reputation is lower than in the prior year. Control variables are the same as those described in Table 5. All regressions include year and issuer fixed effects. Variable definitions are detailed in Appendix B. p-values are listed in parentheses.

	All Banks			Top 10 Banks			Non-Top 10 Banks		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Financial Debt Capacity	-0.055			0.061			-0.014		
	(0.01)			(0.00)			(0.74)		
Asset Management Arm		-0.189			-0.187			-0.715	
		(0.00)			(0.00)			(0.00)	
Lower Rank than Prior Year			0.028			0.019			0.091
			(0.00)			(0.00)			(0.00)
Year and Issuer FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	9,760	9,515	9,760	6,199	6,193	6,199	3,561	3,322	3,561
Adjusted r^2	0.574	0.565	0.581	0.228	0.235	0.228	0.401	0.412	0.406

Table 8: Probability of Hiring a Rival – League Table Adjustments

This table presents estimations from a linear probability model (LPM) on whether a firm hires a rival for a given debt issuance while controlling for the influence of self-underwriting on threshold banks. The measure of influence is whether the self-underwriting proceeds exceed the difference in total proceeds underwritten between a bank and the next lowest ranked bank (Self > Difference). Column 1 includes all deals in the sample. Columns 2, 3, and 4 are limited to only those deals issued by "threshold" banks ranked 5 or 6; 5, 6, 10, or 11; 5, 6, 10, 11 20, or 21, respectively. Rankings are identified each year from the SDC League Tables. Control variables are the same as those described in Table 5. All regressions include year and issuer fixed effects. Variable definitions are detailed in Appendix B. p-values are listed in parentheses.

	All Deals	Rank 5 or 6	Rank 5, 6, 10, or 11	Rank 5, 6, 10, 11, 20, or 21
	(1)	(2)	(3)	(4)
Intercept	0.429	0.221	1.254	1.338
	(0.00)	(0.02)	(0.00)	(0.00)
Self > Difference	-0.002	-0.106	-0.075	-0.130
	(0.88)	(0.03)	(0.07)	(0.00)
International Deal	0.076	0.073	0.094	0.110
	(0.00)	(0.00)	(0.00)	(0.00)
Private Deal	-0.146	0.028	-0.085	-0.183
	(0.00)	(0.75)	(0.29)	(0.01)
Relative Deal Size	-0.476	-0.767	-0.963	-0.559
	(0.00)	(0.00)	(0.00)	(0.01)
Maturity	0.004	0.001	0.001	0.002
	(0.00)	(0.39)	(0.14)	(0.04)
Prior Year Debt Market Share (Issuer)	-0.005	-0.044	-0.040	-0.011
	(0.05)	(0.17)	(0.01)	(0.48)
Post-1999	-0.189	-0.075	-0.799	-1.138
	(0.01)	(0.14)	(0.00)	(0.00)
Year and Issuer FE	Yes	Yes	Yes	Yes
N	9,760	1,339	1,762	1,914
Adjusted r^2	0.574	0.349	0.562	0.626

Table 9: Probability of Hiring a Rival – Combined Models

This table presents estimations on whether a firm hires a rival for a given debt issuance while controlling for expertise, information, and bank-specific motivations jointly. Columns 1, 3, and 5 present estimates from a linear probability model (LPM) and Columns 2, 4, and 6 provide odds ratios computed from a fixed effects logistic regression. Columns 1 and 2 include all deals, while Columns 3 and 4 (5 and 6) are limited to Top 10 banks (non-Top 10 ranked banks). Control variables are those described in Table 5. All regressions include year and issuer fixed effects. Variable definitions are detailed in Appendix B. p-values are listed in parentheses.

	All Banks		Top 10 Banks		Non-Top 10 Banks	
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	0.817		0.294		1.490	
	(0.00)		(0.00)		(0.00)	
Issuer: % International	-0.526	0.000	-0.535	0.000	-4.491	0.000
	(0.00)	(0.00)	(0.00)	(0.00)	(0.01)	(0.04)
12-mo Prior Stock Vol	0.361	0.948	0.396	1.327	-0.393	0.644
	(0.00)	(0.66)	(0.00)	(0.02)	(0.48)	(0.14)
Prior 12-mo Rival Use	0.230	4.75	0.032	0.547	0.108	3.470
	(0.00)	(0.00)	(0.25)	(0.08)	(0.00)	(0.00)
Proprietary Trading	-0.241	0.000	-0.155	0.205	-0.718	0.000
	(0.00)	(0.98)	(0.00)	(0.05)	(0.00)	(0.99)
Financial Debt Capacity	0.018	1.305	0.094	4.281	-0.050	1.168
	(0.37)	(0.38)	(0.00)	(0.00)	(0.27)	(0.75)
Lower Rank than Prior Year	0.050	1.54	0.029	1.337	0.115	2.034
	(0.00)	(0.00)	(0.00)	(0.04)	(0.00)	(0.00)
International Deal	0.091	3.16	0.075	3.884	0.154	4.102
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Relative Deal Size	-0.739	0.993	-0.961	0.900	-0.531	69.246
	(0.00)	(0.00)	(0.00)	(0.00)	(0.12)	(0.07)
Maturity	0.003	1.04	0.004	1.050	0.001	1.003
	(0.00)	(0.00)	(0.00)	(0.00)	(0.67)	(0.76)
Post-1999	-0.602	0.468	-0.174	0.879	-0.679	0.188
	(0.00)	(0.00)	(0.00)	(0.54)	(0.02)	(0.00)
Year and Issuer FE	Yes		Yes		Yes	
N	8,240		5,646		2,594	
Adjusted r^2	0.610		0.246		0.431	

Table 10: Gross Spreads

This table details OLS regression on gross spreads as a percentage of principal. The main independent variable is an indicator equal to one if the issuing bank hires a rival, zero otherwise. Columns 1 and 2 include all deals, while Columns 3, 4 and 5, 6 are limited to Top 10 and non-Top 10 ranked banks, respectively. Models 2, 4, and 6 use a two-stage Heckman correction model to first estimate whether a rival is used for a specific deal based on model 2 in Table 9 augmented with prior year return and issuer return on assets. The inverse mills ratio is then computed from this specification and used in the second stage regression. Variable definitions are detailed in Appendix B. p-values are listed in parentheses.

	All Banks		Top 10 Banks		Non-Top 10 Banks	
	(1)	(2)	(3)	(4)	(5)	(6)
Intercept	3.231	4.067	0.670	1.472	1.829	3.223
	(0.00)	(0.00)	(0.04)	(0.00)	(0.00)	(0.00)
Use Rival (0/1)	0.190		0.350		0.042	
	(0.00)		(0.00)		(0.30)	
Inverse Mills Ratio		-0.080		-0.078		-0.192
		(0.01)		(0.08)		(0.10)
International Deal	0.047	0.074	0.040	0.069	0.018	0.042
	(0.07)	(0.01)	(0.23)	(0.04)	(0.67)	(0.41)
Private Deal	0.331		0.762		0.068	
	(0.02)		(0.01)		(0.48)	
Relative Deal Size	-3.060	-3.355	-3.461	-3.767	-1.199	-2.246
	(0.00)	(0.00)	(0.00)	(0.00)	(0.02)	(0.00)
Maturity	0.052	0.050	0.055	0.055	0.039	0.038
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
12-mo Prior Stock Vol	-1.106	-0.292	-1.243	-0.413	0.410	0.699
	(0.01)	(0.53)	(0.01)	(0.45)	(0.26)	(0.37)
Proprietary Trading	0.076	-0.053	0.171	-0.057	0.230	0.502
	(0.46)	(0.62)	(0.24)	(0.70)	(0.09)	(0.00)
Financial Debt Capacity	0.155	0.257	0.281	0.413	-0.058	-0.140
	(0.01)	(0.00)	(0.00)	(0.00)	(0.41)	(0.15)
Lower Rank than Prior Year	0.051	0.077	0.087	0.113	-0.045	-0.067
	(0.02)	(0.00)	(0.00)	(0.00)	(0.17)	(0.06)
Prior Year Return	0.038	-0.048	0.099	-0.061	-0.090	-0.066
	(0.23)	(0.16)	(0.03)	(0.22)	(0.02)	(0.17)
ROA	-4.323	-5.424	-3.261	-5.235	-2.220	-1.718
	(0.00)	(0.00)	(0.11)	(0.01)	(0.26)	(0.56)
Post-1999	-2.783	-3.431	-0.598	-0.712	-2.020	-3.484
	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)	(0.00)
Year and Issuer FE	Yes	Yes	Yes	Yes	Yes	Yes
N	3,715	3,169	2,344	2,127	1,371	1,042
Adjusted r^2	0.518	0.497	0.576	0.546	0.356	0.304