CAPITAL STRUCTURE AND CORPORATE FINANCING DECISIONS

Theory, Evidence, and Practice

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CHAPTER 15

The Roles of Financial Intermediaries in Raising Capital

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INTRODUCTION

In the Federal Reserve Board's April 2008 quarterly survey of senior loan officers, more than 50 percent of respondents reported a tightening of lending standards for loans to all sizes of firms (Board of Governors of the Federal Reserve 2008). More than 90 percent of respondents cite a "less favorable or more uncertain economic outlook" as at least somewhat important in their decision to tighten standards. According to the Securities Industry and Financial Markets Association (2008), between 2007 and 2008, long-term corporate debt issues fell from $1,203.9 billion to $737.2 billion, the lowest issuance year since 2000. Total equity issues also fell from $247.5 billion to $242.6 billion over the same time period, with initial public offering (IPO) activity falling by more than 85 percent.

To understand the importance of these declines requires knowing the functions of banks and other financial intermediaries. Though financial intermediaries serve a wide range of purposes, this chapter focuses on activities that directly provide capital to firms. Thus, the chapter excludes credit rating agencies that indirectly provide access to financing even though these are clearly important economic activities.

Financial intermediaries provide firms direct access to capital through lending or underwriting. Commercial banks, insurance companies, and pension funds, for example, primarily move capital from depositors or customer payments to borrowers. Investment banks historically acted mainly as underwriters, assisting corporations in locating investors for stock and bond issues without investing their own funds. Although the repeal of the Glass–Steagall Act in 1999 means that banks can perform both lending and underwriting activities at the same time, lending activities and underwriting activities are not perfect substitutes.

This chapter updates and extends previous surveys of the literature on financial intermediation. Gorton and Winton (2003) review bank-like financial intermediation and its importance in the real economy, while Strahan (2008) focuses on how bank structure affects the quality of lending. Ritter (2003) and Eckbo, Masulis, and Norli (2007) review evidence on investment bank and security issuance, while Ljungqvist (2007) provides special focus on a particular cost of raising capital, namely, IPO underpricing. Drucker and Puri (2007) and Gande (2008) provide surveys of banks' involvement with other capital market activities. These last two surveys are closely related to this chapter, describing the theoretical arguments and empirical evidence about merging banks' traditional lending services with services such as underwriting. Rather than argue policy or detail the inner workings of financial intermediaries, this chapter focuses on how financial intermediaries directly get capital into firms and balances theory with empirics where possible.

The reminder of the chapter is organized as follows. It begins by exploring the direct lending function of financial intermediaries and provides evidence about why firms choose particular financial intermediaries for their borrowing needs. The chapter then describes underwriting activities including the services performed by intermediaries and the combination of lending and underwriting activities within an intermediary and how this combination affects costs of borrowing. Because recent financial crises have drastically affected financial intermediaries, the chapter provides some discussion of some recent work on crises and financial intermediation. The final section offers a summary and conclusions.

LENDING BY FINANCIAL INTERMEDIARIES

The United States has some of the most developed and active public stock and bond markets in the world. Nonetheless, bank and nonbank loans and advances are extremely important sources of external financing. According to the Federal Reserve's Flow of Funds March 2009 release, such loans financed an average of 13 percent of capital expenditures by nonfarm, nonfinancial corporate businesses between 2004 and 2008 (Board of Governors of the Federal Reserve 2009). Corporate bonds financed 16 percent over the same period. Net new equity issues were negative every year over the same time period, implying that firms did not rely on external equity issues to fund investment.

These aggregate numbers are somewhat misleading, however. Small, privately-held companies with little access to public debt and equity markets benefit most from lending from banks and other private lenders. Moreover, the existence of bank loans can help increase the availability of other types of funding. This section first describes why financial intermediaries make loans to firms rather than households directly lending to firms. It then reviews evidence concerning whether banks are "special" relative to other types of financing arrangements as well as the types of firms that choose certain types of loans.

How Do Financial Intermediaries Help Lenders and Borrowers?

Why do households deposit funds with intermediaries instead of lending to corporations directly? One of the earliest answers involves transaction costs. Financial intermediaries provide reduced-cost methods of contracting between households and firms. A related answer involves information asymmetries. Financial

intermediaries have information advantages relative to households and thus make borrowing and lending easier. This section reviews financial intermediaries in general as well as some results specific to one important type of financial intermediary, namely, banks.

Transactions Costs

A role of financial intermediaries in the corporate capital-raising process is to lower transaction costs. As their name suggests, transaction costs are any costs associated with transactions between economic agents. For example, assume a large number of households. Lending requires finding a potential borrower, which is costly with respect to time even if no other costs are involved. Without intermediation, every household would expend effort in finding and transacting with a borrower. Intermediaries act as a single point of contact for lenders and borrowers, reducing the search costs. Even if searching is relatively costless, writing contracts that spell out plans in all future states in a way enforceable by a court can be extremely costly or even impossible.

Screening and Monitoring

The two major costs of information asymmetry are adverse selection and moral hazard. Adverse selection costs arise when low-quality and high-quality firms both want to borrow funds but lenders cannot distinguish between them. Moral hazard arises when firm's incentives are worsened after receiving a loan. Banks and other lenders can reduce these problems through screening (reviewing a firm before making a loan) and monitoring (reviewing a project after making a loan).

Lenders gather relevant information about the prospects and the creditworthiness of the borrower before providing capital. This information resolves the information asymmetry between the lender and the borrower. Such an argument does not explain, however, why large financial intermediaries arise rather than potential borrowers approaching households directly. Boyd and Prescott (1986) show that pooling funds in a financial intermediary allows for cross-subsidization, decreasing the returns for good types and increasing the returns for bad types in such a way that each agent truthfully reveals the type of her project. A small lender cannot pool enough projects to offer this service. Gorton and Pennacchi (1990) emphasize the relative information quality possessed by different investors. By offering a deposit-like investment opportunity to uninformed investors, banks prevent uninformed traders from losing out to informed traders. This helps reduce the costs of transacting for uninformed lenders. Moreover, lenders who produce information can have a multiplier effect on firms' ability to borrow. Leland and Pyle (1977), for example, argue that intermediaries can put their own capital at risk to credibly reveal information they produce about a firm's assets.

Lenders can also monitor those firms that borrow. Diamond (1984) provides an early examination of the monitoring role of banks. He argues that a large intermediary can minimize the costs of monitoring borrowers. By diversifying the loan portfolio, the monitor can promise payments that are close to risk-free for individual lenders. The only way for the bank to meet these obligations is by keeping its promise of monitoring. Calomiris and Kahn (1991) argue that demandable deposits can discipline bank managers by giving depositors an option to force liquidation.

Chemmanur and Fulghieri (1994) expand on this monitoring role and suggest that banks or bank-like lenders have the appropriate incentives to monitor and make better renegotiation versus liquidation decisions. Bondholders do not have the correct incentives for monitoring. Boot and Thakor (1997) also develop a model that compares banks with other sources of financing. However, they do not start with assumptions about the roles of markets and institutions. Rather, they argue that a bank's investors cooperate, whereas market investors compete. Markets provide a feedback loop (prices influence real decisions by firms), whereas banks provide better protection against asset substitution.

Recent empirical papers examine whether bank relationships affect banks' role as monitors. Carletti (2004) examines how the number of bank relationships influences banks' monitoring incentives and how this decision affects loan rates and a firm's choice between single and multiple bank relationships. She finds that the multiple bank lending monitors less but do not necessarily require higher loan rates than the single bank lending. Carletti, Cerasi, and Daltung (2007) analyze banks' incentives of multiple bank lending relationship when they are subject to moral hazard and when monitoring is important. Sufi (2007) analyzes the syndicated loan market and finds that lead banks retain a larger share of loans when borrowers require more intense monitoring and due diligence. When information asymmetry between the borrowers and lenders is severe, participant lenders are closer to borrowers both geographically and in terms of previous lending relationships. Dass and Massa (2010) find that stronger borrower-lender relationships improve bank monitoring, leading to better corporate governance, but they increase adverse selection for the other market participants and lowers the firm's stock liquidity, which implies that the trade-off affects the firm value.

Further, the information production of financial intermediaries is increased as they interact with borrowers repeatedly. As financial intermediaries develop repeated relationships with their borrowers, the cost of information production declines, which solidifies their roles as efficient producers of information.

Petersen and Rajan (1994) analyze how lending relationships affect the availability and costs of funds to the firm using a survey data of small firms. They find that the prior lending relationships increase the ability of firms to borrow, though the relationships do not appear to reduce the yield on debt. Berger and Udell (1995) examine the role of relationship lending in small firm finance and show that a longer bank relationship lowers interest rates and collateral requirements on loan commitments, which implies that banks share with their clients the benefits of their privileged information. Degryse and Van Cayseele (2000) use detailed contract information of small Belgian firms and show interest rates increase with the length of the lending relationship. At the same time, the scope of the relationship, defined by significant account activity as well as the purchase of at least two other bank products, reduces the interest rates of loans. Schenone (2010) uses a firm IPO as an information event and shows that a U-shaped relationship exists between borrowing rates and relationship intensity before the IPO, while after the IPO interest rates are decreasing in relationship intensity.

Liquidity Provision

Banks are an interesting financial intermediary because of the structure of their assets and liabilities. Bank assets tend to be illiquid, while demand deposits are, as

their name implies, available upon demand. Therefore, the bank provides liquidity, insuring borrowers against liquidity shocks to lenders. Diamond and Dybvig (1983) use the mismatch between liquidity of assets and demand deposits to explain bank runs. Diamond and Rajan (2000) argue that demandable deposits actually allow banks to commit to monitoring because they make the bank vulnerable to a destructive run. Berger and Bouwman (2009a) find that bank liquidity creation increased every year between 1993 and 2003. Moreover, liquidity creation is positively related to bank value. In the other camp, Deep and Shaefer (2004) show that the gap between liquid assets and liquid liabilities is not very large at most banks. Thus, they conclude that the importance of liquidity creation of banks may be overstated by theory.

A second question springing from liquidity provision involves why banks fund loans with demand deposits. Pyle (1971) uses a portfolio problem to show how correlations between deposits and loans can explain why a bank-like intermediary relies on deposits as sources of funds to make loans. Kashyap, Rajan, and Stein (2002) contend that banks provide liquidity to borrowers in both the lending and deposit-taking sides of their business. The authors suggest that banks create liquidity off the balance sheet through loan commitments and similar claims to liquid funds. Consistent with Kashyap, Rajan, and Stein's results, Harjoto, Mullineaux, and Yi (2006) find that commercial banks are more likely than investment banks to provide loan commitment contracts that expose the lender to potential liquidity risk.

Choices between Sources of Debt: Are Banks Special?

A large strand of literature considers the different roles played by sources of funds. According to Fama (1985), a bank loan provides accreditation for a firm's ability to generate a certain level of cash flows in future. Diamond (1991) suggests that banks provide monitoring for young borrowers without the benefit of a strong reputation. Once firms develop a reputation, they switch to other debt sources that do not monitor. Rajan (1992) argues that firms must trade off the benefit of bank flexibility against the cost of hold-up problems when deciding between banks and other sources. Berlin and Mester (1992) also contend that the riskiest firms choose banks over other intermediaries but focus on the renegotiations afforded by bank loans with stringent covenants.

James (1987) starts a stream of literature focusing on the effect of bank loan announcements on the firm's other security holders. He finds that bank loan announcements significantly increase stock prices while announcements of privately placed and public issues of debt experience zero or negative firm stock price reactions. Lummer and McConnell (1989) maintain that bank monitoring is more important than screening, as they show the positive response is solely due to loan renewals. Slovin, Johnson, and Glascock (1992) find significantly positive share price reactions for both initiation and renewal of loans but only for small firms. Best and Zhang (1993) show banks provide the most information where analysts provide only noisy information. Billet, Flannery, and Garfinkel (1995) find evidence that banks' credit ratings determine the level of the borrowers' stock price reaction, while Preece and Mullineaux (1994) find no statistical difference in the firms' stock price reactions to loan announcements from different lenders. Dahiya, Puri, and Saunders (2003) document a negative stock price reaction to loan sales,

which suggests that banks play some monitoring role. Fields et al. (2006) show that equity price reactions to bank loan announcements have considerably decreased over time, possibly due to increased competition and the changing nature of the banking sector. Ongena et al. (2008) examine bond and equity price reaction to bank loan announcements and find that bank loan announcements transfer wealth from bondholders to equity holders but the transfer appears concentrated in smaller, riskier firms.

Another strand of empirical studies for bank loan uniqueness focuses on firms' choice of banks versus other lending sources. Houston and James (2001) show bank dependent firms are smaller, younger, less highly levered, and more likely to hold liquid assets than firms with public debt outstanding. Krishnaswami, Spindt, and Subramaniam (1999) show larger firms and firms with larger average issue sizes rely more on public debt financing, while reliance on private borrowing is positively related to the extent of a company's growth opportunities. Denis and Mihov (2003) find that firms with the highest credit quality borrow from public sources, firms with medium credit quality borrow from banks, and firms with the lowest credit quality borrow from nonbank private lenders.

UNDERWRITING BY FINANCIAL INTERMEDIARIES

This section reviews literature related to underwriting activities of financial intermediaries. Underwriting actually has several definitions depending on use. This chapter views the term *underwrite* as meaning to agree to purchase (as security issue) usually on a fixed date at a fixed price with a view to public distribution and to guarantee financial support of the issue.

Intermediaries can underwrite many different securities for firms such as common or preferred stock, straight bonds, and convertibles. The choice of security is left to other reviews because this section instead focuses on what the underwriter does in each case. The only implication for security choice is to report relative costs of underwriting by different types of security offered.

The largest difference between lending and underwriting involves what Bhattacharya and Thakor (1993) call *qualitative asset transformation.* This means that the liabilities of the bank (demand deposits) are qualitatively different from the assets of the bank (loans). In underwriting, the assets of the lender and the liabilities of the borrower match. For example, a household owns a share of stock, and a firm has obligations consistent with a share of stock after an equity offering.

Costs of Underwriting

Underwriting contracts are generally one of two types: firm commitment or best efforts. In a firm commitment contract, the underwriter purchases securities from the firm and then sells them to other investors. The spread between the price paid to the firm and the price received from investors, called the *underwriter spread,* provides compensation to the underwriter. In a best efforts contract, the underwriter brokers the deal but receives a guaranteed fee from the firm rather than bearing risks about the offer price. Several underwriters may form a syndicate to reduce risk or pool resources. Here, one intermediary serves as the lead manager with the

responsibility for all aspects of the issue and others in the syndicate help to sell the securities.

Firms face two basic types of costs in underwriting arrangements: direct costs such as underwriter fees and indirect costs such as underpricing. Underpricing refers to the fact that security issues often see large positive first-day returns. This suggests that the firm could have received a higher price for that security. Lee et al. (1996) document the different costs of equity and debt offerings. Equity issues are relatively costly. IPOs have the highest costs with 11 percent of proceeds going to direct costs and indirect costs of underpricing around 12 percent of proceeds. Seasoned equity offerings (SEOs) have a much smaller cost of around 7.3 percent of proceeds. Direct costs of non–investment-grade bonds are around 3.5 percent of proceeds with investment grade bonds seeing costs of 1 percent (straight bonds) to 2 percent (convertible bonds).

Many empirical studies use these figures as a starting point, using theory to explain the cross-section of issuance costs. The chapter now turns to theories and evidence about what intermediaries do for firms in underwriting. In a sense, this chapter is asking what firms buy in paying for underwriting services.

Underwriting Services

This section reviews some of the major services underwriters provide during and after a security issue. Generally speaking, underwriters provide screening and monitoring before an issue. Underwriters also assist markets for new securities in the time immediately following the offer.

Screening and Monitoring

When the firm issues new securities, the underwriter reviews the firm's affairs. The underwriter may develop a reputation as an effective screener, monitor, or both. The underwriter uses this reputation to extract rents in securities issues.

Ramakrishnan and Thakor (1984) present a model in which firms issuing new shares to the public can hire an agent to produce information about their quality. An intermediary with a contract resembling that of a firm commitment offering, where the underwriter buys shares from the firm before selling to other investors, induces screening. Consistent with the information role of underwriters, Ritter (1987) shows costs of IPOs are drastically higher for best efforts IPOs than for firm commitment IPOs. Thus, when underwriters commit their own capital to the underwriting process, markets appear to require less compensation for uncertainty.

A large literature focuses on underpricing and information problems in equity IPOs. For example, Beatty and Ritter (1986) document more underpricing when investor uncertainty about the value of an issue is greater. They also propose that underwriters can develop a reputation for fairness by underpricing neither too much (which hurts firms) nor too little (which hurts investors). Carter and Manaster (1990) model the importance of exogenously determined underwriter reputation and find that underwriter prestige is negatively related to the magnitude and variation of post-IPO price run-ups. Cai, Helwege, and Warga (2007) also show evidence of underpricing in initial debt offerings. As with equity initial offerings, uncertainty also appears to increase the underpricing of debt offerings.

Interestingly, Altinklic and Hansen (2003) and Corwin (2003) provide underpricing evidence in SEOs, offerings by firms that already have publicly-traded stocks. Cai, Helwege, and Warga (2007) also show such underpricing in seasoned debt offerings. Underpricing magnitudes are lower in SEOs than IPOs and also increase with uncertainty. This is intriguing because during a seasoned offering, investors can see market prices of the firm's securities. The evidence suggests a role for intermediaries' information production even when markets already trade a firm's securities.

Underwriters may also provide monitoring to firms after a security issue. Hansen and Torregrosa (1992) argue that banks receive rents from their reputations for monitoring and show the reputation costs of shirking make monitoring optimal for an underwriter. Jain and Kini (1999) argue that demand exists for third-party monitoring in the IPO market and find a positive relationship between investment bank reputation and post-issue performance.

Empirically, the evidence for post-issue monitoring is at best mixed. Michaely and Womack (1999) find that stocks recommended by underwriter-affiliated analysts underperform. Das, Guo, and Zhang (2006) report that IPOs with high coverage from nonaffiliated analysts outperform relative to those with low coverage. Fang and Yasuda (2009) find that the severity of conflicts of interest has a negative effect on the performance of lower-ranked analysts regardless of bank reputation. Without a risk-based story, none of these papers provides much evidence in favor of post-issue monitoring by underwriters.

As in lending relationships, investment banks obtain information concerning firms' operations and management that is useful in underwriting subsequent offerings. Thus, the underwriters possess valuable relationship-specific information that cannot be transferred easily. Such information is especially important when a firm goes public due to the substantial uncertainty about the firm's value.

James (1992) argues that underwriters have durable relationship-specific information similar to that of commercial banks and auditors. He reports lower spreads for firms that make subsequent issues and less underwriter switching when the time between an IPO and subsequent equity issues is smaller. James and Wier (1990) show that firms with inside debt at the time of the IPO exhibit lower IPO underpricing. Krigman, Shaw, and Womack (2001) find that while client loyalty had declined, 70 percent of firms completing a SEO within three years of their IPO select the same lead underwriter.

Price Stabilization

A lead underwriter plays an important role in pricing and distributing an IPO. However, the importance of the underwriter continues beyond the IPO date through the underwriter's post-issuance activities. One important post-issue service involves price stabilization. The underwriter often offers to buy back securities offered if the price falls, acting as a market maker for the newly traded stock when liquidity is otherwise likely to be weak.

Several empirical studies focus on stabilization of share prices after IPOs. Ruud (1993) finds that the high average level of underpricing is offset by the value of price support, though price support has only a temporary effect on prices. Hanley, Kumar, and Sequin (1993) argue that price stabilization by underwriters provides dealers with a put option reducing dealers' costs. In a similar vein, Schultz

and Zaman (1994) find that underwriters generally quote the highest active bids and so support the price of less-successful IPOs. Aggarwal, Prabhala, and Puri (2002) contend that underwriters provide price support as a credible commitment to reduce informational asymmetry problems in the IPO markets. Specifically, they find that stabilization enables the underwriter to reduce the ex-ante price risk of IPOs. Ellis, Michaely, and O'Hara (2000) present evidence on the first few months post-IPO and find that the lead underwriter becomes a market maker and takes a substantial inventory position in the stock. Lewellen (2006) examines the price effects and determinants of price support, finding substantial stabilization activities, done by large underwriters protecting their reputation with investors.

UNIVERSAL BANKING

Banks that perform both commercial and investment banking activities are called universal banks. In many countries, commercial banks routinely conduct investment banking activities such as helping their customers in bringing new debt and equity issues to the market. After the Glass–Steagall Act of 1933, commercial banks were not allowed to underwrite securities in the United States. In November 1999, the Financial Modernization Act of 1999 repealed the Glass–Steagall Act and removed restrictions about underwriting securities. This section summarizes the theoretical and empirical evidence on the trade-offs in combining lending with underwriting of securities.

Universal Banking: Theory

Combining lending with underwriting can be more efficient than providing the services separately. The reason is that both commercial and investment banking are heavily based on information production. Universal banks uncover firms' private information from lending activities, and banks can use the information to underwrite new issues of the firms. Just as lending relationships help with subsequent loans, such relationships can also help with subsequent security issues. Traditional investment banks expend costly resources to produce information on the firms, duplicating the efforts of lenders. If a fixed-cost component is present to both lending and underwriting of securities for the same firm, combining two functions lowers the total cost. Thus, financial intermediation can provide economies of scope.

The main costs of combining lending with underwriting are conflicts of interest and information monopoly rents. Rajan (1992) suggests that lending relationships might create hold-up problems for lenders. The hold-up problems refer to the possibilities that a relationship bank uses the superior private information about the firm to extract rents, thus distorting managerial incentives and causing inefficient investment choices. Lending and underwriting relationships together create similar problems. Moreover, combining lending and underwriting can reduce lender incentives to monitor. A lender could, for example, underwrite a security issue to provide funds for a firm to pay off the original loan. If this is possible, the lender has little reason to screen or monitor in the first place.

One argument for universal banking is that, if it is inefficient, banks will choose to specialize. Thus, there is no need for such a law. Rajan (2002) asserts

that underwriting can allow banks to extract rents generated from prior lending activities. In this case, a commercial bank may choose to become a universal bank even if it is not as efficient as underwriting. Puri (1999) models the trade-off between commercial banks' potential to be better certifiers of firm value and the cost that can arise from the bank misrepresenting the value of a firm's securities in order to use the proceeds to repay bank loans. She argues that this potentially stronger certification benefit has to be weighed against the conflicts-of-interest cost. Kanatas and Qi (2003) model the information scope economies, where information costs incurred in learning about a firm in the process of underwriting their securities need not be fully incurred again when making a bank loan to the same firm. They show that the informational economies of scope can lower transaction costs and can theoretically reduce underwriting fees if banks pass along costs savings to firms. Universal banking may or may not benefit firms that use universal banks for financing needs in theory. The next section therefore turns to the evidence.

Universal Banking: Evidence

The evidence on universal banking is generally favorable. Costs of raising debt and equity appear to fall under universal banking, while the quality of securities placed remains high.

Debt Underwriting

The biggest question from a borrower's perspective is whether universal banking reduces the costs of raising debt and equity. However, such a question also requires controlling the quality of services provided. This section focuses on the quality and cost of debt issues underwritten by commercial banks.

The conflicts-of-interest effect suggests that commercial banks have incentives to place low-quality bonds during underwriting. This does not appear to be the case, however. Ang and Richardson (1994) find that the default rates are similar for investment bank– and commercial bank–underwritten securities. Kroszner and Rajan (1994) examine the relative performance of industrial bonds that are underwritten by commercial banks with those that are investment bank–underwritten. Their evidence shows that commercial bank–underwritten issues perform better than similar, investment–bank underwritten issues, which is inconsistent with commercial banks succumbing to conflicts of interest. Puri (1994) also examines the long-run default performance of bank-underwritten issues and supports the view that banks are not exploiting conflicts of interest.

From a borrower's perspective, the important question is whether universal banking reduces the costs of borrowing or allows greater access to credit. Puri (1996) examines the ex-ante pricing of industrial bonds and preferred stock during the pre–Glass–Steagall period of January 1927 through September 1929. She finds that, relative to investment bank issues, commercial bank–underwritten issues have a significantly lower yield, which is consistent with commercial banks having a net certification effect. Gande et al. (1997) use a relaxation of Glass–Steagall in 1987, which allowed some banks to set up subsidiaries with underwriting ability, to show benefits of universal banking. They find that commercial bank subsidiaries primarily underwrite small issues. Also, when underwriting where the bank has

existing lending exposure, the commercial bank subsidiaries have significantly lower yields for lower credit-rated issues but no difference on the less informationally sensitive, higher-rated issues. The authors argue that potential conflicts of interest exist only when the proceeds of a debt issue are being used to refinance existing bank debt and the underwriter is a commercial bank whose loans are being refinanced.

Gande, Puri, and Saunders (1999) use a further relaxation of Glass–Steagall in 1997 to examine competitive effects of commercial bank entry and show that market concentration, underwriter spreads, and yields fall with the benefits mainly garnered by small, lower-rated debt issues. Roten and Mullineaux (2002) find the benefits of bank underwriting show up in reduced underwriting fees rather than in net yields. Yasuda (2005) examines the value of banking relationships for the firm's underwriter choice in the corporate bond market and finds that existing bank relationships have positive and statistically significant effects on a firm's underwriter choice. Overall, smaller, riskier borrowers appear to gain substantially from commercial bank entry into underwriting.

Equity Underwriting

As with debt, equity underwriting by commercial banks appears to help firms issue securities. Hebb (2002) shows that prior banking relationships with underwriters significantly reduce the underpricing of commercial bank–underwritten IPOs. Fields, Fraser, and Bhargava (2003) find that the total issuance costs are significantly lower for commercial bank IPOs than for non–commercial bank–underwritten IPOs and commercial bank-underwritten issues have superior long-run performance to non–commercial bank–underwritten IPOs. Schenone (2004) also finds that IPOs underwritten by a firm's relationship bank are less underpriced than IPOs where the firm does not have lending relationships with any potential underwriter. Benzoni and Schenone (2010) examine the long-run performance of equity issues that are underwritten by the firms' relationship banks relative to those issues that are underwritten by other commercial bank and investment bank underwriters. The authors find that IPOs underwritten by relationship banks perform no better or worse than issues underwritten by outside commercial or investment banks, which is inconsistent with relationship banks misrepresenting the quality of the firms that they underwrite.

Narayanan, Rangan, and Rangan (2004) find that the total issuance costs with SEO underwriting data are lower when a lending bank co-manages the issue with a reputable investment bank. Drucker and Puri (2005) find that when a financial intermediary concurrently lends to an issuer and underwrites the firm's SEO, the issuer benefits through lower financing costs and through receiving lower underwriter fees and lower loan yield spreads. They show that concurrent lending also helps underwriters build relationships, increasing the probability of receiving current and future business.

Once again, the bulk of the evidence suggests that universal banks provide high-quality, low-cost underwriting services to firms. This is not to say that universal banking involves no costs. On net, however, universal banking appears to benefit firms, especially small, risky firms.

FINANCIAL CRISES

The recent financial crisis had strong effects on lending activity of financial intermediaries. Ivashina and Scharfstein (2010) find that banks sharply curtailed lending to the corporate sector during the financial crisis. Puri, Rochell, and Steffen (2009) also find evidence of a supply effect whereby German banks affected by the crisis tighten lending to retail customers significantly more than non-affected banks, controlling for loan demand and loan applicant qualify. This reduction of lending also has real effects. Duchin, Ozbas, and Sensoy (2010) find a decline in corporate investments as a consequence of tightened credit supply. Tong and Wei (2008), who focus on explaining stock price changes following the financial crisis, find that stock price declines are more severe for more financially constrained firms. Campello, Graham, and Harvey (2010) survey corporate managers and find evidence that firms forgo profitable investment opportunities during the crisis as a result of binding external financing constraints.

Gatev and Strahan (2006) argue that during periods of market crisis, investors become less willing to hold risky debt and commercial paper spreads widen, which leads firms to draw funds from backup lines of credit from banks. They show that the supply of deposits to banks increases and most of these inflows are concentrated in transaction deposits. Gatev, Schuermann, and Strahan (2006) find that among banks those with the largest transaction deposit base experience the greatest inflows of funds and the banks can offer liquidity insurance. Berger and Bouwman (2009b) examine the connection between financial crisis and bank liquidity creation. They find that liquidity creation increased substantially during normal times and financial crises. The authors also report that both the share of large banks in aggregate liquidity creation and the fraction of liquidity created off the balance sheet increased over the time period.

Other crises have similar effects both in the United States and around the world. Chava and Purnanandam (2010) show that during the Russian crisis of 1998, affected banks reduced their supply of credit and worsened the terms. Moreover, borrowers dependent on those banks saw reduced valuations as a result of the crisis. Klingebiel, Kroszner, and Laeven (2007) and Dell'Ariccia, Detragiache, and Rajan (2008) provide similar evidence at the macro level. They show that output falls most during a banking crisis in industries most reliant on external financing.

SUMMARY AND CONCLUSIONS

Financial intermediaries allocate capital to businesses and consumers efficiently and can expedite the flow of credit through economies. This chapter deals with the roles of financial intermediaries in corporate capital raising process and focuses on two important activities: lending and underwriting. Though the mechanics and details of explanations differ somewhat, information problems are incredibly important in carving out an important place for financial intermediaries. Both theory and evidence point to screening and monitoring roles for lenders and underwriters to help reduce the costs of these information problems. In a general sense, the ability of financial intermediaries to produce information makes them an integral part of the economy.

Combining lending with underwriting provides trade-offs between benefits and costs of universal banking. On one hand, the combination plays off economies of scale and scope in information production. On the other hand, relationships in lending and underwriting increase the potential for hold-up problems and other conflicts of interest. Empirically, universal banking benefits appear to outweigh the costs, providing relatively high-quality, low-cost capital to small, risky borrowers.

Finally, financial crises provide interesting and important shocks to the financial system. These shocks appear to have large effects on the ability of intermediaries to provide capital to firms. Moreover, financial crises open up discussion by policymakers and others about the role and importance of financial intermediaries in the overall economy. Observing the reaction of policymakers to recent financial crisis and following up on the long-run effects of these policies should prove fertile ground for understanding how firms raise capital and why it matters.

DISCUSSION QUESTIONS

1. Rajan (1992) trades off the monitoring benefits of banking relationships against the hold-up costs. Suppose a firm borrows to pay off a bank loan. Is this good news or bad news for shareholders? Why?
2. How could conflicts of interest in universal banking lead to reduced costs of borrowing for firms? What evidence is against this particular conflict of interest?
3. Following the collapse of much of the banking sector in 1933, the Glass–Steagall Act separated banks based on their types of business. Why might price stabilization contribute to financial crises?
4. Why might relationships between banks and firms push the government to protect banks from failure in times of economic uncertainty?

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