

Tying and Subsidized Loans: A Doubtful Problem

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In recent months, several articles have appeared in the financial press observing that commercial-banking organizations have been accused of unfair, and perhaps illegal, business practices. *The Economist* issue of January 9, 2003, avers, for example, that: “Many of the biggest (banks), it is said, have been using cut-price loans to win lucrative business previously reserved for investment banks.” The observation echoes another in the *American Banker* (September 27, 2002) that: “Wall Street securities firms accuse the commercial bankers of offering cut-rate products to win the more lucrative underwriting assignments.” The most blunt claim comes from *Grants’ Interest Rate Observer* (September 13, 2002) which claims: “The practice of extending subsidized loans in exchange for lucrative investment banking fees seems to be hugely popular, given that it’s illegal.” These are serious claims and in this paper we consider whether tying activities by commercial banking organizations make any sense from an economic perspective. We also evaluate the so-called evidence of tying that is based on comparisons of relative interest rates on loans and other types of financial contracts. To preview the conclusions, we suggest that tying is hardly a rational strategy in today’s financial environment and that no valid inferences about tying can be drawn from simple comparisons of rates on loans with those on bonds or credit default swaps.

The source of the illegality argument is legislation that proscribes the practice of “tying.” Section 106 of the Bank Holding Company Act (BHC Act) constrains the ability of banks to link the purchase of one product or service to another. Anti-trust laws (Clayton Act and Sherman Act) also restrict tying activities, but the prohibitions against tying in the BHC Act are considered more restrictive than general anti-tying prohibitions. Banks explicitly are permitted to tie traditional bank products like deposits to loans by offering discounts to borrowers that hold deposit accounts. Also, if customers request loans and other services, tying is not an issue. And if BHCs make loans through non-bank subsidiaries, they are not subject to tying restrictions.

The charges that banks engage in tying behavior are not new. The GAO earlier conducted a study of tying activity by banks over the period 1990-96 and reported that: “We found limited evidence of tying activity by banks.” The GAO reported a single violation that was discovered in the bank examination process and 4 additional actions taken in response to specific complaints (out of 14 cases investigated involving over 20 institutions). Representative John Dingell of Michigan has requested that the GAO again undertake an investigation of the issue and they have agreed to do so by early October. He also has sought responses from the Federal Reserve and the OCC to various questions about tying and to claims that banks may be “mispricing credit” and “manipulating the price of credit.” In the appendix to a joint letter to Congressman Dingell (August 13, 2002), Chairman Greenspan and Comptroller Hawke indicated that “to date, the agencies have not found that commercial banks are manipulating the price of credit to build investment banking share” and that “we have not identified illegal tying by banks.” The bank regulatory chiefs also noted that: “Prior to 2002, the Board and OCC separately issued guidance directing banks and bank holding companies to implement and maintain appropriate systems and controls to promote compliance with the antitying provisions.” While the evidence supporting the notion that banks or BHCs are engaged in illegal tying activities is scant to non-existent, the claims in the press continue and Congressman Dingell has asked the regulators to take another look.

The Tying Claim Has No Valid Economic Rationale

The claim that banks are offering subsidized rates or engaged in predatory pricing of loans in a tying scheme makes little economic sense. Why? Because the conditions that produce socially bad outcomes in the event of tying are not present in the commercial lending and underwriting markets. The concern about tying and the rationale for its proscription under anti-trust law is that tying can reduce market competition. The standard example assumes that a firm maintains a monopoly (or “market power”) in one market (the tying product), but offers a second product in a more competitive market. It offers a discount on the good it sells in the non-competitive market, but only to buyers that purchase the second good (the tied product). The seller essentially gives up some monopoly profits in the first market to earn greater-than-competitive profits in the second. In the case at hand, banks allegedly are offering discounts in an asserted non-competitive loan market to gain above-normal profits in an underwriting market that is assumed to be relatively more competitive. This strategy is rational, however, only if it results in a monopoly or significant increase in market power in the underwriting market.

This framework fails in an attempted application to the commercial lending business for two reasons. First, there is no evidence that the commercial lending market is non-competitive. Indeed, there has been significant entry into the U.S. commercial loan market in recent years, especially by non-banking institutions such as pension funds, mutual funds, insurance companies and investment banks. While pension funds and mutual funds have limited their activities to buying loans in the secondary market, investment banks and insurance companies are also engaged in originating loans. New entry by strong players is likely to place downward pressure on commercial loan rates. Second, there is likewise no evidence that BHCs have gained market power in the underwriting market. Indeed, the evidence is to the contrary. A study by Gande, Puri and Saunders (1999) provides evidence that bank entry into debt underwriting over the period 1987-97 had significant pro-competitive effects in terms of lower underwriter fees and lower bond yields. Roten and Mullineaux (2002) examined the 1995-99 period and observed identical yields on bonds underwritten by investment banks and commercial-bank affiliated firms, but somewhat lower fees on commercial banking related issues. If commercial banks were exercising market power in the underwriting market, their fees would be higher, not lower, than those at firms that lacked such power.

The Loan Syndication Market is Highly Competitive

The relevant focus on the loan side is the market for large loans, which consists primarily of syndicated credits, since only relatively large firms are likely to access the capital markets along with the commercial lending market. The syndicated loan market is the largest single segment of the global capital markets and origination volume in the U.S. has exceeded over \$1 trillion in 4 of the last 5 years. The very nature of this market practically assures a competitive outcome. Lee and Mullineaux (2001) show that syndicate arrangers typically sell over two-thirds of their originations to an average of eight participants. These purchasers have no incentive to buy loans where the rate fails to provide adequate compensation for the risk and capital involved, especially since buyers in the primary market often want to sell portions of the loan in the secondary market. Moody’s (1996) emphasizes that syndicated loans are priced on the margin “to secure the next bank as a member of the syndicate.”

While historically commercial banks have been the primary lenders in the market, other institutions aggressively entered the syndication game as both arrangers and participants in the latter half of the 1990's. Jones, Lang and Nigro (2000) report that over the period 1995-99, syndication activity by securities brokers increased six-fold, while participation by mutual funds and pension funds grew by a factor of five. More commercial banks entered the syndication market as well, as the number of active banks grew 57 percent over the same time horizon.

Despite the number of new syndication players, the market has become more concentrated in recent years as a result of significant consolidation among the major banks. Seven of the top 15 originators in 1994, for example, have been acquired by other players in the market. The three largest arrangers (JP Morgan Chase, Bank of America, and Citigroup) originated 48 percent of the deals and 68 percent of the dollar volume of syndicated loans in the first half of 2002, according to Loan Pricing Corporation. More recent data reveal a decline in market shares of the top 3 arrangers. High market shares also are consistent with the fact that reputation is a key driver of syndication capacity, according to a study by Dennis and Mullineaux (2000).¹ There are nonetheless a large number of players in this highly competitive market. Jones, Lang and Nigro (2000) reveal that there were 223 arrangers in the U.S. market in 1999 and over 2,300 unique participants. Table 1 shows the top 30 loan originators as of June 30, 2002. Almost half of the top 30 are foreign-based banks and three investment banks (Lehman Brothers, Goldman Sachs and Morgan Stanley) rank among the top 20.

The foreign markets for syndicated loans also are very active and less concentrated. The top three arrangers in Europe (Barclays, JP Morgan Chase, and Deutsche Bank) have a 27.9 percent share of syndication volume. The top 10 players in the European market are also bidding for business in the U.S. market. The Asian and Latin American markets are likewise growing substantially and have a multitude of global players. It seems quite implausible that any one institution in a huge global market with a host of well-capitalized participants could drive most, or even a small set, of its competitors out of these markets. It is clear, therefore, that one of the assumed conditions necessary for a tying strategy to yield net benefits (market power in the tying product) does not pertain in the large commercial loan market.

Relationship Pricing is Rational

It is certainly rational for banks to take account of the nature and value of their relationships with commercial and retail customers.² Indeed, corporate customers are likely to require that their banks do so. Banks and other financial institutions consequently have invested significant sums in

¹ A similar structure characterizes the underwriting market where reputation is likewise an important factor. The top three bond underwriters over the period 1997-2001 had a 69 percent market share and the top three equity underwriters a 50 percent share over the same period. There are fewer institutions engaged in underwriting than in loan syndications, however.

² Finance theory provides one rationale for the relevance of relationships between commercial banks and their customers in the "life cycle model" of borrower behavior. This model suggests that firms tend to rely on bank financing prior to tapping the capital markets for funds, since banks have specialized monitoring skills that facilitate management of the large risks involved in lending to younger, smaller firms. As firms grow in size and build a reputation for repaying bank debt, they eventually gravitate to the capital markets where contract terms are often less onerous (in terms of lender requirements such as collateral or covenants that restrict borrower behavior). Diamond (1991) provides a theoretical rationale for this model. A study by Datta, Datta, and Patel (1999) finds that firms with prior banking relationships pay substantially lower rates when initially issuing bonds, regardless of the identity or type of underwriter employed. They claim their results support the "contention in the theoretical literature that bank creditors have information superiority and better monitoring ability than public debtholders."

Table 1

Lead Arrangers in U.S. Ranked by Dollar Volume, First Half, 2002

<u>Rank</u>	<u>Bank Holding Company</u>	<u>Volume</u>	<u># of Deals</u>
1	JP Morgan Chase	\$183,098,332,200	270
2	Bank of America	89,836,036,471	394
3	Citigroup	84,667,658,727	128
4	Bank One Corporation	33,037,640,000	116
5	Deutsche Bank	16,834,540,737	54
6	FleetBoston	16,223,980,000	98
7	Credit Suisse First Boston	13,089,151,040	33
8	Wachovia Corporation	12,384,253,403	79
9	Lehman Brothers	8,674,833,333	14
10	Bank of New York Company	5,021,194,452	22
11	Goldman Sachs & Company	4,441,625,000	11
12	ABN AMRO Bank N.V.	4,008,935,000	41
13	PNC Bank	3,960,390,000	32
14	Wells Fargo & Company	3,821,913,396	51
15	SunTrust Bank	3,484,450,000	26
16	Toronto Dominion Bank	3,395,000,000	9
17	RBC Capital Markets	2,750,000,000	3
18	Morgan Stanley	2,616,000,000	7
19	Scotia Capital	2,559,311,655	16
20	Société Générale	2,546,040,970	13
21	General Electric Capital Corporation	2,153,050,000	21
22	Barclays	2,099,839,521	7
23	Bank of Montreal	2,065,750,000	12
24	Merrill Lynch & Company	2,042,500,000	3
25	UBS Warburg	1,959,990,984	13
26	National City Corporation	1,932,677,050	21
27	U.S. Bancorp	1,895,552,754	29
28	CIBC World Markets	1,532,000,000	9
29	Royal Bank of Scotland plc	1,205,000,000	5
30	BNP Paribas	1,058,093,727	11

Source: Loan Pricing Corporation

software and training that enable measurement of the various components of customer relationships and facilitate evaluating and predicting customer needs. Since businesses typically purchase multiple services from their banks, customers anticipate, and competition dictates, that the prices charged for individual services like cash management or loans will reflect the overall value of the relationship between the customer and the bank.

Relationship-driven behavior leads naturally to the offering of bundled products or services. Commercial banks will bundle services like loans, deposits, and cash management for the same reasons that fast food restaurants offer packages of hamburgers, french fries, and soft drinks. Customers value packaging because it saves on transactions costs (traveling to multiple restaurants), especially when the price of the bundle is less than the total cost of purchasing the products separately. Restaurants and banks can offer packages more cheaply when there are cost savings (what economists call “economies of scope”) associated with bundling. These cost savings are generated from sharing resources in producing the bundle. Information and technology are key shared resources in the case of financial services.

Packaging and relationship selling also help banks resolve a fundamental tension that has developed in the loan market. Thanks to technology, information about sizeable borrowers has become quite cheap. Large loans consequently have become more like commodities over time, resulting in downward pressure on loan rates and bank profits.³ The source of the tension is simple: shareholders have not lowered the returns they require on bank equities. By offering a loan as part of a package, banks can meet the requirement to price “at market,” but also satisfy a pre-specified “hurdle rate.” This hurdle rate is established at a level that assures that investors receive the required return on their equity investment. (See the box titled “**Bundling Can Enhance a Loan’s Attractiveness**” for an example of how packaging can produce a return that exceeds the hurdle rate, even though the individual loan component in the bundle does not.)

In sum, there appears to be no economic logic to support a claim that commercial banking organizations are illegally tying their commercial lending activities to the provision of investment banking services.⁴ This conclusion follows from the evident lack of market power among competing banks in the commercial lending market. It also makes good economic sense for banking organizations to assess the value of relationships and offer service bundles in this intensely competitive market. Nonetheless, critics of bank behavior carry forward their allegations, arguing that there is evidence of tying in the observed behavior of loan rates relative to rates on other debt claims such as bonds or credit default swaps. We next examine this view and contend it likewise lacks validity.

³ The availability of database services from a company like Loan Pricing Corporation contributes to this outcome. Their Dealscan database contains detailed transaction information on over 110,000 loans, private placements and high-yield bonds issued since the early 1980’s. Information on all the key elements of individual debt contracts is available from them at a cost of less than the 25 cents per transaction. Loan Pricing Corporation, which is owned by Reuters, offers a wide set of services in addition to Dealscan, with pricing dependent on the *package of services* purchased.

⁴ A recent memorandum by the law firm of Covington and Burling argues that a broad range of relationship banking practices do not violate the antitying provisions of Section 106 of the Bank Holding Company Act Amendments of 1970.

Bundling Can Enhance a Loan's Attractiveness

One question that sometimes arises is how a loan with a narrow spread can yield a return that satisfies the bank's hurdle rate, which we can approximate by the bank's ROE. One answer is that many banks use a so-called RAROC ("risk-adjusted return on capital") approach to measuring the return on a loan. RAROC is calculated as the adjusted income on the loan divided by the bank's capital at risk. The adjusted income consists of the spread on the loan plus any fees minus the expected loss on the loan. The expected loss is calculated as the probability of default times the amount of the loan. The capital at risk in the denominator can be calculated as the product of the loan amount, the duration of the loan, and the discounted expected change in the credit risk premium. If we assume the following values:

SPREAD = 0.50%
FEE = 0.50%
PROBABILITY OF DEFAULT = .1%
LOAN AMOUNT = 10 million
LOAN DURATION = 3 Years
EXPECTED CHANGE IN RISK PREMIUM = 1.5%
LOAN RATE = 5%

Then the RAROC on this loan is:

$$\frac{(.005 + .005 - .001) \times 10m}{3 \times \frac{.015}{1.05} \times 10m} = \frac{\$90,000}{\$428,571} = 21\%$$

If the bank's ROE is 15%, the RAROC on the loan exceeds the hurdle rate and the loan will be made, despite the low spread. This loan has a high RAROC in large part because the expected probability of default is low, but this should be the case on loans with small spreads.

While the loan return (reflected in the spread) appears low when related to the loan size, it is high relative to the capital at risk on the loan, which the RAROC framework takes as the appropriate base for the return calculation. A similar approach to RAROC is RORAC, which is the "return on risk-adjusted capital." It uses the same numerator as RAROC, but the denominator is the amount of capital on the loan divided by the required capital on the loan under the BIS regulations.

A similar approach can be used to analyzing a package of services. For example, if we double the expected loss on the loan in the example above to \$857,142 (by doubling its duration, for example), then the resulting loan return of 10.5% falls short of the hurdle rate of 15%. But suppose the bank also offers the customer a cash management product that produces \$50,000 in fees annually. There are low risks of loss associated with providing cash management services, but let's assume the bank allocates \$2,000 in equity capital to cover prospective losses associated with operational risk. The RAROC on the package of services becomes:

$$\frac{90,000 + 50,000}{857,142 + 2,000} = \frac{140,000}{859,142} = 16.3\%$$

which exceeds the hurdle rate and suggests that the package adds to the value of the bank.

There are still other methods that banks use to determine the expected return on loans or packages of products and services. The actual framework used to calculate returns is not observable to analysts and researchers, nor is the actual hurdle rate employed. We use ROE as a convenient approximation, but many banks use more sophisticated measures of the hurdle rate. The various approaches to measuring loan returns are discussed in *Credit Risk Measurement: New Approaches to Value at Risk and Other Paradigms* by Anthony Saunders.

There Is No Viable Evidence of Tying in Bond/Loan Rate Comparisons

The Economist article referenced above outlines the argument that banks are under-pricing loans as part of a tying arrangement and refers to information provided by Loan Pricing Corporation, “a company that publishes not only loan rates but also rates on bonds issued by the same borrower with similar duration.” The article does not assert that a comparison of such rates provides any useful information about tying, perhaps because comparing bond and loan rates is an apples/oranges type of exercise. Loans differ from bonds in a number of fundamental dimensions that have implications for their respective yields. These include maturity, collateral, priority in the event of bankruptcy, covenant structures, and the option to re-negotiate the terms of the loan contract. *The Economist* hints that it is important to take account of at least one of these factors by noting that the loan/bond rate data offered by LPC are for like-duration instruments. It is well known that duration or maturity is one characteristic of a debt contract that affects its yield. But all the others need to be “controlled for” as well if comparisons of rates on different debt are to yield meaningful conclusions. Table 2 provides a summary of how these factors typically differ between loans and bonds and indicates the likely impact on the loan’s interest rate. We next turn to a brief discussion of each factor.

Table 2

Differences in Characteristics of Loans Relative to Bonds

<u>Dimension</u>	<u>Relative Direction for Loans</u>	<u>Likely Loan Rate Impact</u>
Collateral	More Frequent	Decrease
Seniority	More Senior	Decrease
Maturity	Shorter	Decrease or Increase
Covenants	More Frequent & Restrictive	Decrease
Option to Restructure	Yes Loans/No Bonds	Decrease

Finance theory (Merton, 1974) suggests that the credit risk premium on a debt contract varies with its maturity. Merton shows that for strong borrowers there is no real upside to a debt contract as time elapses and the prospects for payment improve (the lender cannot get back more than the principal), but some significant downside when the repayment outlook deteriorates. For weak borrowers, the downside is more limited (a loss was already anticipated) and the upside is more substantial as time passes. So the theory predicts that credit spreads will widen as maturity increases for high quality credits, but decline for low quality borrowers. Fons (1995) presents evidence that supports this kind of relationship for bonds. While most bonds issued are investment grade, the majority of rated syndicated loans over the period 1995-2000 were non-investment grade, so maturity is likely to affect loan rates differently than bond yields. Though it is important to control for maturity in comparing bond and loan rates, it is a knotty exercise. Many bonds and loans can be prepaid, so the effective maturity is the expected date of payoff, which is difficult to measure.

Another factor that has a strong influence on debt yields is collateral. Loans are more likely to be secured than bonds. The majority of the loans in the Loan Pricing Corporation (LPC) database from 1995-2000 were collateralized, while less than 20 percent of all bonds issued in 2000 were secured, according to the Securities Data Corporation. When bonds are non-callable and non-convertible, they are almost never secured. There is also evidence that the type of collateral is relevant for debt yields. In particular, claims on real assets are more effective in reducing rates on debt than collateral in the form of financial assets. Hence, a failure to distinguish between secured and unsecured debt or to take account of the type of collateral can invalidate simple comparisons between loan and bond rates.

The status of a debt claim with respect to seniority also affects its yield. Bank loans tend, on average, to be senior to bonds in bankruptcy proceedings, which implies a lower interest rate on loans than bonds, other things equal. Bank loans are also more readily renegotiated than bond claims. Bonds are never renegotiated, since all bondholders must agree to any substantive change in the terms of a debt contract. Since the capacity to restructure offers the prospect of saving the deadweight costs of bankruptcy, commercial loan rates should be lower than yields on otherwise identical bonds. Again, any valid comparison of rates on bonds and loans must take account of the role of seniority and the value of the option to restructure. The latter exercise is particularly complex.

Still another key difference between loans and bonds is the nature of the covenant structure in the two types of debt contracts. Loan contracts typically contain more restrictions on borrower behavior than bonds, primarily because commercial loan borrowers are typically smaller firms that pose more severe information problems to lenders. A study by Paglia and Mullineaux (2000) involving 234 large loans found that 70 percent contained equity-related covenants, 75 percent contained leverage covenants, 78 percent involved cash flow covenants and 31 percent contained covenants on liquidity. Almost half of the sample loans contained five or more financial covenants. Covenants are credit risk management devices that have clear implications for default prospects and risk premia. When covenants are breached, the lending bank typically has the option to demand repayment or alternatively can re-structure the loan.

There is substantial evidence that both loan and bond rates are affected by the credit rating on the debt instrument, which measures both the prospects for borrower default and the likely size of any recovery if default occurs. Most syndicated loans that come to market today are rated by one or more of the rating agencies. A recent study by Yi and Mullineaux (2002) finds that the process used by Moody's to rate bank loans differs from that for bonds. This result supports the notion that the credit risk on the two instruments is affected by different factors.

Because commercial banks usually have senior status and typically require collateral, the recovery rate on loans in default is larger than that for distressed bonds, resulting in a smaller expected loss on loans. Moody's (1998) notes that: "In more than 50 percent of all cases, Moody's rates companies' bank loans higher than the bonds it rates for the same issuer. This "rating spread," reflects, in part, our opinion that the loans will be worth more in the event of a default than the bonds." Moody's estimates that 87 percent of senior secured bank loans and 79 percent of senior unsecured bank loans were recovered in 119 bankruptcies occurring from 1986-97. When Moody's (2002) studied defaults by non-investment grade issuers over the period 1982-2001, the average recovery rate on senior secured bank loans was 67 percent, compared to 52 percent on senior secured bonds. Subordinated junk bond issues produced mean recovery rates of just 32 percent.

Holding other factors constant, these expected loss differentials clearly argue for lower interest rates on loans than bonds.

The relevance of variations in borrower credit risk for loan rates can be seen in a simple comparison of rates on syndicated loans originated by investment banks relative to commercial-bank led originations. Over the period 1996-2002, Loan Pricing Corporation data reveal investment bank loan spreads over LIBOR of roughly 284 basis points, on average, compared to a mean loan spread of 187 basis points on commercial bank-led syndications. One factor that accounts for the observed difference, which is highly significant in a statistical sense, is that investment bank loans are more concentrated in lower quality credits, as reflected in the borrower's senior debt rating. Over 93 percent of investment bank-originated syndicated loans went to non-investment grade borrowers, while a bit over 50 percent of commercial-bank led loans went to these lower-rated firms. Investment bank loans also had significantly longer maturities than commercial bank credits, but did not differ much in average size.

Bank lenders receive their compensation through interest and fees, but fees are the sole source of bond underwriter revenues (since bond buyers receive all the interest payments.) Moreover, the fee structure on loans is more complex than that for bonds, especially on loan commitments. Shockley and Thakor (1997) present evidence that banks employ fee strategies as a risk management tool. While evidence reveals that fees increase with the degree of default risk on both bonds and loans, the risk/fee relationships are not identical. Still another relevant issue is that some of the fees on loans are shared with loan investors, whereas bond issue fees are captured fully by the underwriters. All these factors need to be taken into account in comparing pricing and expected returns on loans and bonds.

Several research studies have focused on the issue of loan pricing relative to bond pricing, and in one case, specifically on the issue of whether bank loans are mispriced. A study by Federal Reserve economist Mark Carey in 1994 compared spreads on loans and corporate bonds, controlling for many of the differences in the two types of debt contracts. He found that large borrowers who had accessed the capital markets paid slightly more (20 basis points) for loans than bonds, on average, when they were A-rated or better. Borrowers paid 160 basis points less for loans when rated below A, however. But the contractual devices banks employ to mitigate credit risk are likely to be relevant precisely in the case of lower-rated borrowers. When Carey controls for the impact of maturity, collateral, seniority, and the prospect of early payment on observed rate spreads, he finds no significant differences between rates on loans and bonds, on average. This result holds without taking account of the relevance of covenants or loan renegotiability for loan yields. The author notes there is more "noise" (variability) in loan relative to bond spreads, suggesting that loan pricing is more idiosyncratic than bond pricing. This point is important since it implies that any conclusions drawn from a small number of observations are highly suspect.

A study by Angbazo, Mei, and Saunders (1998) uses the LPC database to study the determinants of spreads on highly-leveraged transactions (HLT) to "determine the degree of divergence between HLT loan and bond yield spreads." A key finding is that loan spreads do not respond proportionately to changes in bond spreads in either the investment grade or junk-bond segments of the debt market, suggesting a lack of convergence between the two markets. They find that the degree of divergence is linked to various characteristics of loans, including maturity, collateralization, syndication, and loan size. The authors also find that fees augment, rather than

substitute for, the interest rates on loans and that loan purpose has a significant and potentially sizeable influence on loan rates.

Although they do not compare loan and bond rates, the study by Dennis, Nandy, and Sharpe (2000) is also relevant. The authors confirm that contract features affect loan rates, but also find significant interdependence among these characteristics. Collateral is a more likely component of longer-term loans, for example, and fees increase with both loan maturity and the presence of collateral. There is no research that reveals whether similar interdependencies exist in the bond market. The authors also find evidence that the extent of the relationship between the borrower and the lending bank affects rates on large loans, a finding consistent with research on small business lending (Berger and Udell, 1996) that finds declining loan rates as borrower/lender relationships mature.

In sum, a host of contract characteristics have relevance for rates on debt that can differ substantially between loans and bonds. The key conclusion is that loan and bond rates are determined by the total set of contract (and borrower) characteristics. Rational borrowers shop for credit not just by comparing rates, but by evaluating the benefits and costs of the total package of contract terms.

Nor Does Default Swap Pricing Provide Useful Clues

In an apparent effort to provide more evidence to support the claim of subsidized lending, both *The Economist* (January 9, 2003) and *Grant's Interest Rate Observer* (August 13, 2002) refer to observations that providers of protection against credit risk in the form of credit default swaps appear to be more richly rewarded than providers of the loan itself. This claim suffers from the same shortcomings as loan/bond rate comparisons. A default swap is a very different product than a loan, so any valid comparisons of pricing differentials would need to take account of all the relevant dimensions in which they differ.

A credit swap is essentially an insurance contract in which the buyer of protection against “default” pays periodic premia (quoted in basis points as a percent of the amount of protection) to the seller. In return, the buyer receives a specified payoff if and when a “credit event” occurs with respect to either a designated financial instrument or portfolio. As Moody’s (2001) notes in “Understanding the Risks in Credit Default Swaps,” the payoffs often are conditioned on events that are broader than the set of factors that would constitute a default on the underlying loan. In brief, default swaps can result in cash flow exchanges for observed credit deterioration that falls short of default. For example, a loan restructuring typically represents a “credit event” and an associated payoff in a typical default swap. Not surprisingly, the cost of such broad protection is more expensive than protection against narrowly drawn default. There are still other factors that come into play for the relative pricing issue. The maturity of the default swap affects its value and can be different than the maturity of the underlying loan, for example. While loan rates can reflect the impact of factors like collateral, the nature of the borrower-lender relationship, and the option to re-negotiate, none of these are relevant to the value of a default swap. Also, there is no active secondary market in credit swaps, as *The Economist* article points out. This lack of liquidity makes credit swaps relatively expensive. Finally, there is some prospect the buyer of protection will default by failing to make the promised cash flows, with implications for pricing by the seller.

Finance theory provides relatively little practical guidance concerning the pricing of credit swaps, since existing models require that the probability of default and the recovery rate are known. Neither is, of course; nor are there contracts available that allow an inference of these key parameters.

Conclusions

It is difficult to rationalize why banks or BHCs would use loans as part of a tying scheme, since such a strategy is more likely to destroy than enhance BHC value. Instead, given the large number of bank and non-bank lenders, the inexpensive availability of information about large corporate borrowers, and the trend towards “commoditization” in an increasingly competitive loan market, banks will price loans to reflect the perceived value of relationships with their customers. In this environment, loans that otherwise would fail to satisfy a designated hurdle for required return can be offered profitably as a part of a package.

For those inclined to believe the tying allegations, there is no evidence in simple comparisons of loan rates with bond rates or default swap prices. These are apples/oranges exercises. While it may be possible to “adjust” an apple (a bond or swap) to look just like an orange (a loan), none of the participants in the tying discussion have made any attempts to do so. Such an effort would be quite a complex task.

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