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Bank Debt Restructurings and the Composition of Exchange Offers in Financial Distress

CHRISTOPHER JAMES*

ABSTRACT

This article examines the relation between bank debt forgiveness and the structure of public debt exchange offers in financial distress. I find that the structure of exchange offers and the likelihood of an offer's success are significantly related to whether the bank participates in the restructuring transaction. Exchange offers made in conjunction with bank concessions are characterized by significantly greater reductions in public debt outstanding and significantly less senior debt offered to bondholders. Overall, the results suggest that the structure of a firm's public and private claims significantly affects the firm's ability to modify its capital structure in financial distress.

RECENT EMPIRICAL STUDIES PROVIDE apparently conflicting evidence on the relation between the mix of private and public debt in a firm's capital structure and the ability of the firm to restructure its debt outside of bankruptcy. For example, Gilson, John, and Lang (1990) find that the likelihood of a successful debt restructuring is positively related to a firm's reliance on bank borrowing. In contrast, Asquith, Gertner, and Scharfstein (1994) and James (1995) find that, for firms with public debt outstanding, banks rarely make unilateral concessions. Indeed, the latter two studies suggest that the avoidance of bankruptcy depends on the ability to restructure public, *not* private, debt claims.[1] Finally, Gilson (1994) finds less debt reduction in financial distress the higher the proportion of bank debt a firm uses.

In this article, I examine the relation between bank debt restructurings and the composition of public debt exchange offers by financially distressed firms. The secured status of bank debt and institutional constraints on bank debt for equity swaps imply that banks are unlikely to provide debt forgiveness unless their claims are impaired; i.e., the face value of the bank's claim is greater than the value of the collateral net of transactions and bankruptcy costs.[2] However, drawing on theoretical work by Gertner and Scharfstein (1991), I argue that bank participation in a restructuring can play an important role in resolving

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[1] These findings are consistent with theoretical work of Diamond (1993).

[2] As discussed in James (1995), virtually all the bank debt of financially distressed firms is secured. In contrast, public debt is rarely secured.

information and holdout problems that impede a public debt exchange offer. For example, debt forgiveness by a secured creditor can mitigate holdout problems by making a senior for junior debt exchange offer involving public bondholders feasible.

The dependence of public debtholders' actions on bank actions in restructurings, in turn, implies a relationship between the nature of the bank's restructuring and the composition of public debt exchange offerings. In particular, if bank debt forgiveness mitigates holdout and information problems that impede public bond exchange offers, then exchange offers associated with the bank debt forgiveness should consist of less senior debt (per dollar of public debt sought) and result in greater reductions in the overall amount of public debt than exchange offers not done in conjunction with bank debt restructurings.

Bank concessions and public debt reductions may, however, be related, even in the absence of information and holdout problems. In particular, since secured bank lenders are unlikely to make concessions unless their claims are impaired, banks are expected to make concessions only when firms are in severe financial distress. These firms are likely to need the greatest debt reduction to avoid bankruptcy. As a result, even in the absence of holdout and information problems, bank concessions may occur in conjunction with concessions by public bondholders. I refer to this explanation as the "share the pain" hypothesis.

To examine whether bank concessions mitigate information and holdout problems, I examine the relation between both the amount of public debt reduction and the amount of senior debt offered to bondholders and the number of public bond issues outstanding (a proxy for the severity of holdout problems). If bank concessions serve to mitigate holdout problems, I expect that the relation between public debt reduction and proxies for the importance of holdout problems to vary depending on whether banks also make concessions. In addition, if bank concessions mitigate holdout problems, tendering rates (relative to the minimum specified in the exchange offer) are expected to be greater when banks participate in the restructuring.

Using a sample of 68 exchange offers made by financially distressed firms, I find that exchange offers accompanied by bank concessions involve significantly greater reductions in public debt outstanding, less senior debt offered to bondholders, and are more likely to succeed than restructurings in which banks do not participate. Consistent with the hypothesis that bank participation facilitates public debt exchange offers, I also find that the severity of holdout problems varies with bank participation.

Overall, my empirical results suggest that bank offers of debt forgiveness have a significant impact on the composition of public debt exchange offers by resolving potential holdout and information problems that can impede exchange offers. For firms with public debt outstanding, banks provide flexibility directly through an ability to restructure bank claims (where, if the claims were publicly held, an exchange offer would fail) and indirectly through bank facilitation of public debt exchange offers.

The remainder of the article is organized into four sections. In Section I, I discuss how bank lenders can resolve impediments to public exchange offers. This discussion provides testable implications concerning the relation between bank concessions and the structure of public debt exchange offers. In Section II, I describe the sample and methodology. Section III presents the empirical evidence concerning the relation between bank debt restructuring and public debt exchange offers. Section IV provides a summary and conclusions.

I. Bank Debt Restructuring and the Composition of Public Debt Exchange Offers

The Trust Indenture Act of 1939 prohibits the alteration of interest or principal provisions on publicly traded debt without the consent of each bondholder affected by the change. Since unanimous consent from a diffuse set of bondholders is extremely difficult to obtain, public debt restructurings take the form of exchange offers. There are at least two impediments to the success of the exchange offer. First, bondholders acting atomistically may hold out and preclude a value increasing transaction (see Gertner and Scharfstein (1991) and Kahan and Tuckman (1993)). Second, even if bondholders can coordinate their actions effectively, information asymmetries may lead bondholders to prefer a bankruptcy over a private debt restructuring (see Giammarino (1989)). This section examines how bank participation in a restructuring can affect the structure of the exchange offer and the likelihood of success by mitigating these impediments.[3]

A. Holdout Problems and Bank Debt Forgiveness

An impediment to reducing the principal or interest payments on publicly traded debt is that if some bondholders make concessions (i.e., reduce the face value of their claims) and the exchange offer is successful, the value of the claims of nontendering bondholders will increase. As a result, if individual bondholders believe they are not pivotal to the offer's success, they will hold out and not participate in the exchange offer.

A number of potential solutions to the holdout problem are discussed in the literature. These include conditioning consummation on a high acceptance rate, limited proration rights, and offering bondholders a mix of securities that contains claims senior to the existing bondholders' claims.[4] Since exchange offers in distress frequently involve offering new bonds that have a higher

[3] Banks may facilitate restructurings in other ways. For example, consolidated equity holdings by banks may mitigate agency problems between stockholders and creditors. In this article, I focus on the role of banks in facilitating the restructuring of public debt.

[4] See Bab (1991) for a discussion of the legal issues associated with these various techniques. Limited proration rights involve providing bondholders, who exchange their bonds within some time limit, a guarantee that a certain proportion of their bonds will be acquired. Bondholders that tender later than the time limit can expect their bonds to be acquired only on a first come first serve basis. Structuring the offer in this way provides an incentive for bondholders to tender early.

seniority (and/or have a shorter maturity) than the bonds sought, I focus on this mechanism for mitigating holdout problems.[5]

Gertner and Scharfstein (1991) provide a model that illustrates how bank participation in a restructuring transaction can mitigate holdout problems among public bondholders. The intuition behind their model is as follows. Consider a financially distressed firm that must reduce its overall debt burden in order to avoid liquidation and pursue a value enhancing investment project (i.e., the firm has a debt overhang). Assume that the firm has two types of debt outstanding: short-term secured bank debt and long-term subordinated public debt. Since, in practice, priority rules are generally enforced for secured lenders, assume that in bankruptcy, absolute priority is maintained for secured lenders.[6] Finally, assume that the bank debt is held by a single well-informed lender and the public debt is held by a diffuse set of poorly informed investors.

Given holdout problems, a necessary condition for a successful exchange offer is that the value of the securities offered to bondholders exceeds both the current value of the existing bonds and the value of the existing bonds if the offer is successful.[7] One way to meet this condition is to offer bondholders senior debt in an exchange offer (debt senior to existing debt claims but junior to the bank's secured claim). However, if the bank's claim is impaired, a senior debt offer may not be feasible without bank participation. Specifically, if the bank's claim is impaired, the face value of the bank's claim is greater than the liquidation value of the firm's assets. As a result, without some concession of principal by the bank, the firm may not be able to offer its bondholders a claim which, in liquidation, is "effectively" senior to bondholders' existing claims (i.e., a claim in liquidation with cash flows that are distinguishable from junior debt).

This argument suggests that bank participation may be pivotal to the success of some transactions. In addition, since the bank's claim is impaired, it has an incentive to make a concession because its reservation price is the value of its claim in liquidation (net of transaction costs) which is less than the principal amount of its loan.[8] Finally, note that if the secured bank debt was publicly held, it would not be possible to offer tendering bondholders a senior

[5] While some bond contracts contain covenants that prohibit the issuance of senior debt, exit consent solicitations commonly are used to avoid these restrictions. See Bab (1991).

[6] See Weiss (1990) and Eberhart, Moore, and Roenfeldt (1990).

[7] See Kahan and Tuckman (1993) for game theoretic analysis of consent solicitations. As these authors point out, it is possible to structure a transaction in which the value of securities offered is less than the value of the firm's existing bonds after a successful exchange offer. In this case, resolving holdout problems requires conditioning the offer on a high acceptance rate (for diffuse creditors, 100 percent). Since unanimous consent is generally not feasible, I restrict myself to the case in which the value of securities offered is strictly greater than the value of existing bonds after the exchange.

[8] Since unimpaired or over-collateralized creditors generally are entitled to receive interest payments during bankruptcy proceedings while impaired creditors do not receive interest, the bankruptcy costs that the bank incurs when it is impaired will be higher than when its claim is unimpaired (see *Bank Officer's Handbook of Commercial Banking Law* (1988)). This creates a further incentive for impaired senior lenders to make concessions that avoid bankruptcy.

claim (since their claims are already secured). This argument suggests that having secured claims privately held adds flexibility.

As discussed earlier, bank concessions may be associated with larger reductions in public debt even though banks play no role in facilitating the exchange. Specifically, firms in severe financial distress may need to scale back both their public and private debt claims. The reduction in public debt may be the result of negotiations among banks, shareholders, and a well-informed coordinated group of bondholders. I analyze the importance of holdout problems by examining the relation between the composition of the exchange offer and the number of public debt issues the firm has outstanding. If holdout problems impede exchange offers, I expect a negative relation between the percentage reduction in public debt and the number of bond issues. In addition, if bank participation mitigates holdout problems, I expect that the number of bond issues outstanding will have a smaller effect on the amount of debt reduction when banks participate.

B. Information Asymmetries and Bank Debt Forgiveness

A second impediment to a successful exchange offer is that management (shareholders) may have private information concerning the value of the firm. In particular, as discussed by Wruck (1990), when liquidation is the highest valued alternative, firms in financial distress have an incentive to overstate their value to induce bondholders to accept a restructuring and thereby preserve some option value for shareholders. The potential wealth transfer from bondholders associated with an overstatement of firm value will be greater when bondholders receive equity (see Brown, James, and Mooradian (1993)). This potential adverse selection problem can impede debt forgiveness in public exchange offers. This argument also suggests that bondholders prefer senior debt to stock even in the absence of holdout problems.

Participation by well-informed secured or senior bank lenders in a restructuring can mitigate adverse selection problems. In particular, banks and other private lenders are generally assumed to be better informed about the firm's prospects than public securities holders (see James (1987)). Moreover, the potential conflict over the disposition of the firm's assets is likely to be the greatest between stockholders and secured bank creditors. Specifically, secured creditors will not exchange their debt for equity if liquidation is the highest valued use of the firm's assets. Thus, bank actions can provide bondholders with reliable information about the ongoing concern value of the firm's assets.[9]

Since wealth transfers to bondholders are minimized if bondholders also exchange some portion of their debt for equity, one would expect bank participation to be conditional on bondholder participation.[10] In addition, if senior

[9] Regulatory restrictions on bank equity for debt swaps limits bank concessions to situations in which the bank's position is impaired. See James (1995).

[10] Indeed, as Brown, James, and Mooradian (1993) point out, the bank's acceptance of equity or some other junior claim should be unambiguously good news, since it reveals that the going

debt is offered to bondholders to avoid adverse selection problems, bank debt forgiveness may reduce the need to offer bondholders senior debt. This argument suggests that the frequency of senior debt (and the proportion of senior debt in the offer) will be lower when banks participate in the restructuring by forgiving principal.

II. Sample Selection

To examine the relationship between bank debt restructurings and the structure of public debt exchange offers, I construct a sample of exchange offers involving financially distressed firms. The sample covers the period 1980 through 1990 and is obtained by a key word search using the Dow Jones News Retrieval service. The key words used are "exchange offer," "debt restructuring," and "debt swap." Since my concern is with exchange offers by financially distressed firms, the search is restricted to articles that contain the key words "troubled," "distressed," "default," or "bankruptcy."

Transactions identified in the key word search are included in the final sample if (1) the exchange offer does not involve a firm currently operating under bankruptcy protection, (2) the firm's common stock is traded on the American Stock Exchange (AMEX), New York Stock Exchange (NYSE), or National Association of Securities Dealers (NASD) during the year the restructuring transaction was announced,[11] (3) the firm's annual report or 10k report is available for the fiscal year of the restructuring announcement, and (4) the firm is not a regulated utility or financial institution (i.e., insurance company, bank, or S&L).

The selection procedure results in a total of 68 proposed exchange offers.[12] The details concerning the composition of the exchange offers are obtained from the news announcement and the firm's annual reports. Information on bank debt restructurings for these firms also is obtained from the firm's annual reports and from the news announcement describing the exchange offer.[13] Since the terms of exchange offers frequently change while the offer is out-

concern value exceeds the value of the firm in liquidation. They do not examine, however, the interaction between public exchange offers and bank restructurings. Instead, they model these transactions as substitutes for one another.

[11] I limit my sample to firms with publicly traded stock so that I can obtain information from the firm's 10K. However, this implies that my sample does not contain distressed firms that engaged in LBO transactions.

[12] My sample is similar in size to samples used in other studies of troubled debt exchange offers. See for example, Franks and Torous (1994), Gilson (1994), Asquith, Gertner, and Scharfstein (1994), Gilson et al. (1990), and Brown et al. (1993).

[13] To identify bank loan restructurings around the time of the exchange offer, I examine all new announcements contained in the Dow Jones News Retrieval Service data base for each company during the period that the exchange offer proposal is outstanding. In addition, for each company, I perform a key word search for a six-month period preceding and subsequent to the exchange offer period. The key words used in the search are "loan restructuring," "bank loans," and "default."

standing, I classify offers according to terms contained in the final proposal to bondholders.[14]

Information on the amount of senior debt offered per dollar of junior debt sought, the amount of debt reduction proposed, minimum tendering rates required, actual tendering rates, the amount of stock offered to bondholders, and information on whether interest on new debt is deferrable or payable in securities (typically common stock) is obtained from the firm's annual reports and news announcements concerning the proposed exchange offer.

Exchange offers are classified as successful if the exchange offer is completed. Seventy-five percent of the exchange offers in my sample are completed. Exchange offers fail either because the firm files for bankruptcy protection while the offer is outstanding or a sufficient amount of the bonds is not tendered. It is interesting to note, however, that exchange offers are frequently completed even though the firm fails to receive the minimum level of tendering specified in the original proposal. In particular, 50 percent of the successful tender offers that specify minimum tendering rates have tendering rates below the stated minimum.

Bank actions in conjunction with the exchange offer are classified according to whether the transaction involves the bank (1) reducing the principal amount of its loan, (2) taking additional collateral or taking a more senior claim (without reducing principal), (3) waiving a covenant or extending the maturity of its loan (without reducing principal), or (4) providing additional credit to the borrower. A bank action is defined to be in conjunction with an exchange offer if the news announcement or the firm's annual report describes the exchange offer and loan restructuring as part of a single restructuring transaction or indicates that a bank loan restructuring is contingent upon completing an exchange offer. In all cases in which a bank proposes reducing the principal amount of its loan (in exchange for stock or warrants), the news announcement concerning the proposal indicates that the bank's offer is contingent on the successful completion of the exchange offer.

III. Empirical Results

A. Characteristics of Exchange Offers

Panel A of Table I contains a summary of the exchange offers in my sample classified according to actions taken by bank lenders in conjunction with the offer. As shown in Table I, the majority (75 percent) of the exchange offers are successfully completed. The proportion of successful offers is highest (93 percent) when banks forgive principal. The success rate of exchange offers is lowest (25 percent) when banks take additional collateral or security.

[14] Modifications generally involve changing the terms of the offer to make it more attractive to bondholders and avoid holdout problems (e.g., providing bondholders with additional cash or senior securities). The frequent modification of the terms of the restructuring suggests that holdout problems are important impediments to the completion of the transaction.

Table I

Summary Statistics Concerning the Composition of Exchange Offers and Firm Characteristics for a Sample of 68 Financially Distressed Firms Proposing Exchange Offers 1980–1990

Successful exchange offers are defined as offers completed within two years of initiation. Bank actions refer to the nature of the bank debt restructuring proposed in conjunction with the exchange offer. Senior debt offers involve offering public bond holders debt claims senior to the debt sought in the exchange offer. Percent reduction in public debt equals the actual reduction in public debt outstanding if the exchange offer is successful. For unsuccessful offerings the percentage reduction equals the reduction proposed. Firm characteristics are from the fiscal year end prior to the exchange offer. Leverage equals the sum of long plus short term debt divided by total assets. The number of public bond issues is defined as the number of separate public bond issues listed in the firm's annual report. The solvency ratio equals short plus long term debt divided by total debt plus the book value of equity.

Panel A: Exchange Offer Characteristics

Bank Action	Percent of Sample	Percent of Offers Successful	Percent of Offers with no Reduction in Public Debt	Percent Offers with Senior Debt	$ Senior Debt Offered per $ of Debt Sought		Percent Reduction in Public Debt	
					Mean	Median	Mean	Median
Overall sample (N = 68)	100	75	46	64	0.50	0.50	32	24
Bank takes no action (N = 15)	22	80	60	92	0.78	0.93	19	0
Bank takes additional security (N = 4)	6	25	50	75	0.63	0.76	31	7
Covenant waived; maturity extended (N = 22)	32	64	32	73	0.53	0.65	23	12
Bank provides additional credit (N = 13)	19	85	8	54	0.37	0.16	37	6
Bank reduces principal owed (N = 14)	21	93	0	29	0.25	0	56	54

Panel B: Firm Characteristics

	Entire Sample		No Reduction in Bank Principal (N = 54)		Bank Reduces Principal (N = 14)		No Bank Action (N = 15)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Leverage	0.72	0.61	0.70*	0.59*	0.83	0.78	0.60	0.58
Bank debt/total debt	0.41	0.36	0.36*	0.32*	0.61	0.58	0.21	0.22

Table I—*continued*

Panel B: Firm Characteristics

	Entire Sample		No Reduction in Bank Principal (N = 54)		Bank Reduces Principal (N = 14)		No Bank Action (N = 15)	
	Mean	Median	Mean	Median	Mean	Median	Mean	Median
Public debt/total debt	0.46	0.43	0.51*	0.47*	0.27	0.12	0.62	0.69
Fraction bank debt secured	0.88	1.00	0.86	1.00	0.86	1.00	0.90	1.00
Number public bond issues	3	2	3	2	3	2	4.13	2
Assets (millions)	$862.89	$323.91	$862.00	$272.34	$864.00	$337.93	$741.75	$216.37
Coverage ratio	0.43	0.49	0.45*	0.54*	0.33	0.34	0.60	0.76
Solvency ratio	0.85	0.86	0.69*	0.82*	1.43	1.05	1.02	0.85

* Significantly different (at the 0.05 level) from the mean (median) for the sample in which banks reduce principal.

Most of the exchange offers (64 percent) involve offering bondholders a package of securities that includes some senior debt claims. In these transactions, the average amount of senior debt offered per dollar of junior debt sought is 0.78. In 19 (43 percent) of the transactions in which senior debt is offered, the senior debt has the same (or higher) face value as the junior debt sought. In all 19 of these transactions, interest on the new senior debt is payable in kind at the option of the issuer (generally in common stock).

The average reduction in the amount of public debt in the proposed exchange offer is 32 percent (the median is 24 percent).[15] The amount of debt reduction is significantly less when senior debt is offered. In particular, the average reduction in public debt outstanding is 18 percent for transactions in which senior debt is offered versus 59 percent in transactions in which no senior debt is offered (the difference is statistically significant at the 0.01 level). If senior debt is offered to avoid holdout problems, this result suggests that holdout problems are an important impediment to significant reductions in the debt of financially distressed firms.

As shown in Table I, transactions in which banks take no action are characterized by a higher frequency of senior debt being offered and a larger amount of senior debt offered per dollar of junior debt sought than transactions in which banks participate in the restructuring.[16] The percentage reduction in

[15] For completed offers, I compute the reduction in public debt based on actual tendering rates obtained from the firm's annual report. For failed offers, I compute debt reduction based on the minimum tendering rate. The amount of debt reduction for successful offers is discussed below.

[16] Dividing transactions according to whether the bank took any action yields similar results. In particular, senior debt is offered in only 53 percent of the transactions in which banks take some action. The difference in the proportion of offers with senior debt between the two categories is statistically significant at the 0.05 level. In addition, the average amount of senior debt offered per dollar of junior debt sought is significantly greater when no bank actions are taken (at the 0.05 level).

public debt in the exchange offer is also significantly less (at the 0.05 level) when banks take no action than when banks forgive principal. Dividing the sample according to whether or not the bank reduces principal yields similar results.

In transactions in which banks forgive principal, the average reduction in bank debt is 53 percent (the median reduction is 50 percent). It is interesting to note that in all of the transactions in which banks offer to scale down their loan, their offer is contingent upon the successful completion of the public debt exchange offer. In addition, in all of these transactions, actual tendering rates are above the minimum specified for success. In contrast, when banks do not make concessions, only 30 percent of the offers have tendering rates above the minimum specified in the exchange offer. Thus, bank participation appears to increase the likelihood of achieving minimum tendering rates. I examine the relation between tendering rates and bank participation further in Section III *D*.

While a reduction in the principal amount of a bank's loan is a concession on the part of the bank, it is less clear that the other bank actions can be viewed in this way. For example, in 4 transactions, the bank takes additional security or exchanges an unsecured claim for a secured claim with no other modification to the loan contract. These transactions potentially improve the bank's position vis à vis other creditors and, as such, are not likely to constitute a concession on the part of the bank. As shown in Table I, the success rate is lowest and the amount of senior debt offered is highest in these transactions.

Whether the waiver of a covenant or the provision of additional credit are activities that constitute significant concessions by the bank that facilitates the exchange offer is unclear. Given the ambiguity in defining what constitutes a concession, I focus on those transactions in which banks forgive principal. However, if concessions are defined broadly to include providing additional credit, waivers of covenants, and reductions in principal, I obtain results very similar to those using the narrow definition of concessions.[17]

B. Firm Characteristics

Panel B of Table I provides descriptive statistics concerning the financial characteristics of the firms in my sample. As shown, transactions in which banks forgive principal involve firms with higher leverage and solvency ratios (the ratio of total debt to total debt plus book value of equity), lower coverage ratios, and a greater proportion of their debt held by banks than the other transactions in the sample. These results are consistent with the argument that banks make concessions only when their claims are impaired.

[17] For example, defining bank concessions broadly, the mean (median) percentage reduction in public debt is 46 percent (46 percent) when banks make concessions versus 20 percent (5.5 percent) when no bank concessions are provided. Also, the amount of senior debt offered is lower when banks make concessions (broadly defined). In particular, the mean (median) amount of senior debt offered per dollar of junior debt sought is 0.32 (0) when banks make concessions versus 0.64 (0.75) when no concessions are provided. (The difference is statistically significant at the 0.05 level.)

Taken together, the results in Table I suggest that the amount of public debt reduction is related to whether banks participate in the restructuring. Transactions in which banks make concessions involve firms with a higher proportion of bank debt and firms in more severe financial distress—cases in which the bank's claim is more likely to be impaired.

The summary statistics reported in Table I are based on proposed transactions. To investigate whether completed transactions result in a substantial reduction in the firm's debt burden or leverage, I calculate interest coverage ratios and leverage (defined as the ratio of short plus long-term debt to total assets) for firms completing exchange offers over the two-year period subsequent to the completion of restructuring. When banks make concessions, the mean (median) coverage ratio increases from 0.33 (0.24) in the year prior to the restructuring to 2.86 (1.60) two years after the transaction. For firms in which banks do not forgive principal, the mean (median) coverage ratio increases (decreases) from 0.37 (0.49) to 1.84 (0.25). The mean or median change in interest coverage is significantly higher (at the 0.05 level) for firms in which banks make concessions. Changes in leverage follow a similar pattern. For firms in which banks make concessions, the mean (median) leverage ratio declines from 0.61 (0.61) to 0.38 (0.40) two years after the restructuring. In contrast, leverage increases slightly for firms in which banks do not make concessions from a mean (median) of 0.61 (0.55) to 0.68 (0.57).[18]

The actual percentage reduction in public debt when banks make concessions also varies with the number of bond issues outstanding. For example, the median number of bonds outstanding for the firms in my sample is two. For firms with two or fewer bond issues outstanding, the mean (median) percentage reduction in public debt is 20 (5) percent. For this group, the mean (median) decrease in public debt outstanding is 13 (25) percentage points greater when banks make concessions. In contrast, for firms with more than two bond issues outstanding the mean (median) reduction in public debt is 14 (0) percent. When banks make concessions, the mean (median) decrease in public debt outstanding is 22 (35) percentage points greater for firms with more than two bond issues outstanding.

C. Regression Analysis

To examine further the relations between bank actions and the characteristics of the public exchange offers, I estimate a set of regressions relating the proportional reduction in public debt and the amount of senior debt offered in the exchange to the financial characteristics of the firm and the proposed

[18] Leverage ratios are computed using data from COMPUSTAT. Leverage is the ratio of short plus long-term debt to total assets. While coverage ratios increase and leverage declines for firms in which banks make concessions, coverage ratios are lower and leverage is significantly higher than other firms in the industry. For the sample in which banks make concessions, the mean industry coverage ratio is 3.59 and the mean industry leverage ratio is 0.16. This finding is similar to the results reported by Gilson (1994).

actions of the bank. I also examine the relation between tendering rates, the characteristics of the exchange offer and bank actions.

If holdout problems impede the ability of firms to reduce the amount of public debt outstanding, a negative relation is expected between the percentage reduction of public debt in the exchange and the severity of holdout problems. In addition, if senior debt is used to overcome holdout or information problems, then the amount of senior debt offered to bondholders is expected to be positively related to the severity of these problems. Finally, if bank participation mitigates holdout problems, higher tendering rates are expected relative to the minimum specified in the exchange when banks make concessions.

As a proxy for the severity of holdout problems, I use the number of separate bond issues the firm has outstanding (see Gilson et al. (1990) and Franks and Torous (1994)). To examine whether bank concessions mitigate holdout problems, I construct an interaction dummy variable that equals the number of bond issues outstanding if the bank makes a concession, and is zero otherwise. Under the hypothesis that bank concessions mitigate holdout problems, a positive relation is expected between debt reduction and the interaction variable.

The composition of exchange offers is also expected to vary with the financial condition of the firm. In particular, the larger the firm's debt overhang, the greater the amount of debt reduction expected in the restructuring. As a result, assuming the firm's solvency ratio (ratio of total debt to total capitalization) is a reasonable proxy for the severity of the firm's debt overhang, I expect a positive relation between the reduction in public debt outstanding and the firm's solvency ratio. A similar argument suggests that the amount of senior debt offered in the exchange will be related negatively to the firm's solvency ratio.[19]

Bank concessions may affect the composition of exchange offers apart from any effect on holdout problems. As discussed in Section I, bank concessions can mitigate information problems concerning the value of the firm. This argument suggests a positive relation between the percentage reduction in public debt and bank concessions and a negative relation between the amount of senior debt offered and bank concessions. Under the hypothesis that creditors "share the pain" if bank concessions occur in firms in the worst financial condition, the amount of public debt reduction will also be related to whether banks make concessions. However, under the "share the pain" hypothesis, no relation is expected between debt forgiveness and the number of bond issues outstanding.

Table II provides estimates of the relation between the composition of the public debt exchange offer, firm characteristics, and whether the bank makes concessions. Panel A contains estimates of the reduction in public debt.[20] The first two columns contain Ordinary Least Squares (OLS) estimates using the

[19] I obtain similar results when I use the firm's coverage ratio as a measure of the severity of financial distress.

[20] Several transactions involve issuing senior debt with a face value greater than the junior debt sought. These transactions are classified as debt increasing transactions. In these transactions, debt reduction is a negative number, and the amount of senior debt offered relative to junior debt sought is greater than one.

Table II

Estimates of the Relation between the Decrease in Public Debt Associated with Exchange Offers and Firm Financial Characteristics, the Number of Public Bond Issues Outstanding, and Whether Bank Lenders Make Concessions. Estimates are Based on a Sample of Financially Distressed Firms from the Period 1980–1990

Bank concessions are defined as a reduction in the principal amount owed to the bank. Reduction in public debt is the proportional decline in public debt associated with the debt restructuring. Number of bond issues is the number of separate public bond issues listed in the company's annual report. Solvency ratio equals total debt divided by total debt plus book value of common stock. *t*-statistics are in parentheses.

	Proposed Reduction in Public Debt (OLS Estimates)		Actual Reduction in Public Debt (Tobit Estimates)	
Panel A: Proportional Reduction in Public Debt				
Intercept	0.205	0.182	0.160	0.127
	(2.125)	(1.848)	(1.206)	(0.937)
Bank debt/total debt	0.204	0.075	0.096	0.030
	(1.324)	(0.435)	(0.494)	(0.205)
Number of bond issues	−0.019	−0.010	−0.084	−0.067
	(−2.178)	(−1.730)	(−2.774)	(−2.042)
Solvency ratio	0.040	0.036	0.012	0.012
	(1.962)	(2.105)	(0.441)	(0.443)
Bank concession* number of bond issues	0.039	0.0159	0.092	0.070
	(3.992)	(2.101)	(3.123)	(1.976)
Bank concession = 1		0.310		0.143
		(2.422)		(0.951)
	Adjusted R^2 = 0.14	Adjusted R^2 = 0.23	Tobit σ = 0.334**	Tobit σ = 0.333
	N = 59	N = 59	N = 59	N = 59

	Proposed Transactions		Senior Debt Per $ of Junior Debt in Successful Transactions	
Panel B: Senior Debt per Junior Debt Sought				
Intercept	0.784	0.802	0.756	0.767
	(6.254)	(6.635)	(5.259)	(5.712)
Bank debt/total debt	−0.518	−0.422	−0.416	−0.252
	(−2.636)	(−1.861)	(−1.835)	(−0.964)
Number of bond issues	0.016	0.009	0.031	0.022
	(1.852)	(0.974)	(2.325)	(2.545)
Solvency ratio	−0.068	−0.065	−0.057	−0.051
	(−5.034)	(−4.423)	(−4.400)	(−2.922)
Bank concession* number of bond issues	−0.041	−0.023	−0.056	−0.033
	(−3.865)	(−2.151)	(−4.245)	(−3.636)
Bank concessions = 1		−0.233		−0.31
		(−1.453)		(−1.731)
	Adjusted R^2 = 0.22	Adjusted R^2 = 0.24	Adjusted R^2 = 0.23	Adjusted R^2 = 0.29
	N = 59	N = 59	N = 44	N = 44

* t statistics for OLS estimates are based on White consistent estimates of standard errors.
** Tobit σ is the standard deviation of the errors from the Tobit estimates.

public debt reduction proposed in the exchange offer as the dependent variable. The next two columns contain Tobit estimates of amount of public debt reduction achieved in successful transactions. For transactions that failed (or those resulting in an increase in public debt), the percentage reduction in public debt is assumed to be zero.

As shown in the Panel A, I find a negative and statistically significant relation between the proportional reduction in public debt proposed and the number of bond issues outstanding in the year prior to the exchange offer. This result is consistent with the hypothesis that holdout problems impede the reduction in leverage in out-of-court debt restructurings. However, the coefficient on the number of bond issues outstanding interacted with the bank concession dummy variable is positive and statistically significant at the 0.01 level. The results are similar for the Tobit model.

I find a positive and statistically significant coefficient (at the 0.10 level) on the bank concession dummy variable for proposed transactions. However, I find no significant relation between the actual amount of debt reduction achieved and the bank concession dummy variable. Finally, the results in Panel A suggest that the poorer the financial condition of the firm (measured by the firm's solvency ratio in the year prior to the proposed restructuring), the greater the percentage reduction in public debt associated with the proposed transaction. However, I find no significant relation between the reduction in public debt achieved in successful restructurings and the firm's solvency ratio.

Taken together, bank concessions appear to have a substantial effect on the amount of debt reduction that occurs. For example, the coefficient estimate on the interaction variable in the Tobit model can be used to calculate the marginal impact of bank concessions on the relation between debt reduction and the number of bond issues outstanding. The results, reported in Column 4 of Table II, indicate that bank concessions are associated with a 5.1 percent reduction in public debt per bond issue.[21]

Panel B of Table II provides the results of the determinants of the amount of senior debt offered in the exchange. The amount of senior debt per dollar of junior debt sought in successful transactions is the product of the tendering rate and the amount of senior debt offered in the transaction. The first two columns provide results for proposed transactions and the second two columns contain results for successful transactions.

The positive and statistically significant (at the 0.05 level) relationship between the amount of senior debt offered and the number of public bond issues outstanding is consistent with the hypothesis that holdout problems require firms to offer senior debt. Consistent with the hypothesis that bank concessions mitigate holdout problems, the coefficient on the bank concession interaction variable is negative and statistically significant. The coefficient on

[21] The marginal impact is calculated by multiplying the maximum likelihood estimates in Table II by the cumulative standard normal density function evaluated at the predicted reduction of debt calculated using the mean of each independent variable. See Maddala (1983), pp. 159–160.

the bank concession variable is negative although not statistically significant at the 0.10 level.

Finally, the negative relation between the amount of senior debt offered and the firm's solvency ratio is consistent with the argument that the magnitude of the potential debt overhang affects the composition of securities offered in the exchange. In particular, the larger the solvency ratio (the ratio of debt to total capitalization), the less senior debt provided in the exchange.

While the results reported in Table II are generally consistent with the hypothesis that bank concessions affect the composition of exchange offers, there is a potential econometric problem associated with these estimates. In particular, the results in Table II suggest that the amount bondholders scale down their debt depends, in part, on whether the bank proposes concessions. However, as discussed earlier, whether the bank proposes concessions depends on the financial condition of the firm (i.e., whether the bank is impaired).[22] In addition, as shown in Table I, banks never make unilateral concessions. This raises the issue as to whether bank concessions can be treated as independent of bondholder actions (as assumed in estimating the regressions in Table II) or whether bank concessions are endogenously determined. While there is a potential problem of endogenity, the sequence of bank and bondholder actions suggests that bank *proposals* can be treated as exogenous in the Tobit estimation. Specifically, as discussed in the previous section, bank concessions are always made contingent on the completion of an exchange offer. As a result, although *actual* bank concessions may depend on the exchange offer's success, the proposed concession (which influences the exchange offer's success) does not depend on bondholder actions.

D. Analysis of Tendering Rates

A final test of whether bank concessions facilitate public debt exchange offers involves an examination of the relation between actual tendering rates relative to the minimum specified by the offer and bank concessions, the number of bond issues and the amount of senior debt offered bondholders, and the proportion of total debt publicly held. Assuming actual tendering rates differ from the minimum required because of unanticipated holdouts among bondholders, bank concessions are expected to be positively related to the actual tendering rate (relative to the minimum).

Estimates of the relation between tendering rates and bank concessions are presented in Table III. Notice that the coefficient on bank concessions is positive and statistically significant at the 0.05 level. Assuming that actual tendering rates relative to the minimum required measure the importance of

[22] To examine the determinants of bank concessions, I estimate a probit model relating the likelihood of bank concessions to firm characteristics. I find a positive and statistically significant relation between the likelihood of bank concessions and the proportion of total debt held by banks. I also find a positive and significant relation between the likelihood of concessions and the solvency ratio (a proxy for the firm's debt overhang). These results are consistent with the hypothesis that banks make concessions only if they are impaired.

Table III

The Relation between Tendering Rates Relative to the Minimum Tendering Rate Required, Bank Concessions, Firm Characteristics, and the Composition of the Exchange Offer

OLS estimates are based on a sample of financially distressed exchange offers during the period 1980–1990. Transactions are included if minimum and actual tendering rates are reported. Bank concessions are defined as a reduction in the principal amount owed to the bank. Number of bond issues is the number of separate public bond issues listed in the company's annual report.

	Coefficient (t-statistics are in parentheses)
Intercept	−0.023
	(−0.133)
Bank concession = 1	0.33
	(2.03)
Number of bond issues	−0.06
	(−1.59)
Senior debt per $ junior debt sought	0.22
	(1.08)
Public debt/total debt	−0.021
	(−2.90)
Adjusted R^2	0.17
N	36

holdouts, this result is consistent with the hypothesis that bank participation reduces holdout problems. The negative coefficient on the number of bond issues is consistent with the hypothesis that holdout problems become more severe as the number of bond issues increases. Finally, firms with relatively more public debt in their capital structure appear to experience more severe holdout problems.

IV. Summary and Conclusion

Overall, I find evidence consistent with the hypothesis that bank actions influence the success of public debt exchange offers. In particular, I find that the reduction in public debt outstanding associated with exchange offers in financial distress is significantly related to whether bank lenders forgive principal. Transactions in which banks make concessions are characterized by a significantly larger reduction in public debt and less senior debt being offered to bondholders. Moreover, transactions in which both bank lenders and public bondholders forgive principal involve firms with poorer ex-ante operating performance and a larger debt overhang than firms in which debtholders do not make concessions.

My results provide an explanation for the apparently conflicting results of earlier studies (for example, Gilson, John, and Lang (1990), Asquith, Gertner, and Scharfstein (1994), and James (1995)). The higher the proportion of total debt held by the bank, ceteris paribus, the greater the likelihood the bank will

be impaired and therefore has an incentive to participate in a restructuring. Since unilateral concessions by senior bank lenders provide a wealth transfer to bondholders, banks are unlikely to act unilaterally when the firm has public debt outstanding. However, the evidence presented in Table II suggests that bank participation in the exchange offer mitigates the holdout and information problems associated with leverage reducing exchange offers. Moreover, secured private lenders provide concessions in circumstances where, if their claims were diffusely held, holdout problems would impede leverage-reducing transactions. This argument suggests that private lenders play an important role in facilitating out-of-court debt restructurings for firms without "too much" public debt outstanding. Moreover, these results suggest that the mix of private and public debt is an important determinant of a distressed firm's ability to modify its capital structure through out-of-court restructurings.

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