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THE DETERMINANTS OF UP-FRONT FEES ON BANK LOANS TO LDC SOVEREIGNS

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ABSTRACT

The paper explores the determinants of up-front fees on sovereign bank loans. Remuneration of bank loans is typically channelled through the floating interest benchmark, the interest spread, and a battery of fees. There is substantial evidence of the spread paying for long-run sovereign repayment capacity. Little is known, however, about the role of the fees paid up-front. Based on a uniquely extensive sample of LDCs sovereign loan contracts, this study provides substantial evidence of up-front fees capturing the costs due to the expected renegotiations and agency issues. This contradicts previous studies based on spreads only, predicting a pricing difference between public and private debt to LDCs sovereigns.

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1. INTRODUCTION

Empirical analyses of the pricing of bank loan contracted by sovereigns situated in Less-Developed Countries (LDCs) have proceeded in a rapid way after the major crises in the early eighties. The evolution has been limited, however, by the lack of an easily accessible and large-scale database containing the terms of loan arrangements. Unlike private placement and public debt, remuneration of a bank loan is typically composed of a battery of fees and commissions along with the floating associated interest benchmark rate and the fixed spread over this benchmark. Empirical literature has focused on this fixed interest margin consciously dismissing any other type of remuneration. Nevertheless, descriptive results provided by Mills and Terrell (1984), Booth and Chua (1995) and Shockley and Thakor (1997) document the substantial amounts driven by the fees, in particular the up-front fee (the up-front fee is charged at the signature of the loan arrangement).

In this paper, I expand on earlier investigations by analysing whether risk-taking compensation has empirical relevance for up-front fees on sovereign loans. If it is agreed that the interest premium is important to default risk compensation, what is the role of the up-front fees? Answering this question will allow to address fundamental issues regarding the role of financial intermediaries on sovereign debt markets featured by the absence of enforceability means. Do financial intermediaries monitor sovereign borrowers? Are bank loans dominant relative to public debt in the presence of information asymmetries? The study is based on a relatively extensive and reasonably heterogeneous sample of bank loan contracts issued by LDC sovereigns between 1983 and 1997. I find that the up-front fees pay for the expected costs resulting from renegotiations. They are also related to the presence of information asymmetry and, therefore, agency costs. Both hypotheses of a fixed cost and concealed information relative to public debt markets are rejected.

There are theoretical reasons suggesting that the up-front fees have non-trivial economic motivations. Conventional practice asserts fees paid on the unused balance are aimed at

reimbursing sunk administrative and commitment costs. Instead, the insider role of financial intermediaries highlighted by Fama (1985) and documented by James (1987) would tell the fees are aimed at voluntarily biasing the publicised interest premium, thus, concealing private information about the effective borrower's characteristics. On the other hand, Thakor and Udell (1987) and Shockley and Thakor (1997) explain the nonlinear pricing on commitment facilities with the presence of informational asymmetries related to the creditworthiness of the borrower, up-front fees acting as a screening device.

Empirical studies on interna tional markets compare the macroeconomic determinants of interest margins on bank loans with yield margins over long-term free rate in the primary bond markets (Edwards(1986)). The small number of bank participants and their cohesive behaviour feature the banking debt. As a result, when the borrower is illiquid (temporarily short of cash), private loans are assumed to enhance the renegotiations pace for rescheduling and allow for lower costs relative to atomised bondholders. Hence, banking debt is never defaulted for short-run financial trouble so that bankers price the liability in function of the solvency risk only (the debts exceed what the borrower will ever be able to repay). Bonds, instead, expect a compensation for both. Empirical tests conducted on both the Euro-currency loan market prices (interest premia) and bonds are consistent with this hypothesis. Boehmer and Megginson (1990) extend these results on secondary markets of sovereign syndicated loans between 1985 and 1988. Authors again find indicators of liquidity are insignificant. Recently Eichengreen and Mody (2000) study on emerging countries reveals bank loans premia react to macroeconomic information in the same manner as the bond markets. However, the estimated model makes no distinction between sovereign and private debt.

However, as a consequence of the absence of enforceability means highlighted by Eaton and Gersovitz (1981), the sovereign will consider appropriate either to negotiate a rescheduling of

existing bank loans or to default on both public and private debt. Therefore, the banking debt is ranked at the lowest seniority level among private creditors. The facilitated rescheduling actually exposes the lender to future involuntary lending, making the asset maturity irrelevant. Note that rescheduling is not cost free either. Hence, the banker will claim for short-run risk compensation. I find the up-front fees are used as such a tool. I extend my investigation to other banking issues. I demonstrate up-front commissions are also aimed at tackling informational asymmetries.

The paper is organised as follows. In section 2, I provide some background about sovereign debt theory and the functioning of syndicated loans. This is completed with further literature on banking theory. Hypotheses are presented in this section. Section 3 presents a model of sovereign debt with exogenous pricing split-up and the empirical model. Section 4 describes the sampling procedure, the actuarial methodology, and the constructed database. Results are reported in section 5. I find strong support for fees related to risk and asymmetric information. In the final section I summarise the results and provide some concluding remarks.

2. SOVEREIGN DEBT AND BANK SYNDICATED LOANS

a. The Theory of Sovereign Debt

The sovereign agent is the state or the national entity which acts on behalf of the state (usually the government and the central bank). State representative individuals and property goods are not subject to foreign national legislation. The so-called *sovereign immunity* results in lenders being unable to enforce the terms of contract, therefore creating debt market imperfection. The modern theory of sovereign debt, in particular Eaton and Gersowitz (1981), popularised the concept of *willingness to repay.* Authors argue the repayment capacity approach is of little relevance since debt service amounts are lower than the national product. Adjustment for tax collection is therefore contingent on the government *will* to repay, provided authorities ignore other political troubles such

as social riots.[1] In this context, debt repayment is reputation motivated since lenders would presumably deny the defaulter future access to foreign-currency debt and prevent from consumption smoothing.

Legally, although sovereign immunity remains the rule, a few exceptions have been implemented in the late 1970s in the US and the English&Welsh laws which govern most of international banking debt contracts. New dispositions explicitly declare sovereign agents and properties are no longer immune in cases related to defaults on terms of commercial activities (US act) and loan contracts (England & Wales act). Delaume (1994) finds that the few judicial cases of private creditors suing defaulting states under US law were successful in their majority over the 15-year period following the Foreign Sovereign Immunities Act adoption.[2] Moreover, the US and UK governments have hardly claimed the Act of State to prevent the judicial procedure.[3] Last, but not least, nowadays the inclusion of the *sovereignty waiver* is a prerequisite for loans to LDC sovereigns. Therefore, the universal legal immunity issue the literature has put forward seems inconsistent with reality. Arguing of the legal threat, Bulow and Rogoff (1989b) sustain sovereigns are indeed subject to international commercial regulations. Moreover, denial to euro-debt markets is complemented by threats and limited access in savings and international trade markets. Indeed, the sovereign defaulter is unable to take full advantage of the defaulted amount since these two markets are still under the control of banks. The latter are able to put a threat on savings and reduce access to essential tools to exports such as letters of credit.

[1] See for example the riots in Caracas that took place in February-March 1989 and the related speech of President Perez reported in the *Financial Times* March 4, 1989.

[2] The US Foreign Sovereign Immunities Act took effect in 1976. Delaume (1994) listed about 25 cases involving debt disputes between private lenders and defaulting states between 1976 and 1994. Although assets seizures were uneasy, judicial statements were in favour of creditors, even in the most extreme illustrative case *Rep. of Argentina v. Weltever, Inc Supreme Court 112 S. Ct 2160 (1992)*.

[3] Case *Allied Bank International v. Banco Credito Agricola de Cartego, 752 F2d 51b (1985) 82 ILR 62; US Court of Appeals (2nd Circuit)*. Secretary of State denied the application of the Act of State despite the Appeal Court's decision. Full details of the story are available in Greenwood and Mercer (1995), appendix.

Despite legal threats, there still remain substantial differences between a sovereign and a corporate debtor. On the first place, there exist *national* bankruptcy codes to which all private enterprises are subject in their own jurisdiction of residence. The possibility of creditors liquidating the debtors assets, although costly and undesirable, represents well-established collateral. No such national legal tools are available to the sovereign lenders in the issuer's country where the state remains immune. Besides, listing the debtors assets abroad remains a very tedious and hazardous task resulting in substantial costs. This is the reason why the difficulty to enforce loan terms subsists. The second remarkable difference lies in the type of revenues. A firm earns revenues only from commercial activities. Lenders assess the risk of each current or future project and the related present cash-flows of the potential borrower. The state also undertakes projects bringing in profits. But, most of them are "public goods," so that profits are likely to be lower. Revenues are completed with two additional sources, namely tax collection and seignorage. Therefore, more than the firm, the sovereign's creditworthiness should be consistent with the country's fundamentals.

The lack of enforceability has substantial consequences on the general design of the loan contract which is the focus of interest in this article. The most remarkable is that the financial covenants put on the borrower make little sense. Moreover, collateral security amounts reduce of the same amount the borrower's creditworthiness. Therefore, in contrast with corporate lending where financial restrictions are widespread,[4] the bankers have no other means than the size, the maturity and the various types of remuneration to control for crucial economic issues such as risk and asymmetric information. The good understanding of the mechanisms of the banking syndicated loan is important for what follows.

b. Syndicated Loans and Banking Theory

Almost all of the sovereign banking debt is composed of syndicated loans. A syndicated loan is a loan made available by a group of banks in predefined proportions under the same credit

[4] See Smith and Warner (1979) for an extensive review of covenants on corporate bonds.

facility. Floating rate loans are the majority. In this case, the interest rate is composed of the euro-currency benchmark floating rate (usually the 6-month London inter-bank rate, LIBOR, which is a euro-currency interest rate) and the risk remunerating fixed margin. Along with the interest rate, the contract contains a battery of fees and commissions among which I retain the *up-front fees.* The up-front fees are obtained by each lender in function of the title he holds in the syndicate. For example, the lead-manager who commits for the highest amount receives the so-called lead-manager fees. The amounts are paid at the signature proportionately to the committed amount. In the rest of the analysis, the *all-in* margin indicates the equivalent interest margin that combines the mark-up above benchmark and the up-front fees.[5]

The banking literature has highlighted the leadership role banks hold in debt markets. Fama (1985) argues that banks are assumed to hold the inside or private information thanks to the close relationship prevailing between the debtor and his banker. Empirically, this is confirmed by the analysis provided by James (1987) who finds a significant positive impact of bank loan announcements on the borrower's stock returns. This leading role attributed to financial intermediaries gives higher importance to their pricing. Spreads usually receive more publicity than any other remuneration. Therefore, borrowers have an incentive to requesting a lower interest margin which is offset by higher fees, the overall credit remuneration being equal. Mills and Terrell (1984) document preliminary evidence of up-front fees on euro-currency syndicated loans being related to other factors than fixed cost. They find a robust positive relationship between the level of fees and the spread. Their interpretation follows the hypothesis of the existence of a collusion between the borrower and the lender to disclose part of information to public debtholders. I disagree with this. Instead, I argue this provides evidence on the fees being related to risk without specifying, however, any in particular.

[5] Typically the all-in cost includes all types of costs. For simplification purpose, I use the same straightforward meaning term.

Another motivation for fees stems from the lenders organisation in the contract. Deriving from the non-enforceability feature of sovereign debt described by Eaton and Gersovitz (1981), Folkerts-Landau (1985) argues that the reduced number of banks in the syndicate relative to bondholders contributes to making renegotiations in case of distress easier and less time-consuming. The descriptive comparison between yield premia on public debt and spreads on bank loans suggested by Folkerts-Landau (1985) shows the former is larger. However, the author compares the spread between bonds fixed-yield over benchmark to designed spreads over floating benchmarks on syndicated loans. This ignores the interest rate risk exposure resulting in higher fixed yield. Edwards (1986) demonstrates empirically that public debtholders respond significantly to short-term risk factors, while bankers do not, hence confirming Folkerts-Landau (1985). The workout being easier also makes public debt implicitly senior on private debt.[6] This feature takes higher importance in the sovereign debt markets where, for the lack of enforceability reasons again, seniority is hardly mentioned. Provided settlement is unlikely to be cost free, expected renegotiations should make the loan more expensive and sensitive to short-run risk. Therefore, it is not clear whether the syndicated loan should bear a higher cost than the bond and why short-term risk has no impact on its price. No conclusion can be drawn until a complete study including all costs is achieved.

Bank debt also allows for higher flexible contract design relative to standardised equities. The pricing structure on *loan commitment* has been widely analysed theoretically and empirically.[7] Fees categories are of two types: *up-front* and *commitment* fees are paid on the undrawn amount; the *usage* fees are charged on the total amount over the life of the loan. Thakor and Udell (1987) and Shockley and Thakor (1997) suggest evidence of fees paid on used balance are act as a

[6] Note, however, that the limited number of participants in the syndicate is also an advantage for lenders as this facilitates co-operative behaviour and enhance their bargaining power in the renegotiations.

[7] Also called *revolving credit* or *line of credit*. The loan commitment is a special type of loan where the bank *commits* to pay out the loan amount at any time the borrower desires until maturity. The loan is typically accompanyied by a series of fees paid either *before* or *after* disbursements along with the interest rate.

screening device in the presence of informational asymmetries. The take-down decision is contingent on the quality of the borrower's project. The intuition is that the lower quality investor will favour (usage) fees paid on take-down amounts since his probability to make use of the loan is lower. This indicates the borrower's investment quality. The empirical evidence reported in Shockley and Thakor (1997) is consistent with the self-selection pattern.

c. The Hypotheses

Therefore, I find four likely economic motivations for the presence of up-front fees. First, it corresponds to a fixed cost banks are seeking to be repaid at the signature. The payment effected up-front is intended to ensure administrative sunk costs are, indeed, refunded. Moreover, this helps in simplifying the distribution of remuneration which varies as a function of the commitment banks hold in the syndicate. This argument is widespread among bankers. This is also one of the main results presented by Mills and Terrell (1984). However, such a justification of the custom has its limitations since this is reducing the probability of repayment of the same amount. The implicit higher interest margin (the so-called *all-in margin*) applies to the lower loan volume. Nevertheless, fixed-cost motivation constitutes my first hypothesis.

The second argument for the presence of up-front fees is consistent with the leadership attributed to bankers in the debt markets, especially relative to capital markets. The loan price proxy provided by the spread is assumed to convey the bankers inside information to public markets. However, the proxy turns out to be downward biased where a share of the risk remuneration, namely in the form of up-front fees, is not publicised. This is intended to up-grade borrowers while attempting to tap public capital markets. Another motivation is the presence of high withholding tax on capital income increasing the cost of the loan. Therefore, both borrower and lender find an agreement and channel the payment through various fees. The all-in payment turns to be the real risk premium.

The third motivation extends on the rescheduling hypothesis defended by Folkerts-Landau (1985) and Edwards (1986). If one considers the observation of pricing is biased by the presence of fees, it is interesting to verify whether the latter are indeed determined by short-term factors. The banker would ask for likely costs from rescheduling to be distributed before the loan is paid-out.

The fourth motivation is related to agency problems and the asymmetric information the lender faces. Alongside the spread, the up-front payments are used as a screening device on a similar way as described in Shockley and Thakor (1997).

In the next section I suggest an extension of the sovereign risk-sharing model proposed by Feder and Just (1977). This is aimed at investigating further the trade-off between spread and up-front fees where the split is exogenously determined.

3. THE MODEL

a. Loan Pricing with an Exogenous Split-up

In this section I present a model of sovereign debt where the remuneration of the banker for risk-taking is split into up-front payments and interest rates for exogenous reasons. It is intended to describe the spread behaviour if the second hypothesis were true, that is up-front fees can be explained by a collusion between the lender and his customer. It extends on the traditional linear model used in the sovereign debt empirical literature first implemented by Feder and Just (1977). Assume the economy is a one-period economy composed of three agents, the sovereign and two bankers. Bankers are risk-neutral and are competitive. The sovereign agent seeks to borrow a certain amount q on date 0. On date 1, the borrower fully defaults on principal and interest repayment with probability p. The unique alternative is the full repayment with probability $1-p$. The creditor has no alternative but to accept the borrower decision. This follows the reputation

hypothesis and the consequent credit disruption.[8] The loan is remunerated by the interest rate composed of the floating benchmark free-rate *i*, usually the London inter-bank euro-currency rate (LIBOR) and the spread over the benchmark. For simplicity purpose I assume the refinancing interest rate and the treasury free-rate are equal. Suppose r is the mark-up. The expected value of the banker's present profit p is:

$$E(p) = -q + q(1+\frac{r}{1+i})(1-p)$$

Consider another contract in which, for some exogenous reasons, the borrower pays a part of r in the form of a commission paid at date 0. This up-front payment represents a share j of the total payment r. The so-called up-front fee is then $j.r$. The outstanding share is still paid at date 1 as post-disbursement payment (or spread) $S=(1-j).r$. The expected present profit is hence:

$$E(p) = q(1+\frac{(1-j)r}{(1+i)})(1-p) - q(1-jr) \qquad (1)$$

Risk-neutral bankers behave competitively on all-in price r so that expected profits break even. r is therefore determined as a function of the probability of default and the share of r paid up-front:

E(π) = 0 implies

$$r = \frac{p}{1-p}(1+i)\frac{1}{j(1+i)(1-p)^{-1} + (1-j)}$$

$$S = \frac{p}{1-p}(1+i)\frac{1-j}{j(1+i)(1-p)^{-1} + (1-j)}$$

Note that the equivalent loan with size $q'=q(1-j\ r)$ and thus *0* up-front payments yields a higher all-in interest spread r':

[8] This is consistent with the "negative pledge" and the "*pari-passu*" clause. See Wood (1995) 16-10 to 16-12 for further details.

$$r' = \frac{r(1+ij)}{1- j\,r} > r \tag{2}$$

If j equals zero we obtain the model presented by Edwards (1986), i and j equal zero is the model presented by Feder and Just (1977). r and S are therefore two decreasing convex functions on j and increasing concave functions on i. The more is paid up-front the smaller is the risk exposure. The remuneration is null when repayment is sure and goes to infinite when default tends to certainty. The spread S as estimated in previous studies is thus substantially biased if there exists a share j of the remuneration paid up-front. Assume the probability of default p is logistic distributed as a function of a set of exogenous macroeconomic determinants X:

$$p = \frac{\exp(b'X)}{1+\exp(b'X)} \tag{3}$$

The obtained log-remuneration is:

$$\begin{aligned} \ln r &= b'X + \ln(1+i) - \ln\left((1-j) + j\,(1+i)(1+e^{b'X}\right) \\ \ln r &= b'X + \ln(1+i) - \ln\left((1-j) + \frac{j}{1-j}(1+i)(1+e^{b'X}\right) \end{aligned} \tag{4}$$

However, as a result, marginal impacts on the all-in and the spread of each of the exogenous factors are identical. The impact will be of the same sign as but not equal to b_i. If you call [j (1 + i)(1 + $e^{b'X}$) + (1 – j)] = A (j , X) > 0 for all real vector X and 0< j <1,

$$\begin{aligned} &\frac{\partial \ln r}{\partial X_i} = \frac{\partial \ln S}{\partial X_i} = b_i . \frac{(1+ij)}{A(j, X_i)} \\ &\frac{\partial \ln r}{\partial j} = -\frac{i(1+e^{b'X}) + e^{b'X}}{A(j, X)} < 0; \frac{\partial^2 \ln r}{\partial j^2} < 0 \\ &\frac{\partial \ln S}{\partial j} = -\frac{(1+i)(1+e^{b'X})}{(1-j).A(j, X)} \end{aligned} \tag{5}$$

Hence, assuming the up-front fee results from the risk premium split-up, one would expect a negative impact of the share of the remuneration paid in the form of fees j on both the spread and the all-in margin. This has substantial consequences on the specification of the empirical model.

b. Empirical Model Specifications

The Linear Model

The first model explores the determinants of selected terms of pricing on the sovereign bank loan. The pricing elements are the spread and the up-front fee. For specificity purpose, the up-front fee is also estimated as an equivalent annual payment on the used balance. The basic price term equation is written as:

$$\begin{aligned}\ln(\text{Price term}_{j,m,i}) = \text{Constant} &+ \Psi_0 . Dummies_{j,i,m} \\ &+ \gamma_1 . \ln(1 + free\ rate_m) \\ &+ \gamma_2 . Inflation_{m,i} \\ &+ \gamma_3 . Liquidity_{m,i} \\ &+ \gamma_4 . Solvency_{m,i} \\ &+ \gamma_5 . Average\ GNP per\ capita\ growth_{m,i} \\ &+ \gamma_6 . Variability\ of\ growth_{m,i} \\ &+ \gamma_7 . Gross\ investment\ to\ GNP\ ratio_{m,i} \\ &+ \gamma_8 . Commercial\ debt\ share\ of\ public debt_{m,i} \\ &+ \gamma_9 . LDC\ debt\ share\ of\ country's\ debt_{m,i} \\ &+ Error_{j,i,m}\end{aligned} \qquad (6)$$

where a subscript j indicates that the variable refers to the jth contract. Similarly, a subscript i indicates a variable regarding the ith country, and m the issue date (month). Upper-case coefficients indicate vectors.

The dummies correct for the presence of specific terms on the contract and for the temporary adverse economic environment. Two dummy variables indicate the benchmark rate is respectively the US and Japanese primary rates. Time dummies correct for year 1995 that

witnessed the Mexican crisis aftermath, and 1997 year end after the Thai currency had collapsed. The last dummy indicates the presence of a *tax-spare clause* in the contract that states the interest payments on loan will not be subject to any withholding tax.

Liquidity is proxied by the amount of foreign currency reserves available to the sovereign relative to the public and publicly guaranteed (PPG) short-term debt. This indicator was used by Eichengreen and Mody (2000). The ratios of reserves relative to imports and the short-term debt relative to exports are two alternative variables. However, results showed they added no information in the model estimates. The liquidity variable indicates the probability of a temporary foreign-currency shortage. In the sovereign debt perspective, this indicates default and the subsequent credit disruption is not necessarily maximising the country's wealth. Instead, the sovereign will seek to renegotiate the loan arrangements. The liquidity variable, hence, indicates the perspective of renegotiations rather than debt repudiation. Therefore, the sign of y_3 is expected to be negative on all pricing values. However, liquidity impact was found insignificant on previous studies on sovereign debt spreads.

The solvency is constructed as the ratio of the total amount of PPG long-term debt (lifetime more than a year) relative to GNP. Solvency in the sovereign debt literature indicates the total amount of liabilities is larger than expect cash-flows. In this case, credit disruption is unlikely to be a credible threat to the sovereign debtor. In previous studies the sign of y_4 was significantly positive on the spread. Similar results are expected here. Not necessarily should it be on the up-front fee.

The second set of exogenous variables captures the borrower's creditworthiness. It is constituted of indicators of the country's macroeconomic fundamentals inspired by the recent empirical literature on sovereign and international risk, i.e. Eichengreen and Mody (2000), Minh (1998), Cantor and packer (1996) and Bohemer and Megginson (1990). The *inflation* is determined

by the month-to-month yearly consumer prices growth in the issuing country. It indicates the monetary policy consistency. The sign of y_2 is expected to be positive on all pricing terms. The GNP *growth* is calculated as the average value of the GNP per capita yearly return over the last five years.[9] The ratio of the gross domestic investment relative to the GNP indicates the long-run growth expectations, but also the national commitment to development. The sign of y_5 is expected to be negative on all terms of pricing.

This two following variables are aimed at assessing the validity of the asymmetric information hypothesis to motivate non-linear pricing. The *variability of growth* is calculated as the variability of income per capita growth in the last five years.[10] It captures the uncertainty on income. It also proxies for the amount of potential asymmetric information. y_6 is expected to be positive on both spread and fees. The impact on the spread indicates risk aversion while the impact on the fees will indicate the potential of agency costs. The ambiguous interpretation should be cleared by the use of an estimate of how well known the debtor is among creditors. This is proxied by the size of debtor's commercial debt relative to the overall LDC debt. The share of the private creditors' asset is similar to the variable defined as the book value of debt plus the market value of equity utilised by Shockley and Thakor (1997). The impact on the spread should be insignificant while I expect a negative impact on fees.

Finally, the share of public debt relative to the total private creditors debt (bank loans and bonds) isolates the incentive for collusion between the sovereign and the banker so that the interest spread is publicised with a bias. The ratio indicates the weight of public markets in the sovereign private creditors debt and, therefore, the higher is the share, the higher is the incentive to hide

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[9] For country *i*, year *j* = 0, $Growth_{i,j} = \sum_{j=-4}^{0} \frac{Income\ growth_{i,j}}{5}$

[10] For country *i*, year j = 0,

$$\text{Variability of Growth}_{i,j} = \Sigma_{j=-4}^{0} \frac{(\text{GNP per Capita growth}_{i,j} - \textit{Average}\ \text{GNP per capita growth over the last 5 years}_{0})^2}{5}$$

information. This will be consistent with a negative impact on the spread together with a positive impact on the up-front fees and the share of up-front payments in the combined remuneration. Note that this variable may make confusion with the cross-monitoring hypothesis tested by Booth (1992). This is why the collusion hypothesis is consistent if the ratio has an insignificant impact on the combined cost, as well.

The extended linear model

The approach outlined above enables to identify the effect of the presence of asymmetric information and renegotiations risk on the spread and the up-front fee. In other words, this would be the effect we would find if there were no trade-off between the spread and the fee, the size of the debt market testing for this. The extended model is derived from the marginal impact described by equation [5]:

$$\begin{aligned} \ln(\text{Margins}) = \text{Constant} &+ \Phi_0 . X_{j,i,m} + f_0 \ln(1+ \textit{ free rate}_m) \\ &+ f_1 . \textit{Share of the all-in cost paid up-front}_{j,i,m} \\ &+ \textit{Error}_{j,i,m} \end{aligned} \qquad (7)$$

where $X_{j,i,m}$ is the vector of explanatory variables as described above. In this extended specification of the linear model, I include the share of the combined margin paid up-front as an explanatory variable. The price terms are now set to be the spread and the all-in. I test whether the fee results from an exogenous split-up agreed by the banker and his customer. This is consistent with the share having a negative marginal impact on both the spread and the all-in cost. Moreover, if this was true, there may be a colinearity with the size of the public debt relative to the commercial debt, but not with other variables.

The nonlinear model

Finally in a third extended non-linear specification, I focus my attention on the collusion hypothesis. Because I find that the inclusion of the share paid up-front has a dramatic statistical

effect on other explanatory variables, I want to be convinced the non-linear model outperforms the linear specification. The non-linear model specification follows equation [4] :

$$\ln(Spread)_{j,i,m} = \Gamma' X_{j,i,m} + \ln(1 + Freerate_m) - \ln\left[1 + \frac{Share_j.(1 + Freerate_m)}{1 - Share_j}.\left(1 + e^{\Gamma' X_{j,i,m}}\right)\right] + Error_{j,i,m} \quad (8)$$

where subscripts and variables are the same as described previously and *Share* is the share of the all-in cost paid up-front.

4. SAMPLING AND DATA DESCRIPTION

a. Sampling Procedure

The data set of contracts is obtained from various issues of the International Financing Review (IFR). There are two additional major sources surveying banking loan contracts: *Loanware* from Euromoney and *Loan Pricing Corporation* from Reuters Company.[11] I chose the IFR because it provides higher information about the borrower, the disbursements/repayments schedule of the loan, and the fees. In particular, the IFR also indicates on some contracts the respective amounts on which fees are to be paid so that I could calculate the average value of up-front payments. Moreover, the completely reported observations allow to conjecture for incompletely reported contracts. This shall be detailed in the next subsection.

I selected all loans *issued* or *guaranteed* by states, governments, monetary central authorities, and public enterprises and agencies situated in countries ranked as *low* or *middle income* by the World Bank in 1998 or 1999.[12] Non-guaranteed debt issued by public enterprises and agencies were retained where the debtor could reasonably be assimilated to a quasi-sovereign

[11] See Rhodes (1996) Appendix II for a complete listing of data providers.

[12] The determination is based on *per capita* incomes. In the tables published in 1999, middle- and lower-income countries were countries displaying *per capita* income in 1997 not higher than US$ 9,655.

entity.[13] Notice that the selection of sovereign borrowers permits the exclusion of commercial risk. This is very important although almost absent in the previous literature. In the extent of my knowledge, Eichengreen and Mody (1999) is the first article where the distinction is applied. The authors indeed find a significant higher spread charged on international bank loans to private borrowers relative to sovereigns. The second requirement for contracts selection is the presence of a complete report of the size of the loan, its duration, and the interest rate details. The selection was made on contracts with a signature date between January 1983 and December 1997. Hence, of the 1750 contracts collected in the first place, only 781 had the appropriate prerequisites. However, of these 781 contracts, 679 are usable in the statistical analysis.[14]

The information recorded for each contract is the signature date of the contract, the identity, the type and geographic location of the borrower, the type and purpose of use of the loan, the currency of disbursement and repayment, the global, original and issued amounts in denominated currency and (current) US dollars. The disbursement and repayment schedule information includes the eventual draw-down and grace period, the number of tranches, the repayment frequency and period, bullet or balloon repayment. Interest payments are described by the fixed interest rate or the floating benchmark rate and the spread. All types of fees are indicated with the related amounts. However, provided that reports are often incomplete, a blank in place of fees remains ambiguous. This may mean fees were absent in the contract or the report was incomplete.

b. The Calculation of the All-in Margin

Beyond the interest margin, the all-in cost margin is an essential element for the acceptance of the loan. The calculation methodology, however, varies slightly according to the actuarial

[13] If necessary, the status was verified in the articles of the company, where it should be written that the state would make sure the company will meet its (foreign) obligations. This is usually the case of national development banks, e.g. the Korean Development Bank, and national primary resources monopoles, e.g. the Sonatrach in Algeria.

[14] 3 contracts includes security clauses, 30 are revolving credits, 62 contracts are fixed rate loans. The reason why fixed-rate loans were discarded is that I found inconsistently low interest rates with respect to the related free-rates. Moreover, the 2 loans denominated in Kuwait Dinar were deleted because I had no Kuwaiti benchmark free-rate.

officer. This is why, except for a few exceptions, I follow the standard method suggested in Rhodes (1996), p. 136-144. It consists of the discounted cash-flows analysis where present values of every single cost is calculated and then annualised over the average life of the loan.

Hence, the first step consists of the determination of the discounting free rate. I selected redemption yield of the government benchmark bond associated with the currency and maturity of the contract. Yield values are monthly averages and the month is the signature month. Retaining monthly instead of daily values reduces the bias due to temporary shocks. Moreover, this is consistent with the typical timetable of the syndicate formation presented in Rhodes (1996), p. 149. Facility negotiations and allocations are made in the last four weeks preceding the closing date. Bond yields reports are obtained from Datastream.[15]

The second step consists of the calculation of the respective present value amounts paid in the form of fees and the interest rate spread. Notice that the spread may vary over the life of the loan. Annualising all spread remuneration provides me with the *average spread*. Previous studies have ignored this fact taking into account the first reported spread only. This gives higher support to the adopted approach. Moreover, I remind that up-front fees values depend on the rank of the lender in the syndicate and the related disbursed amount. Amounts depend on fees values and the number of banks at each rank. The IFR provides the latter for each contract but not always the former. An average share amount by rank was computed based on the observations where the information was available. This estimator was in turn used for contracts with incomplete report.

The next step consists of the calculation of the average life of the loan.[16] Time is divided in monthly periods and for every single period I determine the outstanding disbursed amount. The sum of these values is divided by the size of the loan to obtain the *average lifetime*. Last, I

[15] For limited issues reasons, 3 loans denominated in Swiss Francs and 9 in Austrian Sterling had no benchmark bond yields for the related maturity. For these contracts only, I selected the respective "official" 10-years benchmarks.
[16] Note that Mills and Terrell (1984) considered the overall loan lifetime. This results in a downward bias.

annualise (i.e. calculate the internal rate of return) the present values of each of the individual payments over the average duration. This provides the equivalent yearly margin over the benchmark interest rate on the utilisation period for each of the fees and commissions. To determine the appropriate all-in margin of interest I add up the adequate values.

c. Description of the Data Set

The sample includes 679 observations of loan contracts from banks to LDC sovereign borrowers for which information is available on pricing structure (spread, index, and fees), loan size, term-to-maturity, and borrowing sovereign. 58 countries are represented. The oldest contract was signed in January 1983 and the most recent in December 1997. This is a large number relative to previous studies. Indeed, Mills and Terrell (1984) based their study on a sample of 183 syndicated Euro-credits in the three year 1981-1983. Booth and Chua (1995) focused on a sample of corporate debt issued between 1987 and 1989. Last, Shockley and Thakor (1997) analyse loan commitments and lines of credits purchased in 1989 and 1990 in the US.

Summary statistics of the terms of the contracts in the sample are displayed in table [1]. Frequencies and average values of costs of contracts are displayed by year and country in table [2] and table [3], respectively. The two principal issuers of sovereign loan contracts are Turkey (19.9% of the total number of contracts) and Brazil (16.8%). In (constant) dollar amount terms, Turkey also comes first (14.8%) followed by Mexico, Argentina, Brazil, and India. These five countries represent half of the total amount in the panel. This is consistent with figures reported in the World Bank's *Global Development Finance* (GDF). However, I find total volumes have a striking breakdown in the mid-eighties. Following their financial recovering during the late eighties, the major LDC sovereign loan issuers withdrew from the syndicated loan market and turned to public bond markets. For example, GDF report only 5% of Brazilian international debt contracted from

private creditors was in the form of bonds in the early 1990s. In 1996, it represented 82%. The debt on Argentina and Mexican has followed a similar pattern.

Of the 679 contracts, 435 are reported with up-front fees. The average share in the overall sample is of 19.4% of the combined remuneration In average, up-front fees amount to 0.743% which represents US$ 1.1 million (in 1995 constant US dollars) for an average 153 million US dollar loan. The average fees payment by country is very heterogeneous. An extreme case is Nigeria which paid 4.33% of the loan amount in flat fees. This was superior to the mark-up remuneration itself.

These results are consistent with previous studies. Although the level of the spread and the equivalent margin fee in percentage are lower in their sample, Mills and Terrel (1984) find up-front fee pay for 19% of total return of the public debtors Euro-credit loans. This is very similar to my figure. Alternatively, Booth and Chua (1995) find on term loans the average up-front fee amounts to 1.05%. This is 40% higher the up-front payment on sovereign private debt. The authors also report 47% of their sample with up-front fee. While my sample of sovereign loans report the presence of such a fee on 65% of the contracts. Finally, Shockley and Thakor (1997) find only a mean up-front fee of 26% on loan commitments to US publicly traded firms. Despite the difference in the considered types of contract, it is interesting to note the difference according to the type of debtor and the likely amount of public information. I will find the same sort of result in my estimates. Moreover, the high amounts of money driven up-front fees along with their heterogeneity constitute a preliminary evidence of the little relevance of the contracting cost hypothesis and give credit to the creditworthiness and asymmetric information hypotheses. The next section presents the results of the estimates and their interpretation.

5. EMPIRICAL RESULTS

a. Estimate of the linear models

In this section, I present the results from the estimate of the ordinary least squared linear model implementing the endogenous pricing terms. All contracts are considered individually. This allows a direct analysis of the interaction between the terms designed on the contract. The fundamentals indicators are implemented as exogenous variables. Their number has been simplified relative to previous studies. This is intended to avoid any misspecification due to multi-colinearity. Therefore, every factor is proxied by one variable. Tests of multi-colinearity are run after every estimate to ensure the validity of results. I use the *variance inflation factors* test.

Exogenous macroeconomic and debt indicators are obtained from the international development organisations which provide high quality public information on most of LDCs. Indeed, data are obtained from reports provided by local authorities and specialised internal economists. Consumer prices growth monthly data stem from the *International Financial Statistics*, published by the IMF. All other variables are collected on a yearly basis from the tables provided by the *Global Development Finance* and the *World Development Indicators*, both published by the World Bank. The World Bank's tables present the advantage of being homogenised and thus more convenient (relative to the IMF tables in particular). Recent and missing figures are obtained from the *IMF* and *World Bank* country surveys, the joint tables jointly published by the IMF-World Bank-OECD-BIS[17] and various *Economist Intelligence Unit Country Reports*. However, missing values in the accounting variables restrict the sample. This explains the difference in the number of observations.

Estimates of linear ordinary least-squared are reported in table [4]. Computations are conducted using ®Stata. The dependent variable in columns (a), (b) and (d) is the logarithm of the

[17] Internet access at http://www.oecd.org/dac/Debt

average spread over the basis interest rate. The dependent variable in columns (c) and (e) is the logarithm of the all-in margin which combines the interest spread and the up-front fees. The first estimated models reported for the spread and the all-in margin, all independent parameters are implemented. None of other contract terms are implemented. Column (a) shows that the spread responds significantly to all indicators except *Liquidity*. The insignificant impact of *Liquidity* is consistent with previous results presented by Edwards (1986) and subsequent studies of the spread on sovereign debt in LDCs. As expected, long-term indicators, *Solvency* and *dIncome*, are significant at the level 0.01, with high *t*-statistics of 4.03 and -3.77, respectively. The presence of a large public debt market drives the spread down at the significance level 0.01. This contradicts the collusion hypothesis and is consistent with the cross-monitoring hypothesis presented in Booth (1991). The size of the debtor liabilities in the LDC debt market has a significant positive impact on the spread. This likely to be related to risk exposure issues instead of information asymmetry. Lenders will require a higher premium in function of the share of this particular risk in their assets.

The estimated all-in margin that combines up-front fees and interest spread is significantly determined by all factors. Results, hence, vary relative to the spread. The 0.22 significance of *liquidity* is low, however. This is to be compared with the 0.954 level on the spread. Nevertheless, withdrawing *Liquidity* results in substantial loss in the R-squared value. Therefore, the final model keeps this variable. Generally speaking, short-term and volatility indicators have a higher impact on the all-in margin. Long-run solvency indicators have lower impacts. This provides evidence of the short-term factors being, indeed, remunerated through front-end payments. This contrasts with previous results. The interpretation of non-enforceability presented in Folkerst-Landau (1985) and Edwards (1986) are therefore inconsistent with the new data. Note the presence of a larger bond market also result significantly in a lower all-in remuneration at similar levels. This is inconsistent with the collusion hypothesis that predicts the size of the bond market should have an impact on the spread and fees separately, but not the combined payment. Therefore, the result provided on spread

is unlikely to be related to the inside information hypothesis either, but rather to more general financial issues like monitoring. The presence of a larger public debt market also makes the banker better off since this provides the debtor with a second source for later refinancing.

In columns (d) and (e), the share of the up-front payment is included in the model as an explanatory variable. This is intended to test the linear marginal impact as reported in equation [5]. Figures show that the share of the premium paid up-front has an opposite impact on spread and all-in margins. It is respectively negatively and positively significant at the level .01, with *t*-statistics of -3.76 and 2.748, respectively. This provides mixed evidence on fees being the result of an exogenous split of risk-remuneration. Equations [4] and [5] suggest that if the determination of the share was exogenous, it would have a negative impact on both spread and all-in. Moreover, the introduction of the share implies very different results suggesting strong multi-collinearities between the share and various indicators in particular indicators of liquidity shortage, variability of revenues, level of investment, and the size of the borrower's debt relative to the total LDC debt. This suggests endogenous fees may be determined by these factors.

The linear regressions on up-front fees are presented in the second part of table [4]. The dependent variable in columns (f) and (g) is the logarithm of the weighted mean of the up-front fees face value in percentage. The dependent variable in columns (h) and (i) is the logarithm of the equivalent margin in percentage above the floating basis rate. The dependent variable in columns (j) and (k) is the logarithm of the share of the debt combined cost (up-front fees and interest spread) paid up-front. The calculations of weights and present values were described in section 4.2. Results show strong evidence of fees being risk related. In both regressions on the face value and the equivalent margin, liquidity, growth of GNP per capita, variability of income are significant at level 0.01. The signs are consistent with hypotheses. The face value of fees are significantly influenced by national investments and the size of the bond market, while inflation has a positive significant

impact on the up-front fees calculated as a margin. The share of the total debt of the debtor in the total less-developed countries debt provides significant but contradictory results. It has a positive impact on the face value, whereas it is negative on the equivalent margin.

Therefore, there is strong evidence of fees determined by short-term indicators while the solvency indicator is unlikely to be a significant determinant. The equivalent margin fee is also related to factors of information availability (MktSize) and factors of asymmetric information (VdIncome).

The regression on the share of the remuneration paid up-front is presented in the second part of table [4]. The significance of the equation is rather low. The indicators of liquidity holding and uncertainty regarding revenues are both statistically significant at the level .01, with *t*-statistics of -6.38 and 3.22, respectively. The size of debt is here too negatively significant at level 0.01. Final models are represented in models (2).

Regressions of the face value and equivalent fees on other terms of the loan contract are presented in table [5]. I remind that sovereign debtors are hardly subject to any covenants apart from the standard covenants described in section 2, namely negative pledge and *pari-passu*. Contracts are not subject to any negative financial covenants. No seniority constraints are designed. The results presented in table [5] replicate the estimations performed by Mills and Terrell (1984) on loans issued during the period 1981-1983. I too find a highly significant relationship between the fees in face value or equivalent margin form and the spread and the duration of the loan. The estimated average life is actually of a lower explicative performance. These results are similar to Mills and Terrell (1984). The authors interpreted them as evidence of fees functioning as a device for service compensation along with hiding information to public markets, namely the fixed-cost and the inside information hypotheses. In the light of the results reported in table [4], the positive impact of the spread on the fees is likely to be related to colinearity rather than a determination

relationship. I showed they are determined by a common set of macroeconomic factors, but there are outstanding differences. Moreover, the error terms provide poor normality features, while the error terms collected from the estimation of model (2) respond positively to normality tests.

b. Estimate of the Extended Non-linear Model

In this section the least-squared estimates of the non-linear model described by equation [4] are presented. I implement the non-linear ordinary least squared model with Stata®. Starting values are derived from table [4]. Results are reported in table [6].

Respective coefficients associated to *Inflation*, *Liquidity*, *Solvency*, *dIncome* and *V(dIncome)* are found to be significant at the level 0.03, with *t*-statistics of 3.67, -2.56, 2.15, -2.29, and 3.44. Respective signs are consistent with the hypotheses. The size of the debt market relative to the LDC debt market and the share of bonds in the country's debt financing are found to be irrelevant to explain the spread.

c. A Direct Comparison with Public Markets

This section is intended to provide additional evidence on the little explanatory power of the inside information hypothesis to explain the presence of fees. I present a contract-by-contract comparison of pricing on pairs of bonds and loans that present sufficient common characteristics. Indeed, previous literature has failed in determining which of a syndicated and a bond loan presents a higher spread. Both comparative studies presented by Folkerts-Landau (1985) and Eichengreen and Mody (2000) help very little since they are based on pooled data sets. They are designed to highlight the respective determinants of spreads on bank loans and primary bond issues instead of determining which of the two presents higher spreads. In my study, the sample of bond spreads is constituted of all euro-currency primary issues of public loans launched by LDCs sovereigns during the period 1983-1997. They are floating rate denominated so that the spread can be compared more easily. All bonds are issued between 1983 and 1997. Descriptive statistics are presented in table[7].

Eichengreen and Mody (2000) find an international bank debt market that reacts to macroeconomic and financial information in the same manner as the primary bond market. They intuitively explained this stylised fact by the substantial interconnection of actors in both markets. However, Eichengreen and Mody (2000) also find bond primary bond spreads to be as much as three times higher than syndicated loans spreads on a monthly pooled data set.[18]

I calculate the difference between the spread designed on syndicated loans and bonds at the primary issue date. Both types of loans display the same floating index and the lifetime is similar. The descriptive figures are displayed in table [8]. The figures are displayed in function of the number of days separating the two issues. Results show that spreads on bank loans are higher than spreads on floating-rate bonds in general. [19]

For more detailed evidence, table [9] displays terms on all pairs of banks loans and bonds launched in a less than 60 days window. Pairs of floating-rate notes are constituted of 25 syndicated loans and 24 bonds. None of the eleven pairs of contracts designed in the same currency and based on the same floating benchmark rate provides with a lower spread on bank loans. The sample of fixed-rate notes is constituted of six bank loans and eight bonds. For facility reasons, the pairs of fixed interest rate loans are not reported in the table. Again, fixed interest rates are found at least as high as public debt interest rates. Noteworthily, larger spreads are connected to troubled periods. Therefore, if one still assumes banks should be helpful to their borrowers by misleading public markets on their creditworthiness, one must admit banks give little support to their customers in particularly relevant situation.

[18] Note that authors mention the inclusion of fees in the spreads on bank loans. However, details of included fees and calculation of this sort of all-in margin is missing.
[19] I deleted the outlier concerning the Argentine Republic in 1995 where I found a difference of -270 bp.

These results provide additional evidence suggesting the inside information hypothesis cannot explain the presence of up-front fees. Up-front fees are instead aimed at resolving sovereignty and principal-agent issues.

6. CONCLUSION

Important contributions have established a difference in the pricing of private and public sovereign debt in developing countries. However, the studies of private debt pricing are based on the sole interest rate premium. The next step involves a deeper analysis of other payment terms. In particular, previous authors have mentioned the likely importance of fees paid up-front i.e. at the signature of the contract.

This paper suggests new major innovative stylised facts about pricing structure on LDC sovereign syndicated loans. The study focuses on the up-front fees. It is based on a uniquely extensive sample of bank loans contracted or guaranteed by 58 less-developed countries sovereigns in the period from 1983 until 1997. This permits to isolate the pure sovereign risk from any commercial risk. All reported details also allow for the calculation of the equivalent margin on the utilisation period for all individual costs.

The findings suggest a substantial impact of the short-run risk and agency costs on the up-front fees. Unlike the sole interest spread, the all-in interest margin encompasses these short-run risk factors. This finding questions previous results derived from the analysis of the sole spread. Moreover, the results reject the two hypotheses suggested by Terrell and Mills (1984) of up-front payments related to fixed-cost compensation and information dissimulation. Last, up-front fees compensate for agency costs.

The main insight of this study is that banks demand payment for all types of sovereign risk in an identical manner public debt holders do. The difference is that, instead of the spread, up-front

fees are intended to capture the risk of renegotiations. The superiority in the design of the asset also makes private debt dominant on sovereign debt markets relative to public debt.

The results of the paper have relevance for developing countries, where external government debt is a primary source of finance. The findings are also relevant for emerging markets public debt holders who consider interest premium on sovereign bank loans as a more appropriate proxy for sovereign creditworthiness.

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Table 1: Statistics values of the terms on the syndicated loan contracts to LDC sovereigns during the period, 1983-1997

Spread is the average spread over the loan lifetime; Up-front fees is the weighted average of up-front fees in percentage; Annualised values are the estimated equivalent yearly margin on the utilisation period; Combined all-in margin is the equivalent yearly margin that combines interest spreads and up-front fees. All mean costs values are reported in percentage. Lifetime is the lifetime of the loan in number of years; Amount is the size of the issue in million of constant 1995 US dollars.

Items	Observations	Mean	Std. Dev.	Min.	Max.
Spread	679	1.110	0.792	0.100	6.330
Up-front fees	435	0.743	0.772	0.000	5.210
Annualised up-front fees	435	0.297	0.349	0.000	3.160
Combined all-in margin	679	1.340	0.936	0.100	7.810
Lifetime in years	679	6.870	3.570	0.250	25.25
Size (1995 million US$)	679	153.0	452.0	0.015	7666

Table 2: Distribution and mean values of spread and share of remuneration in the form of up-front fees by signature year on the syndicated loan contracts to LDC sovereigns during the period, 1983-1997

Obs. is the number of observations; Mean is the mean value; Spread is the average spread over the loan lifetime (percentage); Share is the share of overall remuneration (spread and up-front fees) paid in the form of up-front fees.

Year	Observations		Mean		Year	Obs.		Mean	
	Share	Spread	Share	Spread		Share	Spread	Share	Spread
1983	74	114	0.220	1.051	1991	16	26	0.300	0.790
1984	69	109	0.165	1.481	1992	18	26	0.301	1.078
1985	46	80	0.143	1.338	1993	21	30	0.200	1.085
1986	26	41	0.181	0.759	1994	11	15	0.197	1.025
1987	26	51	0.190	0.924	1995	20	25	0.190	1.725
1988	28	39	0.199	0.655	1996	23	33	0.132	0.812
1989	12	19	0.197	0.631	1997	28	47	0.167	1.498
1990	17	25	0.276	0.586	Total	435	679	0.194	1.111

Table 3: List of countries and pricing design on sovereign loan contracts during the period, 1983-1997

Obs. is the number of observations; Spread is the average spread over the loan lifetime (percentage); Share is the share of the combined remuneration (spread and up-front fees) paid in the form of up-front fees; Fees is the weighted average value of the up-front fees in percentage.

Country	Obs.	Spread	Share	Fees	Country	Obs.	Spread	Share	Fees
Algeria	10	0.688	15.0	0.526	Mauritius	1	3.000	.	.
Antigua	1	2.500	1.20	0.125	Mauritania	1	1.500	24.0	1.266
Argentina	9	1.408	17.0	0.542	Mexico	5	2.410	15.6	1.012
Burundi	1	1.875	27.5	1.500	Nigeria	15	0.867	54.7	4.330
Brazil	114	1.977	13.3	1.350	Nepal	1	1.250	13.6	0.559
Barbados	4	1.311	8.80	0.498	Oman	10	0.437	17.8	0.334
Chile	3	1.500	.	.	Panama	3	2.167	18.8	1.500
Congo	6	1.729	27.6	1.600	Peru	1	2.250	7.50	0.750
China	22	0.698	18.5	0.545	Philippines	12	1.207	7.20	0.367
Cameroon	2	0.875	8.20	0.377	Pakistan	27	.9765	16.1	0.378
Colombia	18	1.324	13.0	0.839	Paraguay	3	2.000	22.3	1.482
Czech Rep.	1	0.450	6.00	0.068	Romania	1	5.600	.	.
Ecuador	2	0.688	15.8	0.554	Russia	4	4.769	12.5	0.334
Ethiopia	1	0.750	.	.	South Africa	12	0.573	15.8	0.205
Gabon	3	1.041	21.4	1.070	Seychelles	1	2.000	21.7	0.807
Ghana	4	0.725	45.6	0.551	South Korea	31	0.483	29.1	0.762
Hungary	9	0.603	29.3	0.563	Sri Lanka	2	1.062	13.2	0.375
Indonesia	2	1.500	4.50	0.300	Slovak Rep.	3	0.708	8.60	0.302
India	55	0.385	16.0	0.334	Soviet Union	1	0.875	.	.
Iraq	2	0.875	.	.	Slovenia	5	1.012	7.40	0.277
Ivory Coast	2	1.688	19.9	1.828	Thailand	22	0.694	16.5	0.344
Jamaica	3	1.250	.	.	Turkey	135	1.115	23.4	0.637
Jordan	8	0.594	16.1	0.467	Trinidad	10	1.294	17.1	0.533
Kazakhstan	1	3.250	4.50	0.317	Tunisia	21	0.624	15.7	0.418
Kenya	2	0.750	52.6	0.454	Tanzania	3	1.333	47.9	1.125
Lithuania	1	2.500	28.8	0.500	Uruguay	1	1.625	.	.
Malaysia	42	0.335	13.8	0.270	Venezuela	3	1.542	11.6	0.500
Macedonia	1	4.000	14.4	0.500	Zambia	1	1.500	.	.
Morocco	3	1.292	15.0	0.148	Zimbabwe	12	0.835	44.2	0.488

Table 4: Regression estimates of banking contracts pricing terms on macroeconomic indicators; t-statistics in square parentheses.

The dependent variables in columns (a)-(b) and (d) is the logarithm of the average spread over the basis interest rate. The dependent variable in columns (c) and (e) is the logarithm of the equivalent margin above benchmark that combines the interest spread and up-front fees. Exogenous variables are: i is the government currency-and-maturity related monthly average bond yield; In‡ation is the yearly month-to-month consumer prices increase; Liquidity is the foreign currencies reserves to short-term debt ratio, p-test (rejection probability) in parentheses; solvency is the ratio of public and publicly guaranteed long-term debt to GNP; dIncome is the last …ve years GNP-per-capita returns average; V(dIncome) is the variability of income per capita return in the last …ve years; Investment is the national gross investment to GNP ratio; MktSize is the share of the country private creditors debt relative to all LDC debt; Bond is the share of private creditors debt in the form of bonds; Tax-Spare indicates the presence of a clause exempting from withholding tax.

Regressors	(a)	(b)	(c)	(d)	(e)
ln(1+i)	-2.683**	-2.470**	-2.871**	-0.612	-1.107
	[-2.240]	[-2.450]	[-2.380]	[-0.460]	[-0.830]
ln(Share)	.	.	.	-0.150***	0.109***
	.	.	.	[-3.760]	[2.748]
In‡ation	0.213***	0.214***	0.193***	0.402***	0.377***
	[4.541]	[4.600]	[4.081]	[4.958]	[4.674]
Liquidity	-0.001	.	-0.022	-0.031	-0.035
	[.0180]	.	[-1.220]	[-1.350]	[-1.500]
	(0.954)	.	(0.223)	(0.176)	(0.133)
Solvency	0.567***	0.587***	0.507***	0.587***	0.541***
	[4.027]	[4.612]	[3.575]	[3.359]	[3.110]
dIncome	-3.770***	–3.765***	-4.523***	-2.797***	-3.950***
	[-4.143]	[-4.147]	[-4.941]	[-2.686]	[-3.813]
V(dIncome)	0.264***	0.261***	0.371***	0.139*	0.161*
	[3.070]	[3.070]	[4.292]	[1.646]	[1.922]
Investment	-1.308***	-1.233***	-1.149***	-0.621	-0.353
	[-3.070]	[-3.380]	[-2.680]	[-1.259]	[-0.721]
MktSize	3.155***	3.174***	2.710***	0.470	0.420
	[4.967]	[5.023]	[4.237]	[0.498]	[0.448]
Bond	-0.350***	-0.331***	-0.314**	-0.334**	-0.313**
	[-2.610]	[-2.740]	[-2.330]	[-2.197]	[-2.069]
Tax-Spare	-0.780***	-0.777***	-0.791***	-0.870***	-0.890***
	[-7.100]	[-7.120]	[-7.160]	[-6.540]	[-6.780]
Observations	616	616	616	390	390
F	56.83	67.84	56.11	35.95	31.87
R-squared	0.570	0.594	0.567	0.590	0.561

* indicates rejection of the null at the 10 percent signi…cance level, ** indicates 5 percent signi…cance level, and *** indicates 1 percent signi…cance level.

Table 4: (continued)

The dependent variable in column (f)-(g) is the logarithm of the up-front fees in percentage as it appears on the contract. The dependent variable in columns (h)-(i) is the logarithm of the up-front fees expressed as an equivalent margin above the basis rate. The dependent variable in column (j)-(k) is the share of the up-front payment in the all-in cost that combines up-front fees and interest spread. Exogenous variables are: i is the government currency-and-maturity related monthly average bond yield; In‡ation is the yearly month-to-month consumer prices increase; Liquidity is the foreign currencies reserves to short-term debt ratio, p-test (rejection probability) in parentheses; solvency is the ratio of public and publicly guaranteed long-term debt to GNP; dIncome is the last …ve years GNP-per-capita returns average; V(dIncome) is the variability of income per capita return in the last …ve years; Investment is the national gross investment to GNP ratio; MktSize is the share of the country private creditors debt relative to all LDC debt; Bond is the share of private creditors debt in the form of bonds; Tax-Spare indicates the presence of a clause exempting from withholding tax.

Regressors	(f)	(g)	(h)	(i)	(j)	(k)
ln(1+i)	5.070***	5.360***	-0.140	.	0.872	.
	[2.517]	[2.710]	[-0.060]	.	[0.506]	.
In‡ation	-0.105	.	0.363***	0.387***	-0.0126	.
	[-0.857]	.	[2.570]	[2.790]	[-0.120]	.
Liquidity	-0.123***	-0.127***	-0.211***	-0.220***	-0.159***	-0.159***
	[3.630]	[-3.910]	[-5.410]	[-5.81]	[-5.500]	[-6.380]
Solvency	0.329	.	0.319	.	-0.200	.
	[1.240]	.	[1.040]	.	[-0.884]	.
dIncome	-6.190***	-6.260***	-4.610***	-5.850***	-0.598	.
	[-3.920]	[-4.180]	[-2.540]	[-3.890]	[-0.444]	.
V(dIncome)	0.414***	0.401***	0.546***	0.536***	0.346***	0.297***
	[3.270]	[3.250]	[3.740]	[3.820]	[3.202]	[3.220]
Investment	1.097*	1.199*	-0.830	.	-0.429	.
	[1.470]	[1.620]	[0.964]	.	[-0.673]	.
MktSize	4.470***	3.222***	-2.575*	-2.880*	-2.700**	-2.490***
	[3.149]	[4.450]	[-1.580]	[-1.870]	[-2.270]	[-5.000]
Bond	-0.413*	-0.432*	-0.036	.	0.249	0.326**
	[-1.800]	[-1.900]	[-.1360]	.	[1.270]	[2.113]
Tax-spare	-0.512**	-0.498**	-0.716***	-0.723***	0.122	.
	[-2.550]	[-2.510]	[-3.090]	[-3.170]	[0.431]	.
N	390	390	390	390	390	390
F	15.03	23.24	11.20	22.26	6.32	14.11
R-squared	0.359	0.355	0.2948	0.290	0.191	0.2163

* indicates rejection of the null at the 10 percent signi…cance level, ** indicates 5 percent signi…cance level, and *** indicates 1 percent signi…cance level.

Table 5: Linear regression estimates of up-front fees on other terms of the loan.

The dependent variable in column (a) is the weighted average of the up-front fees in percentage as they appear on the contract. The dependent variable in column (b) is the weighted average of the up-front fees in percentage as an equivalent margin above the basis rate. Exogenous variables are: Spread is the spread above the basis rate; Lifetime is the life length of the loan.

	(a)			(b)		
Regressors	Coe¤.	t-Student	p-value	Coe¤.	t-Student	p-value
Spread	0.342	7.98	0.000	0.121	6.30	0.000
Lifetime	0.041	4.09	0.000	-0.027	-5.99	0.000
Constant	0.094	1.06	0.288	0.330	8.29	0.000
Observations	435			435		
F	39.40			38.85		
R-squared	0.155			0.153		

Table 6: Non-linear Least-squared estimates of banking contracts interest spread on macroeconomic indicators.

The endogenous variable is ln(spread) the logarithm of the average spread over the benchmark. Reported exogenous variables are: In‡ation is the yearly month-to-month consumer prices increase; Liquidity is the foreign currencies reserves to short-term debt ratio; solvency is the ratio of public and publicly guaranteed long-term debt to GNP; dIncome is the last …ve years GNP-per-capita returns average; V(dIncome) is the variability of income per capita return in the last …ve years; Investment is the national gross investment to GNP ratio; MktSize is the share of the country private creditors debt relative to all LDC debt; Bond is the share of private creditors debt in the form of bonds.

Regressors	Coef.	Std. Dev.	t-Statistics	p-values
$\bar{}_0$ (Constant)	0.206	0.198	1.040	0.298
$\bar{}_1$ (In‡ation)	0.509	0.139	3.670	0.000
$\bar{}_2$ (Liquidity)	-0.075	0.029	-2.560	0.011
$\bar{}_3$ (Solvency)	0.566	0.263	2.150	0.032
$\bar{}_4$ (dIncome)	-3.537	1.548	-2.290	0.023
$\bar{}_5$ (V(dIncome))	0.793	0.231	3.440	0.001
$\bar{}_6$ (Investment)	-0.978	0.673	-1.450	0.147
$\bar{}_7$ (MktSize)	-1.128	1.492	-0.760	0.450
$\bar{}_8$ (Bond)	-0.113	0.187	-0.600	0.546
N=390	R^2=.52		F=31.64	

Table 7: Descriptive table of the sample of euro-currency ‡oating rate denominated bonds issued by LDCs sovereigns during the period, 1983-1997

Variables are: Country is the issuing country; obs. is the number of observations; Spread is the mean value of the spread.

Country	Obs.	Spread	Country	Obs.	Spread
Argentina	5	2.010	Panama	1	1.000
Brazil	2	1.840	Pakistan	3	2.690
China	11	0.800	Russia	3	0.729
Colombia	2	1.260	South Africa	1	0.250
Czech Republic (City of Pragues)	1	0.230	South Korea	13	0.249
Ecuador	1	4.750	Sri Lanka	1	1.500
India	3	0.400	Thailand	4	0.125
Malaysia	3	0.100	Turkey	3	1.750
Moldavia	1	2.500	Trinidad&Tobago	1	1.370
Mexico	9	2.190	Venezuela	7	1.860

Table 8: Descriptive table of the di¤erence between the …rst spread designed on syndicated loans and public bonds on a sample of euro-currency ‡oating rate loans issued by LDCs sovereigns during the period, 1983-1997

Variables are: obs. is the number of observations; Mean is the mean value of the di¤erence; Negative is the number of strictly negative observations.

	All observations			Obs. with up-front fees		
	Obs.	Mean	Negative	Obs.	Mean	Negative
30 days	6	0.22	0	2	0.188	0
60 days	12	0.22	0	6	0.125	0
90 days	15	0.17	2	8	0.014	2
180 days	23	-0.00	7	15	-0.178	7
360 days	55	0.09	18	41	0.032	16

Table 9: Interest spreads and lifetime on all pairs of syndicated loans and public bonds launched by LDC sovereigns included in a gap period lower or equal to 60 days during the period, 1983-1997

Variables are: Bank is the interest spread in percentage respectively on banking loans and on bonds; Fees is the equivalent additional margin in percentage due to the presence of up-front fees; Lifetime is the lifetime of respectively the syndicated loan and the bond; Dummies are dummy variables indicating the currency and the basis rate : the 1-value indicates identical currency- and/or basis rate on the private and the public debt issues.

Pair	Interest design			Lifetime		Dummies	
Number	Bank	Fees	Bond	Bank	Bond	Currency	Basis
1	0.500	0.260	0.125	8	12	1	1
2	0.250	0.035	0.188	10	10	1	1
3	0.250	0.071	0.188	10	10	1	1
4	1.125	0.152	0.550	2	5	1	1
5	0.550	0.000	0.350	15	3	1	1
6	1.750	1.457	1.750	3	1	1	1
7	1.750	1.457	1.750	3	3	1	1
8	1.750	1.457	1.750	3	2	1	1
9	3.000	0.092	0.875	10	7	1	1
10	5.375	0.000	5.375	2	2	1	1
11	5.375	0.000	5.375	2	2	1	1
12	0.375	0.012	0.250	7	5	0	1
13	1.500	0.298	1.375	7	5.25	0	1
14	0.125	0.000	0.062	1.5	20.25	0	1
15	0.625	0.483	0.250	8	7	0	1
16	0.125	0.078	0.125	10	20	0	1
17	0.500	0.132	0.375	8	15	0	1
18	1.250	0.271	0.188	8	5	0	1
19	0.550	0.000	0.300	15	5	0	1
20	0.875	0.000	0.150	3	4	0	1
21	0.875	0.000	0.125	3	3	0	1
22	0.500	0.000	0.188	10	10	1	0
23	0.100	0.000	0.375	8	15	0	0
24	0.100	0.000	0.125	8	20	0	0
..	..	..	..	..	..	..	..
35	0.100	0.000	0.125	8	20	0	0
36	0.100	0.446	0.250	8	7	0	0
37	0.780	0.000	0.275	3	3	0	0