

International Finance Discussion Papers

Number 243

April 1984

FEDERAL TAXATION AND THE DOMESTIC-FOREIGN
ASSET CHOICE OF A U.S. BANK

by

Allen B. Frankel

NOTE: International Finance Discussion Papers are preliminary materials circulated to stimulate discussion and critical comment. References in publications to International Finance Discussion Papers (other than an acknowledgment by a writer that he has had access to unpublished materials) should be cleared with the author or authors.

Title: Federal Taxation and the Domestic-Foreign Asset Choice of a U.S. Bank

Author: Allen B. Frankel

Address: Board of Governors of the Federal Reserve System
Washington, D. C. 20551

Date: June 1984

Series and Number: International Finance Discussion Papers, No. 243

Pages: 22

Price: No charge

JEL Subject Classification: 441, 312

Keywords: Bank lending to LDCs, U.S. taxation of foreign-source income.

This paper develops a simple model of US bank taxation which emphasises the influence of tax rules on banks' portfolio choices among domestic and foreign assets. It is a thesis of this paper that US tax policy for banks provides part of the explanation of the "why" of the large credit exposures of US banks in the developing countries. This contribution encompasses not only the response of banks to the tax-based financial incentives but also the perception of banks that the tax rules were meant to be interpreted as signals of a general US public policy stance favouring bank financing of the developing countries' external borrowing requirements.

April 1984

Federal Taxation and the Domestic-Foreign

Asset Choice of a US Bank

by Allen B. Frankel*

1. Introduction

Several explanations have been offered for the prominence of commercial banks among the creditors of the developing countries. One explanation, which has gathered acceptance, focuses on the government-insured status (deposit insurance and equity-preserving access to official credit facilities) of banks' creditors. This status isolates banks' compensation of their creditors from the performance results for their loan portfolio choices.

The government-insurance explanation of the importance of commercial banks among the creditors of the developing countries is not a fully-developed view of government involvement in banks' credit decisions. In particular, it does not account for either banks' preferences for foreign assets or bank supervisors' acceptance of such choices. The insurance explanation does not recognise the general rôle assumed by public policy with respect to the inclusion of credits to developing countries in banks' portfolios and, in particular, does not take into account the tax rules chosen to guide the operations of the credit allocation mechanism.

The US banking community has indicated its awareness of the guidance function of tax policy. In a 1979 memorandum the American Bankers Association argued:

"In some countries, the United States must, for political and strategic reasons, maintain its financial position, including the availability of both private and governmental credits and loan guaranties. To the extent that changes in tax regulations cause US banks to withdraw from foreign markets, this goal of the United States would be undermined. The American Bankers Association certainly claims no expertise in US foreign policy, but we do wonder what the reaction would be in the countries of the developing world if the loan windows of this nation's commercial banks are closed to them."¹

This paper develops a simple model of US bank taxation which emphasises the influence of tax rules on banks' portfolio choices among domestic and foreign assets. It is a thesis of this paper that US tax policy for banks provides part of the explanation of the "why" of the large credit exposures of US banks in the developing countries. This contribution encompasses not only the response of banks to the tax-based financial incentives but also to the perception of banks that the tax rules were meant to be interpreted as signals of a general US public policy stance favouring bank financing of the developing countries' external borrowing requirements.

The paper is organised as follows: Section 2 develops a simple model of the taxation of US banks. Section 3 discusses the implications of the creditability of foreign taxes paid on gross interest receipts by a US bank against the bank's US tax liability. Section 4 discusses the relationship between the foreign tax credit and bank portfolio management. Section 5 examines particular US tax rules that affect the creditability of foreign taxes for US banks. Section 6 presents the concluding remarks.

2. A Simple Model of US Bank Taxation

Consider the three classes of assets a US bank may invest in, classified according to the tax status of related income: foreign taxable (F_t), domestic taxable (D_t) and domestic non-taxable (D_n). The last grouping includes investments in the federally tax-exempt securities of US state and local governments. The assumed certain market rates of return on each of these three homogeneous classes of bank assets are r_t^f , r_t^d , and r_n^d , respectively. Later in the paper, the consequences of a relaxation of the homogeneity assumption will be examined. The total assets (A) of the bank are equal to the sum of its holdings of the three types of assets ($A = F_t + D_t + D_n$).

It follows that the bank's worldwide gross income (WWGI) may be expressed as:

$$\text{WWGI} = r_t^f F_t + r_t^d D_t + r_n^d D_n \quad (1)$$

There are three basic principles of US taxation of a US taxpayer's foreign source income.² First, to avoid double taxation of US taxpayers' foreign income, the United States defers to foreign host governments with respect to the taxation of foreign income by allowing US tax credits for foreign taxes. Second, US tax credits for foreign tax payments are not allowed to reduce US taxes against US domestic taxable income. Third, a premise underlying US tax regulations for the deductibility of interest is that all sources of borrowed funds to a bank are interchangeable or fungible. That is, the tax-assignment of a bank's interest expense to foreign income is simply based on the ratio of its foreign to its total assets. Thus, all interest expense associated with a bank's financing of its US tax-exempt investments is assigned as a tax-deduction against domestic taxable income.³

The above three principles are reflected in the derivation of a US bank's worldwide net after-tax income ($WWNI_a$) from its worldwide net before-tax income ($WWNI_b$). To simplify the derivation, only interest-related earnings and expenses are considered.

$$WWNI_b = WWGI - E \quad (2)$$

$$E_f = \frac{F}{A} E \quad (3)$$

$$E_d = E - E_f \quad (4)$$

where

E = a US bank's total interest expense

E_f = a US bank's interest expense apportioned as a deduction against its foreign source taxable income

E_d = a US bank's interest expense apportioned as a deduction against its domestic taxable income

It is assumed that the modelled US bank is subject to foreign governments' taxation of its gross foreign source earnings and to only

US taxation of its net income.⁴ Such taxes against the gross interest earnings of creditors are referred to as withholding taxes because of the method by which they are collected. The US bank's foreign and gross (before credit) US tax liabilities may be computed as follows:

$$T_f = t_f r_t^f F_t \quad (5)$$

$$T_d = t_d (r_t^f F_t + r_t^d D_t - E) \quad (6)$$

where

T_f = total foreign withholding taxes paid against gross interest earnings of a US bank

t_f = foreign rate of withholding taxation

T_d = gross (before foreign tax credit) US tax liability of a US bank

t_d = US rate of taxation

Under US tax rules, a bank's limit on the amount of its foreign tax payments creditable against its US tax liability (T_f^*) is equal to:

$$T_f^* = \frac{(r_t^f F_t - E_f)}{(WWNI_b - r_n^d D_n)} [t_d (WWNI_b - r_n^d D_n)] = t_d (r_t^f F_t - E_t - E_f) \quad (7a)$$

when $r_t^d D_t - E_d \geq 0$

and equal to $T_f^* = t_d (WWNI_b - r_n^d D_n) = T_d \quad (7b)$

when $r_t^d D_t - E_d \leq 0$ (a domestic taxable loss)

Based on the above, expressions for a US bank's worldwide net after-tax income ($WWNI_a$) may be derived - see Figure 1.

$$\begin{aligned} \text{WWNI}_a &= \text{WWNI}_b - (T_d - T_f) - T_f & (8a) \\ &= \text{WWNI}_b - T_d \end{aligned}$$

when $T_f^* > T_f$

where $T_d - T_f = \text{net US tax payment}$

$$\text{WWNI}_a = \text{WWNI}_b - (T_d - T_f^*) - T_f \quad (8b)$$

when $T_f > T_f^*$

where $T_d - T_f^* = \text{net US tax payment}$

In turn, equation (8b) may be rewritten to reflect the two computations of T_f^* when a US bank's domestic taxable operations are profitable (8b.1) and when they are not profitable (8b.2).

$$\begin{aligned} \text{WWNI}_a &= \text{WWNI}_b - T_d - [T_f - t_d(r_t^f F_t - E_f)] \\ &= \text{WWNI}_b - T_d - T_f + T_f^* & (8b.1) \end{aligned}$$

when $r_t^d D_t - E_d \geq 0$

$$\text{WWNI}_a = \text{WWNI}_b - T_d - [T_f - t_d(\text{WWNI}_b - r_n^d D_n)] = \text{WWNI}_b - T_f \quad (8b.2)$$

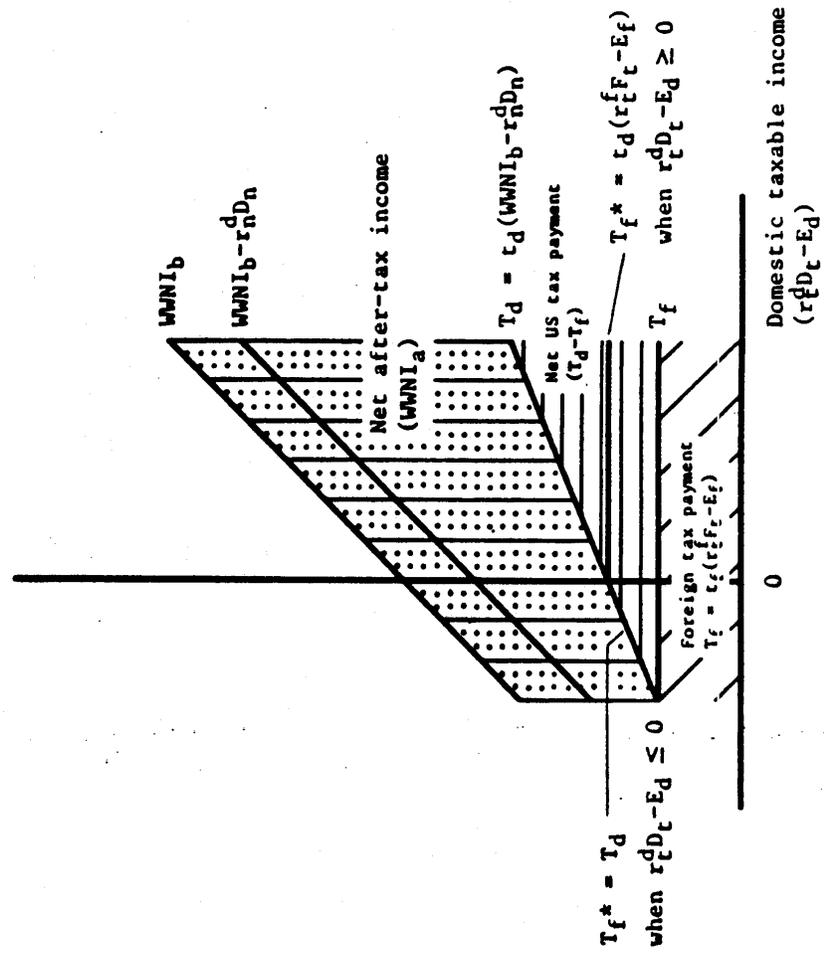
when $r_t^d D_t - E_d < 0$

Figure 1

Derivation of a US bank's net after-tax income

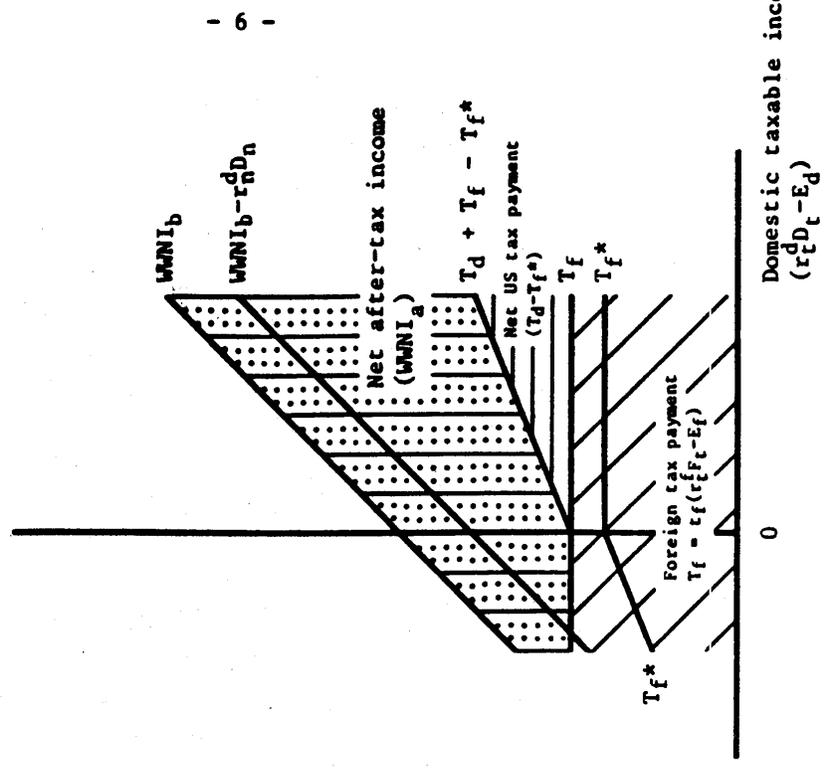
1a

$T_f^* \geq T_f$ (equation 8a)



1b

$T_f > T_f^*$ (equations 8b.1 and 8b.2)



Based on the above, the relationship between the bank's net after-tax income ($WWNI_a$) and the level of interest rates may be derived. Consider a bank with a given asset-mix ($\bar{F}_t + \bar{D}_t + \bar{D}_n = \bar{A}$). An across-the-board change in the interest rate level (r) is represented as:

$$dr = dr_t^f = dr_t^d = dr_t^n = d \left(\frac{E}{A} \right) \quad (9)^5$$

Given these assumptions, the partial derivatives $\delta WWNI_a / \delta r$ may be signed for the three cases represented by (8a), (8b.1) and (8b.2) respectively.

$$\frac{\delta WWNI_a}{\delta r} = t_d \bar{D}_n > 0 \quad (10a)$$

when

$$T_f^* > T_f$$

$$\frac{\delta WWNI_a}{\delta r} = t_d \bar{D}_n - t_f \bar{F}_t \geq 0 \quad (10b.1)$$

when

$$T_f > T_f^* \text{ and } r_t^d \bar{D}_t - E_d \geq 0$$

$$\frac{\delta WWNI_a}{\delta r} = - t_f \bar{F}_t < 0 \quad (10b.2)$$

when

$$T_f > T_f^* \text{ and } r_t^d \bar{D}_t - E_d < 0$$

The signs of $\delta WWNI_a / \delta r$ in the three cases reflect two endowment effects that link a bank's net after-tax income to the interest rate level. Firstly, the deduction in the computation of a bank's domestic taxable income of the interest costs for its investment in tax-exempt assets. Secondly, foreign withholding taxes are assessed against gross interest receipts. Only the first, and not the second, endowment effect enters into the computation of the net after-tax income of a bank with an excess foreign tax credit limitation (10a). On the other hand, only the second effect matters for a bank with a domestic taxable loss and excess foreign tax credits (10b.2). Finally, the sign of $\delta WWNI_a / \delta r$ is determined by the

net of the two effects when a bank has excess foreign tax credits and positive domestic taxable income.

The above discussion points to a relationship between the level of interest rates and the portfolio composition choices of banks, namely, a bank's net after-tax income would rise in response to the following changes in asset mix:

$$\left. \begin{array}{l} \frac{D_n}{A} = F(r^+) \\ \frac{F_t}{A} = F(r^-) \end{array} \right\} \text{when } T_f > T_f^* \quad (11)$$

and

$$\frac{D_n}{A} = F(r^+) \quad \text{when } T_f^* \geq T_f$$

That is, a bank with excess foreign tax credits increases its net after-tax income by reducing the proportion of its portfolio devoted to foreign taxable assets in response to an increase in the level of interest rates.

The carryover rule of US foreign tax credit regulations lessens the sensitivity of bank portfolio choices to interest rate cycles. The carryover rule allows a US taxpayer to carryback over two years, and then carryforward over five years, excess foreign tax credits from its current tax years. The rule thus accommodates the investment by a bank, over an interest rate cycle, of a larger proportion of its portfolio in foreign taxable assets with relatively high acquisition and/or liquidation costs - characteristic of loans to developing countries. That is, the carryover rule loosens the constraint imposed on banks' portfolio selection by the foreign tax credit limitation.

After-Tax Equivalent Rates of Return

Market rates of return relationships are derived from equations 8a, 8b.1 and 8b.2 such that a bank (under assumed conditions) would not be able to alter its net after-tax income by rearranging its portfolio. The purpose of this exercise is to demonstrate that information about the tax

status of a bank, as well as market rate relationships, is required for the identification of profitable rearrangements of banks' asset holdings. Below, the market rates of return relationships are for three cases that are described by two conditions: a bank's foreign tax credit position (whether it is above or below its foreign tax credit limit) and the profitability of its domestic taxable operations.

$$\begin{aligned} \text{Case 1:} \quad & T_f < T_f^*, r_t^d D_t - E_d \geq 0 \\ & r_t^f = r_t^d = \frac{r_n^d}{1 - t_d} > r_n^d \end{aligned} \quad (12)$$

$$\begin{aligned} \text{Case 2:} \quad & T_f > T_f^*, r_t^d D_t - E_d \geq 0 \\ & r_t^f \geq r_t^d = \frac{r_n^d}{1 - t_d} > r_n^d \end{aligned} \quad (13)$$

$$\begin{aligned} \text{Case 3:} \quad & T_f > T_f^*, r_t^d D_t - E_d < 0 \\ & r_t^f = \frac{r_t^d}{1 - t_f} > r_t^d = r_n^d \end{aligned} \quad (14)$$

3. US Tax Creditability of Foreign Withholding Taxes

Let us reconsider the asset choice problem of a US bank when it is assumed that market rates of return on foreign taxable assets are non-negatively related to the rates of tax withholding imposed by various countries on gross interest payments by home-country borrowers to foreign bank creditors. In effect, it is assumed that only when the rate of tax withholding is above a threshold rate does the market require borrowers to compensate bank creditors for foreign tax payments. This section examines when a bank is able to increase its net after-tax income as a result of its payment of foreign withholding taxes.

$$\underline{T_f < T_f^*}$$

Consider a bank with an initial asset-mix such that, at given interest rates, $T_f < T_f^*$. Under such circumstances, the bank can profit by increasing the portfolio share of high return foreign taxable assets. The bank will profit from the rearrangement as long as it does not bear the total incidence of its larger withholding tax payments. Overall, the indicated revision of portfolio shares can increase the bank's net after-tax income, increase its payment of foreign taxes and reduce its net payment of US taxes.

A numerical example may be useful to illustrate the creation of the above arbitrage opportunity under US tax rules. It is assumed that the bank's US tax rate is 50 per cent. and that it has a 10 per cent. cost of funds. The bank is assumed to be faced with the choice of adding to its holdings either a domestic loan (no withholding tax) or a foreign taxable loan with a 25 per cent. withholding tax.

Comparisons of the after-tax profitability of the loan options are shown in Table 1. Columns 2 and 3 are, respectively, based on assumptions that the borrower bears the full initial incidence of the 25 per cent. withholding tax and the bank bears the full initial incidence.⁶

Overall, Table 1 reveals that under US tax rules a foreign taxable loan can be more profitable (line 8) than a domestic loan with an equal, or even smaller, adjusted gross spread (line 5). The domestic and foreign loans reflected in columns 1 and 2, respectively, would provide the bank with equal 200 basis points adjusted gross spreads (line 5). The 200 basis points larger net spread (line 8) for the foreign loan, as compared with the domestic loan, is accounted for by the availability of the 400 basis points US foreign tax credit (line 8) that more than offsets the larger pre-credit US tax liability on the foreign loan (line 6).

By contrast, the domestic and foreign loans reflected in columns 1 and 3, respectively, would provide the bank with equal 100 basis points net spreads (line 8). A comparison of the adjusted gross spreads (line 5) indicates that the bank absorbs the full initial incidence of the 300 basis points withholding tax. The equality for the bank of the net profitability (columns 1 and 3 line 8) of the two loan options is accounted for by the receipt by the bank of a 300 basis points foreign tax credit. By

Table 1

After-Tax Profitability of Loan Alternatives
(Overall foreign tax credit limit)

	Domestic Loan	Foreign Loan 25 per cent. withholding tax	
		paid by borrower	paid by bank
	(1)	(2)	(3)
		(in basis points)	
1. Gross Foreign Interest Income	1200	1600	1200
2. less Cost of Funds	<u>1000</u>	<u>1000</u>	<u>1000</u>
3. equals Gross Spread	200	600	200
4. less Foreign Tax	<u>0</u>	<u>400</u>	<u>300</u>
5. equals Adjusted Gross Spread (excludes foreign tax)	200	200	-100
6. less Pre-Credit US Tax*	100	300	100
7. plus US Foreign Tax Credit	<u>0</u>	<u>400</u>	<u>300</u>
8. equals Net Spread	100	300	100

* Equals 50 per cent. of line 3.

contrast to the first comparison, the borrower, and not the bank, is the beneficiary of the tax-based subsidy of foreign lending by US banks.

"Co-operating" Foreign Governments

Under US foreign tax credit regulations, a foreign withholding tax is creditable only if it is designed to reach the realised net income of the US taxpayer. Furthermore, a creditable tax must be compulsory and must not represent compensation for a specific benefit. In particular, a tax levied by a foreign government will not be creditable to a US taxpayer if the tax's imposition is dependent on the availability to the taxpayer of US tax credits - that is foreign "soak-up" taxes are not creditable for a US taxpayer.

Governments of major developing countries are aware of the home country tax environments faced by their bank creditors.⁷ Thus, it seems reasonable to postulate that these governments structure their withholding tax arrangements for US bank creditors to avoid having it appear that their taxes constitute a rebate of interest charges to borrowers. That is, the sensitivity of developing countries to the home-country tax environments of their bank creditors may explain the choices of these countries to borrow heavily through government-owned and quasi-government entities, credit conditions permitting, rather than in the name of the government itself. The choice by a government of using separate borrowing entities is only definitely welfare enhancing for the country if full tax rebates are paid to borrowers and if there are positive withholding tax receipts net of such payments.⁸

$$\underline{T_f > T_f^*}$$

Consider a bank with an initial asset-mix such that, at given interest rates, $T_f > T_f^*$. Under such circumstances, the bank can profit by reducing the portfolio share of high return foreign taxable assets. The bank will profit from the rearrangement as long as it did bear some portion of the total incidence of the larger withholding tax payments. Overall, there is no arbitrage opportunity which can be exploited to benefit both the bank and foreign tax authorities.

4. Foreign Tax Credits and Bank Portfolio Management

To co-ordinate loan creations in a multi-branch US bank, management guidelines are issued. Such guidelines indicate a minimum expected "hurdle" rate of return required for the loan if it is to be submitted for credit approval. This screening mechanism reflects the cost and time-dependent nature of the bank's asset-mix decisions. That is, the bank's management operates as if there are costly re-contracting penalties for "wrong" loan approval decisions.

Let us now consider the implications for a bank's foreign taxable loan portfolio of two alternative hurdle rates for loan creation guidelines:

1. a minimum adjusted gross spread (Table 1 line 5) and
2. a minimum net spread (Table 1 line 8).

By choosing the minimum adjusted gross spread alternative, a bank's management encourages the avoidance of withholding tax loans where the bank shares in the initial incidence of the tax. A bank management's use of an adjusted gross spread guideline could reflect its assessment that market spreads for withholding tax borrowers were too narrow in light of its own credit judgements and interest rate expectations.

On the other hand, by selecting a net spread guideline, the bank's management encourages the presentation of loan proposals with ex ante justifications dependent on the presumed availability of foreign tax credit limit capacity ($T_f^* > T_f$).

5. Specific Tax Rules

The section outlines and evaluates three current US tax rules that individually, and jointly, favour banks making loans subject to foreign withholding taxes.

a. Computation of Foreign Tax Credit Limit

Under current US tax rules, a taxpayer's overall limitation on foreign tax credits is based on its total foreign source income. Alternatively, the foreign tax credit limitation could be based on a taxpayer's foreign income from each separate country. Under such a per

country limitation, taxes paid to any country could be used against only the pre-credit US tax on income from sources within that country.⁹

Table 2 compares the net spreads which would be realised by a US bank creditor if it made the loans examined in Table 1 under an overall and a per country computation of its US foreign tax credit limitation. Table 2 line 4 indicates that the net spreads on foreign loans would be reduced, by 100 and 200 basis points, respectively, if the per country method was used to compute the US foreign tax credit limitation. Table 2 line 5 indicates that this reduction would be accounted for by the smaller US tax subsidies (Table 2 columns 2 and 3 line 5b less line 5a) available to creditor banks.¹⁰

Let us now consider the implications for US bank creditors of a changeover of US tax rules from an overall foreign tax credit limitation to a per country limitation. Such a changeover would prompt US banks to raise their lending spreads on, or reduce the portfolio shares of, loans to high withholding tax borrowers.¹¹ This might have particularly affected the willingness of US banks to extend credits to borrowers in a number of developing countries in the 1970s (such as Argentina, Brazil, Mexico and Venezuela) which levy high withholding tax rates on interest payments by resident borrowers to foreign creditors.¹²

The sensitivity of US lending to borrowers in developing countries, as opposed to those in industrialised countries, to possible changes in US foreign tax credit rules is largely accounted for by the structure of the US tax treaty network. The United States has bilateral tax treaties with most of the major industrialised countries but none with a major international borrower among the developing countries. The lack of such treaties reflects the absence of interest by developing countries' governments in securing tax concessions for the external investment activities of home-country investors and the US policy of not entering into tax-sparing agreements.¹³

Table 2

After-Tax Profitability of Loan Alternatives
 (Per Country¹ vs. Overall Foreign Tax Credit Limit)

	Domestic Loan	Foreign Loan 25 per cent. withholding tax	
		paid by borrower	paid by bank
	(1)	(2)	(3)
	(in basis points)		
1. Adjusted Gross Spread (same as Table 1 line 5)	200	200	-100
2. less Pre-Credit US Tax (same as Table 1 line 6)	100	300	100
3. plus US Foreign Tax Credit			
(a) Overall (same as Table 1 line 7)	0	400	300
(b) Per Country	<u>0</u>	<u>300</u> ²	<u>100</u> ²
4. equals Net Spread			
(a) Overall (same as Table 1 line 8)	100	300	100
(b) Per Country	100	200	-100
Memorandum			
5. US Tax Receipts (line 2 less line 3)			
(a) Overall	100	-100	-200
(b) Per Country	100	0	0

1 It is assumed that the creditor bank has no other source of income within the foreign borrower's country.

2 Equal to per country foreign tax limitations and less than foreign tax payments (Table 1 line 4).

b. Fungibility

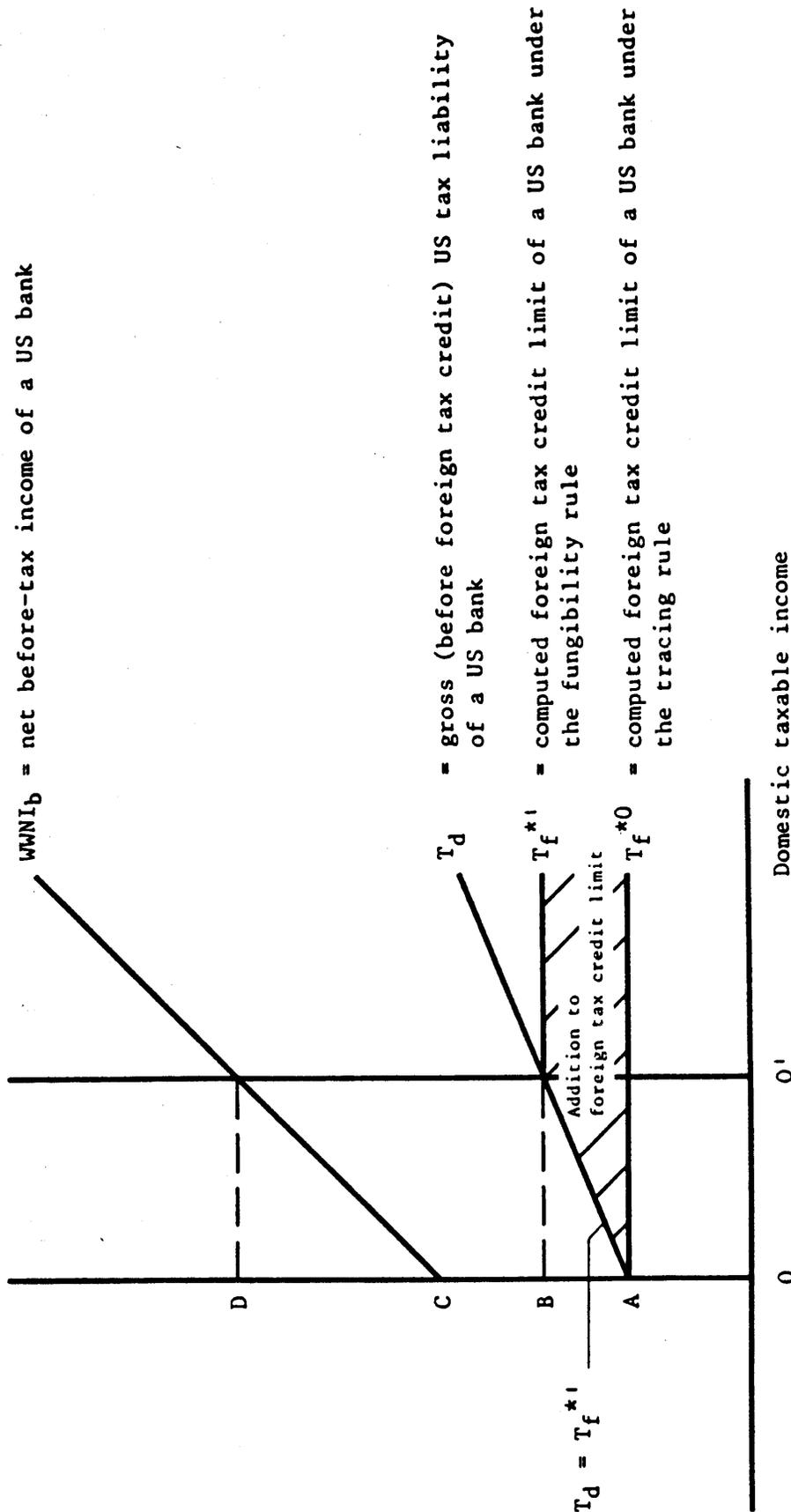
The tax rules for the apportionment of deductions between US and foreign source gross income are very important in the setting of a taxpayer's foreign tax credit limitation. For a US bank, the rules governing the apportionment of interest expenses are of particular importance because the average interest cost of funds to a US bank's domestic offices is typically much lower than that of its foreign offices. The lower interest cost of funds is mainly accounted for by the higher implicit returns (in the forms of various banking services) paid to depositors at the domestic offices and the fact that Federal Reserve reserve requirements apply only to funds raised by the US offices of banks.

The US Treasury's 1977 revision of its interest apportionment regulations significantly increase banks' foreign tax credit limits. The pre-1977 regulations were based on the so-called "tracing" approach which required a bank to consider its head offices and each of its foreign branches as separate entities. Thus, for a bank the tracing approach meant a recognition of the lower average cost of funds of its domestic operations in the computation of its foreign tax credit limit.¹⁴

The post-1977 regulations are based on the "fungibility" approach, which requires a taxpayer's entire interest expense to be attributed to all its activities. The application of the fungibility, rather than the tracing, approach can produce a higher computed value for a bank's foreign tax credit limit. This is illustrated in Figure 2, where reduction in the bank's reported domestic taxable income produced by the switch in tax rules is represented by 0-0'. The addition to the bank's foreign tax credit limit ($T_f^{*'} - T_f^{*0}$) at each level of net before-tax income is shown as the shaded area in the figure. For example, a bank with net before-tax income OD would report a foreign tax credit limit of OB under a fungibility rule, as compared with a value of OA under a tracing rule.

The significance of a choice between the two interest deduction methodologies for the size of foreign tax credit limitations is being reduced by changes in banks' funding behaviour. In particular, larger proportions of the funding needs of the domestic operations of US banks are now being met by the purchase of funds at market-related interest rates

Figure 2
 A US bank's computed foreign tax credit limit under two tax rules



from depositors who now pay explicit fees for banking services. Nevertheless, the 1977 choice of the fungibility approach was an important accommodation of the subsequent surge in withholding tax lending by US banks.

This conclusion is clearly confirmed by a comparison of 1976 and 1978 (most recent published by the Internal Revenue Service in the Statistics of Income) data on US banks' worldwide income:

<u>US banks' reported taxable incomes</u>			
(billions of dollars)			
	1976	1978	Change (1978 - 1976)
Foreign	3.2	6.7	3.5
Domestic	<u>-1.1</u>	<u>-3.2</u>	<u>-2.1</u>
Worldwide	2.1	3.5	1.4

c. Separate Limitation for Interest Income

Under US tax rules, most US taxpayers compute two foreign tax credit limits: one for interest income and the other for all other sources of foreign income. However, banks are allowed to compute one limit, and this special treatment is of considerable value to them.

Major US banks earn large amounts of foreign fee incomes from the banking services of their domestic offices; for example, commissions from the issuance of letters of credit. Because this type of income is generally exempt from taxation by source countries, it provides large net additions to banks' overall capacities to claim US tax credits for foreign tax payments. Thus, under the standard computation rule, the net capacity of banks to absorb foreign withholding taxes would be significantly reduced.

6. Concluding Remarks

This paper has explored the possible rôle of US foreign tax credit rules on the loan selection and pricing decisions of US banks. A conclusion of the exploration is that favourable US tax treatment was a

recognised, and anticipated, inducement for the reliance of developing countries on bank debt financing in the late 1970s. A possible change in this policy was indicated by the 1978 Treasury decision to limit the US tax creditability of the 25 per cent. Brazilian withholding tax.

US banks interpreted the Treasury's Brazilian tax decision as presaging a general review and tightening of US tax policy with respect to the foreign lending activities of US banks. In 1980, the Treasury responded to these expressions of concern through the issuance of proposed foreign tax credit regulations through which it sought to "... relieve some of the anxiety that bankers have felt about changes in the foreign tax credit area".¹⁵ This policy was reaffirmed in 1983 with the Treasury's issuance of revised proposed regulations which would incorporate into US tax rules a strong presumption of the creditability against a bank's US tax liability of foreign withholding taxes.¹⁶ Thus, the ongoing refinement of US tax policy in this area continues to be towards more favourable treatment of bank lending to the developing countries even in the face of a debt crisis which was clearly deepened, if not caused, by an over-reliance by developing countries on variable rate bank financing.

Footnotes

- * International Finance Division, Federal Reserve Board. This paper represents the views of the author and should not be interpreted as reflecting the views of the Board of Governors of the Federal Reserve System or members of its staff. This paper benefited from the comments and criticism of Julian Alworth, Richard Freeman, Richard Herring, Johnathan Hoffman, Peter Isard, Jeffrey Marquardt and Howard Sherman.
1. "Creditability of Foreign Taxes", American Bankers Association, October 19, 1979 (Memorandum submitted to Jerome Kurtz, Commissioner of the Internal Revenue Service).
 2. A general US tax rule is that income is classified as foreign source if its payee is not US domiciled. For example, interest payments received from a foreign branch of a US bank are a source of foreign income to a US taxpayer.
 3. Under the Tax Equity and Fiscal Responsibility Act of 1982, US banks must reduce their tax deductions for interest expense by an amount equal to 15 per cent. of the interest expense associated with their investment in tax-exempt securities. The model in the paper abstracts from this change in the tax environment of US banks.
 4. Recognising that foreign and US state governments may tax some, or all, of the net income of a US bank would have somewhat complicated the derivation of the model. However, the insights provided by the model about the influence of taxation on US banks' asset choices are thought not to be affected by the omissions. This is because these net taxes tend to influence only the location of asset bookings rather than the actual asset-mix choice of a bank.
 5. In order to simplify the presentation, the derivation omits the endowment effect of equity financing. Through the endowment effect generated by the partial equity financing of a bank's asset portfolio, the bank's net before-tax income is positively related to the level of interest rates.
 6. The determination of the sharing of the initial incidence of the withholding tax is a separate matter from the assignment of tax-related interest rate risk. Bank loan agreements specify whether the creditor bank ("gross" loan) or the foreign debtor ("net" loan) absorbs the interest rate-related risk generated by the taxation of borrowers' gross interest payments. Under either type of loan agreement, the full amount of foreign tax payments is creditable against a US bank's US tax liability.
 7. Such sensitivity is strongly suggested by the following excerpt from a 1979 comment on proposed US foreign tax credit regulations:

"Where the developing countries are interested in maintaining relationships with US banks, their government may have an interest in this issue. Because a large percentage of US off-

shore lending is concentrated in Mexico and Brazil, you may be contacted by their Treasury officials as to the financial impact on their economies." Letter of 27th March 1979 from Walter B. Wriston (Chairman of Citibank) to W. Michael Blumenthal (Secretary of the Treasury), Treasury Freedom of Information Document 79-2038.

8. The former condition may be satisfied by an incremental budgetary allocation to a government-sector borrower. In other cases, it may be satisfied by the granting of licences to borrowers for the purchase of foreign exchange at preferential exchange rates.
9. Historically, the foreign tax credit limitation has been either based on total foreign income or per country income, or both. For a thorough discussion of the history of US foreign tax credit regulations see Elizabeth Owens, The Foreign Tax Credit, Harvard Law School, 1961. The most recent change was made in the Tax Reform Act of 1976, which eliminated the option of the per country computation. However, the elimination of the option had little significance for banks because of the advantage to them of the overall method.
10. A creditor bank, subject to a per country limitation, would need to receive a gross spread on a withholding tax loan greater than GS^* for it to realise a larger net spread on such a loan than from a domestic loan with an equal adjusted gross spread. The formula for establishing this threshold value of the gross spread on a withholding tax loan is:

$$GS^* = \frac{C + t_d GS_a}{1 - t_f}$$

C = a bank's cost of funds

GS_a = adjusted gross spread

Thus, for the withholding tax loan example developed in Table 2, GS^* equals 467 basis points.

11. Only if US and non-US banks agree on the valuation of withholding tax loans would the adjustment to a change in US tax rules mainly be accounted for by changes in the composition of US banks' loan portfolios. For a general discussion of taxes as an important imperfection in securities markets see S.M. Shaefer, "Taxes and Securities Market Equilibrium" in W.F. Sharpe and C.M. Cootner, editors, Financial Economics: Essays in Honor of Paul Cootner, Prentice-Hall, 1982.
12. The following withholding tax rates generally apply to cross-border interest remittances to US banks: Argentina - 11.25 per cent., Brazil - 25 per cent., Mexico - 15 per cent. and Venezuela - 15 per cent.

These four countries accounted for 70 per cent. of the \$164 million foreign withholding taxes paid by US banks in 1976, the last year for which such data are available (Statistics of Income, Internal Revenue Service).

Because Brazil directly rebates a portion of the withholding tax payments to the borrowers, US banks are now only allowed to claim credits for a 15 per cent. tax rate directly against US taxes. See Revenue Ruling 78-258, Internal Revenue Bulletin, 1978.

Sensitivity to tax revenue losses and distortions of lending terms led the United Kingdom to cap the creditable rate of foreign withholding taxes in the Finance Act of 1982. The Act provides that UK banking offices cannot claim a tax credit for more than the amount of taxes which would have been paid at a 15 per cent. tax rate.

13. Under a tax-sparing agreement, a developing country would give up the tax on income earned by foreign investors and the investor's home country would treat the income as if a tax had been paid. For a general discussion of US tax policy and developing countries see United States Taxation and Developing Countries, edited by Robert Hellowell, Columbia University Press, 1980.
14. The tracing approach continues to be the basis of public financial reporting by US banks.
15. "Revised Foreign Tax Credit Regulations Liberalise Treatment of Banks and Oil Companies", Tax Notes, 17th November 1980, p. 998.
16. See "New Proposed Regulations for Determining the Creditability of Foreign Taxes" (an article furnished by Price Waterhouse and Company), International Tax Journal, Vol. 9 (September 1983), pp.387-397.