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Some Consequences of U.S. Taxation of  
Foreign Banks  
by  
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1. Introduction

Over the past decade, foreign-based banks have become important providers of banking services to U.S. residents. The available data suggest that the absence of reserve requirements on the deposits of the U.S. offices of foreign banks and the structure of U.S. taxation combined to provide an inducement to foreign-based banks to locate their U.S.-related banking business at U.S., rather than at offshore, offices. With the imposition of reserve requirements by the Federal Reserve in late 1980, some of these banks likely found that a foreign office location for their U.S. banking business had become more profitable than a U.S. office. However, for other foreign banks, the continuation of Federal withholding tax on interest paid to foreign residents (including the offshore offices of foreign banks) still makes it attractive for them to conduct their U.S. banking activities from U.S. offices. <sup>1/</sup> <sup>2/</sup>

An understanding of the role played by tax and reserve requirement variables is crucial to the interpretation of the activity reported by the U.S. offices of foreign banks. This paper focuses on the role played by U.S. and home country taxation in shaping the organization of the

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\*/ 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 other members of its staff. Research assistance for this paper was provided by Melissa Nidever.

<sup>1/</sup> A repeal of the tax on interest paid on foreign investments in U.S. securities (including bank loans) was considered, but not adopted, during the 96th Congress.

<sup>2/</sup> No Federal tax is withheld on interest paid by U.S. borrowers to foreign branches of U.S.-based banks.

U.S. banking operations of foreign-based banks. The paper is organized as follows: Section 2 provides a summary description of U.S. taxation of foreign banks. Section 3 develops a decision framework that a foreign bank might employ in determining where to book its loans to U.S. residents. Section 4 discusses the particulars of the tax situations of banks headquartered in Canada, France, Japan, Switzerland, the United Kingdom and West Germany. Section 5 presents the summary and conclusions.

## 2. U.S. Taxation of Foreign Banks

A foreign-based bank can choose how the United States will tax its U.S. banking business. When a foreign bank chooses to book a loan to a U.S. resident at one of its U.S. offices, the income on that loan is included in the foreign bank's net earnings subject to U.S. (Federal, state and local) income taxation.<sup>3/</sup> By contrast, when a foreign bank books a loan to a U.S. resident at an offshore office, only the gross interest paid by the U.S. borrower on that loan is subject to a Federal tax. In the latter case, the tax is collected by U.S. borrowers withholding part of their interest payments due to foreign-resident creditors.<sup>4/</sup>

The withholding tax on gross interest paid to foreign creditors is at a rate of 30 percent or at a lower treaty rate. Treaty rates for selected countries are: Canada (15%), France (10%), Japan (10%), Switzerland (5%), the United Kingdom (0%), and West Germany (0%). The home

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<sup>3/</sup> States with unitary tax structures, such as California, tax the worldwide income of any foreign bank with an office in the state--lower effective tax rates apply against the income earned by offices outside these states. By contrast, New York taxes only the earnings of foreign bank offices in that state.

<sup>4/</sup> There is a question about whether U.S. tax regulations now allow foreign banks the choice of having some of the earnings of their offshore operations subject to U.S. net income taxation rather than the U.S. withholding tax on interest paid by U.S. residents to foreign creditors. If the regulations were interpreted to allow this choice then very few, if any foreign banks, as will be demonstrated in the paper, should choose to book loans to U.S. residents at U.S. offices.

country of a bank for a branch and the host country of a subsidiary govern which treaty applies. So, for example, the withholding tax on a loan to a U.S. resident from a U.K. branch of a Swiss bank would be 5 percent but for a U.K. subsidiary of a Swiss bank it would be 0. Finally, the tax rate would be 30 percent for a tax-haven subsidiary of any bank, including a U.S.-based bank, if the tax-haven does not have a tax treaty with the United States. In particular, this would be true for the Bahamian and Cayman Island subsidiaries of U.S. and foreign-based banks.

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Some countries tax the worldwide income of their banks.

When such a bank is taxed by its home country it can usually claim a tax credit for U.S. taxes paid, including the withholding tax. Thus, if a foreign bank's tax liability to its home country is sufficiently large, U.S. taxation would not add to a foreign bank's total tax burden and, therefore, should not influence its observed behavior. Other countries tax only a bank's activities in the home country, a territorial system of taxation.<sup>7/</sup> For banks from such countries, U.S. taxation adds to a foreign bank's total tax burden, and therefore there is an incentive to minimize U.S. taxes.

### 3. Tax Minimization

First, consider the case in which the home country tax on a given amount of U.S.-related income of a foreign bank exceeds what would

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<sup>5/</sup> Including Canada, Japan, the United Kingdom and West Germany.

<sup>6/</sup> In most of these countries a bank can defer taxation on a subsidiary's income, but not a branch's income, until the income is repatriated.

<sup>7/</sup> Including France and Switzerland.

be the cost of the U.S. withholding tax, if it applied, or the U.S. corporate income tax, if it applied. In this case, in the absence of Federal reserve requirements, the after-tax profitability of a foreign bank's U.S. credit activity would be the same whether loans were booked at U.S. or at offshore offices. However, because reserve requirements are equivalent to a non-creditable tax, booking U.S. loans at offshore offices is more profitable than at U.S. offices when reserve requirements apply to deposits at U.S. offices and not at offshore offices of the same bank.

Second, consider the case where a foreign bank's U.S. tax liability, whether generated by U.S. withholding or income taxes, is less than the maximum tax credit available from its home country. In this case, the after-tax profitability of U.S. loans for a foreign bank can differ depending on where the activity is booked even in the absence of reserve requirements. Furthermore, for this case, as shown below, the relative profitability to foreign-based banks of booking loans to U.S. residents falls as the level of interest rates rises. That is, above certain interest rates certain foreign banks will always find that booking their U.S. loans at U.S. offices minimizes their total tax burden.

Two other inequalities complete the taxonomy. These are the cases where the maximum amount of the available home-country tax credit for a foreign-based bank on its U.S. credit activities exceeds the cost of the U.S. withholding tax, if it applied, or the cost of the U.S. corporate income tax, if it applied, but not both. In the former case, the after-tax profitability for a foreign-based bank's U.S. credit activities would always be greatest if loans were booked at offshore offices.

This could also be true in the latter case if the cost of reserve requirements exceeded the difference between the cost of the withholding tax and the foreign bank's home-country tax credit.

To simplify the discussion, it is assumed that the tax situations of foreign banks are only either case 1 or case 2. Case 1 banks will always maximize their after-tax profitability by lending to U.S. residents from offshore offices when Federal reserve requirements apply to their U.S. operations. Case 2 banks will maximize their after-tax profitability by lending to U.S. residents from offshore offices up to an interest rate level,  $r^{\Delta L}$ , and will maximize their after-tax profitability by lending from U.S. offices at interest rates above  $r^{\Delta L}$ . This loan rate,  $r^{\Delta L}$ , can be derived from the profit equations for loans to U.S. residents by the offshore and U.S. offices of foreign banks.

$$P_f^L = r^L L - r^D D - t_w r^L L \quad (1)$$

$$P_u^L = r^L L - r^D D - t_c (r^L L - r^D D) \quad (2)$$

$P_f$  = an offshore office of a foreign bank's profit per dollar of loan to U.S. residents

$P_u$  = a U.S. office of a foreign bank's profit per dollar of loan to U.S. residents

$L$  = total loans to U.S. residents by a foreign bank

$D$  = deposits

$r^L$  = gross interest received by a foreign bank per dollar of loan to U.S. residents

$r^D$  = gross interest paid by a foreign bank per dollar of deposit

$t_c$  = U.S. corporate income tax rate

$t_w$  = U.S. withholding tax rate on loans to U.S. residents from foreign banking offices.

Dividing equation (1) by L and taking account of the balance sheet identity,  $L = D + E$  --  $E =$  total equity -- yields

$$P_f = r^L - r^D (1-e) - t_w r^L \quad (3)$$

where

$$e = E/L$$

Dividing equation (2) by L and taking account of the balance sheet identity,  $L + R = D + E$  --  $R =$  total required reserves -- yields

$$P_u = r^L - r^D (1-e+r) - t_c [r^L - r^D (1-e+r)] \quad (4)$$

where

$$r = R/L$$

Setting (3) equal to (4) and solving for  $r^{\Lambda_L}$ , the loan rate at which it would be equally profitable for foreign banks to lend to U.S. residents from their U.S. and offshore offices, produces

$$\frac{\Lambda_L}{r} = (r^L - r^D) \frac{[r - t_c (1-e+r)]}{[r - t_w + t_c (e-r)]} = \frac{S [r - t_c (1-e+r)]}{[r - t_w + t_c (e-r)]} \quad (5)$$

$S =$  the interest rate differential between the loan and deposit rates (including noninterest expenses)

Rewriting (5) as an implicit function

$$r^{\Lambda_L} = r^{\Lambda_L}(t_c^+, t_w^-, S^+, e^+, r^+) \quad (6)$$

where the conditions needed for the indicated signs of the partial derivations are

$$\frac{\partial r^{\Lambda_L}}{\partial t_c} > 0 \text{ if } t_w (1-e+r) - r > 0 \quad (7a)$$

$$\frac{\partial \Delta L}{\partial t_w} < 0 \text{ if } r - t_c(1-e+r) < 0 \quad (7b)$$

$$\frac{\partial \Delta L}{\partial S} > 0 \text{ if } \Delta r > 0 \quad (7c)$$

(7)

$$\frac{\partial \Delta L}{\partial e} > 0 \text{ if } t_c - t_w > 0 \quad (7d)$$

$$\frac{\partial \Delta L}{\partial r} > 0 \text{ if } t_c - t_w > 0 \quad (7e)$$

Furthermore, since

$$\frac{\partial P_f/P_u}{\partial r^L} = \frac{(e-t_w) P_u - (1-t_c)(e-r)P_f}{[P_u]^2}$$

then for  $P_u, P_f > 0$  (8)

$$e \leq t_w \text{ and } e > r \text{ or } e < t_w \text{ and } e \geq r$$

are sufficient conditions for

$$\frac{\partial P_f/P_u}{\partial r^L} < 0$$

The relative profitability to a foreign bank of booking loans to U.S. residents at offshore offices, rather than at U.S. offices, always falls as the loan rate rises if the marginal savings from partial equity financing (rather than deposit financing) of the bank are less than the withholding tax rate ( $e < t_w$ ) but greater than the reserve requirement rates on U.S. offices' sources of funds ( $e > r$ ).<sup>8/</sup>

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<sup>8/</sup> Through the endowment effect generated by the partial equity financing of a bank's loan portfolio, the net taxable earnings of a foreign bank's U.S. operations is positively related to the level of the loan rate. For a discussion of the correct interpretation of the endowment effect of equity financing for a bank see R. B. Johnston "Banks' International Lending Decisions and the Determination of Spreads on Syndicated Medium-term Euro-credits" Bank of England Discussion Paper No. 112 (1980).

So, at any given value of the loan rate,  $\bar{r}^L$ , for values of the various variables that satisfy both (7) and (8)

$$(\bar{r}^L - \bar{r}^L) = \bar{r}^L (t_c^+, t_w^-, S^+, e^+, r^+) \quad (9)$$

and finally,

$$P_f/P_u = P (t_c^-, t_w^+, S^+, e^+, r^+) \quad (10)$$

Equation (10) indicates that at any given loan rate,  $\bar{r}^L$ , an increase in the corporate tax rate (or fall in the value of any of the four other variables) would lower the relative profitability to foreign-based banks of booking loans to U.S. residents at their non-U.S., as compared with their U.S., offices. Thus, for any value of the loan rate,  $\bar{r}_0^L$ , if the differential,  $\bar{r}_0^L - \bar{r}^L$ , is positive, at values of the loan rate above  $\bar{r}_0^L$  the value of the ratio,  $P_f/P_u$ , is always further below 1 than it is at  $\bar{r}_0^L$ .

Values of  $\bar{r}^L$  were computed with realistic values for the other variables --  $t_w$ ,  $t_c$ ,  $S$ ,  $e$ ,  $r$ . The withholding tax rates ( $t_w$ ) used were 5 percent (Switzerland), 10 percent (Japan), 15 percent (Canada) and 30 percent (tax-haven subsidiaries of all banks).<sup>9/</sup> The values of the U.S. corporate income tax rate ( $t_c$ ) were set at 50 and 60 percent to reflect differences in effective state income tax rates. The before-tax net spread of investment received less the total cost of deposits,  $S$ , was set at 1/2 percent intervals from 1/4 to 1-1/4 percent.<sup>10/</sup> The equity-loan ratio,  $e$ , was set at 5 percent, approximately equal to

<sup>9/</sup> Effective January 1, 1979, French banks became exempt from the general 10 percent tax that applies on interest paid by U.S. residents to French creditors.

<sup>10/</sup> This range was chosen because it included the reported 1 percent before-tax profitability of the U.S. offices of member banks. Foreign bank activities in the United States are concentrated in wholesale banking where profit margins are typically slimmer than in retail banking. Thus, it is likely that the 1-1/4 percent upper limit selected for  $S$  for the construction of the table is above the actual before-tax profitability of the U.S.-related activities of foreign banks.

Table 1

Values of loans rates,  $\frac{A^L}{L}$ , that equalize the after-tax profitability of onshore and offshore lending to U.S. residents by foreign banks (in percent)

Net Interest Spread (S)	Corporate Income Tax Rate ( $t_c$ )											
	50%						60%					
	5	10	15	30	5	10	15	30	5	10	15	30
.25	11	2	1	*	17	2			2	1		1
.75	34	6	3	1	51	7			7	4		2
1.25	56	10	5	2	85	12			12	6		3

\* Less than 1 percent

Withholding tax rates

- 5% Switzerland
- 10% Japan
- 15% Canada
- 30% Tax-haven subsidiaries of all banks

the 95 percent "safe-haven" capital ratio that the U.S. Treasury allows foreign banks in the computation of their deductible interest expenses (Interval Revenue Code Section 882). The reserve-loan ratio,  $r$ , was set at 2.94 percent -- equivalent to a 3 percent required reserve ratio. These values of the variables-- $t_w$ ,  $t_c$ ,  $S$ ,  $e$  and  $r$ --satisfy (7) and (8) so that at interest rates above those shown in table 1 it would be more profitable for a foreign bank to book its U.S. loans at a U.S. office rather than at an offshore office. For example, a foreign bank facing a U.S. withholding tax of 10 percent and an interest rate differential of 3/4 percent would find that its after-tax profitability is higher if it books U.S. loans at an onshore office rather than at an offshore office at loan rates about 6 percent. At 10 percent, the after tax differential in profitability between an onshore and an offshore office for such loans would be about 25 basis points.

Moreover, the interest rate at which a foreign bank would find it profitable to book U.S. loans onshore should be somewhat lower than those shown in the table because U.S. offices may be able to pass back to depositors part of the cost of reserve requirements. In fact, if the total cost of reserve requirements can be passed back to depositors at U.S. offices, then the foreign bank, in the example above, would find it profitable to book its loans to U.S. residents at interest rates less than 1 percent rather than the 6 percent breakeven rate that applies when a foreign bank is assumed to absorb the full cost of reserve requirements.<sup>11/</sup>

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<sup>11/</sup> This might be accomplished indirectly through a foreign bank's purchase of reserve-free Federal funds from a member bank able to pass back some, or all, of the cost of reserve requirements to its depositors.

In summary, table 1 reveals that, at current interest rates, foreign banks subject to a 10 percent withholding tax (or more) could find it more profitable to book loans to U.S. residents at their U.S. rather than offshore offices.<sup>12/</sup> Even for such banks, a certainty of their being able to credit fully any related U.S. withholding taxes against their own home country tax liabilities would assure that it would always be more profitable to book U.S. loans at offshore offices. However, although most foreign banks may have the capacity to credit additional U.S. withholding taxes against available excess foreign tax credit capacity it is likely that the volume of U.S. loans that can be sheltered is limited. In general, if the effective rate of the withholding tax against net income is higher than the home country's income tax rate, a shifting of U.S. loans to offshore offices will reduce a foreign bank's excess available foreign tax credit capacity. Furthermore, since the effective rate of taxation of the withholding tax against net income rises with the level of interest rates, all other things being equal, at higher interest rates there would be a smaller volume of U.S. loans for which passage to offshore offices could be sheltered by excess foreign tax credit capacity.

#### 4. Tax Situations by Country

As of the end of March 1980, the U.S. offices of foreign banks reported commercial and industrial loans to U.S. residents of

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<sup>12/</sup> Treaty exemptions apply to 19 countries: Austria, Denmark, Finland, West Germany, Greece, Hungary, Iceland, Ireland, Luxembourg, Malawi, Netherlands, Netherlands Antilles, Norway, Poland, Sweden, U.S.S.R., United Kingdom and Zambia. For all other countries (except Switzerland) a withholding tax rate of at least 10 percent applies. United States, Congress, Joint Committee on Taxation, Description of H.R. 7553 Relating to Exemptions from U.S. Tax for Interest Paid to Foreign Persons, Scheduled for a Hearing before the Subcommittee on Select Revenue Measures of the Committee on Ways and Means on June 19, 1980, Joint Committee Print (Washington, D. C.: Government Printing Office, 1980), p.5.

\$33 billion: Japan - \$13 billion, Canada - \$5.5 billion, the United Kingdom - \$3 billion, France - \$2 billion, West Germany - \$2 billion, Switzerland - \$2 billion and all other countries - \$5 billion. Banks from only 6 countries accounted for more than 85 percent of commercial and industrial loans to U.S. residents by the U.S. offices of foreign banks. Moreover, available data indicate that total loans to U.S. non-banks (in all currencies) from the foreign offices of foreign banks amounted to less than \$5 billion as of the end of March. Thus, prior to the November 1980 imposition of reserve requirements on the U.S. offices of foreign banks, most loans to U.S. residents by foreign-based banks were booked at their U.S. Offices.

#### Canada and Japan

Banks based in Japan and Canada are taxed by their home countries on the basis of their worldwide income. It is likely that the combination of U.S. withholding tax and their home country taxation will make it attractive for these banks not to shift their U.S. credit operations to non-U.S. offices.

#### United Kingdom and Germany

The combination of a 0 percent withholding tax under the U.K.-U.S. treaty and the United Kingdom's relatively high effective corporate income tax rate, compared with the United States, should tend to induce U.K. banks to locate their U.S. loans at offshore branches. Since the United Kingdom does not impose reserve requirements on the dollar deposits of banks in London but taxes the worldwide income of branches of U.K. banks, there would be no disadvantage to a London, rather than Caribbean, booking of loans to U.S. residents by U.K.

chartered banks. German banks should also find it profitable to book loans to U.S. residents at their non-U.S. branches because of the 0 percent withholding tax under the U.S. West German tax treaty. However, both reserve requirements on dollar deposits at offices in Germany and the exemption from higher German taxes of the income of certain overseas branches<sup>13/</sup> (if they are taxed at lower rates than would apply in Germany) should encourage German banks to book loans to U.S. residents at offshore offices other than in Germany.

A repeal of the withholding tax on interest paid by U.S. residents to foreign banks would likely lead to a restructuring of the U.S. credit activities of German and U.K. banks. Both West Germany and the United Kingdom defer taxes, until repatriation, on the income of foreign subsidiaries of domestic banks. Tax deferral has not been of value because the potential low-tax host countries for such banking subsidiaries do not have tax treaties with the United States. Hence, in the absence of a tax treaty lowering the withholding tax rate, the statutory rate of 30 percent applies and, at a 30 percent withholding tax rate (as shown in table 1), offshore lending to U.S. residents is not as profitable as onshore lending. Thus, even though the withholding tax treaty rate for these two countries is 0 percent, a repeal of the withholding tax would give to British and German banks

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<sup>13/</sup> This is a standard provision of most German double-taxation treaties with other industrialized countries.

an opportunity (by booking loans at subsidiaries) to increase the after-tax profitability of their U.S. loans. Alternatively, they could seek a larger market share by lowering the required before-tax return on their U.S. loans and still be able to realize the same after-tax profitability.

Switzerland

Switzerland does not tax the income of foreign branches and subsidiaries of Swiss banks.<sup>14/</sup> Thus, U.S. taxation of Swiss banks, except withholding tax on interest paid to a Swiss office, is not creditable against Swiss taxes. At a sufficiently high withholding tax rate, the cost of noncreditable withholding tax exceeds the combined cost of Federal reserve requirements and the U.S. corporate income tax. Above such a rate, Swiss banks would find it profitable to book their U.S. loan activity at U.S. offices. The 5 percent withholding tax rate that applies under the U.S.-Swiss treaty may be sufficiently low so that Swiss banks will find it profitable to book U.S. loans at offshore offices rather than at U.S. offices after the imposition of reserve requirements.

France

France taxes only the net income produced by its banks' domestic offices. Thus, since the exemption of French banks from the U.S. withholding tax (see footnote 9) it has been possible for French banks to lend to U.S. residents from offshore offices without paying any U.S. or French taxes on the net income. Prior to 1979, the 10 percent U.S. withholding tax rate would have encouraged French banks to book their U.S. loans at U.S. offices.

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<sup>14/</sup> However, such income is aggregated with taxable income for the purpose of determining the income tax bracket and applicable tax rate.

5. Summary and Conclusions

This paper highlights the interaction of taxation and reserve requirements on the behavior of multinational banks. And, in particular, it focuses on the incentives for behavioral change that have been brought about by the imposition of Federal reserve requirements on foreign bank activities in the United States and would be brought about by the elimination of the U.S. tax on interest paid by U.S. residents to foreign creditors.

In respect to competitive issues, some member banks have argued that foreign-based banks now have a clear competitive advantage in making loans to U.S. resident borrowers because of the absence of Federal reserve requirements on the loans to U.S. residents by the offshore office of foreign banks.<sup>15/ 16/</sup> At the margin, for pricing individual loans to U.S. corporate borrowers, this is true for some, if not most, foreign-based banks. Thus, an expansion of loans to U.S. residents from offshore offices will result in a marginal tax burden above that encountered in the U.S. offices of the same banks.

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<sup>15/</sup> Loans to U.S. nonbank residents by the foreign branches of member banks are reservable to the extent they exceed the net advances by the head office to all foreign branches.

<sup>16/</sup> Data are not available that show the distribution by home country of foreign banks' loans to the foreign subsidiaries of U.S. corporations. Neither the U.S. withholding tax for foreign banks (nor the reserve requirements on loans to U.S. residents for member banks) apply on loans to such borrowers. Some U.S. borrowers that are eligible (not prohibited by regulation) do not borrow through foreign subsidiaries to fund U.S. operations because of the present uncertainty about the tax consequences of such borrowing.