

Strangers and Neighbors: Cross-Border Banking in North America

I. Introduction

This paper is concerned with regulatory and competitive aspects of the mutual penetration by Canadian and U.S. banks of each other's domestic markets. Although traditional commercial banking markets have fallen prey to competition from a number of sources, including direct financing (such as commercial paper), offshore markets, and nonbank financial intermediation, attention has focused on the extent to which foreign banks' success could be attributed to differential regulatory treatment. Foreign banks in turn complain of discriminatory official treatment favoring their local rivals.

It can be argued that on economic grounds both countries' best interests lie in acceptance, unilateral or reciprocal, of the principle of national treatment - to the extent possible, foreign banks should be accorded the same official treatment as national banks without regard to country of origin or reciprocity. In reality, however, it has been acknowledgement of the possibility of retaliation rather than acceptance of the principle of national treatment that has restrained the Canadian and U.S. authorities' discriminatory treatment. It may be argued, therefore, that in practice discriminatory treatment has been far less than would have been the case if the flow of cross-border banking had been unidirectional.

These issues have come to the fore of each country's banking authority's attention as a result of the rapid growth of foreign banking in Canada and the United States in recent years. Indeed some have attributed the growth in foreign banking to the presence of differences in the regulatory treatment of foreign and domestic banks. Our hypothesis in this paper is the opposite: that foreign banking can be explained by strictly non-regulatory economic factors.

In the following pages we review the mutual penetration of the two banking systems and attempt to assess the degree to which economic factors alone are responsible for the difference in growth rates between domestic and foreign banks in North America. In order to strengthen our argument that regulation has not affected the growth of foreign banks in North America we address the question of reciprocity in banking regulations and then, in Sections 3 and 4, examine foreign banks in the U.S.A. and the manner in which they have been regulated. The following two sections deal with U.S. banks in Canada. We then present the results of an empirical test of the proposition that the growth of cross-border banking is attributable to factors other than differential regulation.

II. Economic versus Regulatory Influences on Cross-Border Banking

Students of the international banking system have recently turned their attention to explanations of the existence and pattern of foreign direct investment in banking. While the phenomenon of Eurocurrency banking has been relatively easy to explain on the basis of the lower regulatory costs of offshore banking, the pattern of penetration of domestic markets by foreign banks has proved less readily tractable. Why is it that foreign banks are able to overcome the regulatory, cultural, distance and other costs of being foreign and take market share away from domestic banks? And why is it that foreign banks are more successful in certain markets than others?

A partial explanation has been found in the theory of foreign direct investment, attributable to Hymer, Kindleberger and Caves among others: in order for a bank to want to engage in banking in a distant market, the additional returns from investing abroad must exceed the higher costs of doing so; and for the bank to compete successfully against host-country competition, it must possess an advantage not available to local banks. In seeking to explain the particular pattern of foreign direct investment in banking, therefore, studies have sought to identify in each case the

advantages of being on the spot, the distance costs or barriers to entry, and the competitive advantages held by the foreign entrants.¹

In this paper we concentrate on three sets of economic factors that might yield different growth rates between foreign and domestic banks in the United States and Canada.

First, by virtue of their home country familiarity with parent firms, foreign banks may engage in "coat-tail banking": following their traditional customers abroad. Foreign bank growth should therefore be influenced by inward foreign direct investment. Second, because they are international banks, foreign banks might have an advantage in financing foreign trade, so that a relation between foreign bank growth and international trade would be predicted. Third, foreign banks specialize in new entry into relatively stable and protected markets. We therefore expect that the more domestic banks' lending rates exceed competitive levels, the greater the incentive for foreign bank entry. The ability of these three factors to explain North American cross-border banking is tested econometrically in Section 7.

Our hypothesis is that regulatory factors, in contrast to the economic factors just cited, have not affected the growth of North American foreign banking. A major reason for this, we suggest, is domestic banks' concern with reciprocity issues.

In the context of foreign direct investment research by Caves (1971) and others, the term "cross-hauling" has been coined. The term refers to firms from different countries but in the same industry who invest in each other's home countries. The incentive for this is usually product differentiation, or specialization in particular market segments. Once in place, the foreign subsidiaries serve as "mutual hostages" — each country's multinational firms will resist pressure to place restraints on foreign investors for fear of retaliation against their own affiliates abroad. That concept is not unrelated to the principle of reciprocity which influences the banking authorities' approach to the regulation of foreign bank entry and activities. Strictly applied, regulation on the basis of reciprocity implies that the authorities of country A will free B's banks to compete in the home market only to the extent that A's banks are permitted to compete in the B market.

¹ See, in particular, ALIBER (1976), DEAN and GRUBEL (1979), FREEDMAN (1977), GIDDY (1981), and GRUBEL (1977).

U.S.-Canadian international banking forms an excellent example of substantial mutual investment in each other's banking market by the major banks of each country. Neither country has endorsed reciprocity as a legal principle for the regulation of foreign banks; yet the recognition of the mutual hostage relationship, and the possibility of retaliation, has constrained the extent to which the multinational banks have been willing to support restrictive treatment of foreign banks. The fact that retaliation is a concrete possibility is demonstrated by New York state's confinement of Canadian banks to agency (i.e. nondeposit taking) status in retaliation for Canada's (pre-Bill C-6) prohibitions against foreign banks.

Neither country's national regulations, present or proposed, aim regulations specifically at the banks of another country. Yet each country has some scope for discretionary restrictions affecting each other's major banks directly.²

In effect, therefore, reciprocity remains a potential issue in U.S.-Canadian banking relationships. Should either Canada or the U.S.A. alter its treatment of foreign banks in such a way as to produce an important shift in market shares, the ramifications could readily be felt across the border and in other segments of the economy. However, in order to judge the potential outcome of any new regulation, it is necessary to identify *effectively* restrictive treatment of foreign banks. If legal restrictions are placed on foreign banks in activities in which they have little interest (say, mortgage financing) but not at all in areas where their competitive advantage lies (perhaps wholesale banking or the financing of international trade) then the regulations can be regarded as *economically* nonrestrictive. A more concrete example is that of Canada, where despite the prohibition on foreign ownership of banks, foreign banks have achieved substantial effective penetration of the domestic wholesale banking market through nonbank, non deposit-taking affiliates which avoid retail business.

We turn next to a review of the role of foreign bank regulation and of the extent and nature of Canadian banks' penetration of the U.S. market, and vice-versa.

² In the United States, discriminatory restrictions are possible at the level of state supervision and licensing, and (despite the "non-discriminatory" International Banking Act of 1978) at the level of Federal approval of mergers and acquisitions. In Canada, both the Foreign Investment Review Commission and (under the proposed Bank Act) the Minister of Finance have some discretion in approving entry and expansion by individual foreign banks. Since two thirds of the assets of foreign affiliated financial institutions in Canada are U.S. owned, any discrimination against foreign banks has its primary effect on American banks.

III. The Regulation of Foreign Banks in the U.S.A.

During the mid-1970s the size and growth of foreign bank activities in the United States began to attract considerable attention from the U.S. regulatory authorities. Although subsidiaries were governed by existing (state) regulations, branches were largely free from either state or Federal legislation; in particular they were free from reserve requirements, and the requirement (indeed, permission) to carry Federal deposit insurance. And since states were usually happy to license subsidiaries and branches irrespective of their presences in other states, foreign banks could effectively circumvent the McFadden Act which prohibits interstate banking, as well as the bank holding company acts, which prohibit common ownership of banks in different states. Foreign banks also found themselves immune from the Glass Steagall Act, which prohibits U.S. commercial banks from involvement in investment banking. Branches of foreign banks in the U.S. grew spectacularly as the European banks in particular adopted that form of organization.

Foreign bank agencies, although state-licensed and subject to state regulation, also effectively escaped the onerous regulation governing U.S. owned banks because agencies cannot accept domestic nonbank deposits. Thus they were not subject to reserve or deposit insurance requirements. And agencies, like subsidiaries and branches, were free from interstate banking prohibitions.

Although part of the U.S. domestic banking lobby argued that regulation of foreign banks should follow a reciprocity principle, the Federal Reserve and the Treasury argued for national treatment — equity between U.S. and foreign banks on U.S. soil — and this is the principle that was legislated. The International Banking Act (IBA) passed in July of 1978, with its provisions to take effect over the following two years.

IV. Canadian Banks in the U.S.

Foreign banks'³ share in total U.S. banking assets grew from 4 per cent at the end of November 1972 (the earliest data available),

³ "Bank" is used here to mean an agency, branch or subsidiary of a commercial bank. A more accurate but clumsier term would be 'banking institution.'

to 12 per cent at the end of March 1980.⁴ Foreign banks hold an even larger share of certain markets: most dramatically, over 40 per cent of the business loans in New York.

As of March 1980, Canadian banks' share of all foreign banks was 14.8 per cent. Table 1 provides balance sheet details. The great bulk of Canadian banks' assets (85 per cent) are accounted for by their agencies, and the majority of agency assets are located in New York, where state authorities have disallowed Canadian deposit-accepting branches or subsidiaries on reciprocity grounds.⁵

Sources of Funds

About 64 per cent of Canadian banks' funds are raised from related institutions abroad; U.S. banks, by contrast, raise about 72 per cent of their funds from domestic nonbank depositors. The Canadian agencies in particular obtain a large proportion (74 per cent) of their funds from affiliated banks abroad, while Canadian branches and subsidiaries are funded primarily with domestic non-bank deposits.

In the future, fully-fledged subsidiaries can be expected to increase their share of the Canadian total, as two provisions of the IBA take effect. The first provision allows Federal licensing and chartering, so that Canadian banks may now operate branches and subsidiaries (and therefore take public deposits) in the state of New York. The second provision imposes the same reserve requirements on agencies and branches as on subsidiaries, thereby removing a relative advantage to the former two forms of organization. The implications of these organizational changes for liability structure will be that an increasing fraction of funding comes from within the U.S.

Uses of Funds

The most important assets held by Canadian banks in the U.S. are their loans to related institutions outside the U.S. (44 per

⁴ These percentages were calculated by dividing total foreign bank assets (from Federal Reserve Statistical Release G-11) by total assets of domestic and foreign commercial banks in the U.S.A. (*Federal Reserve Bulletin*, Table 1.24, line 37).

⁵ Out of the 30 Canadian-owned banking institutions in the U.S., 11 are in New York and 10 in California.

TABLE 1
BANKING INSTITUTIONS IN THE U.S. OWNED BY BANKS IN CANADA
(March 1980)

Balance Sheet Items as Percentages of Total Assets

	All Reporters	Agencies	Branches	Subsidiaries
<i>Assets</i>				
I. "Standard" Banking Assets	46.3	42.2	52.9	92.7
A. Commercial and Industrial Loans	28.1	26.5	44.8	26.0
B. Interbank Loans and Deposits	7.2	7.8	0.1	8.4
II. Clearing Balances	4.9	5.3	1.0	6.1
III. Due from Related Institutions	48.8	52.5	46.1	1.2
Total Assets and Liabilities (Totals as % of all reporters)	100.0 (100.0)	100.0 (84.9)	100.0 (8.8)	100.0 (6.2)
Total Assets and Liabilities in Millions of U.S. dollars	\$19,990	\$16,978	\$1,769	\$1,244
<i>Liabilities</i>				
I. "Standard" Banking Liabilities	24.6	14.9	79.4	78.9
A. Deposits and Credit Balances of Nonbanks	12.5	2.0	72.9	70.7
B. Interbank Liabilities	9.2	9.9	5.5	3.9
II. Clearing Liabilities	5.3	6.0	0.3	2.6
III. Due to Related Institutions	69.1	78.9	18.3	7.4

Source: U.S. Federal Reserve data bank.

Data do not include offices located in territories and possessions of the U.S.

cent of total assets). Nevertheless, they are net takers of funds from their parents (\$ 3.6 billion net in March 1980). Their other major assets are commercial and industrial loans (28 per cent, nearly all to U.S. residents). U.S. banks, by contrast, hold about 19 per cent of their assets as commercial and industrial loans, 40 per cent as other (mostly retail) loans, and 20 per cent as securities. The major differences are the much higher percentages of retail loans and securities, the lower percentage of business loans, and the absence of significant lending to affiliates abroad.

This statistical picture of Canadian banks in the U.S. can be summarized as follows. About three quarters of their funding comes from their parents in Canada, although they also lend almost half

their assets to these same parents. The great bulk of their non-bank lending is commercial and industrial, to U.S. residents. In contrast to U.S. banks, they do not fund heavily from nonbank deposits, nor do they lend much retail or hold many securities.

As the IBA takes effect, however, the funding mix can be expected to change towards nonbank deposits. To some extent also the Canadian banks may move into retail lending, but the major growth is still likely to come in medium-term business lending in New York.

V. The Regulation of Foreign Banks in Canada

Over the last decade, foreign banks⁶ have entered Canada through a regulatory loophole which allows financial institutions to avoid coverage by the Bank Act if they do not take public deposits. Thus American and other foreign banks have raised money in Canada via short term notes and have competed vigorously with Canadian banks for business loans, but have not been deemed banks under Canadian law. Though they are forbidden access to low cost domestic deposits, the foreign banks in most other respects have benefited from the regulatory environment. They have been free from reserve requirements and moreover have been free to make certain kinds of loans not permitted to Canadian banks, notably for purposes of factoring and leasing.

The Canadian Bank Act of 1980 is an outgrowth of five years of drafting and redrafting in response to vigorous lobbying by the plethora of financial institutions affected.⁷ It was agreed from the outset that the foreign banks would be allowed to take public deposits in return for being required to hold reserves as if they were Canadian-owned. It was also agreed that Canadian banks would be allowed to make leasing loans. A more contentious issue has been whether and how much the growth of foreign banks

⁶ "Bank" is used here to mean a foreign-owned, Canada-domiciled, lending institution. Most are incorporated under provincial legislation as finance or investment companies.

⁷ The Canadian Bank Act must by law be revised every ten years (although this one was delayed for four years). It covers the gamut of chartered banks' activities, not just the operations of foreign banks.

should be restricted. The compromise which was reached is that foreign (actually "Class B" or "closely-held") banks will be restricted in their growth to 8 per cent of the total domestic assets of Canadian banks.⁸

The Act restricts foreign banks in other ways. They must be fully capitalized in Canada as subsidiaries: that is, branches of the parent are disallowed. There is no *a priori* limit on the number of branches that these subsidiaries are allowed, but each new branch required approval by the Minister of Finance. Existing offices are grandfathered. The Act also limits the total assets of foreign bank subsidiaries to 20 times authorized capital, but international business is excluded from this limitation. Finally, the Act requires foreign (but not domestic) banks to apply for license renewals at intervals of three years at most. This will permit government control over not just entry but over continuing performance as well.

VI. U.S. Banks in Canada

Foreign banks' assets as a share of the total have grown from 1.1 per cent in June 1974 (the earliest data available), to 3.0 per cent in June 1980. As of August 1979, American banks' share of all foreign banks' assets was 64 per cent.⁹ Balance sheet details of American banks by themselves are unavailable; data for foreign banks as a whole are provided in Table 2.

Sources of funds

Approximately 80 per cent of foreign banks' funds are raised by issuing short term notes on Canadian (largely Toronto) money markets, with most of the remainder of their funding coming from their parents and affiliates. In the early years, they were forced

⁸ Domestic assets are defined here as all Canadian dollar and foreign currency assets booked in Canada with Canadian residents.

⁹ Other countries significantly represented are the U.K., France, Hong Kong, Switzerland, the Netherlands, and Japan, with asset shares of 17%, 15%, 2%, 1%, 1%, and 1% respectively. These and other countries also operate representative offices that generate business which is booked outside Canada.

to raise almost one quarter of their money by borrowing from Canadian banks, but this has now diminished to about 3 per cent of their liabilities. Funding from affiliates can be expected to diminish when the new Bank Act takes effect, permitting acceptance of public deposits.

Uses of Funds

Over half the assets of the foreign banks are business loans, compared with 19 per cent for Canadian banks. Foreign banks account for about 9 per cent of the total business loan market in Canada; this market is otherwise largely divided between the Canadian chartered banks, which now have about 81 per cent of the market, and the Canadian finance companies. Almost 18 per cent of foreign banks' assets are investments, which take the form of short term paper and term deposits. Canadian banks, by contrast, hold most of their investments as federal, provincial and municipal and corporate securities (to a total of 11 per cent of Canadian dollar assets in July 1980).

The statistical picture of foreign banks in Canada just painted suggests that despite their deposit-base disadvantage, they have managed to erode the Canadian banks' share of the business loan market because of some combination of regulatory and economic advantages. The regulatory advantages will be removed with the new Bank Act, which both imposes reserve requirements and allows all chartered banks to engage in leasing; on the other hand the deposit base disadvantage will also be removed. The question raised here is whether economic factors will influence the growth of foreign banks after the new Bank Act is enacted, or whether the new regulations will constrain this growth. This is of particular relevance given the new Bank Act's restrictions on foreign banks' future growth.

VII. Influences on the Relative Growth of Foreign and Domestic Banks: Empirical Results

The operational task of the paper may now be described as follows: to identify the degree to which the growth of American banks in Canada differs from that of Canadian banks (and other

TABLE 2
BANKING INSTITUTIONS IN CANADA OWNED BY FOREIGN BANKS
(June 1980)

Balance Sheet items as percentage of total assets

<i>Assets</i>	
I. Short-term Paper and Term Deposits	18.2
II. Loans to Parents, Affiliates and Subsidiaries	7.1
III. Loans	71.0
A. Leasing Receivables	9.5
B. Real Estate and Construction	7.3
C. Other Business Loans	56.2
1. short-term (< 1 year)	29.5
2. long-term	26.7
IV. Total Assets	100.0
<i>Liabilities</i>	
I. Loans	17.6
A. From Canadian Chartered Banks	3.4
B. For Parents, Affiliates, and Subsidiaries	14.2
II. Notes Payable	75.1
A. < 1 year	69.8
B. > 1 year	5.2
III. Shareholders' Equity	4.4
IV. Total Liabilities	100.0
V. of which in foreign currency	29.3

Source: Bank of Canada Review, Table 47.

financial institutions) for reasons other than changes in regulatory treatment; and vice-versa for Canadian banks in the U.S.A. The economic factors identified in Section 2 were: international trade, inward foreign direct investment, and monopolistic competition. Our reasoning is since changes in effective regulation cannot be measured directly, it is appropriate to identify other influences on the market share of foreign banks. Only that part of growth differences *unexplained* by economic and competitive factors can be attributed to differential regulation.

In order to express the propositions in a form suitable for empirical testing, we have selected several proxies for the variables of interest. For Canadian banks in the U.S.A., we use the ratio of total Canadian to domestic bank assets (CAU/UAU), and the

ratio of total commercial and industrial loans of Canadian and domestic banks, respectively (CLU/ULU). Similar ratios are defined for U.S. banks in Canada; however, because data on U.S. banks' Canadian assets are not available, we use figures for all foreign banking institutions in Canada. Two thirds of these are American, and it seems reasonable to assume that the total responds to roughly the same influences as does the U.S. portion. The ratios are defined as FAC/CAC and FLC/CLC. As measures of international trade we use exports plus imports of goods and services divided by GNP (for Canada, UTC/YC; for the U.S.A., CTU/YU). Direct investment is measured by total inward direct investment as a proportion of GNP: TDC/YC and TDU/YU for Canada and the U.S.A. respectively. For domestic bank lending rates we use the prime rate¹⁰ (PC and PU) and as a proxy for the competitive rate we use the commercial paper rate (CC and CU). The relationships tested were thus the following:

Canadian Banks in the U.S.A.:

- (1) $CAU/UAU = f_1(CTU/YU, TDU/YU, PU-CU)$
- (2) $CLU/ULU = f_2(CTU/YU, TDU/YU, PU-CU)$

U.S. Banks in Canada:

- (3) $FAC/CAC = f_3(UTC/YC, TDC/YC, PC-CC)$
- (4) $FLC/CLC = f_4(UTC/YC, TDC/YC, PC-CC)$

Our interpretation of the role of the domestic lending spreads, PU-CU and PC-CC, warrants a brief elaboration. Assume one observes a decline in this spread, which we may call ΔR . The change in foreign banks' market share that is associated with this reduction depends on the source of the reduction. If the spread falls because of a lightened burden of regulation on foreign banks, their share will increase; but if it results from more competition, foreign banks' share will decrease. To see why this is so, we refer the reader to Figures 1 and 2.

Figure 1 depicts the supply of commercial loans by domestic (S_D) and foreign (S_F) banks as a function of the domestic lending spread, ΔR . The total supply function is S_T and the demand function

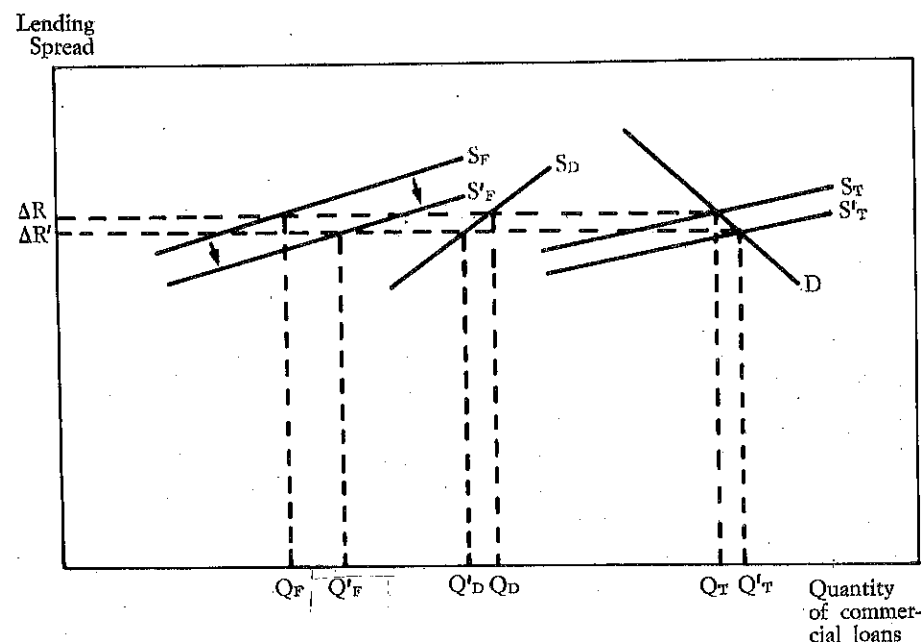
¹⁰ For Canada, we also use the "average rate on new loans" reported by the Bank of Canada.

D. Foreign banks are assumed to have a disadvantage, partly regulatory in nature, but their supply function exhibits greater price elasticity because they have more alternatives and vie for resources in more competitive markets. If their regulatory burden is eased, their supply function drops to S'_F and the total supply to S'_T . The market lending spread falls to $\Delta R'$. Because total quantity increases (to Q'_T), and domestic banks' supply drops (to Q'_D), the foreign banks must supply more and so their share increases.

In contrast, when the reduction in the lending spread results from the reduced bank loan demand that accompanies a more competitive financial system, the foreign banks' greater supply elasticity causes their quantity to fall by more than does the domestic banks' quantity. In Figure 2, demand has dropped to D' , reducing the lending spread to $\Delta R'$ and total quantity to Q'_T . Because S_D is steeper than S_F , $Q_D - Q'_D$ is less than $Q_F - Q'_F$: foreign banks' share drops.

FIGURE 1

EFFECT ON FOREIGN BANKS' MARKET SHARE OF
REDUCTION OF REGULATORY COSTS

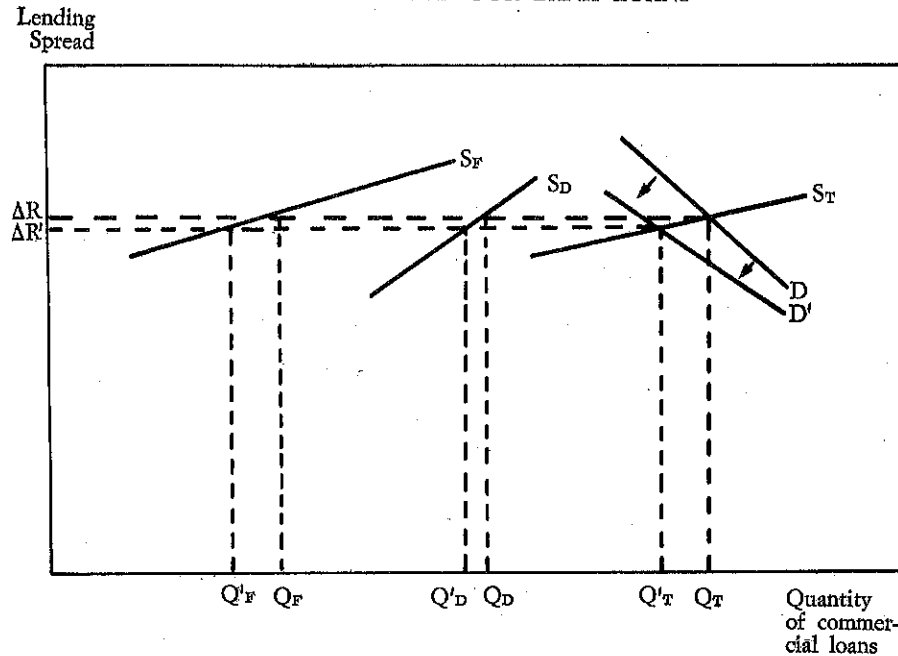


In summary, if competitive rather than regulatory factors dominate foreign banks' share, then their share should be positively related to changes in the domestic lending spread.

Our empirical examination of Canadian banks in the U.S.A. can be taken a step further. We observed earlier that Canadian agencies funded themselves largely from funds provided by their

FIGURE 2

EFFECT ON FOREIGN BANKS' MARKET SHARE OF DOWNWARD SHIFT IN DEMAND FOR BANK LOANS



parent banks in Canada. The parent banks in turn gather the requisite U.S. dollars by issuing Eurodollar deposits in Canada. As has been shown by Giddy and Schadler (1980), Canadians' demand for U.S. dollar deposits in Canada is strongly influenced by the differential between the Canadian and U.S. dollar interest rates. The greater the interest rate on Canadian dollar deposits, relative to U.S. dollar rates, the smaller is the quantity of Canadian funds placed in U.S. dollar-denominated deposits in chartered banks. Interest rate parity ensures that the forward premium on the U.S.

dollar equals the interest rate differential between Canadian dollar deposits and U.S. dollar deposits. Equations (1) and (2) may therefore be augmented by the inclusion of the Canadian dollar-United States dollar forward premium as an argument:

$$(5) \text{ CAU/UAU} = f_6(\text{CTU/YU, TDU/YU, PU-CC, FU})$$

$$(6) \text{ CLU/ULU} = f_6(\text{CTU/YU, TDU/YU, PU-CC, FU})$$

where FU = forward exchange premium, Canadian dollars per United States dollar.

Ordinary least squares linear regression was used to fit these equations to quarterly data for the period 1972-IV to 1980-I for the U.S.A., and 1974-II to 1980-I for Canada. As the initial results indicated presence of serial correlation in the residuals, the data were transformed using the Cochrane-Orcutt procedure and the equations were reestimated. The results for foreign banks in Canada, and for Canadian banks in the U.S.A., are shown in Tables 3 and 4, respectively.

For the influences on foreign banks' share of the Canadian banking market, regressions 1 and 3 in Table 3 are of interest. To judge by the F-statistics the economic variables provide a remarkably good explanation of changes in foreign banks' market share. The trade ratio and lending spread both have estimated coefficients that are significant at the 1 per cent confidence level, as shown by the t-statistic probabilities in parentheses below each coefficient. The direct investment variable, on the other hand, bears the wrong sign; there is no obvious explanation for this. When the independent variable is changed to the ratio of business loans rather than total assets, the coefficients are even more strongly significant but again with the direct investment measure carrying the wrong sign. Results 2 and 4 represent regression estimates with the direct investment variable omitted, on the grounds that quarterly balance of payments figures may be too inadequate a measure of this form of loan demand. As may be seen in Table 3, the estimated coefficients and their significance levels were little changed by this omission. The regressions were also run using the average rate on new commercial loans in place of the prime rate: this provided a slightly poorer fit but otherwise similar results. Those results are not reported here.

Table 4 contains the results of regressions fitted to the data for Canadian banks in the U.S.A. The Cochrane-Orcutt regressions

TABLE 3

REGRESSION RESULTS: FOREIGN BANKS IN CANADA, 1974:II to 1980:I

No.	Dependent Variable	Constant	Ratio of Trade with U.S.A. to GNP	Ratio of Inward Direct Investment to GNP	Domestic Lending Spread	R ²	F-statistic	D.W.
1.	Foreign Banks' Assets/ Canadian Banks' Assets	-0.0081 (0.85)	0.3010 (1.00)	-0.1998 (0.95)	0.0012 (0.99)	0.92	7.35	1.59
2.	"	-0.0064 (0.73)	0.2768 (1.00)		0.0011 (0.98)	0.91	7.70	1.46
3.	Foreign Banks' Business Loans/Canadian Banks' Business Loans	-0.0937 (0.99)	1.4314 (1.00)	-1.2533 (1.00)	0.0057 (1.00)	0.92	11.99	1.54
4.	"	-0.0858 (0.97)	1.2842 (1.00)		0.0051 (0.99)	0.88	8.34	1.89

Note: t-statistic probabilities are shown in parentheses beneath each estimated coefficient.
Sources of data: See Appendix.

again display good fits with significant F-statistics in all cases. Results 1 and 5 show that the trade and inward investment variables and the lending spread all display the predicted positive effects on the Canadian banks' market share. The primary influence, judging by the t-statistics, was the lending spread, as measured by the difference between the prime rate and the commercial paper rate. International trade was significant at the 5 per cent significance level. Again, omitting the direct investment variable does not alter the conclusions to be derived from these results.

When the forward exchange premium is included as an independent variable as a measure of the attractiveness to Canadians of U.S. dollar-denominated deposits in Canada, the results change slightly. For the total asset share regression (No. 3), the forward premium is significant at the 3 per cent level, while the lending spread moves to third place in significance. In contrast, as may be seen in regression No. 7, the Canadian banks' share of commercial loans remains strongly influenced by the lending spread while the forward premium coefficient is not significant. Apparently, Canadian banks' total assets are influenced by the availability of funds, while their business loan share is largely a function of conditions in the loan market.

TABLE 4.

REGRESSION RESULTS: CANADIAN BANKS IN THE U.S.A., 1972:IV TO 1980:I

No.	Dependent Variable	Constant	Ratio of Trade with Canada to GNP	Ratio of Inward Direct Investment to GNP	Domestic Lending Spread	Forward Exchange Premium	R ²	F-statistic	D.W.
1.	Canadian Banks' Assets/ U.S. Banks Assets	-0.0010 (0.20)	0.9814 (0.94)	0.7088 (0.79)	0.0010 (0.97)		0.83	7.92	2.05
2.	"	-0.0026 (0.53)	1.2826 (0.99)		0.0007 (0.94)		0.83	11.43	2.10
3.	"	-0.0024 (0.61)	1.1700 (0.99)	1.0607 (0.89)	0.0008 (0.92)	-0.0002 (0.97)	0.83	20.24	1.89
4.	"	-0.0040 (0.82)	1.4833 (1.00)		0.0006 (0.82)	-0.0002 (0.77)	0.82	15.97	1.98
5.	Canadian Banks' Business Loans/U.S. Banks Business Loans	-0.0024 (0.36)	1.3752 (0.94)	0.3026 (0.25)	0.0017 (0.98)		0.81	11.41	2.18
6.	"	-0.0028 (0.44)	1.4689 (0.98)		0.0016 (0.99)		0.82	16.41	2.21
7.	"	-0.0020 (0.33)	1.2773 (0.93)	0.5118 (0.39)	0.0019 (0.99)	-0.0002 (0.66)	0.81	13.16	2.15
8.	"	-0.0030 (0.50)	1.4709 (0.98)		0.0017 (0.99)	-0.0002 (0.60)	0.81	16.31	2.18

Note: t-statistic probabilities are shown in parentheses beneath each estimated coefficient.
Sources of data: See Appendix.

VIII. Interpretation

This paper has examined the regulatory framework in which cross-border banking takes place between the United States and Canada. We have highlighted the activities and sources and uses of funds of Canadian banks in the U.S.A. and U.S. banks in Canada. We have discussed the issue of reciprocity in regulatory treatment and shown how previous regulatory discrimination has prevented U.S. banks in Canada and Canadian banks in the U.S.A. from tapping domestic funds as freely as they might wish. Observing the rapid growth of cross-border banking during the 1970s, we wondered whether this growth could be attributed to changes in the effective regulations governing foreign and domestic banks.

The empirical results appear to refute this proposition. The growth of cross-border banking in each country is largely attributable to exogenous economic factors — in particular, growing economic integration through trade and loan market conditions. The most persistent result in all the reported tests is that when the spread between the prime rate and the commercial or finance company paper rate increases, so does the share of foreign banks in the commercial loan market.

A plausible interpretation is that foreign bank growth in the United States and Canada is not attributable to favorable regulation but to the elements of additional expertise and competitiveness that accompanies cross-border banking.

To see why the results support this conclusion, consider the contrary argument that diminishing regulation, by allowing foreign banks to offer more attractive rates, has been the cause of foreign banks' market penetration. A reduced burden would impel foreign banks to offer more loans at lower rates, reducing domestic banks' incentive to lend and thus increasing foreign banks market share. Hence, if regulation were a dominant influence, one would expect that as margins narrow, the foreign banks' share would increase. If, on the other hand, foreign banking growth is attributable to competitive factors, foreign banks' share should increase whenever lending spreads widen. According to the tests reported here, the latter is the case.

In conclusion, therefore, we find that foreign bank growth is largely predicted by economic and competitive factors. Our interpretation is that altering the ostensible regulatory environments in the United States and Canada will change the legal form under which foreign banks operate but it is unlikely to have a dramatic effect on their market share.

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APPENDIX

Data Sources

Variable	Designation	Source
Canadian banks' assets in U.S.A.	CAU	U.S. Federal Reserve Board data bank
Canadian banks' C and I loans in U.S.A.	CLU	U.S. Federal Reserve Board data bank
U.S. banks' assets in U.S.A.	UAU	<i>Federal Reserve Bulletin</i> , Table 1.24, line 14
U.S. banks' C and I loans in U.S.A.	ULU	<i>Federal Reserve Bulletin</i> , Table 1.24, line 4
Canadian trade with U.S.A. seasonally adjusted	CTU	INTERNATIONAL MONETARY FUND, <i>Direction of Trade: bilateral exports plus imports, c.i.f.</i>
Inward direct investment in U.S.A., seasonally adjusted	TDU	INTERNATIONAL MONETARY FUND, <i>Balance of Payments Yearbook</i> and supplements
U.S. GNP, seasonally adjusted	YU	INTERNATIONAL MONETARY FUND, <i>International Financial Statistics</i>
U.S. Prime Rate	PU	<i>Federal Reserve Bulletin</i>
U.S. Commercial Paper Rate	CU	<i>Federal Reserve Bulletin</i>
Foreign banks' assets in Canada	FAC	<i>Bank of Canada Review</i> , Table 47
Foreign banks' business loans in Canada	FLC	<i>Bank of Canada Review</i> , Table 47, "Loans and Receivables"
Canadian banks' assets in Canada	CAC	<i>Bank of Canada Review</i> , Table 7, Series B 672

Variable	Designation	Source
Canadian banks' business loans in Canada	CLC	<i>Bank of Canada Review</i> , Table 10, Series B 1401
U.S. trade with Canada, seasonally adjusted	UTC	INTERNATIONAL MONETARY FUND, <i>Direction of Trade</i>
Inward direct investment in Canada, seasonally adjusted	TDC	INTERNATIONAL MONETARY FUND, <i>Balance of Payments Yearbook</i> and supplements
Canadian GNP, seasonally adjusted	YC	INTERNATIONAL MONETARY FUND, <i>International Financial Statistics</i>
Canadian prime rate	PC	<i>Bank of Canada Review</i> , Table 20, Series 14020
Average rate on new commercial loans	ARC	<i>Bank of Canada Review</i> , Table 20, Series B 14021
Canadian finance company paper rate	CC	<i>Bank of Canada Review</i> , Table 20, Series B 14017
Forward exchange premium, Canadian dollars per U.S. dollar	FU	<i>Bank of Canada Review</i> , Table 20, Series B 14017

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