The Relative Efficiency of the Canadian Capital Market: The Consequences for Canadian-United States Financial Relations

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In an address delivered in Montreal on September 28, 1970,[1] Mr. Andrew F. Brimmer, member of the Board of Governors of the Federal Reserve System, made the following comment:

> Recently, the United States has been urged strongly to use its gold and other reserve assets to finance our large deficit. ... The fact is that much of the increase in our liquid liabilities is to Canada. This arises in large part from Canadian use of the international capital markets (especially the market in the United States) to obtain long-term funds, while enjoying a large surplus on current account.
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> I am by no means suggesting that restrictions be placed on Canada's access to our capital market. Canada should continue to have the opportunity to raise whatever funds it needs to further its development. However, I do think it is appropriate to ask whether Canada should not give more consideration to ways of restructuring the internal flow of savings in Canada in order to meet a larger share of the domestic demand for funds.

This comment attracted considerable attention in Canadian financial

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[1] Andrew F. Brimmer, "United States-Canadian Balance of Payments, Prospects and Opportunities," delivered before the First National Conference of Canadian Bankers, sponsored by the Institute of Canadian Bankers, Chateau Champlain, Montreal, Quebec — September 28, 1970.

circles for it seemed to suggest that the pattern of the flows of funds into and out of Canada is in a significant way explained by inefficiencies in the Canadian capital market. More specifically, the reference to giving "...more consideration to restructuring the internal flows of savings in Canada..." was taken to imply that such restructuring was thought to be necessary in order to remove an undesirable pattern in the international flows of funds and that it would not be removed automatically through the free play of market forces because of rigidities or inefficiencies in the Canadian capital market. The undesirable pattern that the presumed rigidities were thought to be creating, it would seem, was one involving Canada's being an exporter of short-term funds and an importer of long-term funds with the latter sometimes exceeding the former in amounts more than sufficient to cover current account deficits. Restructuring presumably would involve encouraging Canadian investors to curtail their export of short-term capital and to shift such capital into long-term Canadian financial instruments. The effect on the U.S. balance of payments of such restructuring would be a reduction in the outflow of capital through a reduction in the purchase of long-term Canadian bonds by U.S. investors and a reduction in the growth of U.S. liquid liabilities to Canada in similar amounts. This, it is felt, would improve the U.S. balance-of-payments position. I do not wish to embark on a discussion of U.S. balance-of-payments accounting conventions, in spite of my scepticism over some of their aspects. My essential purpose is to examine the relative efficiency of the Canadian capital market and, wherever relevant, to identify its balance-of-payments implications.

The suggestion that Canada is borrowing long and lending short because of domestic capital market imperfections is, of course, a suggestion that has for some years been used to explain a similar pattern in the flows of funds between the United States and Europe. It has been argued that Europe did not have an efficient long-term securities market so that international financial intermediation inevitably resulted in exports of short-term funds (i.e., holding of liquid U.S. liabilities) and imports of long-term funds. The phenomenal growth, since the early 1960s, in the volume of Euro-dollar bond financing, with the bonds being purchased by European investors, may be taken as evidence that structural deficiencies were indeed important.

The question I wish to raise is whether the same generalization can be made to apply to Canada. I wish to answer this question, as well as other related ones, by examining certain long-term developments

in the Canadian capital market and, wherever possible, by comparing these to developments in the U.S. capital market, and also by examining some very recent developments.

Long-Term Developments

It is not possible, with the available data, to measure the efficiency of the Canadian capital market using an "output per unit of input" approach. In any case, efficiency of a capital market is concerned not just with minimizing cost per unit of output of capital market services, but also with the quality of the capital allocation decisions made in terms of the relative economic efficiency of the borrower to whom funds are directed. What I propose to do is to make some assumptions as to the characteristics that a well-developed capital market is likely to have, and then determine the relative degree to which these characteristics are present in the Canadian and U.S. capital markets.

It may be presumed that an increasingly sophisticated and efficient capital market is one in which there is a high level of financial intermediation and in which there is a wide spectrum of financial assets available for investing the savings of the nation. This is not to suggest that there will be a never-ending shift away from direct financing to indirect financing through financial intermediaries, but merely to assume that financial intermediation, and innovation in financial claims, are prominent features of well-developed capital markets.

The degree of financial intermediation is roughly indicated by the ratio of the stock of financial intermediary assets to the Gross National Product.* Table 1 shows that while the ratio of financial intermediary assets is lower in Canada than in the United States (by an amount almost exactly equivalent to the degree to which per-capita GNP is lower in Canada than in the United States), that ratio has for at least the last 36 years been rising at the same rate or slightly more than the equivalent U.S. ratio. It can be presumed that the development of financial intermediation is at present proceeding at about the same pace in Canada as in the United States.

It would also seem to be the case that the rate of development of non-bank financial intermediaries has been as rapid in Canada as in

*It would be better, conceptually, to use national wealth instead of national product, but both reveal the same long-term trends. See R.W. Goldsmith, *Financial Institutions*, Random House, New York, 1968.

TABLE 1

FINANCIAL INTERMEDIARY ASSETS AS A PROPORTION OF GNP

	Canada (1)	United States (2)	Canada-U.S. Ratio (1) ÷ (2) (3)	Canadian per capita GNP as a proportion of U.S. per capita GNP (4)
1929	95	130	73	72
1939	139	185	75	72
1948	115	144	80	65
1965	134	167	80	79
1968	140	172	81	80

Source: Canadian financial intermediary data from E.P. Neufeld, *The Financial System of Canada, Its Growth and Development*, The Macmillan Co. of Canada Ltd. (forthcoming). U.S. data from R.W. Goldsmith, *Ibid.*, and from Board of Governors, Federal Reserve System, *Federal Reserve Bulletin*, March 1971.

the United States. Table 2 shows the rates of commercial bank assets to total financial intermediary assets for both countries. It can be seen that since 1890 the two banking systems have both declined substantially in relative size and to roughly the same extent which, parenthetically, is rather interesting considering the quite different legal framework in which the two systems have developed.

This decline in relative size of the banking system, of course, reflects innovation in financial intermediation on the part of non-bank financial intermediaries, including the appearance of government-sponsored intermediaries such as government pension funds and lending agencies. The number and relative size of the various intermediaries gives some impression of the range of financial intermediary claims available to savers and of the extent to which savers have diversified their portfolios. Table 3 gives an over-all impression of the extent of these developments in Canada and the United States. What stands out is the similar distribution of financial intermediary assets among the major types of financial intermediaries of the two countries.

In view of earlier discussions, it may be useful to obtain an impression of the extent to which the capital markets of the two economies are absorbing intermediate and long-term credit instruments. I do this by comparing ratios of net new issues of such securities to gross

TABLE 2

COMMERCIAL BANK ASSETS AS A PROPORTION OF TOTAL FINANCIAL INTERMEDIARY ASSETS CANADA AND THE UNITED STATES

	Canada %	United States %
1860	N/A	65
1869	75	N/A
1890	50	58
1912	60	64
1929	49	50
1939	42	40
1948	44	41
1965	29	32
1968	29	32

Source: See Table 1.

TABLE 3

RELATIVE SIZE OF FINANCIAL INTERMEDIARIES OF CANADA AND THE UNITED STATES 1968

	Canada %	United States %
1. Bank of Canada - Federal Reserve	4.6	5.1
2. Chartered Banks - Commercial Banks	28.9	31.6
3. Trust and mortgage loan companies and credit unions - Mutual Savings Banks and Savings and Loan Associations and Credit Unions	12.2	15.9
4. Finance Companies (including Personal Loan Companies)	4.9	3.4
5. Investment Companies	4.3	3.6
6. Life Insurance Companies	13.6	12.3
7. Private Trusteed Pension Funds	8.9	7.1
Sub-total	77.4	79.0
8. All Other	22.6	21.0
Total	100.0	100.0

Source: See Table 1.

savings as shown in flows of funds accounts. Table 4 gives this information for the years 1968 and 1969. I have combined the two years to minimize the impact of transitory elements. What stands out clearly is the remarkable similarity in the way the two economies utilize intermediate and long-term credit instruments. Bonds absorbed 12.6 percent of gross savings in Canada and 12.8 percent in the United States. The figure for mortgages was 12.9 percent and 12.2 percent, that for life insurance reserves and pensions was 9.9 percent and 8.9 percent, and that for corporate stocks was 3.3 percent and 3.2 percent. The total for all the intermediate and long-term instruments shown was 38.7 percent for Canada and 37.1 percent for

TABLE 4

SELECTED NET NEW INTERMEDIATE AND LONG-TERM CREDIT INSTRUMENTS AS A PROPORTION OF GROSS SAVINGS[1] 1968 AND 1969

	Canada %	United States %
Bonds		
- Federal Government[2]	3.3	2.6
- Other Government	7.0	3.9
- Non-Government	2.1	6.3
Total	12.6	12.8
Mortgages	12.9	12.2
Life Insurance Reserves and Pensions	9.9	8.9
Corporate Stocks	3.3	3.2
Total	38.7	37.1

Source: Based on data in D.B.S., *Financial Flow Accounts* and *Federal Reserve Bulletin.*

[1]Only domestic savings were used in the computation and exclude domestic credit instruments purchased by non-residents.

[2]Includes all securities except treasury bills.

the United States. There is no evidence here that the market for long-term credit instruments is less developed in Canada than in the United States.

These data, of course, ignore the possibility that the terms to maturity of the instruments included differ between the two countries. The only area where this is likely to be an important matter is that of the Federal Government.

Table 5, which outlines the term to maturity of the Federal debt of both countries, shows that Canadian Federal Government marketable debt is about two years longer to maturity than U.S. debt, and that this is little different from what it was in, say, 1950, with considerable variation in between.

It may be concluded at this point that the basic structural characteristics of the Canadian and U.S. capital markets are remarkably similar and so there does not seem to be any obvious evidence to support the view that deeply imbedded rigidities in the Canadian capital market explain the pattern of international financial flows that has existed.

However, it is now necessary to focus closer attention on recent developments, with particular emphasis on the Canadian balance of international payments.

TABLE 5

AVERAGE TERM TO MATURITY OF INTEREST-BEARING MARKETABLE FEDERAL GOVERNMENT DEBT OUTSTANDING

	Canada		United States	
	Years	Months	Years	Months
1946[1]	9	11	9	5
1950	8	1	6	7
1955	6	4	5	4
1960	9	5	4	6
1965	7	9	4	11
1966	7	7	4	7
1967	6	11	4	2
1968	6	4	4	0
1969	5	10	3	7
1970[2]	5	4	3	4

Source: Bank of Canada, *Statistical Summary* and United States Government Printing Office, *Economic Report of the President*, Feb. 1971.

[1]U.S. as of February of succeeding year. Canada as of December.

[2]Both as of December.

Recent Developments

For convenience, Table 6 outlines the Canadian balance of international payments for the period 1952-1970, and it does so in a form that facilitates an examination of the major developments since 1965. Over the period 1952-1970, Canada's current account deficit averaged $689 million per annum. It was more than covered by an inflow of long-term capital of $1,020 million per annum, of which $888 million came from the United States and $132 million from other countries. The difference was accounted for by an average outflow of short-term capital of $183 million ($121 million to the United States and $62 million to other countries) and average accumulation of exchange reserves of $147 million.

It may be asked whether these flows suggest capital market rigidities. In 1952 the ratio of official reserves (monthly average data) to total trade (exports plus imports) was 16 percent, and in 1970 it was 10 percent, while the ratio of the increase in reserves (1951 to1970) to the increase in Canada's total trade was 9 percent. Without discussing the difficult question as to what constitutes an adequate reserve, it does seem that the outflow of capital implied by the increase in reserves over the period as a whole was not unusual in relation to the growth in the volume of trade, even though the rate of accumulation in recent months certainly has been. In any case, if the reserves were regarded as being excessive, this would imply inappropriate exchange rate policy and not structural rigidities.

Consider now the flows of short-term funds. When it is remembered that much of Canada's trade is effected in terms of U.S. dollars and that the Canadian dollar is not essentially an international currency, it is not surprising that there was a net outflow of short-term capital, both on account of book credit increases (apparently), and increased holdings of foreign deposit balances and other short-term claims for essentially transactions purposes. The ratio of the total outflow of short-term capital (1952-1970) in the form of holdings of foreign bank balances and other short-term claims to the increase in total trade was 15 percent. By way of rough comparison, the ratio of *domestic* currency and demand deposits to Gross National Product in 1970 was 11 percent. It does not seem unreasonable to believe that most of the net outflow of short-term capital from 1952 to 1970 (amounting to $183 million annually on average) was the result of the increased need for transaction balances and related foreign claims arising from the growth in the value of trade. It does not appear that the magnitude of the outflow was such as to imply imbedded rigidi-

TABLE 6

CANADIAN BALANCE OF INTERNATIONAL PAYMENTS
1952-1970
(MILLIONS OF DOLLARS)

	1952-70	1952-70 Average	1966	1967	1968	1969	1970
CURRENT ACCOUNT							
1. Exports	189,746	9,987	13,396	15,085	17,184	19,095	21,580
2. Imports	202,853	10,676	14,558	15,584	17,291	19,846	20,283
3. Balance	- 13,107	- 689	- 1,162	- 499	- 107	- 751	+1,297
4. Balance with U.S.	- 22,568	- 1,188	- 2,030	- 1,342	- 801	- 733	+ 33
5. Balance with others	+ 9,461	+ 499	+ 868	+ 843	+ 694	- 18	+1,264
CAPITAL ACCOUNT							
1. Long-Term Capital							
a. Net direct investment	+ 8,126	+ 428	+ 785	+ 566	+ 365	+ 400	+ 545
b. Net Canadian common stock transactions	+ 843	+ 44	- 83	+ 48	+ 176	+ 265	- 82
c. Net Canadian bond transactions	+10,562	+ 556	+ 809	+ 857	+1,354	+1,461	+ 682
d. Net foreign securities transactions	- 1,443	- 76	- 401	- 432	- 467	+ 106	+ 61
e. Other	+ 1,286	+ 68	+ 57	+ 316	+ 226	+ 25	- 392
f. Total long-term	+19,374	+1,020	+1,167	+1,355	+1,654	+2,257	+ 814
(1) With U.S.	+16,865	+ 888	+1,238	+1,258	+1,134	+1,632	+ 958
(2) With other countries	+ 2,509	+ 132	- 71	+ 97	+ 520	+ 625	- 144
2. Short-Term Capital							
a. Resident holdings of foreign bank balances & other short-term claims	- 4,611	- 243	- 603	- 259	- 401	- 1,604	- 376
b. Non-resident holdings of Canadian deposits and other short-term market claims	+ 1,865	+ 98	+ 158	+ 8	+ 25	+ 392	+ 168
c. Other short-term transactions	- 721	- 38	+ 81	- 585	- 822	- 229	- 373
d. Total short-term	- 3,467	- 183	- 364	- 836	- 1,198	- 1,441	- 581
(1) With U.S.	- 2,293	- 121	- 179	- 707	- 1,270	- 540	- 338
(2) With other countries	- 1,175	- 62	- 185	- 129	+ 72	- 901	- 243
3. Net capital movements ex. reserves	+15,907	+ 837	+ 803	+ 519	+ 456	+ 816	+ 233
(1) With U.S.	+14,572	+ 767	+1,059	+ 551	- 136	+1,092	+ 715
(2) With other countries	+ 1,334	+ 70	- 256	- 32	+ 592	- 276	- 482
4. Change in Official Reserves	+ 2,800	+ 147	- 359	+ 20	+ 349	+ 65	+1,530
5. Balance	+13,107	+ 690	+1,162	+ 499	+ 107	+ 751	- 1,297

Source: D.B.S., *Canadian Balance of International Payments.*

ties in the Canadian capital market of the kind previously discussed. A year-by-year examination shows, however, that the volatility of short-term capital movements was very great -- much greater than the volatility of long-term capital movements. Ten out of 19 years showed a net outflow of short-term capital, and nine showed a net inflow, with an absolute range extending from -$1,441 million (1969) to +$425 million (1965), while 18 out of 19 years saw a net inflow of long-term capital. So, while the permanent net outflow of short-term capital can probably be explained by the needs of trade and commerce, this is not the case with year-to-year movements of short-term capital. Expectations of exchange rate changes, interest rate differentials, and spreads between spot and forward rates undoubtedly have been important forces behind the massive annual flows of short-term capital that have existed in the past. To the extent that such annual movements of short-term capital reflect interest rate and exchange rate sensitivity on the part of individuals in the Canadian financial system, presumably they could be taken to imply the existence of an efficient and innovative short-term funds market. An active short-term money market has, in fact, emerged in Canada over the years.[1] Once the basic structure and personnel are there, it is easy for the market to take advantage of new opportunities that emerge at home and abroad. Since 1966 a number of the investment dealers have become very active in the Euro-currency deposit brokerage business, and at least one firm was formed to specialize in it.[2] The Canadian banks and investment dealers in 1969 and 1970 saw an opportunity to develop a market in "Euro-Canadian dollars," involving loans of Canadian dollars to foreign investors, which were then swapped into U.S. dollars. The participants regarded such activity as not covered by the guidelines issued by the Canadian Government that were designed to prevent using Canada as a flow-through for U.S. dollars going abroad. Such guidelines referred only to foreign currency. However, in March 1971, the Bank of Canada wrote a letter to the banks and dealers, saying that such transactions were subject to the guidelines and, since then, they have disappeared.

Let us now examine developments in the period from 1966 to 1970 somewhat more closely. There was a change from a deficit on current account of $1,162 million in 1966 to a surplus of $1,297 million in 1970, or a "turn-around" of $2,459 million, of which

[2]See E. P. Neufeld, *The Financial System of Canada, ibid,* Ch. 14.

[3]See *Financial Times of Canada,* March 8, 1971, p. 14.

$2,063 million was accounted for by Canada's trade position with the U.S. and $396 million by trade with other countries. Roughly one-third of the trade balance turn-around, since 1966, arose from trade in automobiles and parts, reflecting the impact of the Canada/U.S. automobile trade agreement; while two-thirds of the turn-around arose from other trade involving a number of countries (including, of course, the United States).

Until and including 1969, the move toward a reduced deficit on current account was accomplished by an *increased* inflow of long-term funds, mainly through sales of Canadian bonds, which influences were offset by an increase in outflows of short-term funds and a steady accumulation of foreign exchange reserves. From 1966 to 1969 inclusive, the accumulated current account deficit was $2,519 million, the inflow of long-term capital was $6,433 million, the outflow of short-term capital amounted to $3,839 million, and official reserves rose by $75 million. A large part of the increased inflow of long-term funds was accounted for by net sales in the U.S. of provincial municipal and corporate bond issues, but such sales to European investors, including German investors, were large in 1968 and 1969 as well. Much of the outflow of short-term capital took the form of resident holdings of foreign bank balances -- essentially in the form of U.S. dollar balances -- by Canadian individuals and banks. Since the accumulated trade deficit was smaller than the inflow of long-term capital, Canadians as a group were acquiring short-term U.S. dollar claims with funds obtained from selling long-term Canadian claims to foreign (mainly U.S.) investors. But of course those responsible for the long-term capital flows and those responsible for the short-term flows were almost certainly largely independent of each other.

A basic change in trade and capital flows emerged in 1970. In that year, a trade surplus of $1,297 million developed, long-term capital provided an additional $814 million (down sharply from the $2,257 million of 1969), and these were offset only to the extent of $581 million by an outflow of short-term capital (which had been $1,441 in 1969) with an increase of exchange reserves ($1,530 million) absorbing the rest.

Two crucial questions must now be asked: Why did long-term capital inflows not respond more quickly to the declining current account deficit after 1966, and why did short-term capital flow out of Canada in increasing amounts? Consider the matter of long-term capital inflows first. We attempted to define an equation explaining such long-term capital movements over the period 1952-1970, and

estimated its coefficients. The yield spread between the Canadian and U.S. bond markets came out as an important explanatory variable. And it is therefore interesting, as Table 7 shows, that the interest spread between Canadian and both U.S. and German markets widened greatly in 1968 and 1969. Indeed, we have estimated that the average yield spread between the Canadian and U.S. bonds shown in Table 7 from 1952 to 1965 was 1.02 basis points, whereas the spreads from 1966 to 1969 were 1.16, 1.19, 1.42, and 1.37. In 1970 it declined to 1.00. We also found credit availability in Canada to be significant as an explanatory variable, although a really good proxy variable for it was difficult to find. But the fit was much improved when total net bond issues were added as an explanatory variable. This may suggest that Canadian issuers of bonds have, over about the past two decades, become accustomed to financing some part of their requirements abroad, regardless of credit conditions in Canada or changing yield spread; or it may suggest simply that credit availability effects are being picked up here. The difficulty is, of course, that it was a period during which there was a persistent current account deficit (except 1952 and 1970) and so there was not much experience with the behavior of explanatory variables during extended periods of surpluses on current account. However, there is

TABLE 7

CANADA-U.S. BOND YIELD SPREADS

	Average Canadian Provincial Yields	U.S. Corporate AAA Bond Yields	West German Local Authority Bond Yield	Spread	
				Canada U.S.	Canada West Germany
1952-65 Average	4.86	3.84	N/A	+1.02	N/A
1966	6.29	5.13	8.10	+1.16	- 1.81
1967	6.70	5.51	7.00	+1.19	+0.30
1968	7.60	6.18	6.50	+1.42	+1.10
1969	8.40	7.03	6.80	+1.37	+1.60
1970	9.04	8.04	8.30	+1.00	- 0.74
1971 - January	7.66	7.36	7.70	+0.30	+0.04
- February	7.86	7.08	7.70	+0.78	+0.16
- March	7.90	7.21	7.90	+0.69	+0.00
- April	8.10	7.25		+0.85	
- May		7.53			
- June					

Source: McLeod, Young, Weir Ltd.; Federal Reserve System, *Federal Reserve Bulletin;* International Monetary Fund, *International Financial Statistics.*

evidence that market adjustments are occurring. In 1970 and 1971, the yield spread between the Canadian and U.S. markets and between the Canadian and German markets has narrowed, as Table 7 shows.

The period of monetary restraint of 1969, during which the Canadian chartered banks were selling large amounts of Government of Canada securities, was transformed into a period of monetary ease in 1970, which also increased domestic demand for securities. As for balance-of-payments results, in spite of the fact that net new issues of provincial, municipal, and corporate bonds were substantially higher in 1970 than in 1969 ($3,698 million as against $3,212 million), the amount sold abroad declined by $746 million. Looked at in another way, whereas the Canadian market absorbed about $1,775 million or 55 percent of the total of such issues (net) in 1969, in 1970 it absorbed $3,006 million or about 81 percent of the total. First quarter 1971 Canadian balance-of-international payments statistics further support the view that capital flows are responding to the transformation that has recently occurred in Canada's current account position. In that quarter, the net inflow of long-term capital amounted to $269 million, compared with $644 million in the first quarter of 1970 and $560 million in the first quarter of 1969. Of these amounts, net issues of bonds and stocks accounted for $191 million in the first quarter of 1971, $448 million in 1970, and $532 million in 1969. Deliveries of new issues of bonds sold to U.S. residents amounted to $182 million in the first quarter of 1971, compared with $420 million a year ago; offerings amounted to $55 million, down sharply from $361 million of the previous year's first quarter; and undelivered issues were $296 million, compared with $712 million a year earlier. Of $1,156 million net new issues of Canadian bonds and stocks in the first quarter of 1971, 87 percent were sold in Canada. It does seem as if market forces, acting through yield spreads and credit availability, are achieving a substantial change in the flow of long-term funds into Canada, and that the Canadian market can absorb such long-term instruments in large volume.

To market forces there has been added the moral pressure of the Government of Canada. In October 1970, a request went from the Minister of Finance in Ottawa to Canadian borrowers to explore domestic sources of funds carefully before going abroad. In April 1971, the Minister sent a letter to all provincial treasurers and to underwriters active in foreign borrowing, forcefully reiterating his first request and suggesting that foreign borrowing had again begun

to increase. His concern was, of course, with the effect such borrowing would have on the Canadian dollar, fearing that it would lead to further appreciation and so to harmful effects on the export sector. If the results of the regression referred to earlier imply that some Canadian borrowers have become accustomed to selling some issues abroad, regardless of relative yields or credit availability conditions in Canada, then such *ex cathedra* supplementation of market forces might be justified.

It is also possible that some Canadian borrowers erred in their judgment about future exchange rates, considering the recent upward revaluation of the German mark, although the upward revaluation of the Canadian dollar, relative to the U.S. dollar, would argue the other way. But since very substantial adjustments in capital flows had occurred before the Minister of Finance exercised his direct influence, it is apparent that market forces were forcefully at work, and it is not certain that such direct intervention was either necessary or effective; however, it probably has had no harmful effects and just possibly may be speeding up adjustments that market forces were already achieving.

Summary, Implications, and Conclusions

We have seen that the *rate* of development of the financial intermediation process seems to have been at least as rapid in Canada as in the United States. We also found that the spectrum of financial intermediary instruments offered in Canada is as wide as in the United States, and that the relative importance of the various claims offered is very similar in the two countries. Furthermore, we found that, relatively speaking, the Canadian capital market seems to be absorbing just as high a proportion of long-term financial claims as does the U.S. market. All this seemed to suggest that structural rigidities were not the explanation for the pattern of the flows of funds into and out of Canada that has existed.

This conclusion seems to be supported by an examination of capital flows data. Over the last 19 years the *net* outflow of short-term capital might well be explained by needs of trade, while the great annual volatility of short-term capital, involving large amounts of funds, reflects sensitivity of money market dealers, borrowers, and investors to interest and exchange rate changes--evidence of the existence of a sophisticated market. The inflow of long-term funds also seems to reflect sensitivity to relative interest rate costs, although some additional element, involving notions among borrowers of

amounts they should seek abroad annually (regardless of domestic credit conditions), could have developed over the last two decades. The huge current account surplus of 1970 and the prospect for another surplus in 1971 suggests that such notions, if they existed, should be discarded, and the letters from the Minister of Finance to borrowers about seriously seeking funds in Canada may be justified in that they may hasten the results that interest rate changes would eventually achieve alone. At the same time, the sharp decline of long-term borrowing and short-term lending abroad, in 1970, suggests that interest rates and exchange rates, current and expected, are already achieving great changes in capital flows and that they, rather than structural differences between the Canadian and U.S. capital markets, are the dominant forces explaining the nature of Canada's participation in the international capital market.

Some implications of these findings may be noted. Since the Canadian capital market is quite highly developed, there seems to be little economic justification for using extra-market pressure to change basically the international flows of funds that it generates. Second, if troublesome capital flows do emerge, causes for them are likely to be found in the economic policies of the Canadian Government and of the governments with whom Canada has extensive financial relations. Third, if troublesome capital flows that are caused by misguided economic policies are dealt with by directly interfering with the way the Canadian capital market accumulates and distributes funds internationally, then the efficiency of the Canadian capital market is likely to be diminished and its future development somewhat impaired.

The latter point may be stated more directly. Canada has free access to the U.S. capital market, including being exempt from the interest equalization tax. In return, Canada has agreed to ensure that it will not be used as a medium for enabling U.S. funds to escape U.S. guidelines relating to capital outflows. Recently this has been interpreted as applying also to loans made by Canadian institutions in Canadian dollars with proceeds swapped into U.S. dollars. The possibility exists that the foreign financial transactions that are thereby impeded are not ones involving flights of U.S. capital abroad, but, rather, ones arising from swiftly changing conditions in Canada's trade position, credit conditions, and price-level performance. The difficulty of distinguishing between the former and the latter types of transactions could mean that the development of perfectly desirable Canadian international financial activity is being impeded by the impact of U.S. guidelines. At the same time it may be that the very

efficiency of the Canadian money market, including its ingenuity in seeking out new opportunities abroad, may mean that the Canadian capital market will always to some extent succeed in circumventing U.S. guidelines. Or, to put it another way, it is not the *inefficiency* of the Canadian capital market that may from time to time appear to cause trouble for the achievement of capital-flows objectives of U.S. authorities, but rather, its *efficiency*. It is to be hoped, therefore, that future developments will not be in the direction of increasing the number of guidelines that affect the financial transactions of Canadian institutions (for this would make Canada's financial markets less efficient) but rather, in the direction of creating conditions in the U.S. economy that would permit those guidelines to disappear.

DISCUSSION

BILL HUTCHISON

I found Professor Neufeld's paper very interesting. I am a part of the capital market that he so ably surveyed and it is disconcerting to find surprises about one's own work. The point which surprised me was the structural similarity that he demonstrated between the American and Canadian capital markets.

The paper is about the efficiency of the capital market, and since we are discussing this in relation to balance-of-payments transactions between the two countries, we must consider whether efficiency of the capital markets is in fact relevant to problems in this area. I think it is, but we must not forget that the largest part of capital formation in Canada takes place outside the capital market, as I assume is true in the United States. So if there are apparent inefficiencies in the capital market, and if they are causing wrong patterns of international flows, they may, in fact, be due to some structural weakness in those other processes of capital formation outside the capital market itself. Improper international flows of capital need not be the fault of the capital market.

In seeking a measure of efficiency, I think Professor Neufeld has chosen an appropriate course, and I am glad that he did not offer us anything which claimed to be a precise quantitative measure of capital market efficiency. Although theoretical attempts have been made, I think it is impossible to measure the efficiency of the capital market in practice, particularly in terms of its allocation. Therefore, the measure he has used — a comparison of the distribution of financial intermediaries' assets — is a necessary and acceptable proxy.

There is one test that I think might be interesting, because from Canada's point of view the capital inflow may or may not be

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efficient even if the capital market itself appears to be working smoothly. This is the test of whether or not the capital inflows result in a larger change in domestic real income than the return to the foreign owners. I don't know if Canada's inflows have been tested by this criterion, but I would suspect they qualify most of the time, although I have a feeling that the return of some of the foreign capital is pathetically low.

One other way of looking at the question of efficiency would be to look for signs of inefficiency, rather than trying to actually measure the efficiency exactly. It seems to me that inefficiency can come basically in two forms, the first of which is restriction of capital flows that are otherwise justified. The second is rechanneling a justified flow from one place to somewhere else – from a growing and useful industry to a moribund industry – this kind of thing, or from a country which needs the capital to one that doesn't. You can always excuse these interventions by saying that the flow is unjustified in the first place – the kind of reasoning which, in Canada, we are always afraid will be used in American policy. But personally, I would always bet that the degree of intervention is a sign of lowered efficiency. I simply don't believe that intervention on balance is ever likely to be efficient.

Now, if you agree that restrictions on capital movements are a symptom of lowered efficiency, does it not follow that Canada's great degree of freedom from currency restrictions and capital restrictions is a sign of relative efficiency? I think Canada's capital market is one of the freest in the world in terms of what the investor can do with his money. He can even buy gold, which Americans are not allowed to do. There are very few restrictions on movements across the border of capital for an investor. Most of the guidelines we have, have been imposed at the request of the United States. There have been some steps to restrict foreign ownership, of course, but such steps, in the context of this discussion, presumably help the U.S. balance of payments, so that I don't think we can consider them a problem. Basically the long history of the U.S. balance-of-payments program is one of interference with market forces. This strongly suggests that U.S. external capital flows have been lowered in their efficiency – from 1959 on.

After all, this has been a very long balance-of-payments program, partly because it has always been considered a temporary problem. In 1959 it started with a "Buy-American" policy under the Eisenhower Administration – a "Buy-American" policy is hardly something that could be described as efficient in an economic sense.

Then it went through a long series of voluntary restraints on capital flows. In 1965 I remember the treasurer of a large American corporation pointing out that he had repatriated a great deal of money under the contemporary guidelines, but there were two identifiable disadvantages. The corporation suffered a loss of flexibility in its international monetary affairs, and second, there was a reduction in after-tax interest income of about one percent. Those two consequences clearly denote inefficient, not efficient, use of capital from the corporation's point of view. Then there followed a large number of ingenious devices: Roosa bonds, swap credits and so on, which may or may not have increased the efficiency of the capital market, but in my opinion did not.

Now we have the surcharge. Like the interest-equalization tax, it is subject to a fairly solemn pledge that it is temporary. Fortunately for Canada the interest equalization tax did prove to be temporary, but I don't think there is much of a precedent for confidence in assurances of the temporary nature of any of these measures. In any case, most of them can only be classed as inefficient. For instance, in this day and age, considering current views of social justice and what is desirable business activity, I find it discouraging to see Americans adopting a policy which gives a double-edged benefit to the automobile industry. To transfer resources to Detroit at this point will only guarantee the addition of another 40 pounds of chromium to next year's Oldsmobile or twice as many cars. If that is really a legitimate aim of economic policy, I am disappointed.

My impression of all this is that the efficiency of the U.S. capital market, internationally speaking at least, must have suffered because of continuing intervention. Intervention on this scale will always result in lowered efficiency. This is not to deny that there are Canadian restrictions – I think there is an unfortunate trend in this direction and I wonder if we aren't, as Professor Neufeld has suggested, learning from the Americans. The most serious Canadian restriction, because it is so direct, is the limiting of the amount which pension funds may invest in foreign securities. For practical purposes this will chiefly bear on American stocks.

Returning to the concept of using the financial intermediary structure as a measure of the efficiency of the Canadian market, I would like to raise two points. First, Professor Neufeld's analysis shows that the percentage of assets of these financial intermediaries is lower in relation to GNP than the same group in the United States. This suggests that the capital market in Canada is, in fact, still less developed than in the United States, as one might expect. The lower

share of GNP for these intermediary assets does not necessarily mean that there is lower efficiency because, as Professor Neufeld suggested, it is related partly to the lower standard of living in Canada. But it is also possible that the degree of direct American investment in Canada may be a cause rather than a result. A large flow of direct investment may short-circuit a great deal of the domestic intermediary market. The smaller proportionate share of Canada's GNP taken by financial intermediaries may be accounted for by the simple fact that much of our capital formation is taken care of by direct investments, for reasons which may be paternalistic and unconnected with Canada's capital market.

Secondly, I disagree somewhat about the role of the life insurance companies. It's not a terribly important point, but I think at times in the past it has been important for Canada. I am convinced that a significantly higher share of financial intermediaries' assets is taken by the life insurance companies in Canada even now, in spite of the fact that they are losing ground. Let's take the assets for 1970 of the major group of financial intermediaries: chartered banks, other deposit-receiving institutions like trust companies, mortgage companies, mutual savings banks; finance companies, mutual funds, pension plans, and life insurance companies – that is not the complete list of institutions which Professor Neufeld used, but it is the bulk of them. Life insurance companies take 16½ percent of that particular group's assets in the United States and 20 percent in Canada. Not a very large difference, but I think it has significance, particularly because life insurance companies, in my view, are a special kind of financial intermediary. This raises the question of whether or not the mere presence of an intermediary is necessarily efficient. I happen to think that life insurance companies are not a particularly efficient form of gathering savings and allocating them. I say that for two reasons. First, their sales are really based on a non-financial objective. I know that life insurance salesmen have a pitch about savings, which claims that insurance is a good way to save. This has been challenged in recent years, largely by mutual fund salesmen who come around contradicting life insurance companies. This deposit-taking institution really collects its deposits (life insurance premiums) outside the capital market. By that I mean people don't go through a calculation of interest rates when they buy life insurance. Secondly, the reserves of life insurance companies are invested to match liabilities in current dollars. I don't blame life insurance investment officers for doing this. It's a sensible approach, and they do the same thing in the United States. But it does mean

that the real rate of return may be ignored, at least for a long period, by life insurance portfolios. At times in Canada's past, this dollar-matching approach to investment of such a large part of the country's savings has been important. For instance, when oil was discovered in Leduc, Alberta in 1947, Canadian capital simply was not forthcoming. But I believe that if the life insurance companies in 1947 had, in fact, been mutual funds, much more of Canada's resource development would have been accomplished by domestic capital.

Professor Neufeld suggested that the spectrum of financial possibilities is as wide in Canada as in the United States. While for the purposes of the argument this can be accepted, I don't think it is true in detail. There are some gaps. I can think of things like equipment leasing, which has always been far easier and far more economical in New York, through the New York banks, than in Canada. Any equipment leasing, of which there is a fair amount in Canada, has been very limited in the domestic capital market simply because the facilities are not available. We don't as yet have real estate investment trusts although I think we will in the future. The mutual funds' share of Canadian financial assets, I would say, is significantly smaller than it is in the United States.

In general, we seem to have more difficulty in Canada in raising risk capital, except perhaps in the mining industry. Canadian portfolio investors are too often either depressingly conservative or insanely speculative – it's blue chips or penny mines, with not enough in between. Also, I suspect that although our financial intermediaries are very similar in their structure, some of their portfolio tastes may be significantly different. So far, for instance, Canadian pension funds have a far lower investment in common stocks than their U.S. equivalents; I think, at the moment, that the figure is about 24 percent of assets in common stocks, which would compare with 61 percent in private U.S. plans. If you throw in the state retirement plans that would bring the U.S. average down to 44 percent, but there is still quite a difference.

One question I would ask about this striking similarity of intermediary structure is whether it is appropriate for Canada. I suspect that we may have adopted a U.S.-type of financial system that is not entirely appropriate for Canada, in view of its different economy and needs. We have a demonstrably higher capital/output ratio for instance. We devote a higher percentage of GNP to capital investment. We have faster GNP growth and we have a faster-growing labour force. A far bigger part of our GNP is involved in foreign

trade. And fundamentally we are still less mature industrially. So I suspect that there may be something inappropriate about having a financial-intermediary industry which is so similar to that of the United States.

Although I don't quarrel with Professor Neufeld's conclusion, I will mention three special difficulties which confront the Canadian capital market. None of them is in my view a sign of inefficiency. First, the predominant role of our junior levels of government – the provinces and larger municipalities; second, the degree of direct investment in Canada; and third, the issue size problem, particularly for large scale projects. Yesterday, Alan Hockin covered very eloquently the last point about large scale projects in Canada, so I will put that to one side. However, the other two problems – the role of junior governments and the degree of direct investment – I don't think can be attributed to market inefficiency. The political structure is responsible for our emphasis on the provincial government level, and past trade and tariff policies are largely responsible for the branch plant economy we have inherited and which, of course, calls for a substantial amount of direct investment. Also the American need for Canadian resources has resulted in a flow of direct investment. None of these has much to do with the efficiency of the Canadian capital market. It may be true that our domestic capital markets are not well designed to meet these special problems, but I am not sure that they should be. International flows have already provided a solution which is entitled to be called efficient.

In reference to the provincial government role, this shows up particularly in the percentage of GNE. In Canada the federal government accounts for about 5½ percent of Gross National Expenditure, and the junior levels of government account for about 14 percent, for a total of 19½ percent. In the United States the federal government's share of GNE is between 9 and 11½ percent, twice as big as in Canada, and the junior levels only take 12.9 percent, somewhat less than our junior levels. The total of all levels is 22 percent, somewhat higher. The National Accounts don't include any financial transactions, but I think this gives some idea of the relative importance of our junior government finances. This arises, of course, not only from our political structure, but also from the fact that our federal government is not involved in the kind of international obligations that your government is. It is important because it creates a financial problem which shows up in Table 4 of Professor Neufeld's paper where the Canadian junior governments are shown to

take a larger share of total financing. Provincial governments find it harder to raise money than the federal government because they do not have the full panoply of aid and sympathy from the central bank. Debt management is a more difficult matter for a provincial government than for the federal government. The same is true for municipal governments – keep in mind that the municipality of metropolitan Toronto is larger than most of the provincial governments.

Because we fragment so much of our government borrowing in Canada, we may create a source of inefficiency. If the federal government were responsible for more of the big three areas of provincial expenditure – transportation, health, and education – it would be in a better position to manage their financing than I believe the provinces are. As it is, I think each of the provincial governments has had a tendency, as Professor Neufeld suggested, to feel it must resort to the U.S. market almost as a continuing policy. There has been evidence of a policy of raising such and such a percentage in the New York market each year to avoid overloading the Canadian market. The predominance of junior government finance in Canada is confirmed by an analysis of bonds outstanding. Of the major bonds outstanding, 40 percent of the total in Canada is provincial and municipal government debt, whereas in the United States it's more like 22 percent.

Turning to the second problem of direct investment, this is obviously very important. Of the $285 million long-term capital imported from the United States in the first quarter this year, about $200 million was direct investment. Direct investment is always a significant portion of these capital inflows. The capital markets are therefore not responsible for the majority of this capital inflow. We don't directly ask for these savings in Canada. Even though they may benefit Canada, they are not a result of direct forces operating in our capital market.

American parent companies have a special attitude toward their own debt management that may be classed as inefficiency. It's very difficult for a U.S. parent company to consider its Canadian subsidiary's bond issues in the light of its own domestic image in the United States. It tends to be appalled at the rate its underwriter says will have to be paid on a bond issued in the name of its Canadian subsidiary. The simple solution of guaranteeing the debt directly is usually not an acceptable one. Also, the American parent does not usually like to register its subsidiary's issue and publish information on the operations of the subsidiary. These considerations prevent

some of this direct investment from being more properly placed in the public capital market.

Some of the other conclusions drawn by Professor Neufeld are of interest. I agree that transactions needs explain our short-term capital exports except, of course, during periods of great upheaval. There have been some interesting periods of this type, such as the Atlantic Acceptance collapse, for instance. At that time there was actually a short-term capital *inflow* into Canada in response to the difficulty of financing the upheaval – surely a sign of efficient integration of the two markets. Canadian industrial corporations currently carry large foreign exchange balances, as they always have. I think the latest figures are running something like $1 U.S. for every $4 Canadian. Nothing comparable occurs with American corporations. These are corporations operating in Canada – I am not talking about foreign branches. The general run of Canada's industrial corporations will always have large foreign exchange balances, the bulk of which are American dollars. Alan Hockin raised a good point – that these short outflows may be the sensible way to offset the necessary long inflows rather than adjusting the current account balance. Is there any real reason for the United States to consider that these particular liquid liabilities are undesirable? I find it hard to see why.

Finally, as far as implications are concerned, I agree with Professor Neufeld's conclusion that the predominant source of inefficiency in international movements between the two countries is, in fact, the U.S. balance-of-payments program or the policies which give rise to these measures. Perhaps there are some structural difficulties in Canada's long-term capital formation, but these could best be cured by policy changes outside the capital market, in my opinion. I don't think our capital market needs any intervention. Capital market efficiency is not the same thing as helping the U.S. balance of payments, so that I am not at all sure that the two are related. The current measures – the August 15th steps taken by the United States – are, unfortunately, one more invitation to inefficiency.

They amount to use of a blunt instrument on the whole world. In monetary policy and fiscal policy I had hoped we had learned that blunt instruments are to be avoided but now we have the bluntest instrument we have ever seen. It has been used, as far as I can see, to correct a bilateral U.S. problem with two or three countries, at the risk of turning the whole world into turmoil. If Canada is hurt by these measures, which I think is a considerable possibility, then it will certainly cause a turning point in U.S.-Canadian relations. Not one that I relish particularly, but it will be the end of the automatic

assumption on Canada's part that it really does have a co-operative and friendly relationship with the United States. In the future Canada's first action will be to look to its own defense. Perhaps this is the way it really should be. I don't think it will necessarily hurt us, but I do think it will cause a change in our relations.

I am skeptical about the permanence of Canada's current account strength. When the interest equalization tax was imposed on Canada, it happened to arise at a moment when there was a very transitory improvement in the Canadian balance of payments. If one looked at the balance of payments only for the period preceeding the imposition of the interest equalization tax, it looked as if it were justified. I'm worried that the same thing is happening now, that we are looking at a position in the Canadian balance of payments which is in fact unsustainable and temporary.

DISCUSSION

ROBERT M. MacINTOSH

Actually, my name is Pandora; I was the one who invited Andrew Brimmer to come to Montreal last year, and he opened up a whole box of ugly animals which we are still talking about.

First of all, I want to make a couple of observations about whether or not Dr. Brimmer is right in thinking that there has been a fundamental change in the Canadian balance of payments on the current account side. I'm inclined to agree with him that there really has been a fundamental change, but I would have to say that this is a minority view in Canada. We have such a basic inferiority complex that we, in Canada, really can't believe that anything is ever going well. And even last year when we were running a surplus on current account amounting to a very substantial figure, $1 billion or more overall, after having come in two or three years from a negative figure approaching that amount, the hand wringing still goes on: "Things really aren't going to be good. It really isn't going to stay this way."

We have opened a new window on Japan in the last decade or so. We have very large energy resources which are beginning, in terms of comparative cost advantage, to put us in a position where we are going to be in the driver's seat. And when it comes to the automotive deal, our current account has turned around roughly $1 billion, depending on whose statistics you use. If you look at the American trade account deterioration in the last five years, one-fifth of it is due to the automotive pact alone. Well, if one assumes that this is irreversible then we have had a fundamental change. A $1 billion turnaround on the automotive account is more than sufficient to have offset our average trade deficit.

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I personally don't think the deal can be reversed in any sense. For one thing, the plants have been built and all the related rationalization of auto parts manufacturing has been done. The corporations were a part of this. As a matter of fact, I don't think that the apparent American edginess over this subject is entirely justified. First, there appears to be a feeling in Washington that we are trying to make bilateral settlements, industry by industry, and that we are aiming at being balanced in every sector, at least where it suits us. There is also an assumption that the comparative cost advantage still lies south of the border in the automotive industry, a proposition which I simply don't think is true now. The General Motors' plant in St. Therese, Quebec, is said to be the most efficient of the forty plants in the General Motors' empire. The Ford plant that was built in St. Thomas, Ontario, in response to the automotive agreement is perhaps one of the finest plants in existence. That plant, as it so happened, was brought on stream to produce small cars for the North American market. The market took off, and that plant was producing the whole supply of some models. Well, having seen this, the American head office has since reallocated a portion of the market to Kansas City and a portion to Los Angeles. So there is, in fact, a head office decision process in the mix of the models which can and will influence the structure of our automotive market. Nevertheless, I am still assuming that there has been a fundamental turnaround which secures at least 6 percent of the production of North American models related to our 8 percent consumption.

All of that is preamble by way of coming to the point of the paper, which is the question of whether or not there has to be some restructuring of our capital markets to take account of the fact that we no longer need, on balance, a long-term capital inflow. This was the burden of Dr. Brimmer's proposition. By and large, I share Dr. Neufeld's approach to the matter. We are fortunate to have him here because he has been spending the last year at Stanford working on the Canadian capital market, and comes to us, quite evidently, with a wealth of preparation and depth of knowledge in this field, from which we are benefiting now. I don't think our capital market is inefficient in terms of resource allocation. I'm not sure that Dr. Brimmer ever really meant to use the word "inefficiency" as though that were the same thing as a structural problem. The title of the topic led us into using the word "inefficiency." I don't think that is really the issue. The issue is: are there structural problems? I think there is one structural problem that can't be gotten over very easily. During the last two decades there has been a terrific refinement of

the Canadian capital market. I've been in most parts of this market one way or another in the last 15 years, and during that time, the money market has increased in depth and strength and ability to arbitrage over time, over space, over maturity, over structures, and so forth.

A free capital market is an Anglo-Saxon idiosyncrasy. It's not much admired elsewhere in the world except by importunate borrowers, especially by developing regions or countries. That's why, I think, our French-Canadian compatriots also believe in a free capital market, being an importunate borrower. Of course, they don't have at all the same views of capital markets as their French speaking forebears over on the Continent.

Dr. Neufeld has shown that the relative size and the basic structure of the Canadian market for savings is remarkably similar to that of the United States in terms of the institutional structure of the relative proportions of GNP that are allocated to different types of intermediary institutions. But the aggregate numbers fail to describe the market's "lumpiness". The continuing tendency for Canada to import long-term funds despite an overall surplus on our current account is due to the fact that there are a few major borrowers who are very large in relation to the size of our institutional lenders. I want to say a word about this because one can too hastily conclude that Dr. Brimmer was correct in suggesting that Canada should give more thought to restructuring its internal savings flow. I doubt that this part of our savings flow can be effectively restructured in any foreseeable future. Dr. Neufeld did not touch on the position of the lender seen from the point of view of portfolio management. It's on that point that I would like to say a word in a moment.

Before doing so though I would like to make a few more remarks about the reasons for the lumpiness on the part of the borrowers. Mr. Hutchison has already gone over this to some extent, so I am touching on the same ground. There has been a substantial shift of our resources to the provincial-municipal sector in the last decade in Canada. The expenditures on social infra-structure have been relatively heavy compared to the United States in recent years, partly because these same resources have not been pre-empted for military purposes. Table 1 is to remind you of this proportion that our relative budgets allocate for military purposes. A shift away from military expenditure is still a problem to be dealt with by the United States but has been going on in Canada for the last decade, and will, to some extent, raise the same capital market problems here as in Canada. We've been like Sweden during the Second World War.

TABLE 1

DEFENSE SPENDING AS A PERCENT OF GNP

	UNITED STATES	CANADA
1960-64 average	8.7	3.7
1965	7.3	2.8
1966	8.1	2.8
1967	9.1	2.7
1968	9.0	2.5
1969	8.5	2.3
1970	7.8	2.2

Sources: Federal Reserve Bulletin, various dates; D.B.S. National Accounts, various dates.

TABLE 2

CURRENT AND CAPITAL SPENDING ON EDUCATION BY JUNIOR GOVERNMENTS AS A PERCENT OF GNP

	U.S.: STATE AND LOCAL	CANADA: PROVINCIAL AND LOCAL
1960-64	4.0%	4.5%
1965	4.5	4.4
1966	4.8	5.3
1967	5.0	6.4
1968	5.2	6.5
1969	5.5	6.7

Notes:
1. Spending includes grants-in-aid and conditional transfers from federal governments.
2. For the United States, expediture statistics are for the fiscal years of the state and local governments ending in the listed fiscal year of the federal government.
3. U.S. statistics are from the Annual Report of the Council of Economic Advisers. Canadian statistics are drawn from D.B.S. Consolidated Public Finance, 1960 to 1968 issues, and for 1969 estimated from D.B.S. Local Government Finance 1968 and 1969 and from Provincial Government Finance 1969.

TABLE 3

PUBLIC DEBT ISSUES OF ONTARIO & QUEBEC ($ MILLIONS)

Calendar years	C $	U.S.	DM	Euro $
1968	430	310	–	–
1969	315	325	241	40
1970	580	310	–	30
1971 (to Sept. 15)	495	360	30	60

Fortunately we've been able to devote substantial real resources to our social infra-structure. The supporting evidence for this proposition is partly contained in a couple of tables.

The second table is a partial statement of our social infra-structure, related only to education. I picked this particular sector because of the very difficult definitional problems of separating current and capital accounts. As you can see, in Canada the proportion of Gross National Product going to education at all levels, including pass-through of federal funds, has gone from 4.5 percent to 6.7 percent and in the United States, from 4 percent to 5.5 percent. Admittedly, this is only one segment. It is not the whole story. My resources were not sufficient in the time I had available to go into other aspects of it, but speaking in a very general sense, we have introduced national medicare. It is quite self-evident that if you take operating expenditures and related capital expenditures for medical infra-structure, hospitals, etc. our present proportionate budget going into this area is very large compared to that of the United States. The same is perhaps true of highways. Another thing that is left out of the figures, but alluded to by Mr. Hutchison, is the fact that our hydro-electric power utilities are part of the provincial regimes, whereas most of the American utilities are still a somewhat more diverse group of private utilities.

Roughly two-thirds of the Canadian population is concentrated in two of the Provinces, Quebec and Ontario. Table 3 shows the debt issues of these two Provinces in recent years, because these two are so overwhelmingly the area of lumpiness of which I am talking. These figures, the public debt issues of Ontario and Quebec, include their hydro-utility agencies, but do not include the extremely large

sums of money which are being obtained from the Canada pension fund. Again, as you know, we have a national pension scheme now operating in nine Provinces and a parallel one in Quebec to which very substantial resources are going, flowing through the federal government and back into the Provinces, and for the most part financing the social infra-structure, mainly education. Mainly university building, I am sure most of you will be glad to know. Anyway, you can see from these figures that in recent years these two Provinces have been leaning on the U.S. dollar market for something in the order of $300+ million a year.

In '69 there was a very substantial borrowing in the Deutschmark and a few relatively small Eurodollar issues. I think that we will probably be going back to that German market in the future in fair size. The German institutional investors have special problems, the institutions with really big savings, especially the West Deutsch Giro Central, which is one of the really big participants in the Canadian market now. They can only buy very restricted types of assets. They can buy mortgages and government securities. They cannot buy corporate securities or real estate stock. So this is why there is a substantial market in Germany for Quebec and Ontario. In the case of Quebec, the quiet revolution there has led to a catch-up process and has vastly increased social capital spending. The expansion of the school system, 25 or 30 years behind Ontario, has grown at a fantastic rate. It might be argued that a fully flexible capital market in a country with a balance-of-payments surplus could absorb such large scale borrowings, but the problem has to be viewed from the lenders' side. That is what I want to come to next.

Public debt issues in Canada of $50-100 million are not uncommon now. Within the last month Ontario Hydro borrowed $100 million. The month before that the International Nickel Co. had a $150 million issue. If you relate those to the New York market, a $200-300 million issue in the New York market is a very big issue. So a $100 million issue every second or third month by the Ontario government is a big job of financing. I'm saying that the non-bank financial institutions in Canada are incapable of absorbing that scale of borrowing repeatedly.

Table 4 was taken directly from the Bank of Canada Statistical Summary. I'm not going into the details of the table, but the life insurance companies, which used to be major purchasers of Quebec and Ontario bonds, have no real growth in their net cash flow now. The trust and loan companies in Canada have had a very high rate of growth in recent years. These are now our major housing market

suppliers. The mortgage market in Canada has to be seen in the context of provincial requirements. We have a very high rate of population growth and our rate of housing starts per capita in Canada for the last 10 years has been consistently higher than that of the United States, and of California, despite the fact that in California 25 percent of the housing is trailers. So the resources that we are pouring into the housing market are really very considerable. This function is absorbing a large part of the savings flow and again impinges on the size of this market for provinces.

The pension funds are a very large growth area and a major absorber of provincial debt. But in Canada you are talking about a market with maybe only 20 or 30 pension funds in excess of $100 million in size of assets. I happen to be chairman of the investment committee of one of those, and there is just no way that our pension fund, approaching $100 million size, is capable of buying $3 million of Ontario's issues this month, next quarter and next year. After all, a $100 million fund isn't going to have more than $5 million of Ontario bonds all told in its portfolio if it has any sort of asset distribution. A very large pension fund account would be $1 billion, and obviously the scale in relation to the size of the provinces is way out of proportion. Hence, there is a spillover into the U.S. market. Anything that would impede the ability of these lumpy borrowers in the U.S. market would really throw a monkey-wrench in the works.

Moreover, I think it is well understood in Washington and Ottawa that it would also in a very serious way impede the aspirations of Quebec where we have a very special problem, and put almost impossible strains on political unity within the country.

One might hazard a guess that the capital market problem resulting from a shift from federal to junior government activities will eventually lead to a change in the statutory framework to take account of this. As a matter of fact, it is interesting to note that in the United States the Federal Reserve has just now introduced agency bonds as part of the eligible assets which they can absorb on certain terms. FNMA was created 35 or 40 years ago, and despite the fact that it is not an insignificant part of the U.S. federal debt, it's taken 40 years to adjust the commercial and central banking system to this fact of life. I don't think we will go that long in the case of the junior levels of government. The list of liquid assets that is commonly employed is simply out of date in relation to the realities of the nature of borrowing today. Our federal government debt has gone from $15 to $20 billion in the last decade. Our provincial government debt had doubled from $10 to $20 billion. The nature of

TABLE 4

ESTIMATED DISTRIBUTION OF HOLDINGS OF PROVINCIAL, MUNICIPAL, CORPORATE AND OTHER BONDS[1]

As at December 31	Provincial Direct & Guaranteed Bonds[2]						Municipal Direct & Guaranteed Bonds[3]					
	1964	1965	1966	1967	1968	1969	1964	1965	1966	1967	1968	1969
Held by	Millions of Dollars						Millions of Dollars					
Bank of Canada[5]	—	—	—	—	—	—	—	—	—	—	—	—
Chartered banks	372	338	280	343	373	364	307	338	327	348	366	368
provincial governments[6]	1,422	1,719	1,819	1,890	2,089	2,336	261	224	248	254	259	271
Municipal governments[7]	114	124	133	149	161†	127	403	398	429	494	610†	620
Life insurance companies[8]	1,075	1,048	1,063	1,142	1,124	1,094	727	722	716	720	700	678
Other insurance companies[9]	332	387	437	497	567	593	151	154	174	184	201	202
Quebec savings banks	78	67	60	58	62	47	33	30	29	29	39	30
Trust & mortgage loan companies	210	234	273	334	332	338	149	136	137	121	128	103
Trusteed pension plans:												
industry	1,861	733	769	782	781	760	585	313	317	305	292	282
other[10]		1,281	1,449	1,586	1,756	1,947		334	365	392	413	450
All other resident (residual)[11]	2,946	3,064	3,814	4,720	5,490†	6,252	1,215	1,445	1,612	1,741	1,773†	1,966
Total resident	8,410	8,995	10,097	11,501	12,735†	13,858	3,831	4,094	4,354	4,588	4,781	4,970
Non-resident	2,772	2,951	3,437	4,133	4,886	5,864	1,278	1,304	1,418	1,527	1,585	1,674
Total[12]	11,182	11,946	13,534	15,634	17,621†	19,722	5,109	5,398	5,772	6,115	6,366	6,644

TABLE 4 (CONTINUED)

ESTIMATED DISTRIBUTION OF HOLDINGS OF PROVINCIAL, MUNICIPAL, CORPORATE AND OTHER BONDS[1]

As at December 31	Corporate and Other Bonds[4]						Total Provincial, Municipal, Corporate and Other Bonds					
	1964	1965	1966	1967	1968	1969	1964	1965	1966	1967	1968	1969
Held by	Millions of Dollars						Millions of Dollars					
Bank of Canada[5]	177	201	240	270	305	351	177	201	240	270	305	351
Chartered banks	487	529	560	605	712	718	1,166	1,205	1,167	1,296	1,451	1,450
provincial governments[6]	167	230	245	238	319	351	1,850	2,173	2,312	2,382	2,667	2,958
Municipal governments[7]	2	41	42	52	32	50	519	563	604	695	803†	797
Life insurance companies[8]	2,175	2,388	2,533	2,741	2,843	2,780	3,977	4,158	4,312	4,603	4,667	4,552
Other insurance companies[9]	187	234	264	329	360	481	670	775	875	1,010	1,128	1,276
Quebec savings banks	26	30	32	32	47	46	137	127	121	119	148	123
Trust & mortgage loan companies	253	292	264	319	351	362	612	662	674	774	811	803
Trusteed pension plans:												
industry	867	834	882	950	970	994	3,313	1,880	1,968	2,037	2,043	2,037
other[10]		172	208	257	299	331		1,787	2,022	2,235	2,468	2,729
All other resident (residual)[11]	1,546	1,950	1,711	1,951	2,037	2,414	5,707	6,459	7,137	8,412	9,314†	11,734
Total resident	5,887	6,901	6,981	7,744	8,275	8,878	18,128	19,990	21,432	23,833	25,805†	28,810
Non-resident	3,459	3,808	4,787	4,998	5,382	5,828	7,509	8,063	9,642	10,658	11,853	12,378
Total[12]	9,346	10,709	11,768	12,742	13,657	14,706	25,637	28,053	31,074	34,491	37,658†	41,188

1. Holdings are shown at par value where available, in other cases at book value.
2. Excludes provincial treasury bills other than those of Manitoba and Saskatchewan sold at public tender. In 1963, $247 million of bonds of several Quebec hydro-electric utilities were assumed by Quebec-Hydro.
3. Excludes municipal bonds guaranteed by the provinces and bonds sold directly to municipal financing agencies set up by provincial governments. These bonds are included under provincial guaranteed debt.
4. Excludes a relatively small amount of funded debt which it has not been possible to identify by issue. "Other" bonds consist of those of Canadian religious and other institutions. Data in 1963, affected by the reclassification of bonds of hydro-electric utility companies referred to in footnote 2.
5. Holdings of bonds and debentures of the Industrial Development Bank.
6. Includes holdings of various funds under provincial jurisdiction such as hydro commissions, workmen's compensation boards and sinking funds. Holdings of teachers and civil service pension funds are included with "other trusteed pension plans".
7. Based on a sample of those large cities which provide details of their investments in their published annual reports. Includes holdings of various funds under municipal jurisdiction such as sinking funds.
8. Registered under federal Insurance Acts.
9. Fire and casualty insurance companies and fraternal benefits societies registered under federal Insurance Acts.
10. Pension plans of federal crown corporations and government agencies, teachers federations, provincial crown corporations and government agencies, municipal, religious, charitable and health organizations, trade and employee associations and cooperatives.
11. Includes holdings of mutual and closed-end funds as shown on pages 798-801 and of sales finance and consumer loan companies as shown on pages 804-805.
12. Foreign pay issues have been converted at the official rates of exchange of £1 = $3.027 Cdn. and $0.925 U.S. = $1.00 Cdn. Quarterly data on net new issues of bonds with foreign currencies converted to Canadian dollars at market rates of exchange are shown in the table on pages 953 and 955.

† Revised.

the assets of the commercial and central banks is going to have to take account of that fact. I recognize that no one connected with a central bank could regard this idea with anything but horror. The political problems are self-evident. I know quite well how our own central bank would feel about that. But if it's possible to work out a technique for agency bonds down here, it's possible to work out a technique to restrict the number of junior government issues, the nature of issues, and the size of packages the central bank can deal in. You would have to make the central bank capable of dealing in them on both sides of the market if you are going to have the commercial banking system brought into it in terms of liquidity requirements. Well, that's probably a very good place to run for cover.

RESPONSE

EDWARD P. NEUFELD

in response to BILL HUTCHISON and ROBERT M. MacINTOSH

Bill Hutchison referred to the fact that the lower financial intermediary to GNP ratio in Canada may not be an indication of lower efficiency. I quite agree. Some studies Goldsmith and others have done on international financial intermediation show that there are substantial differences. For example, I think one of the highest, in terms of financial intermediary to GNP ratio, is the United Kingdom. Nor would I argue that it is really lower income or lower income alone that explains the level of financial intermediation. In Canada, it just happened to be the case that the lower degree of financial intermediation in relation to that of the United States is almost exactly the same as the lower relative level of per capita real income. I put it down because I thought it was rather interesting and suggestive. But just how important the relationship is should, I think, be examined further.

In considering the life insurance companies, I don't know whether Bill excluded foreign assets of Canadian life companies. I did so, which might make some difference. I concentrated on Canadian assets of financial intermediaries because I was interested in financial intermediation in Canada. While I agree generally with what Bill said about Canadian life insurance companies, what is actually happening to them indicates that the market is moving at a fairly rapid pace toward correcting this area of inefficiency. The highest ratio of life company assets to financial intermediary assets appeared in 1934. So we have had about three or more decades of relative decline in what was, at that time, an exceedingly important financial intermediary.

I agree that we may have gotten beyond the point where Canada could automatically assume that its financial relations with the United States will be of a personal nature, in which a frantic overnight trip to Washington by our friends in Ottawa constitutes a worthwhile approach. We have seen now that it is no longer a worthwhile approach. From here on, it may well be that Canada should reexamine its basic approach in its financial relations with the United States.

I throw out this question now not because I know the answer at this moment but to give a specific example. Has the time come when we should refuse the interest equalization tax exemption, and therefore not feel morally obligated to do all the other things we have committed ourselves to do? I feel that it has indeed impeded the international short-term capital market activities of Canadian financial institutions. A cost has been involved, and I'm not sure, at present, that the benefits have really been greater than the costs. It may well be that we should think not in terms of special arrangements, but in terms of normal kinds of relationships with the United States, of the kind other countries have with the United States.

Bob raised the question of the word "efficiency", and the fact that Governor Brimmer didn't use the word. I think that is perfectly true. I simply used it the way economists use the word, describing situations in which distortions or obstacles in a market are of a kind that lead to results different from those that would otherwise have been produced. That is a sign of inefficiency. I certainly would have been quite pleased to use another term, such as structural rigidities.

The lumpiness question does deserve closer examination. I agree with a good part of what Bob said, but I don't agree with the conclusion reached, that it is obvious we must be net importers of long-term capital for that reason. There are other things happening on the other side. I think that as long as one can assume that the credit instruments available in Canada and issued by Canada are not identical with those available in the United States and acquired in the United States, one would expect to see flows in both directions. As an example of a case of flow in the other direction, the flow of equities in Canada has certainly been less than the rate of growth of the normal macro-economic aggregates. At least, my own research suggests this. The supply of Canadian equities has, in fact, lagged. The growth rate of Canadian equities in relation to savings has lagged. One can point to factors such as foreign ownership as an explanation. The logical conclusion is that, if Canadian portfolio preferences are more or less like those in the United States, this will inevitably lead Canadians to buy U.S. equities, which is what they have done. So here is a case in which there is an outflow of long-term capital, which could be an offset to those cases in which, because of lumpiness, you have an inflow of long-term capital. I see no reason, in theory, why this sort of thing could not happen in a number of other areas. Given a basic balance-of-payments structure, and no obstacles to relative interest-rate adjustments, some U.S. investors might even sell longer-term credit instruments in Canada. We have

gotten so used to an interest rate structure that suited a period in which Canada had substantial deficits that we have not yet begun to contemplate the kind of interest rate structure we would have if that situation were to disappear. I found it interesting when I ran some regressions involving Canadian-U.S. interest rates, that in this period of capital scarcity in Canada, the cost of capital in Canada has been 25 percent higher than in the United States. Indeed, I found that the best forecast of Canadian interest rates, on a year-to-year rather than a month-to-month basis, would simply have been to forecast the U.S. interest rate and add 25 percent to that rate. I also noticed that, in the last year or so, when we have had a fundamental change in our balance of payments, this gap dropped down substantially. In theory, I see no reason why that process could not go even further. We could, in fact, conceivably have an outflow of longer-term capital even though we were financing Churchill Falls in New York.

DISCUSSION

The following note is an expansion of comments made by Professor Dunn during the discussion period which followed the presentation of Professor Neufeld's paper.

ROBERT M. DUNN, JR.

Professor Neufeld has provided a great deal of interesting and useful information on Canadian financial markets, but it is not clear that he has succeeded in refuting some of the conclusions of Andrew Brimmer's paper of a year ago.[1] Governor Brimmer suggested that structural differences between Canadian and U.S. financial markets existed which produced a pattern of long-term capital flows to Canada and short-term flows back to the United States. Neufeld argues (in the first 10 pages of his paper) that the structures of U.S. and Canadian financial markets are actually quite similar, and in particular that the Canadian market is relatively as receptive as the U.S. market to long-term bond issues. This conclusion is defended on the basis of statistics indicating that bond issues as a percentage of gross savings are almost exactly the same in Canada as in the United States. The relative structure of the U.S. and Canadian financial markets is defined, for the purposes of this argument, solely in terms of the relative quantities of various classes of assets moving through the markets.

This argument is in error in making no allowance for yield differentials, and in particular for the decidedly different structure of

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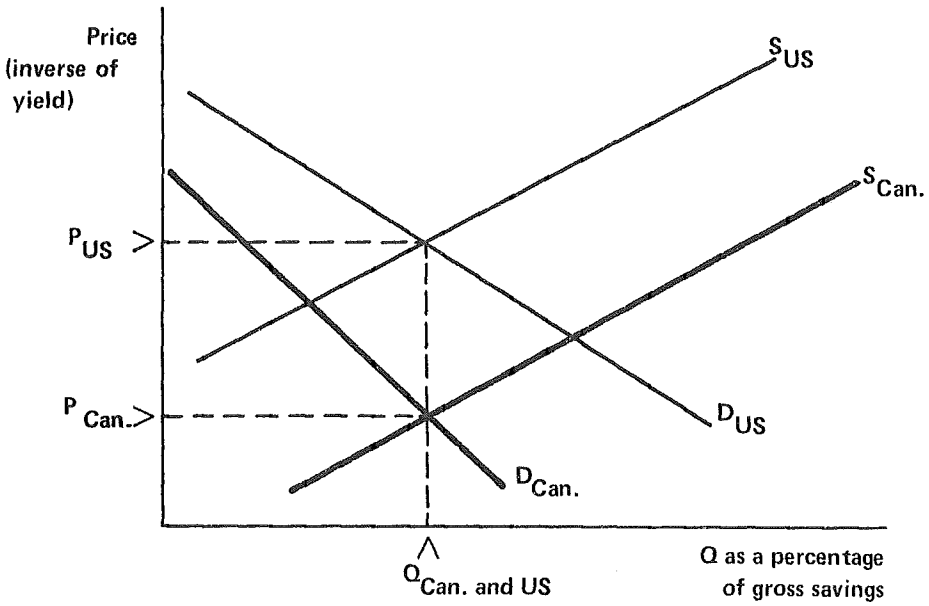
* I would like to thank Mrs. Beth Moxness of the Division of International Finance of the Federal Reserve Board for help in gathering the data for these comments.

[1] Andrew F. Brimmer, "United States-Canadian Balance of Payments: Prospects and Opportunities," presented before the first National Conference of Canadian Bankers, Montreal, September 28, 1970.

yields in the two countries. If two financial markets are similar, the supply and demand functions for various types of instruments ought to be similar, in that if the quantity axis is defined in terms of percentages of gross savings, similar quantities of various assets ought to relate to similar yields in the two national markets. A similarity of quantities in the face of decidedly different yields would indicate a distinct difference in the structure of the two markets rather than a similarity.

If, for example, bond yields in Canada were significantly higher than those prevailing in the United States, a similarity in the quantities of bonds sold as a percentage of gross savings in the two countries would suggest the following supply and demand functions for bonds in the two markets:

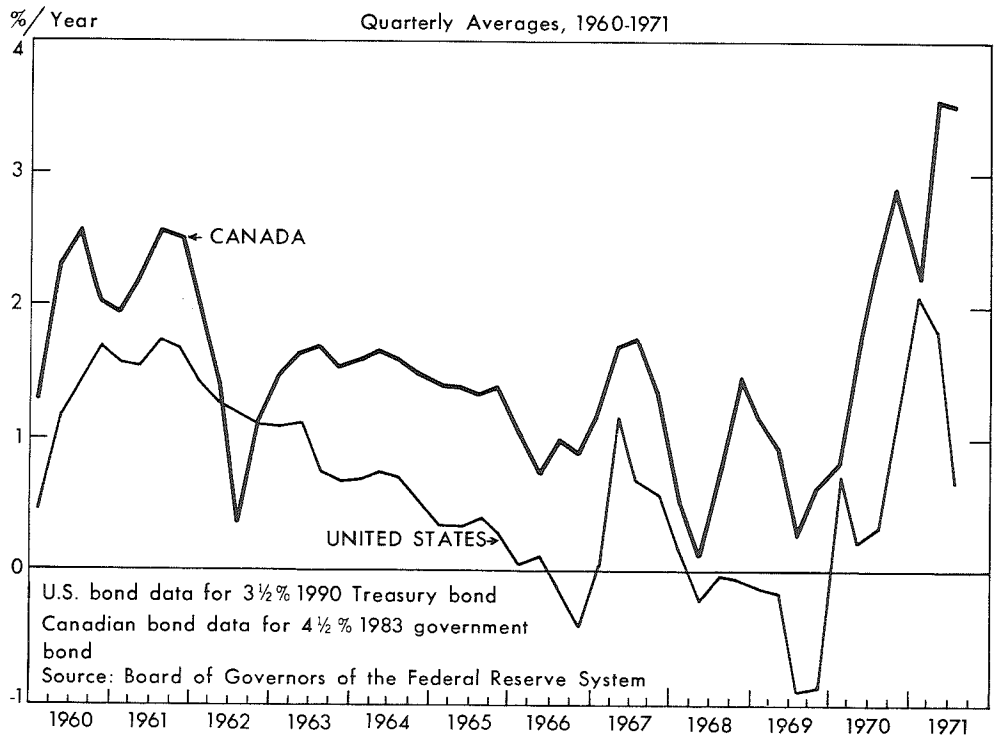
Figure 1



The structures of these two national bond markets are hardly the same, in that Canadian borrowers want to sell more bonds at various prices than do borrowers in the United States, but Canadian lenders want to purchase relatively fewer bonds. The markets clear with similar quantities issued, but with considerably lower prices (higher yields) in Canada than in the United States.

Figure 2

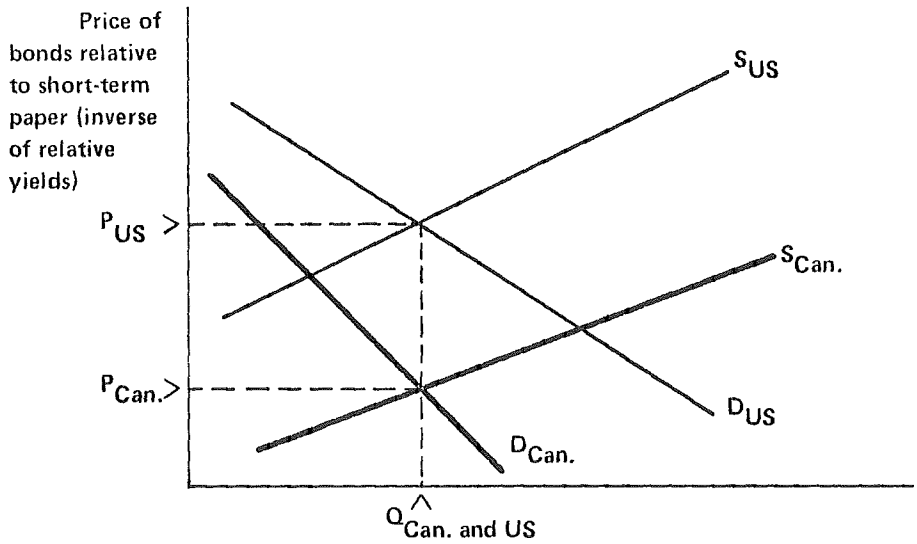
YIELD DIFFERENTIAL BETWEEN LONG-TERM GOVERNMENT BONDS AND 90-DAY TREASURY BILLS



In terms of the relationship between long and short-term markets, a similarity of U.S. and Canadian markets would be suggested if the same relative quantities of the two types of issues were sold *at similar relative prices,* that is, with similar yield curves in the two countries. Professor Neufeld has made no reference to the relationship between yield curves in the two countries in arguing that the financial markets of Canada and the United States are structurally similar, and has apparently confused points on the quantity axis with points on the relevant supply and demand curves.

As can be seen in Figure 2, Canada typically has had a significantly steeper yield curve than has prevailed in the United States in recent years, in that the excess of bond yields over short-term interest rates has exceeded that in the United States. The difference between the bond/bill yield differentials of the two countries averaged .85 percent during the period covered by Figure 2, and the data do not suggest a clear trend in that difference. This suggests that Canadian markets are considerably less receptive to bonds than to short-term paper when compared to the United States. Defining supply and demand curves in terms of bonds relative to short-term paper, the following pattern appears again. Canadian borrowers want to issue

Figure 3



relatively more bonds than short-term paper, but Canadian lenders want to purchase relatively fewer bonds. The markets in the two countries clear with the same relative quantities of the two types of instruments being sold in Canada and the United States, but with decidedly different relative yields. The higher relative bond yields in Canada reflect the relatively limited demand and larger supply of bonds in that market. Given the difference in the yield curves of the two countries indicated in Figure 2, Neufeld's data on the similarity of relative quantities of the two types of issues in Canada and the United States demonstrate a distinct difference in the structure of the two national markets rather than a similarity. His results consequently support rather than refute Andrew Brimmer's conclusion a year ago.

RESPONSE

EDWARD P. NEUFELD

Professor Dunn argues that since Canadian bond yields are higher than U.S. bond yields, even though about the same proportion of savings is invested in bonds in Canada as in the United States, such interest rate differentials indicate distinct differences in the structure of the two capital markets. He feels that this supports Mr. Brimmer's view to the effect that structural deficiencies in the Canadian capital market have caused Canada to import long-term capital and export short-term capital.

I am rather astonished at this theory of interest rate differentials and find it unconvincing. Differences in rates of interest between Canada and the United States could in theory be explained by a large number of factors including higher marginal efficiency of capital or profit expectations in the private sector, greater risk, a higher relative level of capital formation in the public sector, different inflation rates, and different savings rates. Just to take one example, the persistent flow of U.S. capital into Canadian resource industries may reflect higher expected returns on capital investment in Canada compared with alternative investments for such funds in the United States. Indeed, if such fundamental factors did not explain Canada/U.S. interest rate differentials, then considering the virtually complete absence of barriers to capital flows between Canada and the United States, one would expect the differentials to disappear, regardless of the state of development of the bond market in Canada. A zero interest rate differential would no more indicate identical capital market structures than a non-zero differential would indicate differing capital market structures. So Professor Dunn's graphs do not help us and his argument seems erroneous.

I also find unconvincing Professor Dunn's point that a steeper Canadian yield curve suggests a Canadian preference for short-term over long-term securites and therefore structural differences between the two capital markets. What is implied here is a sort of market segmentation theory of term structure, a theory that has received little empirical support in the voluminous literature relating to term

structure. Empirical testing of term structure theories has, of course, encountered great difficulties.

The direct evidence I referred to in my paper seems to me to be the relevant evidence. The data suggest that over the years, Canada has not, on balance, been exporting inordinately large amounts of short-term capital; that Canadian investors, relatively speaking, do buy as many long-term instruments as U.S. investors; that inflows of long-term capital are influenced by changing interest rate differentials; that the spectrum of financial claims is about as wide in Canada as in the United States; and that the rate of development of financial intermediaries is about the same in the two countries. These data leave little doubt, in my mind, that there are no distinct and significant structural differences between the Canadian and U.S. capital markets, and I think Professor Dunn is mistaken in believing that interest-rate data prove that there are.