THE CANADIAN EXEMPTION FROM THE UNITED STATES INTEREST EQUALIZATION TAX

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THESIS

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(summary)

The purpose of this thesis is to analyze the Canadian exemption from the United States Interest Equalization Tax. Two different aspects of this problem are considered: 1) the actual effect of the IET exemption on Canada-U,S. capital flows, and 2) the possible consequences if Canada had not been exempted.

The actual effect is examined in two quite different ways. The first way is to construct an econometric model of Canadian new issues in the United States, This model, which is based on the behaviour of Canadian borrowers specifies Canadian gross new issues sold in the United States to be a function of total Canadian gross new issues, the Canada-United States interest rate differential, and dummy variables for the 1962 exchange crisis and the IET. The dummy variable for the IET represents lower Canadian new issues in the United States prior to the passage of the IET by the U.S. Congress with the Canadian exemption intact-followed by higher new issues immediately after its passage in September 1964- It is this period of uncertainty that had the greatest effect on Canada-U.S. capital flows. The flow model of capital flows is

employed rather than the theoretically preferred stock adjustment model because of empirical difficulties with the latter. Since the model passes the "Chow test" for temporal stability for a breakdown of the sample into the pre and post IET periods, it is concluded that the IET did not cause American investors to substitute untaxed Canadian new issues for other taxed foreign issues. Thus, the IET exemption did not affect Canada-U.S. capital flows after the initial period of uncertainty.

The second way to determine the actual effect of the IET exemption is to study the history of the exemption. Interviews with key Canadian policy makers as well as the more traditional sources are used to provide an integrated view of this episode in Canada-United States economic diplomacy. The most important Canadian quid pro quo for the IET exemption was the Exchange Fund Ceiling. The Canadian negotiators were able to achieve their objectives of maintaining access to the United States capital market at the cost of some monetary independence. Any evaluation of their performance depends on the relative importance attached to these two objectives. In contrast, the United States negotiators failed to prevent a deterioration in tne United States bilateral balance of payments with Canada.

The possible consequences if Canada had not been exempted are evaluated by means of a simulation with the Bank of Canada's econometric model, RDX2. For this exercise in rewriting history, the equation for Canadian new issues in the United States was added to RDX2. Further, it is assumed that the alternative to an exemption is a floating exchange rate. According to the simulation the quarterly reduction in borrowing would have averaged $127 million per quarter. The United States dollar would have been 4.2 cents higher without the exemption at its peak in 1966. However, the Canadian dollar would have strengthened sufficiently to more than offset the effect of the exemption by the late 'sixties. The Canadian current account balance with the United States would have been $272 million greater. The shift in the current account would have increased real demand for output and would have resulted in an unemployment rate that would have been .29% lower. Nevertheless, what the United States would have lost on the current account would have been more than made up on the capital account. As a result, the U.S. bilateral balance of payments with Canada would have been on the average $91 million per quarter more favourable. Thus, United States would have been in a better position to achieve its balance of payments objectives if Canada had not been exempted.

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INTRODUCTION

It has been said that although God cannot alter the past. Historians can; it is perhaps because they can be useful to Him in this respect that He tolerates their existence.

--Samuel Butler
Erewhon, 1872

The Canadian new issues exemption from the United states Interest Equalization Tax is a historical fact whose impact on the economic history of Canada in the sixties can be analyzed. That is the first objective of this dissertation. The second is to rewrite this economic history as it might have been had there been no exemption. This is a task that has been greatly facilitated by the availability of econometric models.

Before proceeding further, it may be helpful to provide a short description of the Interest Equalization Tax (henceforth called IET). The IET, which was announced on July 18, 1963, was the first of a number of measures adopted by the U.S. Government to stem the outflow of capital from the U.S. in order to improve the balance of payments. It is formally an excise tax on the purchase of foreign securities by U.S. residents. The IET was interpreted by the Canadian Government as a direct threat to a Canadian dollar convalescing from

the 1962 exchange crisis. In order to regain the confidence of the world financial community, the Canadian authorities sought and obtained an exemption from the IET for Canadian new issues in the U.S.. The Canadian IET exemption poses questions of a technical economic nature about the effect of taxation on capital flows, and about the degree of integration of North American capital markets. Furthermore, there are political questions concerned with the costs of special arrangements with the U.S. in terms of Canadian independence. A case in point here is the Exchange Fund Ceiling which was the Canadian quid pro quo for the IET exemption.

The body of this dissertation is divided into four main chapters as outlined below. In Chapter I, the IET is described with emphasis on those features of the IET most relevant for Canada. A theory of the incidence of the IET is developed, and from this the effects of the IET on net yield to maturity and gross cost of borrowing are calculated.

A model of Canadian new issues in the U.S. based on the behaviour of Canadian borrowers is presented in Chapter II. The model specifies Canadian borrowing in the U.S. as a function of total financial capital re-

quirements in Canada, and of the Canada-U.S. interest rate differential. Consequently, it is a flow model.

The theoretically preferred stock adjustment model was not employed because it failed to yield theoretically correct and statistically significant coefficients when estimated empirically. Tests of the temporal stability of this model are made for a breakdown of the sample into the pre and post IET periods.

The model developed in Chapter II is linked to the Bank of Canada econometric model of the Canadian economy, RDX2, in Chapter III in order to provide a vehicle for speculation on what might have happened had Canada not been granted an exemption from the IET. The most probable alternative scenario was that a refusal of the Canadian request for an exemption from the IET would have forced the Canadian authorities to float the Canadian dollar. In order to separate the effects of the non-exemption from the IET from those solely attributable to the floating of the dollar, the policy simulation is performed with a flexible as well as a fixed rate control solution.

The final chapter, Chapter IV, is an account of

the Canada-U.S. financial arrangements related to the IET, the most important of which was the Exchange Fund Ceiling. This chapter relies on private interviews with key Canadian policy-makers as well as published sources to reconstruct the diplomatic negotiations concerned with these matters. The actual policy choices and their rationales are contrasted with the alternative scenario of non-exemption, and the costs and benefits of each are discussed. Furthermore, an attempt is made to integrate the political and economic aspects of these negotiations.

CHAPTER I

INTEREST EQUALIZATION TAX

Basic Rate

The Interest Equalization Tax, which was proposed on June 18, 1963 and signed into law on September 4, 1964 is an excise tax on the acquisition of certain foreign securities by American investors. The basic rates are given in Table 1. They range from a low of 1.05% of the value of the security for a debt obligation with a term to maturity of between one and one and a quarter years to 15.00% on debt obligations with a term to maturity greater than twenty eight and a half years. Foreign stocks are taxed at the same rate as bonds of the longest term. The basic rates were originally calculated with a view to increasing the cost of foreign borrowing in the United States by one percentage point so that the interest rate differential in favour of borrowers between the United States and most other Western capital markets would be eliminated. This effect can be shown for the case of a foreign borrower who wishes to raise $1,000,000 by means of a bond issue when the interest rate is 5%. He would have to

pay $500,000 in interest if he borrowed the money for ten years over the lifetime of the bond. If the purchase of the bond were subject to the tax, the purchaser would have to pay $77,000 in tax since the IET rate on a security with a maturity of ten years is 7.70%. The $77,000 would be equivalent to $10,000 a year additional cost for the issuer if he had to reimburse the purchaser in order to offer a yield competitive with other domestic securities. Thus the total interest cost would be $600,000 or 6% of the amount borrowed.

Level of Rates

The basic rate given in Table 1 is only one part of the tax. In 1967 and 1969, the United States Congress gave the President authority to change the level of rates. Initially the President was only free to vary the rates between one and one and a half times the basic rate. Subsequently, the tax could be eliminated at the President's discretion. The Ways and Means and the Finance Committees were very reluctant to grant such wide ranging authority to the President and they required assurance that such a grant would not be taken

as a precedent for providing the President with the discretionary power to change the rates of other taxes. Some economists have suggested that the President might be given the power to reduce income tax rates by Executive Order, thus bypassing a lengthy debate in Congress and decreasing the lags in stabilization policy. For example, the 1964 U.S. tax cut was introduced in Congress as early as late 1962, and its slow passage through the legislative process is well documented,[1] Contrastingly, the President can alter the rates of the IET or change some of the exemptions in an Executive Order. Thus the lag between the need for a change in policy as indicated by monthly statistics on foreign securities issued in the U.S. and the policy measure itself could be reduced to two months.

The levels of the IET rates and the periods for which they were in effect are given in Table 2. The level of the tax corresponds to the increase in the percentage cost of funds when the interest rate is 5% For example, a level of 1.50 would increase the annual cost to a foreign borrower of a bond issue in the U.S.

[1] For example, see Lawrence C. Pierce, The Politics of Fiscal Policy Formation (Pacific Palisades, California: Goodyear Publishing Company, 1971).

from 5% to 6.5% of the principal.

TABLE 1
BASIC RATE STRUCTURE

Period to Maturity p (in years)	Basic Rate %	Period to Maturity p (in years)	Basic Rate %
1 ≤p≤ 1.25[a]	1.05	8.5 ≤p≤ 9.5	7.10
1.25 ≤p≤ 1.5[a]	1.30	9.5 ≤p≤ 10.5	7.70
1.5 ≤p≤ 1.75[a]	1.50	10.5 ≤p≤ 11.5	8.30
1.75 ≤p≤ 2.25[a]	1.85	11.5 ≤p≤ 13.5	9.10
2.25 ≤p≤ 2.75[a]	2.30	13.5 ≤p≤ 16.5	10.30
3 ≤p≤ 3.5	2.75	16.5 ≤p≤ 18.5	11.35
3.5 ≤p≤ 4.5	3.55	18.5 ≤p≤ 21.5	12.25
4.5 ≤p≤ 5.5	4.35	21.5 ≤p≤ 23.5	13.05
5.5 ≤p≤ 6.5	5.10	23.5 ≤p≤ 26.5.5	13.75
6.5 ≤p≤ 7.5	5.80	26.5 ≤p≤ 28.5	14.35
7.5 ≤p≤ 8.5	6.50	28.5 ≤p≤ ∞	15.00

a These rates were added in the IET Act of 19o4. Until then, the rate structure started with a rate of 2.75 for 3 p 3 1/2.

Notes:
In the 1967 I ET Extension Act, the President was given authority to vary these rates between the basic rate and 1.5 times the basic rate. In the 1969 IET Extension Act, the President was given authority to vary these rates between zero and 1.5 times these basic rates and to designate lower rates for acquisitions of stock or debt obligations that are part of a new issue.

Revenue

The IET was not a great source of revenue, but it was never intended to be one, even though its legal form was that of an excise tax. Rather, it was intended as a measure to regulate capital flows. As a result, the rates were increased well into the range where the elasticity of revenue with respect to the base was negative. The availability of close substitutes both to foreign borrowers, and to American lenders has made the tax base (foreign new issues in the U.S. or outstanding foreign securities purchased by Americans) very sensitive to the rate. In the case of most outstanding bonds, if the tax applied there were no transactions, and hardly any foreign borrowers have tapped the U.S. market unless they were exempt from the tax for one of a number of reasons. Most of the revenue from the tax was collected from transactions in outstanding stocks. It is here that the concept of expected return is most elusive and most subject to disagreement. As can be seen in Table 3 the maximum annual revenue collected up to 1969 was only $91.7 million, which is a small sum compared to the revenue from the major taxes.

TABLE 2

LEVEL OF IET RATES

Time Period	Level
July 18, 63 to Jan. 25, 67	1.00
Jan. 26, 67 to Aug. 28, 67	1.50
Aug. 29, 67 to April 3, 69	1.25
April 4, 69 to present	.75

TABLE 3
TAX COLLECTIONS (a)

Year	Amount(mil of $)
1964	8.0
1965	20.7
1966	25.3
1967	40.4
1968	91.7
1969 (first half)	71.2

(a) The bulk of the collections result from U.S. purchases of outstanding stocks,

Source: U.S., Congress, Senate, Committee on Finance, Interest Equalization Tax Extension Act of 1969, Hearing, before the Committee on Finance, U.S. Senate, on H.R. 12829, 91st Cong., 1st sess., September 3, 1969, p. 25.

Exclusions, Exemptions and Loopholes

No discussion of the IET is complete until mention is made of the abundance of exceptions that were built into the IET Act. These exceptions run the gamut from those necessary to fulfill the objectives of the IET or other government programmes, to those inserted at the request of special lobbies to facilitate their own personal business and to reduce tax liabilities. A grasp of the number of these special clauses can be obtained by perusing the fifty nine pages of chapter forty one in the Internal Revenue Code devoted to the IET. In this section the reader will find a summary of some of the more important exceptions to the general principle that all purchases of a foreign security by a "U.S. person" are subject to the IET. Special emphasis is placed on those exceptions that played a large role in shield. ing from the IET capital flows from the United States to Canada,

Dominique G. Carreau breaks down the exclusions into three broad categories; exclusions related to U.S. international commitments, exclusions to promote U.S.

exports, and miscellaneous exclusions.[2] Under the first category are included exclusions given to a country where the application of the tax to new issues of securities of that country would"imperil or threaten to imperil the international monetary system." Canada immediately received an exemption under this exclusion clause, and Japan was given an exemption on February 10, 1965 permitting her to issue or guarantee securities up to a maximum of $100 million in the United States. The Japanese exemption was granted because the Japanese had been heavily dependent on American bank loans, and the extension of the IET to bank loans would have cut off this source of finance. The Japanese exemption was withdrawn on February 3, 1970 leaving Canada the only country with this type of exemption.[3] The acquisition of securities issued by governments or corporations of less-developed countries, as specified by the President, was excluded as was the acquisition of the securities of international organizations such as the World Bank, of which the U.S. is a member.

The second category of exclusions includes securi-

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[2] D.G. Carreau, "The Interest Equalization Tax," Journal of World Trade Law, 2, No. 1 (1968), p.60.

[3] Ibid., p.61.

ties required to finance U.S. exports. Thus, an exporter could take securities as partial payment for goods, or an American investor could purchase securities guaranteed by the Export-Import Bank. The exclusions in the second category are not blanket, however, and each exclusion is carefully specified in the Internal Revenue Code.

The miscellaneous exclusions cover acquisitions of securities by dealers or underwriters for resale, insurance companies for risk funds against foreign liabilities,[4] mining companies to assure access to raw materials,[5] "U.S. corporations"following nationalizations, and by "U.S. persons" if necessary to conduct business abroad. According to Carreau, miscellaneous exclusions cover "acquisition of foreign securities purchased for reasons other than the interest differential between American and foreign security markets". It might be added that the IET also includes many concessions to the financial sector and to the raw material extraction sec-

[4] Bond trading by American insurance companies can account for part of the large gross flows between Canada and the U.S. in outstanding Canadian bonds.

[5] This exclusion is the reason that Tennessee Natural Gas and the other gas utilities in the U.S. did not have to pay the IET on their $75 million loan to Panarctic Oils Ltd. for oil exploration in the Canadian arctic.

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Besides these three categories of exclusions there is an exemption for "prior American ownership and compliance". The consequence of this exclusion was that markets sprang up overnight to facilitate untaxed trading in foreign stocks by Americans. The largest of these markets was in New York, but there was also one in Toronto where it was called the "Z market". In Toronto the premium that American investors were willing to pay for Canadian securities already owned by Americans, and, hence, exempt from the IET, varied generally in the four to eight percent range.[6] The Toronto market had such a low volume of trading that it became inactive in 1968.

It was obvious to Canadian financial journalists early in 1965 that the small size of the premium at times was the result of illegal arbitrage.[7] The problem had been that under the IET Act of 1964, and the IET Exten-

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[6] See W.L. Dack, "Traders Happy as More Stocks Free of U.S. Tax," Financial Post, Jan. 18, 1964, p.37, and Beatrice Ridell, "Canadian Citizens Are Among the U.S. Citizens Caught in Tax," Financial Post, April 29, 1967, p.25.

[7] Robert Jamieson, "Mr. X's Rear-door Stock Deals Neatly Skip the 15% U.S. Tax," Financial Post, Jan. 9, 1965, p.1.

sion Act of 1965, all that was needed to qualify for this exemption was an affidavit certifying American ownership. Such affidavits could be readily purchased from impecunious Americans residing abroad for a small fee. The Bahamian corporation that bought the affidavit would then buy foreign securities on the foreign market and then resell the securities and affidavit for a premium price to a small securities firm that was a member of the National Association of Security Dealers and was able to resell the securities to legitimate customers. The end result of this circumventious string of transactions was the avoidance of the IET and the capture of the premium for stocks on which the IET had already been paid. When this loophole was revealed to the American public in June 1967 by the Wall Street Journal along with speculations that anywhere from $100 million to $1 billion in foreign securities had entered the U.S. untaxed,[8] The U.S. Congress was forced to act. Consequently, regulations were tightened considerably, and, after 1967, a "U.S. person" purchasing a foreign security must show to the satisfaction of the Internal Revenue Service that "the person disposing of the security is a U.S. person who has

[8] Wall Street Journal, June 30, 1967 reprinted in U.S. Congress, Senate, Committee on Finance, Interest Equalization Tax Extension Act of 1967, Hearings before the Committee on Finance, U.S. Senate, 90th Cong., 1st Sess., 1967, p.190.

satisfied any interest equalization tax liability that was incurred by reason of that security or who incurred no such liability with respect to his ownership."[9] The way in which an individual will normally demonstrate "prior American ownership and compliance" is by presenting a validation certificate or an IET clean confirmation which frees him of tax liability.

Some foreign stock issues are not subject to the tax because the foreign corporation is treated as an American domestic corporation for the purposes of the IET, In fact, most of the companies qualifying under this are subsidiaries of American corporations or international corporations owned by Americans. A foreign corporation to qualify must have more than 65% of a class of stock held by "U.S. persons" on the last record date before July 19, 1963, or, alternatively, more than %50 of a class of stock was held by "U.S. persons" on the last record date before July 19, 1963, and during 1963 the principal market for that stock was on a national securities exchange registered with the Securities and Exchange Com-

[9] U.S., Internal Revenue Service, Tax Information on the Interest Equalization Tax (Washington, D.C.: Government Printing Office, 1971), p.14.

mission.[9] In 1963 only two non-Canadian companies listed on the New York Stock Exchange qualified. Consequently, this exemption was weighted heavily in Canada's favour and did not aid many non-Canadian companies.[10] Canadian companies that qualified for treatment as American domestic corporations accounted for 29.6% of the weight in the Toronto Stock Exchange Industrial index, 47.4% of the gold index and 54.9% of the western oils index in 1970.[11] These figures provide an estimate of the proportion of the supply of Canadian stocks that are available without incurring IET tax liabilities. Stocks included in the index must be publicly held (if they are not their weights are adjusted downward to reflect public participation) and have a broad enough market to appeal to American portfolio investors. Sperry Lee estimated that, in 1965, two-thirds of Canadian shares listed

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[9] U.S. Code, Congressional and Administrative News, Internal Revenue Code,(St. Paul, Minn.: West Publishing Co.., 1971), p. 1224.

[10] See the testimony of Henry Wingate, Chairman of the Board of the International Nickel Company of Canada Ltd., whose effective lobbying won this exemption in U.S., Congress, House, Committee on Ways and Means, Interest Equalization Tax Act, Hearings, before the Ways and Means Committee, U.S. House on H.R. 8000, 88th Cong., 1st sess., 1963, p. 281.

[11] The figures were calculated by adding up the weights of stocks listed on the Toronto Stock Exchange, and used in their indices, that were believed by the Financial Post to be exempt from the IET on these grounds. See "TSE Stocks Exempt from the U.S. Equalization Tax," Financial Post, Jan. 30, 1971, p.10.

in New York were exempt from the IET.[12] Therefore, an American can acquire a diversified portfolio of Canadian stocks without even paying a dime in IET or "Z market" premium.

When the IET was passed in 1964, there were many loopholes. One of the most important was that direct investment which was defined to be acquisition by a"U.S. person" of stock or debt obligation of a foreign issuer or obligor of which he had 10% ownership. This meant that big investors were given immunity from the IET. Also American corporations could borrow money in the U.S. and loan it to their subsidiaries avoiding the IET, Further, commercial bank loans were not covered. However, the Gore ammendment gave the President a standby authority to impose tax on commercial bank loans, and the President did just this on February 10, 1965 for bank loans with a term to maturity of one year or more. Loans to Canada were originally subject to the tax but they were exempted by the President on September 12, 1966. Also. in February 1965, the President asked and received an extension of the act to cover non-bank lending with a term to matur-

[12] Irving Brecher, Capital Flows Between Canada and the United States (Montreal: Canadian American Committee of Private Planning Association of Canada, 1965), p.122.

ity between one to three years.

The U.S. Government has also moved in other ways to control direct investment and bank lending abroad in order to reduce the balance of payments deficit. In 1965, the U.S. Government first introduced its Voluntary Credit Restraints Programme for U.S. banks and its voluntary guidelines for U.S. direct investors,and in 1968 both programmes became mandatory. The first is administered by the U.S. Federal Reserve[13], and the latter by the Office of Foreign Direct Investments-in the Department of Commerce.[14] These programmes involve a different philosophy from the IET. The IET relies on market manipulation to achieve balance of payments objectives, whereas the other balance of payments programmes replace the market with a Byzantine complex of administrative rules and ad hoc bureaucratic decision making. The extension of the 1ST and the addition of the guidelines and restraints programme to the U.S. balance of payments arsenal demonstrates what every economist knows; that it

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[13] U.S., Federal Reserve Board, "Revised Guidelines for Banks and Nonbank Financial Institutions," Federal Reserve Bulletin, LVII (October, 1971), pp.9-20.

[14] U.S., Dept. of Commerce, Office of Foreign Direct Investments, "Interpretive Analysis and Explanation of Foreign Direct Investment Regulations," General Bulletin (1970).

is impossible to tax heavily only one of a number of close substitutes without widespread evasion. Effective controls must be comprehensive. Canada was subject to the voluntary programme of 1965, but the guidelines were vague enough that they did not constitute a direct threat to the Canadian balance of payments. The same can not-be said for the 1968 mandatory programme. However, Canada received an exemption after the programme had only been in effect for a couple of months. These programmes are discussed in greater detail in Chapter IV on the Canada-U.S, financial arrangements resulting from the IET exemption,

Now, a more detailed discussion of the Canadian exemption for new issues in the U.S. is in order. The IET Act of 1964 was actually passed by Congress after Canada had already received a guarantee of an exemption, and it was largely for this reason that section 4917, "The exclusion for original or new issues where required for international monetary stability",[15] of the Internal Revenue Code was drafted. It is ironic that it was a $100 million Quebec Hydro bond issue in New York that con-

[15] U.S. Code, Congressional and Administrative News, Internal Revenue Code (St. Paul, Minn.: West Publishing Company, 1971), p. 1203.

vinced President Kennedy of the necessity of decreasing foreign borrowing in the U.S.[16] Under section 4917, the President is given the discretion to exempt from the tax any country that qualifies under the vague terms of this exclusion by means of an Executive Order. Two Executive Orders applying to Canada are Executive Order 11175 of September 2, 1964 and 11304 of September 12, 1966.[17] Under the terms of the Canadian exemption, the acquisition of a newly issued Canadian stock is excludable if it is acquired directly from the Canadian issuers. This means that the "U.S. person" must purchase the stock from the Canadian corporation issuing it or from someone who is acting as an agent of the issuer in the primary distribution. Consequently, a "U.S. person" must pay the IET if he purchases the stock from a foreign underwriter, but he does not have to pay the tax if he purchases it from a U.S. underwriter, since the U.S. underwriter received the exclusion and could issue an IET clean confirmation.(1) In the case of a debt obligation of a Canadian issuer the "U.S. person" must, in general, acquire the debt within 90 days of issue in order to qualify for

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[16] Peter Newman, The Distemper of Our Times (Toronto: McClelland and Stewart, 1968), p. 33.

[17] See the Federal Register for the text of Executive Orders.

the exclusion.[18] In the case of a debt obligation secured by a mortgage the acquisition must be within 90 days after interest has begun to accrue.[19] Consequently, a "U.S, person" can purchase a Canadian debt obligation for a 90 day period without having to pay the tax. Thus, whether the issue is payable in Canadian dollars or U.S. dollars makes no difference in tax liability. The chief advantages an American underwriter would have over a Canadian investment dealer acting as the agent for the issuer is that he could take more than 90 days to distribute the issue since "U.S. persons" that purchase the security from him would qualify for the exemption based on his status as a "U.S. person", and that he could do the paperwork for his clients making it unnecessary for them to fill out "Notice of Acquisition Forms". The exclusion does not apply to the "acquisition of a stock or debt obligation of a company registered under the Investment Company Act of 1940" nor does it apply to the

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[18] U.S. Internal Revenue Service, Tax Infromation on the Interest Equalization Tax (Washington, D.C.: U.S. Government Printing Office, 1971), p.9. The taxpayer must fill out Form 3779 called "Notice of Acquistion of Original or New Canadian Stock or Debt Obligation" in order to qualify for the exemption. In the case of a stock underwritten in the U.S., the underwriter is the only one that has to file, and subsequent purchasers rely on the exemption for purchases from a "U.S. person". A Canadian underwriter who is part of a U.S. selling group can opt to be treated as a "U.S. person".

[19] Ibid., p. 10.

acquisition of the securities of Canadian corporations that were formed to purchase securities that are not exempt from the IET.[20] These two exceptions to the Canadian exemptions for new issues were added in 1966 to stop the use of Canadian corporations as gimmicks for IET avoidance.

Incidence

The question of "who pays the tax?" is a crucial one in the Public Finance literature, and it is central to any analysis of the real or potential effect of the IET on international capital flows. Underlying these flows are the demand for securities by purchasers and the supply of securities by issuers or sellers. In the absence of the IET both purchasers and issuers or sellers of securities are interested in yield to maturity which to them is an indicator of expected return on investment or expected cost of funds. If there are transaction costs or underwriting costs, expected return and costs of funds differ, since purchasers calculate yield to maturity on the gross price of the security, which would include the

[20] U.S., President, Executive Order, "Exclusion for Original or New Issues Where Required for International Monetary Stability," Federal Register, XXXI, Sept. 14, 1966, p.12005.

commission, and the issuers calculate cost of funds on the net price of the security which they receive from the underwriter.[21] These factors which cause the net yield to maturity to differ from gross cost of funds are ignored in the subsequent analysis and full attention is paid to the way that the IET would cause these two to systematically diverge. Consequently, yield to maturity is the equilibrating variable that equates demand and supply of securities, with supply responding to gross yield and demand to net yield when the two differ because of the IET.

The exact meaning of supply and demand in this analysis must be carefully defined because there are two possible interpretations. The first is that the yield to maturity or interest rate equilibrates the demand for the total stock of securities and the total supply of securities. The other is that the interest rate equates the incremental demand for securities with the flow of securities coming on the market. These two points of view have been labeled in their most aggregate forms the

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[21] The difference between the gross price paid by the purchaser and the net price paid by the issuer in the U.S. varies from .44% to 1.5% for bond issuers over $5 million and is as high as 10.26% for smaller issues according to J. Ross Peters, The Economics of the Canadian Corporate Bond Market (Montreal and London: McGill-Queen's University Press, 1971), p.50.

liquidity preference and the loanable fund theories of-interest rate determination.

Before proceeding with the development of a theory of incidence, it is desirable to state explicitly the assumptions underlying the theory. First, it is assumed that it is legitimate to specify demand and supply of securities as flows. Second, it is assumed that the equilibrium flow of foreign securities is non-negative. This assumption is necessary to assure that net and gross yield are different. For once an investor purchases a foreign security for its net yield, he must hold it for its gross yield, since the IET is non-refundable. Third, it is assumed that markets in certain types of Canadian securities can be separated from others. This is an obvious but useful simplification. With these caveats in mind the reader may now continue.

According to the partial equilibrium theory of tax incidence as elaborated by Alfred Marshall,[22] the legal liability for the tax is irrelevant in determining who pays the tax, rather the percentage of the tax borne by each party to the transaction is related to the elastic-

[22] Alfred Marshall, Principles of Economics (8th ed.; London: Macmillan and Co. Ltd., 1936), pp.415-19.

ities of supply and demand. In general, the demander will pay $\epsilon/n+\epsilon$ * 100% of the tax where ϵ is the elasticity of supply and n is the elasticity of demand, and the supplier will bear $n/n+\epsilon$ * 100% of the tax.[23] In the extreme case where the elasticity of demand is infinite the whole tax is borne by suppliers in the form of a lower price received for the commodity or vice versa (lim as $n \to \infty$ of $n/n+\epsilon=1$ and lim as $\epsilon \to \infty$ of $\epsilon/n+\epsilon=1$). This analysis can be applied mutatis mutandis to the IET, a tax on international capital flows.

The polar cases of Marshallian partial equilibrium incidence analysis are suitable approximations to reality if portfolio capital flows can be dichotomized into those in which purchaser initiative is dominant and those in which issuer initiative is dominant. This distinction has been found to be useful by many people who have studied long term capital flows. Kenen treats all U.S. capital flows as the result of borrowers decisions to supply assets to the U.S.,[24] and Miller and Whitman treat all

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[23] These two relationships were first expressed mathematically by Hugh Dalton in Principles of Public Finance (5th rev. ed.; London: George Routledge and Sons, Ltd., 1929), pp. 73-74.

[24] Peter B. Kenen, "Short Term Capital Movements and the U.S. Balance of Payments" in U.S., Congress, Joint Economic Committee, U.S. Balance of Payments, Hearings before the Joint Economic

capital flows as the result of portfolio decisions of American purchasers.[25] Various combinations of these assumptions have been employed by others who have studied the question. R. W. Baguley, in a study of capital flows between the rest of the world (mainly the U.S.) and Canada, estimates a flow equation for new issues whose arguments relate to the supply of bonds to the rest of the world.[26] However, the most convincing case for the importance of this distinction is made by Eleanor Duncan Ripley in her thesis.[27]

Purchaser initiative is dominant when American investors purchase Canadian dollar securities on the Canadian market provided that American purchases are small enough relative to the size of the market that the price of the securities is not affected. The aggregate behaviour of American investors is analagous to that of a

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Committee, U.S. Congress, 88th Cong., 1st sess., 1963.

[25] N.C Miller and M. V. N. Whitman, "A Mean-Variance Analysis of United States Long Term Portfolio Investment," Quarterly Journal of Economics, LXXXIV, No. 2 (May, 1970), p. 187.

[26] R Caves and G.L. Reuber, Capital Transfers and Economic Policy: Canada 1951-1962 (Cambridge: Harvard University Press, 1971), p. 48.

[27] Eleanor Duncan Ripley, "United States Investment in Canadian Securities 1958-1965" (unpublished Ph.D. dissertation, Harvard University, 1969), pp.4-16.

"price taker-quantity maker" in an ordinary market. In this case it is appropriate to use a demand equation to explain this type of capital flow. An example of such a flow is American purchases of Government of Canada bonds. On the other hand, issuer initiative is dominant when Canadian provincial governments or corporations float U.S. dollar bond issues in the U.S. market. Since Canadian borrowings in the aggregate comprise only about one percent of new issues in the U.S., they should not appreciably affect the cost of funds in the U.S.. The most important single factor distinguishing these two types of flows is the currency of repayment for the security.

For purchaser dominated transactions, the supply of foreign securities as a function of yield can be treated as if it were perfectly elastic. Consequently, as is shown in Figure 1, the IET shifts back the demand for these foreign securities as a function of yield, leaving the gross yield rO the same but reducing the quantity of foreign securities that American investors are willing to purchase. In this case, the American investors pay the tax by accepting lower yields.

Insert Fig. 1

For issuer dominated transactions, the demand for securities can be treated as if it were perfectly elastic. As a result, the imposition of an IET would shift down the supply function of foreign securities; that is, foreigners issuing securities in New York would only be willing to pay a given gross yield for any quantity of new issues. The higher the tax is the lower would be the net yield they would be willing to pay for any gross yield. They only accept a higher gross yield at a lower level of borrowing. As Figure 2 shows, in the new equilibrium foreign new issues in the U.S. are lower than they were prior to the IET, Q_1 instead of Q_0 and the gross yield on these securities is higher r_1, instead of r_o.

Insert Fig. 2

If demand and supply can not be properly specified as flows, the analysis becomes much more complex. Only increases in the stock of foreign securities held by American investors are subject to the IET; therefore, only increments in the stock would be a function of net yield, Foreign securities already in the portfolios of American investors would be held on the basis of their gross yield.

Consequently, as long as there were no changes in wealth

or yields, the IET would have absolutely no effect on American holdings of foreign securities.[28] There would be an increase in American holdings of foreign securities if the yield net of the IET increased to the point where it was imposed, or, alternatively, if the wealth of American investors increased. However, any increases in American holdings of foreign securities due to increases in wealth would be less than they would be in the absence of the tax. Before the IET was imposed, the change in the stock of foreign securities held by American investors was a function of the change in the interest rate on these securities relative to the U.S. rate and the change in wealth. After the IET, the relationship to the change in the interest rate would be dampened because increases in the interest rate would not provide as great an incentive for purchases since the net level would be less than the gross level prior to the tax. Any empirical analysis of capital flows subject to the IET would have to take this into consideration.

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[28] W. H. Branson ignored this fact that the IET is a tax on increments in the stock of foreign security holdings rather than a tax on income from foreign security holdings. Consequently, he erroneously concluded that the IET caused a stock adjustment reduction in American foreign security holdings. See W. H. Branson, "Monetary Policy and the New View of International Capital Movements," Brookings Papers on Economic Activity, No. 2(1970), p.238.

Effect on Yield to Maturity

For the case of purchaser initiative the yield to maturity net the IET can easily be derived mathematically from gross yield to maturity. An American investor will only be able to purchase $1/(1+t) worth of foreign securities for every dollar he invests since he is obliged to pay the IET of $t/(1+t) (t is the IET rate appropriate to the maturity of the security). Thus, if the gross yield on the security is $R per dollar of par value, the American investor will only receive $R/(1+t) per dollar invested counting the IET paid as part of the investment. Further, when the security matures, he will only be paid back $1/(1+t). That part of his investment dollar that went to pay the IET is a loss at maturity. The net yield to maturity, r, can be calculated by solving the polynomial obtained by equating the cost of the investment to the discounted value of the associated income stream until maturity in year n for the discount rate. This polynomial can be written as follows: (1)

$$1=R/(1+t)(1+r) + R/(1+t)(1+r)^2+ \ldots+ R/(1+t)(1+R)^n + 1/(1+t)(1+R)^n \quad (1)$$[29]

[29] Equation (1) can be solved, using an iterative method on the computer, for r given various values of R. The solution is

Table 4 gives the net yield for any gross yield between 2% and 15% per annum and for any term to maturity between one year and twenty-nine years calculated from equation (1). The IET rate appropriate to the given maturity is used in the calculation. Note that the IET does not, in general, reduce the yield to the investor by one percentage point, but that this is an adequate first approximation of the effect of the IET. The IET reduces the yield by more than this for high yield securities and by less than this for low yield securities. The differential effect on yield across maturities is as high as 82 basis points but this is only significant for very high or low yields or very short or long maturities.

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straightforward since the function F(r) formed when 1 is subtracted from both sides of the equation is monotonically decreasing over the relevant range, $0 \leq r \leq R$. If r is initially set equal to R and gradually reduced by small increments, F(r) will eventually change signs from negative to positive. After this occurs, r is set equal to its value before the change of sign and the size of the increments by which r is decreased are reduced. By this method the true root can be approached with any desired degree of accuracy.

TABLE 4
THE EFFECT OF THE INTEREST EQUALIZATION TAX ON YIELD TO MATURITY

Before Tax
Yield
R Term to Maturity N

	1	2	3	4	5	6	7	6
2	0.94	1.06	1.06	1.09	1.10	1.12	1.13	1.15
3	1.93	2.05	2.05	2.07	2.08	2.09	2.10	2.11
4	2.92	3.03	3.03	3.04	3.05	3.06	3.07	3.07
5	3.91	4.02	4.01	4.02	4.02	4.03	4.03	4.03
6	4.90	5.00	4.99	5.00	5.00	5.00	5.00	5.00
7	5.89	5.99	5.97	5.98	5.97	5.96	5.96	5.96
6	6.88	6.98	6.95	6.95	6.94	6.93	6.93	6.92
9	7.87	7.96	7.94	7.93	7.91	7.90	7.89	7.87
10	8.86	8.95	8.92	8.91	8.69	8.87	8.85	8.83
11	9.85	9.94	9.90	9.88	9.86	9.84	9.82	9.79
12	10.84	10.92	10.88	10.86	10.83	10.80	10.78	10.75
13	11.83	11.91	11.86	11.84	11.80	11.77	11.74	11.71
14	12.82	12.89	12.84	12.81	12.77	12.73	12.70	12.66
15	13.81	13.88	13.82	13.79	13.74	13.70	13.66	13.62

Before Tax
Yield
R Term to Maturity N

	9	10	11	12	13	14	15	16
2	1.17	1.18	1.19	1.18	1.24	1.20	1.24	1.28
3	2.13	2.14	2.15	2.13	2.19	2.14	2.19	2.23
4	3.09	3.09	3.10	3.08	3.14	3.08	3.13	3.17
5	4.04	4.05	4.05	4.03	4.08	4.02	4.07	4.11
6	5.00	5.00	5.00	4.98	5.03	4.96	5.01	5.05
7	5.96	5.96	5.95	5.92	5.97	5.90	5.94	5.98
6	6.91	6.91	6.90	6.86	6.92	6.83	6.88	6.92
9	7.87	7.86	7.85	7.80	7.86	7.77	7.81	7.95
10	8.82	8.81	8.79	8.75	8.80	8.70	8.74	8.78
11	9.78	9.76	9.74	9.69	9.74	9.63	9.67	9.71
12	10.73	10.71	10.68	10.62	10.68	10.56	10.60	10.63
13	11.68	11.66	11.63	11.56	11.61	11.49	11.53	11.56
14	12.64	12.60	12.57	12.50	12.55	12.41	12.45	12.48
15	13.59	13.55	13.51	13.43	13.48	13.34	13.38	13.41

TABLE 4——Continued

Before Tax Yield

R	Term to Maturity N						
	17	16	19	20	21	22	23
2	1.26	1.29	1.27	1.30	1.33	1.31	1.34
3	2.19	2.23	2.20	2.23	2.26	2.24	2.27
4	3.13	3.16	3.14	3.16	3.19	3.17	3.19
5	4.06	4.10	4.06	4.09	4.12	4.09	4.11
6	4.99	5.03	4.99	5.02	5.04	5.01	5.03
7	5.92	5.96	5.91	5.94	5.96	5.92	5.94
8	6.85	6.88	6.83	6.86	6.88	6.84	6.86
9	7.77	7.81	7.75	7.77	7.80	7.75	7.77
10	8.70	8.73	8.66	8.69	8.71	8.65	8.67
11	9.62	9.65	9.58	9.60	9.62	9.56	9.58
12	10.54	10.57	10.49	10.51	10.53	10.46	10.48
13	11.46	11.48	11.40	11.42	11.44	11.36	11.38
14	12.37	12.40	12.31	12.33	12.35	12.26	12.28
15	13.29	13.31	13.21	13.23	13.25	13.16	13.18

Before Tax Yield

R	Term to Maturity N				
	25	26	27	28	29
2	1.35	1.37	1.36	1.36	1.37
3	2.27	2.29	2.26	2.26	2.29
4	3.19	3.21	3.20	3.20	3.20
5	4.11	4.13	4.11	4.10	4.11
6	5.02	5.04	5.02	5.01	5.01
-7	5.93	5.95	5.92	5.91	5.91
8	6.84	6.65	6.82	6.81	6.80
9	7.74	7.76	7.72	7.70	7.69
10	8.64	8.66	8.62	8.59	8.58
11	9.54	9.55	9.51	9.48	9.47
12	10.44	10.45	10.40	10.37	10.35
13	11.33	11.34	11.29	11.25	11.24
14	12.22	12.23	12.17	12.13	12.11
15	13.11	13.12	13.06	13.02	12.99

TABLE 5
EFFECTIVE IET RATE A PERCENTAGE OF

INCOME

Before Tax
Yield
R Term to

Maturity N

	1	2	3	4	5	6	7	6	9	10	11	12	13	14	15
2	53	47	47	46	45	44	43	43	42	41	40	41	38	40	38
3	36	32	32	31	31	30	30	30	29	29	26	29	27	29	27
4	27	24	24	24	24	24	23	23	23	23	23	23	22	23	22
5	22	20	20	20	20	19	19	19	19	19	19	19	18	20	19
6	18	17	17	17	17	17	17	17	17	17	17	17	16	17	17
7	16	14	15	15	15	15	15	15	15	15	15	15	15	16	15
8	14	13	13	13	13	13	13	14	14	14	14	14	14	15	14
9	13	12	12	12	12	12	12	13	13	13	13	13	13	14	13
10	11	11	11	11	11	11	11	12	12	12	12	13	12	13	13
11	10	10	10	10	10	11	11	11	11	11	11	12	11	12	12
12	10	9	9	9	10	10	10	10	11	11	11	11	11	12	12
13	9	8	9	9	9	9	10	10	10	10	11	11	11	12	11
14	8	8	8	8	9	9	9	10	10	10	10	11	10	11	11
15	8	7	8	8	8	9	9	9	9	10	10	10	10	11	11

Before Tax
Yield
R Term to

Maturity N

	16	17	18	19	20	21	22	23	24	25	26	27	28	29
2	16	17	18	19	20	21	22	23	24	25	26	27	28	29
3	36	37	35	36	35	34	34	33	34	33	32	32	32	31
4	26	27	26	27	26	25	25	24	25	24	24	24	24	24
5	21	22	21	22	21	20	21	20	21	20	20	20	20	20
6	16	17	16	17	16	16	17	16	17	16	16	16	17	17
7	15	15	15	16	16	15	15	15	16	15	15	15	16	16
8	14	14	14	15	14	14	15	14	15	15	14	15	15	15
9	13	14	13	14	14	13	14	14	14	14	14	14	14	15
10	12	13	13	13	13	13	13	13	14	14	13	14	14	14
11	12	13	12	13	13	13	13	13	13	13	13	14	14	14
12	11	12	12	13	12	12	13	13	13	13	13	13	14	14
13	11	12	12	12	12	12	13	12	13	13	13	13	13	14
14	11	12	11	12	12	12	12	12	13	13	13	13	13	13
15	11	11	11	12	12	12	12	12	13	13	13	13	13	13

TABLE 6
THE EFFECT OF THE IET ON THE COST OF FUNDS TO NON-EXEMPT FOREIGN BORROWERS

Quarter	IET Rate %[a]	RCN	RUS	RUSG	Increase In Cost Of Funds RU3G-RUS	Canada-U.S. Differential RCN - RUS
63:3	15.00	5.15	4.01	4.89	0.88	1.14
63:4	15.00	5.11	4.10	4.99	0.89	1.01
64:1	15.00	5.20	4.16	5.06	0.90	1.04
64:2	15.00	5.22	4.16	5.06	0.90	1.06
64:3	15.00	5.22	4.14	5.04	0.90	1.08
64:4	15.00	5.13	4.14	5.04	0.90	0.99
65:1	15.00	5.04	4.15	5.05	0.90	0.89
65:2	15.00	5.10	4.14	5.04	0.90	0.96
65:3	15.00	5.30	4.20	5.10	0.90	1.10
65:4	15.00	5.46	4.43	5.36	0.93	1.03
66:1	15.00	5.59	4.56	5.50	0.94	1.03
66:2	15.00	5.68	4.58	5.52	0.94	1.10
66:3	15.00	5.84	4.78	5.75	0.97	1.06
66:4	15.00	5.86	4.70	5.66	0.96	1.16
67:1	22.50	5.59	4.44	5.83	1.39	1.15
67:2	22.50	5.70	4.71	6.15	1.44	0.99
67:3	22.50	6.03	4.93	6.40	1.47	1.10
67:4	18.75	6.52	5.33	6.61	1.28	1.19
68:1	18.75	6.83	5.24	6.51	1.27	1.59
68:2	18.75	6.74	5.30	6.58	1.28	1.44
68:3	18.75	6.56	5.07	6.32	1.25	1.49
68:4	18.75	7.16	5.42	6.72	1.30	1.74
69:1	18.75	7.35	5.88	7.24	1.36	1.47
69:2	11.75	7.52	5.92	6.78	0.86	1.60
69:3	11.75	7.62	6.14	7.02	0.88	1.48
69:4	11.75	8.12	6.53	7.44	0.91	1.59
70:1	11.75	8.16	6.56	7.48	0.92	1.60
70:2	11.75	7.97	6.82	7.76	0.94	1.15
70:3	11.75	7.75	6.65	7.57	0.92	1.10
70:4	11.75	7.40	6.27	7.16	0.89	1.13
71:1	11.75	6.43	5.82	6.67	0.85	0.61
71:2	11.75	6.60	5.88	6.73	0.85	0.72

a. The rate used is the basic rate on bonds of twenty nine years or more times the level set by presidential discretion.

Even though the yield equivalent of the IET is higher for greater yields, the effective rate of tax as a percentage of yield is lower for higher gross yields.[30] Table 5 has the effective tax rate on income from foreign portfolio investment for different terms to maturity and before tax yields. A tax that was neutral across the varied yields and maturities of foreign portfolio investment would have the same effective tax rate regardless of the yield or term to maturity. The IET is not neutral in this regard; it discriminates against low yield invest ments. This explains why Americans have largely stopped purchasing non-exempt foreign debt obligations, yet have continued purchasing some of the more speculative foreign securities such as Canadian mining stocks which have substantially higher expected yields.

There are other non-neutralities embodied in the IET, Some are the result of the exclusions, exemptions and loopholes discussed above; others, the result of the definition of the IET base. A tax whose prime purpose is to improve the balance of payments by discouraging capital

[30] The definition of effective rate of tax employed herein is that in R.A. Musgrave, Theory of Public Finance (New York: McGraw Hill Book Company, 1959), pp. 338-45.

outflows must discriminate against foreign source investment income. Further, if the objective is a continuing improvement in the balance of payments rather than a once and for all improvement, income from securities acquired after the imposition of the IET should be taxed at much higher rates than those before. This strategy reduces the outflow and assures a continuing inflow as foreign securities mature, whereas equal treatment would produce a very large inflow in the period immediately after the tax was announced assuming the tax could be avoided by selling. If the IET was on all holdings of foreign securities at the time of its announcement, there would be no reason to sell because the investor would have in effect prepaid the tax on future income from the security. If it was on all holdings as of some later date, there would be a passive sell-off. These peculiarities stem from the ability of a tax on the stock of foreign security holdings to force an adjustment in the stock of holdings, and the permanent nature of a prepaid tax. A tax on income from foreign securities would probably not cause as large of a sell-off because it would not be as likely to be considered a permanent tax.

The case of issuer initiative, where the borrower bears the full burden of the tax can also be analysed in terms of

equation (1), but the equation must be given a slightly different interpretation. In order to raise $1 on the New York market, the borrower must offer a yield attractive enough to make purchasers invest (1+t) dollars, since the purchaser must pay the tax. This is analogous to taking r as given, since the purchaser requires a given net yield to maturity or he will purchase untaxed domestic substitutes. The solution of equation (1) for R. gives the following equation:(2)

$$R = \frac{(1+t)r\,[1-1/(1+t)(1+r)^n]}{[1-1/(1+r)^n]} \qquad (2)$$

Equation (2) gives gross yield as a function of the net yield, the tax rate, and the term to maturity. In the case of a consol, R = (1+t)r since the limit of the term on the right in (2) as n approaches infinity is 1, For securities with a finite term to maturity $R>(1+t)r$ since $[1-1/(1+t)(1+r)^n]>[1-1/(1+r)^n]$. However, experiments have shown that the cost of funds for a consol is not a satisfactory proxy for the cost of funds of a bond with finite maturity, particularly if the net yield is small. The smaller r is, the greater the numerator of the term on the right of (2) is in relation to the

denominator, and the greater is R compared to (1+t)r. When the true cost of funds is 6.00% per annum the consol approximation gives a cost of 5.76%. Table 6 shows what the increased cost of borrowing in the U.S. would be for Canada if the IET rate in effect at the time were applied to Canada. RUSG is the cost of funds in the U.S. if higher yields must be offered to compensate for the tax. It also shows how this increase in the cost of funds compares with the interest differential between Canada and the U.S. over this period.

There is also another way of arriving at gross cost of funds. For the few issues that were actually subject to the tax, it was customary for the borrower to immediately reimburse the lender for the tax that he was obliged to pay. This procedure was followed, instead of the alternative of offering the lender a yield sufficient to compensate him for the tax, because reimbursements for IET paid were classified as non-taxable receipts to the taxpayer rather than taxable income. The lender had to pay income tax on the income from the foreign security; however, he was able to amortize the IET premium over the life of the security, thereby reducing his tax liabilities. If the borrower reimburses the lender, the cost of funds can be obtained by finding the gross yield,

R, necessary to make the root of the polynomial in equation (3) equal to zero.

$$1= t+ r/(1+R) + r/(1+R)^2 + ... + r/(1+R)^n + 1/(1+R)^n \quad (3)$$

The values of R obtained from either (2) or (3) are very close when the level of IET rates is one or less. For levels greater than one, the gross cost of funds derived from (3) are somewhat higher. The main difference between the two approaches is the time profile of the reimbursement. In the first it is uniform across time, and in the second it is more heavily weighted towards the time of borrowing.

CHAPTER II

CANADIAN NEW ISSUES IN THE UNITED STATES

The Theory

In this chapter, a model explaining Canadian new issues in the U.S. is developed in order to explore the effect of the IET on actual capital flows, and to provide the principal component for the simulation to follow in chapter III. Canadian new issues can be best explained in terms of the decisions made by Canadian provinces and corporations about bow much to borrow in the U.S., but the issue still remains about which type of model should be used. There are basically two types of models that can be utilized to explain international capital movements; these are flow models and stock adjustment models. Before proceeding further, it is useful to consider the merits of both.

The stock adjustment model is widely considered to be the theoretically preferred model, and the flow model is usually only employed with apologies. Nevertheless, the flow model has been remarkably long lived in spite of all of the criticism directed at it. The longevity of the

flow model can only be attributed to the fact that it has been a useful description of institutional regularities.

On the other hand, the more sophisticated stock adjustment model has been less successful empirically in explaining these regularities,

In a stock adjustment model, the desired stock of an individual asset, given the size of an investor's portfolio, is usually specified to be a linear function of the expected differential returns between all possible assets and some arbitrary numeraire asset.[31] This model has been generalized so that the desired stock of an asset is a linear function of a whole list of possible return variables representing exchange risk, availability of funds, and term structure as well as ordinary yields. The essential feature that is present in all of these models is that the desired stock is a function of levels of rates of return, in contrast to flow models, in which, flows (changes in stocks) respond to levels of rates of return. The above description of a stock adjustment model has been formulated in terms of asset choice, but

[31] See J. Tobin, "Liquidity Preference as Behaviour Toward Risk," Review of Economic Studies, 25 (Feb., 1958), pp.65-86, and H. Markowtiz, "Portfolio Selection," Journal of Finance, Vol.VIII, No.19 (March, 1952), pp.77-91.

it can be applied mutatis mutandis to the choice of a debt structure by securities issuers.

An attractive feature of the stock adjustment model is that it rests on the solid foundations of utility maximization by the ultimate wealth holders. In contrast, the flow model has a much less refined theoretical underpinning; it is based on the idea that capital flows from areas with lower rates of return to areas with higher rates of return in a manner similar to the way water flows from higher to lower levels. In a world where there was no capital accumulation, this would imply continual flows until rates of return are equalized everywhere for securities of comparable risk. The stock adjustment model would, once adjustment was obtained, suggest that no more capital flows need take place unless there is a change in yields or in the size of total assets and liabilities, Moreover, it is argued that the flow model does not adequately explain "perverse" capital flows, that is, flows from areas with high returns to areas with low returns. The stock adjustment model can justify these flows as manifestations of the accepted principle of finance that portfolio risk can be reduced by means of diversification, This difficulty can be surmounted, in part, by respecifying the flow model in terms of net flows between coun-

tries, since the net flow is fairly responsive to yield differentials providing that riskiness is at acceptable levels. However, no one expects the theories of optimal portfolio allocation to explain the capital flows, more accurately called flights resulting from the fear of eventual confiscation. It is these flights that are often held up as examples of perverse capital flows supposedly invalidating the flow theory of capital movements.

The distinction between the flow and the stock adjustment model becomes less clear when assets and liabilities are growing rapidly and when the actual stock adjusts to the desired stock slowly.[32] In such circumstances, a viable model must include both stock and flow features in the proper combination. The basic flow model of Canadian new issues estimated in this chapter is such a hybrid.

The basic flow model specifies that gross new issues of Canadian U.S. pay bonds in the U.S. is a function of

[32] See R.E. Caves and G.L. Reuber, Capital Transfers and Economic Policy: Canada 1951-1962 (Cambridge, Mass.: Harvard University Press, 1971), pp. 99-100 for an elaboration of the importance of the speed of adjustment.

total Canadian gross new issues and the product of Canadian gross new issues and the Canadian-U.S. interest rate differential.

$$NBCUU = a.GNBN + b\text{-}GNBN.(RCN - RUS) \qquad (1)$$

where NBCUU is Canadian U.S. dollar new issues in the U.S., GNBN is total Canadian gross new issues, RCN is the Canadian interest rate, and RUS is the U.S. interest rate.

This macro-economic flow equation has as its counterpart at the micro-economic level similar equations based on decision rules of the form that a certain portion of gross borrowing is done in the U.S. regardless of the Canadian-U.S. interest rate differential, and that another portion is dependent on the magnitude of the differential.

Adjustment of the desired stock to the actual stock is not immediate because of transactions and information costs. Because of transactions cost the Canadian issuer of securities in the U.S, does not, in general, repurchase securities at lower prices on the U.S. market when interest rates in the U.S. rise, only to provide Canadian

underwriters with the business of issuing securities on the Canadian market, unless there is a substantial change in the interest differential. In normal times, he will only alter his debt structure as his total stock of liabilities increase or as the securities that he has already issued mature. This theory claims, further, that there is a positive cost to decision making that decision-makers are reluctant to incur. It is cumbersome to re-assess the total debt structure, but it is necessary to decide what to do when new funds must be raised due either to an impending cash deficit for a provincial government or to an excess of planned investment over estimated cash flow for a corporation. Such behaviour is perhaps most plausible for provincial governments whose borrowing accounted for slightly more than half of the post IET gross new issues in the U.S. that are to be explained.

It is easy to show that a consistent application of the decision rule behind the basic flow model will lead to an optimum debt structure after a sufficient amount of time has elapsed. The quicker the growth or debt, the shorter the required amount of time. This approach to the basic flow model is analogous to that taken by apologists of marginal coat pricing following the Hall and

Hitch study on pricing policies of British firms.[33] They showed how the evidence that businessmen followed rules of thumb in setting prices need not confute the hypothesis that prices are set to maximize profits. In a similar vein, the evidence that borrowers respond to the level of interest differentials is not necessarily evidence of irrationality in the long run.

The basic model states that, in the case of new issues, individual issuers and issuers in the aggregate place their gross new issues so that if the capital structure was optimal, it would remain so.

$$\Delta S_t^G = agW_{t-1} + bdgW_{t-1} \qquad (2)$$

where ΔS_t^G is gross new issues of security S at time t, g is the gross new issues rate as a percentage of the stock of total debt W at time t-1, d is the cost of borrowing differential, and a and b are the parameters in the equation for the desired stock of security S, S^*.

$$S^* = (a + bd)W_t \qquad (3)$$

[33] R.L. Hall and C.J. Hitch, "Price Theory and Business Behaviour," Oxford Economic Papers (May, 1939), pp.12-45.

or

$$w^* = S^*/W_t = a + bd$$

where w^* is the desired ratio of liabilities of type S to total liabilities.

According to the basic flow model, the actual stock of liability S outstanding at any point of time can be written:

$$S_t = w^* g W_{t-1} + (1-m) S_{t-1} \qquad (5)$$

where m is the retirement rate on the stock oF liabilities. It is assumed that both liability S and total liabilities have the same retirement rate m. If the process starts at some point in time with historically given liabilities W_0 and S_0, there will be some historical ratio w_0 which is not necessarily the optimal ratio, of S_0 and W_0. If it is assumed that W grows through time in accordance with the formula,

$$W_t = (1+g-m)^t W_0, \qquad (6)$$

and that the stock of S_t is given by (5), it is possible to specify S_t, as a function of S_0, W_0, and t after substituting for W_{t-1}.

$$S_t = w^* g(1+g-m)^{t-1} W_0 + (1-m)w^* g(1+g-m)^{t-2} W_0 +$$

$$(1-m)^2 w^* g(1+g-m)^{t-3} W_0 + \ldots + (1-m)^{t-2} w^* g(1+g-m) W_0$$

$$+ (1-m)^{t-1} w^* g W_0 + (1-m)^t S_0, \qquad (7)$$

Thus,

$$S_t = w^* g(1+g-m)^{t-1} W_0 [1 + ((1-m)/(1+g-m)) +$$

$$((1-m)/(1+g-m))^2 + \ldots ((1-m)/(1+g-m))^{t-1}] +$$

$$(1-m)^t S_0,$$

or

$$S_t = w^* g(1+g-m)^{t-1} W_0 [(1-((1-m)/(1+g-m))^t)/(1-((1-m)/(1+g-m)))]$$

$$+ (1-m)^t S_0 \qquad (9)$$

Dividing (9) by $W_t = (1+g-m)^t W_0$ gives:

$$S_t/W_t = w^*(g/(1+g-m))((1-((1-m)/(1+g-m))^t)/(1-((1-m)/(1+g-m))))+$$

$$((1-m)^t S_0)/((1+g-m)^t W_0). \qquad (10)$$

Taking the limit of (10) and setting $S_t / W_t = w_t$ gives:

$$\lim_{t\to\infty} w_t = w^*(g/(1+g-m))\ (1/(g/(1+g-m)))\ +0 = w^*. \qquad (11)$$

Consequently, the decision rule behind the basic flow model will result in the optimum distribution of liabil-

ities after sufficient time has elapsed. The larger g and m are, the quicker the optimum will be obtained. The rationality of the decision rule depends on whether or not the assumptions made are adequate descriptions of the reality in which debt structure decisions are made.

Results

The variable to be explained by the basic flow model[34] is non federal gross new issues of Canadian bonds denominated In U.S. currency purchased by residents of the United States, NBCUU. The model is estimated using quarterly data over the period from the second quarter of 1955 (henceforth abbreviated 55:2) until the second quarter or 1971. NBCUU has a mean of $181.5 and a standard deviation of $113.2. Its minimum over the period was $0 million in 55:4 and its maximum of $445 million was reached in 66:1. The form of the basic model given in equation (1) that is actually estimated specifies NBGUU as a function of non federal gross new issues of bonds in Canada, GNBN, and the differential

[34] A version of the basic flow model was first estimated empirically by G.K. Helleiner, "Connections Between the United States and Canadian Capital Markets, 1952-60," Yale Economic Essays, II, no. 2 (1962), pp.351-400.

between the long term interest rate on Government of Canada bonds and the rate on Moody's Baa class corporate bonds in the United States multiplied times non federal gross new issues of bonds in Canada. This latter composite variable is called FRG. Two notes of explanation are now in order. First, new issues by the Federal Government of Canada were deleted from both sides of the basic flow model equation because the behaviour of the Federal Government is sufficiently different from that of other borrowers that aggregation is inappropriate. The Federal Government only issued U.S. pay bonds during the aftermath of the 1962 exchange crisis and during the 1968 crisis following the introduction of the mandatory balance of payments guidelines. Consequently, the Federal Government was solely motivated by balance of payments considerations rather than need for funds and relative cost of borrowing in alternative markets. Secondly, the rate on Baa corporate bonds is used rather than the rate on long term U.S. government bonds because Canadian bonds issued in the U.S. are considered to be "riskier" than comparable U.S. bonds.[35] As a result, a riskier interest rate is a more appropriate proxy for the cost of funds

[35] This statement can be substantiated by checking one of the bond rating manuals such as is published by Moody's or Standard and Poor's Investment Service.

in the U.S.. Further, since the data used are not,seasonally adjusted, quarterly dummy variables are included in all of the regressions to allow for any seasonal factors that may influence the dependent variable. Thus the specification is as follows:

$$NBCUU = a.GNBN + b.FRG + c + d.Q1 + e.Q2 + f.Q3 \quad (12)$$

where a and b > 0.

The regression results for the basic flow model are given in Table 7,[36] As the table shows, in equation 1 the model fits the data very well and the coefficients of the independent variables have the posited sign at a high level of significance. In equation 2, the interest rates are entered separately. The Canadian rate, FRC, has a positive sign that is significant at the 1% level and the U.S. rate, FRC, has a negative sign that is also significant at the 1% level. The coefficient of the Canadian rate is slightly smaller than that of the U.S. rate but they are not significantly different. It is

[36] The variables are listed in the rows and the columns give alternative specifications. The figures in parentheses below the coefficients are t values rather than standard errors. R^2 is the unadjusted coefficient of determination; SEE is the standard error of the estimate adjusted for degrees of freedom; and D.W. is the Durbin Watson statistic.

expected that even if the true relationship involved the rate differential that the coefficient of the Canadian rate would be smaller because of simultaneity bias. New issues in the United States take pressure off the Canadian capital market and permit lower interest rates in Canada. Since the coefficients of the two variables are almost the same, nothing is gained by relaxing the constraint implied by using the differential. In fact, something is lost because the reduction in degrees of freedom increases the standard error of the estimate. This result is the opposite of Baguley's for Baguley concludes that "the joint variation in Canadian and United States interest rates explains the variation in capital inflow more closely than does the Canadian-U.S. interest rate differential."[37]

If transactions costs are low and the speed of adjustment of the actual to the desired stock of liabilities is rapid, the change in the interest differential weighted by the stock of total liabilities, SRG, should be a better explanatory variable than the interest differential itself weighted by gross new issues. However,

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[37] The results of R.W. Baguley's research are published in R.E. Caves and G.L. Reuber, Capital Transfers and Economic Policy: 1951-62 (Cambridge, Mass.: Harvard University Press, 1971), p. 54.

when this variable is included with the other explanatory variable of the basic flow model, its coefficient turns out to be perverse, but insignificant as equation 3 of Table 7 shows. If FRG is omitted from the equation, the coefficient of SRG takes on the correct sign but fails to reach significance.[38] This failure of the simplest form of the stock adjustment model was also reported by Baguley.[39]

[38] Koyck lags were also tried with no success.

[39] R.E. Caves and G.L. Reuber, Capital Transfers, pp.97-101.

TABLE 7
REGRESSION RESULTS FOR CANADIAN U.S. DOLLAR
NEW ISSUES PURCHASED BY RESIDENTS
OF THE U.S.

Equation	1	2	3	4	5	6	7
R2	0.71	0.71	0.71	0.71	0.72	0.72	0.71
SEE	64.4	64.7	65	64.8	63.1	63.5	64.6
Intercept	-63.31	-75.22	-62.15	-62.54	-63.63	-62.7	-60.07
	(-2.48)	(-2.49)	(-2.36)	(-2.42)	(-2.54)	(-2.49)	(-2.31)
GNBN	0.2646	0.3191	0.2634	0.2697	0.298	0.2686	0.2547
	(11.46)	(4.18)	(10.99)	(10.53)	(10.35)	(11.73)	(9.7)
FRG	0.059		0.0598	0.0544	0.0589	0.0603	0.0553
	(5.34)		(5.11)	(3.68)	(5.44)	(5.51)	(4.59)
FRC		0.0498					
		(3.00)					
FRU		-0.057					
		(-4.98)					
Other			SRG	FCTG	RBCUU	PCEF	DEFC
			-0.0003	-0.0058	-0.6298	-341.8	0.0639
			(-0.21)	(-0.48)	(-1.88)	(-1.63)	(0.80)
Q1	61.1	61.38	61.02	60.21	65.12	51.44	65.21
	(2.68)	(2.68)	(2.65)	(2.61)	(2.90)	(2.21)	(2.78)
Q2	4.20	1.23	4.00	5.22	16.34	3.18	8.28
	(0.19)	(0.05)	(0.18)	(0.23)	(0.71)	(0.14)	(0.36)
Q3	39.74	42.5	38.94	39.23	31.59	38.37	39.89
	(1.71)	(1.80)	(1.64)	(1.67)	(1.36)	(1.67)	(1.71)
D.W.	1.84	1.83	1.84	1.87	1.73	1.87	1.87

The basic flow model alone does not explain enough of the variation in the dependent variable. Thus, it is appropriate to consider other forms of borrower behaviour, and other possible independent variables in order to see if they add to the explanatory powers of the model. A Canadian terra structure variable, FCTG, which is the difference between the long term Canadian Government rate and the Treasury bill rate multiplied by the capital requirement varriable, GNBN is tried. The theoretically posited sign for this variable is negative for two reasons: 1) the greater the differential between the long and short rates, the smaller is the differential between the yield on outstanding bonds and the cost of funds for new issues in Canada;[40] and 2) the greater the differential between long and short rates in Canada, the more likely it is for a borrower to find someone willing to lend to him at the going rate. In the first case, the smaller differential between the yield on outstanding issues and the cost of new issues means that the cost of borrowing will be lower. For the second rationale to hold, interest rates must not be market clearing prices and any excess demand for funds must be met by rationing. Equation 4 of Table 7 shows

[40] Eleanor Ripley, "United States Investment in Canadian Securities, 1958-65," p.49.

that FCTG has the proper sign but that it is insignificant. Further, its oollinearity with FRG reduces the significance of FRG somewhat. On the whole, it does not add anything to the model. This should not be surprising in view of the ambiguities involved in interpreting term structure variables.[41]

The next variable that is tried is retirements of Canadian-U.S. pay bonds held by residents of the United States, RBGCU. It is supposed to represent the mechanical tendency to refund maturing bond issues in the market in which they come due. Such a refunding variable could have a very complex lag structure but only its current value is tried. The coefficient of this variable given in equation 5 has an incorrect sign, Eleanor Ripley obtained the same incorrect sign in her empirical study. Her explanation was that retirements are only "manipulated during periods when new issues are low, and retirements are high because of the fear of a Canadian devaluation."[42]

Following the Canadian exemption from the IET, the

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[41] See Caves and Reuber, Capital Transfers, pp.41-46.

[42] Eleanor Ripley, "United States Investment in Canadian Securities, 1958-65," p.83.

Canadian Government undertook a commitment not to use free access to the American capital market to accumulate exchange reserves. The general committment was accompanied by a specific ceiling on foreign exchange reserves. The initial level for the ceiling was that current in July 1963 or approximately U.S., $2,690 million. In December 1965 the ceiling was reduced to U.S. $2,600 million for an exemption from the balance of payments guidelines programme of the U.S., and in May 1966 the ceiling was reduced to U.S. $2,550 million following a payment to the IMF of U.S. $47.5 million in gold.[43] The ceiling was finally dropped officially in December 1968.[44]

Two different variables were tried to see if they could pick up the effect of the Reserve Ceiling agreement. The first is the percentage change in the Exchange Fund, PCEF. It is expected that the faster the Exchange Fund is increasing the smaller would be new issues in the United States because the Canadian Government would make more intensive use of "moral suasion" when its reserves were increasing fastest and the greater the attempt at

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[43] Canada, Bank of Canada, Annual Report of the Governor to the Minister of Finance (Ottawa: Bank of Canada, 1965), p.9.

[44] Bank of Canada, Annual Report (1968), p.14.

"moral suasion" the greater the restraint exercised by Canadian borrowers and underwriters.[45] This same variable was employed by Miller and Whitman in a different context as a proxy for exchange risk. In this capacity its theoretically posited sign is the opposite of that in this study.[46] The lumpiness of Canadian U.S. pay new issues in the United States (one large issue can account for as much as one half of the quarterly inflow) means that "moral suasion" is more than just talking to the wind as might be the case if all of the farmers on the Prairies were asked to cut back on their wheat crop without some type of pecuniary inducement. A large borrower could not seek protection from the consequences of his actions in anonymity, and, as an investment banker has informed the author, it is the large corporations, rather than the junior governments, that are most reluctant to suffer the consequences of crossing the Bank of Canada. Equation 6 indicates that this variable has the

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[45] Requests by the Canadian Government to Canadian borrowers and underwriters not to go to the U.S. capital market or hold off deliveries of prior offerings are well documented, e.g. Bank of Canada, Annual Report (1970), p.69 and Canada, Dominion Bureau of Statistics, Quarterly Estimates of the Canadian Balance of International Payments (Quarterly; Ottawa: Queen's Printer, 1966), 1st Quarter, p.3.

[46] N.C. Miller and M.V.N. Whitman, "A Mean-Variance Analysis of United States Long-Term Portfolio Investment," Quarterly Journal of Economics, XXXIV, No. 2 (May, 1970), p.181.

proper sign but that it is not quite significant.

The other proxy used is the deviation of the Exchange Fund from the exchange ceiling, DEFC, which is defined to be the actual level of the Exchange Fund minus the ceiling during that quarter. It is posited that the greater is the level of the Exchange Fund relative to the ceiling, the smaller would be new issues in the United States, all other things being equal. The mechanism whereby this variable would affect borrower's behaviour is the same as in the case of PCEF. As equation 7 shows, the variable DEFC has a perverse sign that is insignificant. The lack of success of these variables can be explained by the fact that the Government of Canada relied more heavily on other instruments, as explained in Chapter IV, to keep down the level of the Exchange Fund. Consequently, reserve ceiling variables might be more fruitfully employed in explaining the monetary or exchange market policy of the Canadian Government.[47]

Next, IET induced shifts in the basic flow model are

[47] Such a variable has, in fact, been used to partially explain official demand for foreign exchange by J.F. Helliwell and Tom Maxwell, "Short Term Capital Flows and the Foreign Exchange Market," Canadian Journal of Economics, V, No. 2 (May, 1972), p.202.

introduced (Table 8). The first of these involves the addition of a dummy variable, X, that takes the value of zero prior to the announcement of the IET in 63:2 and the value of one after the imposition of the IET starting with 63:3. Some people, such as C. H. Lee,[48] argue that following the imposition of the IET, Americans substituted untaxed Canadian bonds for taxed foreign bonds. Consequently, a supply of funds equation to Canada from the U.S. should shift up subsequent to the IET. If such an effect is present, the interpretation of the basic flow model as a demand for fund equation is incorrect. Furthermore, it would be improper to analyse the effect of non-exemption for Canada under the assumption that the borrower bears the tax, for the evidence would indicate that a hybrid equation was appropriate instead of one based solely on borrower or lender behaviour as required by the theory of incidence in Chapter I. Fortunately, for this exercise in policy analysis, the coefficient of X in equation 1 of Table 8 is negative and insignificant so the equation shifts downwards instead of upwards. The insignificance of this coefficient is consistent with the interpretation of the basic flow model as a demand for funds

[48] C.H. Lee, "A Stock-Adjustment Analysis of Capital Movements: the United States-Canadian Case," Journal of Political Economy, 79 (July/August, 1969), p. 521.

equation. The downward shift could be explained in terms of the Government's policy of "moral suasion". This latter interpretation is reinforced by the results shown for equation 2, where a variable called IET ia added to the basic model. IET is the actual tax rate on purchase of securities of the longest term. It should show the attitude of the American authorities to capital outflows better than the dichotomous dummy variable X. If the Canadian authorities are responsive to various levels of American concern about foreign lending, then the Canadian Government would lean hardest on Canadian borrowers when the American Government was most concerned as indicated by the IET rate then in force. The coefficient of IET is negative and significant at the 5% level.

In equation 3 another dummy variable, Y, is added to the basic flow model. This variable has the value one during the fixed exchange rate period from 62:3 to 70:2 and otherwise it has the value of zero. If fixed exchange rates are more amicable to capital flows, it should have a coefficient with a positive sign. In fact, its sign is negative but not significant even though it verges on significance. Since the fixed exchange rate period overlaps with the IET period, its perverse sign can perhaps be attributed to the factors above that tend to

shift the demand for funds function down during the IET period. In both cases, the coefficient of GNBN and FRG are higher. It is reasonable to expect these sensitivities to be greater during a fixed exchange rate period during which capital markets can become more closely integrated, but it is hard to see why they should be greater during a time when "moral suasion" is being used to discourage foreign borrowing.

The shifts in the basic flow model may be better explained by a simple time trend. The variable, TT, in equation 6 is a time trend variable that starts with the value 14 in 55:2 and is increased by one in each quarter until it takes the value 78 in 71:2. A time trend could represent a change in the tastes of Canadian issuers or it could represent some underlying systematic change in the relationship of the actual cost of funds to the borrower to the yields that are used as proxies for the cost of funds. A positive time trend could be indicative of Canadian borrowers "learning by doing" that is, Canadian borrowers could become more likely to borrow in the U.S. for any given interest differential as they develop market contacts, A negative time trend could be a sign that the Canadian capital market was gradually acquiring increasing depth and that the larger borrowers could tap

the Canadian market without driving up their cost of funds The empirical results show that the time trend is negative and significant at the 5% level.

It is often pointed out that the impact of exchange risk on foreign financing decisions should not be overestimated since to take an example "where the foreign interest rate was four percent against six percent domestically, a 20 year loan would require a 30% exchange depreciation to eliminate the interest gain from borrowing abroad."[49] Nevertheless, exchange expectations can play an important role in the timing of new issues. Equations 3 and 6 present the results of experiments with two possible exchange rate variables. The first employs the level of the Canadian dollar price of one U.S. dollar, LEXC. The higher is the value of this exchange rate, the more likely it will fall to the "normal" level giving the Canadian issuer a reduction in the Canadian dollar value of U.S. dollar liabilities. Therefore, the Canadian issuer will want to issue a greater amount of bonds when LEXC is high than when it is low. However, the coefficient of LEXC does not have the theoretically posited

[49] Irving Brecher, Capital Flows Between Canada and the United States (Montreal: Canadian American Committee of the Private Planning Association of Canada, 1965), p.37.

sign. It could be that LEXC is deficient as an indicator of exchange rate expectations, not because of its assumption of inelastic exchange rate expectations, but because the "normal" level varied between the fixed and flexible rate periods. Further, there was a time near the end of the flexible rate period during which time no one was sure of what the exact "normal" rate was, but when many Canadian borrowers thought that it was lower than the actual rate.

A variable for the deviation of the actual exchange rate, from, the "normal" level, has been constructed to capture all of these features of reality. This variable, DEX, is the exchange rate minus one for the period from 55:2 to 60:4 and from 70:3 to 71:2, the exchange rule minus 1.081 from 62:4 to 70:2, and zero from 61:1 to 62:3. The "normal" level for the exchange rate of one or parity up to 60:4 has been the basis of various empirical studies of exchange expectations by Paul Wonnacott,[50] R. W. Baguley[51] and Charles Freedman.[52] Moreover, an investment

[50] Paul Wonnacott, The Canadian Dollar, 1948-1962 (Toronto, Canada: University of Toronto Press, 1965), pp. 178-79.

[51] R. W. Baguley in R.E. Caves and G.L. Reuber, Capital Transfers, pp.83-84.

[52] Charles Freedman, "Long Term Capital Flows Between the United States and Canada," p.117.

dealer during the flexible rate period was not well equiped unless he had at hand a table to show his Canadian clients the cost of borrowing in the U.S. under the assumption of immediate devaluation of the Canadian dollar to parity. Now with the greater availability of computers, costs of funds under many alternate assumptions about the exchange rate can be calculated. But in the past when one “normal” level had to be chosen it was parity. The choice was based as much on the psychological quirks of individuals who think that a currency called a dollar should be worth what it says, as on a rational evaluation of future market equilibria. The appropriateness of parity as the "normal" level during the flexible rate period from 70:3 to 71:2 is open to question, but the same non-economic reasons that made it the "normal" level earlier are still applicable in the absence of any strong economic arguments to the contrary. The distinction between this period and the earlier floating period is that in this period the "normal" level is below the actual, whereas in the earlier period it was above the actual. During the late ‘fifties the strength of the Canadian dollar was the result of a tight money policy; in the early ‘seventies it was the result of having been pegged at an artificially low level. The rate of 1.081 Canadian dollars for one dollar U.S., that is the

"normal" level during the fixed rate period, is the mid-point of the range in which the exchange rate was allowed to fluctuate and as such has a similiar status as a psychological landmark.

The selection of only two "normal" exchange rates captures the essential features of aggregate expectations with the minimum number of "normal" levels. This is an overwhelming point in its favour. As equation 6 demonstrates, even this more refined specification of the role of exchange expectations in the behaviour of borrowers does not work. DEX has an incorrect sign. Thus, it can be concluded that exchange expectations are not1 an important determinant of borrowing in "normal" times.[53]

There are, however, two important exchange market disturbances in the sample that could interfere with the explanatory powers of the basic flow model. They are the exchange crisis of the early 60's, and the announcement of the IET. These events can be adequetely handled by a judicious use of dummy variables. This technique is rightfully subject to criticism particularly in its

[53] The correct sign and statistical significance for this theory can be obtained by extending the "normal" level of 1.081 to the 61:1 to 62:3 period, but this is loading the test in its favour.

more ex post applications. Nevertheless, constructed variables with an unique value for each observation are more likely to be misused than dichotomous or trichotomous variables. The economic analyst can often judge the qualitative implications of an event for a model even though he is not sure of the quantitative impact. Therefore, the variables used here are dichotomous, based on the rationale that any unfavourable uncertainty will cause Canadian borrowers to avoid the U.S. market until the uncertainty is cleared up, after which they will borrow more heavily for a time. This type of behaviour was suggested by M.F.J. Prachowny[54] and J.F. Helliwell et al..[55]

The variable for the exchange crisis is called CRIS and it has the value of minus one for the seven quarters From 61:1 to 62:3 and the value plus one for the three-quarters from 62:4 to 63:2. The period of negative effect runs from the quarter when the Canadian dollar first started to weaken abnormally until the quarter when the

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[54] M.F.J. Prachowny, A Structural Model of the U.S. Balance of Payments (Amsterdam: North Holland Publishing Company, 1969), p.79.

[55] J.F. Helliwell, H.T. Shapiro, G.R. Sparks, I.A. Stewart, F.W. Gorbet and D.R. Stephenson, The Structure of RDX2 (2 Parts; Ottawa: Bank of Canada, Staff Research Paper No. 7, 1971), Part 2, p.211.

pegging of the Canadian dollar was an accepted fact. During the three following quarters when CRIS has a positive effect, Canadian borrowers were able to partially make up for their earlier absence from the U.S. capital market. It was this heavy borrowing by Canadians in late 62 and early 63 that alarmed the American authorities sufficiently that they introduced the IET to dampen capital outflows.

The variable for the IET announcement period is called IMPACT, It has a value of minus one for the five quarters from 63:3 to 64:3 to capture the panic "announcement effect" and a value of plus one in 64:4 for the one quarter splurge after the IET passed the U.S. Congress with the Canadian exemption intact in September 1964. The enactment of the IET was important because until the bill was in its final form and accepted, borrowers could not be sure that the Canadian exemption would not be deleted and that they would not have to pay the tax. It was a real possibility that the bill might not pass since many Congressmen felt that a Canadian exemption ran contrary to the original conception of the tax as America's "Financial Berlin Wall". Moreover, the period of uncertainty was prolonged by the Civil Rights Bill filibuster and the tax cut bill in the U.S. Congress

which delayed consideration of the IET Act. Equation 7 demonstrates that these two dumny variables are statistically significant at the 1% level with the posited sign, without destroying the significance of the other variables. Consequently, it is safe to conclude that the events surrounding exchange crises have a substantial effect on Canadian borrowing in the U.S..

The final step in the model building process is to take all of the supplementary explanatory variables that passed the test of significance at the 5% level and put them together. The only variable that maintained significance when subject to this test were the 1962 exchange crisis variable, CRIS, and the IET "announcement" variable, IMPACT. The IET rate variable and the time trend become insignificant when included with CRIS and IMPACT. As a result, equation 7 in Table 8 stands as the final form of the basic flow model. The R2 of 0.76, the standard error of the estimate of 59.1, and the Durbin Watson statistic of 2.06 are quite respectable in an equation explaining capital movements where, according to Branson, "an R2 of 0.7 is a welcome sight"[56] and where, further, serial correlation is an endemic problem.

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[56] W.H. Branson, "Monetary Policy and the New View of International Capital Movements," Brookings Papers on Economic Activity, 2 (1970), p.252.

TABLE 8
REGRESSION RESULTS FOR CANADIAN U.S. DOLLAR
NEW ISSUES PURCHASED BY RESIDENTS
OF THE U.S.

Equation	1	2	3	4	5	6	7
R2	0.72	0.73	0.72	0.73	0.74	0.73	0.76
SEE	63.6	62.6	63.1	62.3	61	62.4	59.1
Intercept	-85.3	-93.7	-87.9	-49.9	584.4	-97.4	-46.7
	(-2.94)	(-3.27)	(-3.11)	(-1.96)	(-2.52)	(-3.34)	(-1.94)
GNBN	0.3137	0.3302	0.3289	0.358	0.3395	0.289	0.2462
	(8.03)	(8.68)	(8.02)	(7.58)	(9.83)	(11.59)	(11.26)
FRG	0.0665	0.073	0.085	0.0645	0.08517	0.0598	0.0577
	(5.57)	(5.81)	(4.84)	(5.88)	(6.08)	(5.58)	(5.66)
CRIS							45.72
							(2.34)
IMPACT							74.95
							(2.96)
Other	X	IET	Y	TT	LEXC	DEX	
	-42.9	-3.5	-55.7	-2.14	-687.2	-1148	
	(-1.55)	(-2.13)	(-1.88)	(-2.25)	(-2.80)	(-2.21)	
Q1	63.49	65.95	64.28	67.76	64.9	62.76	67.76
	(2.81)	(2.96)	(2.87)	(3.05)	(3.00)	(2.84)	(3.23)
Q2	-	-3.69	-2.49	-6.44	-2.86	-1.98	13.37
	(-0.10)	(-0.17)	(-0.11)	(-0.29)	(-0.13)	(-0.09)	(0.64)
Q3	50	53.95	52	57.7	52.79	43.68	50.89
	(2.09)	(2.29)	(2.20)	(2.42)	(2.35)	(1.93)	(2.36)
D.W.	1.91	1.97	1.8	2.05	2.17	2.24	2.06

There is, however, a single equation econometric problem that can be easily cleared up. This is that NBCUU is a part of GNBN and thus, there is a simultaneity problem. The seriousness of this problem can be ascertained by subtracting NBCUU from GNB, and then re-estimating the equation with this variable, called GNBS, replacing GNBN, and FRGS (constructed using GNBS) replacing FRG. The result is as follows:

NBCUU = -22.76 + .2723.GNBS + .0751.FRGS + 66.55.CRIS
(-0.72) (7.48) (4.55) (2.70)

+ 102.4.IMPACT + 83.85.Q1 + 21.00.Q2 + 55.92.Q3
(3.19) (3.11) (0.79) (2.01)

R2 = .61 SEE = 75.4 D.W = 1.96

Since the coefficients of the variables stay roughly the same and their significance levels remain comparable, the simultaneity problem does not negate the validity of the results.

The final form of the basic flow model can be compared with the equivalent flow model where the interest differential, RD, is entered directly, rather than its

product with capital requirements, FRG. The alternative flow model is similar to the model estimated by R.W. Baguley[57] with the exceptions that gross rather than net new issues are used, and that the model is more highly disaggregated. The result is as follows:

NBCUU = -16.65 + .2170.GNBN + 80.51.RD + 52.70.CRIS
(-0.71) (10.76) (5.28) (2.64)

+ 95.44.IMPACT + 65.94.Q1 + 14.55.Q2 + 48.45.Q3
(3.63) (3.07) (0.68) (2.20)

R2 = .75 SEE = 60.5 D.W. = 2.00

The results from these two models are essentially the same with the exception that the significance of the interest differential is reduced in the alternative flow model. "The final form of the basic flow model does have a higher R2 and a lower SEE. This coupled with its theoretical kinship with the stock adjustment model explained earlier in this chapter make it the preferred model.

[57] R.W. Baguley, "International Capital Flows and Canadian Monetary and Fiscal Policies, 1951-1962" (unpublished Ph.D. Dissertation, Harvard University, 1969).

Since the purpose of this dissertation is to evaluate the effect of the IET on the Canadian new issues in the U.S. as well as to analyze the consequences of more extensive IET tax coverage, further exploration of the constancy of Canadian borrowers' behaviour is necessary. The relevant statistical tool for this exploration is the P test which is thoroughly discussed in an article by Gregory Chow.[58] The sample period is divided into two subperiods with the announcement of the IET as the dividing line between the two. Table 9 presents the results of the F tests for structural stability for this breakdown of the sample period.

The first test that is made retains the dummy variables CRIS and IMPACT, while the second omits the observations where these dummies have non zero values. Both of these tests lead to the acceptance of the null hypothesis that the structure did not change significantly over the sample period, with the second test, where observations during times of uncertainty in the exchange market are excluded, indicating a greater degree of stability.[59]

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[58] Gregory Chow, "Tests For Equality Between Sets of Coefficients in Two Linear Regressions," Econometrica, 28 (1960), pp.591-605.

[59] A similar test can be made for the division of the sample into flexible and fixed exchange rate periods with the same results.

TABLE 9
TESTS OF STRUCTURAL STABILITY FOR REGRESSION
RESULTS FOR CANADIAN U.S. DOLLAR NEW ISSUES PURCHASED BY

RESIDENTS OF THE U.S.

Equation	1	2	3	4	5	6
Sample	55:2 to	55:2 to	63:3 to	55:2to60:4	55:2 to	65:1 to
Period	71:2	63:2	71:2	65:1to71:2	60:4	71:2
R2	0.76	0.73	0.66	0.73	0.72	0.64
SEE	59.1	46.1	67.3	61.2	42.9	68.3
Intercept	-46.67	-69.46	-96.2	-39.47	-152.9	-208
	(-1.95)	(-2.07)	(-0.87)	(-1.50)	(-3.52)	(-2.77)
GNBN	0.2462	0.2578	0.2897	0.2411	0.466	0.3823
	(11.26)	(5.69)	(3.21)	(10.09)	(5.34)	(6.42)
FRG	0.0577	-0.0269	0.0654	0.0556	0.0569	0.08
	(5.66)	(-0.51)	(3.50)	(4.96)	(0.82)	(5.16)
CRIS	45.72	43.08				
	(2.34)	(2.75)				
IMPACT	74.95		61.89			
	(2.96)		(1.35)			
Q1	67.76	63.63	79.15	76.18	60.04	78.62
	(3.23)	(2.72)	(2.33)	(3.04)	(2.27)	(2.28)
Q2	13.37	46.96	-27.29	-1.73	18.77	-45.48
	(0.64)	(2.02)	(-0.74)	(-0.07)	(0.70)	(-1.31)
Q3	50.89	41.28	77.14	49.3	51.25	89.01
	(2.36)	(1.69)	(1.99)	(1.96)	(1.98)	(2.32)
D.W.	2.01	1.41	2.07	1.9	1.23	1.99
F Test of	F(6,51)=1.53			F(6,37)= 0.34		
Structural	Significance Level for			Significance Level for		
Stability	5%: 2.40	1%: 3.41		5%: 2.36	1%: 3.35	

For the first breakdown, the greatest difference among subperiods comes from the perverse sign on the weighted interest rate differential, FRG, in the pre-IET period; for the second, it is the low level of significance of PRO- in the pre-IET period. Nevertheless, the results of these tests provide strong evidence that there was not substitution of untaxed U.S. pay Canadian bonds for other taxed U.S. pay foreign bonds, and that the decisions of Canadian borrowers, not American lenders, are the prime determinants of Canadian U.S. pay bonds purchased by residents of the U.S..

In Figure 3, the actual and predicted values for NBCUU are plotted against time. On the whole, the appearance is one of satisfactory fit for a capital flows equation. The largest residuals occur in 57:2, 60:3, 68:2, 68:3, 70:2 and 70:3 all of which were quarters sharing the common feature of disturbances in the foreign exchange market. The largest single residual occurred in 68:2 following the introduction of the U.S. mandatory guidelines programme, but before Canada's status under the guidelines was clarified in an exchange of letters between the Secretary of the Treasury and the Minister of Finance. It was this uncertain state of affairs that discouraged borrowing in the U.S..

Figure 3 not included because of file size limitations

(see fig3.jpg)

CHAPTER III

SIMULATION OF NON-EXEMPTION

Introduction

This chapter is an exercise in rewriting the economic history of Canada in the 'sixties as it would have been had Canada not been exempted from the IET, either because no exemption had been sought by Canada, or because one had been refused by the United States. The tool that makes possible such an exercise in speculation is an economy wide econometric model. In this case, the complete model is the Bank of Canada model, RDX2,[60] modified to incorporate the basic flow model developed in Chapter II. This model possesses most of the interdependencies as well as the policy instrument necessary for such a simulation. The results of this simulation enable the analyst to judge the wisdom of choices made by policy makers on both sides of the border on the basis of their own stated objectives.

[60] J.F. Helliwell, H.T. Shapiro, G.R. Sparks, I.A. Stewart, F.W. Gorbet, and D.R. Stephenson, The Structure of RDX2 (2 Parts; Ottawa: Bank of Canada, 1971).

Before proceeding with the simulation, it is informative to consider the effect of the IET on the borrowing in the U.S. of non-exempt countries. Table 10 shows that the countries subject to the IET reduced their borrowings from $356 million in 1962 to $45 million in 1968. Only part of their borrowing was subject to the IET, and there was almost no non-exempt borrowing. The obvious deduction would be that the same thing would have happened to Canadian borrowings had Canada not been exempted. However, it must be remembered that Canada is much more dependent on the U.S. capital market than any other country so that Canadian borrowers may have raised significant amounts of capital in the U.S. in spite of the tax. A more complete answer to this question awaits the simulation results that follow.

TABLE 10
NEW ISSUES OF FOREIGN SECURITIES PURCHASED
BY U.S, RESIDENTS, BY AREA, 1962-70
(Balance of payments basis; in millions of dollars)

		1963(1)								
	1962	1st half	2nd half	1964	1965	1966	1967	1968	1969	1970(2)
All Areas	1,076	1,000	250	1,063	1,206	1,210	1,619	1,703	1,667	1,457
IET Countries(total	356	343	110	35	147	19	14	45	23	130
Western Europe including										
United Kingdom	195	219	53	35	95	15	..	42	14	130
Japan	101	107	57	..	52	4	14	3	9	..
Other(3)	60	17	..	..	..	..	..	..	..	..
Of which										
Exempt from IET(4)	.....		110	20	52	10	14	3	9	130
Subject to IET	.....			15	95	9	..	42	14	..
Other Countries (total)	722	656	141	1	1,058	1,191	2	1,659	2	1,327
Canada	458	608	85	700	709	922	1,007	949	1,270	776
Latin America(5)	119	13	23	208	36	68	140	144	32	120
Other Countries	61	35	33	115	134	121	212	176	179	190
International Institutions(6)	84	..	..	4	179	80	246	390	164	241

1.Not seasonally adjusted.

2. Preliminary.

3. Australia, New Zealand, South Africa.

4. Related to the export, the direct investment, and the Japinese exemptions.

5. Represents commitments made prior to July 18,1963, the date of inception of the IET.

6. lncludes Inter-American Development Bank issues.

Source: U.J., Congress, House, Committee on Ways and Means, Extension of the Interest Equalization Tax, Hearing before Committee on Ways and Means, House of Rep., 2nd Cong., 1st sess. on Administrative Proposal to Extend IET Act, February 22, 1971, p. 6.

Simulation[61]

The basic flow model was re-estimated on the RDX2 data base using ordinary least squares. The result is the following equation:[62]

$$NXCU = \underset{(-3.13)}{-73.80} + \underset{(14.41)}{.2777}.GNX + \underset{(6.29)}{.0847}.FRGX + \underset{(3.74)}{88.82}.IMPACT$$

$$+ \underset{(2.21)}{40.45}.CRIS + \underset{(4.04)}{80.87}.Q1 + \underset{(.67)}{13.27}.Q2 + \underset{(2.72)}{54.68}.Q3$$

$R2 = .84$ $\quad SEE = 55.1$ $\quad D.W = 2.08$

This equation differs from the basic flow model in Chapter II in that Canadian dollar pay new issues of bonds and new issues of stock are aggregated with U.S. pay new issues of bonds in the dependent variable, NXCU. Further, gross new issues of stock are added to gross new issues of bonds to construct the independent variable, GNX. The variable FRGX is equal to GNX times the difference between the long term Canadian Government bond yield, RL, and the BAA corporate rate, RBA, used in the basic flow model. IMPACT and CRIS are the same dummy variables used in Chapter II. IMPACT adjusts for the uncertainty about the applicability of the IET, and CRIS does the same for the uncertainty prevalent during the 1962 ex-

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[61] The RDX2 simulator programme is lucidly documented in F.W. Gorbet, D. Davis, B.E. Near, D.R. Stephenson, and I.A. Stewart, "Simulator," Bank of Canada, 1972 (mimeo).

[62] The equation was also estimated employing the structurally ordered instrumental variable technique proposed by F.M. Fisher in "Dynamic Structure and Estimation in Economy Wide Econometric Models," in The Brookings Quarterly Econometric Model of the United States Economy, ed. by J.S. Duesenberry, G. Fromm, L.R. Klein and E. Kuh (Chicago: Rand McNally, 1965), pp.589-635, and extended in B.M. Mitchell and F.M. Fisher, "The Choice of Instrumental Variables in the Estimation of Economy Wide Econometric Models," International Economic Review, vol.11, no.2 (June, 1972), pp. 226-34. This experiment revealed no great difference in parameter estimates. It might be added that RDX2 has not been estimated consistently yet because it was felt that the resources required could be more profitably used in other areas of model development. It is hoped, however, that RDX2 will be reestimated consistently in the not-too-distant future.

change crisis. The reestimation of the model changed none of its essential features.

The above equation was substituted for equations 19.5 and 19.6 in RDX2.[63] Equation 19.5 is the equation for gross new issues of provincial and municipal bonds in the U.S., and 19.6 is for gross new issues of Canadian corporate bonds in the U.S.. In addition, the gross new issues component of equation 19.9, for the purchase of Canadian corporate snares on a portfolio basis by U.S. residents, had to be subtracted out and equation 19.9 re-estimated in order to avoid double counting new issues of equities.[64] The new equation for 19.9 estimated over the period 57:1 to 68:4 is:

$$NSC = \underset{(.25)}{1.763} + \underset{(1.51)}{23.35}\bullet QMIDEAST - \underset{(-5.82)}{42.17}\bullet QUSTAX - \underset{(-6.42)}{68.70}\bullet QBROKE + \sum_{i=0,3} DRHD_{t-i} + \sum_{i=0,5} DVCN_{t-i}$$

R2 = .68 SEE = 17.9 DW = 1.16

i	0	1	2	3	4	5
W_i	6.51 (0.51)	12.48 (1.20)	13.39 (1.17)	9.23 (1.09)		
V_i	113.75 (.95)	60.87 (1.22)	43.33 (1.08)	49.00 (.52)	48.85 (.22)	33.27 (.07)

where NSC is defined to be net purchases of Canadian stock by residents of the U.S., FIPVB12 in RDX2, minus gross new issues of stock purchased by U.S. residents, DRHD is the first difference in the real cost of capital differential between Canada and the U.S., RHOR - RHOR2, and VCN$ is U.S. net worth from the MPS model.[65] The lag weights are obtained using the Almon procedure with weights laying along a second order polynomial constrained to equal zero in the period prior to the first lagged value.[66] QMIDEAST, QUSTAX, and QBROKE are all dummy variables capturing

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[63] Ibid., part 2, pp.119-20.

[64] Ibid., p.121.

[65] See F. DeLeeuw and E. Gramlich, "The Federal Reserve-MIT Econometric Model," Federal Reserve Bulletin, vol.54 (January, 1968).

[66] Shirley Almon, "The Distributed Lag Between Capital Appropriation and Expenditures," Econometrica, vol.33, no.1 (January, 1965), pp.178-96.

non-recurring events such as the mideast war, changes in U.S. tax legislation unfavourable to income accumulating funds and the bankruptcy of the Atlantic Acceptance Company in 1965.

The stability of the coefficients between the new and the old equation 19.9 in RDX2 is evidence that new issues probably should not have been aggregated with outstanding stocks, since they are better explained by yield differentials and capital requirements. The importance of private placements makes even new issues of Canadian dollar bonds and stocks, that should theoretically respond to demand variables, more sensitive to variables explaining the supply of securities.

The explanatory variable GNX in the basic flow model is made endogenous to the modified version of RDX2. One component of GNX was already endogenous to RDX2, that is gross new issues of provincial and municipal bonds (excluding those sold to the Canada Pension Plan Investment Fund), GBRPM. This variable is determined by a government budget identity, equation 14.11 in RDX2. This identity states that provincial and municipal governments issue bonds when revenues fall short of expenditures. The other component is gross new issues of business securities which is made endogenous by the addition of the following equation estimated over the period 55:1 to 70:4

$$GBO = 133.7 + .4305.CR - 6.44.Q1 + 140.9.Q2 - 100.6.Q3$$
$$\quad (2.45) \quad (7.94) \quad (-.13) \quad (2.92) \quad (-2.08)$$

$$R2 = .61 \qquad SEE = 136 \qquad D.W. = 1.32$$

where GB0 is gross new issues of business bonds and stocks plus other bonds, and CR is the sum of current dollar investment in machinery and equipment and non-residential construction, and retiremments of corporate securities minus capital consumption allowances plus retained earnings.

This equation is based on the theory that decisions about real investment determine financing and that interest rates only effect gross new issues of business securities indirectly through, their effect on real investment. Thus, any increase in interest rates will only reduce new issues with a lag.

Because of the higher degree of disaggregation in RDX2, gross new issues have to be disaggregated so that the stock of long term government and corporate bonds and the stock of common and preferred shares held by U.S.

residents can be calculated from the cumulative flows.[67] These stocks are important because they are the prime determinants of interest and dividends paid to residents of the U.S.. The disaggregation was accomplished by using ratios based on the existing RDX2 equations, 19.5 and 19.6, and the difference between the old and new equation 19.9. Consequently, the basic flow model only determines the level of new issues whereas its composition is determined by the RDX2 equations.

This modified version of RDX2 was solved over the period 63:3 to 69:4 or the actual values of exogenous variables and the predicted values for lagged endogenous variables. This was done under the alternative assumptions of fixed and floating exchange rates,[68] yielding two control solutions, one for each type of foreign exchange market regime. It was then assumed that the value of the exogenous variable, RBA, which represents the cost of borrowing in the U.S. to Canadians, was increased by the imposition of the IET in the manner described in Chapter II. The difference between the cost of borrowing in the control solution and in the policy simulation is given in Table 11. It is, further, assumed that the imposition of the IET forces Canada to abandon the fixed exchange rate for the Canadian dollar. The plausibility of this assumption is explored in the next chapter.

The results of the simulation are presented in Tables 12 and 13. The policy simulation recorded in both of these tables is exactly the same. The only difference between the two is the control simulation to which they are contrasted. The first of these tables compares the most lively policy alternative to an IET exemption to a simulated version of the actual state of affairs subsequent to the IET; while the second compares this policy alternative to a simulated version of the state of affairs as it might have been if the Canadian dollar had been floating. The two control solutions provide a means to distinguish between the consequences of non-exemption from the IET and the consequences of a flexible exchange

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[67] In RDX2 this involves equation 20.1, 20.2, and 20.3. See J.F. Helliwell et al The Structure of RDX2, p.124.

[68] The modifications to RDX2 necessary to convert it to a floating rate model are described in John Helliwell and Tom Maxwell, "Monetary Independence of Canada and the United States Under Alternative Exchange Rate Systems," in R.Z. Aliber ed., National Monetary Policies and the International Financial System,(Chicago: University of Chicago Press, forthcoming).

rate rather than a fixed rate.

According to the simulation, in the three quarters following the announcement of the tax, new issues would have actually been higher if Canada had not been exempted. This anomalous result was obtained by setting the variable IMPACT, which represents uncertainty about the applicability of the IET, equal to zero in the simulation. It was considered inappropriate to pyramid the uncertainty effect with the cost of borrowing effect of the IET. Nevertheless, the differences between the policy and control are small enough that they tend to support the hypothesis that, before the IET Act passed Congress in September, 1964 with the Canadian exemption intact, most Canadian borrowers were conservatively assuming that Canadian borrowings would be subject to the IET. American lenders were reluctant to purchase Canadian new issues unless the borrower contracted to reimburse the lender for any tax that might eventually be levied on Canadian new issues. Thus, Secretary Dillon was correct in 1963 when he stated that "The uncertainty which exists today is a greater deterrent than the tax itself,"[69]

The cumulative reduction in Canadian borrowing from 64:4 to 69:4 would have been $2,672 million or an average of $127 million a quarter. A partial compensation for the reduction in capital inflows would have been lower interest payments to residents of the U.S.. By the end of the period interest payments would have been $40 million per quarter lower. The basic balance with the U.S., UBAL12, would have been on the average $91 million per quarter less favourable. Part of this deterioration in basic balance could be attributed to the IET and part to higher values for the Canadian dollar in the late 'sixties when the undervaluation of a fixed Canadian dollar became more important. Commencing in 67:4 the price of a U.S. dollar in Canadian dollars, PFX, would have been actually lower with no IET exemption and a floating rate than it would have been with an exemption and a fixed rate. In 68:4 PFX would have been 4.3 cents lower. By contrast, PFX. would have been 4.2 cents higher in 66:4. In the simulation reported in Table 13, the applicability of the IET is the only factor permitted to vary, and the difference in value between the policy and control for

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[69] U.S. Congress, House, Committee on Ways and Means, Interest Equalization Tax Act, Report to accompany H.R. 8000, 88th Cong., 1st sess.., Dec. 16, 1963, p.7. Mr. Rasminsky drew similar conclusions in a speech to the U.S. Bankers Association for Foreign Trade in Quebec City on May 25, 1964.

PFX continues to increase until almost the end of the simulation period. At the peak in 69:3 the value of the U.S. dollar is 7.3 cents higher than in the control.

The improvement in the basic balance achieved by the U.S., however, would have been gained at a cost of a less favourable current account balance. Over the simulation period the current account balance would have been $280 million more in Canada's favour. Nevertheless, there would have been a period in 1968 and in early 1969 when the balance would have been more in the U.S,'s favour because of a higher value for the Canadian dollar. Compared to a flexible rate control the Canadian current account balance with the U.S. would have been cumulatively $587 million higher from 64:4 to 69:4.

The swing in the current account balance would have bolstered aggregate demand. Real demand for output, UGPP, would have peaked at $99 million in 67:3. The higher level of aggregate demand would be manifested in an unemployment rate, RNU, that would have been .29% lower. The difference in unemployment rate is even more striking for the flexible rate control where the maximum difference is .62%.

There would have been a small effect on the consumer price index, PCPI, because the difference in aggregate demand would not have been that great. However, with the flexible rate control the induced change in the consumer price index is much greater with PCPI being 2.1% higher at the end of the simulation period.

The above results are model specific, and they are dependent on the idiosyncracies of the particular model chosen. RDX2 is one of the more complex econometric models that have been developed, and it has embedded in it reaction functions for the various levels of governments and the central bank that make a significant proportion of fiscal and monetary policy endogenous. As a result, fiscal and monetary policy are not held constant in a policy simulation but change as they have changed in the past under similar circumstances. This is useful if it is not expected that the policy shock will change this behaviour. However, even though the invariability of governmental behaviour is the subject of much disagreement, and the structure of the model is far from perfect, such policy simulations do provide important imformation, albeit of a highly tentative nature.

More weight can be given to the evidence derived from simulation experiments if similar conclusions result from

the use of different models. Consequently, Table 11 presents the effect of a similar shock to two different models, the Rhomberg and Officer models. The shock employed is an increase of one percentage point in the U.S. interest rate. The result for the reduction in net long term capital movements is remarkably similar in all three models, as is the effect on the Canadian long term interest rate. The effect on the exchange rate in the Rhomberg model is much less than in RDX2, but the effect on the exchange rate in the Officer model appears consistent given that it is only an impact multiplier. Nevertheless, it is probable that both the Officer and RDX2 models overestimate the effect on the exchange rate. On the other hand, both have relatively low export and import price elasticities. Real GNP is increased much less in the Rhomberg model, whereas the impact GNP change in Officer also is prima facie consistent. The ultimate consistency depends, of course, on the equilibrium effect.

TABLE 11
THE COST OP BORROWING IN THE U.S

Period	Without IET	With IET	Period	Without IET	With IET
63:3	4.84	5.81	67:3	6.33	7.98
63:4	4.84	5.81	67:4	6.72	8.13
64:1	4.83	5.80	68:1	6.83	6.26
64:2	4.85	5.82	68:2	7.02	8.47
64:3	4.62	5.79	68:3	6.86	8.29
64:4	4.81	5.78	68:4	7.02	8.47
65:1	4.79	5.76	69:1	7.38	6.87
65:2	4.82	5.79	69:2	7.59	8.50
65:3	4.89	5.86	69:3	7.92	8.85
65:4	4.97	5.95	69:4	8.37	9.33
66:1	5.17	6.17	70:1	8.76	9.75
66:2	5.49	6.51	70:2	8.97	9.97
66:3	5.86	6.92	70:3	9.41	10.45
66:4	6.14	7.22	70:4	9.28	10.31
67:1	5.88	7.47	71:1	8.53	9.50
67:2	5.98	7.58	71:2	8.61	9.59

Source: The cost of borrowing without the LET is the U.S. Baa corporate bond rate that is employed in the basic flow model. With the IET, it is calculated using the formula given in Chapter I and the IET rate actually in effect for a security with a term to maturity of twenty years.

TABLE 12
NON-EXEMPTION FROM THE IET UNDER A FLEXIBLE EXCHANGE RATE COMPARED TO AN EXEMPTION UNDER A FIXED RATE, POLICY MINUS CONTROL

	Variables (a)					
	1	2	3	4	5	6
Period	NXCU	RL	GNX	UBAL12	UBAL	PFX
63:3	43	0.00	0	43	45	0.002
63:4	14	0.00	0	16	21	0.009
64:1	17	0.00	-1	24	30	0.013
64:2	-15	-0.01	-1	-3	4	0.014
64:3	36	-0.01	-1	54	55	0.004
64:4	-190	-0.01	1	-180	-178	0.007
65:1	-71	-0.01	2	-59	-55	0.008
65:2	-100	0.00	1	-82	-71	0.017
65:3	-64	0.01	0	-38	-31	0.011
65:4	-98	0.02	1	-74	-62	0.020
66:1	-100	0.03	1	-69	-56	0.027
66:2	-118	0.04	0	-73	-55	0.034
66:3	-85	0.04		-21	-4	0.036
66:4	-115	0.05	3	-62	-41	0.042
67:1	-204	0.05	3	-148	-135	0.032
67:2	-199	0.06	4	-132	-124	0.023
67:3	-158	0.06	11	-92	-95	0.005
67:4	-164	0.07	17	-123	-127	-0.002
68:1	-144	0.08	20	-124	-138	-0.023
68:2	-141	0.09	24	-122	-136	-0.028
68:3	-141	0.10	31	-138	-159	-0.042
68:4	-148	0.09	22	-133	-153	-0.043
69:1	-147	0.06	16	-134	-141	-0.035
69:2	-86	0.05	11	-55	-48	-0.015
69:3	-78	0.04	8	-42	-22	-0.002
69:4	-121	0.03	-17	-18	9	0.008

a
NXCU - New Issues in the U.S.
RL - Canadian long term interest rate
GNX- Gross new issues of securities
UBAL12 - Basic balance with the U.3,
UBAL - Basic balance
PFX - Exchange rate (Canadian $ / U.S. $)

TABLE 12 (Continued)

	Variables (a)				
	7	8	9	10	11
Period	XBAL$12	XBAL$	UGPP	RNU	PCPI
63:3	0	1	0	0.00	0.000
63:4	1	6	2	0.00	0.000
64:1	5	11	4	-0.01	0.000
64:2	11	17	7	-0.02	0.001
64:3	17	17	9	-0.03	0.001
64:4	10	11	6	-0.04	0.001
65:1	9	12	6	-0.04	0.001
65:2	11	21	12	-0.06	0.001
65:3	19	24	16	-0.07	0.001
65:4	13	23	22	-0.08	0.002
66:1	16	26	31	-0.10	0.002
66:2	26	42	48	-0.14	0.003
66:3	40	53	65	-0.19	0.004
66:4	28	44	73	-0.23	0.005
67:1	28	36	82	-0.26	0.006
67:2	34	35	96	-0.28	0.006
67:3	32	20	99	-0.29	0.006
67:4	2	-11	85	-0.26	0.006
68:1	-16	-37	67	-0.22	0.006
68:2	-22	-49	53	-0.14	0.006
68:3	-37	-70	27	-0.04	0.006
68:4	-24	-58	3	0.09	0.005
69:1	-21	-40	-33	0.22	0.005
69:2	0	-3	-63	0.33	0.005
69:3	10	19	-96	0.43	0.005
69:4	79	98	-96	0.51	0.005

a
XBAL$12 - Current Account Balance with the U.S.
XBAL - Current Account Balance
UGPP - Gross Private Business Product (1961$)
RNU - Unemployment Rate
PCPI - Consumer Price Index

TABLE 13
NON-EXEMPTION FROM THE IET UNDER A FLEXIBLE EXCHANGE RATE COMPARED TO AN EXEMPTION UNDER A FLEXIBLE RATE, POLICY MINUS CONTROL

	Variables (a)					
	1	2	3	4	5	6
Period	NXCU	RL	GNX	UBAL12	UBAL	PFX
63:3	43	0.00	0	43	43	-0.001
63:4	14	0.00	0	13	13	-0.001
64:1	18	0.00	0	16	16	-0.002
64:2	-14	0.00	0	-16	-17	-0.002
64:3	37	0.00	0	34	33	-0.003
64:4	-190	0.00	0	-191	-191	0.000
65:1	-71	0.00	-1	-70	-69	0.001
65:2	-101	0.00	-2	-96	-94	0.004
65:3	-66	0.01	-4	-58	-55	0.007
65:4	-100	0.01	-4	-89	-84	0.011
66:1	-103	0.02	-4	-89	-84	0.014
66:2	-122	0.02	-5	-100	-93	0.019
66:3	-88	0.02	-4	-55	-47	0.023
66:4	-118	0.02	-1	-91	-81	0.028
67:1	-208	0.03	-1	-175	-164	0.034
67:2	-202	0.04	0	-152	-137	0.040
67:3	-161	0.06	3	-93	-77	0.045
67:4	-166	0.07	7	-109	-88	0.051
68:1	-146	0.09	6	-86	-65	0.056
68:2	-143	0.11	10	-56	-31	0.061
68:3	-143	0.13	15	-28	1	0.066
68:4	-144	0.15	19	-57	-20	0.069
69:1	-139	0.16	17	-44	-7	0.073
69:2	-72	0.18	19	59	106	0.073
69:3	-61	0.20	26	103	151	0.073
69:4	-92	0.21	22	41	98	0.071

a
NXCU - New Issues in the U.S.
RL - Canadian long term interest rate
GNX- Gross new issues of securities
UBAL12 - Basic balance with the U.3,
UBAL - Basic balance
PFX - Exchange rate (Canadian $ / U.S. $)

TABLE 13 (Continued)

	Variables				
	7	8	9	10	11
Period	XBAL$12	XBAL$	UGPP	RNU	PCPI
63:3	0	-1	-1	0.00	0.000
63:4	-1	-1	-2	0.01	0.000
64:1	-1	-1	-3	0.01	0.000
64:2	-1	-2	-4	0.02	0.000
64:3	-2	-3	-6	0.02	0.000
64:4	0	1	-4	0.01	0.000
65:1	1	2	-1	0.01	0.000
65:2	3	6	5	-0.01	0.000
65:3	5	8	12	-0.03	0.000
65:4	7	12	22	-0.06	0.000
66:1	8	13	31	-0.10	0.000
66:2	14	21	45	-0.14	0.001
66:3	21	29	58	-0.19	0.001
66:4	15	25	68	-0.23	0.002
67:1	17	26	81	-0.28	0.003
67:2	27	39	108	-0.34	0.004
67:3	40	52	134	-0.40	0.005
67:4	22	38	152	-0.46	0.006
68:1	20	34	170	-0.50	0.008
68:2	37	53	206	-0.55	0.010
68:3	60	78	234	-0.60	0.011
68:4	28	52	234	-0.62	0.013
69:1	34	56	231	-0.62	0.015
69:2	64	92	248	-0.61	0.017
69:3	97	125	251	-0.60	0.019
69:4	67	103	222	-0.54	0.021

a
XBAL$12 - Current Account Balance with the U.S.
XBAL - Current Account Balance
UGPP - Gross Private Business Product (1961$)
RNU - Unemployment Rate
PCPI - Consumer Price Index

TABLE 14
COMPARISON OF THE EFFECT OF A ONE PERCENT INCREASE IN THE U.S. INTEREST RATE IN THE RHOMBERG AND OFFICER MODELS

Variables	Rhomberg Model		Officer Model
	Impact	Equilibrium	Impact
Net Long Term Capital Movements	-140	-120	-120
Canadian Long Term Rate	0.049	0.19	0.004
Exchange Rate U.S. Dollers Per Canadian	-0.007	-0.0095	-0.015
Real GNP	36	17	5.25

Source: Rudolph Rhomberg, "A Model of The Canadian Economy Under Fixed and Fluctuating Exchange Rates," Journal of Political Economy, vol.LXXII, no. 1 (Feb., 1964), p. 14 and Lawrence Officer, An Econometric Model of Canada Under the Fluctuating Exchange Rate System (Cambridge, Mass.:Harvard University Press, 1966), pp. 210 - 24.

CHAPTER IV

CANADA-U.S. FINANCIAL ARRANGEMENTS

Introduction

On July 18 and 19, 1963, following the announcement of the Interest Equalization Tax by President Kennedy, in New York the Canadian dollar dropped more than ½ cent to 92 cubed /32 cents and in Toronto, where the exchange fund sold $110 million U.S. dollars, the U.S. dollar rose 6/32 cents to 1.08 cubed /32 cents.[70] In spite of an intervention greater than any that had occurred during the 1962 exchange crisis, the Canadian dollar was still falling. Canadian financial markets were also undergoing a wave of panic selling; the Toronto Stock Exchange index dropped 15.29 points on the 18th and 5.33 points on the 19th.[71] Confidence in the future of the Canadian economy and the dollar was at a record low. Many Canadians felt that, in spite of U.S. denials, the U.S. was retaliating against the Gordon budget of June 13, 1963, which contained provisions such as an increase in withholding tax on foreign subsidiaries and a 30% takeover tax that could be interpreted as Anti-American.[72] It is in this crisis atmosphere that the Government of Canada undertook to negotiate an exemption from the IET.[73] The fact that these and further negotiations were successful in securing and maintaining the Canadian exemption is widely known, but the details of the exemption, as important as they may be, are not generally understood. The purpose of this chapter is to explain these details.

The Initial Canadian Exemption In July 1963

The initial Canadian exemption from the IET was the result of hurried negotiations between top level delegations on both sides over the weekend of July 20 in Washington. Canada was represented by the Ambassador to the U.S., C. S. Ritchie, the Governor of the Bank of Canada,

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[70] Globe and Mail, July 22, 1963, p.2 and Peter Newman, "The Great Money Panic of 1963," Maclean's, May 16, 1964, p.54.

[71] Globe and Mail, July 22, 1963, p.2.

[72] New York Times, July 22, 1963, p.1.

[73] This crisis atmosphere and the ensuing diplomatic negotiations are admirably recreated in Peter Newman, "The Money Panic of 1963," Maclean's, May 16, 1964.

Louis Rasminsky, the Assistant Deputy Minister of finance, Wynne Plumptre, and the Assistant Secretary of State for External Affairs, A.E. Ritchie.[74] The U.S. delegation included the Secretary of the Treasury, Douglas Dillon, the undersecretary of State, George Ball, the Undersecretary of the Treasury for Monetary Affairs, R. V. Roosa, and Stanley Surrey, the Assistant Secretary of the Treasury.[75] Agreement on the main points of the Canadian exemption was hurriedly reached and a joint communique was released to the press on Sunday July 22 in order to forestall any continued run on the Canadian dollar on Monday. The U.S. authorities were as anxious as the Canadian to avoid the possibility of a Canadian devaluation which they had earlier overlooked.[76]

The rationale for the Canadian exemption given in the Joint communique is:

> For many year's the capital markets of the two countries have been closely interconnected, and U.S. exports of capital to Canada have financed a substantial portion of the Canadian current account deficit with the U.S.. This need continues. A portion of these flows must be supplied through the sale of new issues of Canadian securities in American markets. U.S. officials had considered that ample flows for these needs would continue under the proposed IET. However, Canadian representatives stated that this would require a very substantial rise in the entire Canadian interest rate structure. It was recognized by both governments that such a development would be undesirable in the present economic circumstances.[77]

Thus, judging from this statement, it would appear that U.S. officials had underestimated the impact on Canada of the IET and that the Canadian representatives had argued that the continued application of the IET to Canada would necessitate a deflationary monetary policy if the exchange rate was to be defended. Such moves were not to be desired by Canadians because of the 5.5% unem-

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[74] Canada, House of Commons Debates, July 22, 1963, p.2451.

[75] Canada, House of Commons Debates, October 9, 1963, p.3357.

[76] Canada, House of Commons Debates, May 19, 1964, p.3365.

[77] Canada, House of Commons Debates, July 22, 1963, p.2500.

ployment rate in 1963 and by Americans because it would wipe out most of the improvements in their balance of payments.

However, the joint communique, for obvious reasons, fails to mention the spectre of a Canadian devaluation that haunted the negotiations. When Mr. Rasminsky and the rest of the Canadian delegation went off to Washington, Mr. Walter Gordon had already resigned himself to a devaluation. He had told Secretary Dillon that unless something was worked out he was going to announce the floating of the Canadian dollar on Sunday July 22 before the exchange market opened on Monday morning. That Secretary Dillon got the message is obvious, for he told the Senate Finance Committee that "There was no doubt that, if this exemption had not been promptly granted, the Canadian dollar which had only recently had a firm par value established would have been devalued once more...."[78]

The IET had placed Mr. Walter Gordon in a dilemma. On the one hand, as a nationalist he was opposed to special arrangements with the United States that limited Canadian sovereignty. On the other hand, as the finance minister he was concerned with Canada's international credit rating. He wrote, "Canada could not face another financial crisis and a second devaluation of the currency within a year. This would have meant forfeiting the confidence of investors in Canadian bonds and other securities for a long time, perhaps for a generation."[79] He has said that if the Canadian dollar had not been devalued in 1962, he would have taken a different position.[80] Nevertheless, he was willing to accept an exemption from the 1ET at the cost of the Exchange Fund Ceiling when the possibility was presented to him by Mr. Rasminsky, who had originated the idea.[81]

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[78] U.S. Congress, Senate, Committee on Finance, Interest Equalization Tax Act, Hearings before the Committee on Finance, U.S. Senate on H.R. 8000, 88th Cong., 2nd sess., 1964, p.78.

[79] Walter Gordon, A Choice for Canada (Toronto: McClelland and Stewart Limited, 1966), p.74.

[80] Walter Gordon, private interview, held in Toronto, September 25, 1972.

[81] Louis Rasminsky, private interview, held in Ottawa, October 19, 1972.

The argument that Mr. Rasminsky put forward to the U.S. negotiators was:

> If the U.S. took steps to cut its exports of capital to Canada sharply below the level needed to finance the deficit which remained after we had used all the non-American sources of finance, referred to, we would be faced with a severe loss of reserves and with the inevitable need to cut our current account deficit. Since the whole of the deficit is with the U.S. and about 70% of our imports come from that country, the impact of whatever steps we took would necessarily fall very largely on the U.S., and that country would not have succeeded in improving its payments position. This is the basic rationale of the exemption."[82]

It is not strictly true that the U.S. would not have succeeded in improving its balance of payments position. As the simulation results in Chapter III show, on the average the quarterly basic balance with Canada would have been $91 million more in the United State's favour if there had not been an exemption. Nevertheless, the Americans did find the argument very convincing at the time, even though they had obviously forgotten it by 1965 when they introduced their direct investment guidelines.

An additional rationale for the Canadian IET exemption was given by Secretary Dillon.

> It is very important that we maintain general stability in the international monetary system and to have a country as important as Canada devalue its currency would have all sorts of repercussions, including repercussions against the dollar.[83]

In other words, the U.S. was concerned that a Canadian devaluation would direct speculative attention against the U.S. dollar.

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[82] Bank of Canada, Annual Report (Ottawa: Bank of Canada, 1964), p.8.

[83] U.S. Congress, Senate, Committee on Finance, Interest Equalization Tax Act, Hearings before the Committee on Finance, U.S. Senate on H.R. 8000, 88th Cong., 2nd sess., July 1964, p.79.

The U.S. Government was willing to exempt Canada from the tax on new issues, but they categorically insisted in the face of Canadian objections that the tax must apply to purchases of outstanding securities. The Canadian Government acquiesced on the grounds that net trade in outstanding securities is not a substantial component of the balance of payments, and that they had been guaranteed unimpaired access to the U.S. capital market. However, that subsector of the financial community organized around the major stock exchanges was very upset. American stock purchases were a lucrative source of commissions, and the tax threatened to shut off this portion of the market. For example, American orders executed on the Toronto Stock Exchange in 1963 before the IET was announced accounted for 12% of the volume of trading and in the past the figure had ranged from 5 to 25%.[84] In this instance the views of the stock brokers were articulated by Eric Kierans, who was then President of the Montreal Stock Exchange. He said in a letter to Finance Minister Gordon, "The effect of this tax must be estimated on total transactions of $1,670 million and then the effects become potentially catastrophic for Canada."[85] These cries of doom were largely ignored by a Canadian Government that was able to distinguish between real and imaginary threats to the Exchange Fund. The Canadian Government was well aware that the determination of the U.S. to solve its balance of payments problem was being questioned in Europe because of the Canadian exemption. An IET with Canada exempted would have only applied to 33% of the new issues of foreign securities in the U.S. during 1962 and the first half of 1963; the Canadian exemption alone during this period would remove 51% of the tax base.[86] A narrowing in the scope of the IET of this magnitude was not likely to inspire confidence in the future of the U.S. dollar. Consequently, the determination of the U.S. to apply the IET to transactions in outstanding securities, in spite of the insignificance of the items in the balance of payments and the taxes considerable nuisance value to the North American financial community, was un-

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[84] Globe and Mail, July 19, 1963, p.B4.

[85] Quoted in David Oancia, "Kierans Still Fighting U.S. Tax," Globe and Mail, July 27, 1963, p.38.

[86] U.S. Congress, House, Committee on Ways and Means, Extension of the Interest Equalization Tax, Hearings before Committee on Ways and Means, U.S. House, 92 Cong., 1st sess., February 22, 1971, p.6.

derstood by the Canadian Government as a symbolic gesture to impress world opinion. Nevertheless, a number of concessions to business were appended to the bill by Congress that had the effect of weakening the impact of the tax on American purchases of outstanding Canadian securities. The most important of these were the exemption from the tax for life insurance companies operating in Canada on purchases up to 110% of reserves against foreign liabilities and the exemption for purchases of outstanding securities of companies that were substantially American owned.[87] Even the symbolic gesture was watered down.

Although the rationale of the exemption was clear to both sides, the terms of the agreement were not. Perhaps this is because of the time constraints on the initial negotiations that permitted only broad consensus on matters of principle and not agreement on the specifics of implementation. The only term agreed to by both sides is found in the joint communique of July 21 .

> The Canadian authorities stated that it would not be the desire or intention of Canada to increase her foreign exchange reserves through the proceeds of borrowing in the U.S., and it is the hope and expectation of both governments that by maintaining close consultation it will prove possible in practice to have an unlimited exemption for Canada without adverse effect on the U.S..[88]

This paragraph contains the Exchange Fund Ceiling agreement. The interpretation accepted by both sides was that Canada had undertaken a commitment to keep foreign exchange reserves below $2,692 million, the level on June 30, 1963. In fact, the Canadian delegates had suggested the idea of a limit on exchange reserves in the first place.[89] The disagreement was over the nature of the exemption. The Canadian view as expressed by Mr. Rasminsky was "that there should not be any fixed views about the appropriate amount of new issue borrowing and that Canada and the U.S. should rely on continuous and flexible cooperation rather than rigid rules or arbitrary prejudge-

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[87] Canada, House of Commons Debates, December 6, 1963, p.5516.

[88] Canada, House of Commons Debates, July 23, 1963, p.2500.

[89] Louis Rasminsky, private interview.

ment. " It was partially for this reason that Canada rejected the limited exemption that was originally offered by the U.S.. Another, perhaps more important, reason was that the Canadian Government was reluctant to perform the unpopular task of rationing the borrowing quota among the various corporations and particularly among the various provinces.[90] Whereas the American view, as expressed by Secretary Dillon, was that without some limitations on the size of exempt Canadian borrowing, "the proposed Canadian exemption would undermine the whole purpose of the proposed tax."[91]

The U.S. Council of Economic Advisers write that:

> In connection with this exemption, Canadian authorities have agreed that it is not the intention of Canada to increase foreign exchange reserves through the proceeds of borrowing in the U.S., with the implication that borrowing would be restored to the more normal levels of earlier years.[92]

The U.S. Treasury hoped "that we can work out a method of operation where Canada can have an unlimited exemption" but that "if it doesn't work the president has the authority and will continue to have authority to take whatever action is necessary,"[93] The authority that the President had was the power to limit the size of the exemption by Executive Order. This was used in February 1965 when Japan was given a $100 million dollar exemption. The Senate Finance Committee in their report on the IET Act said that the "discretionary power to limit the size of any exemption gives assurance that the Canadian ex-

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[90] Ibid.

[91] Neville Nakivell, "Walk Very Carefully If You Borrow in the U.S.," Financial Post, May 30, 1964, p.1.

[92] U.S., Office of the President, Economic Report of the President and Annual Report of the Council of Economic Advisers (Washington: U.S. Government Printing Office, 1964), pp. 129-30.

[93] U.S. Congress, House Committee on Banking and Currency, Recent Changes in Monetary Policy and Balance of Payments Problems, Hearings before the Committee on Banking and Currency, 88th Cong., 2nd sess., 1964, p.102.

emption will not undermine the purpose of this tax".[94]

There appeared to be a slight disagreement between the U.S.. Congress and the U.S. Treasury about the acceptable level of Canadian new issues in New York. The Congress thought that the 1950-55 average and the 1961 level of $250-300 million was tolerable,[95] whereas the Treasury said that it would not take action as long as Canadian borrowing stayed under $500 million.[96] The U.S. Government was happy with the $85 million borrowing in the second half of 1963, but the 1964 total of $700 million was considered to be too high.[97] That is why they asked the Canadian authorities to appeal to the provincial governments in "December 1964 to avoid as far as possible adding to the value of new Canadian issues in the U.S. at that time."[98] Ottawa never formally agreed to the $500 million limit and the U.S. never formally asked for the limit, but it was what they were aiming at. The limit was surpassed in 1965 as well when borrowings were $709 million. Finance Minister Walter Gordon after consultations with Henry Fowler, the U.S. Secretary of the Treasury, requested in November 1965 that Canadian borrowers defer deliveries of securities to American purchasers in order to improve the U.S. balance of payments in the final quarter of 1965. The largest deferral that was made public was a $50 million Hydro Quebec issue.[99] Thus, up until the end of 1965 the Canadian interpretation of the exemption was more accurate. No limits were placed on Canadian borrowings, and informal appeals were the order of the day.

An interdepartmental Committee in the U.S. was set

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[94] U.S. Congress, Senate, Committee on Finance, Interest Equalization Tax Act, Report to accompany H.R. 8000, 88th Cong., 2nd sess., July 30, 1964, p.14.

[95] Ibid., p.14.

[96] C.K. Nash, "The U.S. Draws a Tight Line Around Borrowing Permit," Financial Post, August 8, 1964, p.3.

[97] Canada, House of Commons Debates, January 27, 1966, p.324.

[98] C.K. Nash, "What the U.S. Really Asks of Us," Financial Post, February 20, 1965, p.1.

[99] D. Forster, "The National Economy," in John Saywell ed., The Canadian Annual Review for 1963 (Toronto: University of Toronto Press, 1964), p.349.

up by the U.S. Treasury a week after the publication of the joint communique. This committee was to implement the financial arrangements between the U.S. and Canada and to maintain contact with its Canadian counterparts in the Finance Department and the Bank of Canada.[100] Close cooperation was essential to fulfill the agreement to the satisfaction of both parties. During this period, the instruments used to achieve the objective of a stable Exchange Fund for Canada were, in order of importance, monetary policy, persuasion, and foreign exchange market intervention.

Americans felt that they had a commitment from the Canadians to decrease interest rates in Canada relative to the U.S., and in fact, the long term differential was reduced from 1.42% in the second quarter of 1962 to an average of 1 .04% in 1964. However, in late 1962 monetary policy in Canada was still tight in the aftermath of the exchange crisis. Secretary Dillon explained his interpretation of the exemption:

> They the Canadian representatives have stated that it is neither their desire nor intention to conduct a monetary policy that would encourage flows any larger than necessary to keep their current account (sic) in balance and to keep unimpeeded the flow of trade between our two countries.
>
> On that understanding, I hope that we can work out a method of operation where Canada can have an unlimited exemption. The Canadians felt that this involves monetary policy in Canada. They felt that for them to come down here and purchase or sell securities with this tax in effect would have necessitated a substantial overall increase in their interest rates. They also felt that by a modest decline in their interest rates, the central bank, the Bank of Canada would so reduce the incentive to borrow in the U.S..[101]

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[100] Canada, House of Commons Debates, July 29, 1963, p.2728.

[101] U.S. Congress, House, Committee on Banking and Currency, Recent Changes in Monetary Policy and Balance of Payments Problems, Hearings before the Committee on Banking and Currency,

U.S. Treasury officials were quoted as saying that "the decision on whether, when and how much Canadian interest rates would be reduced would be left to Canada."[102]

In contrast, finance Minister Walter Gordon asserted in response to a question from Mr. Diefenbaker, on Canada undertaking to reduce interest rates, that Canada had explained "that Canadian monetary policy was to be expansionary and that the IET, if applied would increase the Canadian rate, but there was no commitment made."[103] He also reiterated this when questioned in December 1963 by Mr. Diefenbaker on the existence of a "'gentlemen's agreement' to hold down interest rates."[104] Thus, the Canadian position seemed to be that lower interest differentials between Canada and the U.S. were responses to the exigencies of domestic policy and that their effect on borrowing in the U.S. was incidental. The U.S. position seemed to be that Canada had given assurances of lower interest rates in order to stem capital inflows, As long as these two objectives were furthered by the same monetary policy, the positions are operationally-equivalent. Only when the two objectives clearly conflict can the agreement be said to be restrictive. Until that happens, it is convenient for both sides to present the most attractive justification for action to their respective constituencies. The shakedown of the Exchange Fund caused by the announcement of the IET gave the Canadian Government room for maneuver until tile end of the third quarter of 1964.

The second instrument was persuasion. The oligopolistic banking system furnished a suitable environment for its use as a domestic policy tool; therefore, its extension to the realm of in international economic policy was only natural.[105] The two documented cases of the effective

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U.S. House of Representatives, 88th Cong., 1st sess., July 22-26, 1963, p.102.

[102] "Canada to Aid in Deficit Fight; Opinion is Mixed on U.S. Tax, Dollar Flow Pledge," New York Times, July 24, 1963, p.37.

[103] Canada, House of Commons Debates, July 23, 1963, p.2501.

[104] Canada, House of Commons Debates, December 18, 1963, p.6064.

[105] See E.P. Neufeld, Bank of Canada Operations and Policies (Toronto: University of Toronto Press, 1958).

use of persuasion are December 1964 and November 1965.[106] The December 1964 request does not seem to have been overly successful at deferring deliveries of prior offerings, The undelivered balance at the end of the fourth quarter of 1964 was $51 million; this was a reduction of $179 million in the undelivered balance from the third quarter. The November 1965 request was more impressive in this respect. The undelivered balance at the end of the fourth quarter at $310 million was $115 million greater than at the end of the third quarter.[107] However, such fluctuations are not unusual.

The third instrument was foreign exchange market intervention, There were two techniques employed. The most straightforward of which was to sell U.S. dollars when the ceiling was approached. This could be done as long as the Canadian dollar was comfortably below the upper limit of the band in which it was permitted to fluctuate. Once this limit was approached, however, the Exchange Fund was obliged to purchase all the U.S. dollars offered in order to maintain the current exchange rate. Nevertheless, a strategic policy induced revaluation of the Canadian dollar within the band could serve to reduce exchange reserves. Obviously this instrument was deficient because of the minimal flexibility of exchange rates under a fixed rate system. The success of this technique required intermittant devaluations to provide slack for further revaluations. The behaviour implied by this technique has been observed and incorporated into RDX2.[108]

The second technique of exchange market intervention, which was suggested by R. M. Dunn,[109] combines forward pur-

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[106] Canada, House of Commons Debates, January 27, 1964, p.324.

[107] See D.B.S., Sales and Purchases of Securities Between Canada and Other Countries for December 1964 and 1965.

[108] The equation for official excess demand for spot exchange, equation 21.1, has a variable defined to be the Exchange Fund Ceiling target minus the actual level of exchange reserves to represent this type of behaviour. It is highly significant. See J.F. Helliwell et al, The Structure of RDX2, Part 1, p.232 and Part 2, p.126.

[109] R.M. Dunn, Canada's Experience With Fixed and Flexible Exchange Rates in a North American Market (Montreal: Canadian American Committee, Private Planning Association of Canada, 1971), p.32.

chases of U.S. dollars with spot sales. This sophisticated technique has the advantage of making Canadian foreign exchange resources less visible to prying American eyes. Forward purchases of U.S. dollars and spot sales increase the forward premium or reduce the discount on the U.S. dollar making interest rate motivated short term capital outflows from Canada more profitable. Paul Wonnacott claims, however, that this has not been an important instrument except perhaps in late 1968 immediately prior to the termination of the agreement (more on this later). He cites as evidence that only in September 1963, March 1964, and August 1965 did forward dollar holdings exceed $80 million. But in October 1968 the Exchange Fund held $135 million forward U.S. dollars.[110] This large demand for forward U.S. dollars is reflected in a negative covered Treasury bill differential in spite of a substantial positive uncovered differential (see Figure 6). Nevertheless, forward purchases did provide the Canadian Government with an added degree of flexibility in keeping their side of the bargain. In October 1968 official holdings of gold and U.S. dollars plus the net

creditor position with the IMF stood at $2,529 million which was just under the ceiling figure of $2,550 million. Without the forward purchases the Exchange Fund would have been over the ceiling. The same applies in March 1964. The September 1963 forward purchases were probably made to slow down the growth of reserves following the $500 million wheat sale to the Soviet Union. The U.S. Treasury had at various times stated that the ceiling was not an absolute maximum and that it could be exceeded for short periods of time without abrogating the agreement. The reason, why the Government chose these times to act when at others they pierced the target while this instrument lay idle, is obscure.

There was some suspicion at the time of the IET's announcement that the U.S. was retaliating against Canada for the nationalist measures in the Gordon budget of June 1963.[111] The alternative explanation for the American action is in the words of A.E. Safarian, "colossal thought-

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[110] Paul Wonnacott, The Floating Canadian Dollar (Washington: American Enterprise Institute for Public Policy Research, 1972), p. 52.

[111] New York Times, July 22, 1963, p.1.

lessness or incompetence".[112] The Canadian policy makers interviewed all accepted this alternative.[113] The man responsible for the preliminary work on the American side was Mr. Merlyn Trued, who was at that time the Head of the International Finance Section of the U.S. Treasury. He confessed at the time that "The inclusion of Canada probably meant that our staff work was not too good. It turned out that the existing integration of the capital markets of the two countries was much greater than we expected. It was a great surprise."[114] Moreover, A.D.P. Heeney and Livingston Merchant wrote in their famous study that the U.S. "should maintain a conscious awareness of Canadian interests to ensure that they are not violated or prejudiced through, inadvertence or ignorance."[115] This policy prescription was based on a confidential case study of the IET. Thus, the bulk of the evidence clearly favours the poor planning theory.

Even though the IET was not drawn up specifically to discipline Canada, it probably contributed to an increased awareness in Canada of the degree of dependence on the U.S.. As a result the withholding tax increase for foreign owned firms was quietly dropped following a conference attended by Finance Minister Gordon and Secretaries Dillon and Hodges,[116] The scrapping of this measure could not have been a quid pro quo for the IET exemption since it came later. However, it was the result of an increased desire to please the Americans, who had inadvertently

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[112] Professor Safarian, himself, did not believe that this alternative explanation was plausible. Consequently, he rejected it almost as soon as he suggested it. However, it is argued here that it is the only explanation that is consistent with all the facts. For an interesting discussion of the issue, see A.E. Safarian, "The Web of Repercussions," in Stephen Clarkson edited, An Independent Foreign Policy for Canada? (Toronto: McClelland and Stewart Limited, 1968), pp.48-51.

[113] Mr. Walter Gordon said that subsequent conversations with Mr. Douglas Dillon removed his suspicion on this point.

[114] Peter C. Newman, "The Great Money Panic of 1963," Maclean's, May 16, 1964, p.55. The role of Mr. Merlyn Trued was confirmed by one of the Canadian policy makers.

[115] A.D.P. Heeney and Livingston Merchant, "Canada and the United States: Principles for Partnership," June 28, 1965, p.51.

[116] This incident was pointed out by Mr. Diefenbaker in Canada, House of Commons Debates, Feb. 20, 1964, p.50.

exposed Canada's vulnerability.

Revised Agreement of December 1965

On February 10, President Johnson launched a new balance of payments programme. The IET had not succeeded in reversing the U.S. deficit. Consequently, direct investment and lending by financial institutions were to be subject to voluntary guidelines.[117] Canada's special status under the IET was continued, in that investments in Canada were given special priority under the programme to limit direct investment. Nevertheless, voluntary guidelines were imposed on bank lending to Canada and the IET was extended to bank loans to Canada.[118] However, neither of these measures constituted a major threat to the Canadian balance of payments because bank loans were not an important source of capital inflow. The guidelines for non-bank financial institutions were not applied to long term lending. The U.S. Government thought the IET was sufficient deterrent.[119] Secretary Dillon explained the treatment of Canada under this programme in terms of the IET exemption; he said it did not make sense to restrict direct investment in Canada if Canada would just be forced to borrow more in the U.S. under the IET exemption.[120] Furthermore, Canada had been relatively successful in keeping the Exchange Fund within the agreed upon limits. It was only in November 1964 that the ceiling level was exceeded and then only by $51 million. An excess of this magnitude could be entirely justified on the grounds of seasonal variability. Therefore, it would have been improper for the U.S. to take action against Canada in view of the cooperative attitude of the Canadian authorities.

By the end of 1965 the American position on capital

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[117] The details of this programme can be found in U.S. President, Economic Report of the President and Annual Report of the Council of Economic Advisers (Washington: U.S. Government Printing Office, 1966), pp.165-66, and in G. Shultz and R. Aliber eds., Guidelines, Informal Controls and the Market Place (Chicago: University of Chicago Press, 1966), Appendix B.

[118] The IET applied to bank loans to Canada between February 10, 1965 and September 12, 1966.

[119] Shultz and Aliber, Guidelines, p.349.

[120] Bruce MacDonald, "U.S. Exempts Canada from New Voluntary Curbs," Globe and Mail, February 18, 1965, p.29.

flows to Canada had hardened substantially. The apparent seasonal strength of the Exchange Fund in late 1964 and early 1965 had proved to be something more. The Exchange Fund dipped below the ceiling in March only to re-emerge in July, and even during this supposed seasonal weakening the Exchange Fund was never more than $35 million below the ceiling. Consequently, heavy borrowing in the U.S. and a wheat sale to Russia were sufficient to boost the Exchange Fund through the ceiling. Then, in November 1965, the Canadian Government, in an attempt to preserve American goodwill, "requested all major Canadian issuers of securities in the U.S. to defer deliveries of their issues until the turn of the year."[121]

However, this action was not sufficient to appease the U.S. Government even though it had its origin in a conference between finance Minister Gordon and Secretary Fowler. They were dissatisfied with the level of the Canadian exchange reserves, which stood at $2,907 million at the end of November. Consequently, the U.S. unveiled a more comprehensive and tougher set of guidelines in December 1965,[122] which pointedly made no special mention of Canada. The IET exemption for Canadian new issues was being suddenly underlined. The guidelines for non-bank financial institutions, which would have limited the increase in Canadian debt held by these investors to 5% of the total outstanding on September 30,1965,[123] in tandem with the lack of special treatment for Canada would have made the IET exemption meaningless. Non-bank financial institutions such as pension funds, insurance companies and investment companies purchase most of Canadian new-issues in the U.S.. Any limitations on their acquisitions

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[121] Canada, House of Commons Debates, January 27, 1966, p.324.

[122] The revised guidelines are discussed in U.S., President, Economic Report of the President and Annual Report of the Council of Economic Advisers (Washington: U.S. Government Printing Office, 1966), p.167.

[123] Schultz and Aliber, Guidelines, p. 351. Assuming that all long-term investment in Canada was held by non-bank financial institutions, purchases of new Canadian securities would have been limited to $450 million in 1966 at a maximum whereas net new issues bought by residents of the U.S. were $944 million. Figures are calculated from Statistics Canada, Canada's International Investment Position 1926 to 1967, (Ottawa: Information Canada, 1971), p. 25 and D.B.S., Sales and Purchases of Securities Between Canada and the U.S. (December 1966), p.5.

of Canadian securities would have severely restricted the advantages to be gained from the IET exemption. When asked about the termination of Canada's special status, the new Secretary of the Treasury Mr. Fowler seemed to be unaware that Canada had ever had one.[124]

This puzzling episode has a rather simple explanation. Mr. Walter Gordon had been informed earlier of U.S. plan by the Secretary of the Treasury, Henry Fowler. Since the special circumstances that had led him to accede to an exemption in 1963 no longer applied, he informed Secretary Fowler that Canada would accept a circumscription of the IET exemption. However, he did request that the announcement of the new measures be postponed until after the Canadian federal election in November 1965, and so it was. The results of the election were disappointing to the Liberals who were returned to Parliament with another minority government. Mr. Walter Gordon then resigned because of his advice on the timing of the election. Mr. Mitchell Sharp who replaced him as finance minister had very different views on this question. Consequently, after a period of confusion resulting from the changeover of the finance minister, the Canadian Government re-opened negotiations with the Americans.[125]

In the words of Finance Minister Mitchell Sharp, "We sought and obtained an exemption from this important restriction [guidelines for non-bank financial institutions] justified on the same ground as our original exemption from the IET and in consideration for an undertaking of the same kind on our part regarding the level of our reserves."[126] However, the American Government drove a harder bargain this time. The Exchange Fund Ceiling was by mutual consent reduced to $2,600 million. This entailed a reduction of $307 million from the November total. The new ceiling of $2,600 million was never met. It was reduced to $2,550 million after a $47.5 million gold payment to the IMP (the gold portion of the increased Canadian quota). The August 1966 reserves at $2,543 million were the first to meet the new reserve ceiling requirements. Also in December 1965, as a further gesture of goodwill, the Government of Canada arranged to sell $200 million in

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[124] Bruce MacDonald, "U.S. to Ask Businessmen to Reduce Flow of Investment Capital," Globe and Mail, December 6, 1965, p.3.

[125] Walter Gordon, private interview.

[126] Canada, House of Commons Debates, January 27, 1966.

gold to the U.S.[127]

The American Government's obsession with exchange ceilings may have been misguided, since in 1966, the policy induced deterioration in the Canadian balance of payments was composed of a reduction of $359 million in its deficit with the U.S. and a reduction of $839 million in its surplus with the rest of the world, for a total deterioration of $480 million which meant a $333 million official settlement deficit.[128] The bulk of the shift came from a short term capital inflow from the U.,3. and an outflow to the rest of the world as Eurodollar rates climbed sharply. The U.S. may find some solace in the thought that the bilateral balance with Canada may have moved more in Canada's favour without the reduction in the ceiling.

A new instrument of Exchange Fund manipulation was added to the Canadian arsenal at this time, so that the general instrument of monetary policy would be less encumbered by the Canada-U.S. financial arrangements. This novel instrument was the purchase of outstanding Canadian securities held in the U.S. and the purchase of U.S. pay issues of international organizations.[129] At this time $700 million worth of Government of Canada bonds were owned in the U.S.. Of these $300 million were U.S. pay and $400 million Canadian pay.[130]

During the years 1966 and 1967, this new instrument replaced the old instrument of formal requests from the minister of finance. The year 1966 saw $150 million of Government of Canada U,S. pay bonds purchased, and in 1967 $40 million were bought.[131] This left less than $110 million still outstanding. Newspaper articles indicate that there were sometimes problems finding a willing seller and that the purchases were often made in negotiated

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[127] Bank of Canada, Annual Report (1966), p.7. This was the result of R.B. Bryce's astute suggestion about how to placate the Americans.

[128] Figures in U.S. dollars.

[129] Canada, House of Commons Debates, January 27, 1966, p.325.

[130] Ronald Anderson, "Expect U.S. Curbs to Cool Overheating for Canada," Globe and Mail, December 7, 1965, p.B1.

[131] Bank of Canada, Annual Report (1966), p.9 and (1967), p.66.

deals from large holders.[132] One of the largest deals involved the repurchase of the securities issued during the 1962 exchange crisis from three large insurance companies,

In 1966 and 1967 respectively, $25 million and $40 million of World Bank bonds were bought by Canada. This helped the U.S. balance of payments because these securities would have been added to American portfolios if the Canadian Government had not acted. However, IBRD bonds only came on tho market in $10 or $15 million lots which were considered to be too small to provide a satisfactory outlet for excess exchange reserves.[133] Thus, there were supply constraints that limited the effectiveness of this new instrument.

In addition to reconciling itself to the tightening of the Exchange Fund Ceiling rein, the Government of Canada endeavoured to prevent the Canadian exemption from becoming a device for evading the U.S. capital controls. Therefore, the Minister of finance, Mitchell Sharp, made a formal request to Canadian investors to refrain from acquiring "securities denominated in Canadian or U.S. dollars, which are issued by U.S. corporations or their non-Canadian subsidiaries and which are subject to the U.S. IET if purchased by U.S. residents."[134] This was only the first and weakest of a number of measures meant to prevent U.S. funds from "passing-through" Canada and circumventing U.S. regulations.

Canada received no exemption from the rest of the U.S. balance of payments programme, but the Canadian exemption from the IET had been preserved intact at the cost of further concessions to the U.S.. As a result a Joint Canada-U.S. Ministerial Committee was able in March 1966 to note "the measures that have been taken to maintain access to the U.S. capital market for an unlimited amount of new Canadian securities free of the IET. The U.S. members reaffirmed that in buying such issues U.S. investors were completely free to be guided by market conslderations."[135]

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[132] See for instance, C.K. Nash, "L.B.J. Expects to Wipe Out Payments Deficit in 1966," Financial Post, February 5, 1966, p.17.

[133] Louis Rasminsky, private interview.

[134] Canada, House of Commons Debates, March 16, 1966, p.3037.

[135] Canada, House of Commons Debates, March 7, 1966, p.2348.

Total Exemption From The U.S. Balance Of Payments Programme

As long as the U.S. balance of payments was in deficit the Canadian economy was exposed to U.S. policy induced balance of payments crises of its own. On January 1, 1968, President Johnson announced that the Commerce Department's voluntary controls on foreign direct investment were to become mandatory and the amount of direct investment permitted was to be reduced. This announcement touched off another run on the Canadian dollar, in spite of Finance Minister Mitchell Sharp's optimistic claim that the new controls would not materially reduce U.S. investment in Canada.[136] The treasurers of the large international corporations were not reassured, and they rushed to reduce their Canadian dollar liquid assets. The Finance Minister sought American help to reduce the outflow of short term funds. Consequently, on January 21, the U.S. Secretary of the Treasury, Henry Fowler wrote a letter to U.S. subsidiaries in Canada telling them that the new guidelines did not call for the abnormal transfer of earnings or withdrawal of capital and that the programme still left room for large flows of capital to Canada.[137] Of course, the American subsidiaries were not primarily motivated by the desire to comply with the guidelines, but rather with a desire to avoid a foreign exchange loss, so the outflow continued at a diminished pace. The gravity of the crisis can be gauged by the decline of U.S. $707 million in the Exchange Fund during the first quarter (the decline to the middle was even greater.)[138] The Canadian problem was only one facet of an international monetary crisis that was raging in the wake of the devaluation of the British pound in November 1967.

The crisis was dissipated by the exemption of Canada from all U.S. balance of payments programmes including the Direct Investment Guidelines and the Voluntary Foreign Credits Restraint Programme commencing in March

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[136] Canada, House of Commons Debates, March 6, 1968, p.7333.

[137] Ibid.

[138] Bank of Canada, Annual Report (1968), p.37.

1968.[139] The rationale for the exemption is clearly set out in a later exchange of letters in which Secretary Fowler states:

> Recognizing this interdependence, we have long since believed that it is not in the interest of either country to occasion destabilizing influences in our currencies which might inhibit the other country from the pursuit of its own economic objectives.[140]

In other words, the U.S. was afraid that an impending devaluation of the Canadian dollar would have thwarted the U.S. efforts to ameliorate their position, or perhaps would have directed the attention of speculators to the U.S. dollar. Consequently, the crisis atmosphere of this negotiation was more closely akin to the original 1963 dealings than to the 1965 where the Americans did not, evidently, think a settlement favourable to Canada was imperative in order to restore confidence. The U.S. Government would probably have withdrawn the extension of the guidelines to Canada sooner, but it appears that key members of the Canadian Government were too absorbed in a Liberal Leadership contest to have asked.

The quid pro quo tor the blanket exemption from the Commerce Department and Federal Reserve Board programmes were the additional undertakings: (1) to take any steps necessary to ensure that the exemption does not result in Canada being used as a "pass-through" by which the purpose of the U.S. balance of payments programme is frustrated, and (2) to invest the entire holdings of U.S. dollers, apart from working balances, in U.S. Government securities which do not constitute a liquid claim on the U.S..[141] The undertaking of the Exchange Fund Ceiling was reiterated by both sides. The first obligation was discharged by the successive promulgations of guidelines for investment abroad by banks, non-bank financial corporations,

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[139] The exemption was announced in an exchange of letters between Secretary Fowler and Finance Minister Sharp dated March 7, 1968 which can be found in Bank of Canada, Annual Report (1968), pp.64-66.

[140] Secretary Fowler in a letter dated December 16, 1968 in Ibid., p.67.

[141] Paraphrase of Finance Minister Sharp's letter to Secretary Fowler on March 7, 1968 found in Bank of Canada, Annual Report (1968), p.66.

and non financial corporations over the course of 1968.[142]

The guidelines were the product of Canada-U.S. consultations,[143] although, it must be added, there was little enthusiasm on the Canadian side for these guidelines.[144] The second undertaking has also been fulfilled. Over the year 1968, the Government of Canada invested U.S. $1,050 million in the non-liquid U.S. Treasury securities, bringing the total held to U.S. $1,250 million. The holdings of U.S. $150 million prior to 1968 is an indication that this instrument of payments policy had not been important until 1968. On the other hand, the earlier instruments of formal requests to defer deliveries and repatriation of government securities were not employed to regulate the Exchange Fund after the new settlement. One instrument replaced another rather than supplemented it. By the end of September 1970 the Exchange Fund held U.S. $2,229 million of these securities.[145] The advantage to the U.S. from Canada holding reserves in illiquid securities is a purely technical one; the liquidity measure of balance of payments' deficits is reduced while the official settlements deficit remains unchanged.

The first round of bargaining in 1968 was only incidentally concerned with Canada's exemption from the IET. Nonetheless, it is necessary to understand these arrangements in order to follow a discussion of the demise of the Exchange Fund Ceiling. The exchange crisis in early 1968 furnished a temporary respite from the obligations of the Exchange Fund Ceiling for as long as it took for depleted reserves to be rebuilt. By November, however, the Fund had been replenished, and according to the Governor of the Bank of Canada, "concern was expressed in Canada that the flexibility of Canadian monetary policy was in danger of being severely limited by the existence of the 'target'

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[142] The texts of the statements announcing these three sets of guidelines are found in Bank of Canada, Annual Report (1968), p.66.

[143] "New Guidelines for U.S. $ Hire," Financial Post, May 11, 1968, p.1.

[144] The Canadian negotiators had resisted pressure from the Americans on this point as long as possible according to Alan B. Hockin.

[145] Donald Townson, "U.S. Pressure Builds on Trade Balance Issue," Financial Post, November 28, 1970, p.37.

level for Canadian exchange reserves."[146] At this time, Finance Minister Benson stressed that the ceiling is a "target" and not an absolute level and that it had been exceeded in the past. Further, he asserted, "it [the Exchange Fund Ceiling] has neither caused any difficulties nor had any effect on the monetary policies we follow in this country...however...the whole matter is under discussion."[147] The two countries emerged from this discussion with conflicting interpretations of the fate of the Exchange Fund Ceiling.

On December 16, 1968, Secretary Fowler and Finance Minister Benson exchanged letters in order to clarify the essential features of the Exchange Fund Ceiling agreement. Secretary Fowler wrote:

> in the exchange or letters last March we reiterated the basic principle that it would not be Canada's intention to increase its foreign exchange reserves through borrowings in the U.S.. Implementation of this principle does not require that Canada's reserve level be-limited to any particular figure. We are well aware of Canada's need for flexibility with respect to reserve levels in order to accomodate the adaptation of monetary policy to the changing needs of its domestic economy, seasonal factors and other influences of a temporary nature. This statement of objectives recognizes that under circumstances in which an improvement in the payments position of the U.S. is essential to the strengthening of the world monetary system, it is in Canada's own interest to avoid hindering the achieve--ment of this objective by unnecessary borrowing in the U.S.. In recent times capital markets in other countries have developed a capacity which has attracted borrower's from many countries. Canadian authorities have taken advantage of these expanding capital markets to raise funds in substantial quantities. These devel-

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[146] Bank of Canada, Annual Report, (1968), p.14.

[147] Canada, House of Commons Debates, November 14, 1968, p.2266.

> opments now offer Canada an alternative means of achieving an increase in its reserves whenever Canadian authorities believe this is desirable.[148]

The letter written by Finance Minister Benson says essentially the same thing. Finance Minister Benson wrote:

> In the light of these considerations I can reiterate to you that it is not an objective of Canadian policy to achieve permanent increases in our exchange reserves through unnecessary borrowing in the U.S. I fully share the view expressed in your letter that the implementation of this principle does not require that Canada's reserve level be limited to any particular figure and that our reserves may be expected to fluctuate to accommodate the adaptation of monetary policy to the changing needs of the domestic economy, seasonal influence, and other influences of a temporary nature.[149]

Every word in both of these communications has been weighed carefully and every nuance has been pondered, for they are diplomatic documents. Nevertheless, their ultimate components, words, are sufficiently abstract that a convincing case can be made for sundry interpretations of the intended meaning. To the Americans, the letters meant that Canada would only accumulate, other than temporarily, exchange reserves as the surplus with the rest of the world increased, and that the accumulation would not be the result of reducing the deficit with the U.S.. Whereas the Canadian view as expressed by Finance Minister Benson was that there no longer was the "limitation of any numerical target"[150] on Canadian foreign exchange reserves. The Canadian interpretation was most clearly evinced by the surge in exchange reserves from U.S. $2,672 million at the end of November 1968,

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[148] Bank of Canada, Annual Report (1968), pp.67-68. Emphasis added.

[149] Bank of Canada, Annual Report (1968), pp.69.

[150] Canada, House of Commons Debates, January 30, 1969, p.4975.

before the exchange of letters, to U.S. $3,106 million at the end of 1969.[151] The increase was achieved in exactly the wrong way from the U.S. point of view; the Canadian surplus balance with Europe was reduced while the deficit balance with the U.S. was transformed into a healthy surplus. Part of the new surplus with the U.S. could safely be attributed to the U.S. $439 million increase in long term capital inflows. Consequently, it could be said that part of the increase was due to "borrowings in the U.S.". The year 1968 was the last one in which the U.S. had a surplus with Canada.

The lag between the de facto unilateral termination of the Exchange Fund Ceiling agreement by the Canadian Government and the recognition of this fait accompli by the American authorities was quite long. This is nowhere more suitably illustrated than in two quotations from a senior U.S. Treasury official, separated by two years time, in which, he completely contradicts himself. .Mr. Paul Volcker, the Undersecretary of the Treasury for Monetary Affairs, in testifying before the Senate Finance Committee in September 1969 responded to a question from Senator Miller on the justification of a continued exemption for Canada by saying that, "I think one of the key elements here ... is whether Canada, not whether it passes on funds elsewhere, but whether it is itself, in such a strong position, that it is both borrowing in our market and building up vast amounts of reserves itself, and that has not been the case."[152] He also put on the record the traditional rationale for the IET exemption that had been regularly supplied to Congress when the IET came up for extension. In reply to a question by Senator Miller on the growth of Canada's exchange reserves in March 1971, the same Mr. Volcker contradicted himself and said, "I have no real problem in terms of the behaviour of their reserves [ie. growth]. I think more importantly [sic] is the question of whether the exemption for Canada opens an avenue by which funds can pass through

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[151] Alan B. Hockin said that Canadian officials were surprised that this increase in the Exchange Fund was not reversed.

[152] U.S. Congress, Senate Committee on Finance, Interest Equalization Tax Extension Act of 1969, Hearing, before the Committee on Finance, U.S. Senate on H.R. 12829, 91st Cong., 1st Sess., September 3, 1969, p.46.

Canada to third countries."[153] Ihe Exchange Fund Ceiling had passed away without ever being officially pronounced dead by the U.S. Administration.[154]

Evaluation Of The Exchange Fund Ceiling Agreement

The official Canadian position articulated by successive finance ministers and the Governor of the Bank of Canada was that the Exchange Fund Ceiling never really prevented Canadian monetary policy from conforming to the needs of the domestic economic situation. In 1965 the Governor wrote in the Annual Report, "Though we naturally had to take the agreement regarding reserves into account, we were able to pursue a monetary policy which in its broad lines was appropriate to the requirements of the domestic situation as it developed."[155] Thus, the Governor was more candid than the finance ministers who would admit no alterations in monetary policy. In the 1967 Annual Report the rapid monetary expansion is partially explained by the need to avoid excessive capital inflow.[156] Official statements that suggest that the Agreement was restrictive were written after it had lapsed. The Governor of the Bank of Canada's statements in the 1968 Annual Report seem to indicate that the Exchange Fund Ceiling was restricting monetary policy.[157] And in fact, on the eve of the exchange of letters between Finance Minister Benson and Secretary Fowler, which for Canadian policy makers was the death knell of the ceil-

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[153] U.S. Congress, Senate Committee on Finance, Interest Equalization Tax Extension Act of 1969, Hearing, before the Committee on Finance, U.S. Senate on H.R. 5432, 92nd Cong., 1st Sess., March 15, 1971, p.38.

[154] This interpretation is supported by R.M. Dunn who says, "Although the U.S. Government may have felt that the reserve ceiling maintained some force in 1969, the Canadian Government obviously did not feel constrained. R.M. Dunn, Canada's Experience With Fixed and Flexible Exchange Rates in the North American Capital Market (Montreal: Canadian American Committee, Private Planning Association of Canada, 1971), p.41.

[155] Bank of Canada, Annual Report (1965), p.8.

[156] Bank of Canada, Annual Report (1967), p.10.

[157] Bank of Canada, Annual Report (1968), p.14.

ing, the Governor increased the bank rate from 6% to 6.5%.[158] This was not a coincidence.

Paul Wonnacott tends to concur with the statements of the Governor that the "reserve ceiling did not significantly alter the course of Canadian monetary policy", and he characterizes the agreement as an "annoyance".[159] However, he stresses the point that the effect of the constraint must be judged in comparison with some imprecise norm of what the government would have otherwise done.[160] On the other hand, R.M. Dunn believes that the ceiling severely limited the choice of policy options open to the Canadian monetary authorities. He writes:

> Canada's reserves were so close to the ceiling during all out two quarters in this period 1963-68 that Canada could not have maintained significantly higher interest rates than prevailed for anysignificant length of time. Given the reserve ceiling and Canada's actual re serves, Canada's ability to deal with inflation through monetary policy was determined in Washington when the Federal Reserve System decided what interest rates would prevail in the U.S..[161]

Dunn bases his assertion on the empirical evidence con-

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[158] Another semi-official view of the effect of the Exchange Fund Ceiling agreement is give in Canada, Foreign Direct Investment in Canada (Ottawa: Information Canada, 1972), p.289. They say, " In reaching these arrangements a certain cost has been incurred by Canada...during the period of the ceiling on exchange reserves and maintenance of a fixed exchange rate the choice available to the monetary authorities in regulating credit conditions were reduced. In particular, the level of interest rates had to take account of the need to minimize capital inflows. While the inflows could, up to a point, be offset by Canadian purchases of non-marketable U.S. securities when excess exchange reserves were being accumulated, this did not constitute an entirely satisfactory response. Thus, the exchange reserve limitation involved some restriction on the use of monetary policy."

[159] Paul Wonnacott, The Floating Canadian Dollar (Washington: American Enterprise Institute for Public Policy Research, 1972), p.54.

[160] Ibid., p.51.

[161] R.M. Dunn, Canada's Experience With Fixed and Flexible Exchange Rates in a North American Capital Market (Montreal: Canadian American Committee, Private Planning Association of Canada, 1971), p.34.

cerning the sensitivity of capital flows to interest differentials.

The empirical evidence provided in Figure 4 indicates that the money supply was growing at what might be considered excessive rates during three of the six years covered by the Exchange Fund Ceiling. Those years were 1965, 1967 and 1968. Figure 5 shows that the exchange reserve ceiling was penetrated in 1965, 1967, and 1968. On the whole the graphical presentation of the relationship of reserves to the ceiling resembles a control theory diagram with the ceiling serving as the target.

In 1965, the Exchange Fund Ceiling was surpassed in seven out of twelve months and in November of that year the Finance Minister requested that borrowers defer deliveries of prior offerings. Further, the Governor of the Bank of Canada acknowledged taking the agreement into account this year. Consequently, it is probably fair to say that the agreement was restrictive in 1965.

Figure 4 not included because of file size limitations
(see fig4.jpg)

Figure 5 not included because of file size limitations
(see fig5.jpg)

The greatest rate of monetary growth of the decade occurred in 1967, when the money supply increased 16.1% over the course of the year. This can be explained to a certain extent by a .5% increase in the unemployment rate during 1967 and a slowing down of economic growth to 3.5%. Even though the ceiling was only pierced in one month in 1967, the Government of Canada purchased U.S. $59 million of its own and international securities from residents of the U.S. and the Governor of the Bank of Canada mentioned the need to avoid the capital inflows that would be induced by a less expansionary monetary policy. Consequently, the ceiling was an important constraint in 1967 and the expansion should not be attributed solely to domestic policy considerations.

The year 1968 is the only year that has been unanimously cited as a case where the ceiling was binding. Nevertheless, the reserves were only above the ceiling in four months during 1968. The rate of monetary expansion for the last half of the year was 15%. The American rate was 10.2% for the year and was showing no signs of slackening. The possibility of more of the same was not contemplated with equanimity by a Canadian Government that was preparing to attack the problem of inflation.[162]

Meanwhile, however, the U.S. Government was planning their own campaign against inflation. Thus, after the initial increase in reserves as forward deliveries of dollers were accepted in early 1969 and late 1968, Canadian official reserves dropped until the end of the year when they started their rise that culminated in the unpegging of the Canadian dollar. The U.S. money supply actually declined by .9% in 1969 whereas the Canadian increased at 3.8%. However, this was adequate to more than maintain the Canada-U.S. interest differential at the exchange crisis level of early 1968. As Figure 6 shows the Government bond differential had widened from 1.11% in 1967 to 1.56% in 1968, to 1.68% in 1969. Nonetheless, the terms of the agreement could have been observed during 1969 without necessitating excessive monetary expansion, but this could not be foreseen in 1968. In fact, if the agreement would have remained in force in 1969, the Canadian Government would nave been restrained from initiating inappropriately tight monetary policy. Constraints not only reduce the range of policy alternatives, but also exclude some “bad” alternatives. By the beginning of 1970, toe agreement would have become an albatross around the neck of the Canadian monetary authorities.

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[162] For an interesting account of this episode in recent Canadian history see Walter Stewart, Shrug: Trudeau in Power (Toronto: New Press, 1972), pp.71-87.

Figure 6 not included because of file size limitations
(see fig6.jpg)

In summation, during its lifetime of six years, the Exchange Fund Ceiling was a major determinant of monetary policy in three years, 1965, 1967, and 1968.[163] For the rest of the period it was only one of a number of constraints. However, the U.S. Government's habit of creating exchange crises for Canada periodically relaxed the constraint by shaking down the reserves. In the absence of such disturbances the Exchange Fund Ceiling would have been a straight jacket for the Canadian monetary authorities.

The Exchange Fundd Ceiling failed to stop the deterioration in the U.S. bilateral balance of payments with Canada that took place between 1965-68. Further, the Canadian exemption from the IET allowed new issues of foreign securities in the U.S. to grow from U.S. $1,076 million in 1962 to U.S. $1,703 million in 1968. Canadian securities alone grew from U.S. $458 million in 1962 to U.S. $949 million in 1968.[164] The American objective would have been better served if the Canadian exemption would have been limited like the Japanese, rather than trading a blanket exemption for an agreement on reserves. Changes in reserves are much less closely linked to the bilateral capital flows.

The best example of the failure of the ceiling is the U.S. effort to improve their position in 1966 by demanding a reserve reduction from U.S. $2,692 million to $2,600 million and then $2,550 million. The reduction was facilitated by a short term capital outflow to Europe from Canada caused primarily by skyrocketing Eurodollar rates. The short term outflow was so large that Canadians had to withdraw short term funds from the U.S.. The new draconic ceiling was easily met notwithstanding the slow rate of Canadian monetary growth of only 6.5% per year. Consequently, Canada complied with the ceiling without helping to improve the U.S. balance of payments. A limited exemption would have been more effective. Canadians should be thankful that the U.S. Government was not very skilled in the application of "begger-thy-neighbor" capital account restrictions. The IET exemption and the Exchange

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[163] Thomas Courchene and John Winder also believe that the Exchange Fund Ceiling was a serious limitation in 1965 and 1968. See Thomas Courchene, "Recent Canadian Monetary Policy," Journal of Money, Credit and Banking, 3(1) (February 1971), pp.43-8, and John Winder, "Canadian Monetary Policy," Submission to the Senate Standing Committee on National Finance, June 1971, p.4.

[164] U.S. Congress, House Committee on Ways and Means, Exension of the Interest Equalization Tax, Hearing, February 22, 1971, p.6.

Fund Ceiling must certainly be an exception to A. D. P. Heeney's observation that the "Canadian delegation have, in most cases, been outmanoeuvred by those on the U.S. side of the table."[165]

Problem of Continued Exemption

The Canadian exemption from the IET has now endured nine difficult years without being withdrawn. However, Paul Volker, the U.S. Undersecretary of the Treasury, has, in a recent speech, grouped the IET exemption with tax guidelines exemption, the Auto-pact, and Defense Production Agreement as arrangements that must be changed because they unduely favour Canada.[166] The Canadian-American Committee has also speculated that the Canadian exemption would be terminated.[167] The U.S. may unilaterally bring to a close the Canadian exemption but it is highly unlikely that the Canadian Government would request an end of the exemption itself like the Japanese Government did in late 1969.

It has been suggested in the Canadian press that the Canadian Government might request an end to the exemption in order to reduce upward pressure on the Canadian dollar.[168] Nevertheless, it is improbable that the Canadian Government would act on this suggestion because the exemption primarily benefits the provincial governments. These governments would react very negatively to any federal efforts to deprive them of this source of funds. The intensity of provincial feelings on this matter are indicated by their refusal to restrict foreign borrowing when requested to do so by Finance Minister Turner.[169] The Ontario Provincial Treasurer, Mr. McKeough, said that the problem of foreign borrowing by provinces at a time

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[165] A.D.P. Heeney, The Things That Are Ceasars (Toronto: University of Toronto Press, 1972), p.201.

[166] R. Anderson, "Interest Clear If It Comes to a Crunch," Globe and Mail, January 22, 1972, p.B2.

[167] Canadian American Committee, The New Environment For Canadian-American Relations (Montreal: Canadian American Committee, Private Planning Association of Canada, 1972), p.41.

[168] Financial Post, October 30, 1971, p.1.

[169] See for example John Slinger, "Ontario Refuses to Give Turner Vow Against Foreign Borrowing," Globe and Mail, July 12, 1972, p.B2 and "Atlantic Provinces Tell Ottawa They Must Seek Best Rates on Financing Despite Pressure on Dollar," Globe and Mail, July 11, 1972, p.B6.

when the Canadian dollar is strong must be linked to the problem of tax sharing and that if the Federal Government wanted the provinces not to borrow abroad it would have to provide an alternative source of funds.[170]

The Federal Government would not need provincial co-operation to have the exemption withdrawn, but such co-operation is essential if the provinces are expected to voluntarily restrict foreign borrowing. Nevertheless, an action of this type by the Federal Government would not be in the spirit of Co-operative Federalism. The Federal Government's position on this matter is that:

> With the elimination of the current account deficit the balance of payments need for Canada's exemptions from the U.S. programmes is no longer as great. The exemptions are still of some value, however, largely because certain provincial governments may not be able to obtain all the funds they need in the Canadian market.[171]

Consequently, the fate of Canada's IET exemption depends on the U.S. Government. If the New Economic Policy of President Nixon is successful in solving the balance of payments problem, the U.S. will tolerate a continued exemption, if not, either the exemption goes or Canada must make further concessions to keep it.

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[170] John Slinger, "Turner's Limits Called Far Fetched Ontario Would Prefer Tax Funds," Globe and Mail, July 13, 1972, p.B2.

[171] Canada, Foreign Direct Investment (Ottawa: Information Canada, 1972), p.289. As subsequent events have shown the current account deficit is not only a historical phenomenon.

V. CONCLUSIONS

There are two types of conclusions to be drawn from this dissertation. One type is related to the Canadian IET exemption itself, and the other to the tools used in analyzing this policy measure.

The first concerning the exemption is that uncertainty about the applicability of the IET to Canadian new issues was the most significant effect of the IET on Canada. It resulted in very low levels of borrowing until the IET was passed by the U.S. Congress in September 1964. If the legislation would not have been delayed by the civil rights filibuster and the tax cut bill, there would have been almost no effect on Canadian borrowing. It was largely the postponement of Canadian borrowing that temporarily abated the capital outflow from the U.S..

The IET was not a measure taken by the U.S. to discipline Canada for nationalist economic policies; rather, it was supposed to improve the U.S. balance of payments. The U.S. would not have acted as it did if it would have taken time to consider the consequences for Canada. As a result, the only suitable explanation of the U.S. action is inadequete forethought. The IET was the international equivalent of an oligopolist trying to act as a perfect competitor, and, as events showed, it was not long before the U.S. realized that such a strategy was doomed to failure.

The IET exemption meant that Canada was able to retain a fixed exchange rate for the remainder of the 'sixties. A floating rate had been avoided for a time. Consequently, output and employment were lower than they would have been with a floating rate and no exemption until at least late 1968. The provincial governments and consumers gained from the exemption, and export industries and import competing industries lost. The U.S. Government was also a loser since the bilateral basic balance with Canada would have been more in the U.S. favour without the exemption. However, this ignores any other advantage that the U.S. Government may have gotten in return for foregoing the balance of payments gains that would result from the application of the IET to Canada. One such advantage would have been a more favourable current balance with the exemption. Nevertheless, the Canadian exemption was the largest and first loophole in a tax that came to be notorious for its loopholes.

The Exchange Fund Ceiling imposed a cost on Canada by limiting the policy choices available to the monetary authorities. The excessive rates of monetary expansion

in 1965, 1967, and 1968 can be, in part, attributed to the Exchange Fund Ceiling. If it was not for the periodic exchange crises that the U.S. generated for Canada, the burden would have been intolerable. On the other hand, the Exchange Fund Ceiling agreement was certainly not an unqualified success for the Americans. It was a particularly inefficient way of assuring that Canada did not improve her balance of payments at the expense of the U.S.. This fact combined with the ease with which Canada slipped out of the agreement in 1968 when it became more restrictive is evidence that, at least in the IET and Exchange Fund negotiations, the Canadian negotiators got the better of the Americans. However, it must be remembered that this was only a part of Canada-U.S. economic relations, and the Americans may have overcompensated for their set-backs here on other fronts.

The first conclusion concerninq the tools is that a flow model of Canada-U.S. capital flows is supported by the empirical evidence, whereas a stock adjustment model is not. That flow model specifies gross new issues in the U.S. as a function of the Canada-U.S. interest rate differential and the gross capital requirements of Canadian provinces and corporations. Exchange expectations variables do not improve the fit of the model, but dummy variables for the 1962 exchange crisis and the IET impact period do. The flow model estimated is temporally stable over the pre and post IET periods. Since the model is based on the decisions of Canadian borrowers, who take the cost of funds in the U.S. as given, the Canadian borrower would bear the full burden of the tax. Thus, the imposition of the IET on Canadian new issues would have reduced Canadian borrowing in the U.S. by the same amount as a comparable increase in the cost of borrowing.

Finally, the study of the Canadian IET exemption has reinforced the author's belief that it is inadvisable to separate politics and economics when analyzing economic policies. Any work on the Canadian IET exemption that ignored its political aspects would be, at best, incomplete. It is hoped that this dissertation has avoided this pitfall.

APPENDIX I

THE TREATMENT OF THE IET IN THE LITERATURE

Introduction

Up to the present, there has not been an empirical study that has dealt exclusively with the IET. Rather, they had only considered the IET when it became impossible to ignore it any longer, and, as a result, the begrudging treatment of this important tax has been a by-product of studies of American capital flows. Nevertheless, the authors of these empirical studies have devoted varying amounts of time to thinking about the IET, even if it is only how to minimize the disturbance to their empirical models arising from this source. Therefore, it is appropriate to summarize critically the role of the IET in some of the capital sector models that have been recently published. The models to be discussed were developed by M. F. Prachowny, William H. Branson, C. H. Lee, Norman C. Miller and Marina V. N. Whitman, Eleanor Ripley, Charles Freedman and the Bank of Canada. Some of the models cover total U.S. outflows, and inflows while others focus on Canada-U.S. bilateral flows. It is important to keep this distinction in mind since the Impact of the tax can be geographically differentiated because of exemption provisions.

M. F. J. Prachowny[172]

M. F. J. Prachowny has estimated an econometric model of the balance of payments of the United States that includes capital flow equations. His model of capital movements is of the flow type, where the net purchase of foreign securities is a function of the interest rate differential between the U.S. and the rest of the world. Thus, he uses the average of the Canadian and U.K. long term rate minus the U.S. long term rate as the differential. He also includes lagged purchases of foreign securities.

In his book he tests two alternative theories of the effect of the IET on purchases of foreign securities. The first theory is that the IET lowers net yield by roughly one percent and thus a dummy variable with value of one during the IET period should have a negative coefficient of the same magnitude as the coefficient of the interest rate differential if all foreign securities

[172] M.F.J. Prachowny, A Structural Model of the U.S. Balance of Payments (Amsterdam: North Holland Publishing Co., 1969), pp.77-9.

were taxed equally. However, with the Canadian exemption, it should be less than the slope of the yield differential depending on the proportion of outflows that had previously gone to non-exempt countries. The result of this test is given in the following equation:

$$L_t == 149.15(((rcan+ruk)/2)-rus) +51.54\ 1ET + .386L_{t-1} + 10.42$$
$$(65.69) \qquad (63.69) \qquad (.147)$$
$$R = .35 \qquad F = 3,73 \qquad (1)$$

where L_t is purchase of foreign securities, IET = 1 for 63:3 to 64:4 and rcan, ruk, and rus, are the interest rates in Canada, the U.K. and the U.S. respectively. (The numbers in brackets are standard errors and not t statistics.)

The IET variable has the correct sign but it is not significant. Its magnitude would seem to indicate that only one-third of foreign securities were actually taxed. This is consistent with other estimates.

Prachowny then formulates an alternative theory that there was an overreaction to the IET at first and then purchases of foreign securities returned to a more normal level still slightly below the initial level. Thus, he re-estimated his model with two dummy variables for the IET, one for the period 63:3 to 64:1 and one for 64:2 to 64:4. The equation is as follows, where IET1 is the first dummy to represent the overreaction, and IET2 is the

second dummy:

$$L_t = 123.38(((rcan+ruk)/2)-rus) - 195.26\ IET_1 + 108.52\ IET_1$$
$$(61.68) \qquad (78.66) \qquad (82.70)$$
$$485\ L_{t-1} + 42.34$$
$$(.141) \qquad (2)$$
$$R2 = .47 \qquad F = 4.60$$

The first dummy is significant with the proper sign but the second is insignificant with the incorrect sign, This can be attributed to the inadequecy of the sample, Prachowny only has five observations in the IET period and consequently, what he picks up with IET2 is the high Canadian new issues in this period once Canadian issuers become assured that the tax would not apply to them.

William H.Branson

William Branson is a vigorous proponent of the stock

adjustment model. He wrote a book in which he used this type of model to explain capital movements into and out of the United States.[173] But he does not really do much about the IET in it. Rather, we must look at a recent article in the Brookings Papers for more than a cursory reference.[174] Before considering Branson's empirical results, it is necessary to correct an error that Branson makes about the effect of the IET on the United States capital account. He claims that the implication of a stock adjustment reality is that "policy steps like the interest equalization tax (...) stimulate an essentially one time improvement in the capital account. Although there is a continuing-flow effect, it is probably small relative both to the initial stock effect and to subsequent stock shifts stemming from later changes in interest rates. In other words, the continuing-flow effects would tend to be swamped in the data by later stock shifts."[175] This statement shows a complete lack of understanding of the effect of the IET on portfolio choice in a stock adjustment world. In fact, no stock adjustment effect need be felt when the tax is imposed if everyone's portfolio is in equilibrium since the tax is on increases in holdings of foreign securities rather than on the levels of these holdings. If there were no change in yields and in net worth, the impact of the IET on foreign security holdings would only be complete after all outstanding securities were retired and after individuals were forced to make portfolio decisions on the basis of the new yield net of the tax. Branson is confusing the effect of the IET with the equivalent tax on income (or yield) from foreign security holdings. The bases for these two taxes would only be the same if the IET were levied on all holdings of foreign securities or if the yield tax was only imposed on income from increments in holdings of foreign securities after some prespecified date. The full stock adjustment effect would only occur if the base for these two taxes were all holdings of foreign securities.

Branson introduces the IET in his empirical model as a dummy variable that is equal to one in 63:3 and 63:4 Since Branson's model is specified in terms of changes in claims, this is the proper specification if there is

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[173] W.H. Branson, Financial Capital Flows in the U.S. Balance of Payments (Amsterdam: North Holland Publishing Co., 1968).

[174] W.H. Branson, "Monetary Policy and the New View of International Capital Movements," Brookings Papers on Economic Activity, 1, No. 2 (1970), pp.235-70.

[175] Ibid., p.238.

to be no continuing-flow effect from the imposition of the IET.[176] The estimated equation for change in U.S. non-banking claims over the period 60:1 to 69:4 on foreigners is:[177]

$$\Delta C_t^1 = \underset{(5.22)}{84.2} + \underset{(3.35)}{4686.7}\Delta W_t - \underset{(1.83)}{597.7}\,\Delta(v^{US})_t$$

$$- \underset{(2.04)}{47.6}\Delta(Wcr)_t + \underset{(2.76)}{50.9}\Delta(Wi^{ED})_t + \underset{(1.79)}{31.7}\Delta(Wi^{ED})_{t-1}$$

$$- \underset{(1.10)}{46.7}\Delta(Wi_e^{can})_t - \underset{(4.84)}{428.9}\ IET \qquad (3)$$

R2 = .69 See = 116,9 DW = 1.49

where ΔC_t^1 is increase in U.S. non-banking claims on foreigners, ΔW_t is change in U.S. net worth from FRB-MIT model, v^{US} is income velocity of money in the U.S., cr is the Jaffee-Modigliani credit rationing measure, i^{ED} is the Eurodollar rate, i_e^{can} is the rate on long term Government of Canada bonds, and IET is the Interest Equalization Tax dummy variable as defined above.

The IET variable is significantly different from zero with a negative sign as he posited. However, this variable could be picking up the overreaction suggested by Prachowny. Branson also estimates a similar equation for increases in long term banking claims in which both the IET and the Voluntary Credit Restraints Programme play a role. He puts in a dummy for 63:4 which is significant with a positive sign that can be interpreted as the substitution of bank term loans for long term bonds that were taxable under the IET. This interpretation, however, means that he has not estimated an equation for bank demand for foreign loans, but rather foreign demand for U.S. bank loans.

C. H. Lee[178]

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[176] Branson suggests that it would be better to allow for a small continuing flow effect by using net foreign yields but in the context of his model the major effect is the stock adjustment effect, Ibid., p.247.

[177] Ibid., p.248.

[178] C.H. Lee, "A Stock Adjustment Analysis of Capital Movements: The United States-Canadian Case," Journal of Political Economy, 79 (July/Aug., 1970), pp.512-23.

C. H. Lee has employed a stock adjustment model to explain the stock of Canadian securities held by U.S. residents as a proportion of U.S. wealth. His model assumes that the actual stock is the desired stock, which in the context of quarterly data means that all adjustment takes place within one quarter. Since he takes U.S. wealth as his scale variable he is focusing on U.S. lending behaviour rather than Canadian borrowing behaviour. He combines the IET with the change in withholding tax legislation introduced by the Canadian government in June 1963 in a dummy variable he calls X_2. He argues that lenders would tend to substitute untaxed Canadian securities for taxed foreign securities, and that American financial institutions exempt from taxation in the U.S. would be attracted by the abolition of withholding tax by the Canadian government on securities held by foreign financial institutions that were exempt from income taxation in their own country. However, this is to ignore the fact that only new issues were untaxed and that the bulk of the increase in the stock of Canadian securities held by U.S. residents was the result of Canadians deciding to issue securities in the U.S..

The estimated equations are:[179]

$$V_f/W = 2.39 \cdot 10^{-3} + \underset{(10.60)}{0.53 \cdot 10^{-3}} X_1 + \underset{(5.22)}{0.31 \cdot 10^{-3}} X_2 + \underset{(3.56)}{0.31 \cdot 10^{-3}} (M_f - M_d)$$

$$R2 = .897 \qquad DW = 1.09 \qquad (4)$$

and:

$$V_f/W = 2.18 \cdot 10^{-3} + \underset{(10.69)}{0.45 \cdot 10^{-3}} X_1 + \underset{(4.92)}{0.24 \cdot 10^{-3}} X_2 + \underset{(6.92)}{0.64 \cdot 10^{-3}} (M_f - M_d)$$

$$R2 = .935 \qquad DW = .90 \qquad (5)$$

where V_f is the stock of Canadian securities owned by U.S. residents, W is U.S. wealth, X_1 is a dummy for European convertibility with the value one starting in 58:1, X_2 is a dummy variable for the effect of the

[179] Ibid.,pp.512-23.

IET equal to one beginning with 63:3, and M_f and M_d are Canadian and American long term interest rates in the first equation and expected rates in the second. The expected rates are determined by means of an adaptive expectation model with adjustment coefficient of .2.

The model has a significant positive coefficient on the IET variable. Nevertheless, this could be the result of a time trend or perhaps the changeover to a fixed exchange rate system. Also it must be stressed that Lee's sample period (52:2 to 64:4) only includes six quarters in which the IET was operative. Consequently, Lee is not on very firm empirical ground when he asserts, on the bases of equation 5, "If the wealth increases by $30 billion a quarter, the effect of the tax measures is an increase in the U.S. holding of Canadian securities by $7.2 million a quarter,"[180] This figure is quite small given that average quarterly inflows to Canada from net transactions in Canadian securities in 1964 was $177 million. Most of the significance of **X2** probably results from the record inflow of funds to Canada because of Canadian new issues sold in the U.S. of $511 million in 64:4.

Morman C. Miller and Marina V. N. Whitman[181]

Miller and Whitman argue that the expected return on foreign securities held by Americans would be reduced by the IET, and consequently, the IET should have a negative impact on American holding of foreign financial assets. However, they add that this will only hold in disequilibrium and that eventually the prices of securities subject to the IET would drop and a new equilibrium would be attained with a higher yield.[182] This is probably true for foreign securities denominated in U.S. funds, but except in the case of Canadian securities it would be unrealistic to expect significant changes in yields of domestic securities given the small part that net U.S. purchases play in domestic financing in all industrial countries taken together. Further, this makes the interpretation of the estimated equations as U.S. demand for foreign securities less acceptable. In spite of

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[180] Ibid., p.522.

[181] N.C. Miller and Marina V.N. Whitman, "A Mean Variance Analysis of United States Long Term Portfolio Foreign Investment," Quarterly Journal of Economics, LXXXIV, No. 2(May 1970), pp.175-96.

[182] Ibid., p.181.

this adjustment. Miller and Whitman suggest that the IET dummy should be retained in the equation because published yields are gross of the tax. They also justify the use of an IET dummy by its effect on the riskiness of foreign securities. They claim that: "these restraint programs (the IET and VCRP) added an element of uncertainty about the yield on foreign assets because people were not sure just how they would be applied or enforced. furthermore, bankers and purchasers of foreign securities assert that these regulations have lowered the quality of foreign assets in U.S. portfolios by discriminating against low risk borrowers in advanced countries."[183]

The estimation of their model over the sample period 57:2 to 66:3 resulted in an insignificant but correctly signed coefficient for the IET variable. This could be a result of many things since their model includes a lagged income term, a lagged liquidity measure of the U.S. balance of payment deficit, a time trend, and a Voluntary Credit Restraints Programme dummy; all of which have ambiguous interpretations. They give as a possible explanation that "after an initial period of adjustment and until the imposition of the VRP, two major shifts took place; borrowers affected by the IET substituted untaxed securities; and American lenders shifted more heavily into Canadian securities which are not subject to the IET and which were more attractive to certain classes of U.S. investors by Canadian legislation of June 1963."[184] The bank loan part of this argument is probably sound until this loophole was closed in February 1965, but the transition from a fluctuating to a fixed exchange rate by Canada provides just as satisfactory an explanation of increased capital flows to Canada.

Eleanor Duncan Ripley[185] and Charles Freedman[186]

These two studies focus on long term capital movements between the United States and Canada. Unfortunately, they only cover up to 1965 tor Ripley and 1966 for Freedman so they do not have many observations in the

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[183] Ibid., p.185.

[184] Ibid., p.190.

[185] Eleanor Duncan Ripley, "The United States Investment in Canadian Securities 1958-1965" (unpublished Ph.D. dissertation, Harvard University, 1969).

[186] Charles Freedman, "Long Term Capital Flows Between the United States and Canada" (unpublished Ph.D. dissertation, Massachusetts Institute of Technology, 1970).

sample for the period for which the IET was in effect. In spite of different approaches, Ripley uses a flow model and Freedman estimates both the flow and stock adjustment model in order to make comparisons. They both seem to agree that there was not much impact on new issues after the initial period of reaction to uncertainty.

Bank of Canada

The Research Department of the Bank of Canada has constructed two econometric models of the Canadian Economy, RDX1 and RDX2. Both of these models have equations for capital flows between the United States and Canada, and in some of these equations they have tried to allow for the effect of the IET. In RDX1, their first model estimated over the period 53:1 to 65:4 they only have one equation for long term capital flows, which aggregates inflows and outflows, direct and portfolio investment, and all countries. Net long term capital inflows are a function of the long term interest differential between the U.S. and Canada, net new issues of provincial and municipal bonds, investment in current dollars, interaction of investment in current dollars and a time trend, a dummy for the IET that equals one following 63:3, a dummy for the agreement between the U.S. and Canadian governments on the delivery of new issues, and quarterly dummies. The IET dummy is negative and highly significant.[187] They interpret this as "representing (albeit in an oversimplified manner) the fundamental change in the balance of payments policies of the U.S. government - the shift to capital controls, voluntary and involuntary, in addition to the interest Equalization Tax itself."[188]

RDX2 has a more disaggregated treatment of capital flows. Flows between Canada and the United States and Canada and the rest of the world are separated and equations are estimated for gross new issues of provincial and municipal and corporate bonds and for purchases of outstanding Canadian government and corporate bonds by residents of the U.S. and for purchases of Canadian corporate shares on a portfolio basis. These three flows are important because they are the ones that are most likely to be affected by the IET. However, they include no dummy variable for the tax, nor do they adjust the yields in their equations for trade in outstanding bonds or in common stocks where the tax did apply to some ex-

[187] J.F. Helliwell, L.H. Officer, H.T. Shapiro, I.A. Stewart, The Structure of RDX1 (Ottawa: Bank of Canada, Staff Research Study No.3, 1969), p.45.

[188] Ibid., p.25.

tent. The absence of dummy variables is not based on theory; rather it is the result of trying dummy variables and not finding a significant effect.[189]

In their equation for sales of gross new issues of provincial and municipal bonds in the United States, they express these issues in the U.S. (divided by gross provincial and municipal issues) as a distributed lag function of the deviation of chartered bank liquid asset ratio from a hypothetical minimum ratio (divided by the liquid asset ratio). The equation also contains quarterly dummies, a dummy variable equal to one from 60:3 to 62:3 to represent exchange uncertainty and governmental attempts to discourage borrowing in the U.S., and finally a dummy for the IET which is equal to -.2 in 63:3 to 64:3 followed by 1 in 64:4.[190] The IET variable is significant with a positive sign. This suggests that Canadian provinces and municipalities postponed new issues until they became certain (with the passage of the IET in September 1964) that the tax would not apply to Canadian new issues, and then they compensated for their postponement.[191]

They explain sales of gross new issues of Canadian corporate bonds in the U.S. (divided by a twelve quarter average of outside capital requirements, which is defined to be gross investment minus retained earnings and capital consumption allowances) as a distributed lag on percentage deviation of chartered bank liquid asset ratio from the minimum ratio, and as a distributed lag on Canadian corporate bonds as a percentage of U.S. net worth. They also include seasonal dummies, a dummy equal to one for flexible exchange rate periods up to 61:2, and the same IET dummy variable discussed above. The IET variable retains the sign and significance it had for provincial and municipal new issues.[192] In both new issues equations the IET primarily effects timing rather than the level of new issues in the United states.

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[189] J.F. Helliwell, H.T. Shapiro, G.R. Sparks, I.A. Stewart, F.W. Gorbet, D.R. Stephenson, The Structure of RDX2 (Ottawa: Bank of Canada, Staff Research Study No.7, 1971), p.215.

[190] Ibid., Part 2, p.119.

[191] Ibid., Part 1, p.211.

[192] Ibid., Part 2, p.120.