Preface

Friedberg Mercantile Group proudly presents its second Annual Spring Review of Inflation in Canada, a monetary analysis of the ongoing depreciation of the Canadian Dollar.

We assume full responsibility for any errors of omission or commission that may appear on the following pages and thank profusely the statistical departments of the Bank of Canada, Statistics Canada and the IMF for the courteous information received in reply to some of our naive queries.

We also thank the enthusiastic effort put out by our staff and, in particular, the formidable statistical help provided by Mrs. Fuerh Tang without whose help the paper would not have been completed.

Certain conceptual matters were omitted in the 1979 report which were fully discussed in the 1978 analysis. Readers interested in obtaining the 1978 report entitled Inflation in Canada : a Monetarist Interpretation & Forecast, should address their written request directly to our office.

We hope that whatever criticism has been made is received in the same constructive manner that it has been presented. We also hope to have broadened the Canadian public's understanding of so serious a malaise which threatens the very fibre of our society.

Canada experienced during 1978 a rate of inflation of 8.9% (1), a performance decidedly worse than the 8% rate of 1977 and the 7.5% rate of 1976. Not only did price increase in 1978 record the second worst showing of the last half-century but the pace of it exceeded by a substantial margin private and public forecasts made in the early part of the year.

When analyzed against the backdrop of the largest fiscal deficit in history, the results were a bit more encouraging (2). As discussed in the Spring 1978 Review of Canadian Inflation (3) the financing of a CD$ 11 billion prospective fiscal deficit could have translated itself into a depreciation of approximately 25%, manifested either in the external and/or internal value of the Canadian dollar.

Wherein lies this modest success ? Just two paragraphs below our unconventional forecast of a 25% potential depreciation, we discussed a solution. Short of eliminating or reducing its $10-11 billion fiscal deficit, " .... the Government of Canada may decide to raise a substantial portion of its net financing requirements abroad. Provided that the foreign currency thus obtained is exchanged for CD$ ... the net effect would be ... to diminish the potential monetization of the deficit, with beneficial side effects in the anti-inflation effort." The Government of Canada did go abroad to fund its activities with the result that net financing requirements including foreign exchange financing were cut almost in half, i.e. from $11,814 to $6,338 billion (4)

Footnotes:

(1) As measured by the Consumer Price Index, All Items.
(2) It should be noted, however, that adding the 9% rate of inflation for the U.S. to the 7% drop of the CD$ vis a vis the U.S. dollar, yields a total depreciation of 16%,significantly worse than the 8.9% inflation figure. The rationale for this computation is, of course , the fact that the CD$ dropped vis a vis a currency (namely the U.S.) which by itself lost a great deal of purchasing power. Therefore, the CD$ depreciation was all the more serious.
(3) Inflation in Canada : a Monetarist Interpretation & Forecast, page 14.
(4) All figures, of course, are on a calendar rather than the fiscal basis.

The Money Supply Process

Table I is a summary of the Government of Canada's net financing requirements (including foreign exchange financing) for the period 1966-1978. As it can be seen, Bank of Canada purchases of Government debt during 1978, i.e. monetization, amounted to $1.74 billion, approximately 27.4% of the Government's total requirements. This figure represented fully 100% of the increase of the Bank of Canada's assets and over 86% of the increase in the nation's Monetary Base. (5)

Via the workings of the known banking multiplier (6), this increase in Bank of Canada's Credit should have translated itself into a 1978 increase of the average Money Supply (7) of $12.5 billion, a remarkable good approximation to the actual increase of $11.936 billion.

Table I

	Gov't of Canada Net Financing Requirements	Bank of Canada Purchases	Purchase / Requirements
1966-68	2,578	471	18%
1969-71	3,671	925	25%
1972-74	3,271	2,172	66%
1975-77	15,821	3,266	20.6%
1978	6,338	1,740	27.4%

In Millions of Canadian Dollars Source: Bank of Canada Review

Footnote:

(5) Δ Monetary Base = Δ Total currency in circulation plus Δ Chartered Banks' reserves = $1,488 billion.

(6) Inflation in Canada, page 13.

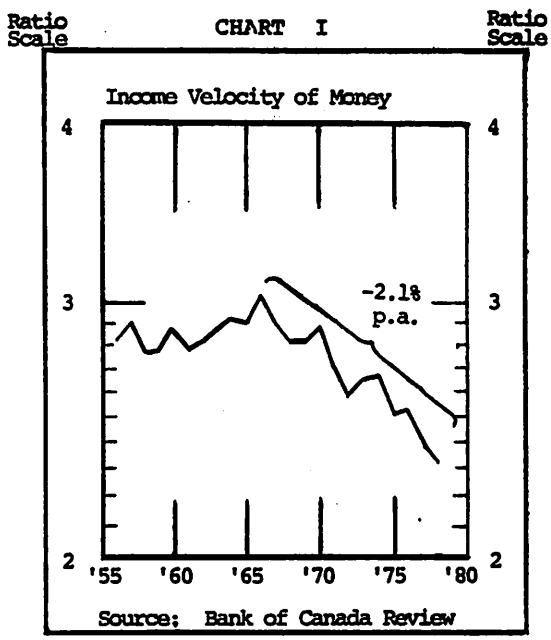
(7) For the purposes of our analysis, the term Money or Money Supply is defined as Currency held by non-bank Public plus all Chartered Banks' Deposit Liabilities.

Offsetting Factors

Having obtained the year over year increase in Money Supply, namely $11.9 billion or 13.8%, we are able to estimate the rate of inflation provided we can ascertain the total increase in the supply of goods and services, and the income velocity of Money.

A fraction of the increase in Money Supply will finance a real increase in goods and services. For all of 1978, Gross National Product in real terms increased by 3.4%. Subtracting this 3.4% from 13.8%, we arrive at a potential monetary inflation of approximately 10.4%. Furthermore, since velocity has continued to decline at a predictable rate of slightly over 2% per annum, price inflation must have equaled 8.4%, a fair approximation to the CPI increase of 8.9%.

Velocity



* GNP/Total Money Supply,
Average Annual GNP,
Average Annual Total Money Supply.

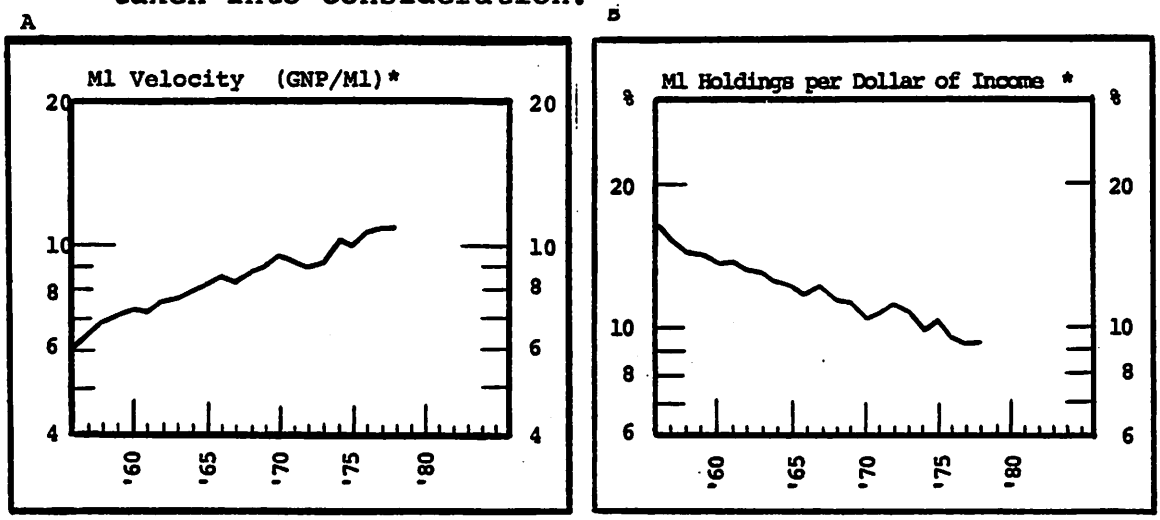
As Chart I illustrates, the income velocity of Money has traced a fairly predictable & constant downtrend since 1966, a rather puzzling development given the relative acceleration of inflation over the past twelve years.

It would appear that Canadians have been lulled into holding larger money balances per dollar of income (8) despite the constant erosion of these balances - by the mere expedient of rising nominal rates of interest. Whereas the public at large has successfully economized non-interest bearing demand deposits (as demonstrated in Chart II), the same cannot be said about interest bearing deposits despite the negative rates of return offered by current market rates of interest (9). The 'flight from currency' phenomenon so typical of latter stages of inflation has not occured, as yet. In fact, public cupi-

dity has been a major offsetting factor in the inflation prone behaviour of the Monetary Authorities.

(8) The inverse of declining velocity.
(9) This is particularly true if income taxes are taken into consideration.

Chart II



* Average Annual GNP; Average Annual M1
Source : Bank of Canada Review

* M1/GNP Source: Bank of Canada Review

Chart III

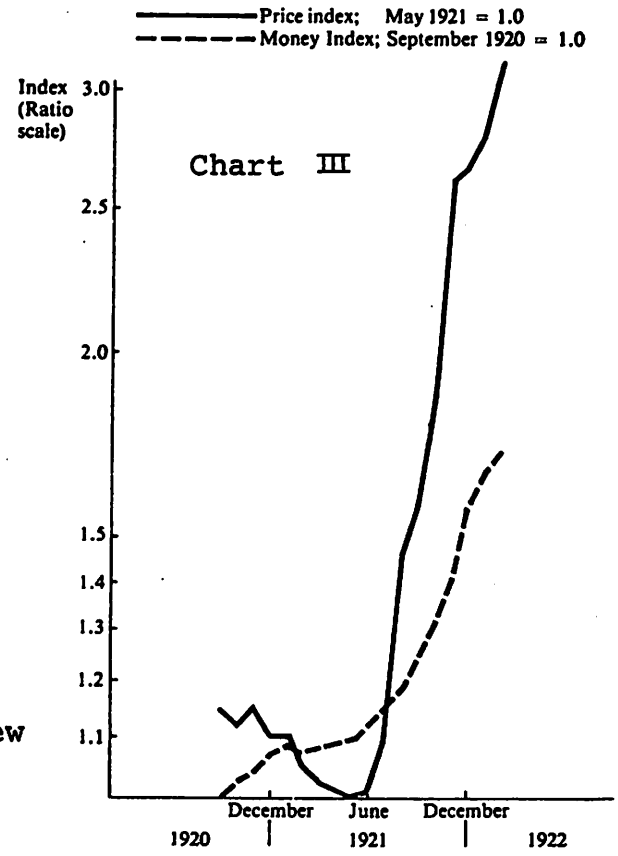


Chart III is a frightening demonstration of the power of accelerating velocity. Once it occurs, Monetary Authorities lost complete control of inflation.

The beginning of hyperinflation in Germany.
Sept. 1920 - Feb. 1922

Money & the Economy: A Monetarist View
By: William Poole

A Scenario of 1979

From the above analysis, it is clear that inflation rates can be fairly predictable if one could successfully estimate:

a) the total size of the government's net financing requirements.
b) the portion of these requirements that will be monetized by the Bank of Canada.
c) the real increase in the production of goods & services.
d) the velocity of Money Supply, and
e) Money Supply multiplier.

Government's Net Financing Requirements

Present estimates of government's net financing requirements for calender 1979, excluding foreign exchange range from $12 billion to $15 billion, a great deal depending on which political party will govern Canada over the next year (or few years), the fulfillment of their pre-election promises and the real rate of GNP growth. Our conservative mid-point guesstimate is $13 billion.

The next crucial variable is the proportion of these borrowing requirements that will be raised abroad. During 1978, Canada borrowed in the U.S. & German Capital markets U.S.$2.20 billion while it made net drawdowns of U.S. $2.7 billion under standby credit facilities with Canadian & U.S. banks. Slightly under $3 billion is still available under the combined revolving standby credit facilities. In addition, in the early part of 1979, Canada raised a total of 100 billion Japanese Yen (approx. U.S. $500 million) and SFr. 1.5 billion (approx. U.S. $900 million) in public and syndicated loan offerings at rates of interest ranging from 2.7% to 7.5%. Assuming a full drawdown of its existing credit facilities, another series of similar and successful placements in the U.S. and German capital markets, and Yen and SFr. borrowings to date, foreign exchange financing will cut net borrowing requirements by at least CD$ 6.8 billion. Furthermore, during March and April, the Exchange Fund Account should have replenished its net reserves by at least U.S.$1.5 billion, a war-chest likely to be used on any future weakness in the foreign exhange market.

In all, financing requirements likely to be raised abroad may add up to approx. CD$ 7.0 billion. This implies that Government's net financing requirements for 1979 including foreign exchange may amount to CD$6.0 billion, a similar figure to the one obtained in 1978.

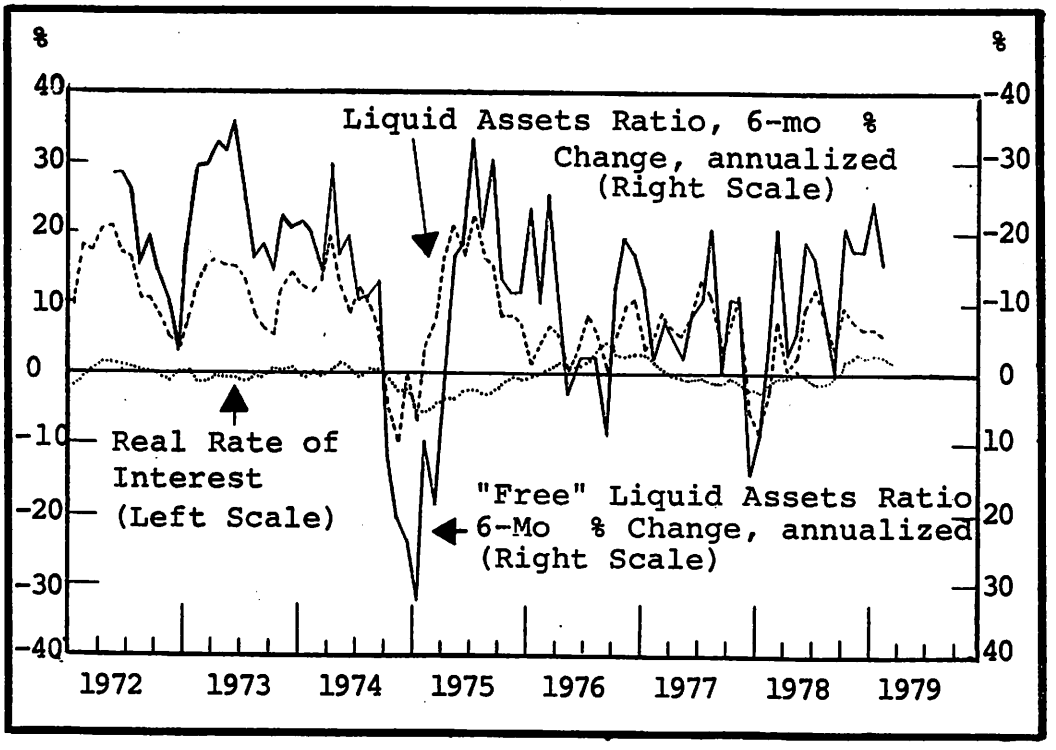
Monetization

The recent acceleration of private credit demands (Table II), the tightening vise on banking liquidity and its impact on real rates of interest (Chart IV) and the Bank of Canada's satisfaction with its M1 performance (Chart V), militate against a further substantial credit tightening on the part of the Monetary Authorities.

By drawing down its substantial cash balances, the Government may offset part of the expected decrease in the general public's purchases of Marketable Securities, which during 1978 reached a record CD$ 4.1 billion. Redemption of Canada Savings Bonds in early 1979 exceeded substantially those for the corresponding period of 1978 and may indicate a substantial run-off during the remainder of 1979. Furthermore, the banking system may be pressed to liquidate its government portfolio in order to accommodate rising loan demand, thus contributing negatively to the government's net financing requirements.

In all, our conservative guesstimate calls for the Bank of Canada purchasing approximately CD$ 2.5 billion of Government Securities, a monetization of the Public Debt equal to 41.6% of net financing requirements (see Table III).

CHART IV



Source: Bank of Canada Review

Table II

Claims on Private Sector
% increase, Annualized

1978	3-Month
1st Qtr	20.71
2nd Qtr	20.68
3rd Qtr	18.77
4th Qtr	30.64
	6-Month
1st Qtr	16.72
2nd Qtr	21.23
3rd Qtr	20.21
4th Qtr	25.42
	12-Month
1st Qtr	18.77
2nd Qtr	18.25
3rd Qtr	19.31
4th Qtr	24.68

Source: IFS

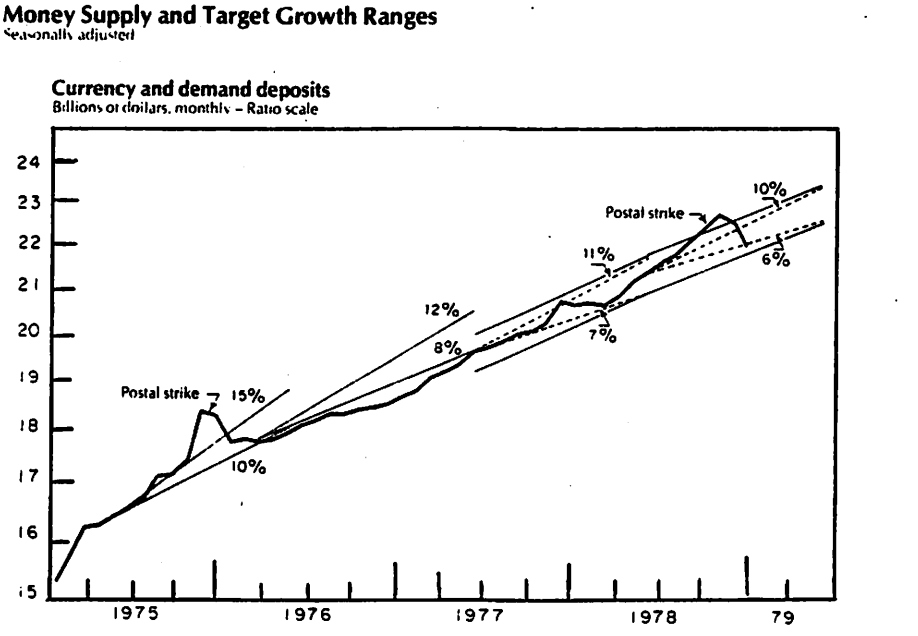
Table III — Government of Canada — Mln CD$

	Net Financing Requirement		Canadian Dollar Financing Requirement met by:					
			Reduction or increase(-) in Canadian $ cash Balance	Increase in holdings of Canadian $ securities outside Gov't accounts				
					Banking System		General Public	
	Excl. Foreign Exchange Financing	Incl. Foreign Exchange Financing		Total	Bank of Canada	Chartered Banks	Canada Savings Bonds	Marketable Securities
1963	618	511	-352	863	155	562	513	-367
1964	-177	407	197	210	31	-228	480	-73
1965	-241	19	-147	166	356	18	253	-461
1966	610	254	-49	303	2	167	223	-89
1967	1,074	1,275	297	978	330	740	230	-322
1968	1,042	1,050	-59	1,109	135	943	40	-9
1969	-85	-399	-676	277	170	-480	324	263
1970	334	1,908	-84	1,992	183	1,510	714	-415
1971	1,449	2,162	-823	2,985	571	721	2,519	-826
1972	1,323	1,430	-127	1,557	587	-192	1,195	-33
1973	771	14	68	-54	572	159	-385	-400
1974	1,582	1,825	-?,360	4,185	1,014	831	2,445	-105
1975	5,674	4,967	1,024	3,943	841	-351	2,664	789
1976	4,129	4,676	556	4,120	572	872	775	1,921
1977	7,164	6,178	-1,619	7,797	1,853	894	1,660	3,390
1978	11,814	6,338	-1,746	8,084	1,740	286	1,974	4,084
1979(e)	13,000	6,000	500	5,500	2,500	0	1,000	2,000

(e) : Our estimate

Source : Bank of Canada Review

Chart V



Source: Bank of Canada, Annual Report

Real GNP

Public and private forecasts vary between a 3.5-5% increase of GNP in real terms. A mid-point estimate of 4.5% will be adopted although it should be fairly clear that in the context of double digit monetary expansion, a 'miss' of one percentage point either way will alter the forecast rate of inflation by an immaterial amount.

Velocity

In keeping with Chart I, we will assume a further drop in Money Velocity equal to 2.1%.

Money Supply

Having estimated the increase of the Bank of Canada's assets (i.e. monetization), it remains to see how this figure translates into an increase in Money Supply.

Table IV illustrates the rising trend of the multiplier over the past few years, a direct result of the lower fractional reserve requirements for interest bearing deposits. As currency and high-reserve requirement demand deposits continue to represent even smaller proportions of the banking system's liabilities, cash ratios diminish (Chart VI) thus implying a larger monetary expansion per dollar of reserve (10).

Table IV

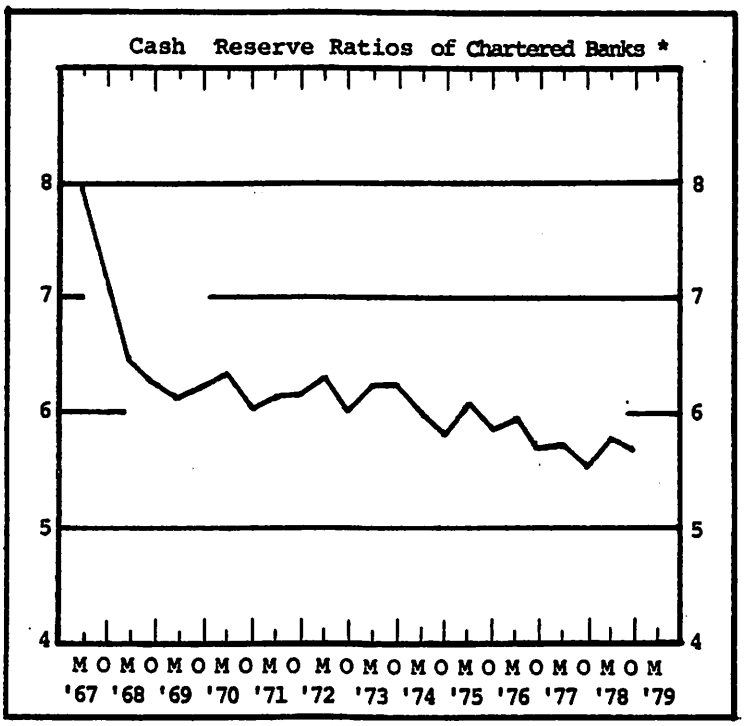
	1975	1976	1977	1978
Multiplier *	6.93r	7.14r	7.42r	7.45

* : Money Supply / Bank of Canada Total Assets

r : Change from last year due to Bank of Canada revisions to bank deposits and use of average figures rather than end-of year figures.

(10) See Inflation in Canada (1978); page 10 for further comments.

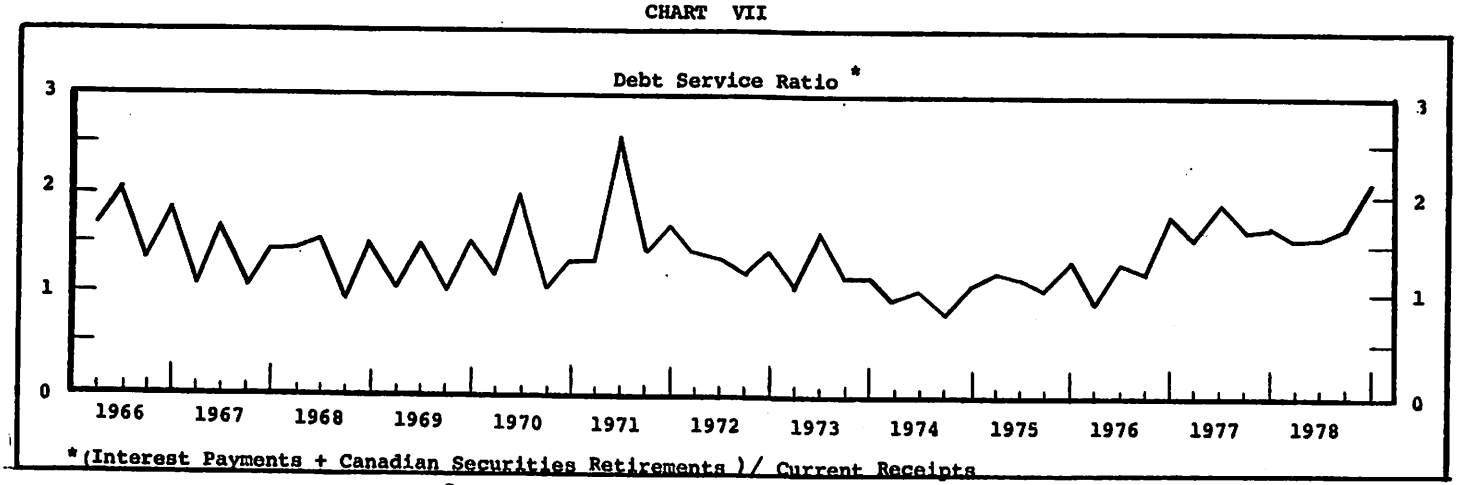
Chart VI



* Minimum Average Required (March & October Figures)

Source: Bank of Canada Review

CHART VII



*(Interest Payments + Canadian Securities Retirements)/ Current Receipts

Sources : Bank of Canada Review, Statistics Canada

In view of the foregoing, it should not be unreasonable to assume for 1979 a further rise in the multiplier to, say, 7.60 .

Inflation Forecast

We now have all the elements necessary to project the average rate of price increases for all of 1979.

Starting from an increase in Bank of Canada assets of approximately CD$2.5 billion and a multiplier of 7.6, Money Supply should average CD$19.0 billion higher in 1979 than in 1978, a 19.1% increase. We then proceed to subtract the 4.5% real increase in GNP, and the 2.1% decrease in velocity, and we obtain an average rate of inflation of 12.5% for all of 1979.

There are a number of caveats. In the first place, the behavior of the CD$ in the foreign exchange markets will influence greatly the portion of the government's net financing requirements raised abroad. The Bank of Canada has seemingly acted to borrow funds externally in response to weakness of the CD$ rather than as a budgetary device. It would appear that if the CD$ were to remain relatively strong during the course of 1979, the Bank of Canada would be more than happy to replenish reserves resulting in a monetization of foreign exchange inflows. At the same time, it would be forced to increase manifold its purchase rate of Government Securities to finance the gigantic government borrowing requirements. These two events, acting in unison, would accelerate domestic inflationary pressures by a substantial margin above our forecast in spite of a strong or strengthening CD$ in the foreign exchange market. (11)

Secondly, a 12.5% average rate of inflation implies a substantial acceleration from the present pace of 8.9% (year on year) with the latter part of 1979 showing a rate of close to 17% per annum.

Can Canada afford to borrow abroad ?

In recent months, private economists and the media have expressed dismay at Canada's growing international indebtedness, particularly as a result of the recent spate of borrowing abroad.

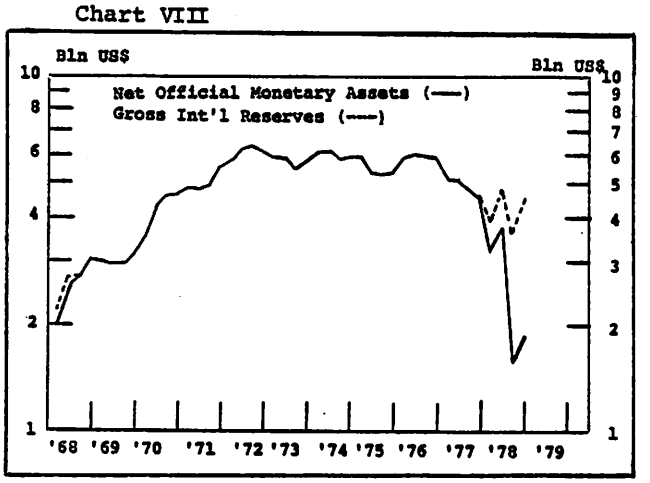
(11) As outlined in our 1978 report, currency depreciation, a result of excess domestic monetary expansion, may take the form of either a fall in the external value (i.e. devaluation) or internal value (inflation) of the CD$ or a combination of these two happenings.

No doubt, the government of Canada has been borrowing too heavily in general, and the size of its net borrowing requirements is just too onerous for the long range health of the nation. Its operations abroad during 1979, however, have been commendable. In the first place, it has borrowed, for the most part, at interest rates substantially lower than the ones obtained in the domestic sector. Secondly, should some semblance of fiscal discipline appear on the horizon, the CD$ could conceivably rise vis a vis the U.S.$, the Yen, the SFr & the DM thus lowering the cost of the debt. Finally, external borrowings were responsible for Canada's relatively low rate of inflation, in that they freed the Bank of Canada from monetizing a larger share of the government's financing requirements.

Back to the original question. Is Canada's external debt too high ? Chart VII illustrates the cost of servicing Canada's total external debt, i.e. interest and amortization, as a percentage of its earnings on current account(12). As it can be seen, present levels of indebtedness do not exceed levels attained in 1971 and just match the relative levels of 1966.

Are Canada's Int'l Reserves too low ? In a pure floating-rate system, int'l reserves are superfluous. The nominal gross level of int'l reserves, however, is of some psychological significance to the foreign exchange markets and, no doubt, the Bank of Canada has responded to this "mirage" by managing to keep its nominal gross reserves almost unchanged (Chart VIII)

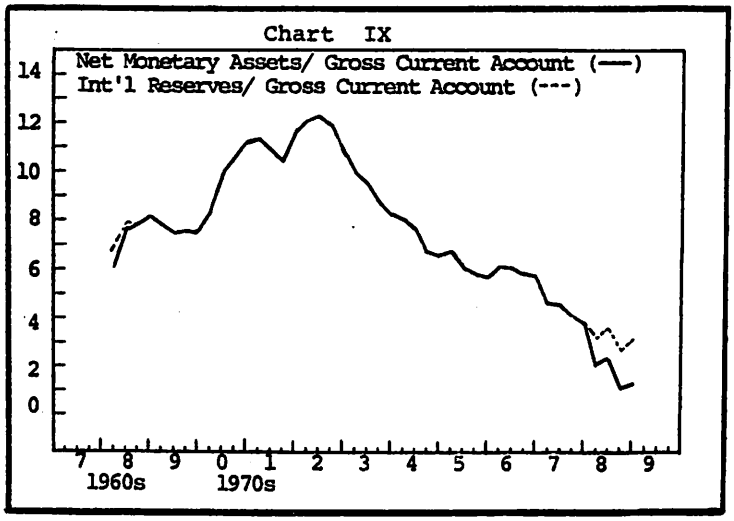
Chart VIII



A better way to look at international reserves is to compare Net Monetary Assets to the Gross Current Account.(Net Monetary Assets because Canada has indebted itself substantially in order to replenish its International Reserves). The comparison to the Gross Current Account, in a less-than-pure floating-rate system, should be seen in the context of affording a smooth transition between current inflows and outflows with the least disruptive effect on foreign exchange markets (i.e. a policy of foreign exchange stabilization).

(12) For a developed nation current receipts, in our opinion, are a far more meaningful proxy than exports.

On this count, Chart IX leaves little doubt that smoothing or stabilization policies are becoming increasingly less possible. It would appear, then, that an element of increased volatility in the foreign exchange market has been gaining ground, which should, in turn, affect trading conditions accordingly.



Sources: Bank of Canada Review
Statistics Canada

Trade Balance and the Canadian Dollar

The rationale for allowing the CD$ to depreciate in the foreign exchange markets has been one of obtaining and/or preserving Canadian competitiveness in its international trade. As stated by the Bank of Canada 1978 Annual Report (page 13) "... with the decline in the exchange rate the international competitive position of Canadian suppliers is very strong, and this is a force that is potentially capable over time of reducing sharply Canada's current account deficit..." Although the Bank concedes that the improvement in the Current Account may come 'rather slowly' due to a variety of reasons such as capacity bottlenecks, U.S. recessionary forces and unfavorable terms of trade, it is significant that the entire current account forecast is couched solely in terms of the potential trade flows, rather than on the total behavior of visibles and invisibles. This structural-type analysis is also typical of the U.S. Administration which has laid the blame on its deficit on Current Account solely on the oil shortfall.

What of the balance of trade ? The substantial descent of the CD$ has had little or no effect on its trade balance as Charts X and XI demonstrate. In fact, at end of IV Qtr. 1978, the trade balance was running a surplus equal to I Qtr 1977, despite a trade-weighted devaluation in excess of 20.5%.

We submit that a better forecaster of the Current Account movement is the increase of Domestic Credit as a percentage of nominal Gross Domestic Product. This monetary approach to the Balance of Payments was pioneered by the economists of the IMF in the mid-50's and has been used with remarkably good results over the past two decades. Some of its most recent successes have been in the U.K. and Italy (among developed nations) and Mexico, Argentina and Chile (among the lesser developed ones).

Its rationale simply states that domestic credit demands may not exceed available domestic savings without inviting external savings, i.e. a Current Account deficit. Significantly even a small improvement in the rate of change of domestic credit demands vis a vis domestic savings will, with a short time lag, create an improvement in the Current Account.

Chart XII is instructive in this respect. Line a-b, showing a substantial deceleration of domestic credit expansion vis a vis domestic savings, creates the only Current Account surplus of the past 15 years. Line c-d is the precursor of trouble : the Current Account begins to deteriorate almost simultaneously with the re-acceleration of credit demands in excess of domestic savings, reaching a record CD$ 4.7 billion deficit in 1975, at just about the time when we observe a small improvement in credit demands. Line e-f explains rather well the renewed deterioration of the Current Account, which now reaches a new record deficit of CD$ 5.2 billion.

Line A-B has a foreboding configuration. Not only has Canada lived well beyond its means since the early 60's but it has done so in an accelerated fashion.

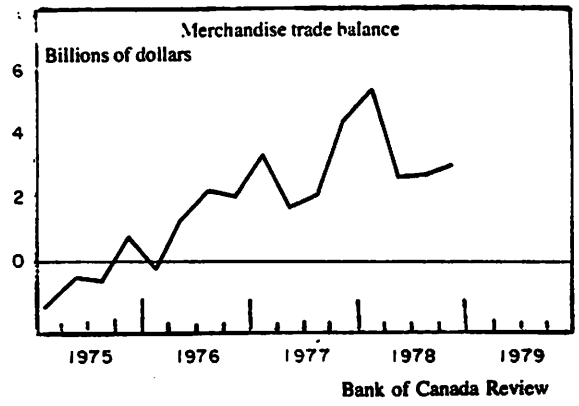
Our 1979 estimate (solid line) does not augur well for a sustained improvement in the Current Account. In fact, given present financial information , the Current Account should reach a new record deficit over the coming two years.

Can it be avoided ? We believe it can provided that:

a) the fiscal deficit is reduced substantially, perhaps by as much as 50-60% over the next few years.
b) the government continues to fund a very substantial share of its financing requirements abroad during this transition period, and
c) the Bank of Canada begins to adopt a real rate of interest policy, i.e. monetary policy tight enough to produce consistent and persistent real rates of interest so as to slow down private credit demands. A continued tight rein on the banking system's already low level of free liquid assets may accomplish this objective (see Chart IV).

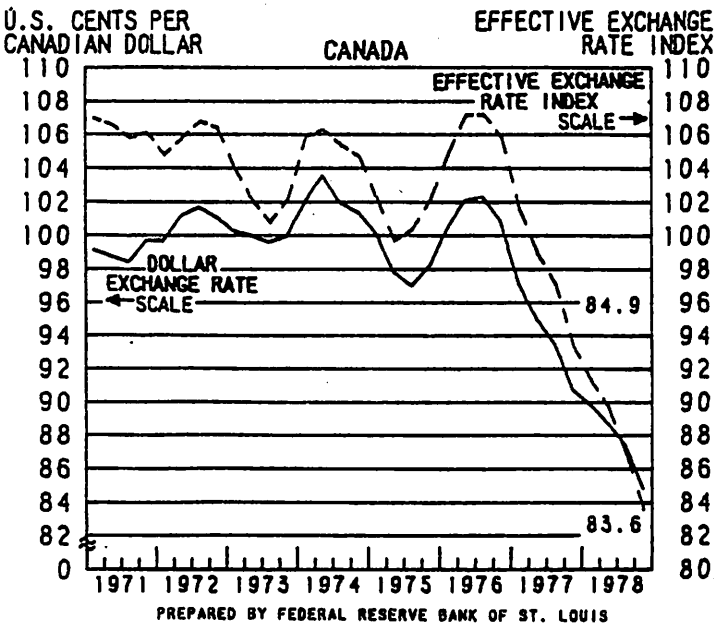
Chart XI

Canadian balance of international payments



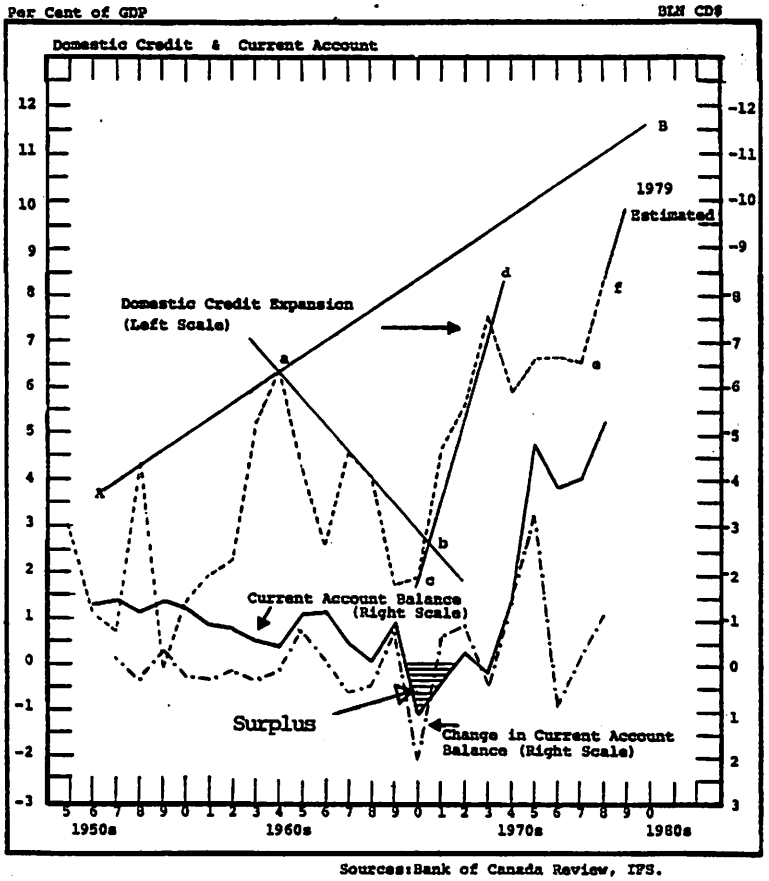
Bank of Canada Review

Chart X



PREPARED BY FEDERAL RESERVE BANK OF ST. LOUIS

Chart XII



Sources: Bank of Canada Review, IFS.

Table V

Money Supply *

Mlns of $

1978	
Jan.	93,072
Feb.	93,314
Mar.	94,752
Apr.	96,198
May	97,300
Jun.	98,119
Jul.	99,808
Aug.	100,673
Sep.	102,574
Oct.	103,629
Nov.	106,379
Dec.	107,882
Avg.	99,475

* Average of Wednesdays

Source : Bank of Canada Review

Summary and Conclusion

There is no escaping the consequences of a loose fiscal and monetary policy. Parting with relatively well known pre-estimates of fiscal borrowing requirements and allowing for conservative guesstimates as to external borrowings and real growth, one arrives at an unconventional inflation forecast of 12.5%, average 1979 over 1978, and a rate of inflation of 17% for the latter part of 1979. Similarly, one can predict that, ex ante, the pieces of the puzzle are in place for a continued deterioration of the Current Account and, perhaps, more downside pressure on the CD$ over the coming 18 months.

We pointed out that the Government must attempt immediately - at the risk of a massive crises- to reduce its gigantic fiscal borrowing requirements and must continue to fund externally a very substantial portion of these requirements. Furthermore, we pointed out that, at this stage, there is still little risk in increasing Canada's external indebtedness provided it is merely a transition to a more sensible fiscal policy. Whereas present international reserves were clearly inadequate to smooth out the in and out-go's of the Current Account , making for increasingly volatile foreign exchange markets, they did not present an insurmountable problem in a loosely-defined floating rate system. The Bank of Canada was seemingly responding well to the psychological needs of maintaining a relatively stable level of nominal gross International Reserves.

Aside from a substantial cutback in government borrowing requirements, we recommended that the Bank of Canada persevere in maintaining a tight monetary policy measured by the obtainment of a persistent real rate of interest, i.e. a nominal rate of interest higher than the rate of inflation as envisioned by the market place. At the present time, this rate may be in excess of 11% for short term money (90 day Finance Company Paper or Chartered Bank deposits); as inflation accelerates, of course, the rate must be forced higher in rapid order.

As suggested last year, the Government should consider floating a domestic issue of Cost-of-Living indexed bonds,- tax exempt of any 'inflation gains' - with a nominal 1% or 2% coupon as a way of funding its borrowing requirements with genuine savings and as a guide to other financial lenders and borrowers of the importance of real rates of return. As a side benefit, this Cost-of-Living indexed bonds would greatly alleviate the uphill battle facing private and public pension funds in their striving for the maintenance of constant purchasing power.

Albert D. Friedberg