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*Some Implications of
International Financial Integration
for Canadian Public Policy*

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INTERNATIONAL FINANCIAL INTEGRATION
FOR CANADIAN PUBLIC POLICY

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TABLE OF CONTENTS

ABSTRACT	i
RESUME	ii
1 INTRODUCTION	1
2 INTERNATIONAL FINANCIAL INTEGRATION	2
3 SOME IMPLICATIONS FOR CANADIAN PUBLIC POLICY	5
Structural Implications	5
Implications for Macroeconomic Policies	10
4 CONCLUSIONS	21
REFERENCES	27

ABSTRACT

The domestic capital markets of the major industrial countries have become more closely integrated over the last two decades, a by-product of regulatory and technological change. This paper considers some of the implications of those changes for Canadian public policy. While no profound implications are found for Canadian macroeconomic policies, which probably reflects a long history of close relationships between Canadian and U.S. financial markets, recent trends in international financial markets nevertheless have implications for the structure, regulation and supervision of Canadian financial markets.

RÉSUMÉ

L'intégration des marchés financiers intérieurs des grands pays industriels s'est accrue au cours des deux dernières décennies, en raison notamment de l'évolution du cadre de réglementation et des techniques. La présente étude examine quelques-unes des conséquences de cette évolution pour les politiques des pouvoirs publics au Canada. Même si aucune de ces conséquences ne se révèle importante pour la conduite des politiques macroéconomiques canadiennes, ce qui reflète sans doute l'ancienneté et l'étroitesse des relations existant entre les marchés financiers canadiens et américains, certaines tendances récentes des marchés financiers internationaux comportent néanmoins des implications en ce qui concerne la structure, la réglementation et la surveillance des marchés financiers canadiens.

1 INTRODUCTION

The domestic capital markets of the major industrial countries have become more closely integrated over the last two decades, a by-product of regulatory and technological change. In this paper, I present some reflections on the implications of these changes, if any, for the conduct of Canadian public policy — considerations based in large part on research carried out by my colleagues at the Bank of Canada. While the paper thus lays no claim to great originality, I hope that it provides a useful summary of some current thinking.

It is concluded in the paper that recent trends affecting international financial markets do have implications for the structure, regulation and supervision of Canadian financial markets, although the implications for Canadian macroeconomic policies seem generally less important. This may be because the degree of openness of Canadian financial markets to international financial influences, particularly American influences, does not seem to have changed greatly over the last twenty years. Changes occurring in financial markets abroad, while profound, are generally serving to make other countries' financial markets more like ours.

2 INTERNATIONAL FINANCIAL INTEGRATION: Facts and explanations

First, consider some simple facts. Over the last two decades, there has been a sharp expansion in the scale of both net and gross capital flows between the major industrial countries (Tables 1 and 2). The integration of international financial markets is further indicated by the fact that *daily* turnover in the foreign exchange markets of the major financial capitals now averages more than \$600 billion, a sum vastly in excess of that required to cover the needs of trade.¹

Another indicator of growing international financial integration has been the development and expansion of new markets and new instruments facilitating international transactions. The Eurocurrency markets allow transactions (and security issues) denominated in domestic currencies to take place outside the home country, and this has been matched by the growing penetration of domestic financial markets by foreign financial institutions.² Taken together, these last two developments might be described as globalization. Further, a whole host of new financial instruments have been developed that allow money raised in one currency (or for one maturity) to be swapped easily into international obligations of quite another sort, making it easier for both lenders and borrowers to obtain the combination of risk, return and liquidity that they desire. With single firms operating worldwide, and with books being transferred from branch to branch across time zones, one by-product has been twenty-four-hour trading of a wide range of financial instruments.

In short, in most industrial countries foreign investors are now important players responding to domestic financial opportunities, while domestic investors now have an increasingly global set of financial alternatives available to them.

Among the forces behind these developments have been the trend towards deregulation in the financial sector (especially the reduction of foreign exchange controls in Europe) and continuing declines in communications costs (due to technological change). Both have contributed in an important way to a climate of intense international competition in the provision of financial services. Also contributing to the rise in net international capital

1. See Bank for International Settlements (1990b).

2. Courchene (1989) estimates there are now over 700 foreign banks in the United States, 550 in the United Kingdom and between 150 and 400 in such countries as France, Germany and Switzerland.

flows was the trend to growing international current account imbalances.³ In the early 1970s the "necessity" of recycling OPEC oil receipts encouraged international lending by banks. In the second half of the 1980s, the trade surpluses of Germany and Japan had a similar effect on international portfolio investment.

Canadian financial markets and market participants have shared in these international trends, albeit from a starting point in the early 1970s of already significant financial integration with U.S. financial markets. Canadians have become increasingly heavy *net* borrowers in international capital markets (reflecting our rising current account deficit) but *gross* borrowing has risen even more strongly (Table 3). Statistics Canada estimates that, as a consequence, non-resident holdings of Canadian liabilities rose from \$52 billion in 1970 to \$456 billion in 1990. Further new trends were a shift in the source of these borrowed funds (away from the United States and towards other international lenders) and a growing tendency for the borrowers to be Canadian governments rather than private corporations.

As for institutional developments, Canadian banks and other Canadian institutions established a solid international presence in the 1970s and 1980s, while there are fifty-seven foreign banks now registered in Canada (1990). Finally, it is worth remarking that turnover in the exchange market for Canadian dollars has also grown significantly, if less rapidly than the general turnover in foreign exchange. In April of 1989, the average *daily* turnover in Canadian dollars was \$15 billion.⁴

The above evidence is admittedly anecdotal. However, there are a variety of more precise measures of the extent to which Canadian financial markets are or have become integrated with financial markets elsewhere. These different measures recognize that there is full integration only when (1) investors can invest in other national markets without regulatory impediment (perfect capital mobility), and (2) investors are essentially indifferent to the specific currency in which an investment is denominated (a very high degree of asset substitutability), assuming identical expected return.

3. It is worth recognizing that there is a "chicken and egg" aspect to this. While current account imbalances generate a need for financing, in the end the current account imbalances will be reduced to the extent that financing cannot be found at unchanged terms. Nevertheless, I am not alone in relating recent trends in international financing to trade imbalances. See International Monetary Fund (1990), p. 10.

4. See Bank for International Settlements (1990b). Also C. Sawchuck and G. Pickering (1989).

One approach to the issue of perfect capital mobility focusses on the interest rate differential between the cost of funds (denominated in Canadian dollars) in Canada and in the Eurocurrency markets. Murray and Khemani (1989) have examined this for short-term funds and concluded that the mean interest differentials for Canada were effectively zero between 1974 and 1988, and also zero in the two subperiods divided at 1980Q1. Murray and Khemani conclude that these results are consistent with the hypothesis that there are no significant impediments to capital flows between the two markets (perfect capital mobility), and furthermore that there were no trends in this regard over the period considered.⁵ In sum, arbitrage is essentially complete and has been for quite some time. Further support for this conclusion is provided by the observation that the short-term interest differentials between Canada and the U.S. have not differed significantly from the cost of forward cover, at least since 1970.

Testing the second hypothesis — that international investors see no risk differential between Canadian dollar and U.S. dollar short-term securities — has proven much more difficult. If capital is perfectly mobile, and if there is perfect asset substitutability, then investors will act so as to equalize the expected holding period yields on comparable domestic and foreign securities. The difficulty in testing whether this has happened rests in finding an adequate proxy for something which is unobservable — investors' expectations of the change in the value of the Canadian dollar over the holding period. At best, all one can conclude from the available literature⁶ is that there is no clear evidence rejecting the second hypothesis in the case of shorter-term securities.

Trying to measure the extent to which longer-term financial markets in Canada are integrated with those in the United States is a still more daunting task, essentially because the expectations horizons are even longer.⁷ Nevertheless, work done to date by Caramazza et al. (1986) did not find any evidence inconsistent with the hypothesis of full integration in bond markets.

5. Murray and Khemani also extended their tests to Germany and Japan and concluded that there was *not* perfect capital mobility in those cases, but that capital mobility was clearly increasing over time. This is consistent with a general trend to deregulation in those countries.

6. See F. Caramazza et al. (1986).

7. It may well be that the investment horizon for longer-term securities is actually no longer than for shorter-term securities, but this does not reduce the scope of the measurement problem. One is still left with the added difficulty (relative to shorter-term securities) of finding a proxy for expected changes in capital values.

3 IMPLICATIONS FOR CANADIAN PUBLIC POLICY

To the extent that Canada has shared in the trend towards the growing integration of international financial markets and the globalization of competition, certain effects can be identified. This in turn has implications for public policy. A useful distinction for analytic purposes is the distinction between structural or microeconomic implications and the implications for macroeconomic management.

Structural Implications

The integration of financial markets and the globalization of competition in financial services have had at least three favourable effects for Canada. In some areas, increased competition has apparently reduced the costs of purchasing financial services (bid-offer spreads, for example). Further, international competition has likely led to a higher level of service, in the sense that new financial innovations abroad have been transmitted to Canada more rapidly than would otherwise have been the case. These include many new instruments through which individual investors can reduce the various risks to which they are exposed. Finally, there is a presumption that Canada will benefit, along with other countries, from a more efficient international allocation of capital through internationally integrated capital markets.

These positive aspects of international integration have, however, been accompanied by other effects. In the following paragraphs I focus on these latter issues, not because I believe the negative effects outweigh the positive ones, but because it is the issues below which provide new challenges for public policy.

Institutional relationships

Turning to a first set of challenges for policy makers, Courchene (1989) makes the case that globalization has been the major force acting to undermine the traditional distinctions between the "four pillars" of the Canadian financial system. He notes that such legislated distinctions are not part of the framework in many other countries, and foreign institutions operating in North America have increasingly come to question why they must operate under greater restrictions here than they do at home. The advent of "Europe 1992," and the recognition that the principle of national treatment will give European banks in North America less advantage than North American banks will be given in Europe, has provided further impetus to consider introducing a "more level playing field" through legislative change.

In contrast, Freedman (1987) argues that the impetus for a new legislative framework has come from a variety of sources, both domestic and foreign. Among the former factors he includes the need to modernize legislation, the pressure to expand powers, the spread of conglomerate mergers, and growing public concern about closely held ownership and commercial-financial links. The fallout from the failure of a number of small financial institutions has also been an important catalyst for change in legislation.

Courchene also contends that pressures arising from globalization contributed to the recent decision by Canadian authorities to accept ownership of Canadian securities dealers by banks. The banks were able to make the case that their prospects were currently limited, in a world where international financing was increasingly being arranged through securities rather than loans. The fact that such deal making was also highly capital intensive, and that the banks could provide the dealers with needed capital, implied a symbiotic relationship between banks and dealers which Courchene contends it no longer made sense to prohibit. Freedman (1990) seems to agree with this interpretation.

Systemic risk

The integration and globalization of international financial markets may also have implications for the various risks to which financial institutions are subject. On the one hand, the availability of new financial instruments denominated in many currencies provides new means to hedge risks. On the other hand, a case can be made that there are also new and more serious risks to manage in global financial markets where competition is more fierce, where profit margins are less comfortable, and where markets are increasingly interrelated in new ways that are not yet fully understood.

Some initial definition of different kinds of financial risks may be useful. *Market risk* is concerned with taking open positions of various sorts, which can result in loss as well as gain. *Counterparty risk* is concerned with the failure of a contracting counterparty to honour its obligation.⁸ *Liquidity risk* is concerned with the inability to meet contractual obligations, even in cases where the firm is otherwise solvent, either because a counterparty

8. There are a number of specific risks subsumed under my general definition of counterparty risk. In the context of standard banking relationships, there is the risk (credit risk) that loans will not be repaid. In the context of clearing and settlement systems, losses can be incurred in two ways. First, supposing a counterparty to a forward contract defaults, the contract may have to be renewed at a loss if the price of the asset involved has changed in the interim (forward replacement cost risk). Second, if delivery of an asset and receipt of payment are not synchronous, then a default may leave the other participant short of the value of the transaction (settlement risk).

has failed to deliver or because normal credit channels have dried up in an environment of fear and uncertainty.

All these risks have the potential to bankrupt individual firms, and rigorous evaluation of these risks is in the firm's own best interest. Indeed, in recent years many financial institutions (including Canadian ones) have significantly increased their efforts in this area. However, to the extent that the failure of financial firms can affect public confidence and provoke chain reactions in the payments system, this is also an area of interest to regulators and public policy makers.

Turning first to questions of *market risk*, Table 4 indicates that quarterly net capital flows became much more volatile over the 1980s. While there need be no link between the volatility of capital flows and prices determined in those markets, asset prices do seem to have become more volatile in some markets since the 1960s.⁹ In part, increased volatility may have been the by-product of financial markets reacting appropriately to larger, real economic shocks requiring a real economic adjustment. However, increased volatility may also have been a product of "faddish" speculation, unrelated to market fundamentals, encouraged by an environment of high inflation and unpredictable monetary policies.

Whatever its source, greater volatility in financial markets increases the likelihood of large losses from taking open positions. Moreover, recognition of the international systemic implications of bankruptcies associated with such losses has led policy makers to respond. To begin with, policy makers in all the major industrial countries now accept the principle that a reduction of macroeconomic uncertainties can help significantly in reducing volatility in domestic financial markets. A clearly defined and consistently applied set of policy objectives gives financial markets an anchor for their expectations and helps minimize "overshooting" problems in response to economic shocks. This recognition underlies the text of many of the recent G-7 communiqués and, incidentally, the policy approach of the Bank of Canada.

The same objective, of reducing unnecessary volatility in financial markets, has led to suggestions in some countries for limits on daily price movements and restrictions on certain kinds of computer trading. The rationale in both cases is to provide time for more sober reflection about what the underlying fundamentals really imply for asset prices. The fact that such suggestions have not been universally adopted reflects concerns that traders will simply transfer their activity to other markets, or even

9. See S. Beckett and G.H. Sellon, Jr. (1990).

cease trading on regulated markets entirely. This latter concern is very real, given that technology increasingly allows profitable trading directly between large market participants. A further concern has been that such restrictions might prolong market disequilibria, encouraging further speculation and potentially increasing volatility over time.

The globalization of financial markets also has clear implications for *counterparty risk*. In contrast to ten or twenty years ago, counterparties are now much more likely to be regulated by, or to reside in, some other national jurisdiction. In part then, the health of any domestic financial system rests in the hands of regulators in other countries and is dependent upon the health of other nations' financial systems.

An important step was taken towards increasing the health of the international financial system when the major industrial countries (under the aegis of the Cooke Committee of the Bank for International Settlements) agreed on common definitions and a common minimum level of capital requirements for their banks. Of particular note is that capital requirements are broadly related to the level of credit risk assigned to the various assets in the banks' portfolios. The intention here is to ensure in a non-discriminatory way that the banks have the capacity to absorb whatever credit losses may affect them.

There has been less progress in establishing international capital standards for non-bank financial institutions, although discussions between the regulators of banks, insurance companies and securities dealers have at least begun at the BIS. In part, this lack of progress has occurred because national regulators do not always have clear authority for the regulation of such institutions.¹⁰ A further factor is that non-bank financial institutions (e.g., securities dealers) are much more dependent than banks on the acceptance of market risk as the basis of their profits. Unfortunately, it has proven quite difficult to obtain agreement on the technical assessment of market risks, such that capital requirements can be adjusted on an internationally agreed basis for both banks and non-banks.

The issue of *liquidity risk* is related to that of counterparty risk, but is of particular interest to central bankers in their role as lenders of last resort to domestic institutions. The internationalization of financial markets has complicated this role in certain ways. First, the liquidity shortage faced by a domestic institution might well be in a foreign currency. The provision of domestic currency by the lender of last resort would then have exchange rate implications as the currency was converted. Second, as events like the

10. The provincial charters of some trust and mortgage loan companies in Canada and the self-regulatory nature of our stock exchanges are cases in point.

October 1987 stock market crash make clear, there now seems a greater likelihood that international developments may spill over into domestic markets and precipitate liquidity problems.¹¹

While it is true that central bankers have the means to respond to more frequent crises of this sort, each case does bring with it the chance of something going wrong. Further, the more frequently that central bankers are called on to provide liquidity for "systemic" reasons, the more likely are financial markets to assume that the central banks will always be there. In other words, there is an associated moral hazard problem if financial institutions are encouraged by public sector behaviour to act less prudently than they might otherwise do.

Discussions are also beginning in international forums about a closely related problem: how to reduce the deleterious "side effects" associated with the broad safety net provided to financial institutions through such means as public deposit insurance, and with the common presumption that some financial institutions are "too big to fail." The source of concern is that such deposit guarantees discourage depositors from examining closely how the financial institution is being managed. Without such supervision, financial institutions may be inclined to take significantly more risks than they would otherwise do; the example of the U.S. savings and loan associations is commonly referred to in this regard. Regulators are cognizant, however, of a possible conflict in making policy prescriptions. Deposit insurance and "too big to fail" reduce liquidity risk even if, at the same time, they may lead to a greater willingness on the part of management to accept increases in both market and counterparty risk.

Finally, there has been renewed interest over the last few years (spurred in part by events surrounding the 1987 stock market crash) in the mechanics of both domestic and international clearing and payments systems. At issue are efforts to ensure that the failure of one party to meet a contractual payment does not cascade into a series of defaults which could have implications for the real economy. Alternative ways to deal with problems of this sort, in the specific case of cross border payments and of foreign exchange transactions, continue to be debated at the Bank for International Settlements, and some recommendations have already been made.¹² A similar set of discussions, but related more directly to

11. To say this, however, is not to say that the resulting policy response has to be internationally coordinated. In October 1987, there was no such ex ante coordination. Central bankers in the major countries simply responded individually to what they saw as the liquidity requirements of their own financial system.

12. See Bank for International Settlements (1990a).

clearings and settlements for corporate securities, has also been taking place under the aegis of the so-called "Group of Thirty."¹³ While progress is being made, the pace is rather slow.¹⁴

The process of international financial integration is to be welcomed because the net benefits to Canadians are considerable. In any event, the process is worldwide and is not reversible. A challenge for policy makers nevertheless remains: to manage the change so that the attendant costs are minimized and the net benefits increased.

Implications for Macroeconomic Policies

The fact that Canadian short-term financial markets are, in effect, fully integrated with international financial markets also has potential implications for the conduct of both monetary and fiscal policy in Canada. Similar to the discussion of structural implications above, some of these implications are more significant than others, and some are more welcome than others.

The objective of monetary policy and the transmission mechanism

One thing that should not be affected by financial integration is the *objective* sought by monetary policy. That objective should be the pursuit of stability in prices, the value of money. Indeed, if one accepts one of the principal elements of the neo-classical paradigm — the absence of any long-run trade-off between output and inflation — a central bank has little choice in this matter because real variables are in any case beyond its control in the long run. To put this another way, evidence from the last two decades¹⁵ indicates that the possibility of exploiting the short-run Phillips curve trade-off is very limited. Attempts to achieve faster than "potential" real growth through monetary expansion lead rapidly (although not instantaneously) to rising inflationary expectations and accelerating

13. This is a private sector group interested in the functioning of the international financial system.

14. Clearinghouses and depositories in many countries are already planning to reduce their vulnerability to counterparty failure by, variously in different countries, demanding more and better collateral from participants, by shortening settlement periods, by placing limits on daylight overdrafts, by using netting procedures to reduce the level of outstanding positions and settlement transactions and by clarifying the legal obligations of clearinghouse participants in the face of counterparty losses.

15. See B. O'Reilly, W.R. White and R. Ford (1986).

inflation. Moreover, the more frequently the trick is tried, the more rapidly the inflationary process proceeds.

A high degree of international financial integration does, however, affect the channels through which monetary policy acts in the pursuit of its objective. As far back as 1963, Mundell noted the crucial role played by a flexible exchange rate in effecting monetary policy when asset substitutability was infinite and domestic interest rates were *assumed* equal to foreign rates. In more recent years, a variety of theoretical models have tried to explore the dynamics of adjustment to monetary shocks when both interest rates and the exchange rate are allowed to change,¹⁶ and exchange rate expectations are *assumed* to be well behaved.¹⁷

The broad conclusion of these latter studies is that monetary shocks initially cause the exchange rate to overshoot its equilibrium value. The result of this is a more rapid effect on prices than might be expected in a closed economy, and a commensurate reduction in the short-run effect of the monetary shock on real variables. Over time, however, equilibrium is re-established for all variables. Since the price level in equilibrium reflects the size of the initial monetary shock, it can be concluded that monetary policy has not been made less effective because of international capital flows.

More detailed examinations of the channels of monetary policy in Canada have been carried out using RDXF, the Bank of Canada's large-scale econometric model, and a number of other models both small and large.¹⁸ The broad conclusion suggested is not at all surprising; both the exchange rate and the level of interest rates seem to have had a significant effect on demand and output levels in Canada over the data period considered. Further, preliminary results suggest that service-producing industries, as well as goods-producing industries, eventually respond to the influence of monetary policies.¹⁹

16. For one of the earliest and still most pertinent examples see Dornbusch (1976).

17. In the Dornbusch model, for example, the expected exchange rate is anchored to an equilibrium exchange rate whose value reflects the monetary shock assuming purchasing power parity. I discuss below some of the practical problems posed for policy makers when expectations prove to be less well behaved in practice.

18. See B. O'Reilly, G. Paulin, and P. Smith (1983).

19. The demand for services may reflect the cash-flow effects of higher interest rates. Further, while it might seem counterintuitive to suggest that exchange rates may affect service industries, two points should not be forgotten. First, many service industries are in fact servicing the goods-producing sector. Second, an exchange rate appreciation (say) changes relative prices and diverts demand towards tradeables and away from non-tradeables. In this way, competitive pressures are spread more evenly across the economy.

An interesting question is whether changes in the degree of international financial integration have caused the transmission mechanism of monetary policy in Canada to change over time. However, a complication affecting econometric tests of this specific hypothesis is that a number of other factors could also account for any identified changes in the elasticity of spending with respect to interest rates and the exchange rate.²⁰

On the one hand, arguments have been advanced to the effect that monetary policy may currently be *less* effective than hitherto in, for example, reducing demand. Some commentators have contended that the overall interest elasticity of demand may have declined in recent years, as the demand for shorter-lived services has become more important in the economy relative to the demand for more durable products.²¹ Other commentators have focussed on income effects noting, in particular, that government paper is akin to "outside wealth" and that higher interest rates interact with a very large and short-term government debt to provide an offsetting expansionary fiscal shock whenever monetary policy is tightened.²²

On the other hand, other commentators have presented arguments which imply that monetary policy may now be *more* effective than previously. One possibility is a new asymmetry in the consumption responses of debtors and creditors to the income effects of higher interest rates. With currently high debt levels, cash-constrained debtors may have a stronger

way, competitive pressures are spread more evenly across the economy

20. *Not* included in this list of other factors would be deregulation of interest rates, reduced reliance on quantitative restrictions in affecting monetary conditions, and the reduction of exchange controls. Such changes may well have had profound and comparatively recent effects on the transmission of monetary policy in the United States, the United Kingdom, France and Japan. However, similar changes were completed in Canada as far back as the late 1960s.

21. See, for example, the recent brief by the Canadian Exporters Association (1990) in which they contend that an ever-decreasing proportion of the economy — the goods-producing and internationally exposed sector — is bearing the full burden of disinflation.

22. See for example, D. Peters (1990). While plausible at first glance, this argument has a number of fundamental shortcomings. First, it ignores the government's intertemporal budget constraint. To respect this constraint, the government must over time reduce non-interest expenditures or raise taxes. In fact, that has been exactly the reaction of the Canadian government to higher interest rates over the last few years. Second, Peters' argument about the stimulative effect of an increase in "outside wealth" ignores (1) a possible Ricardian effect on wealth, (2) the fact that interest income from governments is taxable, and (3) the fact that much of the interest is paid to financial intermediaries (pension funds, etc.) rather than being paid directly to consumers.

tendency than previously to respond to higher interest rates.²³ The possibility that financial institutions may also, given high debt levels, be more inclined to indulge in "equilibrium credit rationing" could further enhance the effects of higher interest rates. Finally, consideration of the wealth effects of monetary policy might also lead to this conclusion. As interest rates rise, asset prices should decline with a subsequent effect on consumption. The growing importance of the housing stock in the total of personal wealth, allied with the recognition that consumers have increasingly borrowed against higher market values in recent years,²⁴ also implies some enhancement to the effectiveness of monetary policy.

With so many competing and offsetting hypotheses to choose from, it is perhaps not surprising that our econometric work at the Bank has failed to find any evidence that the aggregate effects of monetary policy in Canada have changed significantly over the last 15 years. Further, the various indicator models (ARIMA and VAR type) that the Bank uses to "predict" current and future levels of real growth, inflation and nominal growth do not seem to have changed over the data period.²⁵ This also implies that the lags with which monetary policy affects demand may not have changed either.

Whether this stability reflects the fact that the various hypotheses above are false, or that a number of them are offsetting, remains undetermined. However, allied with the conclusion that the covered interest parity condition has been satisfied in Canada for at least 20 years, one is tempted to conclude that developments in international financial markets have not significantly altered the transmission channels for Canadian monetary policy.

*Medium-term "stock effects" of restrictive monetary policy —
the international dimension*

It is well recognized that the application of a restrictive monetary policy can have short-run effects on output and employment, on the way to a reduction in inflation. It is also well recognized that these short-run costs will be significantly reduced if the monetary authorities are "credible"; that is to say, if the expression of the authorities' inflation target has a direct

23. This argument has also been made in the U.K. context. See W.W. Easton. (1990).

24. The share of housing in the aggregate measure of total financial wealth in RDXF has risen from 26 per cent in 1985 to 30.5 per cent in 1990. Most of this increase was due to increases in house prices. Consumer loans formally collateralized by equity in a house were introduced in Canada only in recent years.

25. See Hostland et al. (1988) and L. Milton (1988).

influence on inflationary expectations and thence on economic behaviour. It is not my intention to address here the issue of whether the permanent benefits of disinflation are worth the temporary costs.²⁶ Rather, in keeping with the international theme of this paper, I wish to note three alleged, undesirable stock effects of restrictive monetary policy,²⁷ and then consider the extent to which these effects are increased or decreased when the exchange rate plays a role in the transmission mechanism. The stock effects to which I refer concern (1) the capital stock, (2) the stock of government debt and (3) the stock of external debt.

Briefly, critics of monetary policy suggest first that higher real interest rates increase the cost of capital and reduce investment. Second, with an initially large government debt, particularly one with short average maturity, higher interest rates cause that debt to compound continuously to higher levels. Third, monetary restraint is said to raise the value of the Canadian dollar, leading to a deterioration in our trade position and a buildup of external debt. Finally, it is contended that all of these stock effects lead to a reduction in Canadian living standards over time.²⁸ Some critics, but not all, do recognize that, to the extent these side effects are a cause for concern, their effects could be mitigated by fiscal policies more directly supportive of anti-inflationary objectives.

On monetary policy and the *stock of capital*, higher interest rates will indeed increase the user cost of capital temporarily.²⁹ However, as the exchange rate rises, the interest rate increase required to effect a given degree of disinflation will be reduced. Further, as the exchange rate appreciates, the price of imported investment goods falls and this pushes *down* the user cost of capital. In Canada, where about 70 per cent of machinery and equipment is imported, this effect offsets about one-third of the increase in the user cost of capital arising from a given interest rate shock. Finally, it should be noted that a world of price stability would be one in which

26. For a recent assessment see J. Selody (1990) and R.G. Lipsey, ed. (1990).

27. For an early analysis of such effects see P. Masson (1983).

28. A smaller capital stock reduces production potential. A larger debt-service burden for the government implies higher taxes and lower rates of return on the provision of both capital and labour. The supply of both factor inputs may then decline. Running a current account deficit implies that domestic investment can be maintained, but its ownership passes into the hands of foreigners. Thus, there is an increasing divergence between gross domestic product (higher) and gross national product (lower), where it is only the latter that is available for consumption by Canadians.

29. Masson (1983) demonstrates that this will be a temporary phenomenon without any potential for dynamic instability provided that higher interest rates also reduce consumption expenditures (say through wealth effects).

the risk premia in interest rates (reflecting uncertainty about inflation) would be reduced, with a further positive effect on investment in the longer run.

On monetary policy and the *stock of government debt*, it is incontestable that higher rates of interest initially increase the government's net servicing requirements. However, it need not increase the stock of debt since reductions in other expenditure items can always offset this without a further increase in the dead-weight burden of taxes.³⁰ Indeed, since governments are subject to intertemporal budget constraints and there are practical limits to tax increases, this must happen eventually. However, to the extent there may be a problem it is again helpful to have the exchange rate play a role in the adjustment mechanism since interest rates will have to rise less than otherwise.

On restrictive monetary policy and the *stock of external debt*, the effects on the trade balance of nominal exchange rate appreciation is often deplored. However, it cannot be treated in isolation. This loss of competitiveness must be balanced against four positive factors associated with monetary restraint. First, increases in interest rates will decrease domestic absorption and reduce imports. Second, slack domestic demand conditions will reduce production costs below what they would otherwise have been. This latter phenomenon will reduce the extent of the *real* exchange rate appreciation associated with the increase in the nominal exchange rate. Third, nominal exchange rate appreciation will lead for a time to an improvement in the terms of trade, and (fourth) to a reduction in debt-servicing requirements measured in Canadian dollars. Simulations carried out using RDXF indicate that the longer-run effects of monetary tightening on the current account are very small, as indeed would be predicted by theory. In passing, it is interesting that simulations of large-scale models of the United States give similar results.³¹

A closely related matter, of significant interest at the current time, is whether the anti-inflationary stance of monetary policy is impeding Canadian adjustment to the opportunities being provided by the free trade

30. It is rather the political difficulty of doing this which leads to calls for lower interest rates (and of course more inflation) as an "easier" way of emerging from this dilemma. In the limit, this argument for lower interest rates leads one to recommend borrowing interest free by paying for all government requirements through note issue.

31. See R.C. Bryant et al. (1989). There was a wide variety of behaviour across the large number of models surveyed but on average the results support the statement in the text.

agreement with the United States.³² The idea that "a window of opportunity" is being missed has, in fact, some antecedents in the trade literature, where Baldwin and Krugman (1989) among others refer to the possibility of "trade hysteresis."³³ The concern they raise is that a long period of overvaluation of a currency will lead investors to invest elsewhere. Once made, such costs are "sunk" and unlikely to be easily reversed, even if the exchange rate does subsequently decline. A further implication is that the subsequent depreciation of the currency might have to be very great to induce some offset to this phenomenon.

There is no conclusive evidence to date that the appreciation of the nominal exchange rate since the free trade agreement was signed has led to trade hysteresis in Canada. Indeed, through early 1990 investment in the Canadian manufacturing sector was considerably stronger than in the United States. While output declines and job losses in the Canadian manufacturing sector have been severe in Canada over the last eighteen months, a number of other factors may also have played a role. First, it is clear that all Western industrial countries are in the midst of a major restructuring in response to new competitive challenges being mounted by the Japanese and the newly industrializing countries of Southern Asia. While such restructuring will pay dividends over time, there will also be short-run adjustment costs. Second, decisions to expand or maintain output in one country as opposed to another are likely to be based on various criteria in addition to nominal exchange rate considerations; tax levels, regulations, work practices, relative wages, labour skills and similar factors all play a more fundamental and more permanent role.

In a similar vein, countries providing an environment of stable prices might be thought more attractive to investors than countries that do not. In addition to the various market efficiencies likely to be associated with stable prices (in particular, easier long-term planning), the cost of capital in countries with stable prices should be relatively lower, other things being equal.

There are also some counterarguments to the hysteresis hypothesis which have an intuitive appeal. First, fundamental to the concept of hysteresis is the idea of slow adjustment to economic phenomena. One might then ask

32. Both Peter Cook and Tom Courchene have expressed this view. See *The Globe and Mail* of 9 April 1990.

33. Hysteresis in economics refers to the lingering effects of temporary economic shocks, and there is now a substantial literature on hysteresis in unemployment. One idea is that the unemployed eventually become unemployable, either because they lose employment skills or because employers believe they have done so. Another strand of the literature is based on "insider-outsider" considerations.

whether the degree of nominal exchange rate appreciation seen to date has been great enough, and has gone on long enough, to trigger the kind of exodus suggested.³⁴ Second, investment is by its nature forward looking. Why would investors assume the exchange rate would stay high forever in response to monetary policy (a nominal shock), rather than assuming some decline in the real exchange rate over time in response to the underlying (real) determinants? This question is particularly pertinent given evidence that medium-run exchange rate expectations tend to be regressive in nature,³⁵ and given the historical reality that periods of sustained deterioration in "competitiveness" in Canada have always been corrected over time.³⁶

To summarize, it may be the case that an anti-inflationary monetary policy has some undesirable medium-term "stock" effects. However, the magnitude of these effects would seem to be less than some critics of monetary policy suppose and certainly less than the deleterious effects arising from not resisting inflation. Further, to the extent that the transmission of monetary policy relies on exchange rate changes rather than interest rate changes, the influence of these stock effects is spread over a broader range of markets. Finally, it is also worth repeating that the risk of stock effects arising from the implementation of monetary policy would be further reduced were fiscal policy to play a larger role in the pursuit of anti-inflationary objectives.

Exchange rate expectations and the conduct of monetary policy

As Dornbusch (1976) has noted, monetary shocks may be expected to lead to some degree of exchange rate overshooting in a world of highly mobile capital and flexible exchange rates, assuming some "stickiness" of domestic prices. This will occur even when exchange rate expectations are firmly anchored; say, as in Dornbusch's model, through an assumed mechanism of partial adjustment towards an equilibrium exchange rate reflecting purchasing power parity. In this section, I wish to consider some of the practical complications posed for monetary policy when such an anchoring mechanism *cannot* be assumed. Broadly stated, shocks to the fundamental determinants of the exchange rate (in particular, short-term interest rates) may have greater effects on the exchange rate than they would in a totally

34. The U.S. literature on this topic was prompted by the 50 per cent effective appreciation of the U.S. dollar between 1980 and 1985. By way of contrast, the nominal effective value of the Canadian dollar rose 11 per cent between January 1988 when the trade deal was signed and January 1991.

35. See Allen (1989).

36. See Robert Lafrance (1988).

rational world with accurate expectations. Further, the exchange rate may even move significantly without much (if any) guidance from the fundamentals.

This seems, moreover, to be an issue of some practical concern. Half a century after Keynes (1936) first warned of the dangers arising from asset prices being driven by short-run expectations of profits, unanchored to the fundamentals, the academic literature once again seems willing to accept the reality of "speculative bubbles"³⁷ in financial markets. Still more relevant to this part of the paper, Stephenson and Lafrance (1990) have conducted tests to detect the presence of speculative bubbles in the market for Canadian dollars. While the evidence is mixed, they do find indications of episodes of speculative pressure on the exchange rate,³⁸ particularly in the mid 1980s.

A more anecdotal review of evidence from the last decade also indicates a frequent problem. Attempts by the Bank of Canada to ease overall monetary conditions have often led to a speculative run on the dollar and a subsequent backing up of interest rates. This was the case in early 1984, in mid-1985, in the spring of 1986 (allied with the effects of a sharp drop in commodity prices) and in the early part of 1990.

How serious is this problem? The first thing to note is that speculative instability in the exchange market does not threaten the fundamental efficacy of monetary policy. Even if an initial attempt to reduce interest rates subsequently results in higher interest rates in the context of a sharply weaker dollar, the *net* effects on spending of *both* channels of monetary policy remain under the influence of the Bank of Canada.³⁹

This having been said, there is also no question that downward instability in the exchange market poses certain difficulties. First, to obtain the same

37. See Stiglitz (1990) for a summary of a recent conference on this topic.

38. There is another set of evidence which indicates the market for Canadian dollars is not wholly rational. Under rational expectations, the forward premium (or the interest differential) should be an unbiased predictor of subsequent exchange rate changes. Murray and Khemani (1989), building on the earlier work of Boothe and Longworth (1986), show that the forward premium is in fact a systematically biased predictor of future exchange rate movements. Over the last few decades, the interest differential in favour of Canada has predicted a depreciation of the Canadian dollar significantly in excess of what actually occurred.

39. In other words, the Bank may not be able to control either the level of short-term interest rates or the exchange rate, but it can still control the overall level of "monetary conditions" defined as the combined effect of the two.

degree of overall easing, interest rates will have to be higher than otherwise. Accordingly, those sectors of the Canadian economy that are relatively sensitive to interest rate movements will not share as much in the benefits of monetary easing. Second, wide swings in the value of important macro variables increase risk and are undesirable for this reason alone. Third, as the single most important "price" in the Canadian economy, the value of the exchange rate can have a significant effect on both inflation and inflationary expectations. Should a sharp fall in the value of the Canadian dollar cause inflationary expectations to ratchet up, one of the fundamental preconditions required to support monetary easing might be vitiated.

To the extent that exchange rate instability does cause problems, what should be done about it? The first point to recognize is that the exchange rate reflects expectations about the *future* value of the exchange rate, which reflects in turn expectations about *future* policy actions. The best defence against instability in the exchange market is, therefore, stability in policy; cultivation of the belief that the monetary authorities will continue to follow a prudent, anti-inflationary monetary policy. This is, of course, only a variation on a still broader theme — that the more credible is the monetary authority, the more likely that policy can be adjusted without generating abrupt revisions to expectations in either financial markets or the markets for products and factors of production.

One proposed solution to the problem of unstable exchange rates — that of pegging the U.S. exchange rate for the Canadian dollar — has benefits but also attendant costs. While such an approach would indeed deal with the problem of exchange rate overshooting (and variability), the broader implications of such a regime shift must be given full consideration. First, inflation control would be placed in the hands of the Federal Reserve rather than in Canadian hands. For better or for worse, we would have to accept the U.S. rate of inflation. Second, Canada would no longer have use of the nominal exchange rate to help us adjust to real (terms of trade) shocks which commonly affect Canada differently from the United States.⁴⁰ Relying wholly on domestic price and wage adjustments to restore equilibrium in the face of external shocks could conceivably be quite costly.⁴¹ Finally, there remains the practical issue of choosing the

40. While Canada's terms of trade are not very volatile by the standards of other countries, Canada is unusual in that its terms of trade tend to be weakly or negatively correlated with its major trading partners. See S. Roger (1991).

41. By way of example, in the early 1970s in Canada a mistaken attempt to prevent the nominal exchange rate from appreciating in response to a positive terms-of-trade shock led to a significant acceleration of inflation in Canada and a subsequent recession.

level of the pegged exchange rate. This could be a significant problem since any level thought low enough to satisfy trade balance "requirements" might also be low enough to generate rising inflationary expectations.

Implications for fiscal policy

Assuming highly mobile capital and flexible exchange rates, countercyclical fiscal policies become less potent. As Mundell (1963) has pointed out, fiscal restraint leads to lower interest rates and a lower exchange rate, which in turn imparts an important and offsetting degree of stimulus. The same process can, however, be interpreted more positively. Should governments wish to pursue fiscal restraint for reasons unrelated to macroeconomic considerations (say to stabilize medium-term debt-service requirements) there is the possibility of some offsetting movement in interest rates and the exchange rate — "crowding-in" rather than "crowding-out."

Another implication of highly mobile capital is that expansionary fiscal policies are likely to be sustainable for much longer periods than would otherwise have been the case. Without such flows, government deficits would be reflected in trade deficits that might be much more difficult to finance. In earlier decades, such financing difficulties led relatively quickly to a reversal of the original stimulative policies, and/or other means of dealing with the trade deficit. However, to the extent that financing is currently more easily available in international markets, the initial domestic policy stance can now be maintained for a longer period of time. As a result, both government debt and external debt may cumulate over time, implying eventually a sharper policy correction than would have been required had the international financing not been available in the first place.

4 CONCLUSIONS

In recent years, there has been a trend in most overseas industrial countries to deregulation in financial and exchange markets, and to reliance on market-based monetary policies rather than policies based on quantitative controls. In this regard, other countries are proceeding down the path first followed by Canada in the late 1960s and by the United States a little while later. These changes have allowed the development of increasingly integrated international capital markets, and the concomitant development of new telecommunications technology has made such integration feasible. Allied with this has been a major expansion in the kinds of international financial instruments available, both on balance sheet and off balance sheet.

As a result of these developments, national regulators and supervisors must increasingly take into account what is going on in other national jurisdictions. Further, they must also pay attention to the systemic risks arising from the interaction of various kinds of markets and institutions across national boundaries. Finally, these developments have implied some pressure for the harmonization of international financial structures and standards. Canada has been affected by all of this, even though our capital markets have been very closely integrated with those in the United States for some time.

Canada's long history of domestic deregulation and close integration with U.S. capital markets does, however, suggest that the transmission mechanism for a monetary shock in Canada has not changed in any fundamental way in recent years. By the same token, the interest rate and exchange rate implications of fiscal shocks might also be expected to be broadly unchanged. One qualification to these conclusions arises from the current existence of a large stock of both government debt and international debt. This implies distribution effects given either a monetary or fiscal shock.

TABLE 1

NET INTERNATIONAL CAPITAL FLOWS OF THE
LARGEST INDUSTRIAL COUNTRIES, 1970-90
(period averages)

	The Federal Republic of Germany				Japan				The United States			
	1970/72	1979/81	1985/88	1989/90	1970/72	1979/81	1985/88	1989/90	1970/72	1979/81	1985/88	1989/90
Capital account balance ¹ (in billions of U.S. dollars)	-1.13	7.59	-38.15	-52.64	-4.68	5.02	-75.04	-46.32	1.63	-2.34	139.73	101.08
Capital account balance (in billions of U.S. dollars deflated by U.S. GNP, 1985-100)	-2.83	9.78	-36.53	-45.31	-11.72	6.47	-71.84	-39.87	4.09	-3.02	133.77	87.02
Capital account balance as a per cent of GNP	-0.52	0.98	-3.88	-3.97	-1.88	0.47	-3.53	-1.57	0.15	-0.08	3.17	1.90

1. This is taken as the counterpart to the current account imbalance. A positive value indicates a capital account surplus (inflow).

Source: National sources.

TABLE 2

**INTERNATIONAL BANK LENDING AND INTERNATIONAL BONDS,
1973-1990¹**
(in billions of U.S. dollars)

	<u>1973</u>	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>
International bank lending																		
BIS data (net of redepositing: stocks)	175	230	265	340	435	530	665	810	945	1,020	1,085	1,285	1,485	1,805	2,270	2,450	2,825	3,350
Growth rate (in per cent)		31	15	28	28	22	25	22	17	8	6	18	16	22	26	8	15	19
BIS data (net of redepositing: flows)		45	50	70	55	85	125	160	165	95	85	90	105	180	300	260	410	380
Growth rate (in per cent)		26	22	26	16	20	24	24	20	10	8	8	8	12	17	10	-	-
BIS data (gross: flows)		57	88	97	89	180	206	241	265	181	106	124	234	512	598	436	685	480
Growth rate (in per cent)		18	22	22	16	27	24	22	20	12	7	6	11	20	18	10	-	-
IMF data (gross: flows)							347	414	404	186	166	180	276	532	797	555	835	646
Growth rate (in per cent)							27	24	20	8	7	7	10	17	20	11	-	-
International bonds																		
BIS data (outstanding stock)										259	-	-	557	773	991	1,085	1,252	1,472
OECD data (net of redemptions: flows)										58	59	90	132	163	105	142	166	118

1. IMF-based bank lending data on cross-border changes in bank claims are derived from the Fund's international banking statistics (IBS) (cross-border interbank accounts by residence of borrowing bank plus international bank credits to non-banks by residence of borrower), excluding changes attributed to exchange rate movements. BIS-based data are derived from quarterly statistics contained in the BIS's International Banking Developments; the figures shown are adjusted for the effects of exchange rate movements. Differences between the IMF data and the BIS data are mainly accounted for by the different coverages. The BIS data are derived from geographical analyses provided by banks in the BIS reporting area. The IMF data derive cross-border interbank positions from the regular money and banking data supplied by member countries, while the IMF analysis of transactions with non-banks is based on data from geographical breakdowns provided by the BIS reporting countries and additional banking centres. Neither the IBS nor the BIS series are fully comparable over time because of expansion of coverage.

Sources: Bank for International Settlements (BIS); Organisation for Economic Co-operation and Development; and International Monetary Fund, International Banking Statistics; and Fund staff estimates.

TABLE 3

CANADA'S INTERNATIONAL INVESTMENT POSITION
(in billions of dollars)

	<u>1965</u>	<u>1970</u>	<u>1975</u>	<u>1980</u>	<u>1985</u>	<u>1990</u>
<u>Assets</u>						
Direct investment	3.5	6.2	10.5	27.0	54.1	84.8
Portfolio investment ¹	1.9	2.8	4.2	8.9	20.2	26.9
Other ²	7.5	13.0	19.1	34.0	51.4	85.5
Total	12.9	22.0	33.8	69.9	125.7	197.2
<u>Liabilities</u>						
Direct investment	17.4	26.4	37.4	61.7	87.2	126.6
Portfolio investment	10.1	14.9	28.2	69.7	145.1	229.1
Other	7.4	10.7	17.9	44.8	66.0	100.6
Total	34.9	52.0	83.5	176.2	298.3	456.3
<u>Net investment position</u>						
United States	-20.3 (92%) ³	-28.9 (96%)	-48.3 (97%)	-83.1 (78%)	-101.3 (58%)	-107.4 (41%)
Other countries	-5.0 (23%)	-5.8 (19%)	-6.8 (14%)	-28.0 (26%)	-71.2 (42%)	-151.8 (59%)
Official reserves	3.3 (15%)	4.7 (16%)	5.4 (11%)	4.8 (5%)	4.6 (3%)	21.6 (8%)
Total	-22.0	-30.0	-49.7	-106.3	-172.5	-259.2
Percentage of GDP	-38.2	-33.7	-29.0	-34.3	-36.1	-38.6

1. Includes equities and bonds.

2. Includes banks' net foreign currency position, money market securities and other miscellaneous investments.

3. Percentage of total net investment position.

Source: Statistics Canada, Canada's International Investment Position, catalogue No. 67-202, Ottawa, 1990.

TABLE 4
VOLATILITY INDICES

	1970s	1980s	Overall
Bank-related transactions	327	539	463
Money Market instruments	226	390	334
Trade in outstanding stocks	490	1,479	1,150
Trade in outstanding bonds	59	223	184
Net new bonds issued abroad	106	93	100
Direct investment	115	227	205

Standard deviation of quarterly changes in capital account items divided by mean.

Source: D. Stephenson and R. Lafrance (1989).

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