

# Deficits and Debt in Canada: Some Lessons from Recent History

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Ce texte passe en revue l'histoire récente des déficits et de la dette aux niveaux provincial et fédéral dans le but de savoir si l'imposition de règles de comportement aux autorités fiscales pourrait servir à contrôler la croissance de ces déficits et de cette dette. Les résultats suggèrent que l'utilité de règles de comportement pour les gouvernements provinciaux est minime car les marchés financiers imposent déjà de telles règles et qu'elles se sont avérées efficaces dans le passé. Toutefois, les marchés financiers ne réussissent pas à imposer de telles règles au gouvernement fédéral à cause du peu de crédibilité accordé à la politique de la Banque du Canada de ne pas monétiser la dette fédérale.

This paper reviews the recent history of federal and provincial deficits and debt in Canada with the purpose of investigating whether rules of behaviour need to be imposed on fiscal authorities as a way of controlling the growth of these deficits and debt. The evidence suggests that the need for rules governing provincial fiscal behaviour is weak because financial markets already impose such rules and that they have been effective at controlling provincial budgetary choices. Financial markets fail to impose similar rules at the federal level due to a lack of credibility regarding the Bank of Canada's policy of not monetizing federal debt.

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## I Introduction

From the perspective of those concerned about government deficits and debt, the Canadian economic union has worked reasonably well for most of its 127 year history. By the end of fiscal year 1974/75, the federal government had reduced its debt/GDP ratio from its high of 111 per cent in 1945/46 to a post-war low of under 16 per cent and the provincial governments, despite a decade-long process of taking on more and more responsibility for total government spending, had a combined debt/GDP ratio of only 5 per cent (see Table 1). In the past 15 years, however, two deep recessions and persistently high interest rates have put

strains on the finances of the federal and provincial governments and, indeed, on the finances of taxpayers who have suffered a steady increase in their tax burden.

Three types of intergovernmental conflict have arisen due to these strains on government finances: conflict between the federal and provincial levels of government, conflict between provincial governments and conflict between the Bank of Canada and the fiscal authorities at both levels of government. The conflict between the federal and provincial governments has been due to large cuts in federal transfers to the provinces (the so-called 'down-loading' of the federal deficit onto the provinces), conflicting fiscal policies (for example, when a

**Table 1**  
Net debt/GDP ratios

	1969/70	1974/75	1979/80	1980/81	1981/82	1982/83	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90
Newfoundland	29.1	31.4	39.4	37.9	36.6	35.8	37.8	39.4	41.0	40.6	39.1	35.0	35.2
Prince Edward Island	32.4	18.9	15.1	16.0	13.4	15.6	13.7	12.4	12.8	12.2	12.7	12.9	12.3
Nova Scotia	13.0	10.8	13.3	15.4	19.6	20.9	21.8	23.5	25.2	24.9	24.6	23.2	28.1
New Brunswick	19.8	14.4	15.1	18.4	18.1	22.0	22.7	23.2	24.7	23.9	26.0	23.9	22.1
Quebec	12.7	15.4	21.9	24.7	20.7	24.9	27.1	29.2	32.9	33.5	33.0	31.4	31.1
Ontario	4.4	5.9	10.2	10.4	10.3	12.3	13.1	12.9	14.5	14.2	13.7	12.5	11.2
Manitoba	1.0	-0.6	6.3	6.5	7.4	9.9	13.0	14.5	19.8	24.4	26.7	20.9	19.6
Saskatchewan	-2.7	-7.9	-8.7	-8.5	-8.2	-5.9	-3.9	-0.8	3.6	10.9	14.4	15.2	15.6
Alberta	-5.8	-8.5	-26.5	-25.6	-27.1	-24.5	-24.5	-26.0	-24.0	-20.6	-17.9	-14.0	-10.1
British Columbia	-5.8	-7.6	-5.9	-5.6	-4.4	-1.8	0.3	1.4	2.6	3.6	3.1	1.5	0.4
Total Provincial	5.1	5.0	6.0	6.4	5.4	7.9	9.4	10.3	12.5	14.5	14.8	14.0	13.6
Federal	21.4	15.8	26.2	27.3	27.4	33.5	40.0	45.5	49.9	53.3	53.9	53.8	54.5

Negative values indicate a net asset position. All debt figures are measured on a fiscal year basis (ending March 31) and represent the difference between financial assets and direct liabilities. GDP data are on a calendar year basis. Debt/GDP ratios are calculated using the preceding years GDP. Provincial debt figures exclude municipal debt and are measured using FMS conventions while federal debt is measured using national income accounting conventions. Following Ip (1991), in order to provide a more accurate comparison of provincial finances, the figures for Quebec have been adjusted to remove the net assets of the Quebec Pension Plan.

SOURCES: Provincial net debt, CANSIM matrices 3202-3211. Federal net debt, CANSIM matrix 3199. Provincial and national GDP, CANSIM matrices 2610-2621.

number of provinces increased personal income tax rates after the reduction in the federal rate accompanying the introduction of the GST in 1991) and even some discussion about the responsibility of the federal government to bail out provinces that would otherwise have to default on their debt. An example of the conflict between provincial governments is the commonly heard complaint that a loose fiscal policy by Ontario during the mid-1980s caused the Bank of Canada to impose a more restrictive monetary policy than would otherwise have been necessary. Since by necessity any monetary policy is imposed on all members of a currency union, Ontario's fiscal decisions are thought to have had a substantial negative impact on other provinces. Finally, the conflict between the Bank of Canada and the federal and provincial fiscal authorities has been witness to claims from the Bank that the fiscal imprudence of fiscal authorities has undermined monetary policy and countercharges that the Bank's high interest rate policies have increased fiscal deficits and contributed to rising debt/GDP ratios.

The appearance of these types of inter-governmental conflict during a period of fiscal stress raises the question of whether it would be desirable to impose fiscal rules of behaviour on the 11 members of the Canadian monetary union so as to minimize intergovernmental conflict arising due to government budgetary choices.<sup>1</sup> The purpose of this paper is to investigate whether this is the case.

This question is similar to one being debated by those analysing the need for fiscal rules in the proposed European monetary union. In that literature, it is argued that within a common currency union there are two opposing sets of influences exerted upon governments of member states; one that encourages and one that discourages fiscal prudence.<sup>2</sup> Discouraging fiscal prudence is the fact that in a currency union all governments finance their deficits by borrowing in the same capital market so that member states impose externalities on

others in the form of higher interest rates. Higher interest rates not only increase the budget deficits of other member states by increasing debt servicing costs but also reduce the rate of private capital formation throughout the monetary union. Since these externalities are not internalized it might be expected that each member of the union would incur larger deficits and debts than they would otherwise.

A second factor hypothesized to discourage fiscal prudence is that member states have reason to believe, despite possible protests to the contrary, that the union will in fact always bail out an insolvent member. Since a literal default may have adverse systemic effects on the union's entire financial system, the default will more likely occur via the central bank choosing to monetize the debt of the highly indebted member. As such a solution imposes inflationary costs that are borne by the whole union, a member state with a large and growing debt has an incentive to allow it to grow still further and force the monetization rather than adopt painful budgetary restraint that imposes costs only on itself. Both of these incentives for fiscal imprudence, then, create the breeding ground for conflict among member states and between member states and the central bank.

A factor hypothesized to encourage greater fiscal prudence among members of a monetary union is that to the extent that they cannot monetize their debts they face a 'harder' budget constraint than they would otherwise.<sup>3</sup> That is, while those who hold the debt of states with the power to monetize face the risk of a currency devaluation (currency risk), the risk premium the market extracts, reflected in nominal interest rate spreads, has smaller consequences for those governments than the penalty imposed on states without the power to monetize has on them. The interest rate these states pay on outstanding debt includes a premium reflecting default, rather than currency, risk. Credit rating agencies serve financial markets by evalu-

ating and publishing objective measures of default risk. Credit downgrading imposes discipline on profligate borrowers not only by signalling the need for interest rate increases, but more significantly by causing certain lenders who are subject to capital adequacy standards to cut off new credit to such borrowers. As such, lenders are typically large, and a downgrade requires that the risk premia rise dramatically to induce the remaining lenders to absorb new debt. Further downgrades lead to more severe consequences as more and more lenders are required to cut off this borrower. Consequently, default risk becomes an increasing function of one's debt and imposes an increasingly more stringent penalty.

The plan of the paper is as follows. Section II contains a brief summary of the budgetary behaviour of the federal and ten provincial governments during the 1980s. Section III contains an analysis of this behaviour in order to try and determine whether incentives to fiscal imprudence have dominated, or were dominated by, incentives to fiscal prudence during this period. Section III will also attempt to put into perspective the intergovernmental conflict over budgetary issues we have recently seen in Canada. Section IV offers concluding comments.

## II The Recent Economic History of the Canadian Monetary Union

This section briefly summarizes the budgetary experiences of the federal and the ten provincial governments over the course of the 1980s. The 1980s began with a serious recession that increased government deficits and was followed by a period of strong growth that gave governments the opportunity to reduce the debts built up at the beginning of the decade. The analysis stops at the end of fiscal year 1989/90 as this was the last fiscal year prior to the onset of the latest recession. By stopping the analysis at this point we can observe how each of the 11 governments responded to the 1981–82 recession and observe their

fiscal stance during a period of 'normal' economic growth rates. The effects on deficits and debts of the 1990–92 recession are omitted from the analysis in order to focus on the appropriateness of the *long-run* response of these governments to a large budget disturbance. From these data it is possible to infer the reasons for the success and failure of various governments in controlling their debts and in this way evaluate the need for fiscal rules of behaviour.

Table 1 presents data on provincial and federal government net debt/GDP ratios over the period 1969/70 to 1989/90. These figures show that the federal government has been far and away the most lax in controlling growth in its debt. Over the ten-year period 1980/81 to 1989/90 the federal government allowed its debt/GDP ratio to increase by 27 percentage points. According to the most recent budget of February 1994 the 1990–92 recession had helped to increase the federal debt/GDP ratio to 71.9 per cent by the end of fiscal year 1994. Among provincial governments Saskatchewan, Alberta, Manitoba and Nova Scotia (in that order) were least able to limit the growth in their debt/GDP ratios, but only Saskatchewan came close to the federal government's record. Two provinces, Newfoundland and Prince Edward Island, actually managed to reduce their debt/GDP ratios over a period where two major recessions and periods of high interest rates have made such control difficult.

Table 2 contains data on the average value of government deficits, primary deficits (non-interest expenditures minus tax revenue) and debt servicing costs (all as a fraction of provincial GDP) for 1961–70, 1971–80 and 1981–90 for each provincial government and for the federal government.<sup>4</sup> A comparison of these data with those in Table 1 shows how increases in debt are related to changes in deficits and debt servicing costs. Growth in debt and debt servicing costs are a positive function of three factors; (i) increases in the interest rate, (ii) the initial size of the debt, and (iii) additions to the debt. The first factor is

**Table 2**

Measures of deficit and debt service ratios, decade averages

	Newfoundland				Ontario		
	1961-70	1971-80	1981-90		1961-70	1971-80	1981-90
Deficit/GDP	-4.03	-3.17	-1.97	Deficit/GDP	0.12	-1.08	-0.83
Primary deficit/GDP	-2.22	1.33	4.21	Primary deficit/GDP	0.64	0.23	1.18
Debt service/GDP	1.81	4.50	6.18	Debt service/GDP	0.51	1.31	2.01
	Prince Edward Island				Manitoba		
	1961-70	1971-80	1981-90		1961-70	1971-80	1981-90
Deficit/GDP	-1.05	0.40	0.35	Deficit/GDP	0.06	-0.72	-2.47
Primary deficit/GDP	1.20	3.06	4.37	Primary deficit/GDP	0.81	0.90	2.03
Debt service/GDP	2.25	2.66	4.01	Debt service/GDP	0.75	1.62	4.51
	Nova Scotia				Saskatchewan		
	1961-70	1971-80	1981-90		1961-70	1971-80	1981-90
Deficit/GDP	-0.12	-0.52	-1.75	Deficit/GDP	0.56	1.43	-1.92
Primary deficit/GDP	1.48	1.85	2.35	Primary deficit/GDP	1.75	2.80	2.73
Debt service/GDP	1.60	2.37	4.10	Debt service/GDP	1.19	1.37	4.65
	New Brunswick				Alberta*		
	1961-70	1971-80	1981-90		1961-70	1971-85	1986-90
Deficit/GDP	-0.62	-0.72	-1.35	Deficit/GDP	-1.62	3.40	-1.79
Primary deficit/GDP	0.84	1.27	2.21	Primary deficit/GDP	-1.24	4.25	0.10
Debt service/GDP	1.46	1.99	3.56	Debt service/GDP	0.39	0.84	1.90
	Quebec				British Columbia		
	1961-70	1971-80	1981-90		1961-70	1971-80	1981-90
Deficit/GDP	-0.69	-1.25	-1.30	Deficit/GDP	1.07	0.87	-0.35
Primary deficit/GDP	-0.22	-0.04	1.77	Primary deficit/GDP	1.18	1.21	1.06
Debt service/GDP	0.46	1.21	3.08	Debt service/GDP	0.10	0.34	1.40
	Federal Government						
	1961-70	1971-80	1981-90		1961-70	1971-80	1981-90
Deficit/GDP		0.03	-1.81			-4.56	
Primary deficit/GDP		1.93	0.55			0.42	
Debt service/GDP		1.90	2.36			4.99	

All data are on a calendar year, national income accounting basis. A positive value for a deficit figure indicates a budget surplus.

\*Note the different time periods for Alberta.

SOURCES: Revenue and expenditure data from CANSIM matrices 6769-6778 (provinces) and 6671 (federal).

common to all governments except for small changes in the relative interest rates paid by one government versus another resulting from changes in the financial market's perception of the relative risk of holding one government's debt versus the other.<sup>5</sup> Thus, intergovernmental differences in the growth of debt and debt servicing costs must be mainly due to differences in factors (ii) and (iii).

The dramatic changes in the federal

debt/GDP ratio are familiar to most Canadians so it might be useful to start with observations about the federal government's experience. As Table 1 indicates, although loose fiscal policy during the 1970s helped set the stage by increasing the debt/GDP ratio to 27 per cent from its post-war low of 16 per cent in 1974/75, most of the growth in the federal debt/GDP ratio has occurred since 1981/82. As a result, the federal government's relatively poor per-

formance at controlling growth in its debt and debt servicing costs during the 1980s was mainly due to factor (iii), the size of federal deficits over that period, a fact borne out by the data in Table 2 showing an extremely large average deficit/GDP ratio over the 1981-90 period. Of note as well is the lack of increase in the primary deficit (in fact it *fell* from its average value over the 1961-70 period) in response to the increase in debt. It was only in 1988 that the federal government began to run substantial primary surpluses (in excess of 2% of GDP) in order to slow the increase in its debt/GDP ratio.

Table 1 shows that to the east of Ontario, provinces began the 1980s with relatively large debt/GDP ratios whereas provinces west of Ontario began the decade either with small debt/GDP ratios (Manitoba) or were in net asset positions (Saskatchewan, Alberta and BC). The fact that the provinces east of Ontario began the decade with large outstanding debts meant that changes in their debts during the next decade would be in large part a function of changes in the interest rate they would have to pay on that outstanding debt. When interest rates soared during the 1980s the debt servicing costs of these provinces exploded to average an amount well in excess of 3 per cent of provincial GDP. However, the introduction of very large primary surpluses enabled Newfoundland and PEI to offset the soaring debt servicing costs and actually caused a reduction in their debt/GDP ratios. Nova Scotia, New Brunswick and Quebec managed to introduce primary surpluses only half the size of those in Newfoundland and PEI and consequently were less successful in limiting the increase in their debt/GDP ratios.

West of Ontario, increases in interest rates played a much smaller role in explaining changes in debt/GDP ratios. In fact, given the net asset position of three of these provinces, interest rate increases could have conceivably been beneficial from a budgetary perspective. The main explanations for their debt histories during the

1980s therefore rests with the effects on revenues and expenditures of a major recession, energy and commodity price shocks and the fiscal response to these changes. Saskatchewan experienced the largest change in its debt position as its net debt/GDP ratio increased by over 24 percentage points between 1980/81 and 1989/90. This change can be attributed to a fall in oil and gas prices in 1986 and to low potash, uranium and grain prices throughout the decade that contributed to a string of deficits over the 1982-85 period averaging 2 per cent of GDP. These earlier deficits caused Saskatchewan to move from a net asset to a net debt position by 1985/86 so that despite responding with large primary surpluses later in the decade its new exposure to the negative budgetary effects of high interest rates and continued low commodity prices caused the province's debt/GDP ratio to continue to grow. Alberta similarly suffered a dramatic reduction in its net asset position but all of this change occurred in only four years and can be attributed to the fall in oil and gas prices in 1986 and the provincial government's failure to recognize this fall as being more than a short-term deviation from a long-term increase in real energy prices. British Columbia dealt with the volatility of economic conditions during the 1980s by simply avoiding deficits. In non-recession years, BC ran both deficits and surplus but neither ever exceeded 1 per cent of GDP. As a consequence, although it too suffered the revenue loss due to the fall in energy prices and consequently an increase in its debt/GDP ratio following 1986, it managed to quickly reduce this ratio to near zero by the end of the decade. Large primary surpluses were not required in BC during the 1980s due to having entered the decade in a net asset position and because large deficits were avoided.

Ontario's experience was much like British Columbia's in that its deficit/GDP ratio never exceeded 1 per cent (either positive or negative) except during years of recession; just over 2 per cent in 1982 and

1983. This, combined with a relatively small debt at the beginning of the decade which helped protect it from the period's high interest rates, enabled Ontario to allow its debt/GDP ratio to increase following the 1981-1982 recession and then, except for a disconcerting jump in the ratio in 1985/86 when the Ontario economy was booming, to cause it to fall thereafter so that by the end of the decade it had returned to virtually the same level it had at the beginning.

### **III An Analysis of Recent Canadian Experience**

The data in Tables 1 and 2, and the recent economic history of the Canadian monetary union they describe, seem to offer three lessons. First, the decision to bond finance deficits exposes governments to the risk of exploding debts should economic conditions take a turn for the worse - in particular, should interest rates increase and economic growth rates fall. If this occurs, it is incumbent upon governments to react quickly and decisively to increase their primary surplus sufficiently to more than offset increases in debt servicing costs. The problem is most severe if a large debt had been previously built up so that a given interest rate increase requires an even larger offsetting primary surplus. On the whole, the provinces eventually responded in appropriate ways to the build up in their debts brought on by the 1981/82 recession, with the result that eight years after that recession, debt/GDP ratios were falling. Alberta and Saskatchewan were exceptions due to serious province-specific problems that caused them to suffer negative budgetary shocks following the 1981/82 recession. The federal government, on the other hand, proved to be quite unresponsive to changing economic conditions. Faced with an increase in its debt due to a serious recession and the increase in interest rates at the beginning of the decade, the federal government proved to be extremely slow to introduce the primary surpluses needed to offset the exploding debt service component in its

budget. As a consequence the government very quickly became the victim of a vicious circle of growing debt, growing debt service costs and growing deficits.

The second lesson that seems warranted is that the hypothesis that those governments in a monetary union without the power to print money would, if faced with serious debt problems, have an incentive to do nothing and to await bail out by the other members of the union, receives little support from recent data describing the budgetary responses of provincial governments in Canada. The provinces responded to their growing debt problems by running sometimes quite substantial primary surpluses. In fact, when the federal government finally began to do so in 1987, it was the last government to begin running primary surpluses on a consistent basis.

A third lesson to be learned from the data in Tables 1 and 2 is that if it is true that governments in a monetary union impose negative externalities in the form of higher interest rates on other governments in the union, then during the 1980s it was surely the federal government's fiscal behaviour that was imposing them. There is little evidence in Tables 1 and 2 that the provinces reacted to the economic events of the 1980s in a seriously inappropriate way. Indeed, Ontario, Quebec and BC, who together were responsible for an average of 70 per cent of total provincial expenditures during the 1980s, behaved in a fashion that can only be described as fiscally prudent. That is, they allowed their debt/GDP ratios to rise as a result of recession and then increased their primary surpluses in order to cause their debt/GDP ratios to fall during expansion. The speed with which these and other provinces reined in their deficits following the 1981/82 recession is certainly open to criticism.<sup>6</sup> Nonetheless, given that the provincial sector left the turbulent 1980s having added 7.6 percentage points to the debt/GDP ratio it had entering the decade while the federal government added 28.3 percentage points to its own debt/GDP ratio, it was clearly the federal government

**Table 3**  
Moody's debt ratings, January 1980 to March 1993

	Rating	Period rating in effect	Direction of change
Newfoundland	Baa1	January 1980 to March 1993	
Nova Scotia	A1	January 1980 to May 1983	
	A	June 1983 to December 1985	Downgrade
	A2	January 1986 to March 1993	Downgrade
New Brunswick	A1	January 1980 to July 1983	
	A	August 1983 to August 1986	Downgrade
	A1	September 1986 to March 1993	Upgrade
Quebec	Aa	January 1980 to July 1983	
	A1	August 1983 to June 1986	Downgrade
	Aa3	July 1986 to March 1993	Downgrade
Ontario	Aaa	January 1980 to April 1991	
	Aa2	May 1991 to March 1993	Downgrade
Manitoba	Aa	January 1980 to April 1985	
	A1	May 1985 to March 1993	Downgrade
Saskatchewan	Aa	January 1980 to September 1981	
	Aa1	October 1981 to July 1985	Upgrade
	Aa	July 1985 to December 1986	Downgrade
	A1	January 1987 to June 1990	Downgrade
	A2	July 1990 to March 1993	Downgrade
Alberta	Aaa	January 1980 to November 1986	
	Aa1	December 1986 to April 1992	Downgrade
	Aa2	May 1992 to March 1993	Downgrade
British Columbia	Aa	January 1980 to May 1980	
	Aaa	June 1980 to August 1983	Upgrade
	Aa1	September 1983 to June 1987	Downgrade
	Aa2	July 1987 to July 1989	Downgrade
	Aa1	August 1989 to March 1993	Upgrade
Federal government	Aaa	January 1980 to March 1993	

SOURCE: Moody's Bond Record.

that was the major source of interest rate externalities in the Canadian monetary union during the 1980s.

Why did the provinces exhibit more fiscally prudent behaviour during the turbulent 1980s than the federal government? Earlier, we noted the hypothesis that incentives toward fiscal prudence would emanate from the disciplining effects of financial markets and would be most strongly felt by those governments receiving credit downgrades since they would suffer not only the cost of paying a higher interest rate on their debt but would also lose access to

certain large lenders. Table 3 shows the bond ratings on provincial and federal government debt of a major debt rating service (Moody's) over the period 1980 to 1993. The table suggests that in some sense provincial governments in the Canadian monetary union have indeed been subject to rather stringent fiscal rules of behaviour all along. Despite having substantially smaller debt/GDP ratios than the federal government and despite significantly greater efforts to control their debts by running much larger primary surpluses than the federal government, financial markets



**Table 4**

Fiscal stance of the provincial and federal governments, 1989/90

	Debt/GDP 1989/90 (1)	Actual primary deficit/GDP (2)	Required primary deficit/GDP (3)	Estimated debt/GDP 1990/91 (4)
Newfoundland	35.20	5.33	1.06	30.90
Prince Edward Island	12.30	5.03	0.37	7.70
Nova Scotia	28.10	3.17	0.84	25.80
New Brunswick	22.10	3.89	0.66	18.90
Quebec	31.10	2.67	0.93	29.40
Ontario	11.20	0.93	0.34	10.60
Manitoba	19.60	2.96	0.59	17.20
Saskatchewan	15.60	5.91	0.47	10.20
Alberta	-10.10	1.58	-0.30	-12.00
British Columbia	0.40	2.49	0.01	-2.10
Federal government	54.50	2.40	1.64	53.70

A positive value for a deficit figure indicates a surplus. The figures in the last column are based on assumed values for the real growth rate of output and the real interest rate of 2.5% and 5.5% respectively.

have been much harsher in evaluating provincial than federal government debt. Indeed, the rating on federal debt has not changed despite an increase in the federal government's debt/GDP ratio in excess of 400 per cent since 1974/75.

Evidence of the disciplining effects which these credit ratings had on provincial government financial behaviour is presented in Table 4. The figures in Table 4 present a snapshot of the deficit and debt situation of the federal and ten provincial governments at the end of fiscal year 1989/90. This fiscal year was the last before the onset of the latest recession and it marked the end of a period of growth since the 1981/82 recession. The snapshot provided by Table 4, then, might be reasonably interpreted as representing how governments in the Canadian monetary union intended to deal with their debt/GDP ratios during 'normal' economic times of positive economic growth and a stable rate of inflation.

In columns (1) and (2) are data on the net debt/GDP and primary deficit/GDP ratio for each government at the end of fiscal year 1989/90. Column (3) shows the primary deficit/GDP ratio calculated to have been necessary to maintain the debt/GDP ratio shown in column (1) given an assumed

real rate of GDP growth of 2.5 per cent and a real interest rate of 5.5 per cent (these values fairly represent average values in 1989). The figures in columns (2) and (3) indicate that in fiscal year 1989/90 all 11 governments were running primary surpluses more than sufficient to maintain a constant debt/GDP ratio and hence were running primary surpluses sufficient to cause their debt/GDP ratio to decline over time. Column (4) shows the estimated debt/GDP ratio at the end of fiscal year 1990/91 had the real growth rate and the real interest rate remained at 2.5 per cent and 5.5 per cent respectively and the primary deficit/GDP ratio shown in column (2) been maintained.<sup>7</sup>

The figures in Table 4 show that had the economy not entered another recession in 1990 but rather had grown at a historically moderate real rate of 2.5 per cent, then, even with historically high real interest rates, the fiscal stance of all 11 governments was such that all would have reduced their net debt/GDP ratios. In fact, impressive improvements in debt/GDP ratios were at hand for all the provinces. Among 'high debt' jurisdictions, the federal government was the most indebted and yet was scheduled to make the least impressive improvement in its debt position.

Despite these relative fiscal stances, bond rating services continued to downgrade or failed to upgrade provincial debt, but continued to grant federal debt the highest rating. The fact that federal debt has the potential to be monetized therefore seemingly eliminated the default risk premium on federal debt and saved the federal government from those costs imposed by failing to meet capital adequacy standards of large lenders. The monetization option, therefore, insulated the federal government from the threat of a lending cut-off and thus freed it from the main source of market discipline.<sup>8</sup>

Since the Bank of Canada has not been able to convince financial markets that it will refuse to monetize federal debt at sometime in the future, thus freeing the federal government from bearing the costs of credit downgrades, why has the federal government recently turned its attention to deficit reduction? An interesting interpretation is that the tough anti-inflationary stance of the Bank of Canada and the federal government's lack of serious response to its growing deficit and debt problem during the 1980's are elements of a prolonged 'game of chicken' between these two players. This interpretation follows from an analysis ascribed to Neil Wallace (discussed in Sargent, 1986) of the relationship between the President, Congress and the Federal Reserve System in the United States. Wallace hypothesizes that a game of chicken is played between decentralized branches of government that control separate elements of the aggregate government budget constraint. Although separate, the three players must, formally or informally, co-ordinate their actions due to the arithmetic of the government budget constraint. Successful monetary policy requires a co-operative fiscal policy and vice versa. If one or more players is unco-operative and intransigent, a game of chicken is played to determine whose policy will have to be adapted to by whom.

In Canada, the players in this game of

chicken are the Bank of Canada, the provinces and the federal fiscal authority. Seeking to reach and maintain its goal of zero inflation, the Bank of Canada has, since 1980, imposed a monetary policy that prohibits any substantial monetization of federal (and provincial) deficits. This monetary policy stance imposes the penalty of a high and growing debt service component in the budgets of those fiscal authorities who allow large deficits and growing debts and withholds seignorage revenue from the federal fiscal authority. The federal and provincial fiscal policy players can either 'chicken-out' and reduce their deficits and debts, or continue to run large deficits and in this way try to force the Bank to 'chicken-out' by monetizing federal debt and causing an inflation that will reduce the real value of the debt of all levels of government.

Evidence of the game being played would be the sort of rising debt/GDP ratios to which the Canadian economy has been witness over the past 15 years. Capitulation by the fiscal policy players would be evident in rising tax burdens and the crowding out of program expenditures by debt servicing costs such as we have seen from the provinces since the early 1980s but only very recently from the federal fiscal authority. The provinces dropped out of the game first due to the 'encouragement' offered by bond rating services. Without this encouragement the federal fiscal authority has played the game for much longer. However, the reduction in the rate of growth of the federal debt/GDP ratio prior to the onset of the latest recession and the growth in the federal primary surplus are indications that the game may now be over and the Bank of Canada can be declared the winner. The federal government is now talking seriously of deficit reduction only because the Bank of Canada has forced it to choose between that or facing still further tax increases and/or further crowding out of program spending in order to stop the inexorable growth of debt servicing costs.

## IV Conclusion

The rationale for imposing fiscal rules of behaviour on member states in a monetary union is that although member states face constraints and incentives that both encourage and discourage fiscal prudence, those discouraging fiscal prudence dominate. Since such behaviour will impose negative externalities on other members of the union and may eventually require that monetary policy be compromised, fiscal rules prohibiting excessive deficits and debts are required. This paper has reviewed the recent history of deficits and debt in Canada in order to investigate whether the incentives for fiscal imprudence do indeed dominate those encouraging fiscal prudence and hence whether there is a need to impose fiscal rules of behaviour on Canadian fiscal authorities.

The recent economic history of the Canadian monetary union suggests that there is not a strong case for imposing explicit rules of fiscal behaviour on provincial governments as a way of controlling the growth of their deficits and debts. It has been shown that financial markets already impose very strict fiscal rules of behaviour on provincial governments. Financial markets have not, however, imposed similar rules on the federal fiscal authority despite evidence of a much greater degree of fiscal laxity on its part. The much more determined fiscal stance on the part of the provinces compared with the federal government following the 1981/82 recession, and especially just prior to the recent recession, suggests that the market discipline imposed by financial markets is effective at regulating the fiscal behaviour of governments. Indeed, the vigorous deficit cutting that has characterized provincial budgets in the 1990s, despite a prolonged recession, is a further indication of the disciplining effects of financial markets.

Financial markets have not imposed the same standards of fiscal behaviour on the federal government as they have on provincial governments because financial

markets judge that the federal fiscal authority faces a 'softer' budget constraint than the provinces. This is due to the Bank of Canada's ultimate power to monetize federal debt and the perception that it would indeed monetize that debt as an alternative to a sovereign default. As a result, during the 1980s the federal government did not face the discipline of financial markets to the same degree as the provinces.

In Canada, then, the case for imposing rules of fiscal behaviour is strongest not at the provincial level but at the federal level where such rules could be used to impose the fiscal discipline financial markets are not currently imposing. The nature of such rules would have to take into account the reliance of the provinces on transfers from the federal government and hence address the issue of deficit downloading.

## Notes

- \* Subject to the usual caveat, I would like to thank Jeff Church, Jim Johnson, Ken McKenzie and the journal's anonymous referees for helpful comments and discussions.
- 1 There are other reasons why one might want to impose fiscal rules of behaviour on members of a monetary union. One is to facilitate the co-ordination of fiscal policies. For a discussion see Buiters and Kletzer (1992), Casella and Frey (1992) and Scarth (1992). This issue is not dealt with here.
- 2 For discussion of these issues, see Caporale (1992), De Grauwe (1992), Healey and Levine (1992) and Buiters, Corsetti and Roubini (1993). This literature examines the necessity of fiscal rules in order to facilitate union as well as the need for fiscal rules once the union is established. Since the Canadian currency union already exists, it is only the latter set of arguments which are relevant for the question of whether rules are needed in the Canadian union.
- 3 For a good discussion of this issue in the context of monetary unions, see Bishop (1992) and Goldstein and Woglom (1992).
- 4 In Table 2 the time periods differ for Alberta so as to divide 1971-90 into an early period of high oil and gas royalties and a later period of low royalties. As Table 1 shows, Alberta saw its net asset position plummet following the collapse of oil and gas prices in 1986.
- 5 The *timing* of the budgetary effect of an increase in interest rates depends on differences in debt

structure. To the extent that a government's debt is characterized by a long average term to maturity it is protected from the immediate effects of rising interest rates.

- 6 See, for example, Ip (1991) who criticizes the provinces for dragging their feet on deficit reduction during the period of growth in the 1980s with the result that their fiscal manoeuvrability was left seriously constrained when the economy again moved into recession in 1990.
- 7 The figures in columns (3) and (4) are derived using the simple arithmetic of the government budget constraint (GBC). Write the GBC as  $(1/P)\Delta B = G/T + rB/P$ , where  $P$  = the price level,  $G$  = real government expenditures on goods and services,  $T$  = real net tax revenue,  $B$  = nominal value of government debt held by the public, and  $\Delta B$  = nominal value of the deficit. Dividing through by  $Y$  (real income) the constraint can be written as;
- $$\Delta b = g - t + (r \cdot p \cdot n) b$$
- where  $g = G/Y$ ,  $t = T/Y$ ,  $b = B/PY$ ,  $n = \Delta Y/Y$  and  $p = \Delta P/P$ . Note that  $b$  now defines the debt/GDP ratio and  $(g-t)$  defines the primary deficit/GDP ratio. The figures in column (3) show the value of  $(g-t)$  necessary to cause  $\Delta b = 0$  given the value of  $b$  provided in column (1),  $(r \cdot p) = 0.055$  and  $n = 0.025$ . The figures in column (4) are derived using the observed values of  $b$  and  $(g-t)$  given in columns (1) and (2) to calculate  $\Delta b$ . The calculation for the federal government ignores seignorage revenue that accrues to the federal government due to central bank purchase of federal debt. This refinement has only a minor effect on the value in column (4).
- 8 A less plausible reason for the federal government maintaining its AAA credit rating is that the federal government has a favourable 'income gearing ratio'. Bishop (1992) notes that credit rating agencies rely heavily, though not solely, on the ratio of debt service to income when evaluating risk. He shows that by the end of the 1980s the European Community had an income gearing ratio, measured by the ratio of debt service to tax revenue, of 12% and argues that this would have garnered a BBB (rather than their actual AAA) rating from the Standard & Poor's rating agency if member states in the EC did not have the power to print money. At the end of fiscal year 1989/90, the same ratio for the Canadian federal government was 33% and had increased from 21% ten years earlier despite a 22% increase in real per capita taxes. Thus it is difficult to argue that a favourable income gearing ratio can explain why the federal government maintained a high credit rating. The more plausible reason is that financial markets judge that a sovereign default of federal debt would have such serious systemic effects on the whole Canadian financial system that the Bank of

Canada can never credibly refuse to monetize federal debt. It is interesting to note, however, that these same financial markets are not equally concerned about the systemic effects of a similar default by, say, the Ontario government which continues to receive downgrades.

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