The Characteristics of Fiscal Policy in Canada

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Dans cet article, nous utilisons une méthodologie qui permet de faire la distinction entre les changements discrétionnaires et non-discrétionnaires dans les politiques fiscales provinciales et fédérales. Nous trouvons des variations intertemporelles et interjuridictionnelles importantes dans les politiques discrétionnaires des gouvernements au Canada. Cet article révèle une asymétrie importante dans la composition des positions fiscales discrétionnaires. Les politiques fiscales d'économies ont tendance à être dominées par un "équilibre" entre les coupures dans les dépenses et l'augmentation des taxes, alors que les politiques fiscales expansionnistes ont été dominées en grande partie par les dépenses. Cette asymétrie suggère qu'il existe un penchant historique pour augmenter la taille du secteur public. La politique fiscale d'économie la plus récente (1993-1996), tant au niveau fédéral que provincial, s'éloigne de cette tendance historique en étant largement dominée par les dépenses.

We employ a methodology that distinguishes between discretionary and non-discretionary changes in provincial and federal fiscal policy. We find substantial variation in the discretionary policy of Canadian governments, across both time and jurisdictions. We uncover a marked asymmetry in the composition of discretionary fiscal stances. Fiscal retrenchments have tended to be dominated by a "balance" between spending cuts and tax increases, while fiscal expansions have been largely expenditure dominant. This asymmetry suggests an historic bias toward expanding the size of the public sector. The most recent fiscal retrenchment at both the federal and provincial level (1993-96) breaks from this historical tendency by being largely expenditure dominant.

INTRODUCTION

Over the past several years, Canadian governments at both the federal and provincial levels have introduced policies intended to reduce the size of their budget deficits. A number of approaches have been tried. For example, the Government of Alberta is viewed as having adopted an approach characterized by a rapid reduction in expenditures. The Government of Saskatchewan, on the other hand, is generally perceived as having relied mainly on tax increases (a perception we question below). The Government of Ontario has cut both spending and taxes and is therefore taking a more gradual approach to deficit reduction. The federal government has stated a preference for a "balanced approach" to deficit and debt reduction.

An obvious difficulty in assessing deficit reduction efforts, and in comparing them across

jurisdictions and levels of government, is the fact that changes in economic conditions impact government budgets via income-sensitive revenues and expenditures — so-called automatic stabilizers. Thus, although Alberta quickly eliminated its deficit, and indeed has reported substantial budget surpluses for the past few years, the provincial budget has enjoyed the benefits of a robust economy. The federal budget has similarly benefited from relatively strong economic growth and a rapid fall in debt-servicing costs due to the fall in Canadian interest rates. A fundamental problem when describing and evaluating fiscal policy then becomes, how much have deficits been affected by automatic stabilizing forces versus discretionary policy choices?

The purpose of this paper is to identify changes in *discretionary* fiscal policy by governments in Canada. By so doing, we hope to identify the characteristics of discretionary fiscal policies introduced by the ten provinces and the federal government, and address questions such as: Have the deficit reduction efforts been mainly directed toward expenditure cuts or revenue increases? Or, have governments adopted a more "balanced approach" to deficit reduction? Indeed, once the influence of automatic stabilizers are removed, have Canadian governments introduced any discretionary deficit reductions at all?

In the second section, we discuss the basic methodology we use to address these questions by distinguishing between discretionary and non-discretionary changes in fiscal policy. In section three we present our calculations of the discretionary changes in provincial and federal government balances over the period 1962 to 1996. We find substantial variation, both across governments and over time, in the use of discretionary budget policy. We also categorize the fiscal stances of the governments in each year according to how "loose" or how "tight" they were, and briefly discuss some of the more well-known discretionary budget changes of some of the provinces and the federal government in light of this categorization.

The characteristics of loose and tight fiscal stances are described and compared in the fourth section. We are specifically interested in the composition of these stances, and in particular whether they are dominated by changes in either expenditures or taxes. This exercise highlights an interesting asymmetry in these characteristics. We find that discretionary fiscal *retrenchments* in Canada have tended to be characterized by a fairly "balanced" approach between spending cuts and tax increases. By way of contrast, discretionary fiscal *expansions* have tended to be largely expenditure dominant. This asymmetry between the characteristics of fiscal retrenchments and fiscal expansions suggests, not surprisingly, a growing role of the government sector in Canada over the period studied.

In the next section, we take a closer look at the deficit reduction policies introduced by Canadian governments over the last four years of our sample period (1993-96), a period of substantial fiscal retrenchment for most provinces as well as the federal government. We provide measures of what fraction of the total reduction in the deficit during this period was due to policy choices as opposed to favourable economic conditions. We find that for the most part the fiscal retrenchments were indeed due to discretionary policy choices on the part of the governments. With some notable exceptions (Newfoundland, Prince Edward Island, New Brunswick, and Quebec), these discretionary choices were reinforced by favourable economic conditions that further improved the fiscal balance. What's more, unlike the tendency during previous retrenchments, this period was characterized by an unbalanced approach that favoured expenditure cuts.

In the final section, we summarize and conclude.

Measuring Fiscal Impulses

In this section, we outline the methodology we employ to identify discretionary changes in the federal

and provincial government budgets. The methodology is due to Blanchard (1993), and has recently been applied to the Organization for Economic Cooperation and Development (OECD) countries by Alesina and Perotti (1995, 1997) and McDermott and Wescott (1996). We then apply the method to data describing the budgets of Canadian governments.[1]

Efforts to identify the discretionary component of government budgets all involve some method for removing the influence of movements in output, interest rates, and inflation from budget data. Blanchard (1993) suggests focusing on the primary deficit (the deficit net of debt servicing costs) as a fraction of gross domestic product (GDP). As he notes, while not exact, this is a simple and straightforward way of removing the influence of inflation and changes in real interest rates from budget data. Focusing on the ratio of taxes and expenditures to GDP does not afford an exact adjustment for inflation because inflation can affect the deficit vis-à-vis GDP if the tax system is not fully indexed. Using ratios to GDP also ignores the influence demographic changes might have on the deficit. However, the impact of inflation and demographics on the budget move slowly enough that they are unlikely to have a substantial impact on an indicator of changes in discretionary fiscal policy from one year to the next.

There are a number of ways to remove the influence of cyclical movements in GDP from budget data (see Blanchard 1993; and Alesina and Perotti 1995). Many of these require a measure of potential output. One then measures how revenue and expenditures would have changed had output grown at its full, or potential, rate. Subtracting this from observed changes in revenue and expenditures identifies the change in the budget balance that was the result of a cyclical movement in output. The problem with this approach is the difficulty of obtaining measures of potential output; a problem that is especially acute at the provincial level.

To avoid having to use measures of potential output, Blanchard suggests estimating what government program spending and tax revenue would have been in year t had the unemployment rate in year t been the same as it was in year t–1. The difference between these values, and the levels of actual program spending and tax revenue in year t–1, provides us with a measure of discretionary tax and spending changes that occurred in period t. In this way, we can derive a measure of the discretionary change in the primary deficit; what Alesina and Perotti call the *fiscal impulse*. This is the method we employ; as we will show below, it does a remarkably good job of identifying discretionary changes in fiscal policy relative to an approach based upon estimates of potential output.

Specifically, we estimate, for the federal government and for each province, regressions of the following form:

$$S(t) = \alpha_0 + \alpha_1 TS(t) + \alpha_2 UR(t) + \varepsilon(t)$$

$$R(t) = ß_0 + ß_1 TR(t) + ß_2 UR(t) + \mu(t)$$

where S(t) = program spending as a fraction of GDP in year t, R(t) = tax revenue as a fraction of GDP in year t, TR(t) and TS(t) = values of trend variables (whose definition we discuss below) in year t, UR(t) = the provincial unemployment rate in year t, and where ε and μ are error terms. We then use the estimated coefficients and residuals to generate the level of program spending (S(t)*) and taxation (R(t)*) in period t that would have occurred had the unemployment rate been at the level it was last period:

$$S(t)^* = \hat{\alpha}_0 + \hat{\alpha}_1 TS(t) + \hat{\alpha}_2 UR(t-1) + \hat{\varepsilon}(t)$$

$$R(t)^* = \hat{ß}_0 + \hat{ß}_1 TR(t) + \hat{ß}_2 UR(t-1) + \hat{\mu}(t)$$

Our measure of the cyclically-adjusted fiscal impulse (FI(t)) is then calculated as:

$$FI(t) = [S(t)^* - R(t)^*] - [S(t-1) - R(t-1)]$$

so that a positive fiscal impulse implies a discretionary increase in the primary deficit, and a negative value implies a reduction (or an addition to a surplus).

Alesina and Perotti use two linear trends (for periods 1960-75 and 1976-92) in their regressions of S(t) and R(t) on unemployment rates. They do so in order to account for a change in the trend rates of growth in these series. It is also apparent in our data that the trend rate of growth in these series changed over our estimation period (1961-96). However, the changes differ by province and for spending versus revenue. To account for this, we defined TS and TR as province-specific, non-linear trends derived by applying the Hodrick-Prescott filter to S(t) and R(t) respectively.[2]

The data used in our analysis is inclusive of all tax revenue and all program spending, including intergovernmental grants. Federal-provincial grants are a key element of the federalist structure of governance in Canada. In aggregate about 20 percent of provincial government revenues is obtained from federal transfers. Since we need to distinguish between revenue and spending changes due to the discretionary actions of provincial and federal governments, some discussion of how we treated intergovernmental grants is in order.

Over the period studied, federal grants to the provinces fell under three main categories: the Canada Assistance Plan (CAP), Established Program Financing (EPF), and equalization.[3] CAP was a shared-cost conditional grant used to help finance provincial welfare programs. EPF was a block grant program designed to provide the provinces with funds for health and postsecondary education. For the most part, changes in the size of EPF and CAP grants reflected changes to the design of the provincial government programs the grants were intended to finance.

Equalization grants are unconditional grants designed to ensure that all provinces have access to some standard level of per capita revenue capacity. As such, equalization grants vary inversely with economic conditions in the receiving province.[4] The equalization program acts to lessen the sensitivity of revenues in the recipient provinces to changes in provincial economic conditions. As a consequence, changes in total provincial revenues in these provinces may not be very sensitive to changes in provincial unemployment rates. Applying the Blanchard method to provincial revenues inclusive of equalization payments may tend to overestimate the discretionary changes in revenue in recipient provinces. This is not a serious problem with EPF and CAP grants since the revenue-stabilizing features of these grants are limited due to their design and to limits placed on their rates of growth.

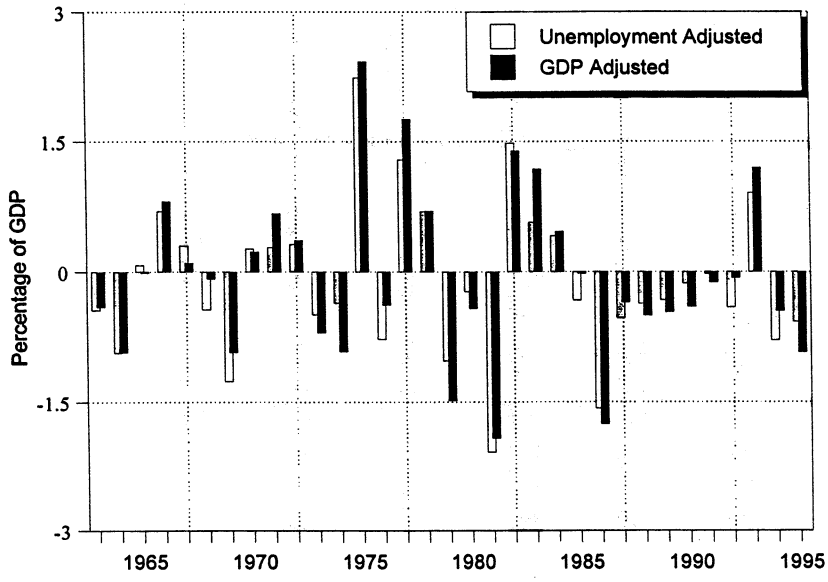
For these reasons, we include EPF and CAP transfers in the definition of provincial revenues but exclude equalization grants. Regressing this definition of provincial revenues against provincial unemployment rates, we therefore obtain the sensitivity of provincial revenues to changes in economic conditions prior to the revenue-equalizing effects of equalization grants but after receipt of CAP and EPF grants.[5]

Budget data are measured on a calendar-year basis using national income accounting conventions.[6] Our data allow us to compute a cyclically-adjusted, or discretionary, fiscal impulse for each of 35 years (1962-96) for the ten provinces and the federal government.

Before discussing our impulse calculations in more detail, it is worthwhile to offer a brief evaluation of our methodology by comparing the fiscal impulses derived using this method to those obtained using an alternative approach.

Figure 1 presents two measures of the annual discretionary fiscal impulses for the federal government over the 1963-95 period. The bars labelled "Unemployment Adjusted" show the discretionary fiscal

FIGURE 1
Alternative Measures of the Federal Fiscal Impulse



Source: "GDP Adjusted" from Canada (1997, p. 48, Table 40). These data are available for 1963-95 only. "Unemployment Adjusted," authors' calculation.

impulses derived in the way described above. Those labelled "GDP Adjusted" show the impulses calculated by the federal Department of Finance using potential, real GDP to cyclically adjust the federal primary deficit. Unfortunately, such estimates are available only for the federal budget and for all 11 fiscal authorities in aggregate. This is due to the difficulty in obtaining a reliable estimate of potential, real GDP for each province.

Figure 1 shows that the two methods produce very similar estimates of the discretionary fiscal impulse contained within the federal primary deficit. We are thus fairly confident that our fiscal impulses provide a reasonable, non-spurious measure of discretionary changes in fiscal policy.

THE FISCAL STANCES OF CANADIAN GOVERNMENTS: 1962-1996

In this section we report our calculations of the discretionary fiscal impulses of Canadian governments. The impulses are compared both across governments and over time. We also show how our methodology identifies various well-known discretionary policy changes at both the federal level and for particular provinces, which provides further evidence on the ability of our simple methodology to identify discretionary budget changes.

We begin by grouping the fiscal impulses into categories that indicate the nature of the governments' fiscal stance. The category in which a fiscal impulse for a particular year falls is determined by the number of standard deviations (σ_i) that fiscal impulse lies from the mean (μ_i). In particular, we define:

The Fiscal Stance for Province i in period t is classified as:	*When the Fiscal Impulse (FI) for Province i in period t:*
Neutral	$\mu_i - 0.5\sigma_i < FI_t < \mu_i + 0.5\sigma_i$
Loose	$\mu_i + 0.5\sigma_i < FI_t < \mu_i + \sigma_i$
Very Loose	$FI_t > \mu_i + \sigma_i$
Tight	$\mu_i - \sigma_i < FI_t < \mu_i - 0.5\sigma_i$
Very Tight	$FI_t < \mu_i - \sigma_i$

By categorizing a fiscal stance on the basis of the number of standard deviations it lies from its mean, we account for the fact that the government's share of GDP in smaller provinces may be more volatile than in larger provinces. Thus, a given percentage change in the government deficit will generate a larger change as a fraction of GDP (i.e., a larger fiscal impulse) in a province where a government's share is large than it will in a province where a government's share is small. For example, by our definition, a fiscal impulse in PEI is categorized as "very loose" only if its value exceeds one standard deviation from the average value of the fiscal impulse in PEI; an amount equal to 2.77 percent of PEI's GDP. To be labelled very loose in Ontario, a fiscal impulse would need to exceed only 0.43 percent of Ontario's GDP. By way of contrast, Alesina and Perotti define fiscal stances on the basis of the absolute size of the fiscal impulse. Thus, they identify a fiscal impulse as very loose if it exceeds 1.5 percent of GDP, regardless of the mean and standard deviation of fiscal impulses in that jurisdiction.[7]

In choosing these cut-off points we must ensure a reasonable trade-off between the requirement that very loose and very tight stances be significantly different from a neutral stance, and the requirement that there are a reasonable number of observations in each fiscal stance category. Table 1 presents summary statistics on fiscal impulses by government and by fiscal stance. The number of each type of stance indicates that our cut-off points do indeed provide us with a reasonable number of observations in each category.

The Provinces

It is noteworthy that the characteristics of fiscal impulses for all provinces in aggregate are very similar to those reported by Alesina and Perotti. For the OECD countries they study, they find that on average very loose and very tight stances are associated with fiscal impulses equal to 2.8 percent and -2.6 percent of GDP, respectively, versus our estimates of 2.6 percent and -2.3 percent. Similarly, their estimates of 0.93 percent and -0.93 percent of GDP for loose and tight stances are similar to our estimates of 1.05 percent and -1.35 percent. Thus the freedom of Canadian provinces to use budget deficits and surpluses to finance budget changes seems to be on par with OECD countries.

Also of note from Table 1 are the interprovincial differences. For example, Ontario and British Columbia have had the greatest number of very tight stances and Newfoundland has had the fewest. Newfoundland, in a tie with Saskatchewan, also has had the fewest number of very loose stances. Remember, however, that the criteria for identifying a stance as very tight or very loose differs across provinces. Thus while Newfoundland had the fewest very tight stances, many of its tight stances implied a larger reduction in the Newfoundland government's deficit-GDP ratio than some very tight stances implied for the deficit-GDP ratio in other provinces.

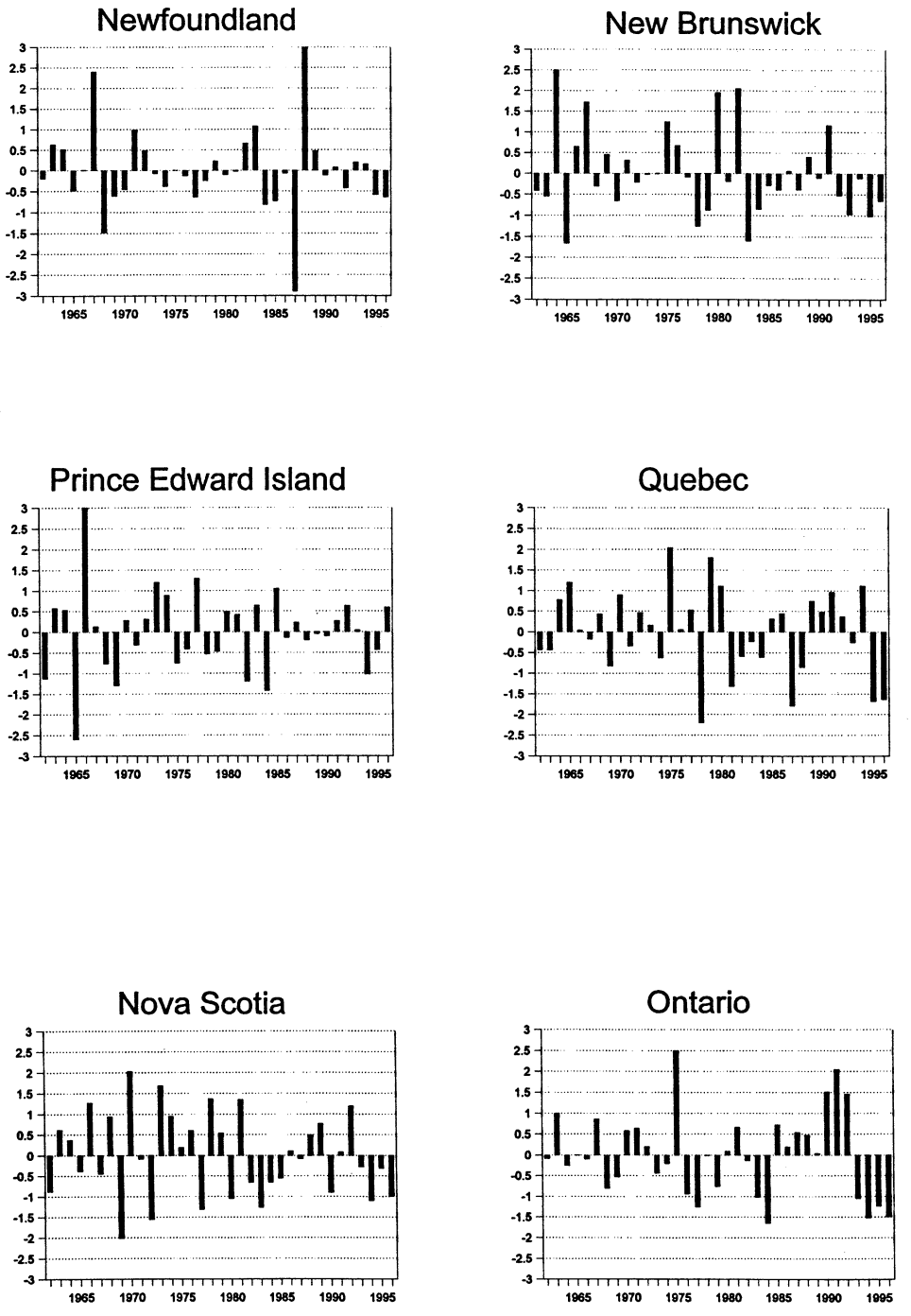
Figure 2 graphs, for each province and for the federal government, the size of fiscal impulses, measured as the number of standard deviations from the mean, over the 1962-96 period. It is useful to use these graphs as a check on the accuracy of our measures of fiscal impulses by determining whether certain well-known discretionary budget policies are captured by our calculations. For example, the largest of Ontario's non-neutral stances came in 1975 when a discretionary increase in the deficit equal to 2.5 standard deviations from the mean fiscal impulse (an amount equal to 1.2 percent of provincial GDP) was introduced. This coincided with a temporary cut in the sales tax rate from 7 to 5 percent, a temporary exemption of car purchases from the sales tax and a cut in succession duties.[8] It is interesting to observe that the election of the New Democratic Party (NDP) government in Ontario in 1990 is

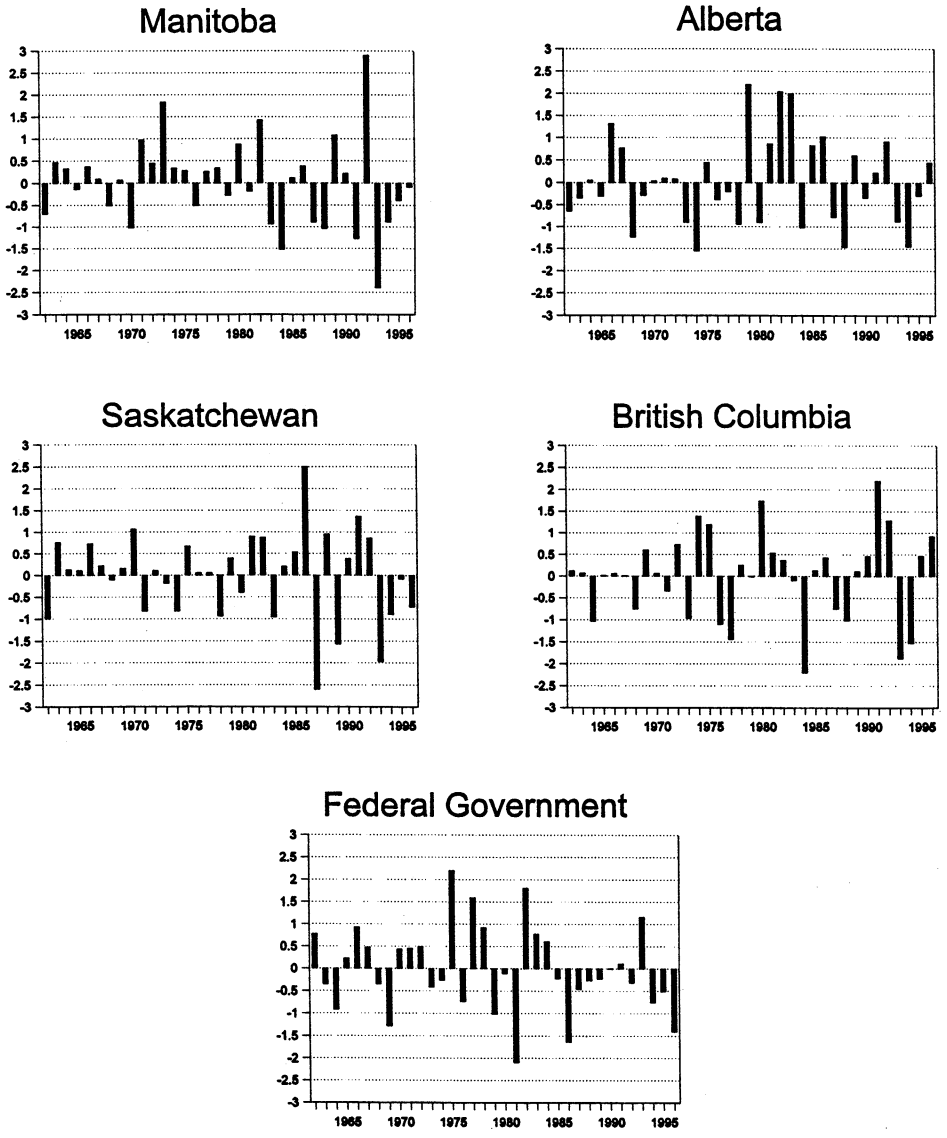
TABLE 1
Summary Statistics on Fiscal Impulses,
by Government and by Fiscal Stance

	Nfld	*PEI*	*NS*	*NB*	*Quebec*	*Ontario*	*Manitoba*	*Sask.*	*Alberta*	*BC*	*All Provinces*	*Federal*
All												
μ	-0.15	-0.08	-0.07	-0.12	-0.12	-0.08	-0.12	-0.24	-0.09	-0.03	-0.11	-0.13
σ	3.34	2.84	1.47	1.68	0.88	0.50	0.96	0.37	0.52	0.19	1.28	0.30
Neutral												
n	20	16	11	16	15	13	18	14	14	16	153	17
μ	-0.33	-0.06	-0.12	-0.25	-0.06	-0.09	0.02	-0.10	-0.19	0.08	-0.12	-0.17
σ	0.92	0.89	0.46	0.46	0.31	0.12	0.25	0.37	0.52	0.19	0.54	0.30
Loose												
n	4	6	6	2	5	7	2	8	5	4	49	5
μ	2.19	1.76	1.01	0.99	0.57	0.28	0.77	1.11	1.32	0.55	1.05	0.59
σ	0.68	0.36	0.26	0.03	0.15	0.08	0.07	0.23	0.21	0.14	0.61	0.12
Tight												
n	6	3	6	7	5	4	6	7	6	3	53	4
μ	-2.40	-2.02	-1.21	-1.33	-0.74	-0.46	-0.83	-1.74	-1.59	-0.73	-1.35	-0.77
σ	0.30	0.37	0.26	0.29	0.11	0.09	0.19	0.16	0.20	0.10	0.61	0.15
Very Loose												
n	3	4	6	6	5	4	4	3	5	5	45	4
μ	7.29	4.72	2.11	2.85	1.17	0.86	1.64	2.60	2.98	1.26	2.56	1.48
σ	3.54	2.88	0.46	0.84	0.39	0.24	0.78	1.33	0.93	0.33	2.06	0.56
Very Tight												
n	2	6	6	4	5	7	5	3	5	7	50	5
μ	-7.46	-4.17	-2.11	-2.44	-1.64	-0.74	-1.53	-3.74	-2.50	-1.25	-2.32	-1.47
σ	3.36	1.60	0.52	0.52	0.28	0.12	0.56	0.91	0.39	0.38	1.70	0.40

Notes: n = number of observations, μ = mean value, σ = standard deviation of the sample.

FIGURE 2
Fiscal Impulses by Government





Notes: The data plotted in the graphs measures $(FI - \mu)/\sigma$, where FI = the fiscal impulse, μ = the mean value of FI and σ = the standard deviation of FI. Thus a value of 1.0 indicates the fiscal impulse in that year was one standard deviation from the average fiscal impulse over 1961-96 period. Positive values indicate a discretionary increase in the budget deficit. Negative values measure a decrease in the deficit. For presentation purposes, values in excess of plus or minus three standard deviations from the mean have been reduced to ±3. The truncated values, with true values in parentheses, are Newfoundland's 1988 observation (3.2) and Prince Edward Island's 1966 observation (3.2).

associated with three successive very loose fiscal stances. The impact of the "social contract" between the provincial government and its public service workers, whereby $2 billion was cut from the public payroll, shows up as the large, very tight stance in 1993. This was followed by three more very tight stances in 1994, 1995, and 1996 as the government in Ontario made efforts to reverse the effects of the earlier very loose stances.

Other well-known discretionary policies also show up in these graphs. For example, in 1979 the Alberta government introduced a 40 percent increase in spending, a major part of which involved a municipal debt reduction program. Alberta also introduced a large cut to its corporation income tax in 1979. Another 40 percent increase in provincial spending took place in fiscal year 1982-83 when the provincial government introduced the Alberta Economic Resurgence Plan in an effort to stimulate the economy following the debilitating effects of the National Energy Program (see Boothe 1995, for a discussion). The election of Ralph Klein in late 1992 saw a change in direction as the provincial government moved from two successive neutral stances in 1990 and 1991 and a loose stance in 1992, to a tight stance in 1993, and a very tight stance in 1994. In 1995 and 1996, the provincial government returned to neutral stances. These measures closely correspond to the budget cuts implemented by the Klein government; a 6 percent expenditure cut in 1993-94, an additional 10 percent cut in 1994-95, and another 4 percent in 1995-96.

The fiscal retrenchment in Saskatchewan in 1987, when 2,000 civil service positions were cut and the sales tax increased from 5 to 7 percent, appears in our calculations as a very tight fiscal stance of 2.6 standard deviations from the mean fiscal impulse in that province; a deficit reduction equal to 4.7 percent of provincial GDP. The graph of Saskatchewan's fiscal impulses is also interesting in that it suggests the possibility of a politically-based regime shift in the early 1980s. Prior to this time, under NDP governments, Saskatchewan introduced mainly neutral stances. From 1982 to 1991, under the Progressive Conservatives, Saskatchewan's fiscal impulses were larger and more volatile. The election of the NDP in 1991 was followed by a loose stance in 1992, but then a very tight stance in1993, equal to 3.6 percent of GDP, and tight stances in 1994 and 1996 as the government took strong measures to try to arrest the growth in the province's debt.

An interesting aspect of the fiscal stances of Newfoundland, PEI, and New Brunswick is that the volatility of budgeting seems to have noticeably diminished sometime between 1980 and 1985. A possible explanation for this change is that by this time the combined effects of large debt burdens and high interest rates reduced the scope for discretionary budget increases (see Kneebone 1998, for a discussion).

Returning again to Table 1, just as Alesina and Perotti discovered for OECD countries, we find that for the provinces in aggregate, the average increase in the cyclically adjusted deficit under a very loose stance is virtually the same, in absolute value, as the average decrease in the cyclically adjusted deficit under a very tight stance. To a lesser degree, the same pattern is true of loose versus tight stances. Interestingly, this mirror relationship between very loose and very tight stances, holds true not only in aggregate but also within most provinces. Saskatchewan is the only exception, as very tight stances have, on average, been noticeably larger than very loose stances. An implication of this is that any quantitative differences in the characteristics of (very) loose and (very) tight stances is likely to be due to qualitative differences in fiscal choices and not to differences in the size of one stance versus another.

The Federal Government

Over the period 1962-96, the largest fiscal impulse for the federal government was a very loose stance in 1975. This was the result of a substantial increase in spending combined with an equally substantial reduction in tax revenue. The reduction in revenues was the result of a package of substantial tax cuts, including a three-percentage point cut in the personal income tax rate, an accelerated write-off

on purchases of capital equipment, the introduction of a $1,000 deduction for dividend and interest incomes and for private pension plans, and the introduction of a home savings program. In 1974 the federal government also introduced measures that more than doubled business subsidies and capital assistance; an increase equal to 6 percent of total federal spending in that year. The largest federal effort at deficit reduction was the very tight stance of 1981. This was the result of a substantial increase in federal tax revenues as a result of the introduction of the National Energy Program. This new revenue source added $3 billion to federal revenues that had totalled $45 billion in the previous year.

The second largest federal discretionary deficit reduction came in 1986, but this time as a result of a large cut to expenditures in combination with a large increase in revenue. This very tight stance, equal to just under 1.6 percent of GDP, can be traced to the first budget of the newly elected (in November 1984) Mulroney government. The increase in revenue resulted from a number of tax increases, including a partial de-indexing of income taxes, the application of two income surtaxes, and the end of the home ownership savings plan, that would add over $5 billion to a revenue base of $77 billion in 1986. On the spending side, the budget phased out the Petroleum Incentive Program, announced the sale of a number of Crown corporations, and substantially reduced grants and subsidies. For the first time, the federal government also raised the issue of cutting transfers to the provinces and, more important politically, proposed to partially de-index old age pensions. It is not difficult to imagine that the political furor that followed the latter announcement put a chill on further efforts to introduce cuts to social programs as a way of reducing the deficit.[9]

During the remainder of the Mulroney mandates, the federal government produced small negative "neutral" stances. These small negative impulses are noteworthy because during this period, from 1985 to 1989 inclusive, the federal debt-GDP ratio increased by ten percentage points despite real GDP growth averaging 3.9 percent per year. That the debt-GDP ratio continued to climb during this period is a testament to the size of the deficit at the beginning of this period, as well as the size of the debt-GDP ratio and the level of interest rates the federal government was paying on that outstanding debt. These factors combined to make the neutral discretionary policies of the Mulroney government wholly inadequate for reducing, or even stabilizing, the debt-GDP ratio.

1993 produced the only discretionary increase in the primary deficit during the Mulroney regime; a very loose stance equal to 0.9 percent of GDP. Perhaps not surprisingly, this was an election year.[10] The attack on the federal deficit by the newly elected Liberal government began with the budget presented in the spring of 1993. As figure 2 shows, this budget introduced changes that resulted in two tight fiscal impulses in 1994 and 1995. In 1996, a very tight stance, the first since the first Mulroney budget, was introduced. Under the Liberals the federal deficit fell from 5.8 percent of GDP on March 1993 to 1.1 percent by March 1997.

The Composition of Fiscal Stances: 1962-1996

Discretionary changes in deficits can be achieved by introducing: (i) discretionary changes to expenditures, (ii) discretionary changes to taxes, or (iii) some combination of these. In this section we characterize fiscal stances by identifying to what extent each is composed of changes to spending as opposed to changes in tax revenue. We are particularly interested in the extent to which the composition of fiscal stances may vary across the type and size of the stance.

Changes in discretionary spending and tax revenue are identified in the same way that we identified discretionary changes in the budget. That is, we identify the "expenditure impulse" (EI) as:

$$EI(t) = S(t)^* - S(t-1)$$

where we recall that S(t)* measures the level of program spending (as a fraction of GDP) in period t which would have occurred had the unemployment rate remained at the level it was in period t–1 and S(t–1) measures observed program spending in period t–1. Similarly, we define a "revenue impulse" (RI) as:

$$RI(t) = R(t)^* - R(t-1)$$

so that $FI(t) = EI(t) - RI(t)$.

Table 2 describes the composition of the various fiscal stances of the provinces and the federal government.

Table 2 highlights an interesting pattern in the spending-tax mix of deficit reductions versus deficit expansions. When Canadian governments have introduced what we call very loose discretionary budget changes, they have, on average, done so by increasing program expenditures by 1.96 percent of provincial GDP while introducing a much smaller reduction in taxes equal to 0.51 percent of provincial GDP. Similarly, loose stances have been much more heavily weighted toward increases in program expenditures (averaging 0.9 percent of GDP) than toward tax cuts (averaging an amount not significantly different from zero). By way of contrast, when governments have introduced a very tight stance, they have, on average, done so by increasing taxes and reducing program expenditures by roughly the same amount (just over 1 percent of GDP in absolute value). This "balanced" approach to discretionary deficit reduction holds true for tight stances as well. It is also interesting to note that over all stances, although offsetting in their net impact on the deficit because they have the same sign, the

TABLE 2
The Tax and Expenditure Composition of Fiscal Stances

Fiscal Stance	*Number of Observations*	*Average Fiscal Impulse*	*Average Expenditure Impulse*	*Average Revenue Impulse*
All	385	-0.11 (0.09)	0.21 (0.08)	0.32 (0.08)
Neutral	170	-0.12 (0.04)	0.19 (0.07)	0.31 (0.07)
Loose	54	1.00 (0.08)	0.90 (0.08)	-0.10 (0.06)
Tight	57	-1.31 (0.08)	-0.66 (0.07)	0.65 (0.07)
Very Loose	49	2.47 (0.29)	1.96 (0.14)	-0.51 (0.10)
Very Tight	55	-2.24 (0.22)	-1.10 (0.08)	1.14 (0.10)

Note: The values in parentheses are standard deviations of the mean.

average annual change in expenditures and tax revenue are separately economically significant at 0.21 percent and 0.32 percent of GDP respectively. This is indicative of the growing share of GDP absorbed by government budgets over the 1962-96 period.

Averages such as these can be misleading, however, because they can be dominated by outliers. In Table 3, we report the number of very tight and very loose fiscal stances that were dominated by spending changes or by tax changes. In particular, we define a stance to be "expenditure-dominant" if the change in cyclically adjusted expenditures (positive for a very tight stance, negative for a very loose stance) makes up more than two-thirds of the total fiscal impulse. Similarly, a "tax-dominant" stance is defined as one where the change in cyclically adjusted tax revenue (negative for a very tight stance, positive for a very loose stance) makes up more than two-thirds of the total fiscal impulse. Recall from our discussion earlier that our fiscal impulse measures for the provinces treat equalization grants as non-discretionary and EPF and CAP as potentially discretionary to the provinces. To investigate the sensitivity of our conclusions to the treatment of federal transfers, Table 3 also presents calculations under alternative treatments of federal-provincial grants (see Note 5). The non-bracketed number in each cell results from our base-case treatment, as discussed above, the number in round brackets is the result of excluding all grants from provincial revenues, and the number in square brackets is the result of including all grants in provincial revenues.

The most prevalent of these extreme stances is the expenditure dominant very loose stance; a discretionary policy choice designed to increase the deficit mainly by increasing program spending. A rarity is a tax-dominant very loose stance; an expansion of the deficit mainly via tax cuts. A heavy reliance on tax changes is far more prevalent when the choice is to reduce the deficit (and thereby raise taxes) than when it is to increase the deficit (and thereby cut taxes). A heavy reliance on changes to program spending is more prevalent when the choice is to increase the deficit (and thereby increase program spending) than when the choice is to decrease the deficit (and thereby cut program spending). The balanced approach to deficit change has typically found favour with policymakers only when deficit reductions are called for. Table 3 thus reinforces our conclusions regarding the asymmetries in the composition of Canadian fiscal policy. Note that the alternative treatment of federal-provincial transfers does not alter these conclusions.

Table 4 identifies governments that have initiated two types of stances that are similar in that they both involve a substantial withdrawal of government from the economy: expenditure-dominant very tight stances (spending cuts) and tax-dominant very loose stances (tax cuts).

TABLE 3
Different Types of Very Tight and Very Loose Stances

	Expenditure Dominant	*Tax Dominant*	*Neither Expenditure nor Tax Dominant*
Very Tight Stances	23 (25) [22]	19 (15) [22]	13 (16) [15]
Very Loose Stances	30 (40) [33]	11 (6) [9]	8 (7) [9]

TABLE 4
The Composition of Extreme Stances

Expenditure-Dominant Very Tight Stances:		*Tax-Dominant Very Loose Stances:*	
Newfoundland	1968	Newfoundland	1988
Nova Scotia	1969, 1983	Prince Edward Island	1973
New Brunswick	1978, 1983, 1995	Nova Scotia	1981
Quebec	1978, 1987	New Brunswick	1991
Ontario	1983, 1994, 1995	Quebec	1994
Manitoba	1984	Manitoba	1973, 1989
Saskatchewan	1993	Saskatchewan	1986, 1991
Alberta	1968, 1984, 1994	Federal Government	1977, 1993
British Columbia	1964, 1976, 1984		
Federal Government	1979, 1996		

Some well-known deficit reduction initiatives can be identified in this table. The cuts to program spending introduced by the Klein government in Alberta show up as an expenditure-dominant very tight stance in 1994. This followed a tight stance in 1993, the first year of the Klein mandate. Our estimates indicate that the reduction in Alberta's deficit from 3 percent of GDP in 1992 to a surplus of 1 percent of GDP in 1995 was largely due to discretionary budget cuts averaging 2.2 percent of GDP in 1993 and 1994. The program spending cuts of the Harris government in Ontario also generated expenditure-dominant very tight stances in 1994 and 1995. In comparing these cases, however, it is again important to keep in mind that the "very tight" classification differs across provinces. Thus while the two expenditure-dominant very tight stances introduced by Harris in Ontario cut that province's deficit by a total of 1.6 percent of GDP over two years, the deficit reduction introduced by the Klein government in Alberta cut the deficit by almost twice as much (2.7 percent of GDP) in a single year. This difference is also indicative of the deficit reduction effort in Alberta being more front-loaded than in Ontario. Alberta introduced large deficit reductions in 1993 and 1994 but relatively small (and offsetting) deficit changes in 1995 and 1996. In Ontario, the government introduced four straight years of similarly sized deficit reductions between 1993 and 1996.

The federal government's efforts at deficit reduction yielded an expenditure-dominant very tight stance in 1996. This was only the second such stance introduced by the federal government within our 35-year sample period. This followed two tight stances in 1994 and 1995. As noted previously, these three stances were responsible for roughly one-half of the turnaround in federal finances since 1993 with the rest being due to the effects of automatic stabilizers.

One of only two examples of tax-dominant loose stances introduced by the federal government occurred in 1993. In that year, the fall in the federal government's revenue-GDP ratio was due to a number of one-time budget measures: in particular, a reduction in the personal income tax surtax and a decision to net out the Child Tax Benefit from personal income tax revenues. These and other similar one-time factors reduced budgetary revenues by $17.1 billion over the period 1993-94 to 1995-96 (see Canada 1994, pp. 52-53).

Recent Efforts at Deficit Reduction: 1993-96

The last four years of our sample period, 1993 to 1996 inclusive, were years of economic recovery for Canada following the 1991-92 recession. The unemployment rate for the country fell from 11.2 to 9.7 percent during these years. The recovery was rather uneven throughout the country, however. The unemployment rate fell by 3.4 percentage points in PEI, 2.4 percentage points in Alberta, and 2.2 percentage points in Manitoba. At the other end of the scale, the unemployment rate fell by just 0.6 percentage points in Nova Scotia and 0.7 percentage points in Newfoundland. Such wide differences in the rate of economic recovery is what makes comparing deficit reduction efforts difficult; clearly, the governments of Nova Scotia and Newfoundland would find it much more difficult to reduce their deficit-GDP ratios than would the governments of PEI and Alberta.

In this section, we examine this most recent fiscal retrenchment in more detail. In particular, we determine the extent to which the fairly substantial decrease in deficit-GDP ratios that occurred over this period, for virtually every government, were due to discretionary actions on the part of the governments, as opposed to the presence of robust economic conditions. We also examine the composition of the fiscal impulses that characterize the fiscal retrenchments, in particular whether the impulses were tax or expenditure dominant. This will allow us to determine whether this most recent fiscal retrenchment shares the tendency of early retrenchments identified in the previous section — namely, was it characterized by a "balanced" approach between spending reductions and tax increases, as was the tendency in the past, or was it more heavily weighted on either the tax or expenditure side?

The 1993-1996 Fiscal Retrenchment: Discretionary or Non-discretionary?

In Table 5 we present, for each government, calculations of the sum of "observed" fiscal impulses (OFI) and the sum of fiscal impulses (FI). By "observed" fiscal impulse we mean the percentage point change in the *total* deficit-GDP ratio, where the measure of the observed deficit is all inclusive — it includes the debt-service component and, for the provinces, equalization grant revenue. Changes in this ratio are due to both discretionary and non-discretionary factors that affect government deficits, the latter reflecting changes in economic conditions through automatic stabilizers and changes in interest rates through debt service. The sum of fiscal impulses (FI) is, as explained previously, the percentage point reduction in the primary deficit-GDP ratio due solely to discretionary policy actions. The ratio of FI to OFI, reported in the last column, indicates the fraction of the reduction in the observed deficit-GDP ratio due to discretionary changes in fiscal policy choices initiated by the relevant government. For example, the value reported for the federal government, 0.70, indicates that of the 2.63 percentage point reduction in the observed federal deficit-GDP ratio (from 4.03 percent in 1992 to 1.41 percent in 1996), 70 percent was due to discretionary actions taken to reduce program spending and/or increase tax revenue. The remaining 30 percent of this reduction was due to the effects of automatic stabilizers and falling interest rates.

The table indicates that a large part of the fiscal retrenchment that occurred throughout the country between 1993 and 1996 was due to discretionary policy actions. The provinces were particularly aggressive. Thus, while the value of the FI-OFI ratio reported for the federal government is large, it is nonetheless the lowest of all of the fiscal authorities. The Government of Saskatchewan, for example, realized a much larger reduction in its observed deficit-GDP ratio (from a deficit of 4.56 percent in 1992 to a surplus of 3.60 percent in 1996), with 88 percent of the reduction due to discretionary policy actions. Ratios in excess of unity indicate that economic conditions over this period were such that they contributed to a worsening of the government's fiscal position. For example, the Government of Newfoundland found that despite introducing

TABLE 5
Recent Budget Policies, 1993-1996

	Sum of FI	*Sum of EI*	*Sum of RI*	*Sum of OFI*	*FI/OFI*
Newfoundland	-3.48	-3.09	0.40	-2.64	1.32
PEI	-2.63	-6.57	-3.94	-2.16	1.22
Nova Scotia	-4.27	-2.64	1.63	-5.06	0.84
New Brunswick	-5.07	-4.28	0.79	-4.03	1.26
Quebec	-2.64	-2.04	0.60	-2.40	1.10
Ontario	-2.98	-2.53	0.46	-3.13	0.95
Manitoba	-4.14	-4.11	0.03	-5.30	0.78
Saskatchewan	-7.21	-8.73	-1.52	-8.16	0.88
Alberta	-4.26	-6.70	-2.44	-5.29	0.81
British Columbia	-1.81	-1.24	0.57	-1.93	0.94
Federal Government	-1.83	-2.67	-0.84	-2.63	0.70

discretionary budget changes designed to reduce its deficit-GDP ratio, economic conditions pushed its deficit-GDP ratio in the opposite direction. If not for discretionary policy changes, Newfoundland's deficit-GDP ratio would have increased by 0.8 percentage points over this period.

The 1993-1996 Fiscal Retrenchment: Tax or Expenditure Dominant?

Table 5 also identifies for each government the source of change in the fiscal impulses over this period. All 11 fiscal authorities introduced policy changes that reduced their expenditure-GDP ratios. The largest of these changes was in Saskatchewan, where discretionary measures reduced the ratio of program spending to GDP by 8.7 percentage points. Interestingly, Alberta, often considered to be the champion of expenditure cuts, initiated only the second-largest discretionary cut in spending, with a still very significant 6.7 percentage point reduction in its ratio of program spending to GDP. The smallest of these changes was in British Columbia, where policy changes reduced the ratio of program spending to GDP by just 1.2 percentage points. As indicated in the introduction, Saskatchewan is often perceived as following the revenue road to fiscal retrenchment in the 1990s. Our calculations show quite the opposite, that Saskatchewan relied very heavily on discretionary spending decreases not on revenue increases.

Although the cuts to federal program spending are sometimes advertised (by the federal government) as substantial, here we see that at 2.7 percentage points of GDP, over the 1993-96 period the federal government introduced cuts to program spending that were much less than the average introduced by the provinces (4.2 percentage points). It is important to note as well that the cuts to federal spending include cuts to provincial grants: an amount equal to 1 percent of GDP. Thus, discretionary cuts to federal "own" spending over this period was a rather more modest 1.7 percent of GDP.

A negative value in the "Sum of RI" column indicates that tax revenue as a fraction of GDP was reduced due to discretionary policy choices. In particular, it indicates the fall in the ratio of tax revenue to GDP that would have occurred had the unemployment rate stayed constant from one year to the next during the period 1993-96. A positive value indicates tax revenue as a fraction of GDP has been

increased due to discretionary policy choices. Only the federal government and three provinces, PEI, Saskatchewan, and Alberta, introduced policies that had the effect of reducing their revenue-GDP ratios.[11] The remaining seven provinces all introduced measures to increase their tax revenue as a fraction of GDP. Nova Scotia introduced the largest increase mainly via the introduction of a substantial income surtax, an increase in the provincial sales tax rate, a widening of the sales tax base, and an increase in the gasoline tax, all in the1993 tax year.[12]

The period 1993-96 is an interesting, and somewhat unique, one in the fiscal history of Canada, as governments introduced significant discretionary measures to reduce their deficits and did so mainly by reducing program expenditures. This behaviour differs substantially from the average behaviour over the 1962-92 period, when fiscal retrenchments tended to be more evenly balanced between measures to reduce program expenditures and increase revenues.

Conclusions

Our objective in this paper was to learn more about the nature of the fiscal policy choices of federal and provincial governments in Canada over the period 1962 to 1996. We applied a method suggested by Blanchard (1993), and recently applied by Alesina and Perotti (1995, 1997) and McDermott and Wescott (1996) to OECD countries, to distinguish between discretionary and non-discretionary changes in the fiscal stance of the governments.

A key insight from our analysis is that over much of the sample period, discretionary fiscal policy in Canada exhibited a marked asymmetry in the composition of fiscal expansions and contractions. Discretionary policies that *increased* the cyclically-adjusted primary deficit were, on average, dominated by spending increases. On the other hand, discretionary policies that *decreased* the cyclically-adjusted primary deficit were, on average, characterized by more balance, with tax increases and spending decreases of roughly the same magnitude. Thus, deficit reductions (fiscal retrenchments) were characterized by a balanced approach, while deficit increases (fiscal expansions) were characterized by an unbalanced approach that favoured spending increases. As such, the history of Canadian government behaviour has been characterized by discretionary changes to budgets biassed in the direction of increasing the government's share of the economy.

More recent budget policy changes (1993-96) have been directed solely at fiscal retrenchment. Contrary to earlier retrenchment episodes, this period was characterized by deficit reduction efforts weighted heavily toward cuts to program spending and hence a reduction in government's share of GDP. We also find that the deficit reductions that occurred since 1993 have been largely due to discretionary policy choices on the part of both federal and provincial governments. In each case, over 70 percent of the improvement in the deficit-GDP ratio was due to discretionary policy choices.

It has been argued elsewhere that deficit reduction efforts focusing on cuts to program spending will prove to be longer lasting than deficit reductions achieved via revenue increases. Alesina and Perotti (1995), for example, claim to have found evidence to support this conclusion for OECD countries. If what Alesina and Perotti found to be true for OECD countries is also true for Canadian governments, recent efforts at fiscal retrenchment by governments in Canada may herald a prolonged period of balanced budgets and even surpluses.

Notes

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[1]Comparing discretionary fiscal policies across OECD countries involves some obvious difficulties. One difficulty is controlling for differences in monetary policy and differences in institutions. The impact of a given fiscal policy is determined in large part by monetary policy. In particular, the degree of exchange-rate flexibility plays a key role in determining fiscal policy outcomes. Similarly, differences in political and social institutions can affect the macroeconomic consequences of fiscal policy. It is claimed, for example, that electoral systems with proportional representation are inherently more unstable than pluralist electoral systems and hence are more likely to yield large deficits and high levels of government debt (see, e.g., Persson and Svensson 1989). The homogeneity of voter preferences can also play a role in determining fiscal outcomes. Tabellini and Alesina (1990), for example, argue that homogeneous voter preferences minimizes social conflict and enables government to react more decisively to events having a negative impact upon the budget deficit. Our study of the fiscal policies of Canadian governments avoids many of these problems. All 11 governments share a common electoral system, all experience common monetary and exchange rate shocks, and voter preferences are likely to be less heterogeneous across Canadian provinces than across OECD countries.

[2]To accommodate the fact that energy royalties make up a large fraction of Alberta's revenues (in 1978, natural resource revenue made up 60 percent of provincial revenues), Alberta's revenue equation includes the real price of oil (OIL) as a regressor and uses two linear trends (1961-84 and 1985-96). Thus the revenue-GDP ratio that Alberta would have realized in period t had economic conditions remained the same as in period t-1 was determined by calculating:

$$R(t)^{*}=\hat{\beta}_0+\hat{\beta}_1 TREND1+\hat{\beta}_2 TREND2+\hat{\beta}_3 UR(t-1)+\hat{\beta}_4 OIL(t-1)+\hat{\rho}(t)$$

where the estimated coefficients came from a similar regression involving UR(t) and OIL(t). The variable OIL is measured as the nominal well-head price of crude oil and equivalents in Alberta (Statistics Canada, various years) deflated by Canada's GDP implicit price deflator.

[3]CAP and EPF were replaced in 1996 with the Canada Health and Social Transfer (CHST).

[4]Current recipients of equalization, the so-called "have-not" provinces, include all provinces except for the "have" provinces of British Columbia, Alberta, and Ontario. See Boadway and Hobson (1993) for discussion and description of the equalization program in Canada.

[5]We recognize that to the extent that changes to the design of the EPF and CAP programs were discretionary policy changes by the federal government alone, our decision to leave these grants as part of provincial revenue means we will inaccurately "credit" this discretionary policy change to the affected provinces. The size of this error is reduced, however, if in fact changes in the design of grant programs were negotiated by the federal and provincial governments so they share "credit" for this policy change. Similarly, we recognize that periodic changes to the design of the equalization program reflected discretionary changes involving provincial decisionmakers so that we are erring in "crediting" all such changes solely to the federal government. To determine the extent to which our results depended upon how we treat transfers, we recalculated the impulses including equalization payments in provincial revenues (along with EPF and CAP) and also recalculated them by removing all transfers completely from provincial revenues. Although the impulses changed slightly, the qualitative nature of our results were not affected by these changes. We present some of the results from treating EPF and CAP differently in Table 3.

[6]Provincial government expenditure and revenue data come from CANSIM matrices 6769-6778 (for years 1961-91) and 9085-9094 (for years 1992-96). Federal government expenditure and revenue data are from matrices 6671 (for years 1961-91) and 9070 (for years 1992-96). All these data are current as of May 1998. Data on equalization grants is from *The Equalization Program*, Federal-Provincial Relations Division, Department of Finance, July 1997. Prior to 1966, unemployment rate data was available on a regional, rather than a provincial, basis. Details on the method for constructing provincial unemployment rate data for the years 1961-65 inclusive are available from the authors.

[7]As we will see in Table 1, the average very tight stance varies from a low of 0.74 percent of GDP in Ontario to a high of 7.5 percent of GDP in Newfoundland. It seems prudent, then, to define fiscal stances in a way that accounts for such a large difference. Alesina and Perotti also tested the sensitivity of their results to the "relative" approach we employ, with no substantive changes. We also re-ran our fiscal impulse calculations using their "absolute" approach; there was no significant change in our underlying results.

[8]The remainder of this section relates our measures of fiscal impulses to policy choices made by budgetmakers. Excellent sources describing these choices are Perry (1989) and McMillan (1991). The rest of this section relies heavily on these sources.

[9]Evidence of the importance of the chilling effect the televised confrontation of pensioner Solange Denis delivering her "Goodbye Charlie Brown" speech to then Prime Minister Mulroney may have had on policymakers is the fact that in 1993 Finance Minister Paul Martin paid a private visit to Mrs. Denis to gain her approval for the budget measures he planned to introduce in the forthcoming budget.

[10]Kneebone and McKenzie (1999) investigate electoral cycles in budget policy in Canada using measures of discretionary fiscal impulses similar to those employed here.

[11]Although the Government of Saskatchewan introduced policies that had the effect of reducing its tax revenue-to-GDP ratio over the 1993-96 period, it had earlier, in 1992, introduced a number of increases in tax rates that substantially increased its ratio of tax revenue to GDP. These included a 10 percent surtax on personal income, an increase in the corporate tax rate, an increase in the provincial sales tax rate from 7 to 9 percent, broadened the sales tax base, and increased tax rates on gasoline and tobacco.

[12]The well-known cuts to the personal income tax rate in Ontario did not begin until the 1996 tax year when the personal income tax rate was cut from 58 to 56 percent of the federal rate. The larger cuts that reduced it to 38.5 percent of the federal rate by 1 July 1999 do not show up in our data. Prior to these cuts, Ontario's personal income tax rate had been increased from 53 to 58 percent of the federal rate and a substantial surtax was introduced in 1993.

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