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Do Departures From Democratic Accountability Compromise the Stability of Public Finances? Keynesianism, central banking, and minority governments in the Canadian system of party government, 1867 - 2009

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Introduction

This paper is concerned with the effectiveness of parliamentary political institutions in ensuring the stability of Canadian public finances.¹ Our starting point and main hypothesis is that the governance structure embodied in Canada's parliamentary system has contributed importantly to the maintenance of stability in the public debt to GDP ratio since the founding of the modern state in 1867.

Fiscal stability both arises and is maintained, we argue, because the pure Westminster style of parliamentary democracy in Canada vests control over policy-making uniquely in the Prime Minister and his or her cabinet. To be in effective control, only a simple parliamentary majority is needed and, because of this, responsibility for fiscal choices can be attributed by voters directly to the appropriate decision-maker. Hence the ambiguity that can arise in institutions that divide fiscal powers and responsibilities, and thus frustrate decisive decision-making in response to national problems, is avoided. In addition, the abuse of such effective control has been minimized by effective political competition. The need to maintain a constant parliamentary majority on fiscal (and other significant) issues exposes the prime minister to the daily competition of other political parties in the House, and the necessity of holding periodic elections in single-seat constituencies under a first-past-the-post plurality rule gives the electorate a heightened ability (relative to other electoral systems used in OECD countries) to directly reward or punish the ruling political party for the consequences of their behaviour. Moreover, the election-spanning longevity of the political party allows for the creation and enforcement of reputation, which in turn permits political promises to become credible and meaningful. And while the political party becomes the mechanism by which the inter-temporal externalities resulting from the overly-short time horizon of incumbent politicians can be overcome, the prime minister's need to rely on party discipline and the on-going competition of

other political parties defeats, or at least blunts the tendency for the incumbent Prime-Minister to engage in intergenerational redistribution by running up public debt.

The fact that the Government of Canada, like the central government of many other modern democracies, has survived for over a century without default on its public debt means that in some meaningful sense, long run stability with respect to the nation's finances has in fact been achieved. In statistical terms, this implies that we should observe the long run cointegrating relationship required for fiscal responsibility in the and long run debt to GDP ratio to hold in Canada. (Below we show that this is in fact the case.) Hence a more meaningful test of our main hypothesis - that the alignment of decision-making and responsibility within the Canadian parliamentary system has been appropriate for the achievement of fiscal stability - requires the designation of specific sub-periods when the ideological background for political policy making changed and/or when the institutions and organizations for operationalizing policy varied in ways that either improved or discouraged responsible fiscal performance.

Hence we look for evidence of loss (or gain) of fiscal stability in periods when it has been argued that potentially destabilizing ideational factors (such as Keynesianism) were adopted, when innovations in economic institutions, such as the adoption of central banking and the more contemporary adoption of inflation targeting either confounded or enhanced responsible policy choices, and when periods of minority government potentially interfered with normal governance structures. By arguing that each of these episodes either detracted from or contributed to the accountability of the governing party or its ability to make the appropriate fiscal choices, we can derive and test for predicted deviational responses that bear importantly on the main hypothesis, using the history of public policy in general and of fiscal policy in particular since the founding of the modern state in 1867.

Canada is particularly useful as a source of data with which to study fiscal responsibility, for two reasons. First, the fundamental political institutions embodied in its Westminster style parliamentary democracy have remained largely unchanged for the roughly 140 years since Confederation in 1867. In addition, in Canada we find good time series long enough to make equilibrium analysis meaningful while also providing enough natural variation in ideational and institutional factors to allow a test of a number of hypotheses that suggest reasons for divergence from the long run.

The natural breaks we consider include: the founding of the Bank of Canada in 1935; modifications to the responsibility of the governor of that bank to political authorities in 1961 following the dismissal of the governor James Coyne; the adoption of Keynesian policy ideas in Canada in the post-war period; and the advent of inflation targeting in 1991. Finally, we consider the effect on financial stability of minority governments - there have been 11 minorities among the 40 parliaments since the founding of the modern state in Canada in 1867.

The organization of the paper is as follows. In Section 2 we consider a number of potential factors, categorized according to the broad rubrics of *ideas* and *institutions*, that we expect to have affected budget stability. Our discussion here is summarized by a set of opposing hypotheses. In Section 3 we provide graphically some basic statistical information about the nature of federal fiscal policy in Canada since 1870. Section 4 then presents our main empirical findings. The analysis builds on earlier work by Winer and Ferris (2008) who show that Keynesian ideas did, in fact, influence fiscal policy in Canada, and Ferris, Park and Winer (2008) who utilize cointegration analysis to study the size of government in Canada.

We find that, contrary to some public choice hypotheses and despite short run episodes of potential divergence, public expenditure and tax revenue of the Government of Canada have

been in balance over the long run. Concerning the role of ideational and institutional factors or shocks, our major finding is that the adoption of Keynesianism by Canada following the second world war, which may have led to the enlargement of government relative to GDP, did not impede the ability of the state to maintain fiscal responsibility and stable public finances.

In addition, we find no clear evidence that the introduction of a central bank (or later changes in the nature of its accountability to political authorities) had any long run negative impact on fiscal responsibility. The introduction of inflation targeting following 1991, however, does appear to have led to a lower debt to GDP ratio. Finally, we find that greater electoral competition during periods of minority government seem to have imposed greater restraints on spending and resulted in greater fiscal responsibility. This mirrors the earlier findings of Ferris, Park and Winer (2008) for Canada and Winer et al (2008) for the U.S., that larger majorities and unified party control (independent of party affiliation) loosens fiscal restraints and increases government spending.

Ideational and Institutional Factors that Alter the Ability of National Governments to Maintain Long Term Fiscal Stability

Although budget deficits and the resulting change in the debt to GDP ratio is a product of the divorce between public expenditure and taxation in the short run, our focus in this paper is on the shocks or factors that may play a role in the evolution of the level of debt relative to Canada's growing GDP over the longer run. We have labelled such shocks as either *ideational* or *institutional*.

Ideational factors: Keynesianism

The key ideational factor we consider is Keynesianism. In the standard Public Choice view, based largely on evidence from the United States, we believe that Keynes has had a pernicious effect on how governments behave with respect to the economy (see, notably, Buchanan and Wagner, 1977). Here the central argument is less that Keynes was wrong in his macroeconomic theories, or that he was misunderstood by practitioners (though both those points have been made), but rather that Keynes provided the intellectual "cover" that gave legitimacy to the self-serving behaviour of politicians. The Keynesian view that governments have a broader economic mission than merely providing a rule of law to permit free men to organize free markets, along with the more specific Keynesian injunction requiring governments to adopt counter-cyclical intervention to "jump start" the economy, is said to have allowed politicians to "grow government", thus justifying higher spending and the taxes to feed that spending. The combination then provided a justification for deficits as an engine of economic growth that quickly became abused. In Buchanan and Wagner's words (1977: 99), the acceptance of Keynesian ideas introduced a bias toward "larger government" and an "inflationary bias":

The allocative bias stems from the proposition that, if individuals are allowed to finance publicly provided goods and services through borrowing rather than through taxation, they will tend to 'purchase' more publicly provided goods and services than standard efficiency criteria would dictate. The inflationary bias stems from the proposition that,

for any given level of public goods and services, for any size of the budget, individuals will tend to borrow rather than to undergo current taxation. ... The first bias entails the hypothesis that, because of government borrowing, government spending will be excess; the second bias entails the hypothesis that, regardless of spending levels, government borrowing will be excessive.

It is important to emphasize that, even for Buchanan and Wagner (1977), Keynes's notion of counter-cyclical behaviour by governments would not, in and of itself, lead to higher debt in the long term. This is because government would undertake the opposing counter-cyclical actions in good times. Good times would bring about spending reductions and/or tax increases (leading to budget surpluses) in the same way that bad times would be met with higher spending/lower taxes and budget deficits. Thus if a government truly followed Keynesian counter-cyclical prescriptions, the long run would result in a pattern of surpluses and deficits that on average balanced.²

However unlike the "hyper-rational" Chicago School of economics, Public Choice theorists have always been sensitive to the foibles and cognitive limitations that affect the ability of voters to consistently discern and act in their own self-interest. In addition they emphasize the consequences of decisions made by self-interested politicians rather than simply exploring the consequences of a benevolent state maximizing an idealized social welfare function. To explain why Keynesianism has in their view proved so pernicious a factor in democratic politics, Buchanan and Wagner (1977: 93-94) emphasize a fundamental asymmetry in the motivations of self-interested politicians to follow the two sides of Lord Keynes's advice:

Elected politicians enjoy spending public monies on projects that yield some demonstrable benefits to their constituents. They do not enjoy imposing taxes on these same constituents. The pre-Keynesian norm of budget balance served to constrain spending proclivities so as to keep governmental outlays roughly within the revenue limits generated by taxes. The Keynesian destruction of this norm, without an adequate replacement, removed the constraint. Predictably, politicians responded by increasing spending more than tax revenues, by creating budget deficits as a normal course of events. They did not live up to the apparent Keynesian precepts; they did not match the deficits of recession with the surpluses of boom.

Similarly to explain how politicians can run up unsustainable budget deficits without being punished at the polls by unhappy voters, Buchanan and Wagner (1977: 99-100) appeal to a fundamental asymmetry in how voters see budget deficits versus surpluses. To reduce a deficit requires either a tax increase or a cut in public spending. In either case, there will be losers: "If taxes are increased, some persons in the community will have their disposable incomes reduced. If public spending is reduced, some current beneficiaries of public services will be harmed." In contrast, the benefits of maintaining budget surpluses are much less direct and much more problematic. Thus Buchanan and Wagner (1977: 100) argue that even if the public is familiar with the Keynesian argument about the role of budget surpluses in reducing inflationary pressures, "[the] direct and indirect consequences impact quite differently ... on the choice calculus of typical citizens. The benefit side of the surplus policy is never experienced, but rather must be *creatively imagined*, taking the form of hypothetical or imagined gains from avoiding what otherwise be an inflationary history." Buchanan and Wagner (1977: 101) add other

arguments as to why budget surpluses are less likely in a political democracy than in “a social order controlled by ‘wise men’.” They point to interest groups that anticipate “making economic gains from inflation” and to while others that may be particularly “vulnerable to downward shifts in aggregate demand”. Both would be anxious to keep government spending high.

To these arguments we add the point that with a budget surplus, politicians tend to believe that they can achieve greater success by “handing back” the money that government has “confiscated” from the people (rather than simply paying off outstanding debt). In support they tend to argue that “no one is a better judge of how to spend your money than you are.”

A politician's supposed increased ability to borrow using the Keynesian justification of supporting growth in the economy, in combination with Keynes's views about a “wider” role for government, and the arguments about why voters are more sympathetic to tax cuts than spending cuts, all support the claim that the Keynes's influence should yield higher government spending financed by greater government borrowing. Or, to put it another way, since “budget deficits make it possible to spend without taxing“ (Buchanan and Wagner, 1977: 102), the removal of the constraint imposed by the balanced budget generates an asymmetry in competitive democracies in a post-Keynesian world. “Deficits will be created, but to a greater extent than justified by Keynesian principles; surpluses will sometimes result, but they will result less frequently than required by the strict Keynesians prescriptions”(Buchanan and Wagner, 1977:103). Thus, even while there were asymmetries in budgetary incentives based on voter and politician self-interest before Keynes, these asymmetries are expected to be exacerbated by the influence of Keynesian ideas.

The preceding observations lead us to formulate a simple hypothesis, one that we shall test against an alternative, opposing hypothesis to be stated shortly.

Hypothesis 1: The adoption and implementation of Keynesian ideas will lead to spending outstripping taxation, giving rise in the longer run to unsustainable budget deficits.

There can be little doubt that Keynesianism was adopted in Canada. One of Keynes' early students, Robert Bryce, was instrumental in introducing *The General Theory* and Keynesianism to the Department of Finance as early as the mid-1930s. He subsequently served for three decades as a high ranking official in the Department, ending his career as Deputy Minister of Finance. More publicly, the federal government's *White Paper on Employment and Income* in 1945 signalled the formal acceptance of Keynesian ideas in senior Canadian policy circles (Government of Canada, 1945). Finally, we note that Winer and Ferris (2008) tested whether the espousal of Keynesianism in the *White Paper* translated into policy action and found evidence of greater counter-fiscal activity in the data following World War Two. Hence in the tests below we date the advent of Keynesianism from 1946 (using a dummy variable which is 0 prior to 1945, 1 thereafter) when testing for evidence of whether greater Keynesian counter-cyclicality in the size of Canadian budget deficits and surpluses led to a higher long-run debt to GDP ratio.

The essence of Hypothesis 1 is that there is no effective institutional mechanism that imposes the costs of diverging from optimal long run behaviour back onto the appropriate decision maker. This is perhaps easiest to see in the case of the U.S. where political responsibility for the budget is shared among the executive and the two branches of the legislature with overlapping tenures while the day-to-day responsibility for implementing policy is shared between the Federal Reserve System and the Treasury. Together they imply that the voter and the party system become less effective in ensuring fiscal discipline. The alternative to

this hypothesis is that institutional incentives do exist so that the future cost of short-run behaviour is brought to bear on the appropriate decision maker effectively.

In Canada, as we argued earlier, parliamentary democracy and the party structure are the institutions that can internalize the relevant decision externalities. More specifically, effective control over decision making is consolidated in the Prime Minister and Cabinet so that responsibility for the consequences of policy is unambiguous. Similarly political power is concentrated in the party where the election-spanning lifespan allows for the creation of reputation and credibility. Hence the Canadian parliamentary system has imbedded in it institutional arrangements that may help to maintain political accountability for fiscal performance, and thus avoid the pitfalls of Keynesianism.

Thus we can state an alternative hypothesis, which we label 1a, that:

Hypothesis 1a: The governance structure embodied in Canadian Westminster parliamentary system has contributed importantly to the maintenance of fiscal stability over the history of the modern state by internalizing the decision externalities associated with Keynesian macro policy-making.

We shall elaborate further on the internalization of decision externalities when discuss the role of minority government in a latter section.

Institutional factors: central banking and minority government

The literature on the economic effects of institutions is immense and spreads over at least three disciplines - economics, law, and political science - with a nascent literature in sociology as well. Here we will limit ourselves to a brief discussion of two topics in this vast literature that allow us to develop specific hypotheses about other factors than we have introduced so far that influence the stability of the public debt. The first of these concerns the importance of having a central bank as an alternative to the government in providing a homeostatic control for the economy, checking both inflationary and deflationary tendencies.

Here greater independence of the central bank provides a two edged sword—allowing circumvention of asymmetric short run cyclical political influence, while at the same time dividing responsibility for the cycle and thus freeing a majority government in parliament from full responsibility for eradicating the business cycle. The second is the debate about whether a more concentrated, centralized political authority, like single ownership of a “common pool” resource, improves economic efficiency or results in greater rent dissipation and a weakening of fiscal discipline.

Central banking

As a general rule, economists are supportive of independent central banks that are as free as possible from political influence (Cukierman, Webb and Neyapti, 1992; Cukierman and Webb, 1995). Isolating central bank managers from political pressure through the granting of long terms in office and delineating independent authority should allow managers of central banks to take a longer term perspective than would elected officials and thus make more responsible decisions

involving credible commitment. Like the “wise men” earlier referenced by Buchanan and Wagner (1977), central bankers would be less prone to choosing the popular over the good, and hence would help to engineer greater long run price stability.

In this respect, we may note that In the rankings of central bank independence given by Cukierman, Webb and Neyapti (1992: Table 2, 362), Canada is coded as having one of the strongest degrees of independence among the 21 industrial democracies compared, with a score of 0.45, the sixth highest value, where the estimated values range from 0.17 (Belgium) to 0.69 (Germany).³

On the other hand, greater independence also means that the coordination of monetary and fiscal policy action between independent bankers and political fiscal decision-makers may become more complicated and difficult. Because interest rate and money supply changes influence real output in the short run, central bank actions necessarily impact on the plans of fiscal authorities at the policy level. Moreover, because the money supply is increased primarily through central bank purchases of (federal) government debt, monetary and fiscal policy become intertwined operationally within the government budget constraint. It follows that when both monetary and fiscal authorities view themselves as having responsibility for the cycle, accountability for the resulting budget deficit and accompanying changes in public debt may become blurred.⁴ Indeed, Scott Gordon, who organized the letter signed by most Canadian academic economists that was instrumental in the (more or less forced) resignation of then central bank governor James Coyne in 1961, essentially for not being Keynesian enough, regarded central bank independence as one of the greatest breeches of accountable government. As Gordon (1961a, 4) put it:

The Bank has become a freewheeling autocracy, a power unto itself, subject neither to government nor to Parliament. It is an institution of immense power without responsibility. The Bank need answer to no one for its actions and there is no one prepared to answer publicly for it. In the whole fabric of democratic government one will not find a breach that is wider or more dangerous than that presented by the existing constitutional status of the Bank of Canada.

So with greater ambiguity and diminished accountability, recognized responsibility may become lost. In this way, the creation of an independent central bank could be expected to have a weakening effect on fiscal discipline and, thus, to result in larger deficits and higher levels of government debt.

To understand the full implications of the independence created by a central bank, we must, in our view, understand all of the reasons why political authorities might willingly surrender power to “technocrats”. There are at least four reasons why politicians might cede power over the economy to such non-elected officials. First is the kind of logic alluded to by Cukierman, Webb and Neyapti (1992, 353-4), namely a desire to send a credible signal of fiscal responsibility, by delegating responsibility to those who are better able to carry out the mission than politicians themselves. An increase in central bank independence better allows for the creation of reputation as one of the means by which a government can strengthen its commitment to price stability. In addition, a narrowing of central bank focus on price stability requires less policy coordination with respect to longer run fiscal objectives. The result is a greater concentration of responsibility on the government for resulting surpluses and deficits. This, in turn, should lead to greater fiscal responsibility and hence better control over levels of

outstanding debt. This reasoning suggests that politicians are well aware of the tactic used by Ulysses when faced with the lure of the sirens, namely stopping his ears and being bound to the mast (Elster, 1979). According to this line of argument, politicians cede authority for quite laudable reasons, to better serve the public interest.

But rather different motivations may also apply. A second motivation is that politicians cede authority to a central bank from fear. Since the decision to tighten credit or allow inflation has a redistributive consequence for borrowers and lenders, politicians may “outsource” decisions such as these to agencies believed not to be accountable to them, to “pass the buck” in terms of perceived responsibility for politically unpopular choices. Third, given the secrecy of central bank actions and the absence of a need to provide public reasons for their actions, politicians may well believe that they can influence central bank decisions in ways that escape public scrutiny, with central bank authorities sensitive to the desires of their politicians who appointed them (Abrams and Iossifov, 2006; Abrams, 2006; and Ferris, 2008).⁵

A fourth related argument why politicians might cede responsibility for control of inflation and deflation through monetary policy, offers a more Machiavellian story (see Acheson and Chant, 1973). By shifting part of the responsibility for economic matters to a central bank, politicians may see themselves as free to spend, in anticipation not just that they will be spared from public blame, but that the central bankers will work to save them from their fiscal follies. In this case our previous discussion of the consequence of divided responsibility is restructured in terms of *moral hazard* sought through delegation. This line of reasoning suggest that however desirable is the passing of monetary control from political authorities to central bankers, the consequences for fiscal responsibility will be perverse, as the quote from Gordon (1961a) asserts.

This discussion of the pros and cons of central bank independence leads to the following two opposing hypotheses:

Hypothesis 2: The creation of an independent central bank attenuates accountability and thus weakens fiscal discipline and control over the long run level of government debt.

and

Hypothesis 2a: Fiscal responsibility and debt level stability will be enhanced by a concentration of central bank focus on price stability and strengthened by greater political independence.

Returning to the case of the Bank of Canada, we should also note while the original architects in 1935 designed the Bank as a private corporation with widely distributed shares and government participation restricted to the appearance of the Deputy Minister of Finance as a non-voting member of the Board of Governors, subsequent legislation quickly reversed this separation by making the government the exclusive owner of the Bank’s shares (Thiessen, 2000: 3).

The subsequent role that would be played by the government through the Minister of Finance in the setting of policy and daily operations of the Bank of Canada remained both controversial and ambiguous until the Coyne Affair of 1961. In that episode, the inability to reconcile inconsistent monetary and fiscal policies led the then Prime Minister, John Diefenbaker, to attempt to remove the Governor of the Bank of Canada, James Coyne. The refusal of the Senate to pass the legislation declaring the office of the Governor vacant precipitated a serious political crisis that resulted ultimately in the voluntary resignation of the

Governor, and then the adoption of legislation at the request of the new governor Louis Rasminsky enshrining the leadership of the Minister of Finance in matters of economy policy.⁶ Nevertheless despite the undisputed ability of the Prime Minister through his Minister of Finance to dictate Bank policy by “writing a letter of direction” as it was subsequently called, to the Governor, Canada’s Central Bank and its Governor appear to enjoy a considerable degree of independence from partisan politics and the specific policy platform of the governing party.

This attempt at a resolution of who had ultimate authority to set economic policy in Canada, however, did little to resolve the operational issues of overlapping responsibilities and multiple, often conflicting, policy objectives. The situation changed in 1991, however, when the Bank of Canada adopted inflation targeting *jointly with the Government of Canada*. This involved a formal commitment by the Bank *and* the government, using the same language, to maintain price stability, as opposed to the competing objective of maintaining full employment which is also, and still, included in the Act governing the Bank of Canada. From 1991 on, price stability was now officially defined in terms of a targeted range for inflation.

The creation of the Bank of Canada in 1935, the 'letter of direction' policy introduced in 1961 and the onset of joint inflation targeting in 1991 point to policy shocks that can be used to provide some interesting empirical evidence concerning hypotheses 2 and 2a.

Parliamentary process and cohesive single party government

We turn now to consider the role of parliamentary institutions. Breton (1996, chapter 4) emphasizes that the Canadian Minister of Finance is given broad powers in the economic sphere and that Canada has a strong tradition of cabinet solidarity, i.e., the cabinet is collectively responsible to the Government (and thus to the Prime Minister) which prevents end-runs by spending departments around a Minister of Finance who says NO. Also, because budgetary affairs are handled internally by the cabinet and within the Ministry of Finance, there is a good deal of secrecy about budgetary decision-making and timing of announcements, thus adding to the relative bargaining power of the Minister of Finance, provided he or she is backed up by the Prime Minister.

Since it is usually single party governments controlling a majority of the seats in the Canadian parliament, “responsible government” in Canada is effectively “party government”. The prime minister is the leader of the government, and as long as the prime minister commands the loyalty of his own party, this insures that the government largely speaks with a single voice on economic affairs. Indeed, dissenting ministers are expected to resign. Perhaps even more importantly, in Canada rather than taxation and spending being dealt with separately (as in the U.S.), they are considered as a package in every budget. In addition, the Prime Minister exercises a line-item veto if he wishes. Centralized control means that political leaders can effectively link aggregate spending and taxation, and single party government means that politicians can be more easily held to account by the electorate for fiscal performance.

The budgetary process in the Canadian style Westminster parliament thus provides a basis for the view that Canada will not be susceptible to the Keynesian ills that underlie Hypothesis 1 above. It also is reasonable to suggest the following hypothesis:

Hypothesis 3: *Single party majority party governments are more effective in dealing with budgeting issues than are minority governments.*

Minority governments will be more concerned with pleasing the various special interests required to keep the governing party in control of the House of Commons than is a government with a strong majority. This means that its ability to make use of the power of the Prime Minister, cabinet solidarity and budget secrecy may be compromised in periods of minority government. Here a larger majority is viewed as simply reinforcing the argument above. On the other hand, a larger majority means that the governing party faces less effective opposition, allowing it to ignore opposition and implement unimpeded more of its party platform. With less parliamentary opposition and a greater margin to waste, parties have fewer reasons to reject the expansionist plans of its supporters, both in relation to spending more and taxing its supporters less. Finally, by being able to running up deficits to finance public spending, the party in power might also be able to “buy” vote support, thus holding on to office longer, and leaving to the opposition party that eventually takes it place the unpalatable task of coping with a fiscal crisis whose solution has too long been postponed (probably also shortening the term in office of that opposition). Winer et al. (2008) show that in the U.S., government, spending as a share of GDP is greatest when there is single party control over the institutions of government (the two chambers of the legislature and the presidency). Similarly, Ferris, Park and Winer (2008) show that larger parliamentary majorities in Canada led to increases in government spending and resulted in a larger sized government. Thus we are led to a countervailing hypothesis:

Hypothesis 3a : Minority governments represent instances when political competition is heightened. The centralization of policy control and responsibility in such circumstances results in a greater than normal degree of fiscal discipline and thus greater stability in public debt.

We then have three sets of opposing hypotheses concerning ideational and institutional factors. These hypotheses do not constitute a direct test of our main idea concerning the fiscal stability that we think emerges in a Westminster parliamentary system with first past the post single member constituencies. However, in our view, testing these hypotheses about how ideational and institutional shocks add to, or detract from fiscal stability in Canada since the modern state was established in 1867 will provide useful information about the role of the Westminster system.

A Graphical History of the Canadian Fiscal System

Before getting started with the econometric analysis that encompasses the hypotheses we have outlined, Figures 1 and 2 and present a graphical view of the history of the Canadian fiscal system from 1870. In the first figure we show the variables that will form the core of our estimating equations: the excess of real growth over the real rate of interest and, as a percent of GDP, at the top, and federal tax revenues, federal program spending net of interest payments and the federal net of interest deficit in the lower part of the figure. Figure 2 shows federal debt interest paid to the private sector as a percent of GDP.

Figure 1: Federal Fiscal Size (percent of GDP) and Excess of Real Growth Over Real Interest Rate, Canada 1870 - 2009

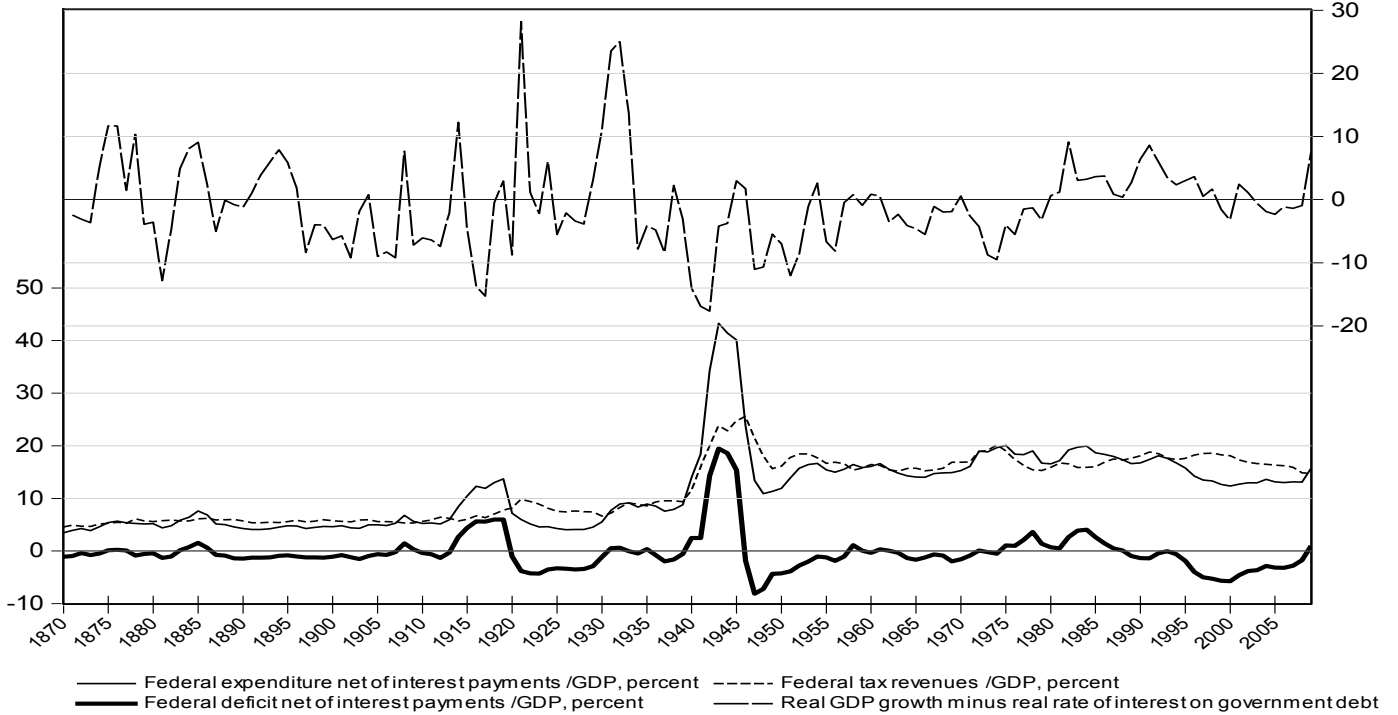


Figure 2: Federal Debt Interest As Percent of GDP, 1870 - 2008

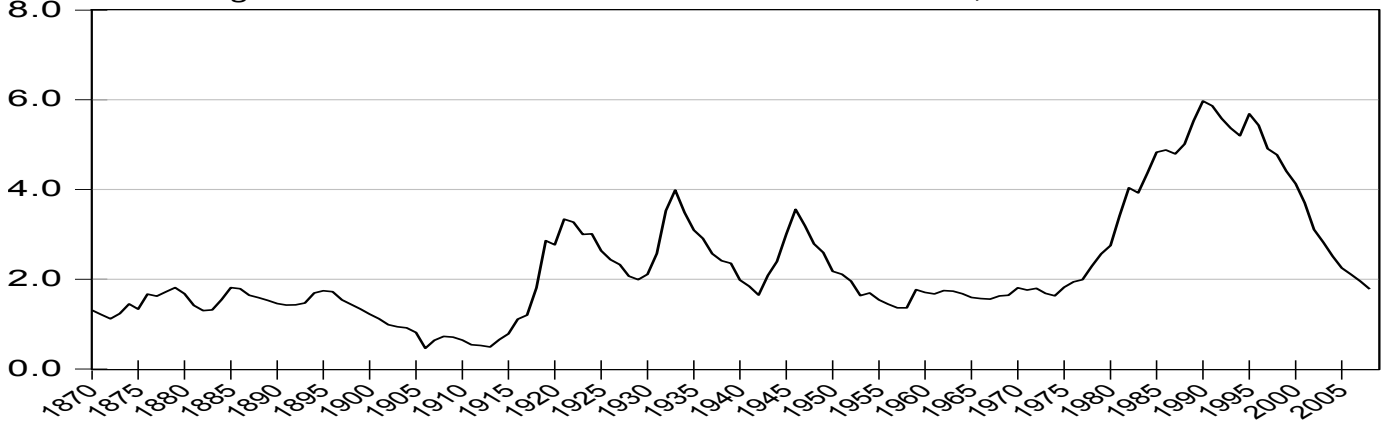


Table Accompanying Figures 1 and 2: Government of Canada, 1870 - 2009

Variable	Coefficient of Variation (and Mean)		
	1870-1913	1920-1938	1950-2009
Non-interest Spending/GDP	0.16 (0.06)	0.31 (0.08)	0.14 (0.16)
Tax Revenue/GDP	0.07	0.11	0.07
Deficit Net of Interest/GDP	-1.20	0.87	-2.31

We will investigate the time series properties of these data carefully in the following sections of the paper. Here we want to draw attention to one fact, confirmed by the coefficients of variation in the table following the figures: that except for the excess of the real rate of GDP growth over the real interest rate (in the top half of Figure 1), Canadian the history of net deficits is obviously much more volatile after 1945 than it was in the 19th century. Whether this has something to do with Keynesianism, and whether or not this implies that the fiscal system is unstable, remains to be seen.

Empirics

In this section we test the hypothesis that Canadian parliamentary democracy has resulted in policy choices that are consistent with fiscal responsibility in the sense that spending and tax decisions led to a stationary share of government debt in GDP over the long run. Our primary focus is on the loss of fiscal responsibility and stability in the parliamentary system that, it is alleged, is associated with or caused by the adoption of Keynesian thinking in policy circles. Our test is based on the idea that If Keynesianism eroded fiscal responsibility, this should show up as a break in the long run cointegration relationship sufficient to insure stability in the long run debt to GDP ratio. An investigation of the other, institutional, elements we have discussed follows our consideration of the role of Keynesianism.

Method

To develop a test for the long run stability of the public finances, we begin with the observation that the level of debt in an economy is sustainable if the share of debt in aggregate income/output, d_t , does not grow through time (i.e., if $\frac{1}{d_t} \cdot \frac{\partial d_t}{\partial t} \leq 0$).⁷ Then since $d_t = \frac{D_t}{p_t y_t}$, where D_t is the nominal level of government debt, p_t is the price level, and y_t is the level of real income/output, its time derivative becomes $\frac{dd_t}{dt} = \frac{1}{p_t y_t} \frac{dD_t}{dt} - \frac{D_t}{p_t^2 y_t} \frac{dp_t}{dt} - \frac{D_t}{p_t y_t^2} \frac{dy_t}{dt}$. This in turn can be rearranged to be:

$$\frac{dd_t}{dt} \frac{1}{d_t} = \left(\frac{dD_t}{dt} \frac{1}{D_t} \right) - \left(\frac{dp_t}{dt} \frac{1}{p_t} \right) - \left(\frac{dy_t}{dt} \frac{1}{y_t} \right) \quad (1)$$

The change in nominal government debt through time, $\frac{dD_t}{dt}$, arises from the difference between total government spending and current tax revenue T_t , where total spending depends upon both program spending G_t and interest on outstanding government debt $i_t D_t$. Using this definition of $\frac{dD_t}{dt}$,

$$\frac{dd_t}{dt} \frac{1}{d_t} = \left(\frac{G_t - T_t + i_t D_t}{D_t} \right) - \left(\frac{dp_t}{dt} \frac{1}{p_t} \right) - \left(\frac{dy_t}{dt} \frac{1}{y_t} \right) \quad (2)$$

$$\frac{dd_t}{dt} \frac{1}{d_t} = \left(\frac{G_t - T_t}{D_t} \right) + i_t - \pi_t - \left(\frac{dy_t}{dt} \frac{1}{y_t} \right) = \left(\frac{G_t - T_t}{D_t} \right) + r_t - \left(\frac{dy_t}{dt} \frac{1}{y_t} \right) \quad (3)$$

where the first term on the right hand side, $\left(\frac{G_t - T_t}{D_t}\right)$, is the operating or primary deficit as a fraction of total debt and r_t and π_t represent, respectively, the real rate of interest and the inflation rate.

For the share of government debt in GDP to be positive and not increasing in the long run, the growth rate of d_t must be zero, i.e., $\frac{1}{d_t} \cdot \frac{dd_t}{dt} = 0$. This in turn implies that in the long run, $d_t = \bar{d}$,

$$\left(\frac{G_t - T_t}{D_t}\right) = \left(\frac{\partial y_t}{\partial t} \frac{1}{y_t}\right) - r_t. \quad (4)$$

Dividing the top and bottom of the left hand side by nominal income, $p_t y_t$, we find with rearrangement:

$$\left(G_t / p_t y_t\right) = \left(T_t / p_t y_t\right) + \bar{d} \left(\frac{dy_t}{dt} \frac{1}{y_t} - r_t\right). \quad (5)$$

This relationship asserts that for the share of government debt in GDP to be sustainable, in the long run there must exist a particular long run relationship among three variables, $G_{SIZE} = G_t / p_t y_t$, $T_{SIZE} = T_t / p_t y_t$, and the fiscal cost of long run debt, $FCOST = \left(\frac{dy_t}{dt} \frac{1}{y_t} - r_t\right)$. Intuitively, a positive primary deficit ($G_{SIZE} - T_{SIZE}$) can be sustained in the long run without increasing the debt to GDP ratio only if the rate of growth of real output appropriately exceeds the real cost of holding the outstanding stock of debt.

In statistical terms, equation (5) must give rise to a cointegrating relation among these three variables. As shown in the Appendix, the expenditure size of government, G_{SIZE} , and the tax size, T_{SIZE} , have both risen through time and are integrated of order 1, or I(1). On the other hand, $FCOST$ is stationary or I(0). Hence $FCOST$ can be combined with the operating deficit as in (5) only if the residual from a linear regression between the two variables in the operating deficit are stationary.⁸

Because Keynesianism is first and foremost a set of shorter run counter-cyclical policies, testing for a long run relationship between government spending and taxes is complicated by the fact that the data observed will also incorporate policy measures designed to deal with short run variation in economic growth about its long run path. This could differ in degree and/or kind from the type of variation implied by long run policy. Hence testing for the existence of a cointegration relationship to assess the long run hypothesis that Canada's parliamentary democracy has been consistent with fiscally responsibility should also account for the simultaneous appearance of short run counter-cyclical policy in the data. To do this, we first estimate the long run cointegrating relationship - the statistical counterpart to equation (5) - as part of an error correction model of adjustment to the long run. In this case, as we discuss further below, the condition that residuals from the linear regression that corresponds to (5) must be stationary is replaced by the condition that the error correction term must have a particular sign for stationarity. In our case convergence requires a reduction in spending when deficits rise and a rise in taxation.

Empirical Tests

Does fiscal policy in Canada exhibit stability over the long run?

The argument above indicates that the sustainability of government debt in the long run can be tested for by the form and coefficients of the following OLS regression:

$$\left(\frac{G_t}{p_t y_t}\right) = c_0 + c_1 \left(\frac{T_t}{p_t y_t}\right) + c_2 \left(\frac{dy_t}{dt} \frac{1}{y_t} - r_t\right) + \varepsilon_t. \quad (6)$$

The sufficient condition for long run fiscal sustainability, that the debt to income ratio not grow over time, requires the regression residuals in (6), ε_t , to be stationary, with $c_0 = 0$, $c_1 = 1$ and $c_2 = \bar{d}$.

As we have pointed out, our analysis also suggests that this long run relationship should be imbedded within an error correction framework that allows for the incorporation of short run counter-cyclical fiscal policies. Since short run fiscal policy differs from considerations spanning the long run, we include the possibility of short run counter-cyclical policy in the error correction part of the model. Hence our test for fiscal responsibility implies an error correction model, where short run changes in government expenditure may respond both to the size of the 'error' arising from incomplete adjustment to the long run, and to variations in the growth rate of GDP.

In Table 1 below we present the cointegration equation and error correction equations for the three potentially endogenous variables, estimated using Johansen's method as implemented in Eviews 7. Because World War Two generates abnormally large shorter run variations in spending, we have excluded the 1940-1946 time period from the sample used. The war period will be included in subsequent estimation.

Table 1: Vector Error Correction and the Role of Keynesianism I, Canada: 1876 – 2009
(Standard errors in brackets)

Cointegrating Equation	Coint Eq1		
G SIZE	1.000000		
T SIZE	-0.988196*** (0.08752)		
F COST(-1)	0.964437*** (0.11276)		
C	0.012384		
Error Correction:	D(GSIZE)	D(TSIZE)	D(FCOST)
Coint Eq1 (error correction term)	-0.055493*** (0.01936)	0.021941** (0.01146)	-0.630447*** (0.07728)
D(GSIZE(-1))	0.464038*** (0.06177)	0.062583** (0.03655)	-0.142570 (0.24652)
D(GSIZE(-2))	-0.085385	0.061778**	0.663875

	(0.06683)	(0.03954)	(0.26671)
D(GSIZE(-3))	0.071234 (0.06251)	0.069948** (0.03698)	0.057774 (0.24945)
D(GSIZE(-4))	-0.133985** (0.05690)	-0.087636** (0.03367)	-0.047893 (0.22708)
D(TSIZE(-1))	0.067321 (0.15371)	0.350726*** (0.09095)	-0.013382 (0.61342)
D(TSIZE(-2))	-0.240225 (0.15690)	-0.294435*** (0.09284)	-0.887089 (0.62617)
D(TSIZE(-3))	0.351814** (0.14965)	0.040592 (0.08854)	1.193730** (0.59721)
D(TSIZE(-4))	-0.243858* (0.12911)	-0.151073** (0.07639)	-0.318013 (0.51526)
D(FCOST(-1))	0.008164 (0.01782)	-0.029383*** (0.01054)	-0.014948 (0.07110)
D(FCOST(-2))	0.014470 (0.01749)	-0.008898 (0.01035)	-0.046340 (0.06980)
D(FCOST(-3))	-0.000202 (0.01554)	-0.024050*** (0.00919)	-0.021689 (0.06200)
D(FCOST(-4))	0.027702** (0.01351)	-0.003915 (0.00799)	-0.012095 (0.05391)
C	0.003119*** (0.00104)	0.000764 (0.00062)	0.038628*** (0.00416)
GROWTH of GDP	-0.078768*** (0.01815)	-0.026486** (0.01074)	-1.088821*** (0.07245)
R-squared	0.626052	0.554854	0.779324
Adj. R-squared	0.579308	0.499211	0.751740
F-statistic	13.39334	9.971627	28.25226
Log likelihood	423.3648	490.0122	247.5975
Akaike AIC	-6.430941	-7.480507	-3.662952

(***) [**] [*] significantly different from zero at (1%), [5%], {10%}. Estimated using Johansen's method with Eviews 7.

The results in Table 1 indicate that for the period since Confederation, the cointegration equation (in the first section of the table) conforms well to requirements of debt stationarity.⁹ First, the c_1 coefficient estimate of tax size is 0.988, insignificantly different from its predicted value of 1, while the constant term c_0 is insignificantly different from zero.¹⁰ Hence the results do not allow us to reject the hypothesis that Canadian parliaments have been fiscally prudent in the sense that non-interest government spending and taxes have been approximately equal over the long run and the implied rate of growth of real government debt as a share of GDP has been approximately zero.

The set of error correction coefficients on the short run spending and taxation equations have their predicted signs for deficit convergence back towards zero (negative and positive).

Also, we see that in the short run, government expenditures rise significantly in the face of negative growth, and fall when growth is positive, while taxes appear to be pro-cyclical but to a lesser extent than public spending, so that there is evidence of shorter run fiscal stabilization occurring over the entire history of the modern state. The short run error correction process also exhibits considerable persistence. A significant portion of both government spending and tax increases persist into the second year and call forth reinforcing changes in the other policy instrument.

From the cointegrating equation we can also recover the implied values of the share of government debt in GDP. Because FCOST is negative on average over our time period (i.e., the long run real rate of interest has exceeded the rate of growth of real output) the data suggest that the stationary long run share of debt in GDP, c_2 , is about 95%. Subsequent models yield quite different and variable estimates.¹¹

Overall, the results provide evidence of cointegration and deficit convergence, and thus are consistent with the hypothesis of long run fiscal responsibility in the tax and spending choices made by Canada's parliament over the entire history of the modern state since Confederation in 1867.

Allowing for Keynesian counter-cyclical policy after World War Two

Winer and Ferris (2008) show that fiscal stabilization was conducted more vigorously after 1945 than in the 19th and early 20th centuries. It is reasonable to interpret this result as an indication that Keynesian thinking was in fact adopted by Canadian policy makers after 1945. Accordingly, before proceeding to test whether Keynes had an influence on the *long run* sustainability of government debt in Canada, as Buchanan and Wagner (1977) and many others assert, we first extend the error correction framework to convince ourselves that in fact short run Keynesianism stabilization was utilized in Canada.

Because Keynesianism first and foremost implies counter-cyclical fiscal policy, our first approach to testing for Keynes' influence on Canadian fiscal policy is to ask whether the short run adjustment process described by the error correction model estimated above changes in any substantive way 'after Keynes', that is, after World War Two. Formally we do this in the error correction setting by interacting a dummy variable for the 1946-2009 time period with real output growth. It follows that greater counter-cyclical intervention as proposed by Keynes would imply a negative coefficient in the interacted spending equation (greater spending when growth rates are falling) and a positive coefficient in that tax equation (reductions in taxation when growth is falling), and more so after 1945. In this case, we include the war years in our sample. The effect of incorporating Keynesianism in this way on the error correction model is shown in Table 2 below.

Table 2: Vector Error Correction and the Role of Keynesianism II, Canada: 1876 – 2009
(Standard errors in brackets)

Cointegrating Equation:	Coint Eq1		
GSIZE(-1)	1.000000		
TSIZE(-1)	-0.971532*** (0.18724)		
FCOST(-1)	1.575533*** (0.16809)		
C	0.010411		
Error Correction:	D(GSIZE)	D(TSIZE)	D(FCOST)
Coint Eq1 (error correction term)	-0.041137*** (0.01426)	0.007384 (0.00764)	-0.417098*** (0.04417)
D(GSIZE(-1))	0.481064*** (0.11106)	-0.117692** (0.05947)	-1.306209*** (0.34395)
D(GSIZE(-2))	-0.264849** (0.13501)	0.137718* (0.07229)	-0.163463 (0.41811)
D(GSIZE(-3))	0.228370* (0.13307)	-0.009745 (0.07125)	0.016204 (0.41210)
D(GSIZE(-4))	-0.220844*** (0.08462)	-0.036342 (0.04531)	-0.000297 (0.26207)
D(TSIZE(-1))	-0.107887 (0.19738)	0.410084*** (0.10570)	-0.549387 (0.61130)
D(TSIZE(-2))	-0.066170 (0.21155)	-0.253332** (0.11328)	0.040345 (0.65516)
D(TSIZE(-3))	0.292730 (0.18995)	-0.048480 (0.10172)	0.834157 (0.58827)
D(TSIZE(-4))	-0.197915 (0.15402)	-0.037356 (0.08248)	-0.263545 (0.47700)
D(FCOST(-1))	0.008187 (0.02215)	-0.010558 (0.01186)	0.042100 (0.06859)
D(FCOST(-2))	0.042657** (0.02055)	0.000402 (0.01101)	0.019100 (0.06365)
D(FCOST(-3))	0.004125 (0.01887)	-0.011678 (0.01010)	0.033470 (0.05844)
D(FCOST(-4))	0.030309* (0.01550)	-0.001417 (0.00830)	0.004274 (0.04799)
C	0.003927 (0.00128)	0.000785 (0.00068)	0.037568 (0.00395)
GROWTH of GDP	-0.050515** (0.02147)	-0.013518 (0.01150)	-1.092989*** (0.06650)
KEYNES *(GROWTH of GDP)	-0.082933**	-0.000732	0.077372

	(0.03884)	(0.02080)	(0.12029)
R-squared	0.301470	0.263154	0.836081
Adj. R-squared	0.205342	0.161753	0.813523
F-statistic	3.136127	2.595181	37.06409
Log likelihood	403.2684	481.3406	261.9653
Akaike AIC	-6.196295	-7.445450	-3.935445

(***) [**] [*] significantly different from zero at (1%) [5%] {10%}. Estimated using Johansen's method with Eviews 7

The coefficient estimates in the last lines of column 1 suggest that fiscal spending has not only been counter-cyclical in the short run for the entire period since Confederation but that fiscal spending has become increasingly counter-cyclical in the time period following 1945. This is consistent with Keynesian prescriptions and with evidence found for Canada in Winer and Ferris, 2008. On the other hand, the coefficient signs on taxation continue to imply that taxation has been mildly pro-cyclical and that the period following Keynes has produced no further effect.

From a broader perspective, the results in Table 2 suggest that the presence of Keynesianism in short run fiscal policy has had very little effect on the long run cointegration equation and hence on the sustainability of government debt in Canada. The coefficient on tax size, 0.972, is virtually unchanged and insignificantly different from one while the constant term remains zero. Similarly the error correction terms and their significance remain largely unaltered as does the pattern of persistence. The one suggestion that something may be arising in the longer run is that the estimated size of the steady state level of the debt to GDP ratio does rise.

We can then conclude our discussion of the effect of Keynesianism on short run policy by saying that that from the perspective of our error correction model (modified to include a counter-cyclical role for short run policy) there is evidence that Keynesianism did make fiscal expenditure policy more responsive to the business cycle, but little evidence that Keynesian counter-cyclical policy has impacted negatively on the sustainability of government debt over the long run.

Did Keynes introduce debt instability into the long run?

While the short and long run fiscal policies adopted by Canada may have resulted in a stable debt to GDP ratio over the time period as a whole, there may well be sub-periods when policy choices were influenced by factors and/or ideologies that resulted in periods of temporary instability. So in this section, we first examine whether the time period following Keynes represented a fundamental change in the long run relationship linking the expenditure and tax sizes of government. If it does, this is interpreted as producing a break in the longer run cointegration relationship at or about the time that Keynesian short run policies were adopted in Canada.

We begin by first presenting a more robust test for cointegration across our time period that assumes there were no breaks in the time series relationship. To do so we use the dynamic OLS (DOLS) model of Stock and Watson (1993) over the entire 1870-2009 time period. This method provides a correction for correlations that may exist among the equations covariates that can bias the standard errors. The result, presented as column (1) in the following Table 3, provides us with a benchmark against which we can assess whether Keynesianism has meant a break with previous policy practice.

In column (1) of Table 3 the DOLS equation can be seen to produce coefficient estimates that are quite similar to the cointegration equations presented earlier in Tables 1 and 2. In particular, the coefficient estimate on TSIZE is still virtually identical to 1 (at 0.975) and the constant term remains insignificantly different from zero (indicating no tendency for the federal government debt to GDP ratio to grow or shrink in the long run). The DOLS correction, however, does make a difference to the estimate of the size of the long run debt to GDP ratio, suggesting a much smaller 10 percent level that is also insignificantly different from zero.

**Table 3: DOLS equation estimates for Canada and the Role of Keynesianism in the Longer Run
1876 – 2005**

(HAC standard errors in brackets)

	(1) GSIZE	(2) GSIZE with break in 1946	(3) GSIZE with break in 1939	(4) GSIZE [#] 1946 break and interaction	(5) GSIZE Keynes 1946-1991	(6) GSIZE Keynes 1939-1975
Constant	-0.004 (0.008)	-0.0105 (0.01)	-0.003 (0.015)	-0.014 (0.011)	0.001 (0.006)	0.007 (0.006)
TSIZE	0.975*** (0.069)	1.079*** (0.137)	0.957*** (0.271)	1.140*** (0.176)	0.881*** (0.061)	1.015*** (0.056)
FCOST	-0.101 (0.091)	-0.090 (0.07)	-0.100 (0.093)	-0.170 (0.107)	-0.066 (0.071)	-0.165* (0.088)
KEYNES(1946)		-0.013 (0.016)		-0.019 (0.022)		
KEYNES(1939)			0.002 (0.34)			
KEYNES(1946)*FCOST				0.0175 (0.110)		
KEYNES(1946-1991)					0.017** (0.007)	
KEYNES(1939-1975)						-0.010 (0.008)
STATISTICS						
No. of obs.	130	130	130	130	130	130
Adj. R ²	.869	.868	.867	.870	.873	.869
SSR	0.07815	0.0777	0.0782	0.07567	0.0747	0.077
Log Likelihood	297.6	298.0	297.62	299.7	300.5	298.46

(***) [**] [*] significantly different from zero at (1%) [5%] {10%}.

This table uses Stock and Watson's (1993) DOLS estimation to account for potential endogeneity among the explanatory variables by including the contemporaneous and four lagged and led values of the first differences of the right side variables (with the exception of the dummy variables). Only the coefficients of the level terms are presented.

The SSRs from 1945 through 1950 are, respectively: 0.07814, 0.07769*, 0.07808, 0.07809, 0.07805 and 0.07812 suggesting that the break point is at 1946. HAC standard errors use Bartlett kernel with Newey-West fixed bandwidths.

In columns (2) and (3) we present further estimates of the long run relationship under two sets of assumptions for the period time relevant to test for Keynesianism. Instability in the government debt ratio then appears as a break in the constant term of the cointegration equation, with a positive constant on Keynes, for example, implying a positive growth rate that would be unsustainable in the long run. Column (2) represents the case where the break point is determined endogenously as the initial point in the time interval that minimized the sum of the squared residuals in successive DOLS equations.¹² This procedure suggests 1946 as the appropriate break point. On the other hand, the choice of a post-war initial time means that Canadian government debt accumulated during World War Two would be excluded from time period attributed to Keynes such that the natural running down of war-time borrowing might bias the measure against finding any expansionary tendency present in Keynesianism. For this reason

we present in column (3) the same equation as in column (2) except that 1939 is used as the potential break point so that build-up of war-time debt is contained within the Keynesian period.

Neither set of empirical results, however, suggest that a break in the long run relationship is in fact present. In column (2) the coefficient sign on Keynes is negative rather than positive (suggesting a tendency to reduce debt accumulated from deficits in pre-Keynesian times). In any case the coefficient estimate is insignificantly different from zero. In column (3) the coefficient sign does become positive but remains both small and insignificantly different from zero.

To be sure that despite the possibility of a break in 1946, the equation in (2) is a cointegrating or long run relationship, we employ the test proposed by Carrion-I-Silvestre and Sanó (2006) as a test of the null hypothesis of cointegration in the presence of a break at a known date. Their test statistic is

$$SC_{An}^+(\lambda = \frac{T_b}{T}) = T^{-2} \hat{\omega}^{-2} \sum_{t=1}^T (S_{An,t}^+)^2$$

where T_b is the time to the break, T is the length of the time interval, $\hat{\omega}^2$ is the long run variance of the residuals, $S_{An,t}^+ = \sum_{j=1}^t \hat{e}_{An,t}$, and An reflects the fact that the estimating equation allows for a shift in the constant term at T_b . To interpret the outcome, we note that the Carrion-I-Silvestre and Sanó test uses the upper tail of the distribution so that the null hypothesis of cointegration is rejected only when $S_{An,t}^+ >$ critical value. In our case $S_{An,t}^+ (.56) = 0.05867$ which is strictly less than the critical value of 0.0840 (for $k = 3, \lambda = .5$).

If the effect of Keynesianism in Canada was to reduce the growth rate of government debt, it would need to be reflected in a lower long run size of government debt as a fraction of GDP. Hence we re-estimate the equation to allow d to vary across the time periods by including an interactive term on FCOST. The resulting equation is presented in column (4). As that column indicates, allowing the estimate of the long run size of government debt as a fraction of GDP to shift does suggest a smaller debt ratio consistent with the estimated negative effect of Keynes on the growth rate, but again both coefficient estimates are insignificantly different from zero.¹³ It follows that if we define the post war time period as one of Keynesianism, using either 1946 or 1939 as the date defining its beginning, the data give no support to the hypothesis that the adoption of Keynesianism introduced fiscal policies that increased the long run size of government debt.

The hypothesis that Keynes' influence on deficits and long run debt has continued into the present has often been questioned for Canada. In particular, much has been made of the observation that the accumulation of public debt in Canada throughout the seventies and eighties precipitated a strong political reaction (the near elimination of the Progressive Conservative Party in 1993) leading to the election of the Chrétien governments (1993 – 2003) that dedicated their mandate to dramatically reducing government deficits and debt by reducing government spending.

The weakening or even ending of Keynesianism may also have been signalled by the formal adoption of inflation targeting by the Bank of Canada and the Government of Canada (jointly) in 1991. Alternatively it has been argued that that the instability of the Phillips curve in the early 1970's may have led policy makers to become more sceptical of the stimulative potential to debt financing. Hence in column (5) and (6) we present two different tests for the effect of Keynesianism now defined as the policy period between 1946 and 1991 (ending with inflation targeting) and between 1939 and 1975 (to include the war time build-up of government

debt to end with the Phillip's curve debate). Somewhat surprising, the data is consistent with the hypothesis that government debt did exhibit instability over the longer 1946 to 1991 time period but not over the shorter 1939-1974 time interval.¹⁴ This suggests that the period of debt instability is associated, if at all, more with the 1974-1991 time interval than with any time period beginning near World War Two, a period of time not well suited to fit into any sort of Keynesian tail.

It follows that for the case of Canada, Keynesianism either had no effect on the long run evolution of government debt (the results in columns (2), (3), (4) and (6)) or, if it had a destabilizing effect (as in column (5)), it did so only for a short period before being countered by the political process through the electoral and party system. We can find no evidence that the more aggressive use of Keynesian counter-cyclical short run fiscal intervention, as suggested by the error correction process, has weakened the fiscally conservative approach that Canadians have typically taken towards paying for government services. This is not inconsistent with the hypothesis that Keynes may have played a possibly influential role in broadening the scope and hence the size of government in Canada. However even if that has been true, as has been argued elsewhere, our evidence does not suggest that that larger scale of services by government has been funded by tax payments transferred implicitly to future generations.

On balance then, the evidence we have presented points to hypothesis 1a rather than its complement: that is, in favour of the view that the Canadian Westminster parliamentary system has contributed importantly to the maintenance of fiscal stability over the history of the modern state.

The roles of central banking and minority government

We now turn to a consideration of the consequences of a fracturing of responsibility for fiscal stability among more policy makers, that is, of establishing or strengthening the independence of the central bank and, second, to the hypothesis concerning fiscal stability when the government is constrained because of its minority status in the House of Commons.

In the first three columns of Table 4 below we examine evidence for hypothesis 2, that the creation of a Central Bank divided responsibility for fiscal stability between the Department of Finance and the Bank of Canada and by so doing lead to less fiscal stability. We also consider here the influence of the 'letter of direction' in 1961 and of inflation targeting after 1990.

In hypothesis 2 there less budgetary control following the introduction of the Bank of Canada so that the coefficient on the Bank of Canada dummy variable (1 following 1935, 0 before) should be positive. This is tested for in columns (1) through (3) where it is given weak support.

As we have outlined earlier, ambiguity over which policy department would ultimately control aggregate economic policy in Canada came to a head during the Coyne Affair in 1961, immediately after which a regulation was introduced (The Rasminsky doctrine) defining the role of the Bank of Canada in relation to the Department of Finance. That understanding ostensibly gave more autonomy to the Bank in terms of the day-to-day operation of monetary policy while giving to the Department of Finance the authority to "direct" the operations of the Bank should its policy practices conflict with what the Minister of Finance and Prime Minister desired.

It is unclear in fact whether the 1961 letter of direction did or did not increase Bank independence and thus make policy coordination more or less difficult. No such letter has ever

been written. The hypothesis that the resolution of the Coyne Affair in 1961 did improve fiscal responsibility is tested in columns (2) and (3). Here the data is more consistent with the hypothesis that the establishment of the Bank weakened rather than strengthened fiscal discipline, but the 1961 Directive dummy generates a coefficient estimate that is insignificantly different from zero.

In column (3) of Table 4 we consider hypothesis 2a, that the adoption of inflation targeting by the Bank of Canada in 1991 did represent a significant delineation of responsibilities between the Bank and the Department of Finance, and this lead to more stability. If true, there should be a negative coefficient on the inflation targeting dummy. The result in the last line of column (3) in Table 3 is consistent with that expectation.

Table 4: DOLS equation estimates for Canada, the Role of the Central Bank, and Inflation Targeting, 1876 – 2005

(HAC standard errors in brackets)

	(1)	(2)	(3)	(4)
	GSIZE	GSIZE	GSIZE	GSIZE
	DOLS(4)	DOLS(4)	DOLS(4)	DOLS(4)
Constant	-0.005 (0.012)	0.003 (0.013)	-0.003 (0.013)	-0.006 (0.013)
TSIZE	0.957*** (0.192)	0.864*** (0.202)	0.957*** (0.192)	1.06*** (0.219)
FCOST	-0.027 (0.076)	-0.091 (0.078)	-0.027 (0.076)	0.003 (0.091)
KEYNES(1946)	-0.026 (0.017)	-0.037 (0.023)	-0.038** (0.019)	-0.044 (0.031)
Bank of Canada (1935)	0.041* (0.022)	0.041* (0.022)	0.038* (0.021)	0.037 (0.030)
Letter of Direction (1961)		0.007 (0.010)	0.012 (0.009)	0.008 (0.015)
Inflation Targeting (1991)			-0.030*** (0.009)	-0.031** (0.015)
Minority governments				-0.020** (0.010)
No. of obs.	130	130	130	130
Adj. R ²	.871	.870	.881	.889
SSR	0.075	0.075	0.068	0.063
Log Likelihood	299.9	300.3	306.28	311.9

(***) [**] [*] significantly different from zero at (1%) [5%] {10%}

Finally, we consider hypothesis 3 and 3a, concerning competition in the House of Commons. Such competition is higher in periods when there is minority government, of which there have been 11 since 1867. The results presented in column (4) suggest that at least for Canada, greater competition in the House under minority government leads to more fiscal discipline as parties jockey for position in the upcoming election. This result however is somewhat weak and not robust to all equation specifications.

Conclusions

The Canadian case, with 140 years of good data, and virtually identical basic political institutions, provides us a long enough data set to model both short term effects and to search for long term equilibrium in budget deficits. Our first finding is indisputable: *despite recurring periods of recession and large deficits arising from world wars, there is simply no evidence of an unstable time path of deficit financing in Canada corresponding to any of the time periods suggested for instability.* Keynesianism, in particular, which is considered by many Public Choice scholars to be an “enabler” (in the language of the clinical psychologists who study drug and alcohol dependency) of weak-willed politicians who find it easy to spend money but hard to raise taxes, and who can shelter their desire to buy votes needed for their re-election behind Keynesian arguments for countercyclical spending, seems to have had little impact in Canada -- at least on deficits and the debt to GDP ratio in the long run. Despite their embrace of Keynesianism and a strong role for the state in the post-World War Two period, Keynesianism does not seem to have sapped the will of Canadian politicians to balance budgets over the decades.

Students of public finance (especially those of a Public Choice persuasion) must come to terms with the Canadian experience. Is it a fluke (and if so why)?¹⁵ Canada’s success in dealing with budget deficits despite its Keynesian leanings poses a serious challenge to those who argue that Keynesianism is a source of evil.¹⁶

Our analysis also suggests that while the standard story extoling the virtue of independent central banks is much more complex. Yes, central banks often have the technocratic expertise lacked by government authorities, are able to focus on a limited number of economic specifics rather than a multiplicity of policy concerns, are able to take a longer term view because they are more resistant to immediate political pressures thus mitigating if not fully solving commitment problems. On the other hand, we also need to understand the potential downside of delegation to central banks in terms of the *moral hazards* of delegation. By providing what seems to be a failsafe of last resort, the existence of an independent central bank may encourage politicians to vice, i.e., to bankrupting the public fisc, because they can expect to be bailed out of their follies by compensatory (and unpopular) actions taken by bankers who will be seen as operating out of the control of these self-same politicians. In addition, the greater independence of the central bank may reduce needed coordination in monetary and fiscal policy. When we examine the role of the Central bank in Canada, it may be that the positive and negative effects of Central Bank independence more or less cancel out, perhaps explaining our empirical finding of little or no impact on the stability of budget deficits attributable to the creation of the central bank or to changes in its powers.

It is tempting to attribute Canada’s success in developing long run economic stability to its (usual) centralization of both political and economic power in the hands of a Prime Minister and a Minister of Finance from a party with majority control of the legislature, and to the norm of “responsible party government,” where by this we mean joint cabinet responsibility to the parliament which, in the case of single party control of the parliament means party responsibility in which the government speaks with a unified voice and dissenters are expected to resign from cabinet office. The argument, as we laid it out earlier, is quite simple. Centralized control means political leaders can link aggregate spending and taxation more easily, and they are also more easily held to account by the electorate for fiscal performance, thus structuring their re-election incentives in a sharp fashion that would seem to incline them to fiscal prudence.¹⁷ (From this

point of view, it would be of much interest, we think, to study the performance of other Westminster style parliamentary democracies, including the U.K. Australia, and India.) But here, too, as with the role of central banking, we must be careful. There is no guarantee that “responsible party government” in the very technical sense we defined it above, means “responsible” government in the more common sense meaning of that term vis-à-vis “sensible” budget outcomes.¹⁸

Therefore, rather than trying to do the impossible, that is arguing that data from a single country makes the general case for some particular factor or set of factors being central determinants of debt stability relative to GDP in all political regimes, we wish instead to conclude simply by pointing out that Canada is the white Keynesian swan that contradicts the claim that all Keynesian swans are black.

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Endnotes

¹ Revision of a paper given at the Conference on *New Perspectives on Public Debt*, La Sapienza University of Rome, September 26-28, 2011, at the Public Choice meetings, New Orleans, Miami, March 2012, and at the National Institute of Public Finance and Policy, New Delhi, March 2012. We are indebted to Geoffrey Brennan, Lars Feld, Fabrizio Balassone, Govinda Rao, Pinaki Chakraborty and seminar participants for helpful comments.

² As Buchanan and Wagner (1977: 94) express this idea: “[i]t might even be said that Keynesian economics did not destroy the principle of a balanced budget but merely lengthened the time period over which it applied.”

³ In comparison, the score given to the U.S. Federal Reserve is 0.48. Not so different from the Bank of Canada. This similarity may color (i.e., reduce) the role one assigns to central banking in explanations of Canada-U.S. differences in public policy performance.

⁴ There is now a large literature under the heading of fiscal theories of the price level that examine the constraints on monetary policy of a dominant fiscal policy (where monetary must compensate to keep the government budget constraint satisfied). See for example, Hamilton and Flavin (1986), Leeper (1991), Canzoneri, Cumby and Diba (2001) and Catao and Terrones (2005). Earlier writers explored the “unpleasant” consequences for fiscal policy (and government debt) of the dominance of monetary policy within the government budget constraint (Sargent and Wallace 1981).

⁵ A Wuffle (personal communication, April 1, 2011) has suggested an analogy between answers to the question “Why political delegation of economic authority to a central bank?” and answers to the question “Why does the quarterback pass the ball? In U.S. football an obvious reason for the quarterback to pass the ball is to increase the likelihood that his team will achieve its immediate goal by scoring a touchdown. Of course, the quarterback only wants to pass the ball to members of his own team, i.e., those who will take the ball in the desired direction. And the quarterback has to be persuaded that passing the ball increases the chance of a gain in yardage over his simply keeping the ball and running with it. The second argument is that the quarterback is afraid that if he keeps the ball he will be crushed by 300 pound linebackers -- who are only allowed to tackle him if he hasn’t gotten rid of the ball. Here the linebackers are analogous to public opinion. (A third argument is that passing the ball with its associated suspense of risk of interception increases the attractiveness of the sport to fans, and thus increases television revenues. But this last argument does not seem to have any obvious parallel with delegation to central banks.)

⁶ The relevant legislation reads: “If, notwithstanding the consultations provided for in subsection (1), there should emerge a difference of opinion between the Minister and the Bank concerning the monetary policy to be followed, the Minister may, after consultation with the Governor and with the approval of the Governor in Council, give to the Governor a written directive concerning monetary policy, in specific terms and applicable for a specified period, and the Bank shall comply with that directive.” This power has never been used.

⁷ Note that this condition is a sufficient rather than necessary, the necessary condition being that the present value of government debt is goes to zero over time. The advantage of using this stronger sufficient condition is that it yields a more transparent testable hypothesis.

⁸ The time series characteristics of, and sources for, all data used in estimating equations are presented in the Appendix.

⁹ We must be careful not to read too much into the significance of the coefficient estimates because of the endogeneity that may exist amongst the variables. See below for the DOLS estimation of the cointegrating part of the equation, which allows for adjustments for correlations among the variables.

¹⁰ If we allow only the two I(1) policy variables in the cointegrating equation, the TSIZE coefficient become .99. Note that Eviews does not report the standard error of the constant term in the cointegrating equation, but from later results we know this will be insignificantly different from zero.

¹¹ We note that if we simply run an OLS regression on the entire sample as our cointegration equation, we find (with standard errors):

$$\text{GSIZE} = -0.013 + 1.08 \text{TSIZE} - 0.016 \text{FCOST}$$

(0.01) (0.025) (0.045)

where the adjusted $R^2 = 0.727$ and the ADF statistic = -6.13 (with the 1% MacKinnon criterion = -4.38). Here the long run debt to GDP ratio is about 16%, and is estimated imprecisely.

¹² That is, we experimented with having the break point at 1945 through 1955 and chose the year at which the SSR was minimized.

¹³ Note that the mean value of FCOST is negative (i.e., $r >$ growth rate) so that the predicted size of the debt share is positive rather than negative. In this case $S_{A,t}^+(.56) = 0.07034$ which is less than the critical value of 0.0741 (for $k = 3, \lambda = .5$ at 97.5%).

¹⁴ Having Keynesianism end with the election of the Chretien government in 1993 strengthens the significance of the Keynes effect. For the period as a whole, after allowing for the break between 1946 and 1991, $S_{An,t}^+(.56) = 0.0248247$ which is strictly less than the critical value of 0.0840 (for $k = 3, \lambda = .5$). Hence government debt over the entire period is stable.

¹⁵ Here we note that there are other factors we have not explored in depth that are peculiar to Canada ranging from a more consensus-oriented political culture, to specific institutions such as the Auditor General's role in budgetary review, or the PM's ability to use a line-item veto, that might help us explain Canadian long run budgetary success.

¹⁶ We repeat, however, a point made earlier, that the present paper's focus is on deficits. We can have stationarity in deficits even if there is long term growth in government size and taxation levels as long as the latter are in balance with each other (CF. Winer and Ferris, 2008). Moreover, our results do not speak to the influence of Keynesian ideas on the size of the welfare state or on industrial policy. Thus we do not wish to overstate our differences with Buchanan and Wagner (1977) and later authors who blame Keynes for providing an intellectual underpinning for many features of the modern state that are repugnant to libertarians or who argue that Keynesian policies ultimately hinder economic growth.

¹⁷ By analogy, this argument suggests that concentrating power in the hands of a king (or having unified party control in a presidential system where the president served as the dominant party leader) would give us good budgetary outcomes at least in the long run. But all we have to do is think about the U.S. under unified party rule (e.g., most of the George Bush II era from 1994 through 2006) to see that centralized control can also mean irresponsibility as ideology requiring tax reduction as a matter of a quasi-religious faith (combined with the influence of special interests directly benefiting from the cuts) dominated common sense. For a more detailed discussion of U.S. - Canada differences in the fiscal policy process, see Breton (1996, chapter 4); for a more general discussion of the U.S. and Canada with respect to political and electoral arrangements see Blais, Bowler and Grofman (forthcoming).

¹⁸ As was said to Peter Parker (Spiderman), "with great power comes great responsibility." But this is a normative injunction, not a guarantee of good behaviour by the powerful.

Data Appendix

1. Economic variables and data sources

The economic data come from several sources: Urquhart and Buckley (1965), Urquhart (1993) and Leacy et al. (1983) for the economic variables in the earliest time period (1870 through 1921); and *Cansim I* and *II*, the statistical databases maintained by Statistics Canada, for these variables in the later time period (1921- 2010). More precise definitions and their sources are given below.

Bank of Canada = 1 for 1935 onwards; 0 otherwise.

D1961 = Legislation authorizing the “letter of direction” concerning conflict between the Government of Canada and the Bank of Canada = 1 from 1961 onwards; 0 otherwise

GDP = gross domestic product in current dollars. 1870-1926: GNP from Urquhart (1993: 24-25) (in millions); 1927-1995: CANSIM I D11000; 1996-2009: CANSIM II V3800002 (aggregated from quarterly data). Note GNP and GDP data are not available before 1870 so that GDP numbers were calculated by assuming that the tax size of government remained constant between 1867 and 1869. Since data is available on federal government tax revenue, a value for GDP was implied.

Keynes = 1 for 1946 through 2009; 0 otherwise

P = GNP deflator before 1927 and GDP deflator after (1986 = 100). 1870-1926: Urquhart, (1993), 24-25; 1927-1995 (1986=100): Cansim data label D14476; 1996-2006 Cansim D140668. All indexes converted to 1986 = 100 basis.

RGDP = real GDP = GDP/P.

GrowthGDP = growth of GDP = $\text{LnRGDP} - \text{LnRGDP}(-1)$.

GOV = total federal government expenditure net of interest payments. 1870-1989: Gillespie (1991: 284-286); 1990-1996: Public Accounts of Canada 1996-97; 1997-2000: Federal Government Public Accounts, Table 3 Budgetary Revenues Department of Finance web site, September 2001. To this we add the return on government investment (ROI) originally subtracted by Gillespie for his own purposes. Expenditure is net of interest paid to the private sector. Data on ROI: 1870 to 1915: Public Accounts (1917: 64); 1915-1967: Dominion Government Revenue and Expenditure: Details of Adjustments 1915-1967 Table W-1; 1916-17 to 1966-67: Securing Economic Renewal - The Fiscal Plan, Feb 10, 1988, Table XI; 1987-88 to 1996-97: Public Accounts 1996, Table 2.2. Interest on the Debt (ID) was subtracted out (with adjustment for interest paid to the Bank of Canada (BCI) ultimately returned to the government). Data on ID: 1870-1926: Leacy et al. (1983: Series H19-34); Federal Government budgetary expenditures, classified by function, 1867-1975; 1926-1995: Cansim D11166. 1996-2000: Cansim D18445. Finally, data for BCI: copied by hand from the Annual Reports of The Bank of Canada, Statement of Income and Expense, Annually, 1935-2000. Net Income paid to the Receiver General (for the Consolidated Revenue Acct). Note: all government data are converted from fiscal to calendar years, and allows for a change in the definition of the fiscal year in 1906/07, as described in Gillespie (1991: Appendix C).

GFSIZE = non-interest federal government, direct public expenditure as a fraction of GDP = GOV/GDP.

TAXES = the sum of the fourteen different categories of taxes collected in Canada. The fourteen categories include: 1. Custom Duties - Customs Import Duties (in Public Accounts); 2. ExciseDuties- Excise Duties (in Public Accounts), included in ExciseTaxes after 1990; 3. Sales Tax - Sales Tax (in Public Accounts). GST replaces Sales Tax from 1991; 4. Excise Taxes -Other (in Public Accounts), includes Excise Duties after 1990; 5. Personal Income Tax - Income Tax, Personal (in Public Accounts); 6. Corporate Income Tax - Income Tax, Corporate (in Public Accounts); 7. Non Resident - Non-resident Income Tax (in Public Accounts), included in Other Income Tax Revenues after 1994; 8. Excess Profits - Energy Taxes (in Public Accounts); 9. Estates Taxes - 0 after 1977; 10. Post Office Revenues - 0 after 1983; 11. Misc. Revenues - Other Non-Tax Revenues (in Public Accounts); 12. Special

Recipient and Other Credits - Refunds of previous year's expenditure, Services and service fees, Privileges, licences and permits, Proceeds from Sales, Bullion and coinage. Excludes premium and discount on exchange. This category listed as Misc. Revenues after 1989; 13. UIC Taxes - Unemployment Insurance Contribution, Government Contribution (in Public Accounts); 14. Old Age Security - 0 after 1977; Sources: 1868-1989: W. Irwin Gillespie, *Tax, Borrow and Spend: Financing Federal Spending in Canada, 1867 - 1990*, Carleton University Press, 1991, 284-286; 1996-97, Public Accounts of Canada; 1997-2000: Federal Government Public Accounts, Table 3 Budgetary Revenues Department of Finance web site, September 2001.

TSIZE = federal tax revenue as a fraction of GDP = TAXES/GDP

r = long term government bond rate as a fraction: 1870-1913: Rich (1988), Average Yield on Dominion Government Bonds - Table 7-4,.201; 1914-1919. Homer (1973) Province of Ontario Bonds Annual Average, %, p. 484; 1920 - 1958: Homer (1973), Long Term Dominion of Canada Dollar Bonds Annual Average, % p. 484; 1959-1995: Gov't of Can. Bond Yield Ave 5-10 year, Cansim series B14030; 1995-2001: updated by hand as average of 12 months Cansim B14030. See: also Sidney Homer. (1977). *A History of Interest Rates*. Rutgers University Press.

realrate = real rate of interest on federal debt, as a fraction = $r - (\ln P - \ln P(-1))$

FCOST = GrowthGDP – realrate

2. Political variables and data sources

MINORITY = 1 if the governing party was part of a minority government; = 0 otherwise. There have been fourteen minority governments in Canada since 1867.

Sources:

Canadian Parliamentary guide (1997, 2002); Thirty Seventh General Election 2000, Elections Canada 2001.

Beck, Murray, J (1968). *Pendulum of Power*. Scarborough: Prentice Hall of Canada

Scarrow, Howard A. (1962). *Canada Votes: A Handbook of Federal and Provincial Election Data*. New Orleans: Hauser Printing Company.

3. Descriptive Statistics of Variables Used in Estimation, 1870 – 2009

	MINORITY	GSIZE	TSIZE	FCOST	GROWTHGDP	REAL RATE
Mean	0.137	0.116	0.119	-0.008	3.61	2.76
Max	1.000	0.433	0.256	0.282	15.77	17.56
Min	0.000	0.035	0.046	-0.177	-11.80	11.14
Std. Dev.	0.345	0.073	0.058	0.072	4.92	4.43
ADF	-5.0***	-2.03	-1.94	-6.77***	-8.96***	-6.62***

***(**) significant at 1% (5%). ADF is the adjusted Dickey-Fuller statistic for the null of no cointegration