

# **Review of Canadian Federal Fiscal Forecasting**

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## ***Processes and Systems***

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# EXECUTIVE SUMMARY

## 1. Introduction

This examination of the federal government's fiscal forecasting accuracy was undertaken at the request of the Finance Minister, the Honourable Ralph Goodale, and follows by ten years the previous full review of the processes used to determine the government's budget projections. At that time, there were concerns about the credibility of a forecasting process in which the federal government had often underestimated the size of its deficits. Since then, the budget balance has been underestimated rather than overestimated and, in each of the past seven years, the government has achieved surpluses larger than originally projected.

The primary objective of this report is to assess the basis for the persistent forecast errors of the last ten years and determine what changes to the budget process might improve the accuracy of those forecasts and ultimately improve the conduct of public policy.

The major factors examined are:

- (i) The accuracy of the forecasts of key economic variables – e.g. real and nominal gross domestic product, inflation, short- and long-term interest rates, employment growth – which affect revenue and expenditures.
- (ii) The sensitivities of specific revenue and expenditure streams to key economic variables, particularly where the relationship(s) might be undergoing structural changes.
- (iii) The impact of the quality and timeliness of the information available for both economic and fiscal forecasts and, in particular, the influence of significant data revisions.
- (iv) The influence on expenditures of factors such as rules governing departmental spending and lags in finalizing transfers to provinces.
- (v) The effects of making provisions to deal with anticipated contingent liabilities of the government.
- (vi) The degree to which implicit caution is incorporated in the translation from economic forecasts to fiscal projections.

The report also deals with an issue that is germane to forecast accuracy even though not directly linked to the specific processes of budget projections. Fiscal forecasting is influenced by the fiscal rules – tacit or explicit – under which budgets operate. It matters whether the rule is to ensure no deficit under any circumstances or some other target, such as balancing the budget over the economic cycle.

To complete this report under a tight time schedule, work was contracted out or requested in three main areas. The analysis of forecast accuracy was carried out jointly by the Policy and Economic Analysis Program (PEAP) of the Institute for Policy Analysis at the University of Toronto and the Center for Interuniversity Research and Analysis on Organizations (CIRANO). The analysis comparing Canada's forecasting track record to that of the other G-7 and OECD countries was conducted, at the request of Finance Canada, by the North American Division and the Fiscal Affairs Division of Western Hemisphere Department at the International Monetary Fund. An extensive consultation was carried out of private sector forecasters and other individuals with insights into the technical and political economy issues involved. Most of the interviews were conducted by Bruce Little, formerly with *The Globe and Mail*, under contract with Finance Canada. The author also conducted several interviews. Most of the interviews were with Canadian experts, but the author also interviewed officials in Europe and the United States.

## **2. Qualitative Analysis of Fiscal Forecast Accuracy: Summary of Consultations**

The federal government's record of economic and fiscal forecasting has been a topic of discussion among private sector forecasters, academics and political party researchers for some time now. Some 20 experts in forecasting and budget preparation were interviewed; these were mainly private sector and university economists, other academics, staff advisors to political parties and some former senior Finance Department officials.

The summary of the consultations reflects the views of those interviewed and, in some instances, their qualitative assessment of the nature and causes of the persistent under-forecasting of budget balances. In some instances, their positions are not supported by the evidence and analysis of the quantitative examination of the issue. There are simple factual inaccuracies as well as interpretations and inferences that can be (and, in a number of cases, are) challenged by the research carried out in this study.

In broad terms, there were several areas of agreement among those interviewed. First, the consistent underestimate of future surpluses does indeed constitute a problem although some argued that it was a better problem to have than running deficits. Second, the surplus "surprises" have been primarily the result of cautious fiscal forecasting that flowed directly from the government's determination never to run a deficit. Third, solutions are available that should be implemented.

There was also general agreement that the succession of larger-than-expected budget surpluses over the past seven years has, whether intentionally or not, hindered the public and Parliamentary debate over the main budget choices

available in an era of surpluses – tax cuts, increased spending and reducing debt. It has also undermined the Finance Department’s credibility to the point where many simply do not believe its published forecast numbers.

Several people criticized the use of year-end surprises for transfers to provinces or foundations as hasty last-minute decisions. Many opposed tax rebates as bad tax policy, even though they supported permanent tax cuts. Most argued that regular surplus surprises effectively “load the dice” against long-term tax cuts and against increases in focused program spending as well, making debt reduction the default winner in any competition for the “extras” generated during the fiscal year. The combination of forecast errors and the narrow range of policy choices at the end of a fiscal year was widely seen as both a forecasting issue and an accounting issue. Forecast inaccuracies might be the cause of both the year-end and final surplus surprises, but accounting rules narrow the range of alternative uses to which the extra funds can be put.

There was broad agreement that little can be done on a technical level to improve economic forecasts, though most forecasters said data revisions by Statistics Canada frequently frustrate their efforts to predict economic growth. More important to most of those interviewed is the process of converting the economic forecast into an accurate fiscal forecast – getting right the projections of federal government revenue and spending. This, most said, is the major source of any fiscal forecast accuracy problem. However, many noted that small misses in forecasting revenue and spending can produce big errors in forecasting the surplus, and several observed that because many people do not understand this arithmetic, they expect a much greater degree of accuracy in forecasting the surplus than is realistic.

Those interviewed offered two quite different reasons for the surplus surprises. The first group, comprising a large majority of those interviewed, saw the recent track record of larger-than-forecast surpluses as the logical outcome of two forces – the government’s practice of budgetary prudence (seen mainly as a by-product of its determination to stay out of deficit) and several years in which the economy grew faster than expected. The second camp, which was very small, saw them as the result of deliberate manipulation that is specifically designed to stifle a wider public debate over how to use future surpluses – tax less, spend more or reduce debt.

Many said revenue forecasts are harder than they look because of changes in the relative importance of different revenue sources. They argued that forecasts of interest costs and program spending should be relatively straightforward, the latter because departments are given spending limits in advance. Many cited an exception to the latter as a source of forecast error – money set aside as allowances for bad debts, the possibility of losing litigation or other disputes that are already under way. Each case involves a judgment call and if each such call is prudent, the cumulative effect might turn out to be large.

As long as the government follows a no-deficit rule, several argued, there will be pressure on the forecasters to project spending levels that reflect (as one put it) “everything you could possibly imagine going wrong.” This tilts the system to produce not only surpluses, but bigger-than-forecast surpluses as well.

There was a sharp divide among those interviewed on the no-deficit rule. Most said it was too rigid. If the government is determined never to run a deficit, it might feel compelled to raise taxes or reduce spending during a period of weakness and thus exacerbate an economic downturn. A few, however, felt that any deficit – however small – must be avoided because it would put the government on a “slippery slope” back to the kind of large federal deficits that characterized the 1980s and early 1990s.

There was general agreement on the importance of a fiscal anchor, which they defined as a strong fiscal policy goal that can be easily communicated to the public, but most thought the value of simple deficit avoidance as an anchor has diminished. The government’s target of a 25% debt/GDP ratio was seen as reasonable but easily achievable through a combination of decent economic growth and small federal surpluses. Almost all endorsed the continued use of the annual contingency reserve (usually \$3 billion) and the allowance for economic prudence (usually \$1 billion in the first fiscal year of the projection and growing thereafter). These were viewed as reasonable sums which, however, should be the upper limit on fiscal cushions in the budget forecasts.

Most of those consulted dismissed the idea of setting up in Canada a body resembling the US Congressional Budget Office to provide an arm’s-length check on the government’s fiscal forecast. But there was broad support for new institutions that might enrich the debate over budget issues by conducting research on a variety of long-term fiscal issues facing the government such as the impending retirement of the baby-boom generation. Some suggested that the House of Commons Finance Committee should acquire additional resources to help it examine the government’s forecasts and deepen its understanding of fiscal issues. Others were attracted by the idea of setting up some mechanism to study a range of medium- and longer-term fiscal issues.

### **3. Quantitative Analysis of Fiscal Forecast Accuracy**

The process of getting from private sector forecasts of the economic outlook to the Public Accounts fiscal forecasts used in the annual Budget involves four basic steps: collecting the private sector forecasts; calculating the average economic forecast; using that to produce the fiscal forecast on a National Accounts basis; translating National Accounts projections into a fiscal forecast on a Public Accounts basis.

Economic forecasts are collected from private sector participants each quarter. The economic forecast values used for fiscal projections are calculated as the average of all participants' estimates available for a specific indicator. Key variables from the average forecast are entered in the Department of Finance's macroeconomic forecasting model, to which some judgmental adjustments are made. The detailed fiscal projections on a National Accounts basis are built from the bottom up, as each revenue and expense category is projected separately, reflecting its own unique and specific base, target population, program parameters and other explanatory variables. The conversion of these National Accounts projections to a Public Accounts fiscal forecast involves several types of adjustments. Some reflect straightforward differences between the definitions of categories in the two systems while others require some interpretive adjustments. As well, the process incorporates more up-to-date information available to the Department, including data from the Canada Revenue Agency on various revenue sources.

It is important to get a proper broad perspective on the issue of forecast accuracy before diving into detail. A budget balance, whether surplus or deficit, is the arithmetic difference between two very large numbers – revenues and expenditures. A small error in either or both can translate into a large error in the difference between the two. If, in fiscal 2003-04, revenues had been 1% higher and spending 1% lower than they actually were, the surplus would have been \$3.6 billion higher than the actual reported result of \$9.1 billion. If a projected surplus were smaller than that – say, \$4 billion – then a comparable 1% error would almost double the surplus while the surplus would disappear if revenues were lower and spending higher by 1%.

Academic and practitioner research on fiscal forecasting in Europe and the United States concludes that there exists an unavoidable level of uncertainty; accuracy, as one US analyst put it, "is largely a matter of luck." In Canada, studies analyzing budget uncertainty have suggested that the government would need to include a cushion of up to \$9 billion to be certain of avoiding a deficit.

Any assessment of fiscal forecast accuracy is far from straightforward, as a review of several such recent attempts illustrates. In the analysis done for this report, the PEAP – CIRANO group makes two important adjustments that have not been done in other studies of this issue. First, the original projections and actual outcomes are adjusted for changes in accounting methods that were introduced in 2002. The second adjustment takes account of policy initiatives – revenue or expenditure – that occurred during the fiscal year. In particular, the government has frequently increased spending during the year in the face of evidence that revenues were likely to be larger (or other expenditures lower) than originally forecast. These in-year policy initiatives need to be excluded from the calculation to get an accurate picture of forecast accuracy. Their results show that the persistent under-forecasting of the year-ahead budget balance evident from conventional assessments is even more pronounced when adjustment is

made for in-year policy initiatives. In no year was the balance over-forecast and, in four of the last seven fiscal years, the under-forecast exceeded \$10 billion.

Two additional conclusions emerge from the calculation of the difference between fiscal projections and the actual outcomes. First, in seven of the last eight years, total revenues came in above projections and dramatically so in three of these years. However, since 2001-02, the revenue projections have been close to the final outcomes and made only a modest contribution to the budget balance under-forecast in this period. Second, total program expenditures have consistently contributed to the budget balance projections coming in too low. They have been over-forecast in all but one year with the gap exceeding \$1 billion in all but one year.

These observations do not explain *why* the budget balances have been under-forecast as they tell us nothing about *how* it came to pass that program spending has been consistently over-forecast and total revenues regularly and, in some cases, substantially under-forecast.

Before answering the why question, however, a comparison of Canada's forecasting track record with that of other countries helps provide a useful perspective. The IMF study finds that Canada is an outlier compared to the ten other countries examined. Canada has more persistently and significantly under-forecast its budget balances. As well, Canada has had the most consistently under-forecasted revenues and over-forecasted expenditures. Although the IMF was unable to use the approach of PEAP – CIRANO (they did not adjust for accounting changes nor for in-year policy initiatives), their results are consistent with those of PEAP – CIRANO.

In assessing the reasons for the budget balance under-forecasts, the most obvious starting point is the accuracy of economic forecasts. There are two distinct but related questions. First, how accurate were the projections of Canada's economic performance? Second, of the persistent differences between budget outcomes and projections, how much can be attributed to inaccuracies in economic forecasts?

The PEAP – CIRANO analysis shows that the economic forecasts have not been particularly accurate, but that the errors have not persistently been in one direction or another. So while the private sector economic forecasts used by Finance to generate its budget projections have sometimes contributed significantly to budget forecast errors, a large share of the explanation for persistent under-forecasting of budget balances lies elsewhere.

Both the PEAP – CIRANO and IMF studies found that projections of nominal GDP (important because this is the underpinning for the tax base) were affected by underestimates of base year GDP levels. The GDP levels used by forecasters as their starting points were later revised higher. So even if their forecasts of

growth and inflation rates had been perfect, the size of the projected increase in GDP in a given year would be underestimated; so, by extension, would any increase in government revenues. In the IMF analysis, the underestimation of the GDP level was larger than that for any other country examined.

Using three different techniques to estimate the impact of economic forecast errors on the fiscal results, the PEAP – CIRANO study yielded the following overall conclusions:

- Economic forecast inaccuracies explain some, but not all, of the forecast differences for revenues.
- The economic forecast errors stem more from revisions to nominal GDP levels from which forecasted growth rates are projected than they do from errors in the forecasted growth rates themselves.
- A relatively small proportion of the forecast differences in program expenditures can be explained by reference to the economic forecasts.
- A substantial portion of the forecast differences for public debt charges can indeed be attributed to errors in forecasting interest rates.

Taken together, these results provide only part of the explanation for the persistent under-forecasting of budget balances, although the precise share of the fiscal projection errors cannot be quantified. Therefore, the explanation for those mis-forecasts includes other factors.

One is the timeliness of information flows – from the Canada Revenue Agency (CRA) on tax collections of all types, from Statistics Canada on current economic data and possible revisions, and from government departments on expenditures. For several major revenue sources, including the personal income tax, the corporate income tax and the goods and services tax, there are significant deficiencies in the information available even by the end of the fiscal year. The move to full accrual accounting has added to the difficulty in projecting personal income tax collections. Thus the budget estimate for the fiscal year just ending is made with critical information not yet available, which may affect the projections for the year ahead.

Certain non-tax revenues have also generated consistent forecast differences in recent years. These particular revenue under-forecasts appear to have been the result of higher-than-expected profits from several Crown corporations and a reluctance to believe that the profits at such levels would indeed continue.

While expenditures should be easier to forecast because the government simply determines what it will spend, in a number of categories the actual outcome has led to an over-forecast of expenditures. First, program spending “lapses” and provisions for “re-profiling” (allowing some funds to be carried over to the next fiscal year) have contributed to the over-estimates. Second, provisions for contingent liabilities – funds set aside for lawsuits, other court or arbitration

decisions or bad loans – have, on occasion, been higher than required. Third, data lags in the final calculation of equalization payments have, in some years, been revised down long after the fiscal forecasts were produced.

Economic forecast errors, including the impact of data revisions, do not explain a large share of the revenue forecast errors. Nor is it likely that the consistent expenditure over-forecasting is due entirely to intermittent factors like departmental spending lapses, over-provisioning for contingent liabilities and after-the-fact equalization payments adjustments.

This logically leads to the proposition that, in addition to these factors, *implicit* caution has been added to the *explicit* contingency reserve and prudence incorporated into the budgets of the last decade. This likelihood was suggested by many of those we consulted and by the authors of both the PEAP – CIRANO and IMF studies. In fact, it is an almost inescapable conclusion that extra prudence – not evident in the budget documents – has been an important factor in explaining the persistent under-forecasting of budget balances since 1994.

The fact that program spending was materially over-projected in six of the last ten years strongly suggests that this is the key area in which extra caution was added. Circumstantial “evidence” on the existence of implicit caution can also be inferred from the IMF’s comment that the comparative pessimism of the Canadian forecasts is not the result of specific large forecast errors but “the accumulation of small but persistently negative errors.” That is more consistent with a systematic infusion of caution than with a steady series of one-off errors, all of which happen to be in the same direction.

Why this might happen is a contentious issue. Some commentators have accused the government of deliberately “hiding” part of the surpluses to avoid pressure to spend the “surprise” amount on programs or to avoid cutting taxes. There is, however, a far less sinister and a far more plausible explanation for the addition of implicit caution. It is that the current fiscal rule of “no deficits” created incentives, for those responsible for producing the fiscal projections, to incorporate extra (implicit) prudence into their forecasts.

Although the no-deficit fiscal target is not formalized in legislation, it has been adhered to strenuously – in fact, much more so than in many countries with formal deficit limit targets. If the officials responsible for producing forecasts are faced with an unequivocal commitment on the part of the government that no deficit will be tolerated, no matter how small and irrespective of the economic circumstances, there will be inevitable behavioural consequences. When considering a range of possible outcomes for a revenue or expenditure item, the prudent civil servant will tend to pick a point estimate at the low end of the range for revenues and at the high end for expenditures. There is nothing sinister or underhanded about such behaviour. It appears, then, that a significant and

recurring influence on the persistent under-forecasting of surpluses is the fiscal rule under which the federal government has operated since 1997.

#### **4. Recommendations**

The recommendations fall under four headings:

- (1) Increased transparency in budget-related information.
- (2) Improvements in data quality and analysis.
- (3) Options for the fiscal rules under which budget forecasts are made.
- (4) Options for changes in the structures/institutions used in the forecast process.

The first two would modify the current forecast process; the latter two would require substantial adjustments to that process.

##### **The Need for Transparency**

Transparency is widely regarded as a key element in sound budget-making. The existence of information asymmetry – actual or perceived – between the government and the public is at the foundation of credibility concerns related to transparency. Governments have access to an extensive array of data and other information and to expertise that most citizens either don't have or can't have in the same time frame. The credibility problem regarding the soundness of fiscal policy tends to arise when the government is underperforming relative to its targets (e.g. Canada in the early 1990s), but can also arise when governments outperform as well.

The most important goal of improving the transparency of the federal government's fiscal forecasting procedures and information is to increase the level of trust in the budget process itself. Apart from sensitive items, full, detailed disclosure should be the norm for all budget-related documents including the Budget itself, the Economic and Fiscal Update, the *Annual Financial Report of the Government of Canada* and the monthly *Fiscal Monitor*.

To that end, there are six recommendations on transparency. The first three relate to the need for Finance to provide a detailed breakdown of the linkages between the (external) economic and (internal) National Accounts fiscal forecasts and of the reconciliation of the National Accounts to the Public Accounts fiscal projections. These include:

- (i) In the Budget and the Economic and Fiscal Update, fully explore the key risks and uncertainties in the economic forecast and discuss their implications for fiscal projections.

- (ii) In the same documents, provide details on the rules of thumb used to estimate the impacts on revenue and (certain) expenditure categories of key economic variables such as nominal GDP growth and short- and long-term interest rates.
- (iii) In major fiscal documents, spell out the details of the reconciliation between the National Accounts and Public Accounts fiscal forecasts.

In the Budget, there should be documentation of the long-term (e.g. ten year) track record of Finance's projections, which will allow all interested parties to better assess the government's fiscal forecast accuracy.

In addition, Finance should, as part of every third *Fiscal Monitor*, provide an analysis of fiscal developments in the current year and the risks to the projected fiscal outcome. Where possible, it should include a complete update of the current year fiscal forecast.

The final recommendation is that Finance increase the frequency of its formal briefings to the House of Commons Finance Committee. In addition to the appearances related to the Budget and the Economic and Fiscal Update, there should be at least one additional briefing provided in the early summer.

### **Improving Accuracy & Timeliness of Data**

Enhancing the accuracy and timeliness of the data used for the economic and fiscal projections can increase the accuracy of the forecasts themselves. There are three recommendations made in this area of the report. The first relates to estimates of nominal GDP made by Statistics Canada. The fiscal forecasts have been affected by persistent upward revisions to GDP growth, which caused revenue projections to be lower than would have been the case had the revisions been known earlier. The recommendation is that Statistics Canada and the Department of Finance jointly examine the causes of this pattern and options for mitigating it.

Another cause of fiscal forecast inaccuracy is the adjustment in the relationships between the economy's performance and several major categories of revenue. It is recommended that research be undertaken to determine the factors that have caused these changes. In addition, the analysis should focus on potential future adjustments in the revenue sensitivities.

Improved monitoring of several key government operations would enhance forecast accuracy. In particular, the reasons for the consistent upside surprises to Crown corporation earnings need to be determined and in-year monitoring of their financial status should be improved. Enhanced ongoing tracking of departmental expenditures would allow lapses to be better anticipated.

## Fiscal Rules

The federal budget process currently operates under not one, but two fiscal rules or targets. The first – the no-deficit rule in effect since 1997-98 – was discussed in the previous section of the report. The other rule is of more recent vintage. In the 2004 Budget, the Finance Minister announced that the government was targeting a reduction in the debt/GDP ratio to 25% from (the then) 41% within ten years. The target was reiterated in the recent 2005 Budget.

There is no uniformity in the fiscal rules under which national governments operate. In Europe, countries that adopted the euro agreed to limit annual deficits to 3% of GDP and debt to 60% of GDP and to achieve balanced budgets over the medium-term. The United Kingdom allows deficit financing only for public investment expenditures and sets a debt/GDP target of 40% over the cycle. In Sweden, the government has a surplus target of 2% of GDP over the economic cycle and specified spending limits over a rolling three-year period. In Australia, the current fiscal strategy calls for a balanced budget over the cycle and a lower net debt level. New Zealand targets an operating surplus over “a reasonable time” and a debt/GDP ratio of 20% before 2015. In the United States, the federal government operated under the Budget Enforcement Act from 1992 until 2001. The Act set upper limits for discretionary spending and required offsetting cuts for increases in mandated spending. While governments can choose a variety of fiscal rules under which to operate, experience suggests that they will achieve their established fiscal targets only if they are willing to take measures that ensure the various rules are followed.

The fiscal target under which the federal government has functioned since 1997 is that no deficit shall be incurred under any circumstances. It is a key conclusion of the analysis of forecast accuracy that the no-deficit rule has been a major cause of the persistent upside surplus surprises at the end of each fiscal year. It is recommended that the government consider adopting a different rule that is more appropriate to its fiscal circumstances and to its increased focus on medium- to long-term commitments.

The report examined the pros and cons of three options – retaining the no-deficit rule, achieving zero balance over the economic cycle and targeting a modest surplus, on average, over the cycle. The big differences between the current rule and the two alternatives are:

- (i) The balance and surplus over-the-cycle targets allow for deficits to be incurred when warranted by economic circumstances such as a significant economic downturn.
- (ii) While the inherent imprecision of economic (and fiscal) forecasts necessitates that caution be built into budget projections, less will be required than for a no-deficit rule.

- (iii) Unexpected budget windfalls (or shortfalls) will only be apparent after several years of the cycle rather than annually as is the case with the no-deficit rule; decisions on the allocation of unanticipated surpluses will not have to be made annually.
- (iv) With the no-deficit rule, there is no ambiguity about the target each year nor about whether it has been attained; attempting to achieve balance or a surplus over the cycle involves inherent uncertainty about whether the rule will be successfully followed.
- (v) If the no-deficit rule is strictly adhered to, it can require adjustments in downturns that exacerbate economic weakness (i.e. it is pro-cyclical); the balance- and surplus-over-the-cycle targets imply counter-cyclical impacts from automatic stabilizers.

The report recommends that the federal government adopt the fiscal rule of achieving a surplus, on average, over the cycle. This target represents a less dramatic departure from the current rule and can be clearly linked to the long-term fiscal goal of lowering the debt/GDP ratio to 25% as the cumulative surplus would be used to reduce the nominal debt level.

If the government decides to retain the current no-deficit rule, it will need to adopt a more formal and structured process for dealing with fiscal surprises. It should establish, in advance, the contingent allocations among tax cuts, spending increases and debt reduction of any unexpected windfalls. This can be incorporated into the (year-beginning) Budget and debated in Parliament as part of the Budget deliberations.

The establishment of a debt/GDP ratio target well below the current level is an important recent initiative, especially given the demographically driven fiscal pressures that will need to be addressed in Canada. The government should consider setting the target below 25% – 20% or even 15% – to ensure that the fiscal challenges can be readily met. It will also be necessary to prepare the public for the transition to targeting a deficit, on average, over the cycle. This is an inevitable consequence of stabilizing the debt/GDP ratio at the targeted level.

### **Possible Institutional Changes**

Institutional change would introduce potential new participants into the process, individuals or agencies whose role would be to make significant improvements in the fiscal forecasting and/or fiscal policy analysis process. An example would be the private economic forecasters engaged by the Commons Finance Committee to provide quarterly forecast updates.

It is important to be mindful of an old adage: when proposing a solution, check first that you actually have a problem that needs solving and then ensure that this proposed solution is the right one. In this case, the analysis and evidence presented in this report cast serious doubt on the proposition that the problem

lies with fiscal forecast accuracy per se. That there are differences between fiscal projections and outcomes is beyond question. Nor is there any ambiguity about the unidirectional nature of the fiscal forecast errors – deficits were smaller and then surpluses larger than projected in every year since 1995-96.

If we apply the adage and the evidence to assess the Finance Committee's recent solution, the question is: what problem is it designed to solve and will it do so effectively? It appears the Committee feels it is not receiving enough information on the in-year fiscal situation of the federal government. If that is the concern, our suggestion that Finance provide the Committee with more frequent and complete fiscal updates is, at minimum, the cheaper resolution. Since the new arrangement calls on the Department to assist the economists hired by the Committee, the Committee will be getting the same fiscal data it can get directly from the Department. If members of the Committee don't trust the information provided currently by the Department, it is not clear why their trust would be much enhanced by having the same information filtered through the external economists.

More critically, the issue is whether any institutional changes are likely to add much value to short-term forecasting and monitoring. The analysis in this report suggests that, in the economic forecast end of the process, a reduction in the size and frequency of data revisions could have a discernible impact on forecast accuracy. Improved understanding of the sensitivities of key revenue components to changes in nominal GDP could also enhance accuracy. Both of these items are taken up in the data improvement recommendations. Resolving them does not require a new agency.

Finally, if the real culprit in the story of surprise surpluses is the predictable response of the system to a no-deficit fiscal rule, hiring outside economists to monitor and produce fiscal forecasts in conjunction with Finance will not resolve that either. Instead, what is required is a change in the fiscal target which affects the incentives driving behaviour in the forecasting process.

More generally, it is difficult to see how an institutional change that involves transferring some of the forecasting responsibility to an independent agency would make much of a difference to short-term forecasting accuracy.

Accordingly, there are two main recommendations in this segment of the report, one of which has negative elements. It is proposed that the economic and fiscal forecasting structure that has evolved over the last decade be maintained. The degree of accuracy of the budget projections will not be materially improved by creating new institutions to produce them. The potential improvements in accuracy described above can be achieved within the existing framework. This means that the hiring of four economic forecasters by the House of Commons Finance Committee to provide quarterly projections should not be continued.

Nor should consideration be given to establishing an agency like the Congressional Budget Office (CBO) in the US or the Central Planning Bureau (CPB) in the Netherlands.

However, if the focus is shifted from short-term forecasting to long-term policy analysis, both the CBO and the CPB have facets of their mandate which could usefully be incorporated into the Canadian context. It is recommended that a small agency be set up with a mandate to focus on the medium- to long-term fiscal implications of structural factors like changing age demographics and productivity growth and of significant policy initiatives such as changes in tax structures. If the government were to shift to a fiscal target of balance or surplus over the cycle, it is further recommended that the agency's mandate be expanded to monitor and report to Parliament on the tracking of the cyclically adjusted fiscal balance.

Although any new institution should work with and respond to the research priorities of the Finance Committee (and through it, of Parliament), it should also have some latitude to determine, on its own, its research agenda.

## SECTION 1 – Introduction

This examination of the fiscal forecasting accuracy of the Canadian federal government was undertaken at the request of the Finance Minister, the Honourable Ralph Goodale. Several factors would appear to have influenced the decision to conduct a review of this nature. It has been ten years since the federal government thoroughly reviewed the processes used in determining its budget projections. In the intervening period, a number of the proposals emanating from that review have been incorporated into the budget process. As well, some of those recommendations adopted have been modified or expanded. Hence, there is merit in reviewing the new budget forecast process to determine whether it is functioning as anticipated.

At the time of the last review, there were concerns about the credibility of a forecasting process in which the federal government had, during the early 1990s, consistently underestimated the size of (persistent) deficits. In the current situation, there have also been criticisms of the government's fiscal forecast accuracy albeit from a completely different perspective. For the past ten years, the budget balance has been underestimated rather than overestimated and, in each of the last seven years, the government has achieved surpluses larger than it had originally projected.<sup>1</sup> The alleged credibility problem this has given rise to is linked to concerns that the government and Parliament are basing fiscal policy decisions on inaccurate and/or incomplete information. To the extent that improvements in forecast accuracy can ameliorate these concerns, that will be an additional benefit of the review.

However, it is the primary objective of this report to assess the basis for the persistent fiscal forecast errors of the last ten years and determine what changes might be effected in the budget process to improve the accuracy of those forecasts. While the reporting of the outcome of a series of consultations conducted as part of this review will touch upon the credibility issue, it is not a primary focus of this report. To make it so would require analytical and forensic skills beyond the capacity of the report's author. As well, it would detract from the primary goal of the report – i.e. to offer analysis and recommendations that could ultimately improve the conduct of public policy.

The report examines a number of factors which can influence the accuracy of any fiscal projection. The major ones are:

- (i) The accuracy of the forecasts of key economic variables – e.g. real and nominal GDP, inflation, short – and long-term interest rates, employment growth – which affect revenue and expenditures.

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<sup>1</sup> This is a problem a number of other OECD countries would prefer to have, rather than the deficit situation in which they find themselves.

- (ii) The sensitivities of specific revenue and expenditure streams to key economic variables, particularly where the relationship(s) might be undergoing structural changes.
- (iii) The impact of the quality and timeliness of the information available for both economic and fiscal forecasts and, in particular, the influence of significant data revisions.
- (iv) The influence on expenditures of factors such as rules governing departmental spending and lags in finalizing transfers to provinces.
- (v) The effects of making provisions to deal with anticipated contingent liabilities of the government.
- (vi) The degree to which implicit caution is incorporated in the translation from economic forecasts to fiscal projections.

In addition to conducting this analysis for Canada on a stand-alone-basis, the review also contrasts Canada's fiscal forecasting practices and experiences with those of other G-7 and OECD countries. The analysis looks at relative accuracy in economic and fiscal forecasting and assesses the factors which may account for the inter-country similarities and differences in forecast outcomes.

The mandate for the report calls for, in addition to the assessment of fiscal forecast accuracy, proposals to improve said accuracy and by doing so, lead to better informed fiscal decision-making. The final section makes recommendations in four main areas: transparency, data quality, fiscal rules and institutional changes.

It is not a part of this mandate to examine or to make recommendations about the *content* of federal budgets. That is, the focus is on how to more accurately forecast revenues, expenditures and budget balances rather than on how to allocate them. However, the report does deal with an issue that is germane to forecast accuracy even though not directly linked to the specific processes of budget projections. It is clear from the analysis presented here that fiscal forecasting is influenced by the fiscal rules – tacit or explicit – under which budgets operate. That is, it does appear to make a difference whether the rule under which fiscal authorities are operating is no deficit under any circumstances versus, say, balance the budget over the economic cycle. This issue is explored in the report and options for future rules considered.

To complete this report under a tight time schedule, work was contracted out or requested in three main areas. The analysis of forecast accuracy and the main factors influencing it was carried out jointly by the Policy and Economic Analysis Program (PEAP) of the Institute for Policy Analysis at the University of Toronto and the Center for Interuniversity Research and Analysis on Organizations (CIRANO). The analysis comparing Canada's forecasting track record to that of the other G-7 and OECD countries was conducted, at the request of Finance Canada, by the North American Division and the Fiscal Affairs Division of the Western Hemisphere Department at the International Monetary Fund.

An extensive consultation was carried out of private sector forecasters and other individuals with insights into the technical and political economy issues of fiscal forecasting. The bulk of the interviews were conducted by Bruce Little, formerly with *The Globe and Mail*, under contract with Finance Canada. The author also conducted several interviews. Most of the interviews were of Canadian experts. However, the author also conducted interviews with officials in Europe and the United States primarily to supplement the comparative quantitative analyses carried out by the IMF with some informed qualitative analysis. There is no separate report of these interviews but their observations are incorporated into the text where appropriate. (See Appendix 1 for the list of individuals consulted in Canada, the US and Europe.)

Section 2 of the report is a summary of the results of the consultations and, in effect, forms the qualitative assessment of fiscal forecasting at the federal level in Canada. It provides a backdrop to the more formal quantitative analysis and assessment of forecast accuracy that follows in Section 3. The consultations also generated useful proposals for possible changes in the fiscal forecasting regime, which will be dealt with in the Recommendations section of the report.

## **SECTION 2 – Qualitative Analysis of Fiscal Forecast Accuracy: Summary of Consultations**

The federal government's record of economic and fiscal forecasting has been a topic of discussion among private sector forecasters, academics and political party researchers for some time now. At the heart of the debate is the government's record of budget surpluses since 1997-98, almost all of which were bigger than the government predicted in its budgets and mid-year fiscal updates.

This is not an issue of widespread concern and commentary among the general public. Rather, for those outside the government, it is confined to a few score of Canadians who devote time and expertise to analyzing federal budgets and fiscal policy in general. Since their views help frame the debate, it was decided to canvass a sample of this group for their perceptions of the forecasting issue. Interviews were conducted from mid-December 2004 to the end of January 2005 with some 20 experts in forecasting and budget preparation – mainly private sector and university economists, other academics, staff advisors to political parties and some former senior Finance Department officials.

The interviews were designed to probe views on three broad questions. First, is there a problem? Second, if so, what is the nature of the problem? Is it technical, political, or does it contain elements of both? Here, the definition of political is not related to partisan politics but rather addresses the issue of the credibility of budget forecasts. Third, to the extent that there is a problem, is it amenable to solution and, if so, what solutions are possible or desirable?

The views expressed here are solely those of the participants in the consultations. We have tried to convey their views as clearly as possible, but we have two warnings for the reader. In some cases, those interviewed made statements that were factually inaccurate; although we will report those statements, we will also correct them. In other cases, we will report statements that involve interpretations or inferences that can be challenged – and, in many cases are challenged by the research carried out for this study. In those cases, we will note that these views will be addressed further in Section 3 of the report and should not be taken at face value without reading that section. As we will see, there are a number of areas in which the conventional wisdom surrounding the fiscal forecasting issue is not entirely correct, and we do not wish to contribute to further confusion on these matters. We will also, in this section, occasionally add explanatory notes to clarify the participants' opinions and to provide the background readers might need to understand their comments.

In broad terms, there were several areas of agreement among those interviewed. First, the consistent underestimate of future surpluses does indeed constitute a problem, though a few characterized it as an issue rather than a problem. Second, the surplus "surprises" are primarily the result of cautious fiscal

forecasting that flowed directly from the government's determination never to run a deficit. Third, solutions are available that should be implemented.

The government has reported surpluses for seven years now, almost all of which were bigger than initially projected. Although most analysts were not particularly critical in assessing the Budgets at the time they were released, the size and persistence of these surplus surprises have begun, in recent years, to raise questions about the reliability of the Finance Department's forecasts. It is safe to say that, among many experts, there is now agreement that the succession of larger-than-expected budget surpluses has, whether intentionally or not, inhibited an informed public debate over the main budget choices available in an era of surpluses – tax cuts, increased spending and reducing debt. It has also undermined the Finance Department's credibility to the point where some observers simply do not believe its published forecast numbers.

A few of those interviewed have carried out a systematic review of the forecast record to make their own judgments about the nature of any forecast errors. Most, however, have not. Their comments are based on their own observations over the years, which often focused on the specific aspects of the budget process that most interested them. For example, forecasters had more to say about the technical aspects of the issue than those whose main interest is budget policy itself.

## **2.1 Nature and Key Elements of the Problem**

There was an overwhelming consensus that federal economic and fiscal forecasting has become a problem of some sort, though several preferred to call it an issue rather than a problem, the distinction reflecting the seriousness with which they regarded the record of forecast errors. Several said that the subject was both trivial and real at the same time – trivial in the sense that no budget surplus should be seen as a problem per se, but real in the sense that forecast errors have both undermined the credibility of the forecasts and narrowed the range of policy options that are open to debate.

A few suggested that Canada is a lucky country indeed if one of its biggest problems is a national government whose finances regularly turn out to be in stronger shape than predicted. Other G-7 countries are running deficits (often bigger than predicted), and Canada's series of surpluses represents a major accomplishment after a quarter century of deficits that were also often bigger than forecast. If we are going to have a fiscal problem, they said, better this one than the other. This view was echoed by several European officials who noted that the generation of persistent surpluses is a pleasant problem to have and one that many OECD countries would be delighted to experience. They also pointed to Canada's exemplary record, to date at least, in governing with surpluses when the inclination in other countries is to increase permanent spending and risk creating structural deficits.

Several of those interviewed observed that the question of fiscal forecasting accuracy is one that deeply interests only the handful of Canadians – mainly in the public policy community and the financial industry – who follow budget policy. In this view, the subject is simply too technical or too arcane to grab the attention of most Canadians. One individual opined that the average Canadian is more interested in knowing only that the government's finances are sound and that the government is implementing whatever tax and spending policies they personally endorse.

At the same time, there was broad agreement among Canadian experts that there is a public interest issue that goes beyond any technical weaknesses in the forecasts themselves. In this view, the growing debate over the persistence of surplus surprises is evidence of a failure in public policymaking. Almost all of those interviewed argued that the tendency to under-forecast the surplus hinders the public and Parliamentary debate over fiscal policy options and even distorts the decision-making process itself. There was also a widely held view that federal accounting rules are partly to blame for the dissatisfaction over the surplus surprises. If the unanticipated additional funds appear only after the end of the fiscal year, it was argued that current accounting rules allow them to be used for only one purpose – reducing debt.

Finally, all clearly supported the idea that better forecasts are a good thing and would support changes to the forecast-making process that might produce more accurate forecasts, although they also recognized that precision in economic and fiscal forecasting is not possible.

### ***Surplus surprises and their implications***

At root, the problem is seen to lie not in the surpluses themselves but in the surprise nature of these surpluses – the unexpected or, at least, unprojected increments at fiscal year-end. Almost everyone interviewed focused on two facts. First, projected surpluses for any given fiscal year have tended to grow as each fiscal year unfolded, leaving additional room for government initiatives as the end of the year approached. Second, the final surplus reported some five months after the end of each fiscal year has tended to be larger, often substantially so, than the one predicted in the budget presented just before each fiscal year ended.

We might call these the year-end surprise and the final surprise respectively. Using 2003-04 as an example, the fiscal year opened with a 2003 budget projection of an underlying surplus of \$4 billion. The fall 2003 Update reported \$1.2 billion in new spending initiatives taken since the budget and the 2004 budget contained another \$3.6 billion in such measures. Yet the projected surplus, despite \$4.8 billion in new spending, was still reported at \$1.9 billion (year-end surprise). When the books finally closed on 2003-04 in October 2004, the surplus was \$9.1 billion (final surprise).

There was a general agreement that this pattern impedes sound longer-term policymaking and limits a complete public debate over the policy alternatives available. Expected surpluses can be used in one of three ways – to reduce the federal government’s debt, reduce taxes, or increase spending – but, it was argued, these options narrow over time.

Under the current legislative framework, a final surprise (that comes after the books close) can be allocated only to debt reduction, since the accounting rules permit new spending or tax measures only if they have been announced and committed before the end of the fiscal year. Any change to this practice would require legislative authority to permit the allocation of a final surplus to one or more of spending, tax relief and debt reduction.<sup>2</sup> In the absence of such authority, one person suggested, the appearance of bigger-than-expected surpluses after the fiscal year-end has amounted to a policy of “stealth” debt reduction.

There are more options for a year-end surprise (i.e. added surplus discovered just before March 31), though some are of a limited nature. First, it can be used to reduce debt. Second, it can be allocated to one-time program spending, but only if that spending is clearly enunciated and for which institutional arrangements exist before the fiscal year ends on March 31 (transfers to the provinces or foundations, for example). Third, it can be used to finance a year-end tax cut (or rebate) that would return to taxpayers some of the taxes they have – in most cases – already paid.

Several criticized the use of year-end surprises for transfers to provinces or foundations as hasty last-minute decisions that are often subject to little debate or discussion beforehand and that are resorted to mainly as a means of reducing an unexpectedly large surplus in a hurry. One person commented that such “makeshift solutions are not seen as democratic” in a world “that prizes transparency and where respect for politicians has hit new depths.” It is worth noting, however, that year-end spending initiatives are explicitly included in the (year-ahead) Budget – extra debt reduction is implicit – and, hence, amenable to discussion in the Budget debate.

To date, the federal government has chosen not to use tax rebates to reduce surplus surprises,<sup>3</sup> though some provinces have done so in allocating unexpected windfalls. Conventional tax cuts normally involve the announcement of permanent reductions that will go into effect on a given date. As such, they would apply only to the future and leave unaffected the finances of a fiscal year

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<sup>2</sup> Although the accounting rules are not changeable, there are ways to accommodate initiatives other than debt reduction (even after the year-end) that are consistent with the rules. This is discussed in Section 4.3 below.

<sup>3</sup> Although, arguably, the energy rebate provided in the Economic Statement and Budget Update in October 2000, was the result of there being unanticipated surpluses available.

that is about to end. In this context, there was widespread agreement that regular surplus surprises effectively “load the dice” against such long-term tax cuts most of all and against increases in focused program spending as well, though to a lesser degree. Debt reduction, it was felt, is the default winner in any competition for the “extras” generated during the fiscal year.

## **2.2 The Economic and Fiscal Forecasts: Issues and Solutions**

### ***Developing the private sector forecast***

The economic forecast used by the Finance Department in its budgets is based on projections made by a group of private sector forecasters. This is sometimes referred to as the “consensus” forecast, but the term should be used with care. The forecasters consulted by Finance do not thrash out their projections and come to some sort of broad agreement on the final numbers used. Rather, they present their forecasts and Finance then calculates an average of the numerical projections. Accordingly, we will avoid the use of the term “consensus” and use the word “average” instead.

One economist summed up several issues regarding the economic forecast process quite succinctly, and his list was echoed – in whole or in part – by several other forecasters who have also participated in the Finance Department’s forecast process.

First, the government takes all comers. It surveys a group of about 20 forecasters for their views of the economic outlook, but no one has to pass either a test of previous forecast success or a test ensuring that the forecast offered is internally consistent. That said, research has shown that average economic forecasts in general, both in Canada and elsewhere, have a better track record than any individual forecaster. This is supported by the quantitative analysis presented in Section 3.

The issue of how the average outlook should be calculated was also raised. It can be a simple average, or arithmetic mean, of the values forecast for each indicator (like nominal and real gross domestic product, the consumer price index and interest rates), a “trimmed mean” (in which the highest and lowest values are tossed out and a simple average taken of the remaining predictions) or something else, like the median (in which half the forecasters are above and half below the reported number). It is not conceptually clear which method is best. However, the analysis presented in Section 3.5 indicates that the choice of an averaging method makes little, if any, difference to the ultimate accuracy of the economic forecasts.

Third, in multi-year forecasts, participation drops off the further out you go. There may be 20 forecasts for Year One, but only four or five forecasts for Year Five. Most forecasters go out only two years, so the representative nature of the average from the third year on is arguably weaker than it is for the first two years.

Aside from these concerns, there was broad agreement that little more can be done on a technical level to improve the economic forecasts per se. A common comment was that the economic forecasters are professionals who are already doing their best to make accurate forecasts simply because they owe that effort to the institutions that employ them or the clients they serve. While errors in economic forecasts do contribute to inaccuracy in fiscal projections, as discussed in Sections 3.5 and 3.6, those are not avoidable through any changes in methodology or models.

### ***From economic to fiscal forecast***

Almost all the forecasters interviewed cited a general problem they face. They said data revisions frequently frustrate their efforts to predict economic growth in general and federal revenues and spending in particular.<sup>4</sup> In recent years, for example, Statistics Canada's initial estimates of nominal GDP (which is the primary input to generating the government's revenue base) were typically too low and later revised higher. One person noted that this is common during periods of economic growth, but when the economy goes into a downswing, the first estimates are often too high and later revised lower. Hence, a forecaster may be right in predicting the rate of growth for revenue or a spending item, but if the starting point for the level of revenue or spending turns out to have been wrong, then the resulting forecast of the level a year or two later (the starting-point level plus the percentage growth in that period) will also turn out to be wrong. As well, it can influence judgments about year-ahead revenue growth. This is a problem for both private forecasters and Finance.

More important to most of those interviewed is the process of converting the economic forecast into an accurate fiscal forecast – getting right the projections of federal government revenue and spending. For budget purposes, this is left to the Finance Department, which takes the economic forecasts from the private sector forecasters and uses those projections to develop its fiscal forecast of revenue and spending. There was widespread agreement that if there is a fiscal forecast accuracy problem, this is where it lies. The translation of economic projections to fiscal forecasts involves a high degree of uncertainty, an issue addressed at length in Section 3 below.

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<sup>4</sup> Only the forecasting firms (currently PEAP, Conference Board of Canada, Global Insight and Centre for Spatial Economics) produce detailed fiscal forecasts and then only for the Economic and Fiscal Update in the fall.

### ***Impossible accuracy***

Many of those interviewed made one broad point about fiscal forecasts, no matter when or how often they are done – viz., small misses in forecasting revenue and spending can produce big errors in forecasting the surplus, which is the residual when spending is subtracted from revenue. This is simple arithmetic. In 2003-04, the government's revenue amounted to \$186.2 billion and total spending was \$177.1 billion, leaving a surplus of \$9.1 billion. If revenue had been 1% lower and total spending 1% higher, the surplus would have been \$5.4 billion, or 40% lower than the actual number. Had revenue been 1% higher and spending 1% lower, the reported surplus would have been 40% higher than reported.

Several of those interviewed observed that because many people do not understand this arithmetic, they expect a much greater degree of accuracy in forecasting the surplus than is realistic. One economist said that any mistake in predicting the surplus of less than \$4 billion is trivial. His reasoning is that because an error of only 1% on roughly \$180 billion in revenue and spending can put each number out by \$1.8-billion, then such errors, if they go in opposite directions, can generate an error in the surplus of \$3.6 billion, which he rounds to \$4 billion. Another suggested that if total revenues are within 2% to 3% of the forecast on either side, the result is acceptable; an outcome outside that range means the forecasting job was not done properly. Spending forecasts, he added, should be more accurate than revenue forecasts.

Beyond that, there is an active debate over the reasons for the government's habit of winding up with surpluses that are bigger than predicted.

### ***Reasons for the surplus surprises***

Broadly speaking, those interviewed offered two reasons for the surplus surprises. The first group, comprising a large majority of those interviewed, saw the recent track record of larger-than-forecast surpluses as little more than the logical outcome of two forces – the government's practice of budgetary prudence (seen mainly as a by-product of its determination to stay out of deficit) and several years in which the economy grew faster than expected. Such a combination, they argued, made bigger-than-forecast surpluses inevitable. Almost all thought the government's caution was amply justified in the late 1990s, when it had just achieved its first surpluses after a quarter-century of deficits and was still wary of any slippage. But most thought some of this caution can now be relaxed somewhat because the government has established a solid pattern of surpluses and the ratio of debt to GDP is falling rapidly and almost certain to keep falling. This issue is, of course, the central focus of Section 3 (especially 3.5-3.7) and of Section 4.3.

The second camp, which was very small, saw the surprises as the result of deliberate manipulation that is specifically designed to stifle a wider public debate over how to use future surpluses – tax less, spend more or reduce debt. This group noted that in the past decade, the government has always produced better-than-forecast fiscal results – smaller deficits than forecast in the early years and bigger surpluses than forecast in the later years. To them, such a record is clear evidence that the government has consistently and consciously “low-balled” its surplus projections so that it could resist pressure for higher spending and lower taxes. “You cannot explain away 11 years of forecast errors that were always in the same direction, not when the false forecasts limited policy choices,” one said. “You have to argue the possibility or the probability that this was deliberate.”

### ***The prudence question***

Among those who believe that surplus surprises are partly the result of abundant forecasting prudence, most thought this habit was bred into the Finance Department by Paul Martin who – as Minister of Finance from 1993 to 2002 – insisted that the department should always underpromise and overdeliver. Some argued that the department has gladly complied because its record during the 1980s and early 1990s had been one of forecasting steady substantial declines in the deficit, only to wind up with deficits that rarely went below \$30 billion.

This perception of the record is, however, somewhat at odds with the facts. The department’s fiscal forecasting problems in the early 1980s and early 1990s were largely related to the severity of the 1981-82 and 1990-91 recessions and the associated lags on federal revenues and expenses. The 1994 Ernst & Young study showed that Finance’s fiscal forecasts were relatively on track during the late 1980s – from 1985-86 to 1989-90. Indeed, the difference might have been larger during the period had the private sector forecasts been used.

Nevertheless, among those interviewed, there was a common view that a history of predicting declines in the deficit that did not materialize was embarrassing and demoralizing for departmental officials, who were thus only too happy to follow a strict political directive to reverse the record. One of those interviewed vividly described the department’s experience in the 1980s and early 1990s as “a searing experience that might be analogized to the Great Depression” and added that it takes a long time for the effects of such an episode to disappear from an organization’s internal culture. Another scoffed at such an explanation: “It makes it too much of a psychological drama and not enough of a policy issue.” Nevertheless, many argued that since Mr. Martin had laid down such a strong line as Finance Minister, it would be difficult (especially since he is now Prime Minister) for a successor to deviate from it. Several commented that the first Finance Minister to “go soft” on the deficit – to be seen to be risking a return to deficits – will attract enormous attention, partly because public opinion polls

indicate that Canadians are opposed to deficit financing. One said that minister would wear “the cloak of shame.”

Many saw it as ironic that Finance, having lost credibility before 1993 for its excessive optimism and forecasts of ever-dwindling deficits, now stands charged with a loss of credibility for the opposite reason. A few said the department is just as embarrassed now by its sequence of bigger-than-forecast surpluses as it was by its earlier record of bigger-than-expected deficits. Almost all agreed, however, that the department has indeed lost credibility, especially in the eyes of Parliamentarians and the media, and that this development does not enhance the budget process.

### ***Sources of fiscal forecast error***

There are three elements to the fiscal forecast – revenue, interest payments on the federal debt and program spending. The first is strongly affected by the growth of the economy – and thus of the government’s tax base – and the second by the course of interest rates, so both are influenced by the state of the economy at large. The third involves a myriad of programs and other considerations.

#### *(i) Forecasting revenue*

The revenue forecast may be seen as relatively straightforward, though difficult. Nominal GDP is the tax base, so if the government has a good handle on the ratio of revenue to GDP, its revenue forecast should be as good as its forecast of nominal GDP. Of course, it is not that simple. Several forecasters noted that it is important to know the composition of future GDP growth. If personal income growth is expected to be strong, but profits are expected to fall, this would imply substantial revenue growth from personal income taxes, but declining revenue from corporate income taxes. If the growth were generated more by the domestic economy than exports, then revenue from the goods and services tax would be higher than it would be if domestic growth faltered, but external demand remained strong. A second point mentioned by some forecasters is that the ratio of revenue to GDP can shift around considerably and is particularly prone to changing at times when economic growth is either accelerating or decelerating. This makes it difficult to predict.

#### *(ii) Forecasting program spending*

Several of those interviewed suggested that program spending is not so much forecast as managed. Most agreed that it is relatively easier to predict major items, like old age security payments and transfers to the provinces, that have been fixed by agreement. Interest charges on the public debt are usually forecast with a high degree of accuracy, some said. Spending on programs by departments can be fixed in advance – in that they are given a specific budget to

live within – but may turn out to be lower than forecast. One person said program spending often winds up being lower than forecast because that is where the obvious bias lies. Departments cannot exceed their budgeted spending, but can fall short of it for a variety of reasons. For example, a major new program might be announced and a price tag attached, but if it is slow to get off the ground, spending in the current fiscal year might be much lower than expected. If there is going to be an error in predicting spending, then it will likely result in actual spending being lower than predicted spending, and that will inflate the final surplus.

Almost all, however, pointed to another source of forecast differences. The government regularly sets aside money for bad debts; it also sets aside money to allow for the possibility of losing litigation that is already under way or to allow for additional payments in contracts that are in dispute, but in the process of negotiation. When the government settled a multi-billion pay equity dispute several years ago, for example, it emerged that the sum involved had already been counted as spent and therefore the government did not have to make any additional allowances to pay what it owed. There have also been cases in which bad debts were written off for accounting purposes, but a subsequent reversal of fortune meant the debts in fact remained good and those sums were restored to the accounts. In both such situations, the costs to the government may turn out to be less than the provision made for it. This would not be the result of a deliberate choice but because outcomes were better than expected.

As it makes its forecast in each such case, the department has to make a judgment call on how much money to set aside. Several of those interviewed said officials are likely to estimate that the liability will be in a range from A (low) to B (high), and then choose a sum that might be 80% of the way to B. This might (and probably would) be done solely in the interest of prudence, they said, not deliberately to pad the spending side of the books. But if this pattern is repeated across several dozen line items in the accounts, even if the individual sums are small, the cumulative effect might turn out to be large. To avoid that problem, some suggested that when those individual estimates are made, the government should aim for the mid-point of any likely range, rather than one end of the range.

These comments apply not only to projections of future fiscal years, but of the current fiscal year as well. One person suggested this scenario might explain some of the final surprise in the 2003-04 surplus (the \$9.1 billion rather than the \$1.9 billion forecast in the March 2004 budget). Even though the budget was presented near the end of the fiscal year, Finance might not have had a clear idea of how many items might turn out. “If there are 30 things you don’t know, you go with the worst-case scenario on each of the 30,” one person commented.

### ***The no-deficit rule***

The high level of budget forecast caution goes back to what some call the asymmetry issue – the insistence that deficits be avoided, because the small-p political cost of a deficit, in terms of the government’s credibility, is much higher than the cost of a surprisingly large surplus. This, several people argued, creates the underlying pressure to forecast spending levels that reflect (as one put it) “everything you could possibly imagine going wrong.” The system, in effect, is so tilted in favour of surpluses that bigger-than-forecast surpluses are more likely as well. A related factor, one person suggested, is the Canadian economy’s exposure to international market shocks and – after September 11, 2001 – to domestic and North American security concerns. This reliance on trade and openness to the global economy means the Canadian economic outlook is often uncertain and the possibility of volatility is always present. This, he said, interacts with the no-deficit rule to reinforce any caution in making fiscal projections.

One person suggested that the practice of abundant – even excessive – caution was necessary in the mid- to late-1990s because “everyone had to believe they were serious” about eliminating the deficit. But he said this was a transitional process and, once credibility had been earned, the government should have eased back. Several people argued one point in almost the same language: As long as the government insists on never running a deficit, then surplus surprises are inevitable. Indeed, one observed that if the \$3 billion contingency reserve is widely expected to turn into a surplus at the end of the fiscal year, then anything less than a \$3 billion surplus is seen as failure – a de facto deficit. Three, one person quipped, is “the new zero.”

The result, most of those interviewed suggested, is that forecasts of spending made in the Update and the Budget contain implicit reserves in addition to the explicit reserves (the contingency reserve and the allowance for economic prudence) published in each document. Several said the 2004 Update took a big step towards greater transparency by publishing a much more detailed presentation of program spending than was usual in the past.

### ***Internal information-gathering***

A few of those interviewed raised concerns about the government’s internal monitoring of its own expenses, arguing that Finance Canada and the Treasury Board Secretariat do not have as clear a fix as they once did on spending and other items during the fiscal year. One said that in 2003-04, three Crown corporations (Export Development Canada, Canada Deposit Insurance Corporation and Canada Post) reported a total profit of \$2.5 billion, while the March 2004 Budget projected a profit of only \$515 million for that fiscal year. This would suggest that there are weaknesses in the government’s internal information-gathering system. The same person noted that when the final figures for 2003-04 were released, one reason cited for the larger-than-expected surplus

was that spending lapses (money approved but not actually spent) reached a historical high.<sup>5</sup> This should not have come as a surprise, he and others suggested, because the government implemented a spending freeze in December 2003, and many items of planned spending never got off the ground. This latter view is, however, overstated. In fact, the spending freeze applied only to capital spending; and because under accrual accounting such costs are accrued over the useful life of capital projects, there was little effect on expenses for the year.

### **2.3 Surplus Versus Deficit**

No one questioned the government's commitment to running surpluses and its abhorrence of ever again slipping into deficit; some noted that the Prime Minister reiterated this view in his pre-Christmas (2004) interviews with several media outlets. However, there was a sharp divide among those interviewed on the appropriateness of such a policy, and these views influenced the respondents' views on how cautious the government should be in setting budget policy and how much prudence should be built into any budget.

Most – especially the economists – were fairly sanguine about the prospect of running small deficits. Though they understood the government's reason for insisting on a continuation of regular surpluses, they argued that too rigid an adherence to this outcome is bad policy. Fiscal policy is seen to constitute what is called an automatic stabilizer for the broader economy. If the economy were to go into a recession, tax revenues would fall and some spending (employment insurance benefits, for example) would rise automatically. The resulting decline in the surplus – even to the point of slipping into deficit – would stimulate the economy and speed its return to growth.

Many expressed the fear that if the government were determined never to run a deficit, it might feel compelled, in order to balance the budget, to raise taxes or reduce spending during such a period and thereby exacerbate the economic downturn. If the federal government were, instead, to slip into a small deficit during an economic downturn, according to this view, so be it. A deficit would be nothing more than a sign that the system is working as it should. One proponent of this view said the government should not adjust taxes or spending to avoid deficits in a downturn and that it should balance this practice by not spending surpluses when the economy is doing well.

A few of those interviewed, however, felt that any deficit – however small – must be avoided. In most cases, they put forward variations on what might be called the “slippery slope” argument. If the government were to allow even a small deficit, the pressure to run even bigger deficits would become too strong to resist

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<sup>5</sup> In 2003-04, on a status quo basis, direct program spending was \$1.8 billion lower than estimated while fiscal transfers were \$4 billion lower.

and the country would return to the kind of large federal deficits that characterized the 1980s and early 1990s. Clearly, this is a more political take on the issue, though in some cases, it was put forward by people who are personally at ease with small deficits, but see political danger in them. As one person put it, Parliamentarians and the general public would quickly realize that even with small deficits, the debt/GDP ratio would keep falling, though at a slower pace than it would with surpluses.<sup>6</sup> Having allowed even a small deficit – unless it was clearly the result of some major unforeseen catastrophe – the government would then have trouble finding a reason, clearly explainable to the public, for a return to surpluses.

Views were divided on how financial markets would react to a deficit, though this was not generally seen as a major concern. A few people suggested the markets would react badly to any sign that the government was losing its commitment to maintaining surpluses, but a similar number said an inadvertent slip into a small deficit would not bother investors, especially if it were clear that a deficit was the result of forces beyond the government's control and that the government remained committed to returning to a surplus. A couple of those interviewed noted that financial market commentary was very negative in late 2001, when the government reduced its usual \$3 billion contingency reserve to \$1.5 billion for the 2001-02 fiscal year in the wake of the September 11 terrorist attacks in the United States. They expressed some puzzlement at this reaction. The reserve is explicitly designed to cushion the budget against unexpected negative shocks; surely, they said, the uncertainty after the terrorist attacks was a good reason to use it.

Where people stood on this issue of surpluses versus deficits was an important determinant of potential solutions they offered to the broader problem of fiscal forecasts. Specifically, it influenced their views on two questions – that of a so-called fiscal anchor and that of the appropriate degree of prudence needed in budgets.

## **2.4 Fiscal Anchor and the Role of Caution**

Most of those interviewed stressed the importance of a fiscal anchor, which they defined as a strong fiscal policy goal that can be easily communicated to the public. The government's original fiscal anchor in 1993 was to reduce the deficit-to-GDP ratio to 3% by 1996-97, 2% in 1997-98 and 1% in 1998-99. The 1998

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<sup>6</sup> The arithmetic of this argument is straightforward: since the federal debt is now about 40% of GDP, then any deficit smaller than 40% of the annual change in GDP would still permit the debt ratio to fall. In 2003-04, for example, the debt ratio fell by 3 percentage points to 41.1% from 44.1%. The numerator (the debt) fell to about \$502 billion from \$511 billion a year earlier. At the same time, the denominator (nominal GDP) increased to \$1,219 billion in 2003 from \$1,158 billion a year earlier, an increase of \$61 billion. Even if the government had run a deficit of \$9.1 billion in 2003-04 rather than a surplus of the same magnitude, the debt ratio would have fallen by 1.5 percentage points to 42.6%.

budget introduced a target of a balanced budget (backed by a \$3 billion contingency reserve) beginning with the 1997-98 fiscal year. After the books moved into surplus in 1998, the anchor was less clear, many felt, but the danger of returning to deficit still appeared real enough that the commitment to deficit avoidance was enough of an anchor to serve the government's purposes. Most thought, however, that after several years of bigger-than-expected surpluses, the value of simple deficit avoidance as an anchor has diminished.

Last year, the government announced an additional medium-term anchor – a goal of reducing the debt/GDP ratio to 25% over the next decade from 41% in the 2003-04 fiscal year. Most of those interviewed regarded the government's target of a 25% debt ratio as reasonable, though most noted that it can be easily achieved through a combination of decent economic growth and small federal surpluses. One found it strange to create a target involving a ratio in which the government controls the numerator (debt) but not the denominator (nominal GDP). Setting a debt target in absolute terms was mentioned by a few, but not recommended as such; it was seen as simply another way of targeting specific surplus targets each year. For example, a goal of reducing the debt by \$15 billion over five years is just another way of planning to run annual surpluses averaging \$3 billion over the next five years.

Discussions of a fiscal anchor, however, were intertwined with discussions of the government's contingency reserve and other forms of prudential forecasting. Almost all of those interviewed endorsed the use of the annual contingency reserve (usually \$3 billion) and the allowance for economic prudence (usually \$1 billion in the first fiscal year of the projection and growing thereafter.) These were widely seen as reasonable sums. However, most said every effort should be made to ensure that any fiscal cushions should be limited to these explicit items. At the same time, most recognized that reserves set aside for the settlement of such things as litigation, potential contract settlements and possible bad debts should be maintained and cannot be made public. There was at least one firm dissent from a person who said the contingency reserve was crucial in the early stages of deficit reduction, but is now no longer needed.

There was also a general recognition that the transparency of the budget process has been improved by the use of the contingency reserve (since 1994) and the economic prudence factor (expressed as a dollar value since 1999), both of which were thought to have also created a safety zone, or cushion, to allow for unforeseen events.

One person suggested that the government could minimize the chance of going into deficit by setting the contingency reserve much higher than \$3 billion. Under this proposal, the government would aim for a surplus of \$10 billion, but manage its affairs as if the \$10 billion level was really zero. In an economic downturn, the government could allow the surplus to fall to \$2 billion, and thereby provide \$8 billion worth of stimulus for the economy, while during a period of strong

growth, it could allow the surplus to rise to \$18 billion, and thereby provide \$8 billion worth of restraint. This would allow for a much faster repayment of debt, he said, freeing up funds now used to pay interest for other purposes.

Some economists found appealing the use of what they called full-employment budget targets. If full employment were defined as a 7% unemployment rate, the government could set a target of what the budget balance should be at that level, and deviations from the target could then be attributed to the strength or weakness of the economy. One acknowledged that it would be difficult to explain this to the general public. It should be added that it would even be difficult to achieve widespread agreement among economists and other analysts on what constitutes “full employment.”

## **2.5 Time Frame**

From 1994 through 2004, the government provided two-year forecasts in the budget, but extended its outlook period to five years in the autumn Updates. Although some said five-year forecasts are of limited use because the future rarely turns out as expected over such a period, most thought the longer-term projection is still helpful because it can cast light on issues that will emerge further down the road, issues that policymakers and the public should begin thinking about.

This view was popular with those who would advocate further tax cuts, mainly because they said tax cuts should be permanent, so the government must be reasonably confident that its financial position is strong enough that it can afford to give up that portion of its future revenue flow.

Some suggested that a longer-term time frame (something actually introduced in the 2005 Budget) would allow the government to use internal reallocations of spending to achieve its desired targets. It is easier, for example, to change spending priorities over several years by freezing one area while allowing others to grow than to make outright cuts to a lower-priority program to free up funds for more important initiatives.

### ***Three long-term issues***

Those interviewed discussed three longer-term issues for budget policy that they thought should be raised soon for public debate. One is the impending retirement of the baby-boom generation, which several suggested will have implications for federal (and provincial) revenue and spending, a subject that is little discussed in the public arena and not fully understood. One said federal revenues will be affected by the fact that baby-boom women, more than earlier generations, have spent most of their lives in the workforce and will thus have more retirement income (which will be taxable) from workplace pensions and registered

retirement savings plans. Others said health care costs will rise rapidly since the elderly account for a disproportionate share of health spending.

A second issue involves the government's target of reducing its debt to 25% of GDP. Several people mentioned that the government will face some difficult decisions once that target is reached. If it continues to run surpluses – or even just balanced budgets – then the debt ratio will fall below 25% as the economy grows. If a future government were to decide that a 25% ratio is appropriate, it would need to run deficits to hold the ratio steady at 25%. In effect, it would have to increase its debt at the same rate of growth as nominal GDP. This is not an impossibly distant prospect, several noted. Assuming moderate economic growth and small surpluses, the 25% ratio would be reached early in the next decade, a period that will begin to show up in the five-year forecasts within the next two or three years. This issue, several argued, will come as a shock to a Canadian public that has come to value surpluses, so it will require a thorough debate, one that should begin several years before decisions need to be made.

A few people looked at these two longer-terms issues together. One person in particular argued that the government will have to run deficits in the 2020s to finance the needs of baby-boom generation Canadians when many will be in their 70s. Lowering debt now and in the near future will make it easier for the government to deal with demographic pressures later on by running small deficits that will increase the overall debt level (while keeping debt/GDP ratio constant). The question of a debt target, he said, should focus on such demographic issues rather than short-term considerations. In other words, he added, policymakers should begin to shift the entire budgetary discussion; rather than worry about how to allocate current surplus surprises, they should be more concerned about how to deliver services to people in their 70s twenty years from now.

A third issue involved the longer-term outlook for the Canadian economy. One person suggested that the possibility of a major adjustment in the United States economy poses a substantial risk for Canada. This might arise through a substantial decline in the value of the US dollar or increased protectionism, both of which would make it harder for Canadian industry to generate the kind of growth it has in the past decade. This in turn would affect government revenue.

In one way or another, many suggested, the government should provide longer-term projections that highlight such issues and give them greater prominence to encourage more public awareness and discussion. An example of this can be found in the 2005 Budget, which included a concise discussion of the demographic issue.

## 2.6 Institutional Remedies

In the public debate over surplus surprises, some have suggested that Canada should develop new forecast institutions that could operate at arm's length from Finance Canada and thus act as a check on the government's own forecasting of the fiscal outlook. The Congressional Budget Office in the United States is often cited as a possible model for such an institution. Most of those interviewed dismissed that idea as incompatible with Canada's Parliamentary system of government. One said it would no more work here than Question Period would work in the US congressional system with its clear separation of powers between the executive and legislative branches of government.

Still, there was broad support for institutional remedies that would enrich the debate over budget issues in Parliament and among the general public. One person noted that the CBO, in addition to making budget forecasts, also carries out research studies into a variety of fiscal issues. A comparable Canadian research group could, for example, analyze the cost of government programs, or the revenue impact of various tax changes, or a variety of long-term fiscal issues facing the government.

Some suggested that the House of Commons Finance Committee should acquire additional resources to help it examine the government's forecasts and deepen its understanding of fiscal issues. One said the Library of Parliament should be given enough additional funds to provide dedicated specialized research support to the Finance Committee. At the time they were interviewed, most were unaware of the Committee's recent decision to commission its own quarterly economic forecasts, a proposal that envisages the Committee's getting assistance from Finance Canada in using those forecasts to generate fresh fiscal forecasts.

Many were attracted by the idea of setting up some mechanism to study a range of medium- and longer-term fiscal issues. Although the basic idea had appeal, there was a variety of views on the nature of the appropriate mechanism. A few argued for a body like the old Economic Council of Canada, which was disbanded in the early 1990s. Others said this would amount to an unneeded additional layer of bureaucracy. A few others leaned towards the creation of a smaller body that could develop a research agenda and commission studies by experts in universities and private research organizations. Such a body would be patterned more along the lines of Canadian Policy Research Networks, the Centre for the Study of Living Standards, the Institute for Research on Public Policy or the Canada West Foundation, which have developed networks of researchers who pursue questions of interest.

## **2.7 Conclusion**

Whatever their analysis, there was a strong consensus among those interviewed that better forecasting and more transparency are necessary, but they often came to this conclusion for entirely different reasons. Among those who would prefer to see more tax cuts or more spending on new or expanded programs, there was a view that better forecasting would open the door wider to their preferred policy options. Among those who give high priority to reducing the federal debt, there was an acknowledgement that the existing system has largely led to a result they like, but that the government's credibility has been undermined in the process, a result they do not like.

One person in the former camp went so far as to say that if the forecasts were accurate, the process of arriving at them, no matter how flawed, was largely irrelevant. One person in the latter camp said he had long recognized problems in the process, but had held his tongue because he liked the outcome. Over time, however, he had come to worry about forecast accuracy because he believes excessive prudence is undemocratic and amounts to withholding information from Parliament.

All, however, would endorse solutions that would make the process more open, improve the forecast record and allow for a more complete and informed debate on budget policy.

## SECTION 3 – Quantitative Analysis of Fiscal Forecast Accuracy

This section proceeds in seven segments. First, we outline the fiscal forecast processes currently used by Finance. Then, we address the issue of how accurate it is reasonable to expect budget projections to be. There is a considerable academic and practitioner literature on this subject. After that, we turn to the actual quantitative assessment of the federal track record on budget projections both on its own and then in comparison with other countries. In the next two segments, the analyses of the Policy and Economic Analysis Program (PEAP) and the Center for Interuniversity Research and Analysis on Organizations (CIRANO) and of the IMF are the primary sources used but other assessments have been drawn upon. In the final two segments, we examine the sources of forecast errors to the extent that they can be readily determined, focusing first on the contribution of economic forecast errors before moving on to consider the role of other factors.

### 3.1 Forecast Processes

In its 1994 *Review of the Forecasting Accuracy and Methods of the Department of Finance*, the consulting firm Ernst & Young made 29 recommendations grouped into five categories: forecasting methodologies, data inputs, forecast and budget process, tracking against forecasts and institutional considerations. In the 1995 Budget document, it is contended that half of the recommendations were included in or incorporated by the 1995 Budget. The document does not specify which specific recommendations were adopted, but a casual inspection of the recommendations and the changes in procedures adopted from 1995 on would suggest that they were the budget process and forecast tracking recommendations. A list of the 29 recommendations is provided in Appendix 2-A.

Since 1994, the budget processes utilized by Finance have evolved, and a chronology of that evolution is provided in Appendix 2-B. What follows is a brief outline of the procedures currently used to get from the private sector economic forecasts to the Public Accounts fiscal forecasts. The process involves four basic steps:

- (i) Collection of economic forecasts.
- (ii) Calculation of economic forecast average.
- (iii) Calculation of detailed National Accounts fiscal forecasts based on average of economic forecasts.
- (iv) Translation of National Accounts fiscal forecasts into Public Accounts fiscal forecasts.

(i) *Collection of private sector economic forecasts*

Economic forecasts for calendar year growth rates are requested of individual private sector participants<sup>7</sup> by the Department of Finance each quarter, and responses are collected up to a cutoff date. Forecasts are requested by the Department of Finance for calendar years starting with the current year and up through six years after the current year. Of course, not all forecasters provide estimates for the full span. The variables for which annual forecasts are requested are indicated in the box.

The Department of Finance has also requested, since September 1999, quarterly detail for six quarters ahead for the following variables: real GDP growth, employment growth, CPI inflation, core CPI inflation, GDP inflation rate, 3-month T-bill rate and US real GDP growth. Nominal GDP – an important input to budget projections and specifically recorded with the economic forecasts in each Budget – is *not* collected. This is because not all respondents report on inflation as measured by the GDP deflator. Rather, the Department of Finance calculates the nominal GDP forecast by using the average value of forecasts for real GDP growth and GDP inflation.

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<sup>7</sup> Current survey invitees: Bank of Montreal, Laurentian Bank of Canada, UBS Warburg, CDP Capital, Centre for Spatial Economics, CIBC World Markets, Conference Board of Canada, Mouvement des caisses Desjardins, Global Insight, Economap Strategic Economic Advisors, J.P. Morgan, Financière Banque Nationale, Merrill Lynch, Nesbitt Burns, Royal Bank of Canada, Scotiabank, TD Canada Trust, University of Toronto (PEAP).

**Economic Variable Requested<sup>8</sup>**

- Real GDP growth\*
- Potential output growth
- Real disposable income growth
- Unemployment rate\*
- Employment growth\*
- Participation rate
- CPI inflation\*
- Core CPI inflation
- GDP inflation
- 3-month T-bill rate\*
- 10-year benchmark government bond rate\*
- Current account balance\*
- Federal balance (National Accounts basis)\*
- Federal balance (Public Accounts/fiscal year basis)\*
- Exchange rate (US\$)\*
- US real GDP growth\*
- US 90-day T-bill rate
- US government bond rate (10 years)
- US CPI inflation
- US GDP inflation

## Real GDP components:

- Consumption
- Investment – total
- Residential investment
- Machinery and equipment investment
- Non-residential structures investment
- Government – total
- Exports
- Imports
- Change in inventories (\$ billions)

<sup>8</sup> Items marked with an asterisk (\*) have been collected since 1994; the full set listed has only been collected since September 1999.

Not every forecaster who submits a forecast provides a number for each of the requested items. The average value for real GDP, for example, may be derived from a different mix of forecasters than the average for the GDP deflator or the unemployment rate. In the December 2004 survey, for example, for the 2005 forecast, there were 13 respondents for real GDP growth, employment growth and CPI inflation, and 12 for the GDP deflator and for the unemployment rate. For the long-term forecast to 2010, there were 4 forecasts for real GDP growth and 3 each for the unemployment rate and the GDP deflator. The response rate for December 2004 was atypically low; on average over the last five years there have been about 18 forecasts for the current year and the year ahead, and 6 forecasts at the five-year horizon.

It should be noted that not all forecast variables provided are of equal importance in their impacts on the fiscal forecast. For example, the US forecasts, the current account and potential GDP affect an individual forecast for real GDP or inflation or interest rates, but have no independent or direct effect on the Department of Finance's models that are used to do the National Accounts fiscal forecast. As will be described further below, for the 1994-2003 span, generally only the following indicators have been actually entered into the Department of Finance's models: real GDP growth, GDP inflation, CPI inflation, the short interest rate, the long interest rate, and the Canada-US exchange rate. Since 1999 the core CPI rate has also been entered and, since 2000, employment growth and the unemployment rate.

(ii) *Calculating the average economic forecast*

The economic forecast values used for fiscal projections are calculated as the average or mean of *all* participants' survey results available for a specific variable and year. As a result, there may be different numbers of participants affecting the average for specific variables, and certainly there are different numbers of participants affecting the average for variables beyond year 2 as one proceeds through the forecast horizon. For example, in December 2004, there were 13 forecasters responding with values for the current year and the year ahead. This was an abnormally low figure but the number has been falling. In the mid-1990s, the number of respondents for the short-term forecast sometimes exceeded 20, but mergers in the banking and brokerage industry have been a key factor causing the number of independent forecasters to decline gradually but steadily over the last decade. The number of respondents and the highs and lows for each variable are all presented in the summary spreadsheets that the Department of Finance prepares after each forecast survey.

The fact that there are different numbers of participants at different forecast horizons in one survey, and between different surveys at the same horizon, may affect the interpretation of the average forecast. Hence, it would not be correct, for example, to claim that "forecasters have changed their minds" if the average has changed from one quarter to the next. While some of them may have, it may

also be the case that the mix of forecasters has changed between surveys. There are two significant issues associated with the use of the private sector average, which are dealt with below. They relate to whether a different “averaging” procedure should be used, and to whether a return to the process followed before the 1994 Budget – to use an economic forecast developed within the Department of Finance itself – are worth considering.

*(iii) From private sector economic forecasts  
to National Accounts fiscal forecasts*

The first stage in the fiscal forecasting process is to enter a key subset of the economic variables from the average forecast in the Department of Finance’s macroeconomic forecasting model. To these aggregate numbers, Finance applies its estimate of the shares of income in the major categories such as earned personal income, capital gains, dividends and corporate income. As with all work using macroeconomic models, some judgmental adjustments are made to certain model equations on the basis of their past performance to ensure a “reasonable” or consistent forecast, or to accommodate more current information.

Note that, prior to 1999, the average economic forecast was not used directly in this step but instead, was deliberately modified for “prudence” – with the projections for real GDP growth adjusted down and for interest rates adjusted up. A contingency reserve was provided for as well. Since 1999, the average private sector forecast is used directly, and explicit economic prudence factors and the contingency reserve are used as a “cushion” against a poorer economic outcome than projected.

That some of the variables collected are not entered into the Department of Finance model makes perfect sense. For example, the US variables are simply there to help underpin the explanation for Canadian growth and interest rates and do not have a direct impact on the fiscal balances.

Finally, it should be noted that the detailed fiscal projections are built from the bottom up. That is, each revenue and expense category is projected separately, reflecting its own unique and specific base, target population, program parameters and other explanatory variables. Expenditures are more of an estimation than a projection based on current program commitments although some (e.g. EI benefits) are affected by the macro economy and hence, are legitimately a true forecast.

With respect to revenues, total personal and corporate income tax collections, for example, are affected by compositional shifts in income between the personal and corporate sectors as the effective tax rates on these two bases are different. Other revenues such as return on investments and government sales of goods and services have little relation to nominal GDP. The summation of the individual

revenue lines has to be reconciled with the aggregate projection based on the application of the economic forecast to generate the total revenue projection.

*(iv) Converting from National Accounts to Public Accounts fiscal forecast*

Using National Accounts detailed fiscal data obtained from running the Department of Finance macroeconomic model (tied, as noted above, to the key average economic variables), the Department of Finance then converts the National Accounts detail to a Public Accounts basis.

There are important conceptual and accounting differences between the National Accounts and the Public Accounts. The primary objective of the National Accounts is to measure current economic production and income, and the government sector is treated like other sectors of the economy. The National Accounts are based on international accounting conventions set out by the United Nations. By contrast, the fundamental purpose of the Public Accounts is to provide information to Parliament on the government's financial activities and are based on generally accepted accounting principles for the public sector. Differences between the National Accounts and Public Accounts reflect conceptual and definitional differences (e.g. the Public Accounts includes revenue related to capital gains while these are excluded from the National Accounts) and timing differences related to the recording of certain revenues and expenses.

Some of the differences are relatively straightforward, primarily relating to classification differences (e.g. in the Public Accounts, the Canada Child Tax Benefit is netted against personal income tax revenues while in the National Accounts it is a government expenditure item). There are adjustments for the not-so-straightforward differences (e.g. the treatment of capital gains and differences in timing of receipts and expenses). Adjustments are also made to convert survey-based data used by Statistics Canada to actual data used in the Public Accounts. Statistics Canada provides the Department of Finance with the detailed reconciliations between the two systems on an historical basis. The Department of Finance uses these adjustments to convert the National Accounts fiscal projections to a Public Accounts basis.

The Department of Finance also makes adjustments to the National Accounts-based projections to include more up-to-date information including data from the Canada Revenue Agency on various revenue sources (personal income tax, corporate income tax, etc.) and more current spending numbers as the year is progressing.

Although the first set of adjustments is relatively straightforward, the latter set of adjustments includes professional judgment by the Department of Finance. But these latter adjustments are a legitimate part of the forecast process. More timely data can always and everywhere improve forecasts. For the Department of

Finance to ignore or not use its knowledge of current fiscal developments and the most timely information would not make sense. But any attempt to examine and decompose the fiscal forecasting process after the fact will be imprecise because of all the assumptions and judgment calls that are made between the average National Accounts-based fiscal forecasts and the budget fiscal forecasts. In the November 2004 Economic and Fiscal Update, the Department of Finance did provide detailed reconciliations between the National Accounts and Public Accounts fiscal forecasts by major component, thereby showing the various adjustments made to each series. We return to this later when examining the role of economic forecast errors and other factors in assessing fiscal forecast accuracy.

### 3.2 The “Big Picture” on Fiscal Forecasting

Before getting ensnared in the details of quantifying the forecasting track record of the Canadian federal government, it is important to get a proper perspective on the issue of forecast accuracy. To provide a “big picture” view, it is worth examining the research done by both academics and practitioners on the subject.

The observation most commonly made<sup>9</sup> is that a budget balance, whether surplus or deficit, is the arithmetic difference between two very large numbers – the streams of revenues received and expenditures made by the government. A very modest error in either or both can translate into a rather large error in the difference between the two. For example, take the actual surplus for fiscal 2003-04 of \$9.1 billion. If revenues had turned out to be 1% higher and spending 1% lower, the net impact on the surplus would be to raise it by almost \$3.6 billion or by more than one-third of the actual reported result. Start with a projected surplus much smaller than that – say, the \$4 billion (before adjustment for contingency reserve) in the 2005-06 projections from the 2005 Budget – and make a 1% error on each of revenues and expenditures and the surplus would double (or disappear if the errors lowered revenues and raised expenditures). As well, the more volatile are the revenue and expenditure patterns, the more prone a fiscal projection is to errors and to relatively larger ones.

Another source of uncertainty in the fiscal projections arises because, in addition to its own revenues, the federal government collects personal income tax on behalf of nine provinces, corporate income tax on behalf of seven provinces, and contributions to the Canada Pension Plan. Estimates of these amounts are made each month and transferred to specified purpose or “off-budget” accounts and are significant. In 2003-04, they totalled \$66 billion, or more than 1/3 of total federal revenue. Given their magnitude, even small percentage variations in the monthly estimates can cause the year-end projected fiscal outcome to differ significantly from the final, audited year-end outcome. Any differences between the two amounts affect the fiscal surplus. Positive adjustments to federal

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<sup>9</sup> See, for example, Rudy Penner (2001) and Ernst & Young (1994).

revenues due to overpayments to the CPP have been as high as \$850 million, and as high as \$1 billion from the Provincial Tax Collection Accounts.

(i) *Forecast bias and efficiency*

The key focus of most quantitative analyses of fiscal forecast accuracy is to test for the existence of bias; forecast bias assesses whether the positive and negative forecast errors balance out over time. Strauch et al.<sup>10</sup> evaluate bias in the fiscal forecast performance of EU countries over the period 1991-2002. Using aggregate data for the EU countries, they find that, while no systematic bias exists at a macro level, forecast errors increase in magnitude as the forecast horizon increases, reflecting the greater uncertainty of future budgetary outcomes. They indicate that a considerable proportion of the forecast errors are “large” – i.e. greater than one percentage point. When comparing forecast errors across countries, their analysis shows differences in forecast errors among European countries and, in many cases, finds significant forecast bias.<sup>11</sup> Austria, Denmark, the United Kingdom, Finland and Sweden all exhibit a strong bias to overestimate their deficit, while France, Italy and Portugal show a tendency to underestimate their deficit. However, as noted by the authors, caution must be used in interpreting their cross-sectional results as accounting concepts differ across countries, particularly near the beginning of the period examined.

While Strauch et al. use the difference between forecasts and actual outcomes, Alan Auerbach (1999) examines semi-annual forecast revisions over the period 1986 to 1999 to compare projections of United States revenues prepared by the Congressional Budget Office (CBO) and by the Office of Management and Budget (OMB). For the whole period (and after removing the impact of policy initiatives in order to restrict the analysis to economic and technical revisions), he finds that average forecast revisions are close to zero (i.e. positive and negative revisions cancel each other out) for both the CBO and OMB<sup>12</sup> – i.e. there is no evidence of bias. However, when he splits the sample period into the “pre-Clinton” (1986-93) and “Clinton” (1993-99) periods the result is that the “pre-Clinton” period is characterized by a tendency to overestimate revenues, while in the “Clinton” period there is a bias towards the underestimation of revenues. This is the case for both the OMB and CBO.<sup>13</sup>

Both Strauch, et al. and Auerbach also test for serial correlation (i.e. repetition of the same error) in order to judge the efficiency of fiscal forecasts, i.e. whether forecasters use all the information available to them at a given point in time.

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<sup>10</sup> Strauch, Rolf, Hallerberg, Mark and von Hagan, Jürgen (2004).

<sup>11</sup> This result appears to contradict results from the aggregate analysis, which found that, overall, forecast errors were symmetrically distributed around zero. The aggregate result is perhaps misleading, as there are differences in the behaviour of forecast errors across countries.

<sup>12</sup> Auerbach considers the average revision at each forecast horizon, as well as the sum of these average revisions over all horizons.

<sup>13</sup> Only the OMB revisions for the “pre-Clinton” period show statistically significant bias.

Evidence of serial correlation indicates that forecasters fail to “learn” from past forecast errors. Strauch, et al find that, beyond the current year horizon, budgetary forecasts for longer time horizons are serially correlated over time, i.e. are not fully efficient.

Auerbach’s analysis also shows the existence of serial correlation for both the OMB and CBO forecasts over the whole sample period. While breaking the sample into the two distinct (pre-Clinton and Clinton) periods reduces the serial correlation somewhat, OMB revisions continue to show significant serial correlation.

Both Penner and Auerbach assess the factors which may generate fiscal forecast bias and efficiency. In discussing the persistence of errors in the five-year forecasts by the CBO over the period 1989 to 2000, Penner points to institutional and political factors as primary causes. For instance, he suggests that forecasters adjust their key assumptions only gradually to what emerge as permanent structural changes in model relationships (e.g. sensitivities of revenues to economic variables like growth and interest rates) in order to avoid major jumps in budget projections from one forecast period to the next. This would make it difficult for policymakers to rely on the forecasts, particularly if the changes turned out to be temporary. Auerbach too considers the effects of institutional and political factors. He suggests institutional factors as a potential explanation for differences in pre-Clinton and Clinton methods of forecasting. As well, he considers the possible impact of budget targets implemented under the Gramm-Rudman-Hollings legislation on forecast revisions.

(ii) *Fiscal forecast uncertainty*

In general, the relevant research on fiscal forecasting concludes that there exists an unavoidable level of uncertainty. In addition to noting that projecting the difference between two large numbers can lead to large percentage errors, Penner also points out that many smaller forecasts (i.e. line revenue and expenditure items) go into the final aggregate product. He states, “A good forecast, which emerges if the hundreds of errors offset each other, is largely a matter of luck.”

Most experts also emphasize the inherent difficulties of making point estimates in projections with relatively large standard errors of forecasts. Auerbach suggest that, given the uncertainty of revenue estimates, it is appropriate, if a government is operating under a zero-deficit budget target, to include a downward bias in point estimates in order to avoid the prospect of a deficit outcome. In Crippen’s (2003) overview of the CBO’s development of budget estimates and analysis of forecast error, he points to the need to incorporate explicit measurement of uncertainty into budget forecasts. He states that “... there will always be uncertainty in the budget processes ... Policymakers need to account for

uncertainty in their decision-making.”<sup>14</sup> He notes that when the CBO releases its January economic and fiscal outlook, it includes information regarding the uncertainty of budget projections. Each year, based on historical forecast errors,<sup>15</sup> the CBO produces what has come to be known as the “Fan Chart.” The “Fan Chart” estimates confidence intervals around the baseline projections in order to provide perspective on the likelihood of deviations from the estimated baseline. Penner also advocates the use of explicit confidence intervals around the point estimates in a fiscal forecast.

In Canada, there have been studies analyzing the uncertainty surrounding budget estimates. In particular, Boothe and Reid<sup>16</sup> assess the probability of recording future deficits given specific budget rules and varying levels of prudence built into budget projections.<sup>17</sup> They argue that prudence should be included as part of budget projections given that balanced budget targets result in one-sided risk to the fiscal authority. They conclude that if budget rules were adopted requiring that cumulative budget totals be balanced over two to four years, the level of annual prudence needed to reduce the probability of going into deficit in a given year to (close to) zero, would be between \$6 billion and \$9 billion. Hermanutz and Matier<sup>18</sup> modify some of the key assumptions in the Boothe and Reid approach<sup>19</sup> and find a lower level of prudence than asserted by Boothe and Reid is required to achieve a comparable (high) probability of avoiding deficit.

To summarize, studies of fiscal forecast performance in the US and Europe generally find evidence of bias in forecast errors and of a tendency to serial correlation (persistence of error). Many of these studies also acknowledge that there is a level of uncertainty surrounding budget estimates that is unavoidable and suggest several means of overcoming this difficulty. These include incorporating confidence bands around point estimates of revenue, expenditures and balance. As well, they posit the need to build in explicit prudence whose level is linked to the probability of missing a fiscal target such as avoiding a deficit under any circumstance. As discussed in Section 3.7 and 4.3, the specific fiscal rule will affect the amount of prudence required to meet it.

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<sup>14</sup> Crippen (2003), p.51.

<sup>15</sup> The historical period used for the 2005-2014 budget projections was 1981 to 2003.

<sup>16</sup> Boothe, Paul and Reid, Brad (1998).

<sup>17</sup> The four levels of prudence considered are: zero, \$3 billion, \$6 billion, and \$9 billion. The three budget rules considered are: a balanced budget in every year, a balanced budget over a two-year period, and a balanced budget over a four-year period.

<sup>18</sup> Hermanutz, Derek and Matier, Chris (2000).

<sup>19</sup> E.g. balancing the budget over a two-year rolling horizon, non-permanent shocks to GDP and partial debt rollover each year.

### 3.3 Calculating Forecast Accuracy

While simply calculating the variance from actual outcomes of a fiscal forecast could reasonably be expected to be a straightforward process, it is far from that. A perusal of several such attempts illustrates that point. In Table 1 the calculation of the difference between budget projection and actual is provided for three recent assessments of forecast accuracy. The first one (actually two versions) is from the study by the Policy and Economic Analysis Program (PEAP) and the Center for Interuniversity Research and Analysis on Organizations (CIRANO) (2005) which was carried out specifically for this report. The other two are from Dale Orr (2005) of Global Insight and Jim Stanford (2005) of the CAW. Their analyses are publicly available on their respective websites.

It is clear from the table that no two calculations of the forecast-actual differential over the 1995-2003 period are precisely the same. While the differences are modest between PEAP – CIRANO 1 and Orr, they are significant between Stanford and the others. This is due, in the first three years, to the fact that Stanford used the budget forecast numbers inclusive of the explicit contingency reserve and the others used the numbers exclusive of that adjustment. The differences between PEAP – CIRANO 2 and the rest are also material.<sup>20</sup> Even where the variations among the calculations are slight, it can give rise to some confusion on the part of the casual reader and to concerns about the credibility of the exercise among more technically expert analysts. It is important, therefore, to clearly spell out the framework and assumptions that underlie the forecast accuracy assessment in this report. It also points to the added confusion that can arise from analysts using different starting points in their assessments of forecast accuracy.

#### (i) *Preliminary considerations*

The first issue is the forecast period that will be examined. Fiscal forecasts can be made one year, two years, five years and ten years into the future. In the US, the Congressional Budget Office (CBO) has made some forecasts over a fifty year time horizon. In the PEAP – CIRANO study there are estimates of forecast accuracy for one- and two-year-ahead projections as well as for fiscal year-end forecasts presented with budgets for the current year. The IMF study examines one- and two-year-ahead forecast errors. In this report the focus of the analysis will be on the accuracy of one-year-ahead budget projections. These are the projections which get the most attention from analysts as they are the most critical for the fiscal planning and policy debate. In recent years, forecast errors at the end of the year have attracted much popular (or at least political) attention. As well, forecast accuracy (normally) should be higher the shorter the time horizon of the projections.

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<sup>20</sup> This will be discussed more fully below.

The starting point for the forecast of a particular year's budget balance, revenue and expenditures needs to be clearly articulated. The year-ahead forecast is found in projections in the budget for the upcoming fiscal year. With two exceptions, federal budgets in the last ten years have been tabled in the House of Commons in February or March just in advance of the beginning (April 1) of the upcoming fiscal year. The two exceptions are the Economic Statement and Budget Update projections in October of 2000, which became, de facto, the budget projections for fiscal year 2001-02, and the forecasts made in the Budget of December 2001 for fiscal year 2002-03.

The options for the final outcome (end point number) against which the forecast is compared are the estimate at (fiscal) year-end (in the budget for the upcoming year) and the number announced when the books are closed on a fiscal year – usually 7-8 months after the fiscal year-end. A third alternative, used for ease of data collection by the IMF, is the actual result reported in the Budget of the following fiscal year (i.e. the actuals for fiscal 2003-04 provided in the documents for Budget 2005-06). This should be the same as the “books closed” number. In the report, the numbers provided in the late fall when the books are closed on the previous fiscal year are the ones used.

There are two material adjustments to the comparisons of forecast vs. actual which need to be incorporated in the analysis. Both have been made in the PEAP – CIRANO research but not in the other studies cited above. First, PEAP – CIRANO ensures that the original projections and actual outcomes are adjusted for any accounting changes that have been made in the Public Accounts of Canada between the point at which the forecast was made and when the actual outcome is finalized.<sup>21</sup> For example, the government moved to full accrual accounting during the 2002-03 fiscal year. Forecasts made in the December 2001 Budget were done on a partial accrual basis but the final outcome was reported on a full accrual basis.

The second, more substantial, adjustment is to incorporate into the calculation of the projection/outcome gap the policy initiatives – revenue or expenditure – that have occurred during the fiscal year. The government has frequently chosen to adjust its spending given evidence that revenues are likely to be much larger (or other expenditures much lower) than originally forecast. That then uses up some or all of the unexpected increment to a projected surplus. If the degree of accuracy of the original forecast is to be properly assessed, the in-year policy initiatives need to be excluded from the calculation. Hence, suppose the forecast had been for a surplus in a given year of, say \$7 billion – with projected revenues of \$175 billion and projected expenditures of \$168 billion – and it actually comes in at \$8 billion. The forecast appears reasonably accurate. However, if the \$8 billion surplus were the result of actual revenues of \$185 billion and actual expenditures of \$177 billion, the forecast could not reasonably be considered to

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<sup>21</sup> For one-year-ahead forecasts, the time difference is 18-20 months.

have been off by only \$1 billion. Had the government not included an additional \$9 billion of spending the actual surplus would have been \$17 billion. The gap between projected and actual would be \$10 billion rather than the apparent variance (unadjusted for policy initiatives) of \$1 billion.

The PEAP – CIRANO study is the only one to have made the adjustments for one-year policy initiatives, and that is evident in the PEAP – CIRANO 2 version of the forecast error calculation in Table 1.

In what follows on measuring the degree of accuracy in federal budget projections, the report relies primarily on the work done by PEAP – CIRANO as it is the most comprehensive in making adjustments to the official published figures to provide a clear record of what occurred.

(ii) *Budget balance*

Budget forecasts, outcomes and differences from outcomes,<sup>22</sup> adjusted as described above, are detailed in Tables 2 through 5. The first of these tables shows forecast differences for the year-ahead budget balance both including and excluding in-year policy initiatives. In Table 3, the balance forecast differences are disaggregated into forecast differences in revenues, program expenditures and public debt charges. Table 3a is for year-ahead forecast differences *without* adjusting for in-year policy changes. Table 3b provides the year-ahead differences adjusted for policy initiatives.

The PEAP – CIRANO analysis considers not only the fiscal aggregates but also examines the detailed components of total revenue and total expenditure. Table 4 shows the shares of the individual major revenue and expenditure categories relative to their respective totals, while Table 5 presents a summary of the year-ahead forecast differences in these detailed categories, adjusted for in-year policy changes.

In Table 2, the first column shows the year-ahead budget balance forecast and column 2 shows the actual budget balance outcome including the impact of in-year policy initiatives, which are displayed separately in the fourth column. The policy initiatives are specified by their impact on the actual budget balance. Thus, for example, the \$4.8 billion for 2003-04 represents the in-year spending increases (and a very small tax cut), which lowered the budget balance by that amount. Without these policy initiatives the surplus would have been \$4.8 billion higher than the \$9.1 billion officially recorded and reported in the actual balance column. In all years except 1996-97, the in-year policy initiatives

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<sup>22</sup> We have adopted for the most part the terminology used in the PEAP – CIRANO study for the difference between projected and actual values. They prefer “differences” to “errors,” which is the more commonly used term. However, the two terms can be used interchangeably and the latter will also be used, albeit sparingly.

(predominantly increases in spending) have reduced what would otherwise have been bigger surpluses.

This year-ahead balance forecast is consistent, on an accounting basis, with the actual outcome including explicit “contingency” and “prudence” factors. Thus, in the Budget of February 2003, the balance for the fiscal year 2003-04 was projected to be \$4.0 billion. In the actual Budget documents, contingency and prudence factors totalling \$4 billion were subtracted to yield the so-called “planning balance.” That adjustment is not incorporated in Table 2.

The third column compares the budget forecast with the outcome before adjusting for policy initiatives. This is the most widely used approach to calculating forecast error as reflected in Table 1.<sup>23</sup> However, the most appropriate comparison is of the forecast with the outcome adjusted for policy initiatives, which is shown in the fifth column. That is, it shows what the deficit/surplus would have been had the policy initiatives not been undertaken and then the last column indicates what the adjusted forecast error or difference should be.

The key results shown in Table 2 can be briefly outlined. When the year-ahead budget forecasts are compared even with the outcomes *not* adjusted to exclude policy initiatives, there is only one year (1998-99) when the forecasting difference is positive (that is, the budget balance was over-forecasted), and then only by \$0.1 billion. However, it must be noted that for the Budgets of 1994 through 1999, implicit economic prudence<sup>24</sup> was incorporated into the budget forecast, and should have led to some degree of under-forecast of the balance. This point is explored in greater detail below.

The persistent under-forecasting of the balance is even more apparent when in-year policy initiatives are accounted for. In no year was the balance over-forecast and the average under-forecast for the last four fiscal years (when there was no implicit economic prudence) has been over \$10 billion.

*(iii) Major components*

The balance forecast gaps are decomposed into forecast differences for total revenues, total program expenditures and public debt charges in Table 3 for the year-ahead forecast relative to the standard outcome (adjusted for all accounting changes but not for in-year policy initiatives) and for the year-ahead forecast compared to outcomes that have been adjusted for in-year policy initiatives.

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<sup>23</sup> The results shown for PEAP – CIRANO 1, Orr and Stanford are inclusive of policy initiatives.

<sup>24</sup> In those years, as mentioned in Section 2, Finance took the average of the private sector forecasts and then adjusted them (down for growth, up for interest rates) to make the fiscal projections more conservative.

The sources of differences in the year-ahead forecast relative to the outcome adjusted for (excluding) policy initiatives are shown in Table 3b. The differences for the budget balance are consistently negative, indicating that it was always under-forecast. This consistency carries over to all three major components. For total revenues, in seven of the ten years, there was an under-forecast of revenues and in the three years of over-forecasts (1994-95, 1995-96 and 2002-03) the differences tended to be small. Note, however, that in the last three years the forecasts for total revenues have generally been accurate. The years of largest errors – and they were very large – were 1997-98, 1999-2000 and 2000-01.

For total program expenditure there is only one year (1998-99) when expenditures (adjusted to exclude policy initiatives) were under-forecast.<sup>25</sup> In the last two years (2002-03 and 2003-04) there have been large over-forecasts which contributed materially to the under-projections of the surplus. The difference between the outcomes including and excluding policy initiatives is by far the largest for program expenditure. If in-year policy initiatives are ignored (Table 3a), it appears that forecast differences on expenditure have been roughly balanced between over- and under-estimates, and the forecast differences for the last several years have been relatively small (the largest being -\$3.3 billion in 2000-01). But once in-year policy changes are excluded, the persistence of program expenditure over-forecasting becomes clear, and is especially pronounced in the last two years.

Public debt charges also show a pattern of consistent forecast differences, with only two of the ten years being under-forecast. The forecast differences are generally smaller in absolute dollar terms than in the other two categories, but not insubstantial – and especially in the last three years, when there was no longer a prudence adjustment incorporated into the interest-rate forecasts by Finance.

*(iv) Detailed revenue and expenditures*

Finally, in calculating forecast accuracy, we turn to an examination of the detailed revenue and expenditure categories. The shares in each category of their respective totals are shown in Table 4, while the forecast differences of the year-ahead budgets adjusted for policy initiatives are shown in Table 5.

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<sup>25</sup> To avoid confusion about terminology, an under-forecast, whether of revenues, expenditures or budget balance, will be entered as a negative value in the tables. However, the term under-forecast can have different meanings depending on the variable. An under-forecast for the budget balance implies that an actual deficit was smaller or a surplus larger (hence better) than predicted. An under-forecast of revenues – revenues ended up higher than projected – would contribute to the budget balance being better than expected. However, an under-forecast of expenditures – spending was greater than anticipated – would contribute to the budget balance being worse than projected.

From Table 5 it is clear that, despite the relatively consistent pattern of under-forecasts for total revenues, there is no one main cause among the components. However, the relative shares of the various components will have a bearing on their respective impact in a given year. Personal income taxes, which have accounted for 45%-48% of total revenues, will tend to have a greater influence than other categories. Personal income taxes did show a consistent pattern of being under-projected from 1997-98 through 2002-03 (although the difference in 2002-03 was negligible). But over-forecasts occurred in each of the three earliest years examined and again in the most recent year. Corporate income taxes show relatively large differences (especially given their much more modest 12%-16% share of total revenues) in most years – the item is clearly very difficult to forecast well – and has shown an under-forecast in eight of the ten years, with two large over-forecasts recently. EI/UI premiums (10% in recent years) show smaller forecast differences and no tendency to be consistently of one sign or the other. GST revenues (12%-15%) can show large differences (five of \$1 billion or more), but there have been six underestimates compared to four overestimates, hence no clear pattern of forecast errors. Miscellaneous tax revenues show relatively small differences but a pattern of persistent under-forecasting. Finally, non-tax revenues (Crown profits, foreign exchange fund, sales of goods and services), while only about 5% of total revenues, do reveal, especially in the last seven years, a strong and consistent under-forecast in the range of \$1.0 billion to \$1.5 billion.

Total program spending, adjusted for in-year policy initiatives, has been over-forecast in nine of the last ten years. Amongst the components, the largest absolute contributor to this pattern has been direct program spending, which has been overestimated in each of the last ten years – by over \$4 billion in seven of those years. That it has had the biggest impact on the forecast gap is to be expected since it is by far the largest component of total program expenditures (close to 50%). Second, EI/UI benefits have been over-forecast in nine years, although the amounts are generally less than for direct program spending. By contrast, there has been relatively little difference from actuals in the forecasts for OAS benefits and CHST transfers. Forecast differences for other transfers to other levels of government (OLG) have sometimes been sizeable, but display no pattern of being consistently under or over.

(v) *Summary*

There are several conclusions to be drawn from this brief overview of the basic calculations of the differences between year-ahead budget projections (balance, revenues and expenditures) and the final outcomes.

First, there is a persistent pattern of under-forecasting the budget balance, especially if due adjustment to the officially reported numbers is made for policy initiatives undertaken during the fiscal year. In the last seven years, said initiatives were material, averaging \$5½ billion over that period.

As a result, the budget balance projection has been too low in all ten years, exceeding \$1 billion in every year, over \$10 billion in four years and close to double digits in two other years.

Second, in seven of the last eight years, total revenues have come in above projections and dramatically so in three of those years (1997-98, 1990-00 and 2000-01). However, from 2001-02 on, the revenue projections have been close to the final outcomes and have made only a modest contribution to the budget balance under-forecasts in this period.

Of the main components of total revenue, personal income tax (PIT) has had projections that proved to be too low in six of the ten years while corporate tax revenues (CIT) have been more consistently under-forecast (eight of ten years). As well, the size of the variance for CIT has been *relatively* greater, exceeding \$1 billion (ignoring sign) in all but one year (vs. seven years for PIT) and especially considering it has constituted only 12%-15% of total revenue (vs. over 45% for PIT). Finally, by way of contrast, EI/UI premiums and GST, which generate 10%-15% of total revenues, have been almost evenly divided between being under- and over-forecast and have not tended to have material differences between forecasts and actuals.

Total program expenditures have more consistently contributed to the budget balance projections being too low, having been over-forecast in all but one year. And, although there have not been the double digit gaps that have occurred several times in total revenues, the (absolute) differences have exceeded \$1 billion in all but one year. Total revenue variances were below \$1 billion in three years.

As to the components of program expenditures, direct program spending has been the most persistent contributor to over-forecasting, having achieved that distinction in every year. The projections for EI/UI benefits have been under in all but one year while OAS benefits and CHST transfers have been insignificant. Other transfers to other levels of government have been evenly split between over- and under-forecasts and have tended to generate small differences until 2003-04.

These conclusions are observational rather than analytical in nature. The facts presented do not, in any obvious way, “speak for themselves” in explaining *why* the budget balances have been under-forecast in every year of the last decade. The component sources can be specified and their arithmetic contribution calculated, but that tells us nothing about *how* it came to pass that program spending has been consistently over-forecast and total revenues regularly and, in some cases, dramatically under-forecast.

Before turning to an examination of the factors that may explain why the forecast difference patterns have emerged, it is worth putting Canada's track record into a broader international context. That is, the observational conclusions indicate that the budget balances over the last decade have been persistently under-forecast in Canada, often by a significant amount. Have other countries experienced similar fiscal forecast results during the same period?

### **3.4 Canada's Forecast Accuracy – An International Comparison**

The IMF study, carried out at the request of Finance Canada, attempts to answer precisely that question and finds, in short, that Canada is something of an outlier compared to the ten other countries whose fiscal track record they examined. In a later section of the paper, we incorporate their analysis of why this might be the case. However, at this point, we will look only at their assessment of Canada's comparative fiscal forecasting record.

In their study, the IMF compared Canadian central government budget forecasting with that of the other G-7 countries (excluding Japan) plus Australia and New Zealand (like Canada, commodity exporting countries) as well as the Netherlands, Sweden and Switzerland (comparably smaller industrial countries). Like the study by PEAP – CIRANO, the IMF compared one- (and two-) year-ahead budget projections with actuals or outcomes as reported in subsequent budget documents.

Unlike PEAP – CIRANO, the IMF did not make adjustments for accounting changes nor, more critically, for in-year policy initiatives. The data collection (and checking) for eleven countries in each of the ten years that would have been required to ensure comparable fiscal data sets would have been an impossible task in the short time frame within which the IMF was operating. This implies, however, that the two studies carried out specifically for this report were not using the same calculation of differences between forecast and actual. However, as the inclusion of in-year policy changes has had a unidirectional impact on forecast differences (increasing them), the conclusion of the IMF on Canada's track record – that budget balances were more persistently and significantly under-forecast relative to other countries – would likely be reinforced.<sup>26</sup>

The IMF, in its study, points to a number of data-related problems encountered in their work. Chief among them were the following:

- Some countries did not provide a complete ten year set of fiscal information.
- While coverage of revenue and expenditure data is broadly similar across countries, there are limits to the degree of comparability.

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<sup>26</sup> Inclusion of other countries' in-year policy initiatives conceivably could change Canada's relative positioning if one or more had larger in-year initiatives than Canada.

- Expenditure sub-categories appear to be especially difficult in this regard.
- Time limitations may have prevented their catching all data anomalies.

However, the authors of the study determined that the degree of accuracy and completeness were sufficient to carry out their analysis.

The overarching conclusion on comparative forecast accuracy is that Canada is among the group of countries with relatively weak forecast accuracy. Using measures of average forecast differences over the period, Canada has had the most consistently negative (under-forecasted) revenue values and the most positive (over-forecasted) values for expenditures. As a result, Canada is something of an outlier when it comes to under-forecasting its fiscal balance.

Canada is, however, not the only country to display a bias towards projecting fiscal balances that are too low. On average, over the period, Switzerland, New Zealand, Australia and Great Britain also under-forecast their budget balances. As well, the relative (ignoring sign) size of the fiscal differences was much larger for the US. However, the under- and over-forecasts balanced out in their projections so there was no directional bias. It is also worth noting that, unlike Canada, the misses on fiscal balance projections in the other countries tended to be under-forecasts in the boom condition of the late 1990s for over-forecasts after the downturn began in 2001.

The IMF notes that, with respect to revenue projections in Canada, the PIT and GST forecast variances have been the most significant contributors to the overall revenue under-forecasting. The PIT observation is consistent with that of the PEAP study, but not that for GST. In the PEAP work, the under-forecasting of CIT turns out to be more critical.

In the IMF results, however, what stands out is that, in the case of Canada, the average forecast difference is negative for all subcomponents of revenue, a result not found in any other country. They conclude that in the revenue projections, it is the accumulation of small but persistently negative errors, rather than large forecast errors per se, that make Canadian fiscal forecasters appear relatively pessimistic.

With respect to expenditures, the IMF finds that forecast differences are primarily in the debt servicing costs rather than in the program spending categories. This is almost certainly due to the fact that they did not make adjustments for one-year policy initiatives, which, as the PEAP – CIRANO analysis demonstrates, were predominantly on the expenditure side. Ignoring the policy initiatives, this would make the expenditure forecasts look closer to the actuals as the underlying over-forecast would be reduced by in-year increases in actual expenditures.

In general, although there are differences in some key details of their fiscal accuracy calculations, the studies by PEAP – CIRANO and the IMF concur in their conclusion that there has been a persistent negative bias in (under-forecasting of) Canada's fiscal balance and revenues and positive bias in (over-forecasting of) expenditures. In addition, the comparative work by the IMF indicates that Canada has larger such biases in its fiscal projections than the ten other countries with which it was compared.

We shift now from observation to analysis. What are the factors which can help explain Canada's absolute and relative forecasting performance? The accuracy of economic forecasts is the starting point.

### **3.5 Track Record of Economic Forecasts**

In looking at the impact of economic forecast errors on fiscal forecast accuracy, we are actually asking two distinct but related questions. First, how accurate were the economic forecasts – i.e. how big have been the differences between the year-ahead economic projections and the actual performance of the economy? Second, of the persistent differences in budget balances, revenues and expenditures between projections and outcomes, how much can be attributed to the inaccuracies in economic forecasts?

In the analysis by PEAP – CIRANO, the general answer to the first question is that the private sector economic forecast differences have been large especially for some of the key variables but that, whatever their size, the differences are not persistently in one direction or another – i.e. neither persistently under- or over-forecasting those variables which are critical to a fiscal forecast. This latter conclusion points, directionally at least, towards an answer to the second question. The private sector economic forecasts used by Finance to generate their fiscal forecasts have, in certain years, been a significant contributor to budget projection differences but a large share of the explanation for persistent under-forecasting of budget balances lies elsewhere.

Before proceeding further with the consideration of the track record for economic forecasting, a cautionary note is in order. There were, associated with the budget process, two sets of economic forecasts over the period 1994-95 to 1999-2000. In preparing the budgets in those years, Finance gathered the private sector forecasts and calculated the averages for each of the main economic variables. Then, to certain of the variables (short- and long-term interest rates and nominal GDP), they added prudence – i.e. made the economic assumptions more conservative. For example, in the budgets from 1996 to 1999, nominal GDP growth was projected to be one-quarter of a percentage point lower than the average private sector forecast while the interest rate assumptions were 0.7 points higher for short-term rates and 0.6 points for long-term rates. In the budget documents through that period, the economic forecast used was the

prudence-adjusted version. From Budget 2000 on, the private sector forecast was utilized without a prudence adjustment.

This makes a difference because, in its examination of economic forecast accuracy, the IMF study used the economic forecasts as they appeared in the budgets and found, unsurprisingly, that there was a persistent tendency in the case of the Canadian economic forecast to under-forecast GDP growth and over-forecast interest rates. This result varies from the assessments of private sector economic forecast accuracy carried out by PEAP – CIRANO and Orr. In particular, the PEAP – CIRANO results for economic forecast accuracy discussed above were based, for maximum comparability and fairness, on unadjusted forecasts collected each December. However, in the PEAP – CIRANO study, they also use the budget document economic forecasts (including prudence adjustments) to measure the quantitative impact of economic forecast errors on fiscal forecast differences. In that work, the IMF and PEAP – CIRANO studies are in parallel.

*(i) Data volatility*

As in its examination of fiscal forecast accuracy, PEAP – CIRANO has provided the most comprehensive examination of economic forecast accuracy. They begin by considering whether the Canadian economy has, in recent years, become more difficult to forecast. If so, that might provide a clue as to why the federal fiscal forecasts have been persistently inaccurate.

Using a set of standard statistical tests, PEAP – CIRANO compared the data for thirteen variables whose behaviour could have a direct or indirect bearing on economic forecast accuracy. They compared quarterly time series for two periods, 1984 to 1993 and 1994 to 2003. The results are shown in Table 6.

On two measures of volatility – standard deviation and standard deviation relative to the mean – with only one unequivocal exception (current account balance), the volatility is the same or lower in the later period. The change in the current account likely reflects the transition in recent years from persistent current account deficits to persistent surpluses. Similarly, the measures of auto-correlation – the correlation between the current value of a variable and its value in an earlier period – show no evidence of having changed from the first to the second period.

PEAP – CIRANO concludes that, while forecasting key economic variables might have proven to be more difficult in a particular year, there is no evidence to suggest that any of the key series have become less predictable. On the other hand, it is also evident from the table that there are considerable differences in volatility among the variables. The most notable is corporate profit growth with the highest standard deviation and, in the more recent period, second highest standard deviation relative to mean.

In its assessment of the potential impact of macroeconomic volatility (i.e. swings up and down in real growth, inflation and interest rates) on economic and fiscal forecasts, the IMF study puts the issue into a broader perspective. Focusing on four key variables – real GDP, consumer price inflation, short-term interest rates and nominal effective exchange rate – the results show that Canada has experienced greater macroeconomic volatility than most of the other countries examined. Over the period 1990 to 2003, Canada had the third highest output volatility after New Zealand and Sweden. We were also in the upper end of the range in the volatility of interest rates and middle of the pack regarding inflation. Interestingly, Canada is close to the bottom of the pack in the volatility of its exchange rate.

Notably, however, whatever may have been the impact of growth and interest rate volatility on economic forecast accuracy, the IMF analysis did not find that it appeared to have had much direct effect on the relative predictability of fiscal revenues in Canada. With the exception of corporate tax revenues, in which category Canada had the highest degree of volatility, the other revenue sources showed relatively low volatility and, for total revenue, Canada had the least volatility among the eleven countries. In short, macroeconomic volatility does not appear to have been a barrier to making a good fiscal forecast.<sup>27</sup>

(ii) *Private sector economic forecasts*

In assessing the track record of the Canadian private sector forecasters used by Finance, PEAP – CIRANO examined the difference between the average forecast and the actual outcome. Some economic data – principally from the National Accounts – are subject to several revisions over time, so they chose as the actual the first annual revision by Statistics Canada.<sup>28</sup> The forecasts chosen were made at the end of the year for the upcoming calendar year.

The forecasts for calendar years 1994 to 2003 for ten economic variables are depicted in Charts 1-4. The ten economic variables are: real GDP growth, unemployment rate, employment growth, CPI inflation, GDP inflation, current account balance, 3-month T-bill rate, 10-year benchmark rate, the Canada/US exchange rate and US real GDP growth. In each graph the forecast range for the individual forecasts is highlighted in grey for each year, the average forecasts are depicted by ■ and the actual (the first Statistics Canada revision of the variable in question) by ●. For each series, the number of misses is indicated (that is, the number of times the actual value of the variable does not fall within the range of forecasts made by the forecasters who participated in the survey).

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<sup>27</sup> However, the IMF does note, more generally, that “the evidence that forecasts tend to be more conservative in the presence of macroeconomic and fiscal volatility is relatively strong” and suggests the need for further research on this issue.

<sup>28</sup> Over the years Statistics Canada has re-based and redefined elements of the National Accounts in ways that forecasters could not have anticipated. Using the most recent Statistics Canada data therefore leads to invalid estimates of economic forecast errors.

Two general results stand out. The first is that data series such as the unemployment rate, employment growth and CPI inflation appear relatively easy to forecast, with the actual value of the variable falling within the range of private sector forecasts in eight of the ten years (ten of ten for the unemployment rate). The accuracy of the forecasts of the two interest rates is also strong. By contrast, economic growth, whether it be in Canada or the US, appears much harder to forecast accurately. It has been particularly difficult to forecast Canadian real GDP, for example, over the last five years with the actual value falling outside the forecast range in every year. This is noteworthy since real GDP makes up part of the nominal GDP forecast, which is perhaps the most essential component in the budget forecast.

On the other hand, although for some of the series the forecast misses have been rather large, there is no indication that the private sector forecasts are consistently off in one direction or another. For example, for real GDP, the average of private sector forecasts was below the actual on five occasions and above in the other five. In the last five years of the period examined, they have been under three times and over twice. For the GDP deflator, which like real GDP they also missed seven times (actual value outside the forecast range) the split is five over, four under and one spot on. However, all four under-forecasts occurred in the last five years. In Orr's study, he notes that in the past nine years, private sector economists over-forecast real GDP growth 5 times and under-forecast it 4 times.

For short-term interest rates, which have been more accurately forecasted (two misses), the over-under split is four to six, while for longer-term rates (two misses) there has been a pronounced tendency to over-forecast (eight to two).

The IMF analysis of Canada's economic forecasting record is not directly comparable to that done of private sector forecasts by PEAP – CIRANO. As noted above, the IMF used the economic forecasts found in the budget documents which, for five of the nine years they examined, included an adjustment by Finance to the private sector forecasts for prudence, i.e. lower growth rate and higher interest rate assumptions. As a consequence, they found that the economic forecasts for growth over the ten year period had a significant negative bias that caused an average 0.5 percentage point underestimate. In comparative terms, Canadian projections of real GDP tended to show larger forecast errors and a more distinct negative bias than was the case for other countries examined. The persistent under-forecasting of GDP inflation (by 0.2 percentage points) added to that for real GDP meant that nominal GDP – ultimately the key figure for projecting (nominal) fiscal revenues – was also persistently underestimated.

It is not absolutely clear what the consequences for the IMF's comparative analysis would have been had they used only the private sector forecasts.<sup>29</sup> However, they did test a set of private sector forecasts of real GDP growth for each country using information available from Consensus Economics for the month in which the budget was released (e.g. March in Canada, February in the US, etc.). The results were that, for Canada, the private sector forecasts of growth were closer to the actual values over the period examined than were the economic forecasts in the federal budget documents. This is, of course, consistent with PEAP – CIRANO and Orr and is the result of the government's having added its own prudence to the private sector economic forecasts for six years.

The other important result from the IMF study was the finding that projections of nominal GDP were relatively significantly affected by underestimation of base year GDP levels. That is, in addition to being under in the forecasts of real GDP growth rates and inflation rates, the projections on average underestimated the year beginning GDP level in which the year-ahead growth rate would be calculated. Hence, even if the growth and inflation rate forecasts were perfect, if the actual base from which they were done turned out to be higher than the projection assumed, the size of the increase in GDP would be underestimated with comparable follow-on effects for revenue forecasts. The size of the GDP level underestimation was larger than that for any of the other countries in the sample.

In this context, PEAP – CIRANO specifically examined the issue of data revisions and their impacts on growth rates for GDP and its components, as well as on estimates of GDP levels. They find that there has been a very persistent pattern of upward revisions to nominal GDP and real GDP growth rates over the past decade. In nine of the last ten years, later estimates of nominal GDP are higher than the original estimates that would have been available when the budget-related economic forecasts were being made.

The problem this creates is that forecasters, both economic and fiscal, do not have an accurate picture of the recent past, which can affect their one-year and two-year-ahead growth forecasts. And it is not just the recent growth rate that is relevant. Even more critical is the impact that the *ex post* revisions have on the *ex ante* assumptions about the level of GDP and its components that the forecasters would have been working with. Finally, it is not simply that the GDP numbers have been revised once or twice but that in some instances, there have been serial revisions. For example, the initial growth figures for 2000 were released by Statistics Canada in February 2001, then revised in May 2001,

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<sup>29</sup> This is not meant as an implied criticism of the IMF as they were using the official budget document figures on economic assumptions for all the countries examined. Their treatment of Canada was consistent with that.

May 2002, May 2003 and May 2004. The quantitative impact of data revisions on fiscal forecast accuracy is estimated in the next segment.

### **3.6 Impact of Economic Forecast Differences**

As was apparent from the summary of the consultations provided in Section 2, there is a perception on the part of some that the inaccuracies in economic forecasts have played an important, albeit not overwhelming, role in the persistent under-forecasting of budget balances. In the discussion that follows, we rely extensively on the PEAP – CIRANO study to assess the contribution of economic forecast differences. As well, the IMF has some comments to make on this from a comparative perspective.

Note that in the analysis by PEAP – CIRANO, they are estimating the impact of the errors in the economic forecast as those forecasts appeared in the budget documents. This is not, for 6 of the 10 years, an estimate of the private sector economic forecast errors.

As noted in the outline of the forecast process in Section 3.1, there is a clear connection from the economic forecasts to the generation of the fiscal forecasts on a Public Accounts basis. However, the economic variables are entered into the National Accounts-based estimates of revenues and expenditures. Then the National Accounts components are subject to amendments as they are translated into Public Accounts forecasts. Judgments are made in line with newly received data and the continuous evolution of not only the economy but also of data on current revenue and expenditure flows. That is, the movement from economic forecast inputs to Public Accounts fiscal forecast outputs is not a mechanical one. This is one of the reasons that PEAP – CIRANO used three different approaches to attempt to estimate the contribution of economic forecast errors to fiscal forecast differences.

The first approach they used was partial correlation analysis to relate economic forecast differences to fiscal forecast differences for the main categories of revenues and expenditures.

The second uses the “fiscal sensitivities” (or “rules of thumb”), developed by the Department of Finance from its own models and analyses, that are rough measures of the impact of a given change in a major economic variable (like real GDP or short-term interest rates) on aggregate revenue and expenditure. Using these fiscal sensitivities and combining them with the economic forecast differences can show how much of a given budget’s revenue or expenditure forecast difference might have been due to a mis-forecast (or data revision) of a key economic variable.

Finally, the third method builds on some recent work by Dale Orr of Global Insight.<sup>30</sup> It focuses on revenue and is grounded on the assumption that each component of revenue has at least some predictable relation to nominal GDP. Conceptually, the forecast for a particular revenue component can be divided into two parts: the forecast for nominal GDP, and the forecast of the ratio of the component to nominal GDP (i.e. its “share” of GDP).<sup>31</sup> The forecast difference for that component may be attributable to either the forecast difference for GDP, or the forecast difference for the ratio or share.

(i) *Correlations of economic and fiscal forecast differences*

The first method calculates simple correlations, over the ten year period, between the relevant fiscal and economic forecast differences. While most expenditure categories will not be closely related to economic performance, the correlation calculations were also extended to all the main expenditure components. Moreover, the correlation analysis was not restricted to GDP and interest rates, but done for other economic indicators as well.

Correlation coefficients were calculated for year-ahead budget forecasts both unadjusted and adjusted for one-year policy initiatives. For the sake of brevity, only the latter are reported here but the more complete set is available in the PEAP – CIRANO study.

For total revenue forecast errors, there is a strong, but not overwhelming correlation of 0.34 with forecast errors in nominal GDP, as shown in Table 7.<sup>32</sup> The correlation with real GDP is virtually the same and with GDP inflation somewhat smaller. Note that the forecast for total revenues will be affected by both growth rates and baseline (year-beginning) levels of GDP. Correlations are done only for the rates.

With respect to the components of total revenue, the highlights from Table 7 include:

- Personal and corporate income tax differences are less correlated with real or nominal GDP than is total revenue. Corporate tax revenues are inherently volatile, and depend on previous years’ economic performances as well as on the relative strength of particular sectors. PIT collections also depend not only on current year economic activity, but also on past years’ in the form of rebates or adjustments that occur at year-end.

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<sup>30</sup> Op. cit.

<sup>31</sup> The revenue/GDP ratio for individual revenue components and for total revenue is functionally equivalent to the revenue sensitivities used by Finance. They both indicate the impact on revenue of a \$1 change in nominal GDP.

<sup>32</sup> A correlation coefficient of 1.00 means that the two variables move perfectly together while 0.00 implies no link at all. A value over 0.25 is noteworthy.

- EI premiums and GST revenues (which combined account for 25% of federal revenue), on the other hand, show a stronger correlation with GDP than does total revenue. These items depend directly on in-year economic activity, with relatively little “hold-over” effect from previous years.

Forecast differences for total program spending show a negative correlation with forecast gaps in GDP, which are about the same absolute size (opposite sign) as the comparable figures for total revenues. This is due primarily to EI benefits, where forecast errors are, not surprisingly, strongly (negatively) correlated with nominal and real GDP (and even more strongly with the unemployment rate). There is also a modest negative correlation for direct program spending, indicating that when the economy surprises on the upside (real or nominal GDP end up better than forecast), then program spending tends to come in below forecast.

Finally, forecast differences for public debt charges show a very strong correlation with forecast differences on both long- and short-term interest rates, but also with real and nominal GDP. The latter should not be a surprise if the Bank of Canada’s reaction to higher-than-expected GDP growth over a year is to raise interest rates more than expected, and vice versa.

The simple correlations tend to confirm conventional expectations of the relationships between the economic and fiscal variables. The next step is to try to quantify this impact in dollar terms.

(ii) *Estimating the impact of economic forecast differences on fiscal forecast differences using Finance fiscal sensitivities*

In their analysis, PEAP – CIRANO evaluated the impact of economic forecast differences on the forecasts of overall Public Accounts revenues, expenditures and balances using the fiscal sensitivity factors presented by Finance in each Budget (or fall Update). The Finance fiscal sensitivities are rough approximations of the relationships between key macroeconomic variables and both total revenue and individual revenue categories. The sensitivities are applied to the differences for the economic forecasts used in the budgets from 1994 to 2003 (with deliberate prudence added in the first six years).

One additional method that could conceptually have been used to trace the impact of economic forecast differences on the fiscal forecast differences would have been to run the Department of Finance macroeconomic model of the appropriate year with the actual economic inputs rather than the values forecasted at the time to see what the model would have predicted the impact to be on National Accounts fiscal variables in that year. This analysis – in the parlance of forecasters a shock (economic actuals) minus control (budget economic assumptions) analysis – would yield an estimate of the impact on the

National Accounts-based fiscal projections consequences of economic forecast errors. Any remaining differences would then be attributable to the differences between the National Accounts and Public Accounts budget projections.

This method was not, however, practical (or even feasible) given the time and resource constraints available for this report. Moreover, the fiscal sensitivities published by the Department of Finance with each budget are themselves derived from the Department's macroeconomic model. Even had such a calculation been possible, it is not necessarily the case that any difference between the National Accounts and Public Accounts fiscal forecasts would have then remained the same, since in the final Public Accounts forecast process adjustments are made for current economic conditions as they seem to be deviating from the private sector forecast.

In the fuller PEAP – CIRANO analysis, there is a delineation of the estimated sensitivities of revenues, expenditures and budget balance to a 1% increase in nominal income and to a 100 basis point (1 percentage point) decline in all interest rates. These can be found in Table 6.4 of their study. It will only be noted here that the sensitivity factors have been changed over time and reflect, among other things, adjustments in the mix of expenditures and income sources. The impact of nominal income changes have increased for all three fiscal categories. By contrast, the sensitivity to interest rate changes of expenditures and budget balances (revenues are only very modestly affected) has declined as a result of the diminishing size of the public debt and the lengthening maturing structure of the debt.

Table 8 shows the estimated impacts of the economic forecast differences on the revenue, expenditure and balance forecasts for the “year-ahead” fiscal forecast. The economic impacts are then compared with the fiscal forecast differences both unadjusted for policy changes (“Budget Difference” in the table) and with policy changes excluded from the comparison (“Budget Diff Excl Policy”).

For revenues there are two measures of economic impact. The first (“economic impact”) applies the fiscal sensitivities to the forecast differences in growth rates for nominal GDP, real GDP and the GDP deflator. However, this will be only a partial measure of “economic forecast differences.” As noted above, there have also been significant revisions over time to levels of nominal GDP (and, of course, to real GDP and the deflator), and these revisions can also cause a misperception of what the level of the economy will be in the future. Hence, the forecast of nominal GDP growth that Finance had used in a budget may turn out to have been perfectly correct, but if the level of nominal GDP at the time of the budget were to be subsequently revised up by several billion dollars, then the *level* of GDP that Finance would be forecasting as a basis for revenue would also

end up being several billion dollars higher, leading to an under-forecast of revenues.<sup>33</sup>

The right-most panel of Table 8 for revenues takes into account these data revisions to the level of nominal GDP along with forecast differences in growth rates (“Economic Impact – Levels Adjusted”). Of course, in attributing any fiscal forecast error to this economic component, the underlying assumption is that all nominal GDP revisions came as “surprises” and could not have been anticipated. For technical reasons it is not possible to make an equivalent adjustment on the expenditure side. Since (nominal) expenditures can be distinctly affected by real GDP growth (e.g. EI benefit payments) and inflation (e.g. inflation-adjusted pension benefit), it would be necessary to separately use forecast differences in real GDP and GDP deflator growth rates (rather than nominal GDP). Adjusting for revisions to starting levels in both variables becomes extremely complex.

To interpret the results carefully, take first the left-hand column under “Economic Impact” for 1994-95. It states that due to the economic forecast errors that occurred, revenues were under-forecasted by \$2.1 billion. Put differently, had the growth rate in nominal GDP been accurately forecasted, the projection for revenues would have been \$2.1 billion higher. When subsequent revisions in the level of nominal GDP for 1993 (the base for projecting the level on the forecasted growth rate) are taken into account, revenues would have been under-forecasted by \$2.3 billion. While the difference between the two estimates is small for 1994-95, this is not always the case. In 1996-97 accounting for nominal GDP revisions along with forecasting differences in the growth rate changes the implied *over-forecast* of \$1.0 billion to an *under-forecast* of \$1.7 billion.

For total program expenditures and again for 1994-95, the economic forecast differences indicate that spending was over-forecast by \$0.9 billion. For public debt charges, on the other hand, the serious under-forecast of interest rates in early 1994 led to an under-forecast of \$3.2 billion.

The first two columns of Table 8 show the fiscal forecast differences against which the impacts of economic forecast differences should be compared. Recall that there are two measures presented: “Budget Diff Excl Policy” shows the forecast difference from the budget with in-year policy changes removed, while “Budget Difference” is simply the forecast difference from the budget with no allowance for in-year policy changes. The largest differences between these two measures show up for program expenditures, while there are much

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<sup>33</sup> There have also been significant revisions over time to the nominal levels of the expenditure and income components of GDP as well as to the overall level, and these could potentially have had their own independent impacts on the fiscal forecast differences. Note, however, that income and expenditure components are forecasted by the Department of Finance itself and not by the private sector forecasters. The components are made to total to the aggregate GDP obtained from the private sector.

smaller differences between the two for revenues, and none at all for public debt charges.

Finally, the second and third columns of the “Economic Impact” panels relate the *estimates* of forecast differences due to economic impacts to the actual forecast differences observed. Where actual numbers appear, they are the per cent of the fiscal forecast difference that can be “explained” by economic differences. Thus, for example, for 1995-96 for total revenues, the impact of economic forecast differences at \$2.4 billion, explains 81.7% of the observed forecast difference for total revenues that year. (There were no policy adjustments to the forecast difference in 1995-96, so the 2% contributions in the middle panel are the same). When allowance is made for levels revisions to nominal GDP on top of the forecast differences for growth rates, the estimated impact in this year is, in fact, slightly smaller, at \$2.2 billion, which “explains” 76.8% of the forecast difference for total revenues in 1995-96.

Where a “\*” appears, this indicates that the estimated impact of the economic forecast differences explains none of the fiscal forecast difference, or more precisely, that the “contribution” in fact goes the other way. For example, in 1994-95 the observed forecast difference for total revenue was a (small) overestimate of \$0.6 billion. However, because GDP growth projections for that year were too low (by 1.6 percentage points), the impact of the economic under-forecast differences should have caused an *under*-forecast of total revenues of \$2.1 billion. It is in that sense that the fiscal forecast difference goes “the wrong way.” Another way of stating it is there was a revenue over-forecast of \$2.5 billion for reasons unrelated to the economic forecast that more than offset what should have been an under-forecast of over \$2 billion, generating a final \$0.6 billion over-forecast.

What, then, do the results tell us in general about the impact of economic forecast inaccuracies on the three main fiscal forecast components?

For total revenues, if we consider *only* differences for growth rates of nominal GDP, the answer is “relatively little.” For the ten years examined, economic forecast differences contribute to explaining fiscal forecast differences in only three: 1995-96, 1999-2000 and 2000-01. In 1995-96 the economic forecast differences explain over 80% of the fiscal forecast difference, in 1999-2000 just over 50% and for 2000-01, about one-quarter.

The picture changes if we incorporate the consequences of revisions to nominal GDP in the base year to which the growth rate is applied. The result is that the economic forecast differences make some contribution to explaining revenue forecast differences in seven of the ten years, the three exceptions being years in which fiscal forecasts were less than \$1 billion below actuals. In four instances the economic forecast contribution exceeded 50% (including 2003-04 when it *over-explains* the revenue forecast difference).

For total program expenditures the impact from economic forecast differences is smaller, which is not surprising since many expenditure categories are relatively immune to macroeconomic disturbances. For program spending, the primary economic sensitivity is to real GDP and the GDP deflator as they affect employment insurance benefit outflows as well as inflation-indexed programs.

It is clear from Table 8 that the estimate of economic forecast impacts is different when adjustments are made for in-year policy initiatives. In two years it goes from not making to making a contribution and in two other years the opposite occurs.

With or without in-year policy changes, only four of the ten years show any impact of economic forecast differences on expenditure forecast differences, and in only one instance (2002-03 with no allowance for in-year policy changes) is the economic forecast contribution greater than 25%.

Finally, for public debt charges, as might have been expected, economic forecast differences almost always contribute importantly to the fiscal forecast differences. Of the two years where there is no contribution (or the contribution has the wrong sign), one (2000-01) has a tiny fiscal forecast error to begin with. There is a substantial contribution (30%-60%) in six years, and an “over”-contribution (that is, the economic forecast differences would explain more than 100% of the debt-charge forecast difference) in the other two (1994-95 and 1995-96).

An “over”-contribution likely indicates that at least part of the economic forecast difference was anticipated at budget time and was corrected for in the Public Accounts forecast put forward in the budget. Thus, for example, in 1994-95 the private sector forecast from early in 1994 (even with the addition of a “prudence” element) would have generated an under-forecast of \$3.2 billion on debt charges because interest rates turned out in that year to be much higher than forecasted. However, as the actual error turned out to be just over \$1 billion, it suggests either that some offsetting error was made in the process of generating the Public Accounts budget forecast from the prudent average economic inputs *or* that by the time the budget was in final stages of preparation it was realized that the prudence-adjusted forecast for interest rates would be too low and the public debt charge forecast was judgmentally adjusted up.

*(iii) Economic forecast impacts – GDP/share decomposition*

If it is assumed that each of the major components of total revenue is linked to some degree to the level of nominal GDP – the correlation coefficients analysis suggests that is the case – then the accuracy of revenue forecasts will be influenced by changes in the level of GDP in two possible ways. A change in the level of GDP and/or a change in the relationship between the revenue component and GDP will cause an adjustment in the flow of revenues. In effect, then, a revenue forecast can be subdivided into two elements, the

forecast for nominal GDP and the forecast of the ratio (“share”) of the revenue component to nominal GDP. A fiscal forecast difference can arise either because the change in the level of GDP is higher or lower than projected or because there has been an unanticipated adjustment in the ratio of revenue to GDP.

The estimation of the two elements of forecast error can be done as follows. The forecast difference due to GDP levels is calculated by multiplying the actual (*ex post* observed) value of the ratio by the forecast GDP. To estimate the ratio or share difference, multiply the actual (*ex post* observed) value of GDP by the forecasted (expected) ratio.

It should be noted that since the reference to nominal GDP and to the ratio is to levels, the economic forecast difference impact effectively incorporates the influences both of errors in the growth rate forecast *and* of data revisions to nominal GDP.

The decomposition technique has been applied by PEAP – CIRANO to revenue components and to total revenue. The results for the revenue components can be found in their study. We report here only those for the aggregate revenue figure which are shown in Table 9. The entries for 1994-95, 2001-02 and 2002-03 can be ignored since the revenue difference is small and the negative sign on the “Economic Difference” indicates that economic forecast errors made no contribution to revenue forecast differences but in fact went the other way.

For the seven years in which the revenue forecast differences were more substantial, the economic forecast inaccuracies accounted for more than half of the result in four years and under 40% in the other three. The balance of the impact in those years comes from mis-forecasting the revenue/GDP ratio.

The results of the decomposition technique are broadly comparable with the estimates of impact derived from applying the Finance sensitivities to the revenue forecasts. Comparing Table 9 with the right-hand panel for total revenues in Table 8, economic forecast errors explain over 50% of the fiscal forecast differences in the same four years, and 40% or less in those other years in which the fiscal forecasts were off by more than \$1 billion. The decomposition method, in general, attributes a somewhat larger contribution to the economic forecast differences than does the application of the sensitivities approach.

In sum, the results of using the three methods to estimate the impact of economic forecast inaccuracies on fiscal forecast errors yield the following conclusions:

- Economic forecast inaccuracies have, on occasion, contributed significantly to forecast differences for total revenues, but a considerable portion of those differences remain to be explained.

- It appears that the economic forecast contributions stem more from *revisions to nominal* GDP on which forecasted GDP growth rates are applied than to errors in the forecasted growth rates themselves.
- For program expenditures, a relatively small proportion of the forecast differences can be explained by reference to the economic forecasts.
- A substantial portion of the forecast differences for public debt charges can indeed be attributed to errors in forecasting interest rates.

(iv) *Contribution of economic forecast errors – international comparison*

While the IMF assessment of economic forecast accuracy is not directly comparable to that done by PEAP – CIRANO of the private sector forecasts, their assessment of the contribution of economic forecast errors to fiscal forecast differences is more parallel. In the PEAP – CIRANO estimates of economic forecast contributions, they utilize the economic forecasts actually incorporated in the budget with, for the first six years, implicit prudence added. The IMF work is based on those same budget document economic forecasts. However, the IMF analysis does not adjust for in-year policy initiatives so it would be comparable, if at all, only with that part of the PEAP – CIRANO analysis which makes no provision for in-year changes in expenditures. As well, the approaches used by the two organizations are sufficiently different that we will refer to consistency (or lack of it) in the results of their analysis rather than to comparability. That is, they may come to conclusions that are directionally similar though they arrive there by different (non-comparable) paths.

While the IMF study finds that macroeconomic volatility is higher in Canada than other countries, it does not appear to have translated into volatility in revenues. Hence, that facet of the economic environment is not a factor in exploring fiscal forecast errors. With respect to economic forecasts, the IMF concludes that a significant portion of fiscal forecast errors is “related to a forecast bias in the macroeconomic component.” They also suggest that while macroeconomic volatility may not have affected revenue volatility, it could have caused more pessimism in the growth projections used in the budgets. More generally, across countries, greater unpredictability in major macroeconomic indicators is associated with more pessimistic economic growth projections in fiscal forecasts.

Their conclusions regarding the impact on fiscal forecast inaccuracy of economic forecast error is not inconsistent with the PEAP – CIRANO analysis, but does not go into the level of detail (nor could it) in estimating the precise sources of the impact from economic forecasts and delineating their proportional contribution to fiscal forecast differences.

### 3.7 Other Factors Influencing Fiscal Forecast Accuracy

The combination of economic forecast errors and serial revisions to data on levels of nominal GDP provide only part of the explanation for the persistent under-forecasting of budget balances (mainly by way of revenue projections that are too low). The issue then is, what other causal factors can we point to?

(i) *Timeliness of data*

One possible factor is the timeliness of information flows. For the most part, Finance has close to real-time availability of the relevant data required for tracking revenue and expenditure flows. They get monthly reports from the Canada Revenue Agency (CRA) on flows of tax collections of all types. Any anomalies in the data flow are routinely discussed with CRA. Finance also maintains close communications with Statistics Canada to better understand any prospective differences between National Accounts and Public Accounts results. From within government, the Department receives timely reports on Employment Insurance benefit payments, OAS and public debt charge payments.

Despite the flow of up-to-the-minute information, many challenges remain in forecasting fiscal components even within the current year, let alone one year ahead. For several major revenue categories, including the Personal Income Tax (PIT), the Corporate Income Tax (CIT) and the GST, there are significant deficiencies in the information available even at or near the fiscal year-end.

The move to full accrual accounting has also made forecasting PIT collections more difficult because all the filing adjustments that occur in April through May of the current year get pushed back into the previous fiscal year, which is when they are technically “accrued.” Thus the budget estimate for the fiscal year just ending is made with critical information not yet available, and whose final value can vary widely from what the ongoing stream of information on monthly source deductions and quarterly installment payments would indicate.

For CIT flows the key issue is that corporate profits are inherently quite volatile and corporate tax flows are more volatile still. The taxes paid by Canadian firms are not linked solely to this year’s earnings but are also affected by the tax losses that may be carried forward from earlier years. Even if Finance had a complete and detailed record of the books of these companies (and the resources required to maintain them), they still could not predict when individual firms would decide to trigger tax savings. As a result, the picture for CIT returns can change significantly when end-of-year filings for the non-financial institutions are done in February and March.

One factor that has led to some consistent forecast differences over the last several years relates to the revenue component Non-Tax Revenues (NTR). There has been a consistent under-forecast of NTR flows of \$1 billion to \$1.5 billion from 1997-98 through 2003-04. Relatively little of this under-forecast

appears to be due to forecast differences from nominal GDP. Finance has advanced a plausible reason for this pattern. For a number of years, these particular revenue under-forecasts have been due to higher-than-expected profits from the Crown corporations – including, but not limited to, the Canada Mortgage and Housing Corporation (CMHC), the Export Development Canada (EDC) and Canada Post. As with other corporations, data on their profits comes late in the budget cycle. Moreover, for a number of years there has been a reluctance to believe that the profits that had only recently appeared would indeed continue. (EDC profits, for example, were boosted by reduced loan-loss provisions for foreign entities). Hence, there emerged a succession of under-forecasts when the profits of Crown corporations continually surprised on the upside.

Thus, to sum up, for most revenue components even the most timely stream of current information cannot make up for discrete timing events like end-of-year filings and corporate profit reporting. The timing of budgets and the government fiscal year do not mesh well with these discrete reporting periods. In one particular case a series of consistent under-forecasts is explained by the uncertainty surrounding Crown corporation profits.

(ii) *Expenditure mis-forecasting*

For major expenditure categories it is reasonable to expect that more accurate forecasting would be possible because the government simply determines what it intends to spend. But in a number of categories, the actual outcome can differ from the plan.

One source of forecast differences on the expenditure side is the phenomenon of program “lapses” and “re-profiling.” Of the funds appropriated to individual departments or programs, not all will necessarily be spent during the year because departments are not permitted to exceed their budgets. As a result, allocated spending is subject to “lapse.” Over the last ten years, appropriations were not made for the compensation impacts of upward movement “through the ranks” in departmental staffs. This would put upward pressure on departmental budgets and it was assumed, therefore, that lapses would get smaller over time.

To ensure that year-end spending splurges did not occur (which would protect against allocation cuts), departments were allowed to “re-profile” some funding – that is, to carry over some allocated funds to the next fiscal year. According to Finance – to the overall benefit of the country but to the detriment of fiscal forecasting – many departments have used this ability to re-profile extensively, leading to a number of years in which actual departmental program spending has ended up being significantly over-forecast because an unexpectedly large share of the funds allocated for a fiscal year was “re-profiled” to the next year. This re-profiling has apparently continued on from one year to the next, and has contributed to a series of consistent direct program expenditure over-forecasts.

Another potential source of over-forecasting within program spending arises out of the provision for contingent liabilities – that is, for funds to be set aside against the possibility, for example, that a lawsuit or other court or arbitration decision might go against the government or that loans outstanding to other governments or organizations could go into default. Many of these provisions are kept secret because, especially in the case of legal disputes, knowledge of how much the government has provisionally booked for a settlement could seriously affect ongoing negotiations.

The provisions for these liabilities and for debt default will change with circumstances and new information from year to year as the Department of Finance re-assesses risks. These adjustments are difficult to forecast and there is a degree of discretion open to Finance in making the adjustments. Not surprisingly, Finance is reluctant to reduce these contingencies in specific instances in order to maintain its flexibility to deal with unforeseen challenges. As a consequence, there may be years in which the provisions were larger than the amounts actually required.

These observations, however relevant, are directional and suggestive only. Without specific data concerning lapses, spending re-profiling and contingent liabilities it is impossible to quantify the extent of their impact on the accuracy of the forecasting process.

Another expenditure forecast challenge relates to equalization payments to the provinces. Much of the data underlying the determination of equalization only becomes available well after forecasts have to be produced. In several instances, including 2003-04, data received after a significant lag have indicated that equalization has been overpaid. The impact on 2003-04 was particularly severe since under full accrual accounting, the fiscal impact of these changes must be recognized in the year in which the government became aware of the changes. This decreased actual expenditures and, consequently, increased the magnitude of the expenditure forecast error.

Under new agreements with the provinces, the amount of equalization will become much easier to determine and to forecast, but tax-base results from the provinces for 2002-03 and 2003-04 are still pending and could affect fiscal forecasts for equalization for the next two years.

*(iii) Failure to learn?*

There are several specific instances of persistence in forecast errors that raise the (arguably) provocative issue of whether forecasters – economic and fiscal – display a “failure to learn” syndrome. Three examples will suffice to illustrate this possibility. It is clear that over the last ten years, there have consistently been upward revisions to the estimates of real and nominal GDP growth rates. As

described above, this has caused revenue under-forecast through the under-forecasting of the growth rates themselves, as well as by causing the baseline level of GDP to be too low. Could not the private sector economists and the Finance officials have eventually built an anticipation of upward revisions into their year-ahead forecasts?

Also on the revenue side, there has been a consistent upside surprise for several years in the earnings flows from Crown corporations. At what point should these no longer be treated as surprises and appropriate adjustments be made to the NTR forecasts? A final example is the persistence of departmental spending over-forecasts arising out of spending lapses and re-profiling activity. Has it now been persistent enough to be treated as anticipated and forecast accordingly?

It may be tempting to conclude that after two or three misses in the same direction, one should correct for these past mistakes and begin forecasting the future on the assumption that the recent pattern will continue indefinitely. In most cases, the temptation is probably better resisted unless there is reasonably clear-cut evidence of some structural adjustment that is likely to be sustained. In the three examples above, the one that most likely fits that description is the departmental spending lapse phenomenon. Having changed the rules of the game and the incentives to which departments are responding, it is reasonable to suppose that the behaviour that it has given rise to will continue unless and until the rules are changed again.

In the other two examples, the answer is not to change the forecasts to suit the apparent change in patterns, but to determine whether and why the patterns have actually emerged. With specific reference to Statistics Canada, the data revision issue begs for a solution that involves an examination of why the initial Statistics Canada estimate of nominal GDP seems generally to be too low and is later revised upward and whether it is possible to make the revisions less frequent and smaller. Given the size of the impact on forecast errors, it is a problem that needs to be addressed.

The case of the Crown corporations' earnings is one where the impact is sufficiently large (\$1 billion to \$1.5 billion) that an examination of what factor or factors are causing the improved performance is worthwhile. Whether they are transitory, cyclical or structural factors will make a difference to how they should be treated in future budget forecasts.

A more general point is pertinent to the issue of adjusting forecasts to respond to recent patterns. Penner has made the observation that "if forecasting techniques and assumptions are changed significantly every time an error is made, long-run budget projections will jump all over the map from year to year, making the analysts appear incompetent and infuriating policymakers."<sup>34</sup> If for that reason

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<sup>34</sup> Op. cit., p. 26.

only, forecasters will want to observe protracted and significant change from the previous patterns upon which their models have been built before adjusting their underlying forecast parameters.

(iv) *Implicit caution – the evidence*

The report has documented and attempted to quantify the link between economic forecast errors and the persistent under-forecasting of budget balances over the past decade. On the revenue side, which is the primary route by which nominal GDP forecasts impact budget balances, the analysis shows that economic forecast errors explain a significant share of the revenue forecast errors in only three years. Even after adjusting for data revision effects on the economic forecast, the total impact of economic forecast differences does not explain all of the revenue forecast difference (over 50% in only four of the ten years), let alone the budget balance under-forecasting. Also related to revenue under-forecasting is the recent pattern of unanticipated earnings of Crown corporations. Interest-rate forecast errors do contribute substantially to forecast errors in public debt charges.

There are also reasonable explanations on the expenditure side for over-forecasting in some specific areas such as departmental spending (lapses and re-profiling), provisions for (unpredictable) contingent liabilities and after-the-fact equalization payments adjustments. However, taken together it is unlikely – lack of information prohibits a more definitive statement – that these expenditure items can account for all of the over-forecasting of expenditures that has occurred in nine of the last ten years. This over-shoot was particularly large in the last two years examined, contributing to almost 90% of the budget balance under-forecast in one year and two-thirds in the other. In 2002-03, the equalization changes and lower direct program spending (most of it lapses) accounted about equally for the over-forecast in program spending (\$2.1 billion and \$2.3 billion respectively). In 2003-04, equalization accounted for \$4 billion of the difference in program spending, with lower direct program spending (again largely lapses) another \$1.7 billion.

This logically leads to the proposition that, in addition to the above-named factors, there has also been *implicit* caution added to the *explicit* contingency reserve and prudence, which has been a hallmark of budgets of the last decade. In other words, it appears that there has been embedded in the revenue and/or expenditure forecast an additional cushion which is not evident in the budget documents.

The issue was raised by a number of the individuals with whom we met in the consultation process. The authors of the PEAP – CIRANO study suggest the possibility that “additional amounts of caution in prudence have been added to fiscal forecast components as part of the overall judgmental adjustments and corrections.” The IMF is somewhat more oblique in positing that “Canadian

budgets [may] have included both explicit and implicit prudence factors in recent years” and that “aggregate forecast error [which] is composed of small but consistently one-sided errors in fiscal subcomponents ... appears characteristic of a cautious fiscal forecasting approach.” As discussed below, this accumulation of modest differences in a number of fiscal categories is quite plausible with conventional bottom-up forecasting.

In fact, it is an almost inescapable conclusion that extra prudence has been an important factor in explaining the persistent under-forecasting of budget balances since 1994. If all the other possible factors are inadequate collectively to explain this pattern, implicit caution has to be included as an explanatory component.

This raises two obvious questions: how might added prudence have been built into the budget forecasts and why would the practice have persisted? The answer to the first question lies in two of the three main components of the forecast – revenues and program expenditures. The over-forecasting of debt service costs was done quite overtly by the (transparent) adjustment to the interest rate component of private sector economic forecasts. As discussed above, in every year from 1994-95 to 1999-2000, Finance raised the projected short- and long-term interest rate levels between 50 and 100 basis points. This “implicit” prudence addition was widely known and its impact on public debt charges forecast errors is clear in the years 1995-96 to 1998-99 when it averaged \$2.5 billion.

Since the private sector forecasts for GDP growth are known and the implicit prudence adjustments to them in the first six years examined were small and also known, the only way in which extra caution could be incorporated into the revenue forecast is through the forecast of the revenue share of GDP. The results shown in Table 9 indicate that, in fact, the revenue/GDP ratio forecast error is a contributing factor to the revenue forecast difference in every year except 2003-04.

One of the analysts consulted, Jim Stanford, and a critic of the government’s handling of budget forecasts, has contended that “Finance Canada officials have developed consistently more pessimistic forecasts regarding the likely trend of the revenue share [of GDP].”<sup>35</sup> This explains, in his view, much of the under-forecasting of the budget balance over the last decade. He contends as well that the revenue/GDP ratio is relatively stable and should be assumed to be in budget forecasts.

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<sup>35</sup> Op. cit. p. 5.

On his first point, his observations on the facts undermine his argument somewhat. He notes that since 1996-97, federal budgets have forecast a decline in the revenue share of GDP but that in only four years did such a decline occur. This implies that Finance officials were correct in four of the seven instances (fiscal 2004-05 figures are not yet final) in their forecast.

Dale Orr has noted that for (fiscal) years 1995-96 to 2003-04, Finance under-forecast the revenue share in five years and over-forecast in four. In only two of the years of revenue share under-forecast was it a significant contributor to under-forecasting the budget balance. He concludes that "if there was a purposeful, concerted and successful effort by the Department of Finance to under-forecast the surplus, we would find consistent and significant under-forecasts of the rev/NGDP ratio [revenue/nominal GDP]. We find the opposite. The rev/NGDP ratio was over-forecast about as often as it was under-forecast."<sup>36</sup>

In fairness, Stanford does point out that the cumulative value of the declines in revenue share forecasted by Finance was more than four percentage points of GDP,<sup>37</sup> while the actual cumulative value in the four years of decline is 1.4 percentage points of GDP. That implies that, while Finance was directionally correct in about 50% of their revenue share forecasts on balance, they over-forecast the magnitude of the decline.

Overall, it is difficult to conclude from this that there is clear evidence that extra caution was added to budget forecasts by way of the revenue share forecasts made by Finance. A persistent forecasting of falling shares is consistent with the view that caution was being added to the revenue forecast. On the other hand, the fact that such declines actually happened about half the time they were forecast casts doubt on whether it was implicit caution or average forecasting success (that was right 50% of the time and wrong the other 50%). Finally, the tax cut program introduced in the Economic Statement and Budget Update in October of 2000 would have caused revenue shares to fall from that point on.

Regarding his argument that revenue shares are relatively constant, Stanford points to the fact that they have not fluctuated by more than a half percentage point of GDP. It is worth pointing out that 0.5% of GDP is a significant (and rising) absolute number. In 1994, it would have been almost \$4 billion and by 2003 \$6 billion. The suggestion that stability of the ratio be assumed is at least a debatable one.

The more likely source of added and implicit caution is in the program spending forecasts. We have already seen that there are several categories of expenditures where the specifics are not broken out. As well, the details of the translation from the National Accounts-based forecast to the Public Accounts

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<sup>36</sup> Op. cit. p. 6.

<sup>37</sup> Finance officials argue that they are not able to reach this total in their calculations from the forecasts made over that period.

version were not spelled out in any public document until the Economic and Fiscal Update in 2004. If Finance officials were inclined to build in an additional cushion, this is the place where it could readily be done.

Clearly, there is no *direct* evidence that such has been happening. However, total program spending has been over-forecast in every year but one since 1994-95. In the nine years of upside misses, the error has exceeded \$1 billion in seven and by an average of \$5.4 billion in those years. In the last two years the over-forecast has averaged \$7.3 billion. Finally, if we eliminate 1994-95, in which an over-forecast of UI benefits was the dominant factor<sup>38</sup> in the program spending forecast error, we are left with six of ten years in which expenditures were materially over-projected. It is difficult to escape the conclusion that this is the key area in which extra caution could have been added.

The contention that the location of implicit caution would be in expenditure estimates is also consistent with the budget forecasting process itself. While Finance does a “bottom-up” forecast of each revenue and expenditure line, the total revenue forecast (but not its composition) has to be broadly consistent with the top-down fiscal forecast that comes from feeding the private sector economic forecasts into the National Accounts-based Finance model. However, there is no private sector projection of expenditures with which a bottom-up forecast could be compared.

Finally, there is circumstantial “evidence” of the existence of implicit caution that can be inferred from the IMF’s comment that the comparative pessimism of the Canadian forecasts is not the result of specific large forecast errors but “the accumulation of small but persistently negative errors.” That is more consistent with a systematic infusion of caution than with a steady series of one-off errors in the same direction, which is statistically unlikely.

(v) *Implicit caution – the causes*

If we accept extra caution was incorporated into fiscal forecasts giving rise to persistent under-forecasting of fiscal balances, the issue of why this would happen needs to be addressed. From the consultations and from political commentary, especially in the last year, it is clear this is a contentious issue. A number of commentators, have accused the government of deliberately “hiding” surpluses from MPs so as to avoid pressure to spend the “surprise” amount on existing or new programs or to avoid making tax cuts. The fact that from 1997-98 on, in-year policy spending initiatives averaged over \$5½ billion gives some lie to the claim of hiding surpluses to protect against spending.

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<sup>38</sup> Coming at the end of a period of sluggish labour market behaviour, the over-forecast is understandable.

Critics go on to suggest that low-balling the surpluses thwarts Parliament's capacity to debate how the extra resources ought to be allocated. They end up going to reduce debt (over and above that provided for by the contingency reserve, if unused) or on one-off spending near the fiscal year-end. Unlike making specific provision for this allocation in the year-beginning budget, these allocations are not amenable to formal debate in Parliament. Hence, the problem is not one of preventing spending but of preventing focused permanent spending.

There are two distinct issues here. The first has to do with the motivations, political or otherwise, driving the emergence of persistent positive "surprises" and the second is the political economy issue of its consequences. It is possible to be concerned about the latter without agreeing with a particular view on the former.

In fact, there is a far less sinister explanation than that of deliberately hiding surpluses, which would imply that pressure was applied by the government to Finance officials and that they gave in to the pressure. A quite plausible reason for the addition of implicit caution is that the current, albeit unlegislated, fiscal rule of "no deficits" created incentives, for those responsible for producing the fiscal projections, to incorporate extra (implicit) prudence into their forecasts.

We discuss below the advisability of maintaining the no-deficit target but its existence is quite evident from statements made by the former Finance Minister, now Prime Minister, Paul Martin. After the first surplus in decades appeared in fiscal 1997-98, the Minister stated widely and often his commitment that the government would never go into deficit again. In his first budget as Finance Minister in 2004, Ralph Goodale reiterated the mantra of his predecessors that the country would not be allowed to "fall back into deficit."

Although the no-deficit fiscal target is not formalized in legislation, it has been adhered to more strenuously than formalized fiscal targets have been in countries which have legislated them. For example, the Euro zone countries unevenly adhere to the Stability and Growth Pact (maximum deficit of 3 percentage of GDP and maximum debt/GDP of 60%) with several of the large countries like Germany and France in violation recently. The IMF points out that, for Canada, "the [de facto] target appears stronger than in many countries"<sup>39</sup> with legislated targets.

The IMF study also points out that one of the consequences of adopting an asymmetric bias in a fiscal target is that it "may lead to the incorporation of both explicit and implicit prudence factors in the forecast."<sup>40</sup> This is a rather obvious but critical point in this context. If the officials responsible for producing forecasts are faced with an unequivocal commitment on the part of the government that no deficit, no matter how small and regardless of the economic circumstances, will

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<sup>39</sup> Op. cit. p.31.

<sup>40</sup> Op. cit. p.?.

be tolerated, there will be inevitable behavioural consequences. When considering a range of possible outcomes for a line revenue or expenditure item, the prudent civil servant would tend to pick a point estimate at the low-end of the range for revenues and at the high end for expenditures.

There is nothing sinister or underhanded about such behaviour. Any individual householder or business manager faced with a comparable rule – e.g. reduce personal debt or lower the cost to income ratio – would behave so as to maximize the probability of meeting the rule. In this case, there are a number of line item decisions which taken individually are relatively small but collectively add up to a sizeable number or, in the IMF's phrasing, to the "accumulation of small but persistently negative errors." Said differently, a series of small revenue under-forecasts and small expenditure over-forecasts will add up to a material under-forecast of the budget balance.

So long as the asymmetric bias in the fiscal rule under which budget forecasts are made remains in place, it is reasonable to expect implicit caution to be added to explicit prudence. Below, the pros and cons of maintaining such a rule are debated.

*(vi) Summary*

Several factors, in addition to economic forecast errors and serial data revisions, were assessed for their impact on the fiscal surprises experienced over the last decade. With respect to timeliness of data, the end-of-year filing of personal income tax and corporate profit reporting have had some influence on fiscal forecast differences but should not have biased the differences in a particular direction.

The phenomena of lapses in program expenditures (unspent budgeted departmental funds) and the re-profiling of funding (some of the lapsed spending carried forward to the next fiscal year) have caused expenditure over-forecasts over the last several years. The provision for contingent liabilities – e.g. loan defaults and lawsuits – has also likely caused overstatement of spending. However, in the absence of detailed data, it is not possible to determine the precise impact of these factors on fiscal forecast accuracy.

The dominant influence on the persistent under-forecasting of surpluses appears to be the fiscal rule under which the federal government has been operating since 1997. The no-deficit rule, which is not formal (i.e. not legislated), has mandated that, in each year, there will be at least a balanced budget and preferably a surplus. Although there is no direct evidence to prove it, it is reasonable to infer that Finance has, in its fiscal projections, been adding implicit caution to the explicit contingency reserve and prudence elements.

This would be the logical behavioural response, when producing the bottom-up revenue and expenditure projections, to the requirement that there be no deficit regardless of circumstances. What may be somewhat surprising to some is that the most consistent source of unanticipated surpluses was not revenue under-forecasts but expenditure over-forecasts. After making an adjustment for in-year (mainly spending) initiatives, total program spending turns out to have been over-forecast in every year but one since 1994-95. On the other hand, revenue has been under-forecast only about half the time.

### **3.8 Conclusions**

It is clear that achieving precision in economic and fiscal forecasts – i.e. that forecasts match actual outcomes – is an impossible objective towards which to strive. This is evident from the considerable academic and practitioner literature on the subject and from the comparative track record of economic and fiscal projections in OECD countries. In particular, because a budget balance is the difference between two very large numbers – revenues received and expenditures made – a modest error in either or both can translate into a rather large error in the difference.

An examination of the differences between the year-ahead budget projections and the final outcome shows the following:

- (i) After adjusting the official figures for in-year policy initiatives, the budget balance projection has been too low in each of the last ten years and by an average of over \$10 billion.
- (ii) While total revenues have been under-forecast in seven of the last eight years and significantly so in three of those years, their contribution to budget balance under-forecasts has actually been quite modest in recent years.
- (iii) Total program expenditure projections have more consistently contributed to the budget balance under-forecasts, having been on the high side in all but one of the last ten years.

In an examination of Canada's comparative forecast accuracy, the IMF concluded that Canada is an outlier when it comes to under-forecasting its fiscal balance. Canada has had the most consistently under-forecasted revenue values and the most consistently over-forecasted values for expenditures. Overall, the bias in its fiscal projections is larger than for the other ten OECD countries with which it was compared.

In its analysis of the track record for the private sector economic forecasts, which are key inputs to the fiscal forecasts, PEAP – CIRANO found that while the forecast errors for some variables have been large, they have not been persistently in one direction or another. The data series which have been hardest

to forecast accurately are real GDP growth and GDP inflation, which together provide nominal GDP growth, a major input to the revenue projections.

With respect to the contribution of economic forecast errors to differences between fiscal projections and outcomes, the analysis shows that:

- (i) Economic forecast inaccuracies have, on occasion, contributed significantly to revenue forecast differences, but are not the sole factor.
- (ii) Revisions to nominal GDP data have played a significant role in economic forecast and, hence, revenue forecast errors.
- (iii) Economic forecast differences have played little role in causing program expenditure forecast differences.
- (iv) Projections of public debt charges have been affected by errors in forecasting interest rates.

Apart from the impact of economic forecast errors and several data revisions, lapses in program spending and the provision for contingent liabilities have affected expenditure forecasts. However, the primary cause of persistent under-forecasts of budget balances has been the no-deficit fiscal rule under which the government has operated since 1997. The strong inclination to add implicit caution to the explicit contingency reserve and prudence in the budget projections is a logical consequence of attempts to meet the balance or better target. It has more consistently shown up in over-forecasts of program expenditures than in under-forecasts of revenues.

## SECTION 4 – Recommendations

In this section of the report, recommendations for possible changes in fiscal forecasting processes are considered in four areas:

- (1) Increased transparency in budget-related information.
- (2) Improvements in data quality and analysis.
- (3) Options for the fiscal rules under which fiscal forecasts are made.
- (4) Options for changes in the structures/institutions used in the forecast process.

The first two involve modifications to the current forecast process; the latter two would require substantial adjustments to those processes such as adoption of a different fiscal rule or target and/or creation of new institutions.

### 4.1 The Need for Transparency

Transparency is widely regarded as a key element in sound budget-making. The Organisation for Economic Co-operation and Development calls a budget “the single most important policy document of governments, where policy objectives are reconciled and implemented,” and defines budget transparency as “the full disclosure of all relevant fiscal information in a timely and systematic manner” (OECD 2001, p. 3). In 1997, when the British government set out its four principles of open macroeconomic policy, one principle was credibility through maximum transparency.<sup>41</sup> The key elements of maximum transparency include clear statements about the government’s long-term policy objectives and the rationale for decisions, comprehensive information on short-term fiscal outcomes and constraints on the ability to manipulate the flow of information. (HM Treasury 2002, p. 40).

In particular, the existence of information asymmetry<sup>42</sup> – actual or perceived – between the government and the public is at the foundation of credibility concerns related to transparency. Governments have access to an extensive array of data and other information and to expertise that most citizens either don’t have or can’t have in the same time frame. As a result, the “suspicion that the government is manipulating information on policy for short-term motives is as damaging to credibility ... as the evidence it has done so.” (HM Treasury 2002, p. 39)

The credibility problem regarding the soundness of fiscal policy tends to arise in instances where the government is underperforming relative to its targets (e.g. Canada in the early 1990s). However, it clearly can also arise when

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<sup>41</sup> The other three are stability through constrained [policy] discretion, credibility through sound, long-term policies and credibility through pre-commitment.

<sup>42</sup> Defined as differences in access to data and information, acquired knowledge and expertise.

governments have been outperforming as attested to by the comments in Section 2.

The consultations make it clear that many people regard the persistence and size of budget balance “surprises” over the past decade as a problem. Fairly or unfairly, this perception has undermined the credibility of the Finance Department to the extent that most analysts and interested observers do not accept the official forecast figures. The significant difference between the year-end surplus estimate for fiscal 2003-04 found in Budget 2004 (\$1.9 billion) and the final number published in November (\$9.1 billion) was probably the clincher.

Many of those consulted also expressed concern that, apart from the dubious veracity of the numbers, the bigger issue has been that the under-forecast of the surpluses has effectively precluded a public debate over the allocation of the incremental “surprise.” Depending upon their fiscal “persuasion,” they decried the foregone opportunity either for more focused spending or for tax cuts. The latter group was more inclined to view any resultant additional debt reduction as an acceptable “second best” outcome.

The perception about the main source of the surprises may be a more sinister version – that the government has been deliberately hiding surpluses from Parliament – or a more benign one of some degree of forecasting incompetence on the part of officials. Our analysis in Sections 3.6 and 3.7 suggests that neither is the likely explanation. Rather, the surprises flow primarily from a combination of conventional economic forecast inaccuracies, more substantial data revision problems and the predictable behavioural response on the part of budget forecasters to the current no-deficit fiscal rule.

Notwithstanding which explanation is the more accurate, if the government’s credibility is in question, the issue needs to be addressed. Part of the answer may lie in changing the fiscal rule. The options for doing so are examined below. However, even without such a change, increasing the transparency of the information available to policymakers, analysts, the media and the public can only serve to improve credibility.

To put this issue into proper perspective, it should be noted that the IMF found in its comparative analysis that “the level and detail of published information is comparatively high” in Canada and that “the Canadian public has relatively broad access to budgetary information.” (IMF 2005, p. 59) The IMF found that Canada already engages in as many of the OECD’s best practices for budget transparency as any other country and more than most. The key ones are pre-budget and mid-year reports on the fiscal outlook, both general and detailed overviews of revenues and expenditures, and a variety of special reports on items such as government debt. To the list could also be added the *Annual Financial Report of the Government of Canada* and monthly reports in the form of *The Fiscal Monitor*.

In a similar vein, an IMF Report on the Observance of Standards and Codes for fiscal transparency concluded that Canada “meets the requirements of the fiscal transparency code and in a number of instances represents best practices” (IMF 2002, p.1). Hence, it is not the case that the federal government’s approach to information disclosure is seriously flawed. However, there are specific areas in which improvements are possible.

The recent comparative study by the IMF points out that there is inadequate information in the Canadian budget documents on how the fiscal forecast is compiled, in particular the key assumptions and methods used to move from the economic forecasts to the fiscal projections. In its earlier report on fiscal transparency, the IMF made suggestions for improvements in transparency pointing, for example, to the value of the government’s publishing the reconciliation between the National Accounts and Public Accounts versions of the fiscal projections.

In Section 3.1 above there is a general description of the process by which the fiscal forecast is developed. The key variables for the economic forecasts are collected from the private sector economists and an average of the variables is calculated to generate the baseline for the fiscal forecasts. The variables are then fed into the Finance forecasting model, which yields the fiscal forecast on a National Accounts basis. The National Accounts forecast is adjusted for the technical differences between the components of the National and Public Accounts. Finally, other judgmental adjustments based on recent fiscal results are added to yield the Public Accounts forecast, which appears in the budget.

Based on the observations of external agencies and on the comments of several of the people consulted for this report, one key area of improvement in transparency is apparent. The government could provide a more detailed breakdown of the linkages, first between the (external) economic forecast and the (internal) fiscal forecast on a National Accounts basis, and second between the latter and the (final) budget projections on a Public Accounts basis.

With respect to the connection between the economic forecast and the National Accounts fiscal forecast, there are several improvements in the current documents which should be considered. In both the Economic and Fiscal Update (EFU) and Budget documents, the key elements of the average economic forecast are provided along with a description of the current and expected economic environment, including a discussion of the key economic risks. It would be useful if there were, in both documents, a much fuller examination of the key risks and uncertainties associated with the economic forecast and of their fiscal implications. This would be particularly important at turning points in the

economic cycle and would be critical if the government were to consider adopting a different fiscal rule than the current annual no-deficit target.<sup>43</sup>

One way in which this could be done is to explicitly capture in the documents the risk assessments of the private sector economists. Even though the PEAP – CIRANO assessment of the economic forecasts indicates some degree of “herding” (or convergence) in them, there are instances in which the forecasts of some key variables are significantly different among the economists. Certainly, there have been cases in which they have differed markedly on the size and even the direction of risks they perceive in their respective forecasts.

At a minimum, the EFU and Budget documents could incorporate the economists’ perceptions of the key upside (positive) and downside (negative) risk(s) to the economy over the next 12-18 months along with the probabilities they would attach to the events occurring. Most macroeconomic forecasters do this as part of their internal advisory role in the organizations for which they work. The analysis could be extended to include a quantitative forecast of the economic “scenarios” that would be the consequence of the key upside and downside risks. This could be contracted out to one of the forecasting firms and the results provided in the EFU and Budget documents.

Note that this is different, in several respects, from suggestions that the forecasts of the economic and fiscal numbers be provided as ranges.<sup>44</sup> First, the high and low values of the variables within a range typically are estimated assuming a given broad economic (or fiscal) context. Hence, for example, if the Canadian economy were experiencing what could be described as moderate growth, the GDP growth rate would be around 3%. The range of values would likely be set at 2½%-3½%, which would be consistent with the “moderate growth” description.

On the other hand, in scenario testing, it would be assumed that a shock (positive or negative) occurs to the economy which pushes it outside the bounds of moderate growth to, say, under 2% or over 4% GDP growth. Obviously, this would have more significant consequences for other economic variables and for fiscal projections.

Scenario testing is also more appropriate for assessing the sensitivity of medium-term projections to different assumptions about the period over which a particular environment may prevail, structural changes that may be occurring in the economy or the consequences of major policy initiatives being considered or implemented.

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<sup>43</sup> The option of choosing to balance the budget over the economic cycle is discussed in section 4.3 below.

<sup>44</sup> For example, see Auerbach.

Whether scenario testing or providing ranges of values for the key economic and fiscal variables is provided in the documents, the Budget will be grounded in a specific (average) economic forecast and set of fiscal projections. Ultimately the government is accountable for the projections, the fiscal plans upon which they are based and the outcomes that emerge over the course of the Budget's time frame. The assessment of whether the government has met its targets will be based on how close the projections come to actual results.

Explicitly pointing out the type and extent of possible risks in the economic forecast helps make it clear that all forecasts have an inherent range of error for which allowance needs to be made. Several of the people consulted suggested that getting the revenue forecast within 2% of the actual fiscal outcome should be regarded as a successful achievement of the target. Laying out the risks to the economic forecast sets the stage for a better understanding of the degree of uncertainty attached to the fiscal forecast.

If the EFU and Budget documents include a more detailed consideration of economic forecast risks, the analysis should be extended to assess the consequences of these risks for the fiscal projections. If the economic risks discussion were primarily qualitative, the focus would be on indicating the direction and order of magnitude of the risks on the fiscal outcomes. If scenario testing were used, it would be possible to do a formal sensitivity analysis of the consequences for the budget projections.

**Recommendation 1:**

**In the Budget and the Economic and Fiscal Update, fully explore the key risks and uncertainties in the economic forecast and discuss their implications for fiscal projections.**

In its budget-related publications, the Finance Department currently provides the rules of thumb (or sensitivities) used to estimate the impact on revenues and expenditures of changes in the key economic variables such as GDP growth and short- and long-term interest rates. In line with the suggestions for an expanded discussion of the impact of economic risks, it would further enhance the transparency of the documents if the sensitivities were more fully explored. This could include how they are derived, material changes in their values over time and the factors which may have caused the changes. For example, adjustments in tax rates or in the tax structure will alter the relationship between economic performance and specific tax categories. The added information would allow analysts and other interested parties to more closely trace the steps from the economic outlook to the revenue and expenditure projections.

**Recommendation 2:**

**In the Budget and the Economic and Fiscal Update, provide details on the rules of thumb used to estimate the impacts on revenue and (certain) expenditure categories of key economic variables.**

The more substantial issue raised about budget transparency relates to the translation from the National Accounts to the Public Accounts fiscal projections. The IMF and several of those consulted suggested that the reconciliation between the two forecast approaches be made more transparent by spelling out the details of the adjustments between the two accounts. This was a regular feature of budget documents in the 1980s and early 1990s and just such a breakdown was provided in the 2004 Economic and Fiscal Update. It should be made a permanent feature of all major budget documents.

As indicated in Section 3.1, the translation is not a purely mechanical one in which the definitional accounting differences in certain tax and expenditure categories (e.g. treatment of the child tax credit) are reconciled. There are also instances in which some judgment has to be applied to the differences (such as the treatment of capital gains in the personal income tax base and inclusion of activities of Crown corporations). Survey-based data from Statistics Canada has to be converted to the actual data used in the Public Accounts. As well, adjustments to the Public Accounts forecast are made close to the Budget to take account of more up-to-date information on expenditures and revenues. These might not be available in the National Accounts data if Statistics Canada had not yet incorporated them.

There will be some components of the fiscal projections – notably the contingencies for liabilities – for which details cannot be provided in the Budget documents. A global figure may be possible if it does not convey enough information for the parties negotiating with the government to determine what has been set aside in their particular case. However, apart from sensitive items, full, detailed disclosure should be the norm for Budget documents.

In each Budget, the government could spell out the transition from the earlier forecasts – one, two and perhaps, five years ago – to the fiscal year just ending. This would more clearly document the sequence of unanticipated changes (“surprises”) to the fiscal outcome. In that reconciliation, Finance could provide, to the extent possible, an explanation of the main factors which contributed to the changes.

**Recommendation 3:**

**In major fiscal documents, spell out the details of the reconciliation between the National Accounts and Public Accounts fiscal forecasts.**

This recommendation represents an extension of current practice. In each *Annual Financial Report of the Government of Canada*, the government includes a detailed post-mortem on the results of the previous budget projections, which provides a basis for assessing the accuracy of its fiscal forecasting performance. The government should consider going much further and provide, as for example the British government and the US Congressional Budget Office do, a longer-term perspective on its fiscal forecasting record. This could go as far back as ten years. The Budget document is the most appropriate one in which to put this scorecard as it is the most high-profile of all the fiscal publications. Before this report, the last time such an extended retrospective review was done was in the Ernst & Young report of ten years ago. Once the foundation work is done, it should be relatively straightforward to maintain a rolling ten year scorecard that documents longer-term patterns rather than providing just one-year snapshots of the forecasting track record.

**Recommendation 4:**

**In the annual Budget, provide documentation of the long-term (e.g. ten year) track record of Finance's fiscal forecast accuracy.**

In the current structure, two major Budget-related documents are produced each year. The Budget is delivered to the House of Commons, usually in late February or early March, and the Economic and Fiscal Update is released each fall about eight months after the Budget. In addition, *The Fiscal Monitor* is published monthly and essentially provides a tracking of the major revenue and expenditure flows to date in the fiscal year. A further publication would be useful. There should be a quarterly report – an expanded version of every third *Fiscal Monitor* would serve the purpose – which provides analysis of fiscal developments in the current year to date in light of variances in the economy's performance relative to the Budget's economic forecast. There should also be an assessment of what risks these developments might pose for the fiscal outcomes. In the same document, Finance could include an update of the reconciliation of the National and Public Accounts to highlight any changes from the reconciliation spelled out in the Budget documents. The reconciliation would be provided by Statistics Canada.

Where possible, the government should provide a complete update of its current year fiscal forecast, providing both aggregate data and more detailed revenue and expenditure line information. This would not be practical for the March *Fiscal Monitor*, which has no information about the current fiscal year. The June *Fiscal Monitor* contains information about the first three months of the fiscal year, which may not be enough to justify a complete formal update.

**Recommendation 5:**

**Provide, as part of every third *Fiscal Monitor*, an analysis of fiscal developments in the current year and the risks to the projected fiscal outcome. Where possible, a complete update of the current year fiscal projections should be done.**

For all of the recommendations to improve transparency in the government's published documents, the overarching recommendation is that the information provided be as detailed as possible, cover an extended time period and be user-friendly. It should be possible for any interested party to follow the chain of analysis that Finance has undertaken to be able to test the outcome (i.e. the fiscal projections arrived at) as well as challenge the assumptions made in the analysis. Clear and comprehensive information is the key.

A second area in which transparency obviously needs improvement lies in the reporting to Parliament of the government's in-year fiscal performance. At an appearance in November before the House of Commons Finance Committee, the author was asked his opinion about the value of regular briefings to the Committee on the government's current fiscal status. Recently, the Committee set up a fiscal forecast monitoring process involving private sector economists to provide it with independent quarterly fiscal updates. The viability and value of this particular institutional change will be discussed further below in Section 4.4. Even discounting for the partisan politics of a minority government situation, there is considerable merit to instituting a process of regular fiscal updates for Parliamentarians. Currently, Parliament and the public have the annual Budget itself and the fall Update as guides to the state of the country's fiscal health. Serious consideration should be given to having the Finance Department provide at least one additional briefing each year. This could be given to the Commons Finance Committee by senior officials and/or the Finance Minister and would be accompanied by publicly available documents.

The rationale for one rather than two is purely logistical. The House of Commons and its committees do not sit through the summer months effectively eliminating a quarter of each year. Therefore, briefings by Finance in the fall (October or November) and in the winter (February or March) could be supplemented by a third meeting with the Finance Committee in the early summer (June). That, combined with quarterly publications, should provide the Committee with a much expanded and useable information base.

Against the benefits of increased transparency would have to be weighed the costs of the time and resources required by Finance officials to produce such reports. However, the raw material is currently available and is published monthly in *The Fiscal Monitor*. There is a practical question of whether it is possible to compile an additional briefing along with quarterly publications that have real incremental value to Parliamentarians. However, Finance Committee members have already revealed their preferences in this regard by hiring private sector economists to provide quarterly forecast information. This suggests that they see potential value in more regular briefings.

**Recommendation 6:**

**Increase the number of formal briefings by Finance to the House of Commons Finance Committee by at least one to be provided in the early summer.**

**4.2 Improving Accuracy & Timeliness of Data**

There are several key areas in which the timing, monitoring or revisions to data are pertinent to the broad issue of fiscal forecast accuracy. The most notable of these is the stream of revisions to estimates of nominal GDP by Statistics Canada. It is demonstrated in Section 3.6 that fiscal forecasts have been materially affected in one direction over the past decade as a result of a series of upward revisions to each year's GDP growth. This meant that the economic forecasts were based on too low a year-beginning level of GDP, from which fiscal projections would be made. The effect was to reduce revenue forecasts below what they would have been had the higher revised GDP numbers been known earlier. The issue would be somewhat less significant if the revisions had occurred in both directions and hence tended to cancel out.

The size and persistence of the revisions' impact suggest the need for an examination, by Statistics Canada in conjunction with Finance and private sector forecasters, of the reasons for the pattern and consideration of possible remedies for it. This is not an implied criticism of Statistics Canada given the breadth of its mandate and the budget constraints under which it, like other government departments, has operated. It may be that there is no solution<sup>45</sup> or, at least, not one that is possible without considerable commitment of resources. However, a joint examination of the problem would make clearer what options are available. If the government is committed to making fiscal forecast accuracy a priority, providing resources, if required, to Statistics Canada to solve this particular problem is likely to be a good investment.

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<sup>45</sup> In the consultations, the observation was made that the revisions may simply be the result of the economy's going through its expansion phase, in which upside economic surprises are typical. If true, the reverse should happen in downturns, i.e. Statistics Canada would be revising GDP down. That did not occur in the 2001-02 period and it is noteworthy that the economy continued to outperform expectations.

**Recommendation 7:**

**Statistics Canada and the Department of Finance jointly examine the causes of the significant GDP data revisions and explore options for mitigating them.**

Changes in the relationship between the level of economic activity and total revenue and individual revenue categories – as reflected in the revenue/GDP ratios discussed in Section 3.6 – have also had a significant influence on budget forecast accuracy in several years over the last decade. Therefore, research on the factors which may have caused these adjustments to the revenue sensitivities would be in order. Specifically, the work should assess and document the impact of changes in both tax rates and the tax structure which have occurred in the last decade as well as shifts in the mix of revenue sources.

In the consultations, OECD officials noted that, in Europe, the underestimation of revenues in the late 1990s (and subsequent overestimation after 2000) could be traced to the dramatic rise (and later decline) in the value of both financial market assets and housing. This gave rise to an increased share in income of capital gains (and then a decreased share from losses) which were not properly anticipated in budget projections. Comparable work could be done for Canada.

The research into changes in revenue sensitivities should also include forward-looking analysis of what shifts might be anticipated in the future as, for example, demographically-driven adjustments occur in income sources and hence in the composition of personal income tax revenues. The work could be carried out by Finance in collaboration with the private sector analysts and/or Statistics Canada. Alternatively, such work could be an element of the research agenda of a prospective new agency discussed in Section 4.4.

**Recommendation 8:**

**Undertake research into changes over time in the relationship between the economy's performance and major revenue categories.**

One revenue source that has generated some consistent upside surprises in recent years is the earnings of Crown corporations. An assessment of the main causes for the improvement would help determine whether it is reasonable to expect the improved performance to continue and, if so, to then build that expectation into the fiscal forecast. In addition, a greater effort at monitoring the ongoing financial status of the Crown corporations would improve the in-year adjustment to revenue forecasts.

In a similar vein, but on the expenditure side, improved monitoring of departmental spending would allow better assessment of anticipated lapses that contributed to the under-forecasting of budget balances. This would not only

enhance the accuracy of in-year forecast adjustments but could also provide useful information for the year-ahead projections.

**Recommendation 9:**

**Improve the in-year monitoring of Crown corporations' earnings and of departmental spending.**

Finally, there was a suggestion made in the 1994 E & Y report that was also raised in the consultations, namely, to change the timing of the budget. One person interviewed noted that, because of the timing of the release of GDP data, the GDP data for the fourth quarter of the fiscal year (first quarter of the calendar year) are not available when doing the year-end budget estimates. The E & Y report noted that the final revenue numbers for corporate income tax and personal income tax are not available until after the fiscal year-end. The suggestion in both instances was that the date of the budget be moved back from February into May, when the data are available and a better estimate can be made.

While tabling the budget in February is not inviolable – it has been much earlier on two occasions in the past decade – it is, in part, linked to the budget timing of the provinces which wait for the federal budget projections and plans for transfers before setting out their own budget forecasts. That would be one argument for not changing the date. Another is that, given the experience with GDP revisions, it is not obvious that moving back the budget date would offer much net improvement in forecast accuracy as it relates to the timing of the quarterly GDP data. The point regarding the timing of CIT and PIT is somewhat more valid because more information is available. However, the key taxation data for PIT are only available in July. As well, major end-of-year adjustments to PIT and CIT are still not available in May.

On balance, the argument for changing the timing of the budget release to accommodate more complete tax revenue data is not, on the face of it, compelling enough to warrant the impact on the provincial budget timing.

### **4.3 Fiscal Rules – Options**

The federal budget process currently operates under not one, but two fiscal rules or targets. The first was the focus of discussion at the end of the previous section of report – namely the no-deficit rule, unlegislated but inarguably in effect since 1997-98. The other rule is of more recent vintage. In the 2004 Budget, the Finance Minister announced that the government was targeting a reduction in the debt/GDP ratio to 25% from (the then) 41% within ten years. The target was reiterated in the recent 2005 Budget.

Before examining the existing fiscal rules and options for changes to them, it is worth considering the fiscal rules under which other countries operate.

As can be seen from the summary table (Table 10) on the fiscal forecasting procedures in other OECD countries, there is no uniformity in the fiscal rules under which national governments operate. In Europe, the countries that have adopted the single currency regime are subject to the fiscal rules of the Stability and Growth Pact (SGP), which came into force in 1999 when the euro was created. The entry requirement and ongoing commitment of each member country is to limit their annual deficits to 3% of GDP and their debt to 60% of GDP. The adherents are also required, over the medium term, to achieve a balanced budget position or better.

However, the three largest Euro-zone countries, Germany, France and Italy, are in breach of the deficit and debt ceilings and have successfully pressed for changes to the SGP rules that keep the ceilings intact but ease the conditions under which correction of an excess deficit must be done. And while there are supposed to be sanctions for countries which fail to meet these ceilings, they have not been applied to the big country violators. Finally, there are no actual incentives in place for countries to meet the (medium-term) balanced budget requirement. Of the fifteen member countries, in 2004, five had deficits exceeding 3% of GDP, seven had deficits below 3% and three were running surpluses.

Among the individual EU countries in Table 10, France and Italy have no fiscal rules apart from the SGP. Germany has a constitutional rule requiring a balanced budget while permitting borrowing that is earmarked for government investment expenditures.<sup>46</sup> As well, exceptions to the balanced budget rule are allowed in periods of macroeconomic disequilibrium and war, and Germany's constitutional court has ruled that economic stabilization is sufficient justification for deficit financing in excess of investment requirements. In other words, the balanced budget rule in Germany is not particularly binding.

The Netherlands, with a long history of coalition governments, has created a structure of post-election "Coalition Agreements." The Agreements set out the overall budget policy and specific fiscal targets that will be in force for the duration of the particular governments' term of office. The independent government agency, the Netherlands Bureau for Economic Policy Analysis (discussed in section 4.4), plays a key role in the development of the Agreements. The last three Coalition Agreements (1999, 1998, 2003) have set real fixed net expenditure ceilings in the main areas of government activity and made provision in advance for the allocation, between budget balances and tax changes, of revenue windfalls and shortfalls. Hence, surprises cannot be used as a rationale for either increasing or decreasing spending.

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<sup>46</sup> This is generally referred to as the "golden rule" and is applicable in several other European countries including the UK.

In the United Kingdom, the government established a Code for Fiscal Stability in 1998. Its two key fiscal rules are the so-called “golden rule” – over the cycle, deficit financing will be allowed only for public investment expenditures – and a debt/GDP target of 40% to be averaged over the cycle. Persistent deficits in recent years suggest the golden rule may be honoured more in the breach than in the observance during this economic cycle.

In Sweden, the government set out, in the Fiscal Budget Act 1996, a surplus target of 2% of GDP to be achieved over the economic cycle. At the same time, it established upper limits on 27 expenditure categories to be specified for a rolling three-year time horizon. The government has persistently met its expenditure targets but current forecasts suggest it is unlikely to meet the surplus target over the 2000-2007 period.

In Australia, the Charter of Budget Honesty Act in 1998, among its other requirements, established stable and predictable tax burdens and predictable debt levels as broad fiscal targets. The current fiscal strategy calls for a balanced budget over the cycle and a lower net debt level as specific fiscal rules. Compliance with the rules has been maintained since their inception.

New Zealand, in its Fiscal Responsibility Act of 1994, set as its primary target an operating surplus over “a reasonable time” – the surplus is intended to pre-fund the Superannuation [pension] Fund – and a debt/GDP ratio of 20% before 2015. New Zealand has contributed to the Superannuation Fund in every year from 1994 to 2003.

Finally, in the United States, the federal government operated under the Budget Enforcement Act from 1992 until 2001 when the act was allowed to expire. Under its provisions, caps or upper limits were set for discretionary expenditures, which is spending not mandated by legislative statute, a category that includes defence, government operations, provisions for homeland security and support for science, culture and the environment. For mandated spending (e.g. Medicare and Medicaid), there were established so-called “pay-as-you-go” (PAYGO) rules. If discretionary spending above the cap or increases in legislated spending were being proposed, offsetting across-the-board cuts in non-exempt spending would have to be implemented. The caps and PAYGO rules, although breached over the life of the BEA, appear to have been a contributing factor (along with a booming economy) to the budget surpluses experienced from 1998 to 2001.

It is obvious that countries can choose a variety of fiscal rules under which to operate. No particular set is unequivocally effective in establishing and monitoring appropriate fiscal discipline. Success depends, in part, on economic circumstances outside the control of government. To a considerable extent, however, governments will achieve their established fiscal targets only if they are willing to take measures that ensure the various rules are followed.

We turn to an examination of the current fiscal rules in Canada – the no-deficit and 25% debt/GDP ratio targets – and to possible alternatives.

Even the critics of the current fiscal forecasting approach, which has generated “surprise” increments to the projected surplus, acknowledge that a stringent deficit reduction approach was required in the mid-1990s. The surprises at that time were of deficits coming in lower than expected – and the consultations with former Finance officials confirm that the pace of deficit reduction was indeed a surprise. This was happening in the context of the experience of the early 1990s when the forecast errors went the other way. The government, in that period, persistently undershot its deficit reduction projections. It is generally agreed that to reverse that pattern and to gain credibility for federal fiscal policy – the lack of which was adversely affecting Canadian interest rates and the value of the dollar – the government needed to under-promise and over-deliver on its fiscal projections.

There is also widespread agreement, among analysts at least, that short-term fiscal discipline and the financial market credibility flowing from it have long been established in Canada. This raises the questions of whether the no-deficit rule is still needed and, if not, with what rule it should be replaced. In what follows, the pros and cons of retaining the no-deficit rule are considered, followed by a comparable examination of the two options that could serve as legitimate replacements – namely to balance the budget over the business/economic cycle (that is, run an average budget balance of zero) and to target a positive surplus, on average, over the cycle (average budget balance of +\$X billion). In both cases, there would be explicit provision to allow for a deficit should severe adverse (quantitatively defined) economic conditions prevail.

*(i) Maintain no-deficit rule*

There are several arguments in favour of maintaining the current rule that no deficit be incurred regardless of economic (or other) shocks to the system. First, it reinforces an already established reputation for fiscal discipline. Second, it provides an unequivocal fiscal anchor for the government. There is no ambiguity about the minimum target in each budget year nor about whether it has been achieved at the end of that year, when all the data are available. Third, the no-deficit target is very easy to explain to the public and it appears to have been both accepted and expected by Canadians.<sup>47</sup>

For many policy analysts, the key reason for maintaining the rule is that, so long as the target is met or exceeded, it is a guarantee against a return to the “bad old days” of persistent and (often) rising deficits. In particular, it prevents structural deficits – i.e. deficits that would persist even if the economy were operating at full

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<sup>47</sup> However, it is interesting to note that in public opinion polls, routinely over 40% of Canadians still think that the federal government has a deficit.

employment. They also believe that it avoids the risk of adverse financial market reaction were Canada to have a deficit for the first time since 1996-97. And, in the situation where the government commits the first \$3 billion of surplus to debt reduction, the no-deficit rule ensures the absolute level of federal debt will decline.

One argument against retaining the rule is that it has no solid grounding in financial or economic analysis but is based on what are essentially political economy considerations such as those outlined above. That is, there is no analytical or empirical support for a no-deficit target as an optimal fiscal target for a government. In fact, the rule tends to be pro-cyclical in its macroeconomic impacts. In periods of economic downturn, it could necessitate spending cuts and/or tax increases, which would exacerbate the decline. On the other hand, if enough prudence is built into the forecast – as has been the case over the last decade – that could preclude the risk of an actual deficit that required such remedial action. However, to guarantee that a deficit will not occur, the rule requires a significant level of prudence in excess of the current explicit level of the \$3 billion contingency reserve.<sup>48</sup>

Another argument against continuing the no-deficit rule is that if fiscal discipline is now entrenched in the federal government, and if fiscal credibility is now entrenched in the public mind and in financial markets, the rule is simply no longer necessary on the political economy grounds on which it is based. More critically, in the current approach, the level of implicit prudence that has emerged to guard against a deficit has given rise to credibility problems for the government. One option, of course, is to make all prudence explicit.

Running significant surpluses to ensure attainment of the benefits to the no-deficit rule imposes costs (in the short term) in the form of missed opportunities for permanent tax cuts or sustainable program spending increases that may be desirable. However, these are not permanently foregone, but merely delayed as the debt reduction of today opens up room for tomorrow's tax reduction or expenditure initiatives.

In short, the main arguments in favour of retaining the current rule are that it is easy to set, explain and monitor and that it guarantees against getting on the so-called "slippery slope" back to persistent deficits. The key arguments against it are that it can have pro-cyclical impacts on the economy and has required a level of prudence that generates costs in the form of diminished political credibility and foregone fiscal initiatives. It is also noteworthy that Canada is the only country examined in this study which has a no-deficit rule.

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<sup>48</sup> Boothe and Reid (1998) estimate that \$6 billion to \$9 billion in prudence would be required to virtually ensure no deficit at any time in the business cycle.

(ii) *Balance over the cycle*

Under this fiscal rule, the government aims to balance the budget over the cycle – i.e. achieve a budget balance of zero, on average, through the upturn and downturn phases in the economic and business cycle. This implies that there will be years in which the budget is cyclically in deficit and, if the economic situation is severe, perhaps even a significant one. The key point is that the government, if it follows the rule strictly, will passively permit the cyclically driven movements in the budget balance. This means that the so-called automatic stabilizers<sup>49</sup> in the system (mainly lower personal income tax revenues and higher Employment Insurance expenditures) will be allowed to operate in a counter-cyclical fashion with no discretionary stabilization action taken by the government.

A note of explanation about cyclical and structural budget balances is in order. The structural balance is the one that would be observed when the economy is growing at its trend rate, i.e. if it is operating at (but not beyond) full capacity or full employment. The actual balance at any given point in time can vary from the structural balance depending upon the phase of the cycle in which the economy is operating. During a downturn, a structural balance of zero, for example, would be consistent with an actual (cyclical) deficit. In a boom period, when growth is above the long-term trend rate, we should observe fiscal surpluses. If, on the other hand, the government were generating surpluses (deficits) regardless of the economy's performance, that would be clear evidence that it was running a structural surplus (deficit). If the government achieves an actual balance of zero on its budget, on average, over the cycle, it will be running a structurally balanced budget.

One of the main arguments in favour of adopting the zero (structural) budget balance rule is that it has well-established analytical support from most macro economists (as economists and not as political economists). The original Keynesian policy prescription was that governments run surpluses in good economic times to provide a cushion for the deficits incurred in recessions.<sup>50</sup> The fact that governments tended to run deficits in downturns and then used the potential surpluses during an upturn for spending initiatives that then maintained the deficits contributed to the disrepute into which discretionary or active fiscal policy has fallen over the last 25 years.

But passive or automatic stabilization policy remains widely accepted as a desirable (if rarely attained) fiscal stance. In fact, the automatic counter-cyclical effect of the balanced budget rule is favoured by those analysts concerned either

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<sup>49</sup> Automatic stabilizers tend to moderate swings in the economy by increasing household spending capacity during downturns (tax withdrawals fall and employment insurance benefits rise) and reducing it in upturns. Because the PIT and EI adjustments are built in, they work automatically.

<sup>50</sup> For a concise history of the debate among economists over the wisdom of balanced budgets, see Balassone and Franco (2001).

with the probability of costly mistakes when discretionary policy is enacted or with the exacerbating macroeconomic impacts of the pro-cyclical tendencies in the no-deficit rule.

The arguments against the cyclically balanced budget target are both technical and political economy in nature. On the technical side, adoption of the rule requires that it be possible, when unanticipated fiscal changes (primarily in revenues) occur, to determine which changes are driven by cyclical factors and should be ignored and which are caused by structural factors to which adjustment will need to be made. This, in turn, puts significant pressure on economic forecasters to determine, at a given point in time, where the economy is in the cycle and where it will be going in the short-term; with the persistent data revisions problem discussed in section 3, the challenge is even more daunting.<sup>51</sup>

In effect, targeting a cyclically adjusted balanced budget involves considerable judgment about the causes of discrete and unexpected changes in revenue and about the proximity of the economy to its long-term full employment level of activity. A recent OECD study notes that “allowance for the business cycle may ... come at the expense of simplicity and transparency ... [and] may make the fiscal framework less binding and reduce its credibility” (OECD 2004, page 16).

There is one issue that has both technical and political economy overtones. Economic cycles are not of consistent length, varying from the most recent (protracted) one of about a decade to the relatively short one of the mid-to-late 1970s, which lasted for approximately six years. This means that it is not possible to set out, in advance, the length of the period over which fiscal projections can be made, targets set and monitored and success determined. The political economy problem is that governments have a political cycle that is of relatively specific length (3-4 years with a maximum of 5) and is shorter than most of the economic cycles experienced in the last 50-60 years. The government of the day cannot match its political term with the economic cycle; this creates an added challenge for monitoring and measuring fiscal policy success.

A budget balance rule would also be difficult to explain and to rationalize to a non-technical audience, especially to a Canadian audience convinced of the merits of avoiding deficits. As well, it can be difficult to interpret whether success has been achieved in following the rule. In some countries that have adopted it, the rule has led to “creative” accounting (or, at least accusations of such) to demonstrate that the rule has been followed. This is a point that came up frequently in the consultations with analysts in Europe although the issue is not

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<sup>51</sup> In unpublished remarks, Rudin (2003) makes the point that the Finance Department has estimated the cyclically adjusted balance since the 1980s but that the official estimate for some years has changed significantly over time as data revisions occur. This renders the initial estimate of dubious value.

confined to countries with balanced budget targets. The problem tends to be more prevalent in countries that have difficulty staying below the maximum deficit ceiling.

A target of balance over the cycle may have more merit for a low debt country with a strong track record of short-term fiscal discipline. While Canada has a strong short-term position, it is still in the process of establishing a solid long-term status.

*(iii) Balance with a structural surplus over the cycle*

In this option, the government targets to achieve a surplus, on average, over the cycle. The size of the surplus can be specified in absolute terms (say \$5 billion) or as a percentage of GDP ( $\frac{1}{2}\%$  of current GDP is \$6.6 billion). The purpose of aiming for a positive balance would not be to prevent a deficit as the current combination of explicit (contingency reserve and prudence factor) and implicit caution is designed to do.<sup>52</sup> Rather, the target surplus would be earmarked for nominal debt reduction to allow the government greater capacity to deal, for example, with the impact on social programs – notably health care – of a retiring and aging baby-boom population starting in the next decade.<sup>53</sup> The countries which have established surplus targets over the cycle – for example, New Zealand, Sweden and Norway – have done so to make provision for the cost pressures on demographically sensitive programs such as publicly funded pensions and health care. Instead of providing insurance against short-term deficits, setting an average surplus level as the fiscal target would be aimed at medium- to long-term fiscal requirements. It would be possible, depending upon how high the target is set (and whether it is achieved) for the government to run a deficit if there were a serious downturn. As in the zero balance option, the government would passively allow the system's automatic stabilizers to operate over the swings in the cycle.

Among the arguments in favour of this approach is that a commitment to debt reduction using the target surpluses can be linked explicitly to the achievement of the already articulated medium-term debt/GDP target. As well, connecting the rule to medium-term and long-term fiscal requirements that are driven by demographics would be relatively easy to explain and justify to the public. Since the Canadian public is conditioned to persistent (actual if not projected) surpluses, this would be less of a departure from current practice than would be the zero balance target.

If properly structured and implemented, it would eliminate the potential for procyclicality of the current no-deficit target. In addition, the ongoing reduction of

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<sup>52</sup> Obviously, if the surplus target were set high enough (say \$10 billion) it would almost certainly prevent deficits.

<sup>53</sup> See, for example, the comments in the summary of consultations (Section 2) as well as Auerbach (p. 779).

debt steadily lowers debt service costs, opens up more room for spending and tax cut initiatives and reduces the vulnerability of both the economy and government finances to volatility in market interest rates. While the allocation of fiscal surpluses to debt reduction implies foregoing (in the short run) its use for other initiatives, there is nonetheless a moderate short-term freeing of resources for these alternatives.

One of the key arguments against this option is that it would still be difficult to explain and sell to a public that understands and accepts the no-deficit rule. However, because it would normally result in surpluses, it does have a clearer (and more “marketable”) message than the simple balance over the cycle, which does not have the visible anchor of either the current no-deficit target (always balance or surplus) or this option (usually a surplus).

It may be difficult to readily distinguish this option from the current rule, both in its explanation to the public and in the behavioural incentives it creates. In the latter case, if the surplus target were to become, in the mind of the public and politicians, a minimum surplus (rather than an average over the cycle) it would function like the no-deficit target and maintain the current incentives to build implicit caution in budget projections.

Finally, like the balance-over-the-cycle target, there remain the technical economic forecasting and monitoring challenges of determining where the economy is in the cycle, where it is likely to be over the forecast period and accordingly, how and to what extent the government might need to adjust its plans. The duration of the cycle cannot be specified but is likely to be longer than the political cycle of the government.

*(iv) Comparing the options*

With two of the options involving setting targets over the economic cycle rather than on an annual basis, several additional technical issues need to be addressed. How is the economic cycle defined? How are the beginning and end points determined?

Strictly speaking, a full economic cycle can be measured from a given point in the cycle to the same point in the next cycle. That is, it could be measured from peak to peak – from the top of one cycle to the top of the next – or trough to trough (bottom to bottom) or any comparable set of points in between. Practically speaking, it should be measured from the point where full employment or full capacity utilization was last reached after a downturn to the point at which it is next reached (also after a downturn). Economists refer to these positions in the cycle as the points at which the output gap has closed. The output gap is the difference between the actual level of output achieved and the level which the economy could attain were it using its physical and human resources to full capacity (but not beyond). In a typical economic cycle, the economy will both

outperform and underperform its potential. That is, there will be both a negative and positive output gap. Both the size and the duration of those gaps will vary from one cycle to another which is why balancing, on average, over the cycle is so challenging a rule on which to base fiscal policy.

If the Canadian government were to decide now to shift to a cyclically adjusted balanced budget target, most economists would agree that the Canadian economy is close to eliminating the output gap and, in most current economic forecasts, will have done so no later than the middle of 2006. Hence the beginning point of the next cycle would coincide with budget year 2006-07.<sup>54</sup>

The choice of a short-term fiscal target should not be based entirely on either convenient political economy grounds or the accepted wisdom of financial and economic analysts. The rationale for a particular target should be capable of being clearly articulated and defended in terms that can be understood by policymakers and by the public, to whom they are ultimately accountable. On the other hand, an effective fiscal rule should be defensible on analytical grounds no matter how difficult it is to explain to a non-technical audience. Otherwise, the fiscal target may end up generating policy distortions that are avoidable such as foregone opportunities for tax cut or spending initiatives.

As we saw above, each of the fiscal target options has its advantages and disadvantages. The no-deficit rule is strong in some aspects of political economy (easy to explain, unambiguous benchmark for monitoring and assessing achievement) but weak in others (impact on credibility). On economic grounds, it is defensible for its debt reduction outcome but that may come at a higher-than-necessary cost in terms of foregone opportunities for short-term spending and tax cut initiatives<sup>55</sup> and of the macroeconomic impacts of its pro-cyclical tendencies.

The balance-over-the-cycle target is quite defensible on analytical grounds as it imposes no foregone opportunity costs so long as it can be implemented successfully. The practical economic problem is that setting and achieving cyclically adjusted budget balance is much easier said than done. Determining where the economy is in a cycle requires more precision in short-term forecasting than is practically achievable. In the same vein, distinguishing cyclical from structural factors that affect fiscal performance is a significant challenge. On political economy grounds, it would be a relatively difficult sell since the fiscal anchor cannot be easily explained and rationalized and, more importantly, it is

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<sup>54</sup> The British government currently is, in its fiscal projections, using fiscal year 2006-07 as the end of this economic cycle in the UK and the start of the next one.

<sup>55</sup> Of course, in the long term, it opens up more room for those same spending and tax initiatives. Therefore, this should be more correctly viewed as the trade-off between current and future consumption of government services and/or current and future tax reductions.

a sharp departure from the rule that has been followed ever since the deficit was eliminated.

The positive balance-over-the-cycle rule – targeting an average surplus – has several things going for it, the most important of which may be that it represents only a small departure from the current rule since it does call for surplus to be achieved. It would need to be made clear that the average surplus is not the new zero – i.e. that it is an average over the cycle, not a minimum to be achieved each year under all circumstances. It can be readily linked to the already accepted long-term fiscal target of having debt/GDP decline over the next decade to 25%. The technical challenges remain of sorting out where the economy is in the cycle and distinguishing cyclical from structural impacts on fiscal components.

One last consideration should be mentioned. One of the persistent patterns in fiscal policy is that governments which end up running structural deficits face a difficult and often protracted process of getting back to balance. It is much easier to face the public with a surplus which needs to be allocated than with a deficit that needs to be eliminated. Canada's own experience from the mid-1980s to the mid-1990s is one example of this problem. However, there are plenty of recent instances just among the other G-7 countries – France, Germany, Italy, Japan, the US – of governments having problems dealing with the negative political consequences that would result from the spending reductions or tax increases required to balance the budget. These challenges need to be kept in mind when contemplating a change from the current no-deficit target.

The government must decide how it wishes to balance the political economy and economic impact considerations of the three possible rules. On balance, however, the above discussion leads the author to the conclusion that the third option – target a positive balance over the cycle – is the one to be recommended, not because it is a compromise between the other two, but because it captures some of the strengths of the two other alternatives and avoids some of their weaknesses.

**Recommendation 10:**

**Shift from the no-deficit target to a fiscal rule of achieving a surplus, on average, over the economic cycle.**

*(v) Handling fiscal surprises*

Regardless of which option is chosen, some prudence still needs to be built into the fiscal forecasts. The vagaries of economic forecasting – the timing of the economy's response to external shocks and to policy changes, the unanticipated shocks themselves – call for incorporating a margin for error in the fiscal forecasts. As well, there are changes in fiscal outcomes, in both revenues and expenditures, which cannot be projected with accuracy and, especially in the

case of revenue, may remain difficult to measure precisely even after the fiscal period has ended. This, too, suggests the need for formal prudence or caution in the projections.

The size of the margin of error will be largest for the no-deficit rule. To ensure that, regardless of economic circumstances, the government does not incur a deficit requires a cushion in the order of \$7 billion to \$9 billion in the fiscal forecast. Even if the government were to adopt one of the cycle adjusted budget balance rules, which allows for the possibility of deficits, it would want to hedge its bets to improve the likelihood of achieving its targets. A cushion in the range of 1% of revenue flows (almost \$2 billion at current levels) would be a low-end-of-the-range provision.

Even with (perhaps significant) explicit prudence built into the forecasts, unanticipated windfalls can still occur. Under any of the options discussed, the government would need to make provision for how those “surprise” surpluses are allocated. One of the key criticisms of the Canadian government’s handling of the unanticipated surpluses – apart from doubts about their being a “surprise” – has been that they emerge (or are acknowledged) rather near the end of the fiscal year, when there is a limited number of allocation options, or after the books are closed, when de facto debt reduction has been the only use to which they have been put. That has been a key element of the credibility problem discussed earlier in the report.

This points to the need for a more consistent, even formalized, procedure or framework for handling “surprises.” One possibility is to establish, in advance, a list of contingent allocations the government would make if a revenue windfall (or expenditure shortfall) were to occur. The government could set this out in each (annual) budget and it could be as general as specifying the broad shares of the windfall which would go to each of spending, tax cuts and debt reduction.<sup>56</sup> While it is often argued that permanent tax cuts tend to be ruled out because the government cannot be sure the “surprises” will continue (hence becoming non-surprises), one-time tax reductions are not out of the question. It is not the mandate of the report to argue the pros and cons of tax rebates but rather to point to this option as a plausible allocation of any windfall.

With respect to year-end spending initiatives, the government has been criticized by some for creating foundations to which unprojected surpluses are allocated but over which Parliament has little if any after-the-fact control and whose merits it has had no before-the-fact opportunity to discuss. One way around this is to have, in the contingent spending provision in the budget, a specification of one-off spending priorities. In fact, it could establish a list of such possibilities that are linked to the overall objectives and priorities set out in that year’s budget.

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<sup>56</sup> In the case of the budget surplus option, the debt reduction could either be a down payment on ensuring target achievement or it could be an adjustment to that target.

The process could be elevated to a higher level of formality. Canada could follow the example of some other countries (notably the Netherlands) by introducing legislation that spells out in detail what the allocation of windfalls will be. Again, it should be linked to the government's policy objectives and priorities. Its key advantage is that it would provide Parliament with an opportunity to discuss and debate the criteria which should be applied to future surplus surprises.

It appears that even surprises discovered at the time the fiscal books are closed are not beyond the pale of consideration as to their disposition. Most observers have been of the view that any additional surpluses discovered after March 31 must be applied to debt reduction. However, if specific provision is made before March 31 there are, in fact, a limited number of alternative uses. Accounting rules would allow for legislation that spelled out how surpluses, discovered six months after the end of the fiscal year, would be retroactively allocated among tax rebates, established activities which are not part of federal operations such as foundations and provincial trusts, and debt reduction.

**Recommendation 11:**

**If the no-deficit rule is retained, provide, in each Budget, for contingent allocations of surplus surprises among tax cuts, spending initiatives and debt reduction.**

The specific suggestions about what to do with an unanticipated windfall are more germane to the no-deficit target case, where success in achieving the goal is determined annually. In the other two options, assessment of whether the target has been met is done cumulatively over several years. Since an average balance (zero or positive) over the cycle must be attained, there will typically be years in which the balance falls below the average – implying a deficit, at least in the zero balance case – and years when it is above. Any surprises, positive or negative, will emerge in a cumulative fashion and likely will not be apparent until the latter phase of the cycle when the closing of the output gap is on the short-term horizon.

The absence of a year-to-year fixed anchor in the cycle balance options gives rise to two particular issues. For any given year, it will not be clear if the actual fiscal outcome is appropriate – i.e. consistent with the medium-term objective of balance or surplus. This is the challenge referred to earlier of whether the current year surplus or deficit is purely cyclical and ought to be ignored or whether it is partly structural and could require adjustments in policy.

The second issue relates to policy changes that should be considered near the end of the cycle (i.e. when the output gap has closed). If it appears likely that the government is going to miss its target on the low side – cumulatively run a deficit or a smaller-than-planned surplus – should the government make short-term policy adjustments (tax increases and/or spending cuts) to ensure its target is met? Since the government will risk starting the next cycle with a budget in deficit

or a debt level higher than planned, the cautious approach would dictate that policy adjustments be made right away to ensure that the current cycle target is achieved and that the government starts the next cycle on the right foot. This will be important for maintaining fiscal credibility.

If the “problem” is that the government looks likely to overshoot its target – run a larger-than-anticipated cumulative surplus – the government will have the option of using the surprise result to lower taxes, raise spending or allow the debt to fall further. Given that the “surprise” has arisen over the cycle rather than in a given year, it suggests that a permanent tax or expenditure initiative rather than a one-off measure would be appropriate.

Two of the short-term fiscal rule options specifically involve reducing debt<sup>57</sup> and are linked, intentionally or not, to the longer-term debt/GDP target. It is therefore, worth reviewing the argument for that target.

(vi) *Debt/GDP ratio – long-term fiscal target*

There is no settled view among economists on the optimal debt/GDP ratio towards which governments should move. No attempt will be made in this report to cover or summarize the voluminous analytical and empirical literature on this subject. However, there are two key elements to the determination of a target debt/GDP ratio. First is the consideration of long-term fiscal sustainability, that is, what will be the fiscal capacity of the government to finance its liabilities in the future. This includes liabilities to which the government is now committed and those to which it will be pushed to commit resources for demographic and other reasons over succeeding decades. Related to that is consideration of the costs that will be imposed on future generations of the working population both to service the debt and to pay, through their taxes and contributions, for current and future commitments. In this regard, the steady decline in the ratio of the working-age to the retired population raises issues of intergenerational equity. Put another way, the baby-boomers caused the run-up in the debt and the generations that follow, though smaller in number, will be saddled with much of the burden of servicing the debt and of the cost of ongoing programs – health and public pensions – from which the retired baby-boomers will disproportionately benefit.

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<sup>57</sup> The no-deficit rule currently has an explicit debt reduction component (the unused portion of the contingency reserve) but that is not an inherent provision of such a rule. Explicitly targeting a surplus, on average, over the cycle implies allocation to debt reduction (or a special fund to be drawn down in the future under specific conditions).

This argues then for lowering the debt burden relative to the capacity to service it (debt/GDP ratio), with reasonable dispatch, to some agreed-upon a level. The government has set 25% as the target and there is significant agreement from Canadian economists that the figure is reasonable. Some would argue that an emphasis on lowering the intergenerational transfer of the fiscal burden implies the need for a somewhat lower target such as 15% to 20%.<sup>58</sup>

**Recommendation 12:**

**Set the debt/GDP target, to be reached within ten years, lower than the current 25% (i.e. 15%-20%) to ensure that future fiscal challenges can be met.**

In the absence of a direct reduction of the nominal debt, the government's debt/GDP target would be reached in a little over ten years assuming trend growth (about 5% nominal and 3% real GDP growth)<sup>59</sup> as the steadily rising denominator (GDP) lowers the ratio. There are several reasons, however, for suggesting that nominal debt reduction be an integral part of the process.

First, as we have seen over the last decade, growth can deviate significantly and persistently from trend. Through the latter part of the 1990s, growth exceeded trend and positive fiscal surprises were among the benefits delivered. Ever since 2000, when growth has been below trend, Canada has enjoyed a better economic performance than past experience with economic downturns might have led us to expect. It is possible, as one of the individuals consulted has suggested, that after experiencing a decade of positive surprises, coming to a considerable extent from the unanticipated outperformance of the US economy, we could be faced with a reversion to the mean – a decade of negative surprises. As the US economy makes the necessary adjustments to correct its fiscal and current account deficits, we could experience the consequences through both weaker US growth and a stronger Canadian dollar.

The point is that we cannot completely count on projections of trend growth to ensure that the targeted reduction in the debt/GDP ratio can come entirely by way of a rising GDP denominator.

Even if growth ends up as expected, there are separate reasons to recommend lowering nominal debt levels. As debt declines, so too does the cost of servicing it. That not only reduces the vulnerability to interest rate volatility but frees up resources over the medium term for tax cut and spending initiatives. It also increases the longer-term flexibility to deal with demographically driven

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<sup>58</sup> See Scarth and Jackson (1998), for example.

<sup>59</sup> Trend (or capacity) growth refers to a pace of economic expansion that matches the growth of economy's capacity, which comprises (approximately) the rate of labour force growth (1%) and long-term productivity growth (estimated at 2%). That yields a real rate of 3% to which is added expected inflation (estimated 2%) to yield 5% nominal growth.

challenges to fiscal capacity. The extent of those challenges can be projected but could well turn out to be more significant than current expectations. Those who advocate using the extra room for tax cuts also point to a positive impact on living standards as lower taxes on employment income encourage greater work effort and higher productivity. Lower taxes on business income encourage increased investment spending and (again) higher productivity.

The extent to which surpluses are used to reduce debt<sup>60</sup> will determine how quickly the debt/GDP ratio falls to the current target level. Reasonable arguments can be made for going below 25% to 20% or even 15% based on the intergenerational equity arguments made above. However, whatever target is set, the question is what happens when the target is reached.

A governmental decision to stabilize the debt/GDP ratio once the target level is reached would require that it move into a structural deficit position. That is, it would run a small deficit, on average, over the cycle. If GDP is rising, then the debt must increase at the same pace to stabilize the ratio. That will require switching from a surplus to a deficit target of 1.25% of GDP<sup>61</sup> over the cycle. From the current vantage point of a firmly entrenched no-deficit rule, this may seem odd, even absurd.

However, not only is the arithmetic inescapable, but there is some logic to it as well. The pressure on the costs of health care<sup>62</sup> and possibly other services to the elderly, combined with the shrinking share of the population that is of workforce age, suggests that running modest deficits on a sustained basis by the middle of the next decade may not be unreasonable to contemplate. Although there is no technical problem with such a shift, political economy and financial market considerations would dictate a well-announced transition phase.

#### 4.4 Possible Institutional Changes

By institutional change we are referring not to modest or even substantial changes to existing budget forecast processes. Rather, the reference is to the introduction into the process of potential new participants – i.e. individuals or agencies whose role would be to make significant improvements in the fiscal forecasting and/or policy analysis process. An example of this would be the private economic forecasters engaged by the Commons Finance Committee to provide quarterly forecast updates.

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<sup>60</sup> The surplus target in the positive balance rule or the contingency reserve of \$3 billion in the current no-deficit rule.

<sup>61</sup> If nominal GDP grows at 5% annually (trend rate) the nominal debt has to grow at the same pace. The size of the increase in debt will be 25% of the size of the change in GDP or 1.25% for a 5% GDP growth rate.

<sup>62</sup> Robson (2002) estimates that the impact of population aging on health care costs will be to “raise their growth rate...by about one percent annually above the path that inflation and increased utilization would otherwise produce.” (p. 1)

However, before suggesting other new institutional arrangements, it is important to be mindful of an old adage: when proposing a solution, check first that you actually have a problem that needs solving and then ensure that this proposed solution is the right one. In this case, the analysis and evidence presented in Section 3 cast serious doubt on the proposition that the problem lies with fiscal forecast accuracy per se. That there are differences between fiscal projections and outcomes is beyond question. Nor is there any ambiguity about the unidirectional nature of the fiscal forecast errors – deficits were smaller and then surpluses larger than projected in every year since 1995-96.

Economic forecast errors were a significant factor in the surprises in several years but definitely have not been persistent. In fact, in some years, greater accuracy in economic projections would have implied smaller rather than larger surpluses. Data revisions which, after the fact, changed the baseline from which the economic and fiscal forecasts were done had a more consistent impact on forecast accuracy. Finally, as argued in Section 3.7, the no-deficit rule is likely the key factor in explaining the consistent under-forecasting of surpluses over the last eight years.

If we apply the adage and the evidence presented in Section 3 to assess the Finance Committee's recent solution, the question is: what problem is it designed to solve and will it do so effectively? It appears, from comments made by the Committee, that it feels it is not receiving enough information – in terms of frequency and content – on the in-year fiscal situation of the federal government. If that indeed is the concern, the suggestion offered in Section 4.1 that Finance provide the Committee with more frequent and complete fiscal updates is, at minimum, the cheaper resolution.<sup>63</sup> This is especially the case since, in the new arrangement, the Department is called upon to provide assistance to the economists hired by the Committee. That is, the Committee will be getting the same fiscal data it can get directly from the Department. If members of the Committee don't trust the information provided currently by the Department, it is not clear why their trust would be much enhanced by having the same information filtered through the external economists.

More critically, the issue is whether any institutional changes are likely to add much value to short-term forecasting and monitoring. The analysis in this report suggests that, in the economic forecast end of the process, a reduction in the size and frequency of data revisions could have a discernible impact on forecast accuracy. Improved understanding of the sensitivities of key revenue components to changes in nominal GDP could also enhance accuracy. Both of these items are taken up in the data improvement discussion above in Section 4.2. But resolving them does not require a new agency.

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<sup>63</sup> By about \$320,000 per year based on the provision that has been made for hiring the outside economists.

Finally if the real culprit in the story of surprise surpluses is the predictable response of the system to a no-deficit fiscal rule, hiring outside economists to monitor and produce fiscal forecasts in conjunction with Finance will not resolve that either. Instead, what is required is a change in the fiscal target which affects the incentives driving behaviour in the forecasting process.

More generally, it is difficult to see how an institutional change that involves transferring some of the forecasting responsibility to an independent agency would make much of a difference to short-term forecasting accuracy.

**Recommendation 13:**

**The House of Commons Finance Committee discontinue the hiring of economic forecasters to provide quarterly fiscal projections.**

The federal government already utilizes outside expertise for economic forecasting in a more formal and extensive way than almost any other OECD country and is the only one which actually adopts private sector projections as its official forecast in its budget. It is not clear that replacing the current process with a new independent agency would offer any improvement in forecast accuracy. And it clearly would make no sense at all to continue using private sector economists alongside a new agency. However, for completeness of the analysis, it is worth looking at two examples of independent forecasting institutions – the Congressional Budget Office in the United States and the Bureau for Economic Policy Analysis (CPB) in the Netherlands.

The Congressional Budget Office (CBO) is one of a duo of agencies which provide input to the budget along with economic and fiscal policy advice to the US federal government. The Office of Management and Budget serves the President by, among other activities, preparing his budget proposals. It also provides economic policy advice, engages in program development, assists in the management of the Executive Branch, provides advice on legislation before Congress and conducts regulatory analysis. Its mandate then is much broader than budget-related concerns.

The CBO, on the other hand, has a more focused mandate. It assists Congress in evaluating the President's budget proposals and in developing the joint budget resolution of the House of Representatives and the Senate. The resolution sets out levels of revenue and spending along with spending priorities for several years into the future. To underpin this work, the CBO produces, each year, an economic and fiscal outlook with revenue and expenditure projections ten years forward based on the assumption that current legislation remains unchanged over that period. This budget baseline is then used by the House and Senate Budget Committees to assess the impact on the budget of any proposed legislation.

Apart from the work specifically related to the current budget, the CBO also has a broader mandate to provide Congress with objective, impartial analysis of economic and fiscal issues that may impinge on the decisions they are deliberating. In particular, the CBO produces a long-term budget outlook which lays out alternative scenarios for fiscal revenues and expenditures under different sets of (structural) economic assumptions. For example, the implications for the fiscal outlook of the aging baby-boom population is examined every two years. Other recent CBO publications have studied the implications of White House plans for defence and the impending adjustments in effective rates of taxation as the result of recent changes in tax laws.

In its role, the CBO does not get to make policy recommendations to the Congressional Budget Committees or to Congress itself. It is meant to be, and does function as, an independent and objective source of information and analysis. This ensures that it will remain a non-partisan agency within the federal government. This is quite unlike the OMB, which has a policy advisory role to play in the White House and, hence, is a partisan body in the US government.

The other institution worth examining is the Netherlands Bureau for Economic Policy Analysis, known officially as the CPB – the literal translation of its Dutch name is the Central Planning Bureau. The CPB is an independent government agency whose overall mandate is to provide objective economic analysis that is relevant to policymaking in the Netherlands. It produces short-, medium- and long-term economic forecasts of the Dutch economy. The areas of its research range from the labour market and competition and regulation to long-term growth factors and international economics.

Of particular relevance for this report is the role of the CPB in economic and fiscal forecasting. The Netherlands has a long history of coalition governments resulting from its having a large number of political parties. Prior to each election, the CPB provides an economic forecast which is used by all the parties in setting out their fiscal platforms. Hence, all political parties start from a common economic outlook. The platforms of all the parties are sent to the CPB, which costs out the programs and assesses their possible economic impacts.

After the election, the coalition establishes a “Coalition Agreement” which sets the budget policy and the fiscal targets for the term of the new government. This is based on the same CPB economic outlook used in the election campaign. Then, in the annual budget process, the CPB provides the economic assumptions upon which the official economic and fiscal forecasts of the Ministry of Finance are based.

In effect, the CPB is an independent agency, operating within government, that provides economic policy analysis. It is both a source, inside the government, of economic and fiscal information – it has access to data which may still be confidential – and an independent agency that provides economic forecasts and

research. It does not make policy recommendations but rather provides an analytical and empirical foundation for policy deliberations. Some of its publications do spell out alternative policy scenarios for policymakers to use in considering future policy actions.

Both the CBO and the CPB were created and have evolved in particular institutional political contexts. The CBO is a creature of a system in which there is a clear division of powers and responsibilities between the executive and legislative branches of government. It was established in 1974 because Congress perceived itself to have lost considerable control over the budget to the Administration. The CBO would, it felt, give it a much firmer foundation of information and analysis on which to establish a budget negotiating strength closer to that of the President. In effect, it was to be a counterweight to the OMB.

The CPB could, arguably, have been established in any political context but its role has evolved to serve a system with a large number of political parties in which minority or coalition governments are the inevitable electoral outcomes. Its role in setting out a common baseline for the economic and fiscal elements of all parties' election platforms and its key input to the Coalition Agreements are linked to that political context.

Notwithstanding the absence of parallels in Canada with the government structures in the US and the Netherlands, there may be some aspects of the mandates of the CBO and CPB that would be worth considering "importing" to Canada. However, there are good reasons for arguing that their overall mandate, structure and activities should not be adopted here.

The CBO is appropriate to a government structure in which there is strict division of powers between the executive and legislative branches of government. The budget emerges from a process of negotiation between the two branches, which can and usually does take several months to complete. The CBO is designed to give Congress the intellectual heft to deal with an Administration that has a wide array of economic expertise upon which to draw.

In a Parliamentary structure like Canada's, the executive branch has sole responsibility for preparing and presenting a budget to Parliament and for implementing it after it has been passed. The Finance Minister and the government of which he is a part are ultimately accountable for the budget and its consequences. The legislative branch has the task of holding the government to account for the budget itself, for its implementation and for the ultimate fiscal outcomes and their impacts. It is not envisaged that Parliament should operate a parallel and competitive structure of budget preparation. That is why the part of the CBO mandate that is directed towards short-term fiscal projections is not appropriate for Canada.

The CPB's role in fiscal forecasting and budget development is more limited than is that of the CBO. It provides an economic forecast for the government to consider but the official economic and fiscal forecast is produced by the Finance Ministry; technically it can deviate from the CPB's forecast, but this has occurred infrequently. On the other hand, the CPB does provide fiscal and economic updates during the fiscal year and provides an independent assessment of the annual budget.

On balance, the fiscal forecast role of the CBO and CPB is unlikely to warrant adoption in Canada. A new agency, cast in their mold, would not be able to overcome the fundamental factors affecting forecast accuracy in Canada any more effectively than current institutions. Its economic projections would be no less prone to the typical margin of error and it could not overcome the data revisions problem. Its budget forecasts would have to be set in the context of the fiscal rules under which the government of the day is operating. In the parlance of economists, a CBO- or CPB-like structure would be neither a necessary nor sufficient condition for improving economic or fiscal forecast accuracy. In fact, the fiscal forecasting track record in the US is not necessarily worth emulating. As noted already, while the CBO's projections have not been biased in either direction, the size of its fiscal forecast errors has been larger than those of Canada. The budget projections in the Netherlands have displayed smaller variance from actual outcomes than has been the case in Canada but the economic forecasts in recent years have been farther off the mark.

While the short-term economic and fiscal forecasting roles of the CBO and CPB are unnecessary in the Canadian context, the broader mandate beyond forecasting is worth considering. The CBO, for example, analyzes the medium- to long-term consequences of major fiscal initiatives that are being considered or have been enacted. It reports its findings to Congress and to the public. The CPB also is responsible for assessing the long-term consequences of potential and actual budget decisions. As well, both organizations conduct analyses of the fiscal effects of demographic and structural economic changes (e.g. productivity growth and labour market shifts).

If the focus in Canada were shifted from fiscal forecasting per se to fiscal analysis and from the short-term to the medium- and long-term, there is justification for discussing an institutional initiative of this sort. In several ways, the orientation of the federal budget and its forecasting requirements is becoming more focused on the medium- to long-term horizon. The most recent budget incorporated the five-year planning horizon. This is consistent with the increased share of longer-term fiscal commitments the government has been making, examples of which include the health care and equalization agreements signed with the provinces last fall.<sup>64</sup> As well, there were measures in the recent budget

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<sup>64</sup> While made before the 2005 Budget, these commitments had a significant impact on other commitments introduced in the Budget.

such as corporate income tax cuts scheduled to come into effect 3 to 5 years out. The commitment to lowering the debt/GDP ratio over a ten year time frame is also a long-term commitment.

If Parliament wants to devote resources to enhancing the analytical impact of its fiscal policy deliberations, it should look to this longer-term focus. There are a number of issues arising out of this report alone on which those resources might focus.

Elements of the debt/GDP fiscal target warrant more intensive scrutiny than they have received to date. Examples of research that could usefully be carried out related to the debt/GDP target include:

- The impact on debt service costs (and on fiscal capacity for spending and tax initiatives) of different assumptions about the path of interest rates.
- The effects of lower nominal debt levels on national savings and on market interest rates.
- Alternative debt/GDP targets and their implications.
- Options for fiscal policy when the debt/GDP target is reached.

There are a host of consequences that flow from the age demographics of the Canadian population whose fiscal implications Parliament might want to have examined. These include:

- Changes in the composition of program spending – e.g. from labour market training and post-secondary education to health care and seniors' income support.
- Shifts in the composition of taxes and transfers – e.g. reduced share of personal income taxes from employment income and increased share from capital gains, interest and dividend income; reduced Canada Child Tax Benefit.
- The net impact on program expenditures from these changes based on varying assumptions about, for example, the pace of health care and education cost increases.
- The impact on resources and program expenditures of varying the pace and composition of immigration.

There is already work underway in the federal government on the possible fiscal and other policy impacts of an aging population, some of which was reflected in an appendix to *The Budget Plan 2005*. Much of the broad array of research has not been provided in an accessible or user-friendly format and, in any event, this will be an evolving issue that will merit continuing research.

What is envisaged here is an agency whose mandate is relatively narrow, with a focus on the fiscal implications of a range of prospective policy changes and of structural factors like age demographics and productivity growth.

However, it would not be involved in producing or monitoring the short-term fiscal forecasts. As well, the policy changes examined would have to be significant to merit analytical resources being devoted to their assessment. Hence, a modest change in tax rates, for example, would not be the subject of extensive study whereas a proposed reform of the overall tax structure would be. It needs to be emphasized that a new agency should not replicate the research capacity that already exists in the federal system – in Finance, Industry and other departments and at the Bank of Canada. Rather, it should draw upon these resources and any of their work that is relevant to its mandate.

If a shift from the no-deficit to a balance-over-the-cycle rule were to be implemented, a somewhat broader role for this agency could be contemplated. As discussed above, a key analytical requirement of adopting such a rule is determining where in the cycle the economy is in order to track the path of the cyclically-adjusted fiscal balance. As already noted, this is not a simple, straightforward exercise with clear-cut answers. It requires both short-term economic forecasting as well as empirical analysis of long-term trend growth and/or full employment. Since there is considerable capacity in the private sector and government departments (Finance and the Bank of Canada) already devoted to carrying out this kind of research, the role of the new agency would be to monitor that work and report on it and its implications for the short- to medium-term fiscal outlook.

Because the comparison is inevitable, it needs to be pointed out that what is being proposed is not a reincarnation of the Economic Council of Canada. The Council had, from the outset, a much broader mandate than is being contemplated for this new agency. Not only was the topical scope of its economic research extensive, but it also had a prescribed advisory role to Parliament which it carried out by making policy recommendations. Its research agenda was driven more by the issues of the day than by any particular research agenda which the government or Parliament spelled out (or suggested). Finally, when the Council was discontinued in the early 1990s, it had a budget of over \$10 million and a total staff of about 120.

This new agency proposed here would be much smaller, less independent in its choice of research topics and more narrowly focused on longer-term fiscal issues when compared to the Economic Council of Canada. At least initially, it should have no more than four or five analysts with appropriate support staff. Its research agenda should be established in collaboration with an existing Parliamentary institution. It should also be housed somewhere in the system for reporting and oversight purposes. Given the current concerns about credibility, it should not be linked to the Finance Department. The non-partisan nature of institutions like the CBO and CPB would be important to emulate in both perception and fact.

**Recommendation 14:**

**Create an agency within government with a mandate to focus on the medium- to long-term fiscal implications of structural economic and demographic factors.**

Several options as to where the agency would be housed could be viable although it is beyond the scope of the report to consider the detailed elements of each. First, as the new agency has as its responsibility to research fiscal issues and report on them to Parliament, it could be attached to the Library of Parliament, which has the mandate to carry out research for Parliamentary Committees and for MPs. It could be established as a unit within the Library with its own specialized mandate and staff.

A second option would be to make the new institution an agent of Parliament attached, for example, to the Office of the Auditor General. To the extent that the agency had a fiscal (and economic) monitoring role, such as that of the Dutch CPB, it would fit logically into a Parliamentary institution, which has a broad monitoring and assessment role such as that of the Auditor General. It is worth noting that, in the UK, the economic and fiscal forecasts produced by Treasury are vetted by the British government equivalent of the Auditor General. Alternatively, it could be made a separate agent of Parliament with its own distinct mandate. This may be preferable to embedding it in an organization whose primary mandate is not analytical, policy-related research. As well, as an independent agent, its accountability would be clearer and its performance more readily monitored.

A third possibility would be to have the agency report and be accountable to the Commons Finance Committee in the same way that the CBO in the US is a creature of Congress and, in particular, works with the House and Senate Budget Committees. In fact, the Director of the CBO is a joint appointment of the Chairs of the two Committees.

In two respects this last option may be the least desirable of the three alternatives. The formal and actual independence of the new institution may be harder to establish if it reports and is accountable to a Parliamentary Committee. Although it should work with and respond to the research priorities of the Committee (and through it, of Parliament), it should also have some latitude to determine, on its own, its research agenda. It might also prove difficult logistically to have the agency responsible to a Parliamentary Committee whose membership (especially the Chair) is subject to more frequent change than is the case in the US Congress. For that reason, an agent of Parliament that also has its own independence or the Library of Parliament would be preferable locations for the proposed institution.

It may be reasonably argued that a focus on medium- to long-term fiscal analysis does not require a new, somewhat independent, agency with a permanent staff.

For example, one could set up a council of experts drawn from the academic and business sectors whose responsibility it would be to advise Parliament on medium- and long-term economic and fiscal issues. Its members would not be permanent civil servants but would serve as independent advisors. However, the challenges often encountered with a more informal structure such as this is that its mandate is subject to frequent adjustment, especially with a change of government, and its impermanence usually implies that it will have a relatively short lifespan. On balance, if there is a significant value in having an agency of Parliament which informs and advises on longer-term economic and fiscal issues, it is worth investing that mandate in a permanent body.

The discussion to this point has been about new “institutions” – the economists recently engaged by the Commons Finance Committee and an agency like the CBO or CPB that is focused on medium- to long-term implications of fiscal policy activities. That ignores the other institutional changes which, beginning ten years ago, flowed out of the recommendations of the E & Y report and have evolved since that time. These were the introduction of private sector economists and their economic forecasts into the fiscal forecast process. Some of the details of the changes over time are outlined in Section 3.1 and Appendix 2-B. The economists’ forecasts have been used directly in the budget projections for the last four years and in an amended (prudence added) form in the previous six years. Finance also introduced the forecasting firms (the smaller group of those with formal econometric models of the economy) to the process by having them project the medium-term fiscal path based on the 5-year economic forecasts.

The private sector economic forecasts effectively replaced those generated by Finance out of its own macroeconomic model. As the E & Y report indicated, the economic forecasts of Finance were, in fact, more accurate than those of any of the individual forecasters and also beat the consensus or average private sector projections. It is likely the case that Finance’s in-house forecasts would still be superior mainly because of the more significant resource base upon which they can draw relative to their private sector counterparts. As well, Finance would be immune to the pressures for herding that appear to be inherent to the public nature of the private sector forecasts. That being the case, does it make sense to return to using Finance’s economic projections – the case in virtually every other OECD country<sup>65</sup> – or should the projections continue to come from outside of government?

If the issue were simply one of forecast accuracy, the strong track record of the government’s own economic projections would point to a return to the pre-1994 approach. However, as in 1994, there is an overlay of credibility which has to be

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<sup>65</sup> The IMF (2005) study takes particular note of the unique role of outside forecasters in the Canadian process. In some countries, private sector analysts are sought for their expertise in the budget process but their input is not formalized.

dealt with. In 1994, the superior performance of the government's forecasts did not inhibit the authors of the E & Y report from suggesting that the private sector economists be brought formally into the process. The same considerations would dictate a comparable recommendation today.

So long as there is no serious consideration given to creating a new agency whose primary focus is short-term economic and fiscal forecasting – and that is the recommendation of this report – the government should continue to use the private sector economists and forecasting organizations as it does now in the budget process.

## **4.5 Summary of Recommendations**

### ***Transparency***

Improving the transparency of the federal government's fiscal forecasting procedures and information has, as its primary objective, to increase the level of trust in the budget process itself. To that end, there are six recommendations on transparency. The first three relate to the need for Finance to provide a detailed breakdown of the linkages between the (external) economic and (internal) National Accounts fiscal forecasts and of the reconciliation of the National Accounts to the Public Accounts fiscal projections. These include:

- (i) In the Budget and the Economic and Fiscal Update, fully explore the key risks and uncertainties in the economic forecast and discuss their implications for fiscal projections.
- (ii) In the same documents, provide details on the rules of thumb used to estimate the impacts on revenue and (certain) expenditure categories of key economic variables such as nominal GDP growth and short- and long-term interest rates.
- (iii) In major fiscal documents, spell out the details of the reconciliation between the National Accounts and Public Accounts fiscal forecasts.

In the Budget, there should be documentation of the long-term (e.g. ten year) track record of Finance's projections, which will allow all interested parties to better assess the government's fiscal forecast accuracy.

In addition, Finance should, as part of every third Fiscal Monitor, provide an analysis of fiscal developments in the current year and the risks to the projected fiscal outcome. Where possible, it should include a complete update of the current year fiscal forecast.

The final recommendation is that Finance increase the frequency of its formal briefings to the House of Commons Finance Committee. In addition to the

appearances related to the Budget and the Economic and Fiscal Update, there should be at least one additional briefing provided in the early summer.

### ***Data quality and analysis***

Enhancing the accuracy and timeliness of the data used for the economic and fiscal projections can increase the accuracy of the forecasts themselves. There are three recommendations made in this area of the report. The first relates to estimates of nominal GDP made by Statistics Canada. The fiscal forecasts have been affected by persistent upward revisions to GDP growth, which caused revenue projections to be lower than would have been the case had the revisions been known earlier. The recommendation is that Statistics Canada and the Department of Finance jointly examine the causes of this pattern and options for mitigating it.

Another cause of fiscal forecast inaccuracy is the adjustment in the relationships between the economy's performance and several major categories of revenue. It is recommended that research be undertaken to determine the factors that have caused these changes. In addition, the analysis should focus on potential future adjustments in the revenue sensitivities.

Improved monitoring of several key government operations would enhance forecast accuracy. In particular, the reasons for the consistent upside surprises to Crown corporation earnings need to be determined and in-year monitoring of their financial status should be improved. Enhanced ongoing tracking of departmental expenditures would allow lapses to be better anticipated.

### ***Fiscal rules***

The fiscal target under which the federal government has functioned since 1997 is that no deficit shall be incurred under any circumstances. It is a key conclusion of the analysis of forecast accuracy that the no-deficit rule has been a major cause of the persistent upside surplus surprises at the end of each fiscal year. It is recommended that the government consider adopting a different rule that is more appropriate to its fiscal circumstances and to its increased focus on medium- to long-term commitments.

The report examined the pros and cons of three options – retaining the no-deficit rule, achieving zero balance over the economic cycle and targeting a modest surplus, on average, over the cycle. The big differences between the current rule and the two alternatives are:

- (i) The balance- and surplus-over-the-cycle targets allow for deficits to be incurred when warranted by economic circumstances such as a significant economic downturn.

- (ii) While the inherent imprecision of economic (and fiscal) forecasts necessitates that caution be built into budget projections, less will be required than for a no-deficit rule.
- (iii) Unexpected budget windfalls (or shortfalls) will only be apparent after several years of the cycle rather than annually as is the case with the no-deficit rule; decisions on the allocation of unanticipated surpluses will not have to be made annually.
- (iv) With the no-deficit rule, there is no ambiguity about the target each year nor about whether it has been attained; attempting to achieve balance or a surplus over the cycle involves inherent uncertainty about whether the rule will be successfully followed.
- (v) If the no-deficit rule is strictly adhered to, it can require adjustments in downturns that exacerbate economic weakness (i.e. it is pro-cyclical); the balance- and surplus-over-the-cycle targets imply counter-cyclical impacts from automatic stabilizers.

The report recommends that the federal government adopt the fiscal rule of achieving a surplus, on average, over the cycle. This target represents a less dramatic departure from the current rule and can be clearly linked to the long-term fiscal goal of lowering the debt/GDP ratio to 25% as the cumulative surplus would be used to reduce the nominal debt level.

If the government decides to retain the current no-deficit rule, it will need to adopt a more formal and structured process for dealing with fiscal surprises. It should establish, in advance, the contingent allocations among tax cuts, spending increases and debt reduction of any unexpected windfalls. This can be incorporated into the (year-beginning) Budget and debated in Parliament as part of the Budget deliberations.

The establishment of a debt/GDP ratio target well below the current level is an important recent initiative, especially given the demographically driven fiscal pressures that will need to be addressed in Canada. The government should consider setting the target below 25% – 20% or even 15% – to ensure that the fiscal challenges can be readily met. It will also be necessary to prepare the public for the transition to targeting a deficit, on average, over the cycle. This is an inevitable consequence of stabilizing the debt/GDP ratio at the targeted level.

### ***Institutional changes***

There are two main recommendations in this segment of the report, one of which has negative elements. It is proposed that the economic and fiscal forecasting structure that has evolved over the last decade be maintained. The degree of accuracy of the budget projections will not be materially improved by creating new institutions to produce them. The potential improvements in accuracy described above can be achieved within the existing framework. This means that the hiring of four economic forecasters by the House of Commons Finance Committee to provide quarterly projections should not be continued.

Nor should consideration be given to establishing an agency like the Congressional Budget Office in the US or the Central Planning Bureau in the Netherlands.

However, if the focus is shifted from short-term forecasting to long-term policy analysis, both the CBO and the CPB have facets of their mandate which could usefully be incorporated into the Canadian context. It is recommended that a small agency be set up with a mandate to focus on the medium- to long-term fiscal implications of structural factors like changing age demographics and productivity growth and of significant policy initiatives such as changes in tax structures. If the government were to shift to a fiscal target of balance or surplus over the cycle, it is further recommended that the agency's mandate be expanded to monitor and report to Parliament on the tracking of the cyclically adjusted fiscal balance.



## TABLES AND CHARTS

**Table 1**  
**Comparison of Estimates of the Error in Forecasts of the Fiscal Balance**  
**(\$ Billions)**

	Balance forecast in the budget before the fiscal year began	Actual balance (outcome) <sup>1</sup>	Difference (forecast less actual balance) <sup>2</sup>	In-year policy initiatives <sup>3</sup>	Adjusted balance (outcome had there been no policy initiatives)	Adjusted difference (forecast less adjusted balance) <sup>2</sup>
<b>A. Policy and Economic Analysis Program – including policy initiatives (PEAP – CIRANO 1)</b>						
1995-1996	-30.3	-28.6	-1.7			
1996-1997	-21.8	-8.9	-12.9			
1997-1998	-13.3	3.5	-16.8			
1998-1999	3.0	2.9	0.1			
1999-2000	3.0	12.3	-9.3			
2000-2001	4.0	17.1	-13.1			
2001-2002	8.2	8.9	-0.6			
2002-2003	2.0	4.0	-2.0			
2003-2004	4.0	9.1	-5.1			
<b>B. Policy and Economic Analysis Program – excluding policy initiatives (PEAP– CIRANO 2)</b>						
1995-1996	-30.3	-28.6	-1.7	0.0	-28.6	-1.7
1996-1997	-21.8	-8.9	-12.9	-0.7	-9.6	-12.2
1997-1998	-13.3	3.5	-16.8	5.9	9.4	-22.7
1998-1999	3.0	2.9	0.1	5.6	8.5	-5.5
1999-2000	3.0	12.3	-9.3	6.2	18.5	-15.5
2000-2001	4.0	17.1	-13.1	5.4	22.5	-18.5
2001-2002	8.2	8.9	-0.6	3.6	12.5	-4.3
2002-2003	2.0	4.0	-2.0	7.4	11.4	-9.4
2003-2004	4.0	9.1	-5.1	4.7	13.8	-9.8
<b>C. Dale Orr, Global Insight</b>						
1995-1996	-30.3	-28.6	-1.7			
1996-1997	-21.8	-8.9	-12.9			
1997-1998	-14.0	3.5	-17.5			
1998-1999	3.0	2.9	0.1			
1999-2000	3.0	12.3	-9.3			
2000-2001	4.0	17.1	-13.1			
2001-2002	8.3	8.9	-0.7			
2002-2003	2.0	7.0	-5.0			
2003-2004	4.0	9.1	-5.1			

**Table 1 (Cont'd)**  
**Comparison of Estimates of the Error in Forecasts of the Fiscal Balance**  
**(\$ Billions)**

	Balance forecast in the budget before the fiscal year began	Actual balance (outcome) <sup>1</sup>	Difference (forecast less actual balance) <sup>2</sup>	In-year policy initiatives <sup>3</sup>	Adjusted balance (outcome had there been no policy initiatives)	Adjusted difference (forecast less adjusted balance) <sup>2</sup>
<b>D. Jim Stanford, Canadian Auto Workers</b>						
1995-1996	-32.7	-28.6	-4.1			
1996-1997	-24.3	-8.9	-15.4			
1997-1998	-17.0	3.8	-20.8			
1998-1999	3.0	3.1	-0.1			
1999-2000	3.0	12.7	-9.7			
2000-2001	3.0	18.1	-15.1			
2001-2002	1.5	8.9	-7.4			
2002-2003	3.0	7.0	-4.0			
2003-2004	3.0	9.1	-6.1			

Note: Some totals may not add due to rounding.

<sup>1</sup> With two exceptions, actual balances are those reported at the end of the fiscal year in question. Many have since been revised to a full accrual accounting basis. The first exception is in the actual outcomes used by Stanford, who used Finance Canada's Fiscal Reference Tables published in 2002 for all years up to 2001-02. The second exception is 2002-03, where PEAP – CIRANO adjusted the actual outcome to a partial accrual accounting basis so that comparisons could be made on an equal footing.

<sup>2</sup> In the difference columns, a negative value indicates that the balance was better than forecast, i.e., the balance was under-forecast. When there were deficits, they were smaller than forecast; when there were surpluses, they were larger than forecast.

<sup>3</sup> A positive value indicates the balance would have improved (a smaller deficit or a bigger surplus) by this amount had the initiatives not been taken. I.e., since 1997-98, the initiatives reduced the potential surplus.

Source: PEAP – CIRANO, Orr, Stanford.

**Table 2**  
**Budget Balance – Forecasts, Outcome and Differences**  
**(\$ Billions)**

	Balance forecast in the budget before the fiscal year began	Actual balance (outcome) <sup>1</sup>	Difference (forecast less actual balance) <sup>2</sup>	In-year policy initiatives <sup>3</sup>	Adjusted balance (outcome had there been no policy initiatives)	Adjusted difference (forecast less adjusted balance) <sup>2</sup>
1994-1995	-39.7	-37.5	-2.2	0.0	-37.5	-2.2
1995-1996	-30.3	-28.6	-1.7	0.0	-28.6	-1.7
1996-1997	-21.8	-8.9	-12.9	-0.7	-9.6	-12.2
1997-1998	-13.3	3.5	-16.8	5.9	9.4	-22.7
1998-1999	3.0	2.9	0.1	5.7	8.5	-5.5
1999-2000	3.0	12.3	-9.3	6.2	18.5	-15.5
2000-2001	4.0	17.1	-13.1	5.3	22.5	-18.4
2001-2002	8.2	8.9	-0.7	3.6	12.5	-4.3
2002-2003	2.0	4.0	-2.0	7.3	11.4	-9.4
2003-2004	4.0	9.1	-5.0	4.8	13.8	-9.8

Some totals may not add due to rounding.

<sup>1</sup> With one exception, actual balances are those reported at the end of the fiscal year in question. Many have since been revised to a full accrual accounting basis. The exception is 2002-03, where PEAP adjusted the actual outcome to a partial accrual accounting basis so that comparisons could be made on an equal footing.

<sup>2</sup> In the difference columns, a negative value indicates that the balance was better than forecast, i.e. the balance was under-forecast. When there were deficits, they were smaller than forecast; when there were surpluses, they were larger than forecast.

<sup>3</sup> A positive value indicates the balance would have improved (a smaller deficit or a bigger surplus) by this amount had the initiatives not been taken. I.e., since 1997-98, the initiatives reduced the potential surplus.

Source: PEAP – CIRANO analysis

**Table 3a**  
**Budget Balance and Components, Including Policy Initiatives**  
**(\$ Billions)**

	Budget Balance			Total Revenues			Program Expenditures			Public Debt Charges		
	Balance forecast in the budget before the fiscal year began	Actual balance (outcome) <sup>1</sup>	Difference (forecast less actual balance) <sup>2</sup>	Revenue forecast in the budget before the fiscal year began	Actual revenue (outcome) <sup>1</sup>	Difference (forecast less actual revenue) <sup>2</sup>	Program expenditures forecast in the budget before the fiscal year began	Actual program expenditures (outcome) <sup>1</sup>	Difference (forecast less actual program expenditures) <sup>2</sup>	Debt charges forecast in the budget before the fiscal year began	Actual debt charges (outcome) <sup>1</sup>	Difference (forecast less actual debt charges) <sup>2</sup>
1994-1995	-39.7	-37.5	-2.2	123.9	123.3	0.6	122.6	118.7	3.9	41.0	42.0	-1.0
1995-1996	-30.3	-28.6	-1.7	133.2	130.3	2.9	114.0	112.0	2.0	49.5	46.9	2.6
1996-1997	-21.8	-8.9	-12.9	135.0	140.9	-5.9	109.0	104.8	4.2	47.8	45.0	2.8
1997-1998	-13.3	3.5	-16.8	137.8	153.2	-15.4	107.8	108.8	-0.9	43.3	40.9	2.4
1998-1999	3.0	2.9	0.1	151.0	155.7	-4.6	104.5	111.4	-6.9	43.5	41.4	2.1
1999-2000	3.0	12.3	-9.3	156.7	165.7	-9.0	111.2	111.8	-0.6	42.5	41.6	0.9
2000-2001	4.0	17.1	-13.1	162.0	178.6	-16.6	116.0	119.3	-3.3	42.0	42.1	-0.1
2001-2002	8.2	8.9	-0.7	172.8	173.3	-0.5	123.9	126.7	-2.8	40.8	37.7	3.0
2002-2003	2.0	4.0	-2.0	174.2	174.1	0.1	136.0	135.0	1.0	36.3	35.0	1.3
2003-2004	4.0	9.1	-5.0	184.7	186.2	-1.5	143.0	141.4	1.7	37.6	35.8	1.9

Source: PEAP – CIRANO and another's calculations

**Table 3b**  
**Policy Adjusted Budget Balance and Components**  
**(\$ Billions)**

	Budget Balance			Total Revenues			Program Expenditures			Public Debt Charges		
	Balance forecast in the budget before the fiscal year began	Adjusted balance (outcome had there been no policy initiatives)	Adjusted difference (forecast less adjusted balance) <sup>2</sup>	Revenue forecast in the budget before the fiscal year began	Adjusted revenue (outcome had there been no policy initiatives)	Adjusted difference (forecast less adjusted revenue) <sup>2</sup>	Program expenditures forecast in the budget before the fiscal year began	Adjusted program expenditures (outcome had there been no policy initiatives)	Adjusted difference (forecast Less adjusted program expenditures) <sup>2</sup>	Debt charges forecast in the budget before the fiscal year began	Adjusted debt charges (outcome had there been no policy initiatives)	Adjusted difference (forecast less adjusted debt charges) <sup>2</sup>
1994-1995	-39.7	-37.5	-2.2	123.9	123.3	0.6	122.6	118.7	3.9	41.0	42.0	-1.0
1995-1996	-30.3	-28.6	-1.7	133.2	130.3	2.9	114.0	112.0	2.0	49.5	46.9	2.6
1996-1997	-21.8	-9.6	-12.2	135.0	137.7	-2.7	109.0	102.3	6.7	47.8	45.0	2.8
1997-1998	-13.3	9.4	-22.7	137.8	152.7	-14.9	107.8	102.4	5.4	43.3	40.9	2.4
1998-1999	3.0	8.5	-5.5	151.0	156.0	-4.9	104.5	106.0	-1.5	43.5	41.4	2.1
1999-2000	3.0	18.5	-15.5	156.7	166.0	-9.3	111.2	105.9	5.3	42.5	41.6	0.9
2000-2001	4.0	22.5	-18.4	162.0	180.3	-18.2	116.0	115.7	0.3	42.0	42.1	-0.1
2001-2002	8.2	12.5	-4.3	172.8	173.4	-0.5	123.9	123.1	0.7	40.8	37.7	3.0
2002-2003	2.0	11.4	-9.4	174.2	174.1	0.1	136.0	127.7	8.3	36.3	35.0	1.3
2003-2004	4.0	13.8	-9.8	184.7	186.3	-1.6	143.0	136.7	6.3	37.6	35.8	1.9

Note: Some columns may not add due to rounding.

<sup>1</sup> With one exception, actual balances are those reported at the end of the fiscal year in question. Many have since been revised to a full accrual accounting basis. The exception is 2002-03, where PEAP adjusted the actual outcome to a partial accrual accounting basis so that comparisons could be made on an equal footing.

<sup>2</sup> In the difference columns, it is important to remember that negative values can have different meanings. In the case of the balance, a negative value indicates an under-forecast, i.e. an actual deficit was smaller than predicted and an actual surplus was bigger than predicted. In the case of revenues, a negative value also indicates that revenue was under-forecast and actual revenues were bigger than forecast; this would contribute to the under-forecast of the balance. However, under-forecasts of spending have the opposite effect on the balance. In most years, spending was over-forecast and the actual sums were lower than predicted. These positive differences also contributed to the under-forecast of the balance.

**Table 4**  
**Shares of Actual Revenues and Expenditures**

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Total Revenues (\$ Billions)	123.3	130.3	140.9	153.2	155.7	165.7	178.6	173.3	174.1	186.2
% of Total Revenues										
Personal Income Tax	45.7	46.2	44.9	46.2	46.6	47.9	46.1	48.3	46.2	45.6
Corporate Income Tax	9.4	12.2	12.1	14.7	13.9	14.0	15.8	13.9	12.2	14.7
EI/UI Premiums	15.3	14.2	14.1	12.3	12.4	11.2	10.5	10.4	10.5	9.4
GST Revenues	13.6	12.6	12.8	12.7	13.3	13.8	14.0	14.4	15.8	15.2
Customs Duties	2.9	2.3	1.9	1.8	1.5	1.3	1.6	1.7	1.8	1.6
Excise, Other Energy Taxes	5.5	5.6	5.9	5.6	5.4	4.8	4.7	5.0	5.6	5.5
Miscellaneous Tax Revenues	1.4	1.6	2.0	1.9	1.9	2.1	2.4	1.8	2.5	1.7
Non-Tax Revenues	6.2	5.3	6.3	4.7	5.1	5.0	5.0	4.5	5.4	6.4
Total Expenditures (\$ Billions)	160.8	158.9	149.8	149.7	152.8	153.4	161.4	164.4	170.1	177.1
% of Total Expenditures										
Public Debt Charges	26.2	29.5	30.0	27.3	27.1	27.1	26.1	23.0	20.6	20.2
Total Program Spending	73.8	70.5	70.0	72.7	72.9	72.9	73.9	77.0	79.4	79.8
Total Program Spending (\$ Billions)	118.7	112.0	104.8	108.8	111.4	111.8	119.3	126.7	135.0	141.4
% of Total Program Spending										
Direct Program Spending	47.7	45.6	46.1	49.8	46.0	48.1	48.1	48.1	47.1	49.5
EI/UI Benefits	12.5	12.0	11.8	10.9	10.7	10.1	9.6	10.9	10.7	10.7
OAS Benefits	17.3	18.8	20.6	20.4	20.5	20.9	20.3	20.0	19.5	19.0
Transfers to OLG – CHST	14.7	14.9	14.1	11.6	14.4	13.4	12.1	13.7	16.7	16.1
Transfers to OLG – Other	7.8	8.8	7.4	7.3	8.5	7.4	8.6	7.4	6.0	4.7

Note: In the 2000-01 fiscal year, transfer to persons for heating relief totalling \$1.5 billion or 1.2% of program spending is included in the total but not separated out into a component.

Source: PEAP – CIRANO

**Table 5**  
**Policy Adjusted Budget Balance Forecast Difference and Components (\$ Billions)**

	1994-95	1995-96	1996-97	1997-98	1998-99	1999-00	2000-01	2001-02	2002-03	2003-04
Budget Balance	-2.2	-1.7	-12.2	-22.7	-5.5	-15.5	-18.4	-4.3	-9.4	-9.8
Total Revenues	0.6	2.9	-2.7	-14.9	-4.9	-9.3	-18.2	-0.5	0.1	-1.6
Personal Income Tax	3.2	0.2	0.2	-4.3	-1.5	-4.4	-8.0	-3.3	-0.4	1.7
Corporate Income Tax	-1.3	-0.5	-1.9	-6.3	-1.1	-2.3	-4.4	4.3	4.3	-3.1
EI/UI Premiums	0.4	1.2	0.0	0.3	-1.1	-0.6	-0.6	0.4	-0.6	0.0
GST Revenues	-0.3	1.0	-0.2	-2.0	0.2	-1.2	-1.9	0.8	-0.6	1.6
Customs Duties	0.2	0.3	0.1	-0.7	0.2	0.4	-0.6	-0.9	-0.3	0.4
Excise, Other Energy Taxes	-0.4	0.1	0.0	0.2	0.3	0.2	-0.1	-0.1	-0.5	-0.4
Miscellaneous Tax Revenues	0.0	-0.3	-0.9	-0.9	-0.6	-0.6	-0.9	-0.6	-0.3	0.0
Non-Tax Revenues	-1.2	0.7	0.1	-1.1	-1.2	-0.8	-1.8	-1.2	-1.6	-1.9
Total Expenditures	2.8	4.6	9.5	7.8	0.6	6.2	0.2	3.8	9.6	8.2
Public Debt Charges	-1.0	2.6	2.8	2.4	2.1	0.9	-0.1	3.0	1.3	1.9
Total Program Spending	3.9	2.0	6.7	5.4	-1.5	5.3	0.3	0.7	8.3	6.3
Direct Program Spending	0.7	1.1	4.5	4.2	0.2	3.5	0.9	1.7	4.9	1.8
EI/UI Benefits	3.5	0.8	1.4	1.7	0.7	2.1	0.5	-1.5	1.4	0.7
OAS Benefits	0.1	0.2	0.3	0.1	0.1	0.1	-0.1	-0.2	0.1	-0.1
Transfers to OLG – CHST	-0.4	-0.3	0.2	0.1	0.0	0.1	0.0	0.0	0.0	0.0
Transfers to OLG – Other	0.0	0.1	0.1	-0.6	-2.5	-0.4	-1.1	0.7	1.8	4.1

Note: In the 2000-01 fiscal year, transfer to persons for heating relief totalling \$1.5 billion or 1.2% of program spending is included in the total but not separated out into a component.

**Table 6**  
**Measures of Forecasting Difficulty**

	Standard Deviation		Standard Deviation/Mean		Lagged Correlation	
	1984-1993	1994-2003	1984-1993	1994-2003	1984-1993	1994-2003
Real Growth	2.53	1.59	0.96	0.45	0.90	0.88
Unemployment Rate	1.48	1.17	0.15	0.14	0.97	0.93
Employment Growth	1.75	0.86	1.12	0.42	0.96	0.80
CPI Inflation	1.32	1.00	0.33	0.54	0.86	0.76
Nominal GDP Growth	3.23	2.55	0.55	0.48	0.94	0.85
3-Month T-Bill Rate	2.44	1.45	0.27	0.33	0.89	0.89
10-Year Benchmark Bond Yield	1.55	1.28	0.16	0.21	0.87	0.95
Current Account Balance	8.87	18.31	-0.47	2.99	0.86	0.87
Exchange Rate	5.29	3.87	0.07	0.06	0.98	0.88
Labour Income Growth	2.79	1.90	0.46	0.42	0.96	0.87
Corporate Profit Growth	20.44	21.25	6.38	1.35	0.84	0.84
Total Business Investment Growth	7.50	5.82	2.97	1.09	0.89	0.88
US Real GDP Growth	1.91	1.33	0.57	0.41	0.85	0.88

Source: PEAP – CIRANO

**Table 7**  
**Correlation Coefficients – Economic Differences and % Fiscal Differences**  
**Year-Ahead Budget Forecasts**

	Real GDP Growth	Nominal GDP Growth	GDP Inflation	Unemployment Rate	Employment Growth	CPI Inflation	Short Rate	Long Rate
Total Revenues	0.36	0.34	0.15	-0.01	0.06	0.03	0.10	-0.15
Personal Income Tax	0.18	0.19	0.12	0.21	-0.08	0.33	-0.23	-0.44
Corporate Income Tax	0.17	0.18	0.12	-0.23	-0.21	-0.34	0.20	-0.01
EI Premiums	0.71	0.59	0.14	-0.35	0.41	0.02	0.41	0.21
GST Revenues	0.38	0.35	0.15	-0.15	0.58	0.04	0.21	0.08
Customs Duties	-0.13	-0.19	-0.22	0.52	-0.10	0.15	-0.17	-0.07
Excise, Other Energy Taxes	-0.07	-0.04	0.01	0.28	0.15	0.02	0.11	0.40
Miscellaneous Tax Revenues	-0.15	-0.25	-0.30	0.27	-0.32	0.03	-0.59	-0.53
Non-Tax Revenues	0.29	0.25	0.08	0.02	0.56	-0.18	0.44	0.47

	Real GDP Growth	Nominal GDP Growth	GDP Inflation	Unemployment Rate	Employment Growth	CPI Inflation	Short Rate	Long Rate
Total Spending	0.25	0.13	-0.14	-0.15	0.17	-0.22	0.23	-0.08
Total Program Spending	0.01	-0.14	-0.32	0.07	0.00	-0.15	-0.10	-0.38
Direct Program Spending	-0.17	-0.34	-0.47	0.20	-0.20	-0.33	-0.14	-0.24
EI Benefits	-0.70	-0.58	-0.14	0.84	-0.45	0.28	-0.62	-0.51
Old Age Security Benefits	-0.18	-0.04	0.19	0.45	-0.07	0.17	0.06	0.07
Transfers to OLG – CHST	0.47	0.39	0.09	-0.44	0.63	0.09	0.36	-0.08
Transfers to OLG – Other	0.25	-0.01	-0.45	-0.39	-0.10	-0.45	-0.05	-0.05
Public Debt Charges	0.71	0.73	0.45	-0.69	0.45	-0.24	0.89	0.74

Note: Economic Differences are based on Statistics Canada 1st revised estimate.

Source: PEAP – CIRANO

**Table 8**  
**Impact of Economic Forecast Differences on Year-Ahead Fiscal Forecasts**  
**Based on Department of Finance "Fiscal Sensitivities"**

## Total Revenues (\$ Billions)

	Budget Difference Excl Policy	Budget Difference	Economic Impact			Economic Impact - Levels Adjusted		
			\$ Level	% of Bud ex Pol	% of Bud	\$ Level	% of Bud ex Pol	% of Bud
1994-1995	0.6	0.6	-2.1	*	*	-2.3	*	*
1995-1996	2.9	2.9	2.4	81.7	81.7	2.2	76.8	76.8
1996-1997	-2.7	-5.9	1.0	*	*	-1.7	63.6	28.7
1997-1998	-14.9	-15.4	0.7	*	*	-4.2	28.5	27.6
1998-1999	-4.9	-4.6	2.3	*	*	-0.1	2.5	2.6
1999-2000	-9.3	-9.0	-5.1	55.0	56.9	-7.5	80.7	83.6
2000-2001	-18.2	-16.6	-4.5	24.5	27.0	-7.4	40.5	44.6
2001-2002	-0.5	-0.5	5.1	*	*	3.0	*	*
2002-2003	0.1	0.1	-4.7	*	*	-8.5	*	*
2003-2004	-1.6	-1.5	0.5	*	*	-2.5	158.3	168.8

## Total Program Expenditures (\$ Billions)

	Budget Difference Excl Policy	Budget Difference	Economic Impact		
			\$ Level	% of Bud ex Pol	% of Bud
1994-1995	3.9	3.9	0.9	23.8	23.8
1995-1996	2.0	2.0	-0.7	*	*
1996-1997	6.7	4.2	-0.2	*	*
1997-1998	5.4	-0.9	0.7	13.7	*
1998-1999	-1.5	-6.9	0.8	*	*
1999-2000	5.3	-0.6	0.9	16.9	*
2000-2001	0.3	-3.3	-0.1	*	3.6
2001-2002	0.7	-2.8	-0.5	*	18.1
2002-2003	8.3	1.0	0.8	10.0	82.7
2003-2004	6.3	1.7	-1.2	*	*

## Public Debt Charges (\$ Billions)

	Budget Difference Excl Policy	Budget Difference	Economic Impact		
			\$ Level	% of Bud ex Pol	% of Bud
1994-1995	-1.0	-1.0	-3.2	308.0	308.0
1995-1996	2.6	2.6	3.4	130.6	130.6
1996-1997	2.8	2.8	1.7	60.0	60.0
1997-1998	2.4	2.4	1.3	54.6	54.6
1998-1999	2.1	2.1	1.3	59.9	59.9
1999-2000	0.9	0.9	0.3	30.1	30.1
2000-2001	-0.1	-0.1	0.0	*	*
2001-2002	3.0	3.0	1.5	48.0	48.0
2002-2003	1.3	1.3	-0.1	*	*
2003-2004	1.9	1.9	0.6	34.3	34.3

\* Denotes fiscal difference increases with adjustment for actual economic growth and interest rates

Source: PEAP – CIRANO

**Table 9**  
**Decomposition of Economic Forecast Impact –Total Revenues**

	Percentage of Difference Explained By:			
	\$ Billion Level Difference	Economic Difference	Revenue Rate Difference	Residual Difference
1994-95	0.6	-319.5	413.3	6.1
1995-96	2.9	63.2	37.3	-0.5
1996-97	-2.7	81.5	18.2	0.3
1997-98	-14.9	34.4	63.2	2.4
1998-99	-4.9	11.8	87.8	0.3
1999-00	-9.3	88.9	10.5	0.6
2000-01	-18.2	38.8	58.6	2.6
2001-02	-0.5	-492.5	601.8	-9.3
2002-03	0.1	-14,716.7	14,158.7	658.0
2003-04	-1.6	158.2	-57.4	-0.8

Source: PEAP-CIRANO

**Table 10**  
**Fiscal Forecasting and Budget Processes in Selected OECD Countries**  
**Summary Table**

**Australia**

<b>Economic and Fiscal Snapshot<sup>1</sup></b>	<b>Fiscal Rules and Targets</b>	<b>Compliance with Fiscal Rules and Targets</b>	<b>Budget Process</b>
<p><b>2004</b></p> <p>Financial balance: 0.7% of GDP</p> <p>Net financial liabilities: 1.9% of GDP</p> <p>Structural balance: 0.5% of GDP</p> <p>Real GDP growth: 3.6%</p>	<p>Charter of Budget Honesty Act (1998):</p> <ul style="list-style-type: none"> <li>- Debt at prudent levels.</li> <li>- Stability and predictability in the level of the tax burden.</li> <li>- Intergenerational report every five years.</li> </ul> <p><i>Fiscal Strategy Statement:</i> (in every budget)</p> <ul style="list-style-type: none"> <li>- Balanced budget over the cycle.</li> <li>- No increase in overall tax burden from 1996-97.</li> <li>- Improving net worth position.</li> </ul>	<p>Federal government has complied with its fiscal rules and targets since their introduction.</p>	<p>Framework for federal government's fiscal policy set by the Charter of Budget Honesty Act (1998).</p> <p>Requires the government to use external accounting and reporting standards and report any deviation from these standards.</p> <p>Economic and fiscal forecasts produced by Australian Treasury.</p>

<sup>1</sup> The fiscal snapshot is for the total government sector, which in the case of Canada includes federal, provincial-territorial and local governments as well as the Canada Pension Plan and Quebec Pension Plan.

Sources: *OECD Economic Outlook* No. 76 (December 2004); national authorities' publications; individual country's OECD Economic Surveys; OECD/World Bank Budget Practices and Procedures Database.

## Canada

Economic and Fiscal Snapshot	Fiscal Rules and Targets	Compliance with Fiscal Rules and Targets	Budget Process
<p><b>2004</b></p> <p>Financial balance: 1.2% of GDP</p> <p>Net financial liabilities: 31.1% of GDP</p> <p>Structural balance: 1.1% of GDP</p> <p>Real GDP growth: 2.8%</p>	<p>No formal short-term budget balance target.</p> <p>First announced in Budget 2004, government's objective of lowering federal debt/GDP ratio to 25% by 2014-15 confirmed in Budget 2005.</p> <p>Debt Repayment Plan to ensure federal debt/GDP ratio remains on a permanent downward track.</p>	<p>Federal government has complied with or surpassed its targets since their introduction.</p>	<p>Each fall and prior to the Budget, the Department of Finance conducts extensive consultations with an economic advisory group.</p> <p>Mid-year Economic and Fiscal Update also includes private sector fiscal forecasts on a National Accounts basis, which are translated into Public Accounts projections in consultation with the private sector economic forecasting firms.</p> <p>At the time of the Budget, the status quo fiscal projections are updated based on the most recent economic and fiscal information.</p>

## New Zealand

Economic and Fiscal Snapshot	Fiscal Rules and Targets	Compliance with Fiscal Rules and Targets	Budget Process
<p><b>2004</b></p> <p>Financial balance: 2.9% of GDP</p> <p>Net financial liabilities: 9.9% of GDP</p> <p>Structural balance: 1.8% of GDP</p> <p>Real GDP growth: 4.8%</p>	<p>Fiscal Responsibility Act (1994)</p> <ul style="list-style-type: none"> <li>- Surplus over reasonable time frame.</li> <li>- Gross debt and net worth at prudent levels.</li> <li>- Publication of fiscal policy intentions twice a year.</li> <li>- Surplus to pre-fund the New Zealand Superannuation Fund (NZSF).</li> <li>- Gross debt on a declining path with a target ratio of 20% of GDP before 2015. (Prior to 2004, debt target was 30% of GDP over the economic cycle.)</li> </ul>	<p>Central government has complied with its fiscal rules and targets since their introduction.</p> <p>In 2004, modified its debt target to adapt to a better situation.</p>	<p>NZ Treasury produces preliminary economic forecasts. Final version is adjusted to include new data, views from an external panel of experts and discussions with private sector representatives.</p> <p>Alternative scenarios are calculated to complement the central forecast.</p> <p>Fiscal forecasts are produced exclusively by the NZ Treasury for the current year and the following three fiscal years.</p> <p>Inland Revenue Department also produces alternative revenue forecasts, which are published in the budget documents.</p>

## Sweden

Economic and Fiscal Snapshot	Fiscal Rules and Targets	Compliance with Fiscal Rules and Targets	Budget Process
<p><b>2004</b></p> <p>Financial balance: 0.5% of GDP</p> <p>Net financial liabilities: 3.8% of GDP</p> <p>Structural balance: 0.6% of GDP</p> <p>Real GDP growth: 3.3%</p>	<p>Fiscal Budget Act 1996</p> <ul style="list-style-type: none"> <li>- Nominal ceilings on 27 spending categories set out three years in advance.</li> <li>- Average surplus of 2% of GDP over the cycle.</li> <li>- Balanced budget requirement for local governments since 2000.</li> </ul>	<p>Central government has complied with its expenditure ceilings each year since their introduction.</p> <p>However, unlikely to meet its surplus target over the 2000-2007 period (an average surplus of 1.3 per cent of GDP is expected for the period).</p>	<p>Economic assumptions are prepared by the Ministry of Finance, which also looks at private sector forecasts.</p> <p>Fiscal forecasts, which are based on the economic forecasts and current tax rules, are prepared by the Ministry of Finance.</p> <p>Top-down budgetary process, multiyear expenditure ceilings and surplus target.</p> <p>Expenditure ceilings are the cornerstone of the budget framework.</p>

## United Kingdom

Economic and Fiscal Snapshot	Fiscal Rules and Targets	Compliance with Fiscal Rules and Targets	Budget Process
<p><b>2004</b></p> <p>Financial balance: -3.2% of GDP</p> <p>Net financial liabilities: 36.3% of GDP</p> <p>Structural balance: -3.4% of GDP</p> <p>Real GDP growth: 3.2%</p>	<p>Code for Fiscal Stability, 1998:</p> <ul style="list-style-type: none"> <li>- <b>Golden rule:</b> borrow (run deficit) only for investment over cycle.</li> <li>- <b>Sustainable investment rule:</b> 40% net debt to GDP over cycle.</li> </ul> <p>Reporting requirements such as annual Pre-Budget Report and Long-Term Public Finance Report.</p>	<p>In its 2005 budget, the government stated that it will meet its two fiscal rules over the current cycle (defined as starting in 1999-2000 and ending in 2005-06).</p>	<p>Forecasts are based on “cautious assumptions” audited on a three-year rolling basis.</p> <p>Public finance forecasts based on trend economic growth rate of 0.25 percentage points lower than the government’s view (central case).</p> <p>An alternative scenario (cautious case) where trend growth is 1 percentage point lower than the central case is published to illustrate the risks.</p> <p>Fiscal rules are assessed in both the central and cautious cases.</p> <p>Illustrative 50-year projections included as an annex to the budget.</p>

## United States

Economic and Fiscal Snapshot	Fiscal Rules and Targets	Compliance with Fiscal Rules and Targets	Budget Process
<p><b>2004</b></p> <p>Financial balance: -4.4% of GDP</p> <p>Net financial liabilities<sup>1</sup>: 37.0% of GDP</p> <p>Structural balance: -4.2% of GDP</p> <p>Real GDP growth: 4.4%</p>	<p>Budget Enforcement Act (expired in 2001) contained discretionary spending caps and “pay-as-you-go” (PAYGO) rules for mandatory spending and revenue legislation.</p> <p>Any discretionary spending legislated above the cap or any mandatory expenditure increase or revenue reduction creating a net fiscal cost would trigger across-the-board cuts (sequestration) for non-exempt programs.</p>	<p>Legislated debt level is increased as needed (automatically in the case of the House) and does not create difficulty for increasing the debt.</p>	<p>President submits budget proposal to legislators (Congress). Houses of Congress reach joint resolution on budget aggregates. Congress passes appropriations bills and any revenue measures and debt legislation. President signs bills into law.</p> <p>The Office of Management and Budget (OMB) assists the President with fiscal and economic policy, preparation of the budget, and overseeing its administration of agencies.</p> <p>The Congressional Budget Office (CBO) assists Congress in evaluating the President’s budget proposals and in developing the budget resolution. It issues non-partisan economic and fiscal forecasts and reports and does not make recommendations.</p>

<sup>1</sup> Adjusted to exclude certain government employee pension liabilities to improve comparability with other countries' debt measures.

## European Union

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<b>Economic and Fiscal Snapshot</b>	<b>Fiscal Rules and Targets</b>	<b>Compliance with Fiscal Rules and Targets</b>	<b>Budget Process</b>
See individual country information.	The 1992 Maastricht Treaty requires: <ul style="list-style-type: none"><li>- Deficit ceiling at 3 per cent of GDP.</li><li>- Debt limit at 60 per cent of GDP.</li></ul> The Stability and Growth Pact, adopted in 1997, came into effect in 1999 to strengthen the Maastricht Treaty provisions. <ul style="list-style-type: none"><li>- Requirement to achieve a close-to-balance budgetary position in the medium term.</li></ul>	In 2004, five EU-15 member countries are estimated to have had deficits equal or higher than 3 per cent of GDP, including France, Germany and Italy.	See individual country information.

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## FRANCE

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Economic and Fiscal Snapshot	Fiscal Rules and Targets	Compliance with Fiscal Rules and Targets	Budget Process
<p><b>2004</b></p> <p>Financial balance: -3.7% of GDP</p> <p>Net financial liabilities: 46.1% of GDP</p> <p>Structural balance: -3.1% of GDP</p> <p>Real GDP growth: 2.1%</p>	<p>No official fiscal rule or target, except that the country is subject to the Maastricht Treaty provisions.</p>	<p>France has been in breach of the Stability and Growth Pact 3-per-cent deficit ceiling since 2002.</p>	<p>Ministry of Finance plays a central role in designing, implementing and controlling the budget.</p> <p>Economic assumptions are prepared by the Ministry of Finance and are revised twice a year.</p> <p>Fiscal forecasts are prepared by the Ministry of Finance.</p>

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## GERMANY

<b>Economic and Fiscal Snapshot</b>	<b>Fiscal Rules and Targets</b>	<b>Compliance with Fiscal Rules and Targets</b>	<b>Budget Process</b>
<b>2004</b> Financial balance: -3.9% of GDP	Constitutional rule requires a balanced budget at the federal level but allows borrowing for investment expenditures (golden rule).	In breach of the Stability and Growth Pact's deficit ceiling since 2002.	A financial-planning council chaired by the federal Finance Ministry makes recommendations for coordinating federal, state and municipal fiscal policies.
Net financial liabilities: 54.7% of GDP	The Constitution specifies exceptions during economic downturns or war and that restrictive fiscal policy should not destabilize the economy or restrict growth and prosperity.	Golden rule breached over the last few years.	Twice a year, a panel of experts publishes estimates of tax revenues, economic growth, etc., which are then used as inputs by the Finance Ministry.
Structural balance: -2.6% of GDP			
Real GDP growth: 1.2%	For 2003 and 2004, all levels of governments agreed to a domestic stability pact including spending limits, although it is not enforced.		Economic forecasts are prepared by the Ministry of Economy and are reviewed by an independent panel of experts.

## Italy

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Economic and Fiscal Snapshot	Fiscal Rules and Targets	Compliance with Fiscal Rules and Targets	Budget Process
<p><b>2004</b></p> <p>Financial balance: -2.9% of GDP</p> <p>Net financial liabilities: 96.2% of GDP</p> <p>Structural balance: -2.7% of GDP</p> <p>Real GDP growth: 1.3%.</p>	<p>No fiscal rule or target, except that the country is subject to the Maastricht Treaty provisions.</p>	<p>Italy has met the Stability and Growth Pact (SGP) deficit ceiling since 1998.</p> <p>However, Eurostat refused to validate Italy's deficit figures for 2003 and 2004, which could be revised upwards, marking a breach of the SGP deficit ceiling for these years.</p> <p>Italy's gross debt burden is significantly higher than the SGP debt limit of 60 per cent of GDP.</p>	<p>Economic assumptions for the budget are prepared internally at the Ministry of the Treasury.</p> <p>Fiscal forecasts are prepared by the Ministry of the Treasury for a three-year period.</p> <p>Economic growth assumptions used in the preparation of the three-year fiscal forecasts are up to 0.5 percentage points lower than the actual Treasury forecast.</p> <p>The annual budget includes a central reserve fund (1.1% of total expenditures) to meet unforeseen expenditures.</p>

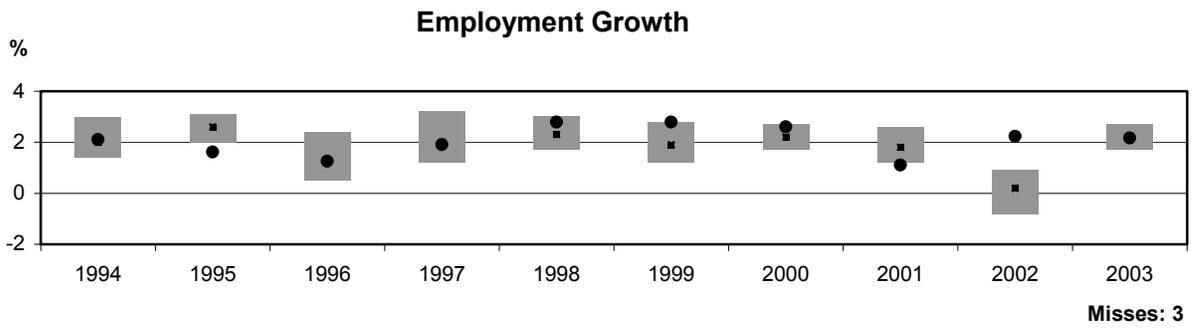
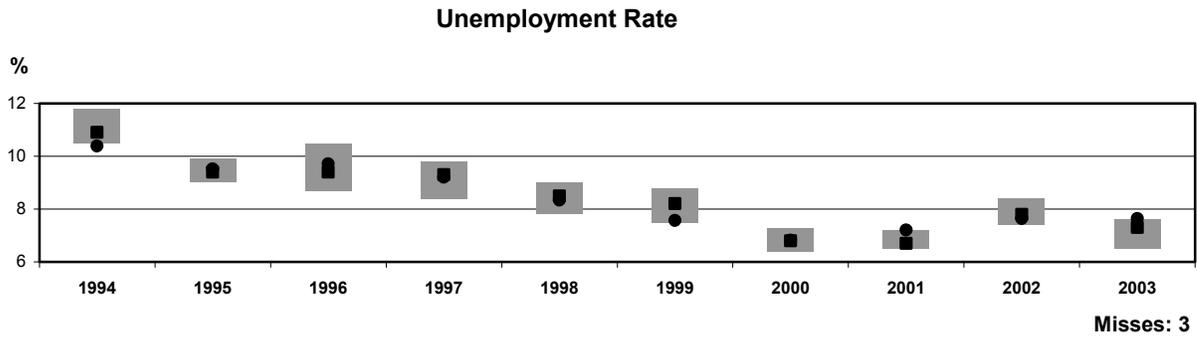
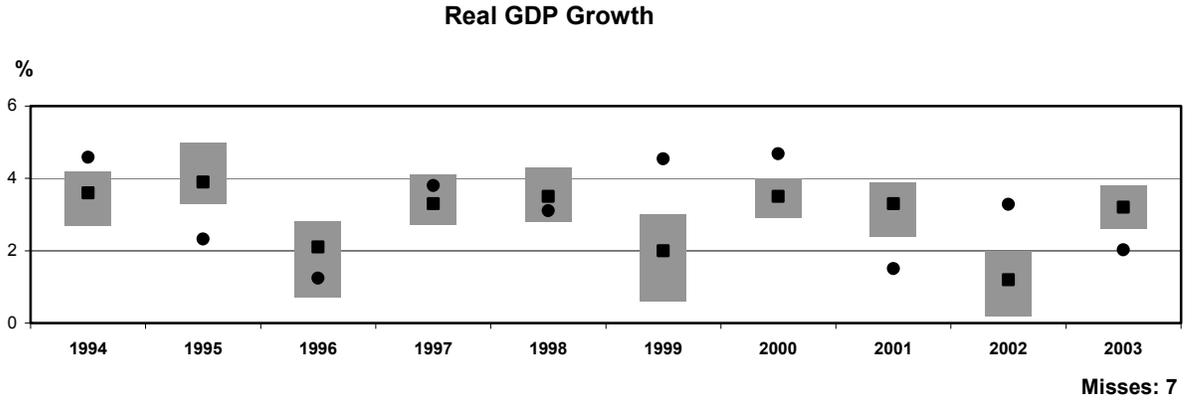
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## Netherlands

Economic and Fiscal Snapshot	Fiscal Rules and Targets	Compliance with Fiscal Rules and Targets	Budget Process
<p><b>2004</b></p> <p>Financial balance: -2.9% of GDP</p> <p>Net financial liabilities: 39.0% of GDP</p> <p>Structural balance: -0.6% of GDP</p> <p>Real GDP growth: 1.2%</p>	<p>After an election, the government produces a “Coalition Agreement,” which establishes overall budget policy and the fiscal targets for the duration of the term.</p> <p>Coalition Agreements presented in 1994, 1998 and 2003 included:</p> <ul style="list-style-type: none"> <li>- Cautious GDP growth assumptions.</li> <li>- Real fixed net expenditure ceilings, set for 4 years, on 3 sectors: central government, social security funds and health care.</li> <li>- Pre-determined allocation of revenue windfalls and shortfalls between budget balance and tax changes.</li> </ul>	<p>Has generally met expenditure ceilings over the last decade.</p> <p>A severe cyclical downturn and recent new measures that reduced the budgetary margins led the country to a breach of the SGP 3-per-cent deficit ceiling in 2003.</p> <p>The government implemented substantial consolidation measures, which helped bring the deficit below 3 per cent of GDP in 2004.</p>	<p>The country has a long history of coalition governments.</p> <p>Culture of fiscal responsibility highlighted by the use of the Central Planning Bureau (CPB), a trusted independent government institution that produces non-partisan economic and fiscal estimates.</p> <p>Prior to an election, the CPB produces an economic forecast on which all parties base their platform estimates. Parties then send platforms to CPB, which then costs the programs and estimates any economic impacts.</p> <p>The Minister of Finance is responsible for fiscal policy and the preparation of the annual budget. The Ministry of Finance bases its budget calculations on the independent economic assumptions prepared by the CPB. Deviations from the CPB economic forecasts do occur, albeit very infrequently.</p>

**Chart 1  
Private Sector Forecasts**

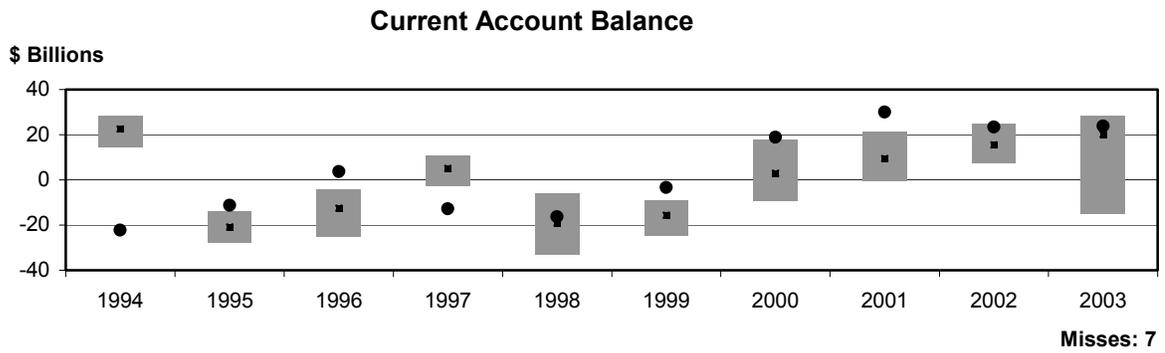
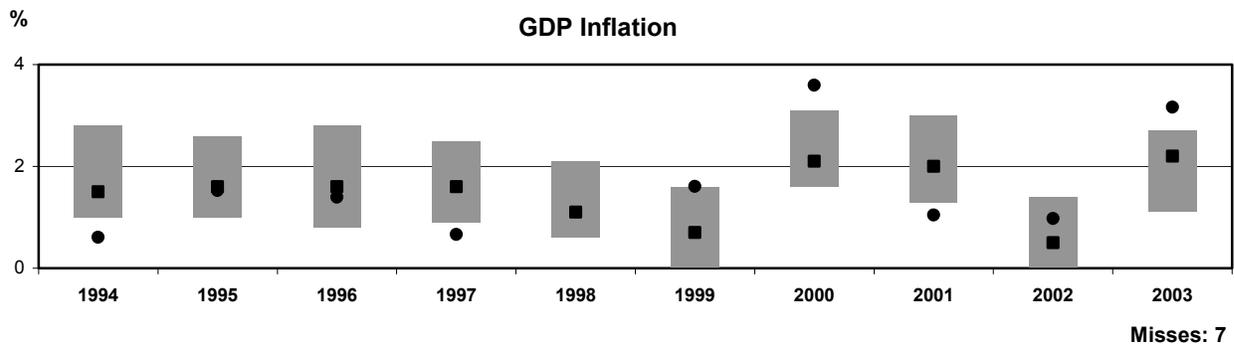
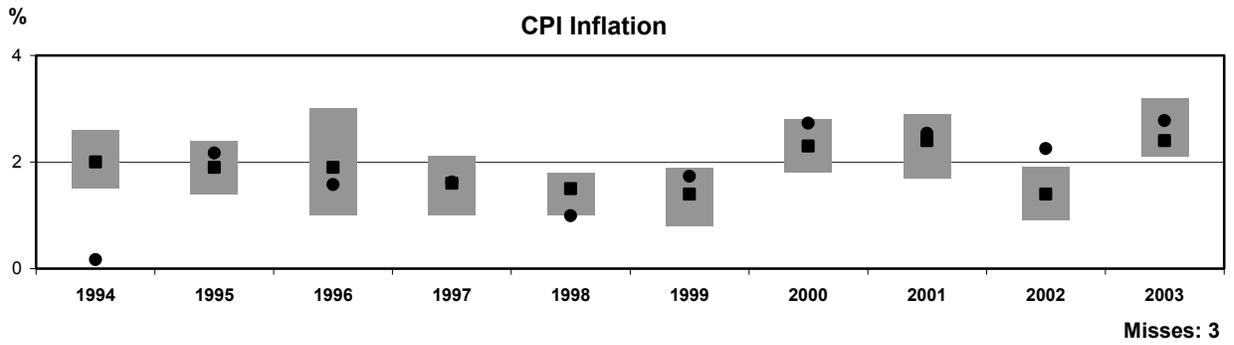
**Average Forecast [ ■ ] Actual [ ● ]**



Source: PEAP – CIRANO

**Chart 2  
Private-Sector Forecasts**

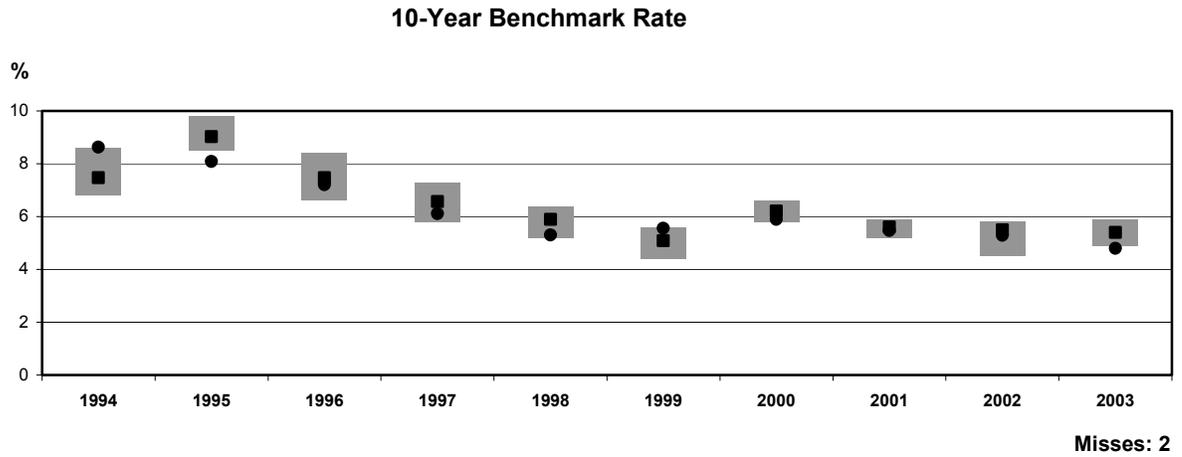
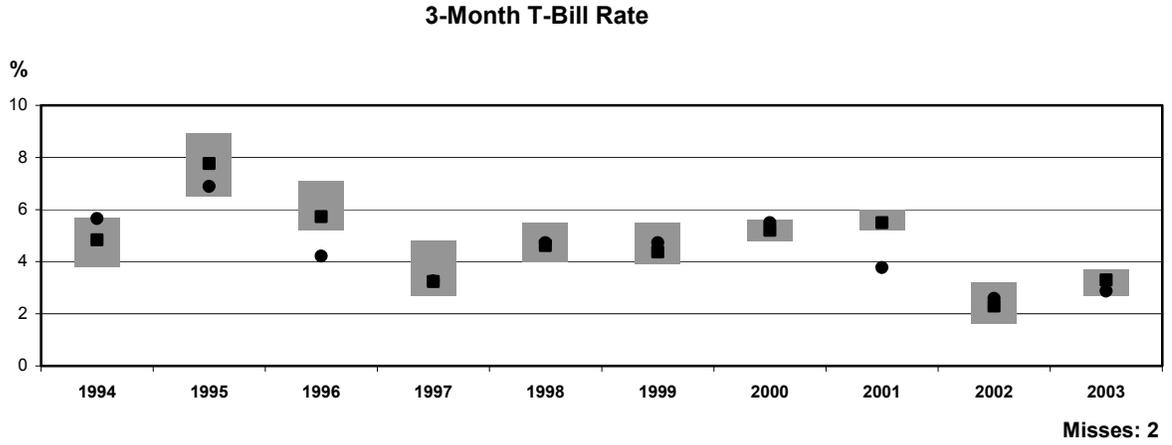
Average Forecast [ ■ ] Actual [ ● ]



Source: PEAP – CIRANO

### Chart 3 Private-Sector Forecasts

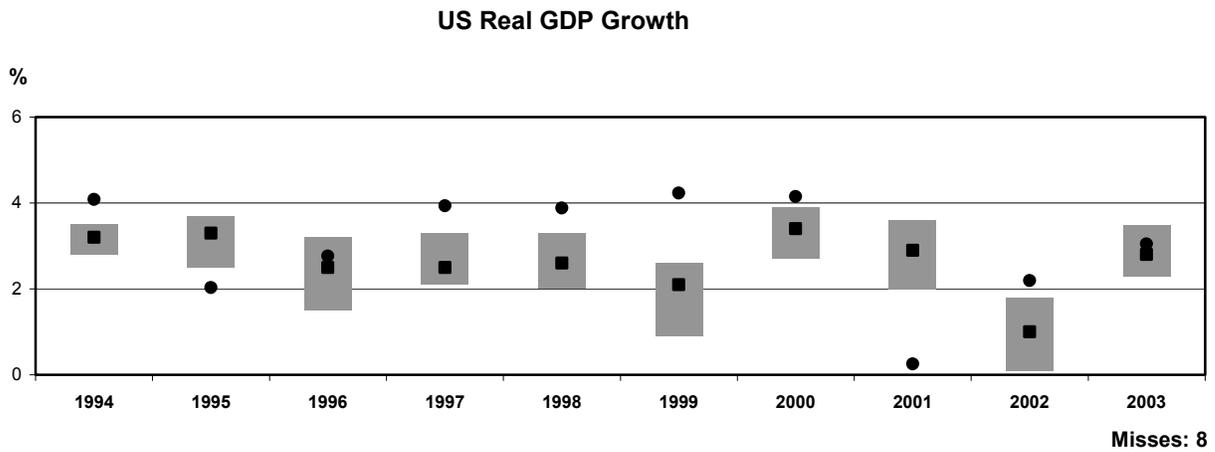
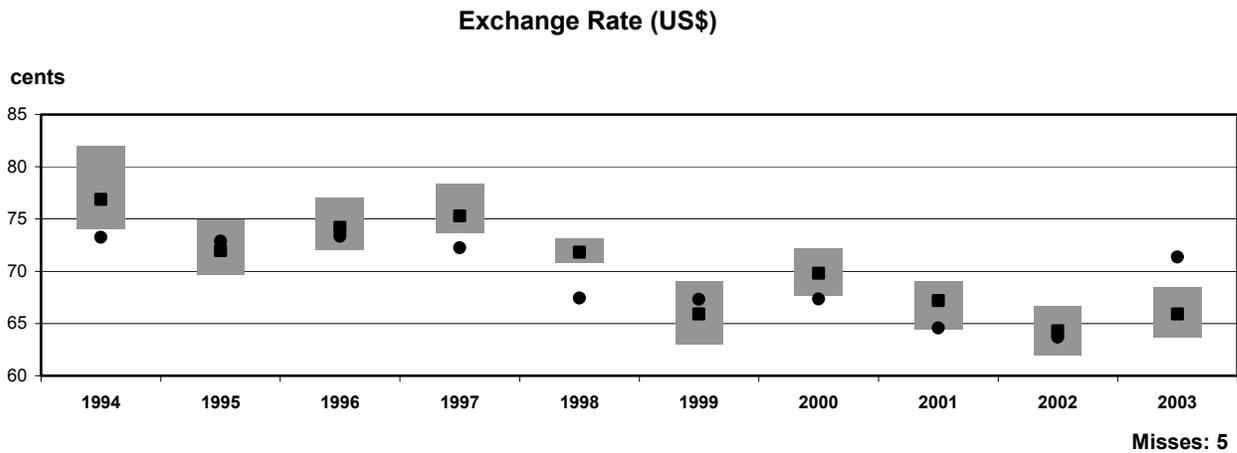
Average Forecast [ ■ ] Actual [ ● ]



Source: PEAP – CIRANO

**Chart 4  
Private Sector Forecasts**

Average Forecast [ ■ ] Actual [ • ]



Source: PEAP – CIRANO

## **APPENDIX 1**

### **Individuals Consulted**

#### **Canada**

Elly Alboim  
Principal  
Earnscliffe Strategy Group

Scott Clark\*  
Board Director (Canada and Morocco)  
European Bank for Reconstruction and Development

David Dodge\*  
Governor  
Bank of Canada

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UK Treasury

Daniele Franco  
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Research Department  
Banca D'Italia

Val Koromzay  
Director – Country Studies Branch  
Economics Department  
Organisation for Economic Co-operation and Development

Sandro Momigliano  
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Research Department  
Banca D'Italia

Martin Muhliesen  
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\* Former Deputy Minister, Finance Canada.

## **APPENDIX 2-A**

### **Recommendations of the Ernst & Young Report**

In 1994, the federal government engaged consulting firm, Ernst & Young to review the procedures for and assess the accuracy of its fiscal forecasts. The E & Y report, *Review of the Forecasting Accuracy and Methods of the Department of Finance*, made 29 recommendations designed to help the Finance Department improve its forecasting accuracy. The following are the recommendations made in the report under five separate categories.

#### **Forecasting Methodologies**

1. The Department of Finance should enhance the personal and corporate income tax revenue forecasts by explicitly incorporating micro-simulation models into the fiscal forecasting methodology.
2. The Department's economic forecasters should specifically estimate corporate profits in a separate model, and use these results in the forecasting process.
3. The Department of Finance should build supplementary fiscal models to analyze and quantify the impact of structural shifts in the economy and specific aspects of the tax system that could have a major influence on tax revenues. The study team suggests prudent capital investment in the development of specific supplementary models to deal with these issues.
4. A detailed external review of the Department's macroeconomic model should be undertaken, and a policy of periodic external reviews should be implemented.
5. The Department of Finance should publish the national accounts version of its fiscal forecasts, as well as the reconciliation between its national accounts forecasts and its public accounts forecasts.

#### **Data Inputs**

6. Statistics Canada should dedicate additional resources to more accurately capturing data for key components of gross domestic product, especially personal income and corporate profits.
7. The federal government should make changes to the accounting for tax revenues to mitigate year-end adjustment issues.

8. The entries for expenditures in the government's spending accounts and the adjusting entries for changes in the valuation of government assets should be recorded at regular intervals during the year, perhaps quarterly, to minimize year-end surprises and to provide better information for tracking purposes during the year.
9. Revenue Canada should gather additional information on GST collections through modification of the GST return. This recommendation does not intend the collection of data not already calculated by vendors when preparing their GST remittance.
10. Revenue Canada should complete its database on industrial classification of vendors subject to the GST. This complete file would assist with an understanding of GST flows at the industry level, which should improve both forecasting and subsequent tracking.
11. Statistics Canada should coordinate corporation income tax data collection with Revenue Canada and the Department of Finance:
  - to avoid unnecessary duplication;
  - to ensure consistency among various data sources;
  - to improve the timeliness and quality of the corporate income tax data; and
  - to provide additional detail on companies in profit and loss positions, and their stocks of unutilized deductions and losses for tax purposes.

### **Forecast and Budget Process**

12. The emphasis for forecasting and budget-making in the future should more evenly balance short-term and medium-term objectives.
13. The economic forecast included in the budget should reflect the "most-likely" short-term and medium-term prospects for the economy.
14. A medium-term fiscal projection based on the assumption of no policy changes should be included in the budget.
15. The fiscal forecast should be prepared against a back-drop of clearly enunciated budget-making rules.
16. The short-term and medium-term fiscal forecasts should intentionally tend to a cautious assessment of the likelihood of improved fiscal performance (the "prudent forecaster rule").
17. A common reporting scheme for the Department's economic and fiscal forecasts should be adopted in all budgets.

## Tracking Against Forecasts

18. The Department of Finance should prepare and publicly release regular mid-year updates on performance versus the budgetary economic and fiscal forecasts for the current year, and updated forecasts for the medium-term outlook.
19. When the economic and fiscal situation has developed significantly at variance from the budget forecasts, the Minister should report this to Parliament and the public as soon as possible. This report should outline the reasons for the deviations from the budget forecast, and present the government's intentions for reacting to the situation.
20. The budget forecasts for the various kinds of tax revenues should be disaggregated by key dimensions (for example, industry sectors and geographic regions) to assist with effective tracking.
21. An analytical group should be created at Revenue Canada with the responsibility for tracking the collections of the various revenue sources against budget forecasts, reporting observed variances from forecasts on a regular basis, and analyzing the reasons for these variances. As well, this analytical group would assist in the revenue forecasting efforts of the Department of Finance.
- 22-
25. The analytical group:
  - would collaborate with the Department of Finance in analyzing major trends affecting revenue collections;
  - should take over the monitoring of receivables. The management and administration functions associated with receivables would remain in regional and local Revenue Canada offices;
  - should have responsibility for quantifying the revenue impact of any ruling requests or potential change in administrative policy; and
  - should cooperate with other data collection agencies to ensure efficiency in data collection, and to avoid duplication in data collection activity.
26. When significant and complex changes to the tax structure are made, such as the implementation of the GST, special monitoring efforts should occur.

### **Institutional Considerations**

27. The Department of Finance should establish a mechanism to increase the “distance” between the economic and fiscal forecasts presented in the budget and the political process. However, the implementation of this recommendation should in no way obscure the responsibility of the Minister of Finance and the government for delivering on the fiscal plans set out in the budget.
28. To achieve greater distance between its economic and fiscal forecasts presented in the budget and the political process, the House of Commons Finance Committee should hold public hearings on the government’s annual mid-year forecast update. As part of this process, the Committee should engage an independent review panel to provide a thorough objective critique of the forecasts, which would be released publicly.
29. A Steering Group should be created, with officials from the Economic Analysis and Fiscal Forecasting and Tax Policy and Legislation Divisions of the Department of Finance, and the Analytical Group from Revenue Canada.

## **APPENDIX 2-B**

### **Evolution of Budget Forecast Procedures**

In September 1994, Ernst & Young released their final report, *Review of the Forecasting Accuracy and Methods of the Department of Finance*, which contained recommendations for how the federal government could improve its forecasting performance. Since that report, budget forecasting procedures have evolved over time, incorporating some of these recommendations as well as others made through repeated consultation with private sector economists (specifically, consultations at the time of the 1999 Economic and Fiscal Update) and the House of Commons Standing Committee on Finance.

#### **1994 Budget**

The following changes to the budget forecasting process were implemented in the 1994 Budget, prior to the release of the Ernst & Young report.

- The government began using economic assumptions below the middle of the range of private sector forecasts in developing the budget plan.
- The government began using a two-year horizon for budget decisions rather than a five-year time horizon.
- A fiscal target equivalent to a 3% deficit/GDP ratio by 1996-97 was set.
- A contingency reserve for the one-year-ahead and two-year-ahead forecasts was included.

#### **1995 Budget**

The 1995 Budget represented the first budget following the Ernst & Young report. It is stated in Annex 1 of that budget that half of the 29 recommendations made by Ernst & Young were included in (or incorporated by) the 1995 Budget. In particular:

- The government released its first public Economic and Fiscal Update, as recommended by the Ernst & Young report, in October of 1994 as a means for updating the public on the economic state of the country and the resulting fiscal situation and outlook.
- Prudence was built into the economic assumptions (via interest rates). It is explicitly stated that the economic assumptions underlying the fiscal projections "...are deliberately biased towards prudence." The government's assumptions for the key economic variables affecting the deficit were more purposely cautious than the average of the 18 private sector firms.

- A contingency reserve was explicitly included for the one- and two-year-ahead forecasts of \$2.5 billion and \$3 billion respectively.
- The government's fiscal forecast was prepared using a fiscal target equivalent to a 3% deficit/GDP ratio by 1996-97.

### **1996 Budget**

- The 1996 Budget explicitly stated that prudence factors of 50 basis points in 1996 and 80 basis points in 1997 were applied to the average of private sector forecasters' projections for interest rates.<sup>66</sup> That is, interest rate assumptions were set 50 and 80 basis points higher than forecast by the economists surveyed. These assumptions translated into a more prudent outlook for GDP growth and inflation as well.
- No changes were made to the contingency reserve.
- In the 1995 Economic and Fiscal Update, the government outlined a more general fiscal anchor of a two-year rolling deficit target. The target set in the 1996 Budget was equivalent to a 2% deficit/GDP ratio for 1997-98.

### **1997 Budget**

- The 1997 Budget explicitly stated that prudence factors of 80 basis points for short-term rates and 50 basis points for long-term rates would be added to the average of private sector forecasters' projections for interest rates in 1997 and 1998.<sup>67</sup> These assumptions translated into a more prudent outlook for GDP growth and inflation as well.
- The contingency reserve for the one-year-ahead forecast was increased to \$3 billion.
- The fiscal target set in the 1997 Budget was equivalent to a 1% deficit/GDP ratio for 1998-99.

### **1998 Budget**

- The 1998 Budget explicitly stated that prudence factors of 80 basis points for short-term rates and 50 basis points for long-term rates would be added to the average of private sector forecasters' projections for interest rates in 1998. Prudence factors for 1999 were set 100 basis points higher than the

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<sup>66</sup> The private sector average is based on 20 respondents for 1996 and 18 respondents for 1997.

<sup>67</sup> The private sector average is based on 21 respondents for 1997 and 18 respondents for 1998.

average of private sector forecasters' projections.<sup>68</sup> These assumptions translated into a more prudent outlook for GDP growth and inflation as well.

- No changes were made to the contingency reserve.
- The fiscal anchor was modified to target balanced budgets within the rolling two-year horizon.

### **1999 Budget**

- Prudence factors of 70 basis points for short-term rates and 50 basis points for long-term rates were added to the average of private sector forecasters' projections for interest rates in 1999 and 2000.<sup>69</sup>
- No changes were made to the contingency reserve.
- The fiscal anchor was revised to target balanced budgets or better within the rolling two-year horizon.

### **1999 Economic and Fiscal Update**

In the spring and fall of 1999, the Department of Finance conducted an unprecedented consultation process with the chief economists of Canada's major chartered banks and four leading forecasting firms. The purpose was to agree upon a set of economic assumptions for budget planning purposes and engage the four forecasting firms to prepare five-year fiscal projections based on the agreed upon economic assumptions (assuming no change to tax and spending policies). As a result of these consultations, changes were made to the government's forecasting methods and assumptions. Specifically, that:

- Five-year time horizons be used for the purposes of public debate, although budget decisions still be made on a rolling two-year horizon.
- The average of private sector economic forecasts continue to be used for budget planning purposes, but that any prudence, in addition to the contingency reserve – which until 1999 had been embedded into the economic assumptions – be explicitly shown.

The 1999 Economic and Fiscal Update represented the first Update to:

- Include five-year status quo fiscal projections for public debate.
- Use the fiscal projections from the four leading forecasting firms.

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<sup>68</sup> The private sector average is based on 18 respondents for 1998 and 1999.

<sup>69</sup> The private sector average is based on 19 respondents for 1999 and 2000.

- Explicitly show economic prudence and extend it to the medium term.

### **2000 Budget**

- Fiscal forecasts continued to be based on the average of private-sector forecasters' economic projections, but prudence factors were not built in.
- Economic prudence of \$1 billion in the one-year-ahead forecast and \$2 billion in the two-year-ahead forecast were explicitly shown.
- The contingency reserve remained unchanged.
- The fiscal anchor (balanced budgets or better) remained unchanged.

### **2001 Budget**

- Fiscal forecasts continued to be based on the average of private sector forecasters' economic projections.<sup>70</sup> Average medium-term economic projections were also included, although the number of private sector respondents was considerably lower.<sup>71</sup>
- Five-year status quo fiscal projections were published and did not include the impact of policy initiatives, the contingency reserve and economic prudence. These projections were based on the private sector survey in October 2001.
- Budget decisions were again made using a rolling two-year approach to budgeting and a fiscal target of balanced budgets over that period. In contrast to the five-year projections, the economic assumptions used were adjusted from the October 2001 survey based on consultations with private sector economists in December 2001.
- The size of the contingency reserve and economic prudence was smaller than in previous budgets.

### **2003 Budget**

- Fiscal forecasts continued to be based on the average of private sector forecasters' economic projections.
- The size of the contingency reserve and economic prudence was restored to pre-Budget 2001 levels.
- The fiscal anchor remained unchanged.

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<sup>70</sup> The private sector average was based on 19 respondents for 2001 and 2002.

<sup>71</sup> The number of respondents for 2006 and 2007 were 9 and 2 respectively.

- As recommended by the Auditor General, the government adopted full accrual accounting as its accounting standard. The fiscal projections in the 2003 Budget, as well as fiscal results back to 1993-94, were presented on a full accrual basis of accounting.

### **2004 Budget**

- Fiscal forecasts continued to be based on the average of private sector forecasters' economic projections.
- The size of the contingency reserve and economic prudence remained unchanged.
- The fiscal anchor remained unchanged.

## APPENDIX 2-C

### Prudence Included in Fiscal Forecasts Since 1994

#### SUMMARY

Two forms of prudence have been incorporated into the fiscal framework since 1994. The **contingency reserve** has been the predominant and most visible measure of prudence included in the fiscal plan. Every Budget and Economic and Fiscal Update (EFU) since 1994 has included a contingency reserve, although the exact amount has varied. While **economic prudence** has also been an ongoing feature of the fiscal framework since 1994, the form of the economic prudence has evolved over time. Further, although the amount of prudence has varied from year to year, it has tended to increase with the length of the forecasting horizon, reflecting the greater degree of uncertainty in the later years of the forecast.

#### Budgets

Table 1 presents the prudence used in each Budget since 1994. In the table, Year 1 corresponds to the fiscal year that is ending as the Budget is tabled. For example, in the 2004 Budget, Year 1 represents 2003-04, while Years 2 and 3 represent 2004-05 and 2005-06.

The table shows that prior to the 1999 Budget, Year 1 would generally not include a contingency reserve. Since then, however, each Budget has included some amount for the contingency reserve for Year 1, consistent with the government's Debt Repayment Plan. That is, if the reserve was not used, it would automatically be used to pay down nominal debt. Although contingency reserves of less than \$3 billion were common up to 1996, the \$3 billion contingency reserve became the norm from 1997 onward, except in years where exceptional circumstances forced a reduction of the reserve.

From the 1994 Budget to the 1999 Budget, economic prudence was embedded in the revenue and expenditure forecasts through the use of conservative economic assumptions. Interest rates were assumed to be slightly higher than the private sector average and GDP growth was assumed to be slightly lower (see Appendix 2-B for details). The fiscal impact of modifying these assumptions was usually not published. However, each document typically published a sensitivity analysis table, which provided "rules of thumb" regarding the fiscal impact of a 100-basis-point increase in interest rates or a 1-percentage-point reduction in economic growth relative to the budget assumptions. This allowed the reader to make a rough estimate of the fiscal impact of the "prudent" assumptions.

Starting with the 1999 fall Update, the amount of economic prudence was explicitly shown as a separate item in the fiscal framework, and revenue and expenditure forecasts were based on the true average of private sector economic forecasts, without any prudence adjustments. This decision was made pursuant to a recommendation by the private sector economists, with whom the Minister began consulting on a regular basis in 1999.

In the December 2001 Budget, in the aftermath of the September 11 terrorist attacks, the government did not set aside any economic prudence and used a portion of the contingency reserve in order to fund new security measures. However, the government indicated its intention to rebuild the normal contingency reserve and economic prudence as soon as possible, which was done in the 2002 fall Update.

**Table 1: Prudence Included in Budgets from 1994 to 2004**

Document	Type of Prudence	Amount of Prudence		
		Year 1	Year 2	Year 3
		(\$ billions)		
<b>Budget 1994</b>	Contingency Reserve	0.0	2.4	3.0
February 1994	Economic Prudence	0.0	*	*
<b>Budget 1995</b>	Contingency Reserve	0.0	2.5	3.0
February 1995	Economic Prudence <sup>1</sup>	0.0	*	*
<b>Budget 1996</b>	Contingency Reserve	2.5	2.5	3.0
March 1996	Economic Prudence	0.0	*	*
<b>Budget 1997</b>	Contingency Reserve	0.0	3.0	3.0
February 1997	Economic Prudence	0.0	*	*
<b>Budget 1998</b>	Contingency Reserve	0.0	3.0	3.0
February 1998	Economic Prudence	0.0	*	*
<b>Budget 1999</b>	Contingency Reserve	3.0	3.0	3.0
February 1999	Economic Prudence	0.0	*	*
<b>Budget 2000</b>	Contingency Reserve	3.0	3.0	3.0
February 2000	Economic Prudence	0.0	1.0	2.0
<b>Budget 2001</b>	Contingency Reserve	1.5	2.0	2.5
December 2001	Economic Prudence	0.0	0.0	0.0
<b>Budget 2003</b>	Contingency Reserve	3.0	3.0	3.0
February 2003	Economic Prudence	0.0	1.0	2.0
<b>Budget 2004</b>	Contingency Reserve	1.9	3.0	3.0
March 2004	Economic Prudence	0.0	1.0	1.0

\* Up to the 1999 Fall Update, the economic prudence was built into the fiscal framework through the use of more conservative economic assumptions than the private sector average. The fiscal impact of using these "prudent" assumptions was usually not published.

<sup>1</sup> The 1995 Budget explicitly showed that the fiscal impact of the "prudent" economic assumptions amounted to \$1.3 billion in 1995-96 (Year 2) and \$2.5 billion in 1996-97 (Year 3).

## Fall Updates

Table 2 presents the prudence used in each EFU since 1999. Economic prudence has tended to increase with the length of the forecasting horizon, reflecting the greater degree of uncertainty in the later years of the forecast. The profile of economic prudence embedded in the Updates since 1999 has been consistent with recommendations of the Minister's advisory group of private sector economists.

**Table 2: Prudence Included in Fall Updates from 1999 to 2003**

Document	Type of Prudence	Amount of Prudence					
		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
		(\$ billions)					
<b>Fall Update 1999</b>	Contingency Reserve	3.0	3.0	3.0	3.0	3.0	3.0
November 1999	Economic Prudence	0.0	2.0	3.0	3.0	3.5	4.0
<b>Economic Statement and Budget Update 2000</b>	Contingency Reserve	0.0	3.0	3.0	3.0	3.0	3.0
October 2000	Economic Prudence	0.0	1.0	2.0	3.0	3.5	4.0
<b>Economic Update 2001</b>	Contingency Reserve	3.0	3.0				
May 2001	Economic Prudence	1.0	2.0				
<b>Fall Update 2002</b>	Contingency Reserve	3.0	3.0	3.0	3.0	3.0	3.0
October 2002	Economic Prudence	0.0	1.0	2.0	3.0	3.5	4.0
<b>Fall Update 2003</b>	Contingency Reserve	2.3	3.0	3.0	3.0	3.0	3.0
November 2003	Economic Prudence	0.0	0.0	0.0	1.0	3.0	4.0

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