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Canada: Selected Issues

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CANADA

Selected Issues

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I. THE PERSISTENCE OF UNEMPLOYMENT IN CANADA[1]

1.   The upward trend in the unemployment rate in Canada during the 1970s and 1980s and the persistence of high unemployment experienced by Canada in the 1990s has generated a broad debate, with several competing hypotheses trying to explain these developments (Table 1 and Chart 1). This paper reviews the factors that may explain high and persistent unemployment in Canada, with particular emphasis on the role that a decline in the relative cost of capital may have had on trend unemployment.

2.   Numerous studies have tried to explain the rise in trend unemployment, the natural rate of unemployment, or the nonaccelerating inflation rate of unemployment (NAIRU)[2] based on the role played by a variety of institutional and structural factors. These studies have considered the generosity of unemployment insurance benefits, the minimum wage, the degree of unionization of the labor force, payroll taxation, and the demographic structure of the labor force. The results have been mixed, with these structural factors not providing a completely adequate explanation of movements in the unemployment rate in Canada. A more recent line of research has explored the long-run effects on employment resulting from job reallocation following extensive technological change. The analysis presented here suggests that in Canada a declining trend in the cost of capital, associated with technological changes and innovations, has been an important factor in explaining the rise and persistence of unemployment.

3.   Caballero and Hammour (1996, 1997) show that job creation and destruction tend to be concentrated during recessions, when the opportunity cost of reallocating labor tends to be the lowest.[3] They suggest that certain market failures, together with policies that protect

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[1]Prepared by Martin Cerisola. A more complete discussion of this issue and the econometric estimates is provided in Cerisola (1998). The empirical analysis was conducted before a revision of Canada's national accounts was implemented during November-December 1997. This revision was comprehensive, including significant changes to several price deflators. These changes may have had some impact on the results presented in this paper.

[2]Although closely related concepts, the trend unemployment rate, the natural rate of unemployment, and NAIRU have been treated in different ways in the literature, without full agreement on their interpretations. Cotè and Hostland (1996) note that conceptually trend unemployment may lie between the natural rate and the NAIRU. The natural rate is related to unemployment when the economy is at its steady state equilibrium, where flows into and out of the unemployment pool tend to be similar on average, and where agents are not "surprised" by inflation. The NAIRU is defined somewhat more narrowly, relating the unemployment rate to short-run excess demand in the labor market and the impact of excess demand on wages and inflation.

[3] For a discussion and evidence on "creative destruction" in the U.S. economy, see Cox and

jobs, may disrupt a smooth reallocation of labor and increase unemployment. In examining European unemployment, they explore the relationship between capital/labor substitutability and stagnant employment. In their model, firms will tend to substitute capital for labor in the long run as a means of avoiding labor demands for higher incomes as well as restrictions and regulations imposed on the terms and conditions of employment, since the supply of capital is more elastic than labor. This implies that policies which tend to favor labor in the short run will likely be "self-defeating" in the long run.

4.   In the case of Canada, some of the institutional reforms, policy measures, and relative price shocks that have taken place since the early 1970s may have contributed to increasing the cost of labor relative to capital. Generous, although declining, unemployment insurance benefits, higher rates of unionization, and a downward trend in the cost of capital may all have played a role. Moreover, during the 1980s and early 1990s, the Canadian economy has undergone widespread technological change and corporate restructuring. Several sectors may have experienced a process of "self-recreation," associated with substantial increases in fixed investment. As noted by Freedman (1995), Canadian industry has faced a major restructuring as a result of increased globalization and free trade with the United States. The extension of the free trade agreement to Mexico has added to the competitive pressures on Canadian firms. Therefore, a process of substituting capital for labor may have disrupted the reallocation of labor from those sectors that have been affected significantly by increased competition in the domestic economy, especially in the presence of strong unions, generous unemployment insurance benefits, and increased payroll taxation. These factors may have contributed to the persistence of unemployment.

5.   Since the mid-1970s, Canada has experienced an upward trend in the use of capital (Chart 2). The capital-labor ratio and the capital-output ratio increased by about 13 percent and 25 percent, respectively.[4] Moreover, the capital-labor ratio increased sharply during the 1981–82 and 1990–91 recessions, supporting the hypothesis that the timing and efficiency of the capital-labor substitution process is heavily influenced by the opportunity costs for labor shedding, so that an economy will tend to experience more reallocation of labor during recessions.

6.   With respect to the cost of capital in Canada, its two main components—the real price of equipment and the real interest rate—have followed very different trends since the

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[3](...continued)
Alm (1992). For alternative evidence in the Canadian case, Picot and Finn (1997) find that both hiring and separations fall in Canada during periods of labor market slack. These results would provide some evidence against unemployment being driven by creative destruction.

[4]The capital-labor ratio was approximated by the net capital stock to total seasonally adjusted employment for workers aged above 15 years old. These figures refer to the percentage change between the quarterly averages for the periods 1976–79 and 1990–96.

mid-1970s (Chart 3). The price of equipment relative to the GDP deflator has declined by about 20 percent, while the trend long-term real yield for Canadian corporate bonds increased by about 35 percent.[5] At the same time, the real price of capital equipment relative to real producer wages has fallen sharply.[6] Therefore, most of the impetus to fixed investment and the increase in the capital-labor ratio may be attributable to the decline in the real price of equipment. The situation has changed somewhat during the 1990s, as the decline in the real price of equipment has slowed, while the real producer wage has fallen by 3 percent since early 1992. However, partly offsetting these developments, the trend component of the long-term real yield on corporate bonds also resumed a downward path, dropping from an annualized rate of 7.8 percent in late 1991 to 5.8 percent in the fourth quarter of 1996.

7.   A trend decline in the cost of capital, together with rising labor costs, helps to explain the upward trend in the capital-labor ratio between 1976 and 1996, as suggested by the equation presented in Table 2.[7] The equation explains relatively well the upward trend in the capital-labor ratio, especially during the 1980–82 and 1990–91 periods (Chart 4). In addition to cyclical factors, the downward trend in the structural component of the price of equipment relative to producer wages was significant in explaining the substitution of capital for labor. The equation also shows that shocks to the price of equipment had a larger impact than the long-term real yield on corporate bonds on the capital-labor ratio.

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[5]Both figures refer to the percentage change between the quarterly averages for the periods 1976–79 and 1990–96.

[6]The real producer wage is defined as hourly compensation deflated by the producer price index.

[7]Assuming a constant elasticity of substitution (CES) production function, the first order

$$\log(\frac{K_t}{L_t}) = -\sigma\log\Theta - \sigma\log(\frac{r_t}{w_t}) + \kappa_t$$

conditions from a static maximization problem result in the following specification for the capital-labor ratio:
where K_t is the capital stock, L_t is labor, Θ is a constant which represents the standard allocation parameter δ in the CES production function, σ is the elasticity of substitution between capital and labor, r_t is the real cost of capital, and w_t is the real producer wage.

8.   The capital-labor ratio equation suggests that the elasticity of substitution between capital and labor was about 0.2–0.3 between 1976 and 1996 (Table 2).[8] Although significant, this coefficient is low and seems to suggest that, since the mid-1970s, capital and labor behaved more as complements than substitutes in the production process. However, the specification of the model chosen may result in a biased parameter of the elasticity of substitution. In measuring the capital-labor ratio, labor was approximated using employment data. Since the level of employment tends to vary less than hours worked during the business cycle, the underlying degree of substitution between capital and labor may be underestimated, since firms tend to adjust more hours worked rather than employment. Therefore, if employment was adjusted for changes in the number of hours worked, the elasticity of substitution between capital and labor may be even higher. For this reason, an alternative equation was estimated using the capital-output ratio as a dependent variable, which specifies this ratio as a function primarily of the real price of equipment and the long-term real yield on corporate bonds. The results, also presented in Table 2 (and Chart 5), show that the elasticity of substitution increases markedly to 2–2.25.[9] These results support the suggestion that there has been a strong substitution of capital for labor in Canada since the mid-1970s, reflecting the rise in the relative cost of labor.

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[8]This result is robust to different equations and specifications for the capital-labor ratio. Two sets of regressions were conducted. The first used the Fully-Modified OLS (FMOLS) procedure proposed by Phillips and Hansen and included the variables in levels. The FMOLS estimates the long-run parameters using a procedure which corrects for possible serial correlation in the residuals without having to specify the dynamics of the model. It is appropriate for estimation and inferences whenever there exists a single cointegrating relation between a set of nonstationary variables. The second specification estimated the equation in first-differences with the Newey-West long-run variance-covariance matrix. The Newey-West procedure computes a serial correlation and heteroskedasticity consistent estimate of the variance-covariance matrix of the parameters. Both sets of regressions included the output gap to account for cyclical variations in the capital-labor ratio, and the long-term real yield on corporate bonds. The regressions also were run using the structural component of the capital-labor ratio as estimated using a Hodrick-Prescott filter. The estimated elasticity of substitution was also robust to specifications which excluded the output gap and the long-term real yield on corporate bonds.

[9]This equation was estimated with the Stock and Watson procedure, which allows for lags as well as leads of the first differences of the structural factors in order to account for potential Granger causality from the error term governing the set of structural factors to the unemployment rate. The standard errors were computed following the Newey-West procedure.

9.   Following Cotè and Hostland (1996), an unemployment equation was estimated that explains unemployment on the basis of structural factors, using cointegration theory.[10] In addition to unionization, the generosity of unemployment insurance benefits, payroll taxes, and demographic changes in the labor force, the trend decline in the cost of capital (specifically, the relative price of equipment and the long-term real yield on corporate bonds) is included in the equation. Estimated using quarterly data for the period 1976–96, the main equation suggests that most of the traditional structural factors had significant effects on trend unemployment (Table 3 and Chart 5). The cost of capital also appears to have contributed significantly to the persistence of unemployment in Canada.

10.   Based on the regression presented in Table 3, an estimate of the trend unemployment rate was derived. After declining in the late 1980s, the trend unemployment rate rose to about 9½ percent in late 1993, reflecting a continuing decline in the real cost of capital as the price of equipment and long-term interest rates fell in real terms. The trend unemployment rate has subsequently declined to about 8 percent by end-1996, largely on account of a sharp reduction in the generosity of unemployment benefits.[11] The recent stabilization of the downward trend in the cost of capital (in particular with respect to the real price of equipment relative to the real producer wage), together with the recent reforms of the unemployment insurance system, should contribute to bring down the trend unemployment rate over the near term.

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[10]Since the unemployment rate and the set of structural factors are nonstationary series, the cointegration approach allows the estimated long-run parameters to have well-defined statistical properties, avoiding the "spurious regression" problem.

[11]The predicted gap between the actual and structural unemployment rates in 1988–89 appear to be too wide (in absolute terms) relative to those observed in 1982–84 or 1991–93, where labor market slack was particularly significant. This raises some concerns on the appropriateness of the econometric specification presented, which would deserve further research.

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Table 1. Canada: Stylized Facts on Unemployment and Its Structural Factors 1976–96 1/

	1976-79	1980-89	1990-96	1976-96
Unemployment rate (in percent)				
Average	7.8	9.4	10.1	9.3
Correlation with: 2/				
Unionization	-10.0	19.1	20.1	13.5
Unemployment Insurance benefits	38.4	61.9	32.8	41.7
Payroll tax rate	30.9	1.0	24.5	14.9
Demographics	23.0	-21.7	-3.7	-10.6
Cost of capital				
Relative price of equipment	70.4	-26.6	-60.4	-17.7
Long-term real corporate bond yield	-43.2	51.9	47.1	35.4
Memorandum items:				
Structural factors (in levels)				
Unionization	36.9	35.7	34.9	35.7
Index of Unemployment Insurance benefits	173.0	144.1	123.3	142.7
Payroll tax rate	8.4	9.5	12.1	10.1
Demographics	53.2	54.7	53.9	54.1
Cost of capital				
Relative price of equipment	5.1	4.7	4.2	4.6
Long-term real corporate bond yield	5.3	6.8	7.2	6.7

Sources: Statistic Canada; Bank of Canada; Human Resources and Development Canada; and Fund staff estimates.

1/ The data definition is as follows:
   Output gap: calculated by Bank of Canada.
   Unemployment Insurance benefits: approximated by Sargent's index.
   Unionization: the percentage of the labor force that belongs to a union.
   The quarterly data is derived based on annual data provided by Human Resources Development Canada.
   Payroll tax rate: ratio of wages, income and supplementary income to wages and income.
   Relative price of equipment is the trend component of the ratio of the price deflator for equipment to the GDP deflator. The series was filtered using the Hodrick and Prescott filter.
   Long-term corporate real bond yield: the Scottia McLeod interest rate divided by the annual rate of GDP inflation. The series was filtered using the Hodrick and Prescott filter.
2/ Contemporaneous correlation for firsts differences.

Table 2. Canada: Capital-Labor and Capital-Output Ratios 1976-96

	Estimated Parameters					
	FM-OLS			FM-OLS I	S&W	
	I	II	III	I	I	II
	Capital-labor ratio			Capital-output ratio		
Dependent variable:						
Constant	2.7996 (75.45)	1.7689 (93.03)	2.7072 (49.11)	0.6471 (14.07)	0.8340 (27.90)	1.1345 (12.56)
Output gap	-1.0018 (-13.523)	-1.0673 (-10.291)	-0.9418 (-16.102)	-1.5305 (-16.66)	-1.0520 (-23.70)	...
Relative price of equipment 1/	-0.2184 (-36.14)	...	-0.2101 (-30.10)	-0.0507 (-6.76)	-0.0719 (-15.05)	-0.0874 (-10.95)
Real producer wages 1/	...	...	0.0004 (1.5810)	...	...	...
Relative price of equipment to real product wages 1/	...	-0.1796 (-25.865)	...	...	...	...
Real long-term corporate bond yield 1/	-0.3199 (-1.5458)	-0.0748 (-.2554)	-0.0805 (-.4940)	-0.9722 (-3.79)	-2.1962 (-10.98)	-3.3755 (-10.25)

Source: Fund staff estimates, t-statistics reported in parenthesis.

1/ These variables represent the structural component after being filtered using the Hodrick and Prescott filter. Output gap

Table 3. Canada: Structural Unemployment 1976:3-1996:3

	Estimated Parameters
Constant	-0.8872
	(0.0000)
Output gap	-0.3245
	(0.0000)
Unionization	0.3188
	(0.0648)
UI generosity	0.0713
	(0.0000)
Payroll tax rate	0.2765
	(0.2758)
Demographic	1.4822
	(0.0000)
Relative price of equipment	-0.0419
	(0.0037)
Relative price of equipment to real product wages	...
	...
Real long-term corporate bond yield	-1.1261
	(0.0000)

Source: Fund staff estimates. Probability values are reported in parenthesis. These represent the probability of accepting the null hypothesis that the estimated coefficient is zero. A probability value less than any significance level indicates rejection of the null hypothesis. The probability values may also be interpreted as the lowest level of significance that can be used to reject a given null hypothesis.

CHART 1

CANADA

UNEMPLOYMENT RATE
(In percent)
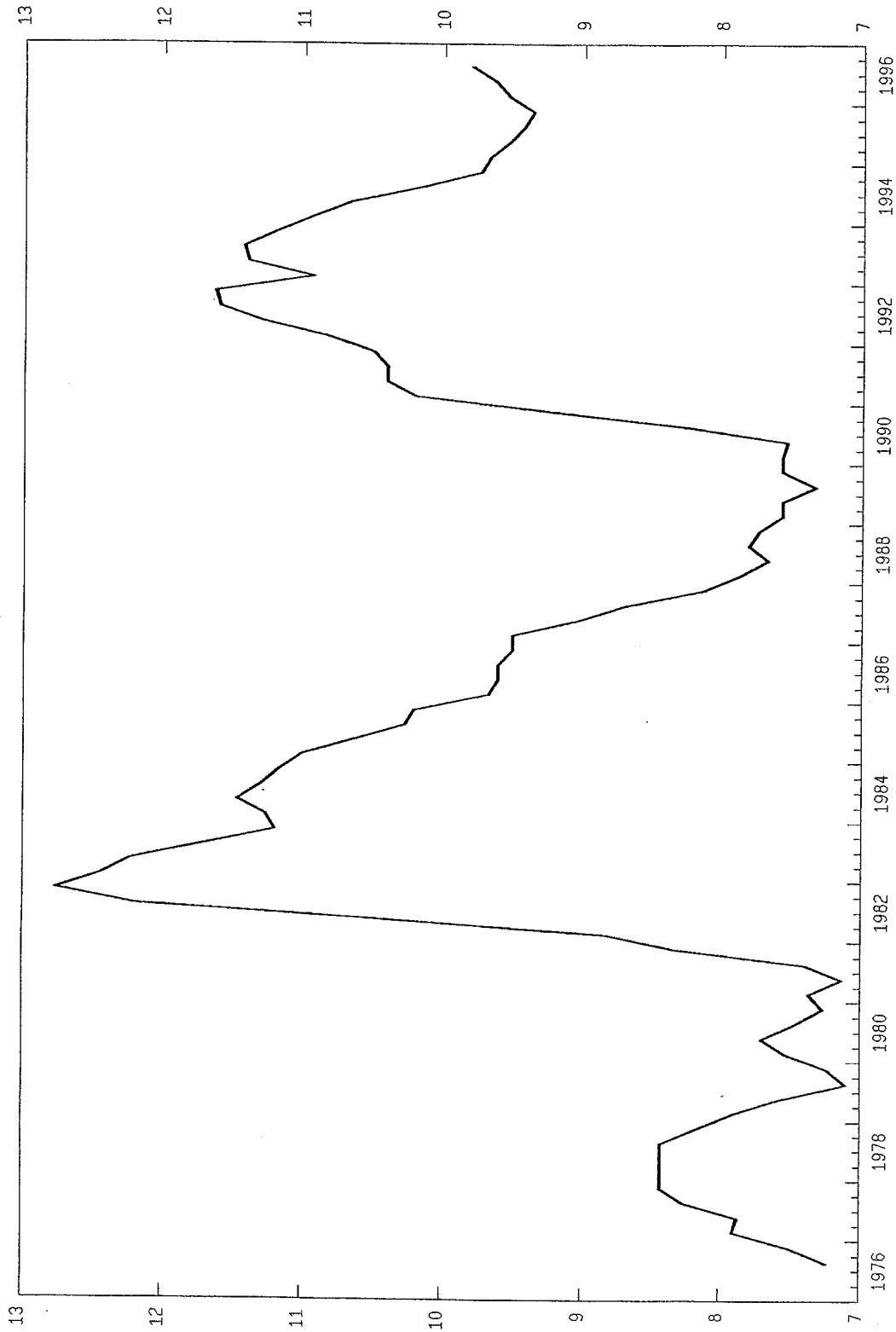
Source: Statistics Canada; and Fund staff estimates.

CANADA
CAPITAL USE
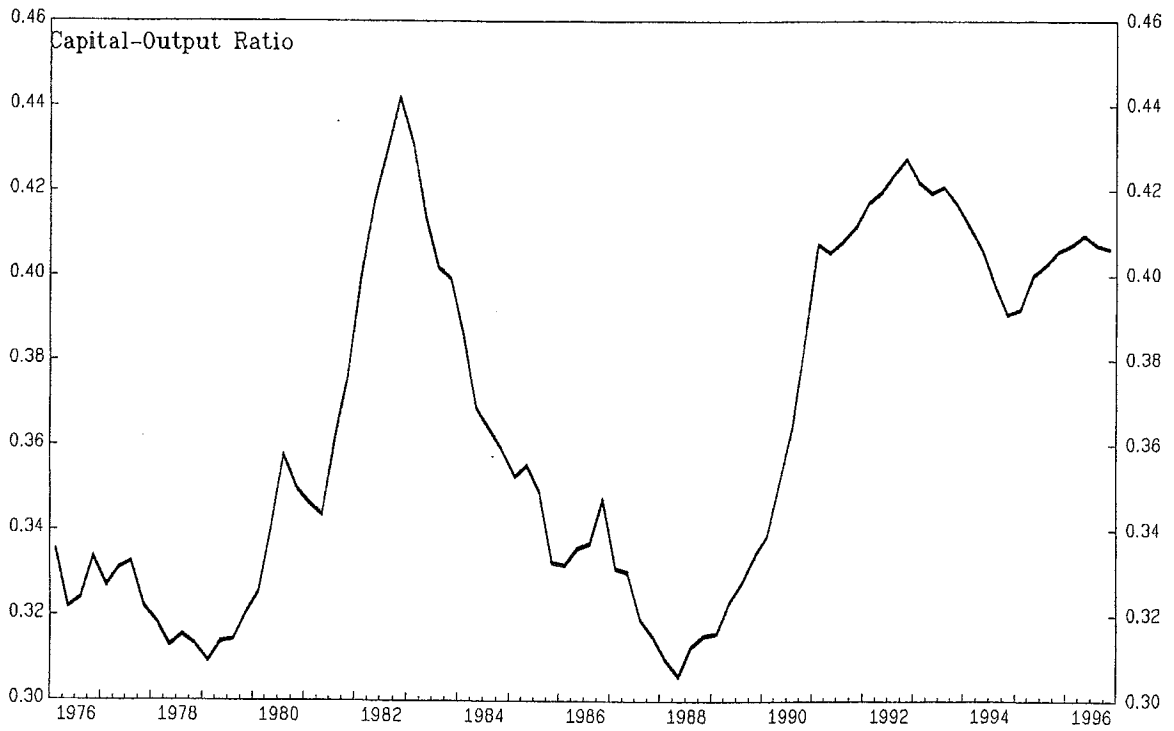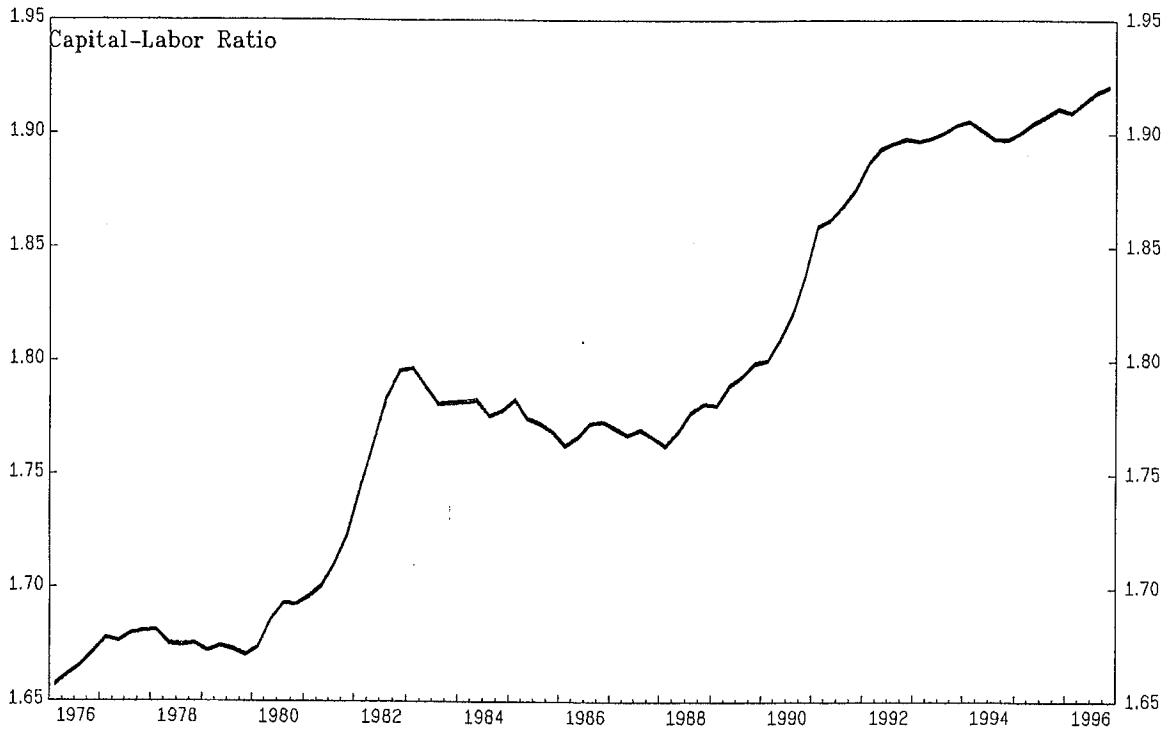
Source: Statistics Canada; and Fund staff estimates.

CHART 3

CANADA

COST OF CAPITAL
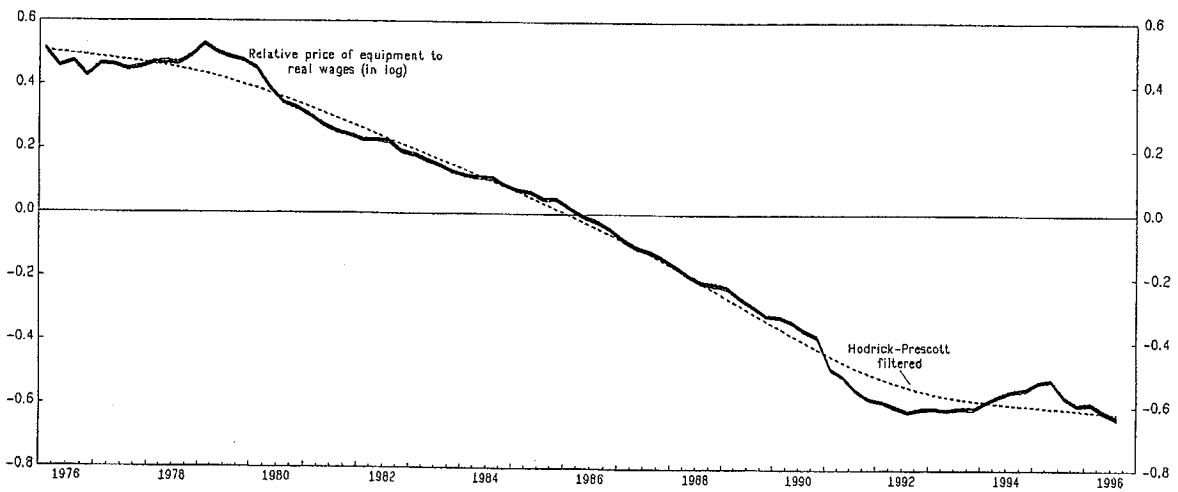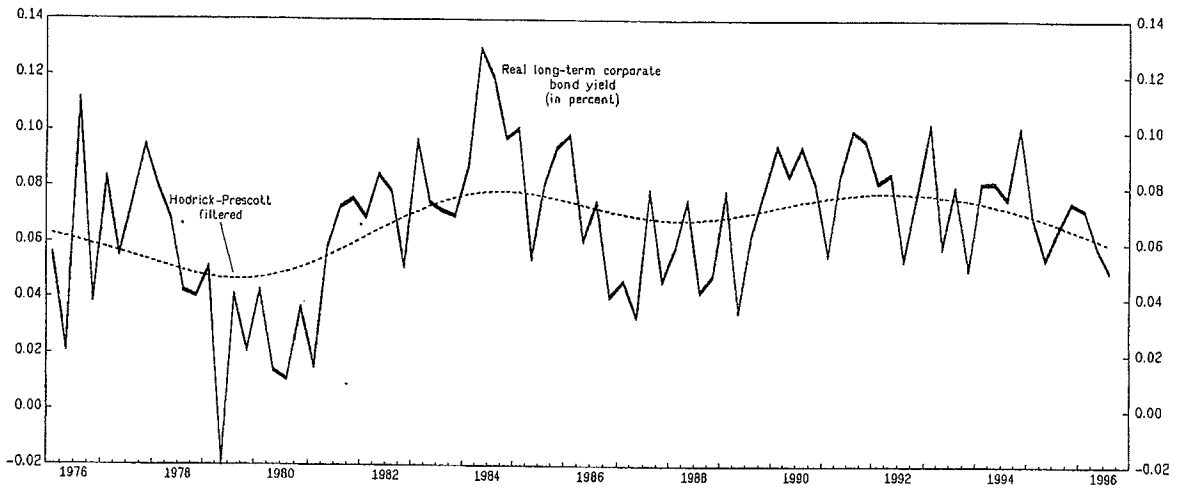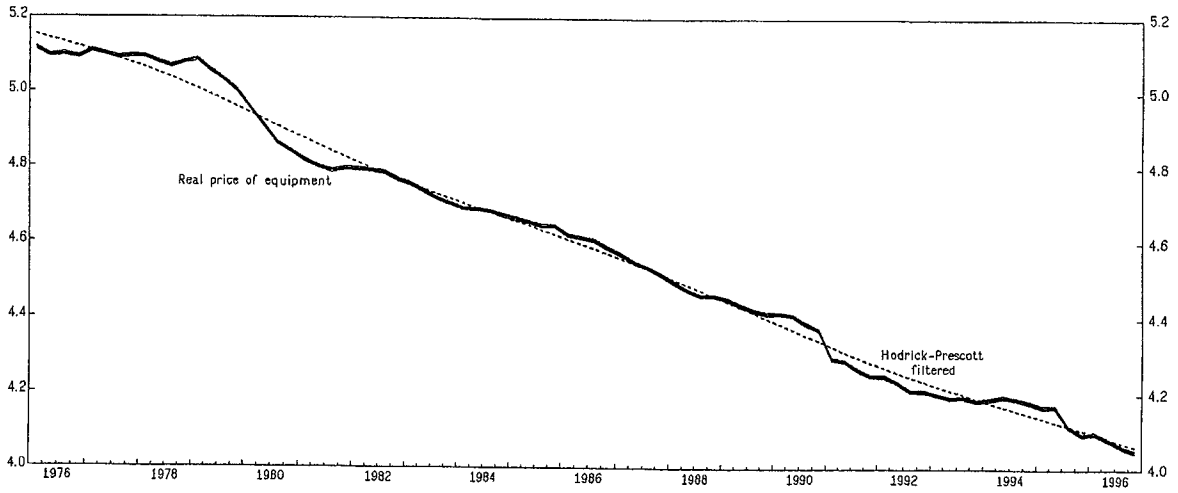
Source: Statistics Canada; and Fund staff estimates.

CHART 4

CANADA

CAPITAL-LABOR RATIO
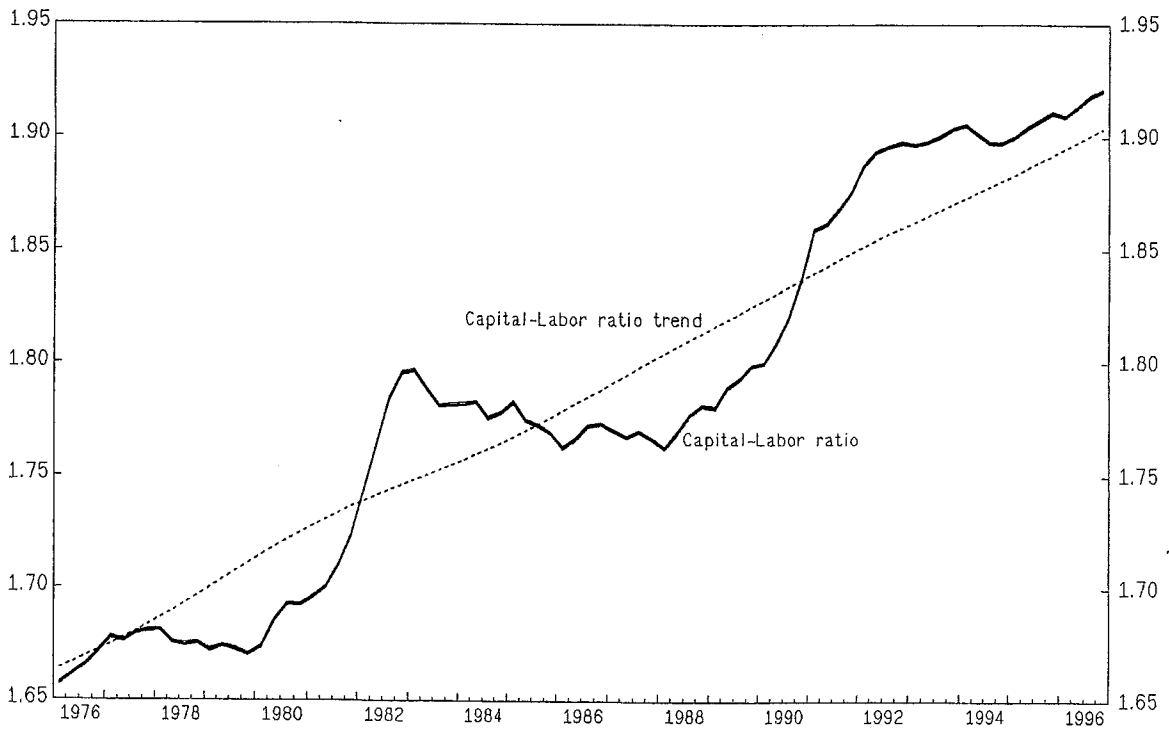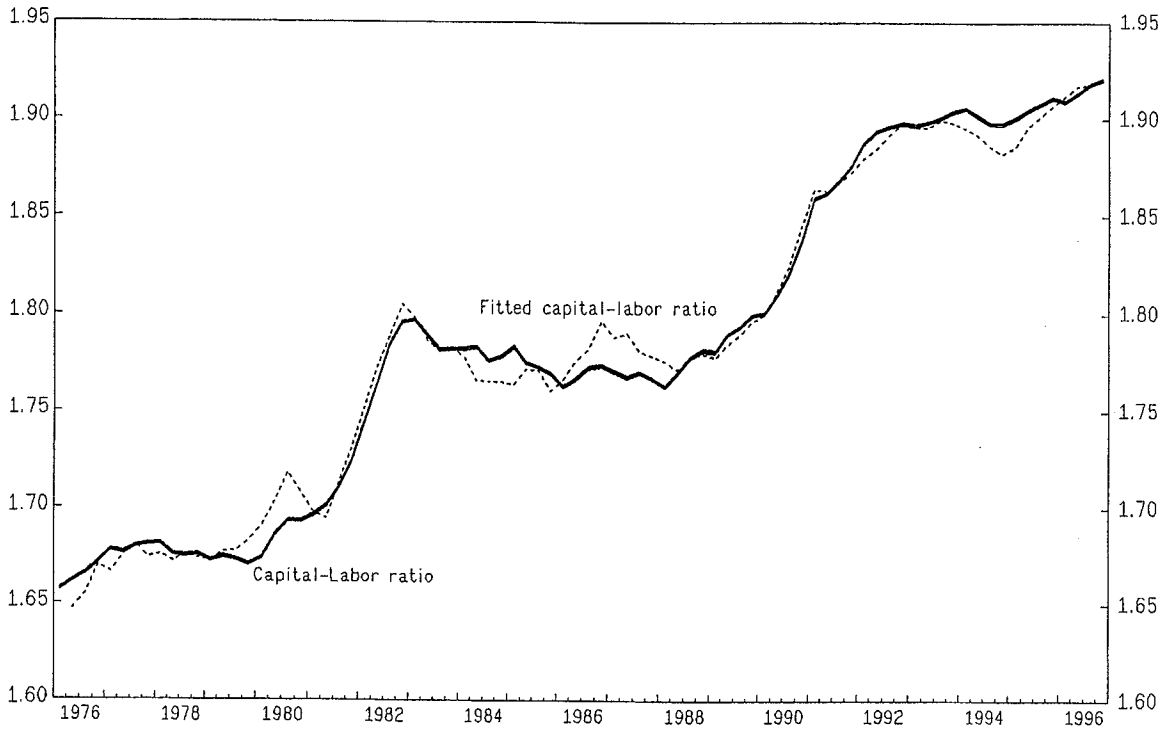
Source: Statistics Canada; and Fund staff estimates.

CHART 5

CANADA

CAPITAL-OUTPUT RATIO

Source: Statistics Canada; and Fund staff estimates.

CHART 6
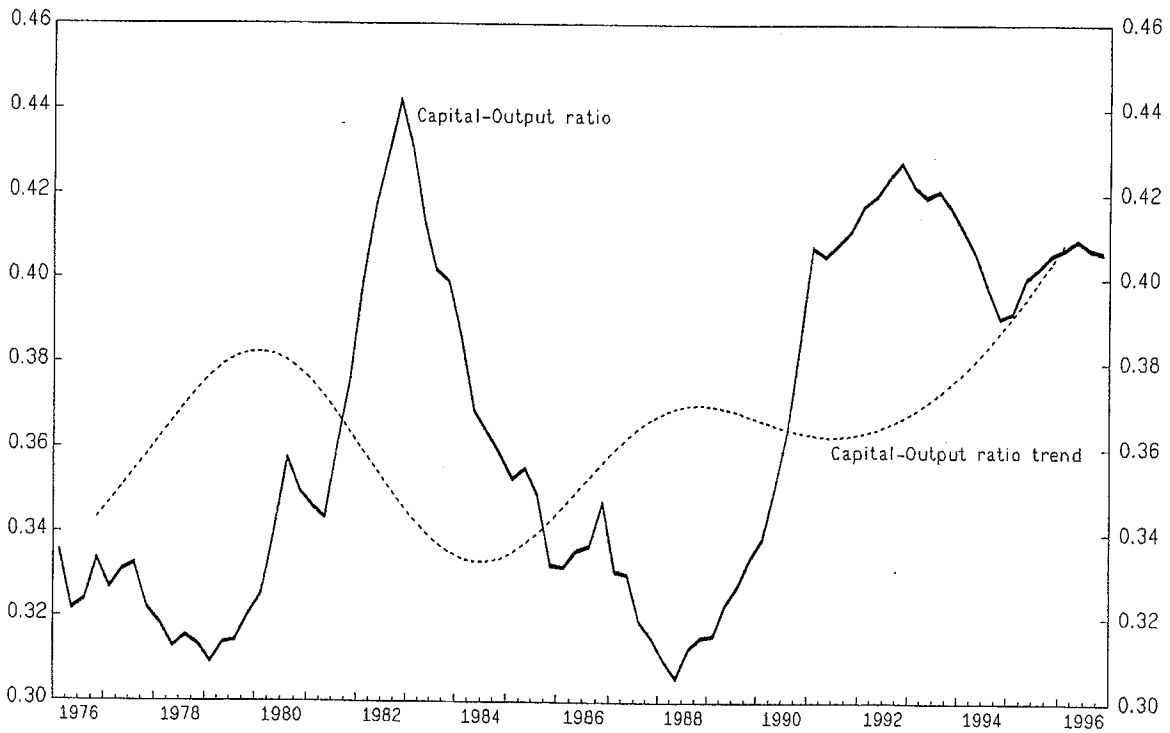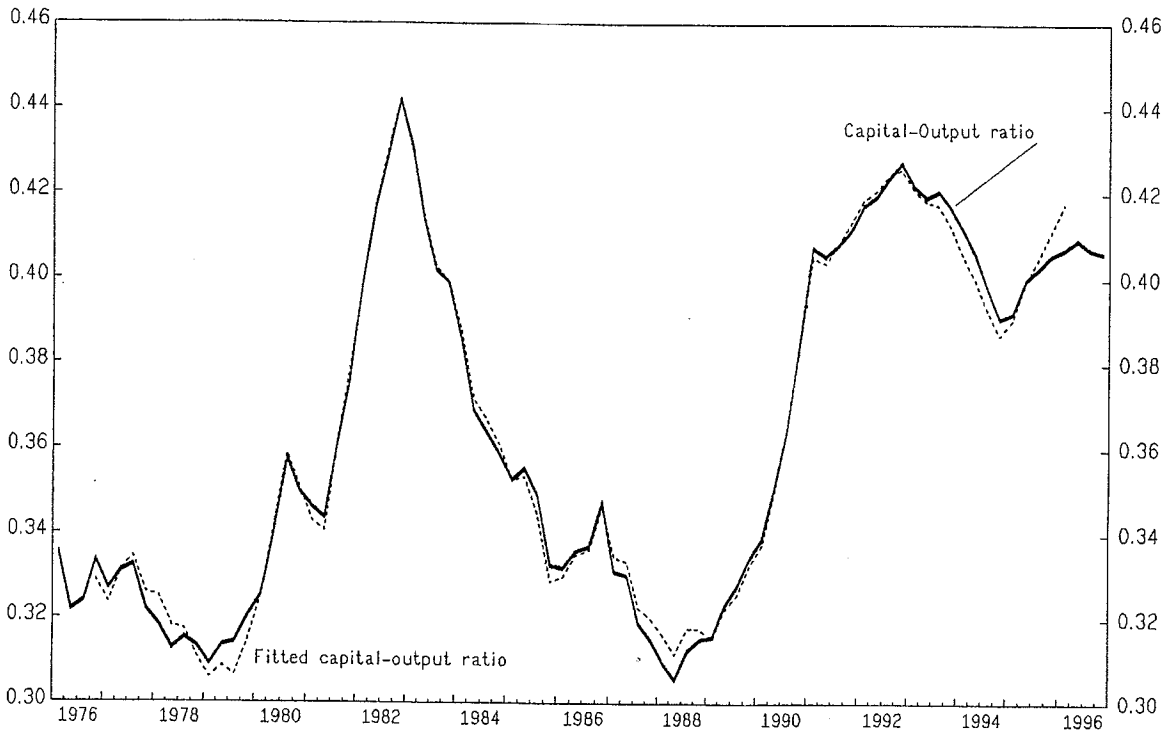
CANADA

UNEMPLOYMENT
(In percent)

Source: Statistics Canada; and Fund staff estimates.

II. Recent Trends in Personal Saving in Canada[1]

1.   The personal saving rate in Canada, as measured in the national accounts, generally increased during the 1960s, 1970s, and early 1980s, reaching a peak of close to 19 percent of disposable personal income in 1982 (Chart 1). Subsequently, it has fallen sharply, declining to 2.3 percent in the first three quarters of 1997. This paper examines some of the factors that help to explain the decline in the personal saving rate and tries to assess the significance of this decli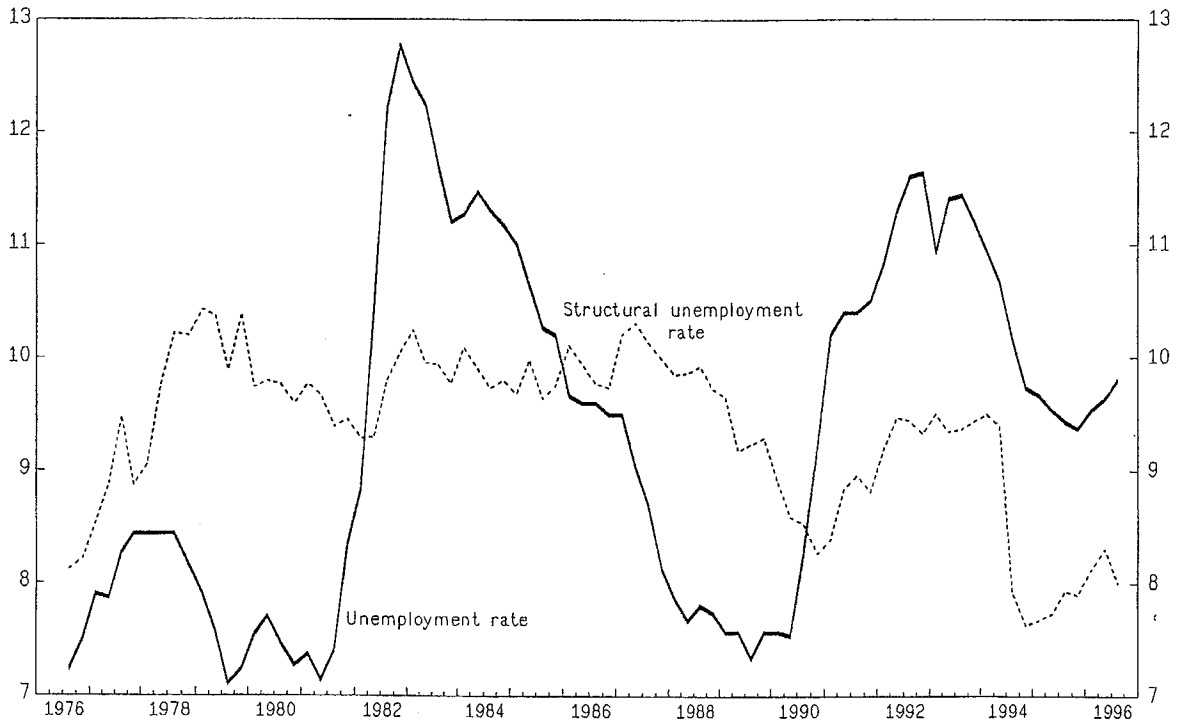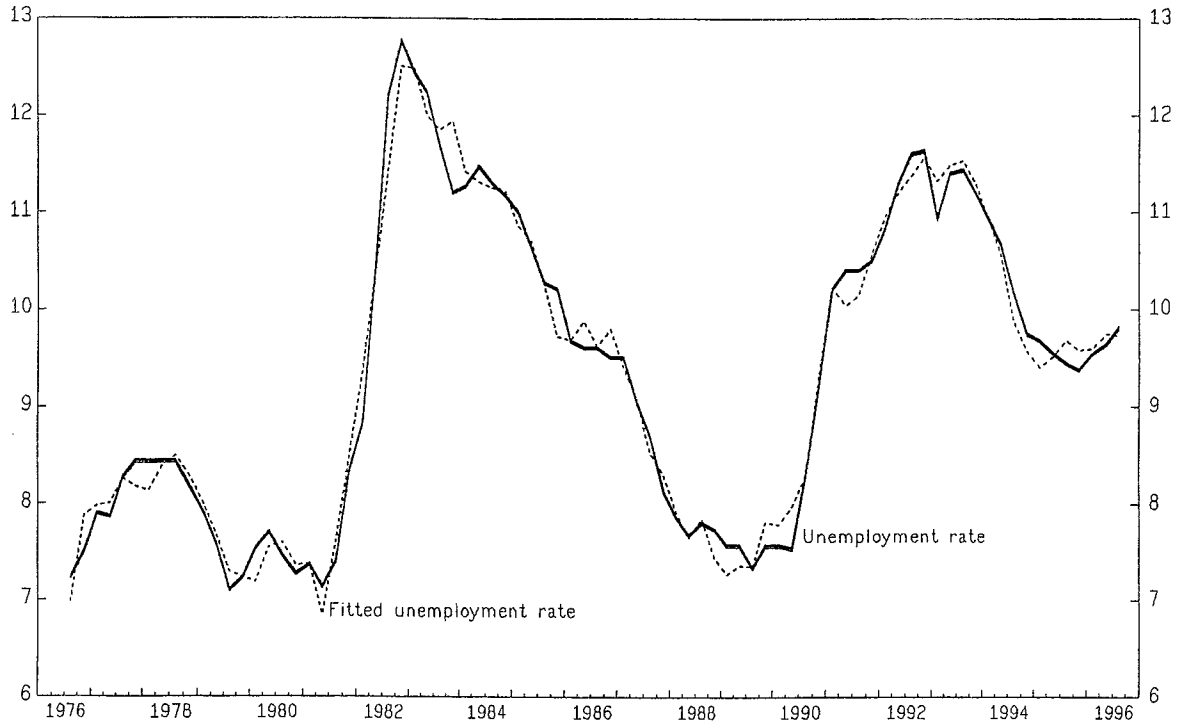ne. In particular, it notes the shortcomings in the national income accounts measure of personal saving and looks at alternative measures that can be derived from the national balance sheet accounts. The paper concludes that the sharp downward trend in the national accounts measure of the personal savings rate since 1982 is largely related to definitional problems in measuring personal savings (in particular, reflecting the treatment of consumer durables and the exclusion of changes in the value of financial assets in the national accounts measure) and the effect on nominal saving of the decline in inflation (nominal personal income and saving tend to be positively related to inflation). Adjusting for definitional differences, the personal savings rate in real terms has been largely trendless.

A. Measuring the Personal Saving Rate

2.   Theoretically, a saving rate should measure the fraction of income not consumed and thus available for future consumption. For the personal sector, disposable income should include all earnings from labor (including wages, salaries, and employer's social insurance contributions), returns on prior saving (rental income, net interest, dividends, and capital gains), and government transfers less taxes. In addition, income should include real returns on the personal sector's assets and not nominal returns on these assets, since the difference between real and nominal asset yields represents an inflation premium to compensate house-holds for losses in the value of their assets owing to inflation. This premium does not provide additional resources for future real consumption.

3.   In Canada's national income accounts, personal saving is measured by subtracting personal consumption and current transfers from persons to corporations and to nonresidents from personal disposable income. The personal saving rate is then derived as the ratio of personal saving to personal disposable income.[2]

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[1] Prepared by Ranil Salgado and Yutong Li.

[2] The guidelines for the *System of National Accounts* (United Nations, 1993) suggest that personal saving be calculated as personal disposable income less personal consumption. In contrast to the Canadian national accounts, the guidelines suggest that current transfers from persons to corporations and to nonresidents should not be included in the measure of personal disposable income. Adjusting the Canadian personal saving rate to the one suggested by the

(continued...)

4.   Measured in this way, the personal saving rate inadequately accounts for inflation in part because nominal, rather than real, asset returns are included as part of income. In addition, inflation could influence the behavior of personal saving. Current inflation could induce households to consume less and save more because of uncertainty about relative prices,[3] and uncertainty about future inflation could induce households to save more in order to hedge against the possible future erosion of real wealth.[4] In fact, the national income accounts measure of the personal saving rate is positively correlated with consumer price inflation (Chart 2),[5] reflecting the inclusion of the inflation premium in returns to personal sector assets and the uncertainty about current and future inflation.

5.   The national accounts measure of personal saving also does not include both realized and unrealized capital gains on the assets of the household sector. To the extent that capital gains are due to fundamental changes in the real value of assets (as opposed to speculative bubbles), they should be included in the measure of saving. The exclusion of capital gains may be a significant factor in explaining the decline in the national accounts measure of the personal saving rate because households have significantly increased their ownership of stocks and mutual funds in recent years and these assets have increased sharply in value.

6.   Errors in the national accounts measure of personal saving may also result from the fact that important data for the household sector tend to be estimated as residuals from the activities of other sectors that are easier to measure. In addition, the unincorporated business sector—which includes private nonprofit institutions, trusteed pension plans, and the investment activities of life insurance companies—are included in the personal sector.[6]

7.   Other shortcomings of the national accounts measure of personal saving are that it excludes saving in the form of consumer durables and investment in human capital, and does

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[2](...continued)
1993 System of National Accounts has only a minor effect (less than a tenth of a percentage point in 1996, for example) on the personal saving rate, and the adjusted measure exhibits a decline similar to the measure derived from Canada's national income accounts. Current transfers from persons to corporations are defined as the interest paid on consumer debt less the administrative expense of lending to consumers, and current transfers to nonresidents include private remittances and withholding taxes paid abroad.

[3]See Deaton (1977).

[4] Empirically, the level and variance of inflation are positively related.

[5] See, for example, Howard (1978), Siegal (1979), Jump (1980), and Davidson and MacKinnon (1983) for more discussion.

[6] Clift (1988) suggests, however, that saving from these institutions is relatively small and has little impact on overall personal saving trends.

not factor in the depreciation of physical assets.[7] Consumer durables are goods, such as motor vehicles or major appliances, which have expected lifetimes of more than one year, and provide consumption services beyond the year in which they are acquired. The national accounts measure treats these durable goods as consumption in the year that they are purchased, and thereby, would tend to overstate consumption in that year and understate a "true" measure of saving. Investments in human capital (for example, outlays for education) may increase the future earning potential of households, and including these expenditures as consumption in the national accounts saving measure also may understate "true" saving. In contrast, the depreciation of physical assets reduces the future returns from these assets, and the exclusion of this depreciation from estimates of personal consumption tends to overstate saving.

8.   An alternative measure of personal saving, which addresses most of the shortcomings in the national accounts measure, can be derived from the national balance sheet accounts data, essentially by defining saving as the change in the real net worth of the personal sector.[8] This measure of personal saving includes capital gains and purchases of durable goods less the depreciation of the stock of consumer durables and excludes the inflation premium from asset returns. The personal saving rate derived on this basis (referred to below as the real net worth personal saving rate) is calculated by dividing this measure of saving by a disposable real income term defined as the real net worth measure of personal saving plus real personal consumption of nondurable goods and services plus the real depreciation of durable goods.

9.   Chart 3 shows the trends in the real net worth personal saving rate and the national accounts personal saving rate. The real net worth personal saving rate is relatively more volatile than the national accounts personal saving rate, with a peak of 30 percent in 1973 and a trough of below -10 percent in 1982; however, this measure displays little or no trend. In 1996, this saving rate was about 12 percent, compared with its average of about 15 percent over the period since 1961. It is interesting to note that this saving rate reached its low point in the same year that the national accounts measure peaked. In other words, analysis based on the real net worth saving rate presents a very different picture than one based on the national accounts measure. The two measures are, in fact, negatively correlated (Table 1).

10.   To examine the differences between the two measures, the national accounts personal saving rate was adjusted to reflect definitional differences, and nominal and real national accounts personal saving rates including net investment in durable goods (consumer durable purchases less depreciation on the stock of consumer durables) were derived (Chart 4). With these adjustments, the real national accounts personal saving rate is positively correlated with

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[7] See Lipsey and Kravis (1987) for more discussion.

[8] As with the national accounts, personal sector data in the national balance sheet accounts are estimated as a residual from the activities of other sectors. In addition, investment in human capital is not included in this measure of saving.

the real net worth saving rate (see Table 1).[9] However, if only the adjustment is made for net investment in consumer durables, then the national accounts saving rate is still negatively correlated with the real net worth saving rate, suggesting that a major difference in the national accounts personal saving rate and the real net worth saving rate appears to reflect the failure to adjust for inflation.

B. Factors Affecting the Personal Saving Rate

11.   The permanent income hypothesis suggests that households will consume constant fractions of their permanent income, and fluctuations in savings should reflect transitory fluctuations in income. The effect of interest rate changes on saving is ambiguous because of offsetting income and substitution effects. To test these hypotheses, an equation relating the real net worth saving rate (Δnw) to the percentage change in real disposable income per capita (%ΔY) and the real three-month interest rate (r) was estimated for the period 1963 to 1996.[10] Lagged values of the dependent variable also were included on the assumption that households adjust their savings only gradually to shocks. The results are summarized below and indicate that changes in real disposable income per capita almost completely explain the behavior of the real net worth saving rate, with the interest rate being insignificant :[11]

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[9] Other differences between the national accounts saving rate and the real net worth saving rate include a different treatment of capital gains and of depreciation of real assets (as noted above).

[10]Table 2 shows the results of unit root tests for the stationarity of various measures of saving and potential explanatory variables. The real measures of the saving rate were found to be stationary (unit roots tests are rejected), while the nominal measures are not (unit roots tests are not rejected). The stationarity of the real measures suggests that ordinary least squares can be used to estimate equations for these variables.

[11] The absolute values of the t-statistics are shown in the parentheses. The LM(p) statistic tests for autocorrelation and is asymptotically distributed $\chi^2(p)$. The ARCH(p) statistic tests for autoregressive conditional heteroskedasticity and is asymptotically distributed $\chi^2(p)$. The Chow statistic tests for a structural break in 1981 and is distributed $F(4,26)$; an "*" signifies that the statistic is significant at 5 percent level.

$$\Delta nw = 0.922 + 0.834\Delta nw(-1) - 0.019r + 0.82\%\Delta Y$$
$$(0.99) \quad (18.39) \quad\quad (0.19) \quad (23.67)$$

$$R^2 = 0.96 \qquad\qquad Chow(1981) = 5.30*$$
$$LM(4) = 2.17 \qquad\qquad ARCH(4) = 4.29$$

Other explanatory variables, in particular the rate of inflation and the dependency ratio (defined as working-age population divided by nonworking-age population), are insignificant when $\%\Delta Y$ and lagged values of the dependent variable are included in the various regressions; the lagged value of $\%\Delta Y$ also was insignificant. The Chow test shows evidence of parameter instability, as it does not reject a structural break in the data around 1981. When added to the equation, a trend term is significant and positive, suggesting a slightly rising real net worth saving rate over time, in contrast to the downward trend in the national accounts measure of the personal saving rate.

12.   A similar equation was estimated for the real national accounts personal saving rate including net investment in consumer durables:

$$\Delta sRDur = 2.599 + 0.641\Delta sRDur(-1) + 0.115r + 0.541\%\Delta Y$$
$$(1.97) \quad (6.98) \quad\quad (0.75) \quad (9.90)$$

$$R^2 = 0.79 \qquad\qquad Chow(1981) = 7.84*$$
$$LM(4) = 3.61 \qquad\qquad ARCH(4) = 1.37$$

As with the real net worth saving rate equation, when $\%\Delta Y$ and lagged values of the dependent variable are included, other variables (including inflation, the dependency ratio, and lagged $\%\Delta Y$) are insignificant. In contrast to the real net worth saving rate equation, the trend term is insignificant, although a structural break around 1981 cannot be rejected.

13.   In sum, these relationships suggest that when saving rate measures are adjusted to remove the inflation premium on asset returns, the movements in saving are well explained by changes in real disposable income per capita (Chart 5). Inflation has no separate explanatory power, and behavioral changes related to the effects of current and future inflation may not be significant. The interest rate is found to be insignificant which may imply that income effects offset substitution effects. Furthermore, when changes in real per capita disposable income are taken into account, the real saving rate measures have either no trend or a slight positive trend.

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Table 1. Correlation Matrix of Different Measures of Personal Saving Rates

	S1	S1_REAL	S2	S2_REAL	S3_REAL
National accounts measure (S1)	1.00	-0.12	0.96	-0.41	-0.37
National accounts measure in constant 1992 dollars (S1_REAL)	--	1.00	-0.03	0.94	0.79
National accounts measure including net investment in consumer durables (S2) 1/	--	--	1.00	-0.31	-0.20
National accounts measure including net investment in consumer durables in constant 1992 dollars (S2_REAL) 1/	--	--	--	1.00	0.89
Real net worth (S3_REAL) 2/	--	--	--	--	1.00

Source: Fund staff estimates.

1/ Net investment in consumer durables is defined as expenditures less the depreciation on the stock of consumer durables.

2/ Derived from the national balance sheet accounts, expressed in constant 1992 dollars. Differences from national accounts measure include net investment in consumer durables and changes in the value of financial assets.

Table 2. Canada: Stationarity Tests 1/ 2/

	Augmented Dickey-Fuller Statistics With a Constant
Measure of personal saving	
National accounts	-1.65 (3)
-- National accounts with durables	-0.93 (0)
-- Real national accounts	-3.71 (3) * 3/
-- Real national accounts with durables	-3.38 (2) *
Real net worth	-3.31 (2) *
Real disposable income in log	
Balance sheet-derived real disposable income per capita	-1.17 (3)
-- In first difference	-3.78 (2) *
Inflation	
End-of-period consumption deflator	-1.61 (3)
Year average consumption deflator	-1.85 (2)
Real interest rate	
Three-month treasury bill less inflation	-1.56 (3)
Dependency ratio	-6.71 (1) *

Source: Fund staff estimates.

1/ Number of lags in parenthesis. Optimal lag length is determined by the Akaike information criterion.
2/ Augmented Dicky-Fuller tests were also run including a trend with similar results (not reported).
3/ * Hypothesis of a unit root is rejected at a 5 percent level of significance

CHART 1

CANADA
NATIONAL ACCOUNTS PERSONAL SAVING RATE
(In percent)
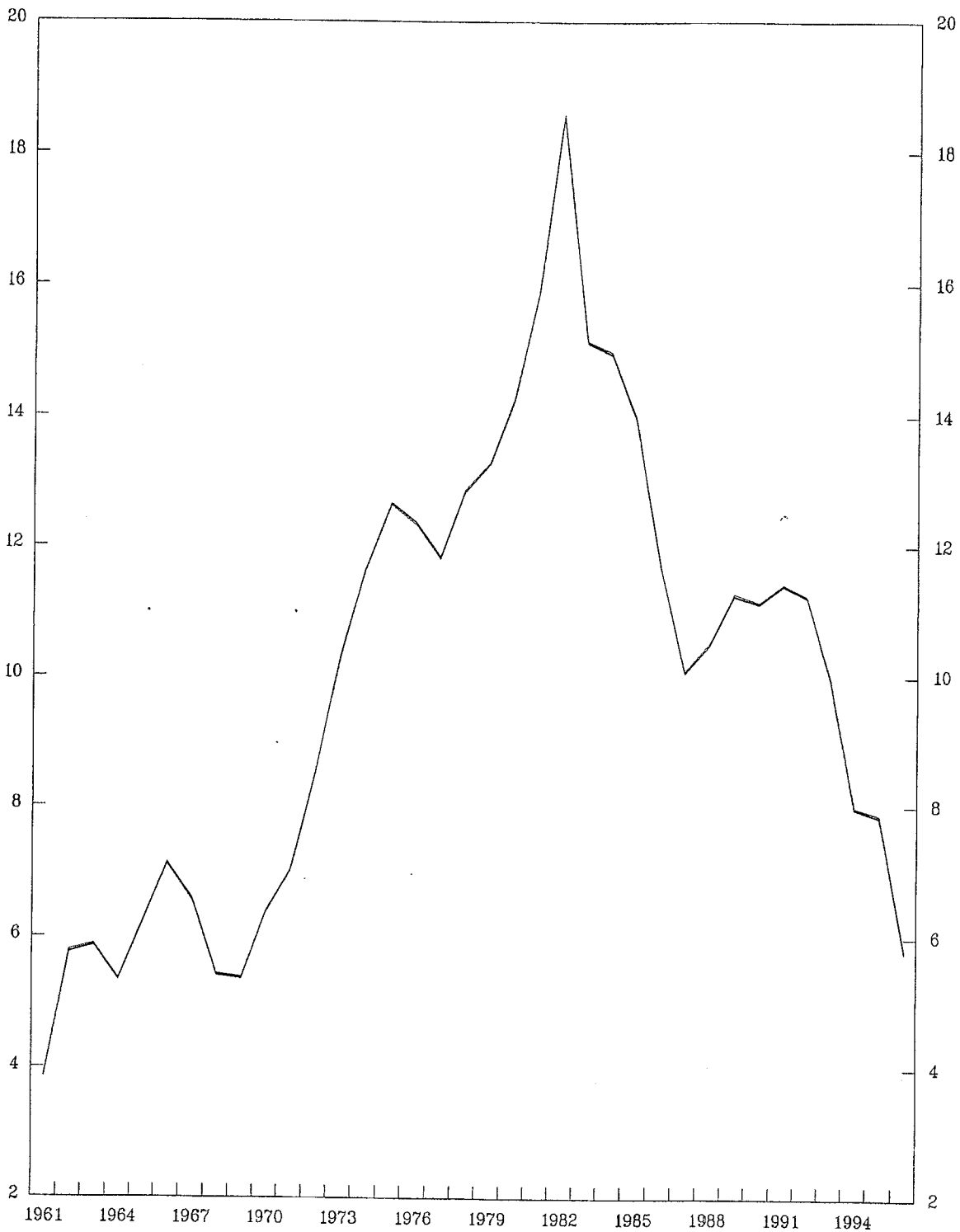
Source: Statistics Canada.

CHART 2

CANADA
NATIONAL ACCOUNTS PERSONAL SAVING RATE AND INFLATION
(In percent)

National accounts personal
saving rate

Percent change of
consumption deflator

1961 1964 1967 1970 1973 1976 1979 1982 1985 1988 1991 1994

Source: Statistics Canada.

CHART 3
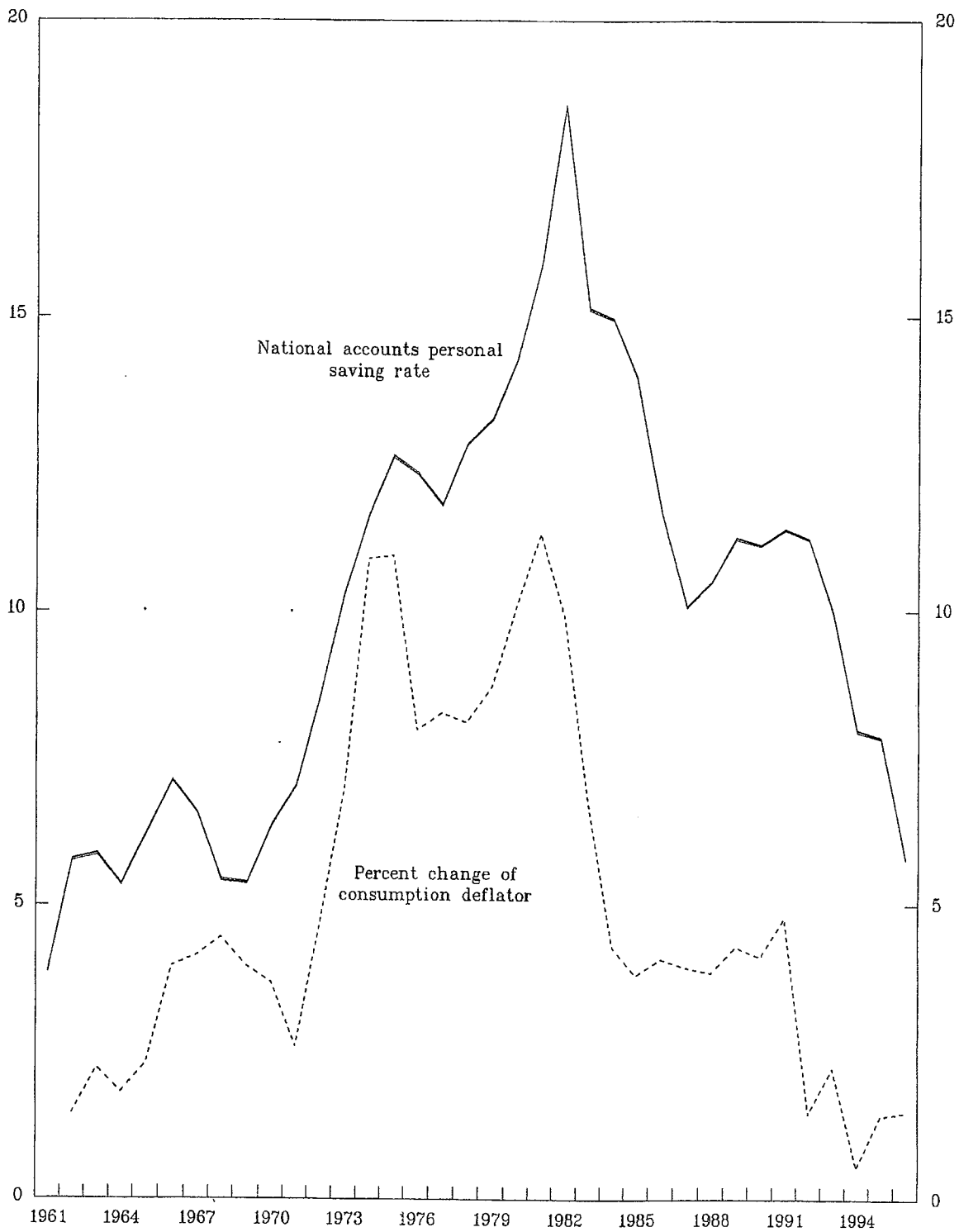
CANADA

NATIONAL ACCOUNTS PERSONAL SAVING RATE VS. REAL NET WORTH SAVING RATE

(In percent)

National accounts personal
saving rate

Real net worth saving rate

Sources: Statistics Canada and Fund staff estimates.

CHART 4
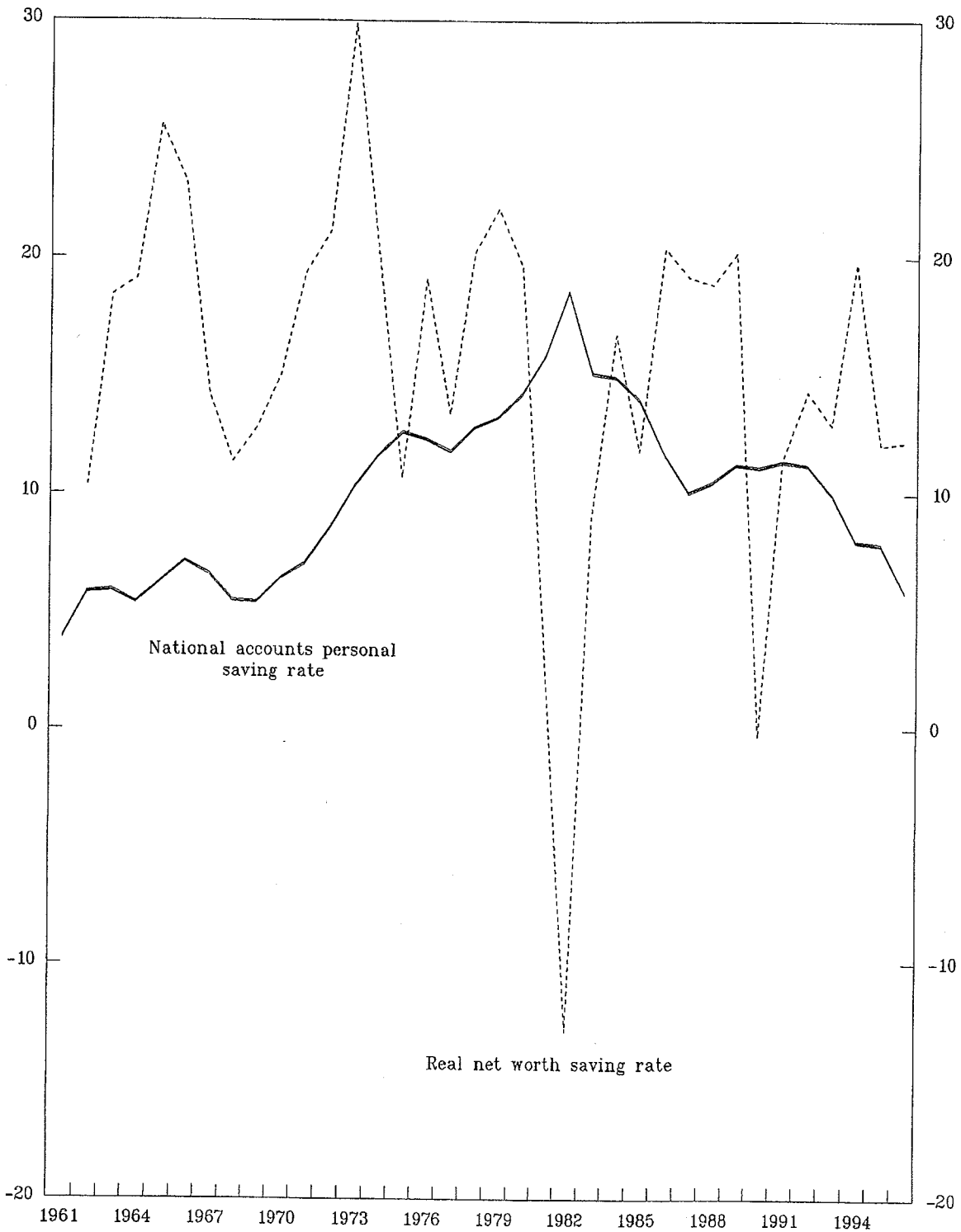
CANADA
DIFFERENT MEASURES OF PERSONAL SAVING RATES
(In percent)

Sources: Statistics Canada and Fund staff estimates.

CHART 5
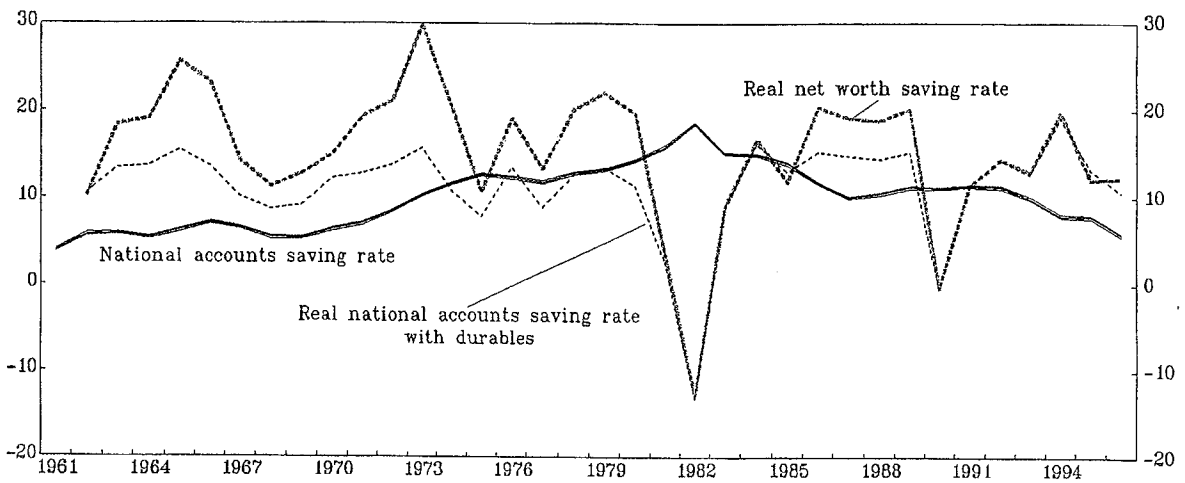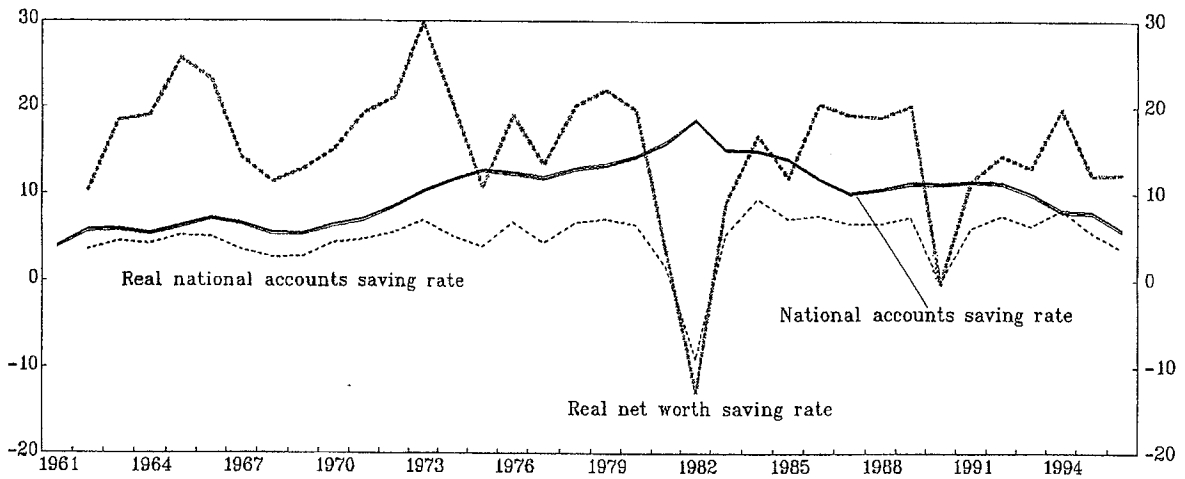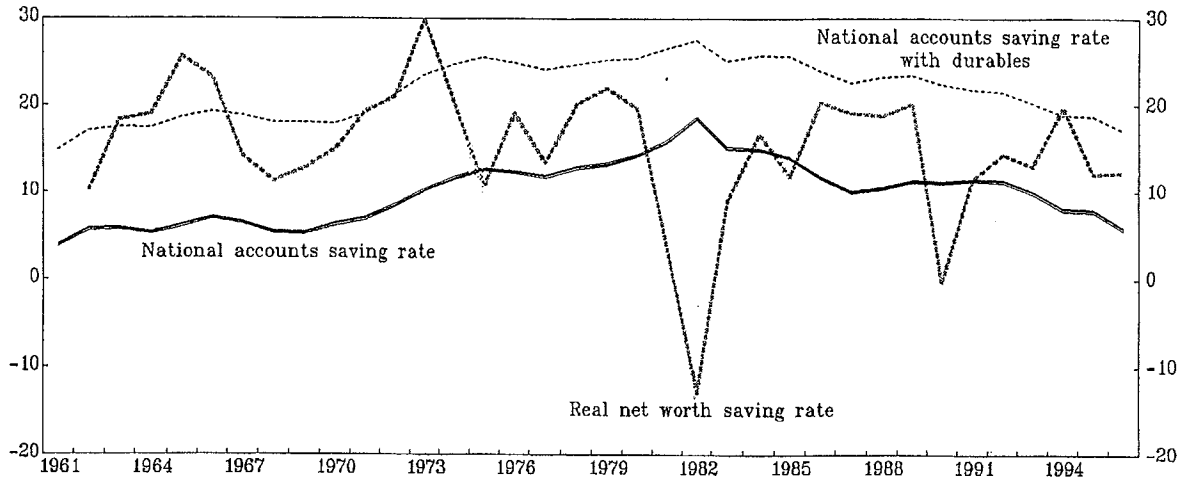
CANADA

REAL NET WORTH SAVING RATE AND PER CAPITA DISPOSABLE INCOME

(In percent)

Real net worth saving rate

Percent change in personal disposable
income per capita
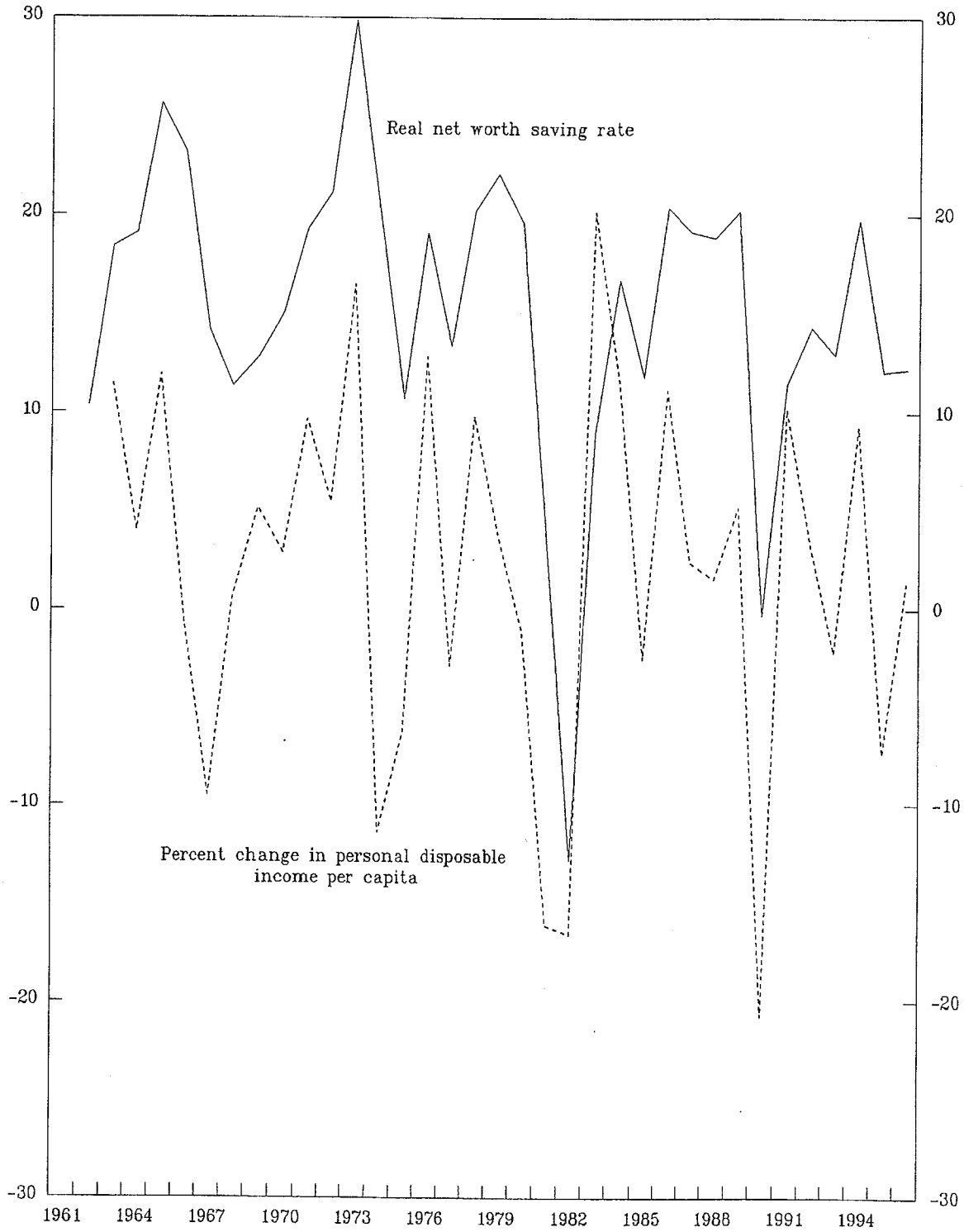
Sources: Statistics Canada and Fund staff estimates.

III. INFLATION TARGETING: CONSIDERATIONS IN REDUCING INFLATION FURTHER[1]

1.   In February 1991, the Government and the Bank of Canada announced targets for inflation, aiming at reducing CPI inflation to a range of 1–3 percent by the end of 1995, and since then, monetary policy has been conducted to achieve this target. After inflation was brought within the target range earlier than expected, it was announced in December 1993 that the 1–3 percent target range would be extended through the end of 1998, at which time a decision would be made regarding the target range that would be consistent with price stability. In making a decision in a low-inflation environment to move toward price stability, the benefits from a further reduction in inflation have to be weighed against potential costs. This paper briefly reviews the possible benefits and costs that need to be considered.

2.   There is a large literature that describes the growth and efficiency gains from moving to a low-inflation environment, but these gains largely appear to accrue as inflation is reduced from high to moderate rates, or from moderate to low rates. The benefits to be derived by moving closer to price stability from already low rates of inflation are difficult to gauge in view of the lack of sufficient recent experience with sustained very low inflation or long-term price stability. Recent empirical work provides evidence that a reduction in the rate of inflation does increase the rate of economic growth; however, the panel data used in these studies do not include sufficient examples of very low inflation to offer much assurance that the results apply when moving from low to lower inflation rates.[2]

3.   Although the relationship between economic growth and moving to very low inflation may be weak, it may still be advantageous to reduce inflation to lower levels in order to capture benefits that would accrue from reducing inflation uncertainty and the variability in output and relative prices.[3] Moreover, moving to very low inflation would eliminate losses to the economy associated with tax distortions arising when the tax system is not indexed for inflation.[4] On the other hand, lower inflation may reduce tax revenue in the absence of full

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[1]Prepared by Michael Leidy and Stephen Tokarick.

[2]See, for example, Fischer (1993) and Barro (1996). Barro (1996) estimates that if inflation falls from 5 percent a year to zero, the growth rate will increase by between 0.1 and 0.15 percentage point a year. These relatively modest gains would likely be more than proportionately smaller if the economy were to move from 3 percent inflation to zero. In any case, Barro's estimated effects of reducing inflation from low rates to zero are not statistically significant.

[3]See Hess and Morris (1996).

[4]Feldstein (1996) acknowledges that the deadweight loss attributable to inflation in a non-indexed tax environment could, in principle, be eliminated by fully indexing the tax system or by shifting to a tax system based only on consumption or labor income. However, he notes

(continued...)

indexation, requiring an increase in other taxes, which may offset some of the gains from lower inflation. Feldstein (1996) concludes that moving from a stable 2 percent inflation rate to price stability would result in a net gain for the economy and that the benefits of price stability could exceed the transition costs within six to nine years.[5] Central to Feldstein's analysis is an assumption that the nominal rigidities responsible for the employment/output costs associated with disinflation do not persist for an extended period.

4.   The existence (and persistence) of downward nominal wage rigidities is a major factor to be considered in deciding to try to reduce inflation further. During periods of disinflation, there is a tendency for nominal wage increases to lag behind the decline in the inflation rate, thereby raising real wages and leading to a rise in unemployment. Once inflation expectations adjust to a new lower level in line with the decline in inflation, real wages should return to a level consistent with the natural rate of unemployment. This process is slowed down at low rates of inflation by the presumed reluctance of workers to accept actual declines in nominal wages.

5.   In a recent paper, Akerlof, Dickens, and Perry (ADP, 1996) suggest that there could be a *permanent* trade-off between inflation and unemployment at low rates of inflation, based on the existence of some downward wage rigidity in the economy. Since there is little recent experience with low inflation, ADP use a model calibrated to U.S.-based stylized facts to run a large number of simulations to arrive at estimates of the implied long-run employment/ inflation trade-off.[6] They estimate that the sustainable unemployment rate at a 3 percent

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[4](...continued)
that no industrial country "has fully (or even substantially) indexed its tax laws" and he argues that, beyond questions of political feasibility, full indexation of the tax system is fraught with technical "legal" and administrative problems. Thus, indexation might not be a workable alternative to achieving price stability.

[5]These results are based on the assumption that there is no indexation in the tax system. To the extent that partial indexation exists, the net benefit would be reduced and the period required to recover transition costs would be lengthened.

[6]In their model, ADP assume the existence of downward rigidities, but they provide for workers to adjust their wage demand behavior to reflect a new lower inflationary environment and the profit performance of individual firms. They assume, however, that firms are mono- polistically competitive and that individual firms are subject to demand and supply shocks that affect them differently. It is principally the influence of these independent shocks to firms in the face of downward nominal wage rigidities that produces the possibility of a permanent trade-off between unemployment and inflation, as adjustments in real wages across individual firms is affected. In critiques of the ADP model, it has been pointed out that the magnitude of ADP's permanent trade-off between inflation and unemployment would be diminished con-

inflation rate is 5.9 percent, and that it rises to 6.1 percent at a 2 percent inflation rate, to 6.5 percent at a 1 percent inflation rate, and to 7.6 percent at zero inflation (price stability). Hence, the ADP model implies that a small amount of yearly inflation provides considerable "grease" to the workings of the labor market, facilitating adjustments in relative real wages in the face of downward nominal wage rigidities.

6.   A number of studies have attempted to establish the existence of nominal wage rigidities, but the results are not conclusive. Survey data from interviews with U.S. employers indicate that firms tend to cut wages only reluctantly and under extreme circumstances.[7] Wage settlement data from the U.S. Bureau of Labor Statistics demonstrate a clear asymmetry in the distribution of yearly wage changes, with the distribution being almost completely truncated below zero.[8] Similarly for Canada, Fortin (1996) found that in over 1,000 large non-COLA wage settlements over the period 1992–94, there were wage increases in 47 percent of the cases, wage freezes in 47 percent of the cases, and wage cuts in only 6 percent of the cases. Crawford and Harrison (1997) also found that for Canada nominal wage cuts are relatively infrequent even in years with low inflation. Wage rollbacks occurred in just 2.8 percent of private sector wage contracts over the period from 1992–96. The authors of these various studies concluded that the relative infrequency of observed wage cuts and the significant number of wage freezes point to the existence of effective nominal wage floors.

7.   Other studies cast some doubts on the existence of strong downward nominal wage rigidities. Parkin (1997) notes that Fortin's evidence is strongly influenced by the presence of public sector wage settlements in the data; when only private-sector settlements are examined, the strength of the evidence supporting downward rigidities diminishes. Parkin also notes that conclusions regarding the degree of rigidity are dependent on how wage changes are classified. For example, he observes that Fortin classified multi-year wage settlements that contained a one-year freeze, but future increases, as a zero wage change. If such cases were treated as wage increases, the percentage of wage freezes falls to about 12 percent in Fortin's data, and the suggestion that the relative frequency of wage freezes indicates resistance to

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[6](...continued)
siderably if firms are allowed to enter and exit, allowing new firms not constrained by the previous history of nominal wage agreements to absorb labor shed by firms going out of business (see Howitt (1997)). The trade-off would also be reduced if firms and workers were treated as forward-looking wage bargainers, instead of just focusing on current profitability as in the ADP model (see Hogan (1996) and Lavoie (1997).

[7]See Bewley and Brainard (1993).

[8]See ADP (1996). These data indicate, however, that under conditions of "extreme duress," such as during deep recessions, there tended to be less resistance to downward wage adjustments.

wage cuts looks less convincing.[9] Moreover, conclusions about the extent of downward rigidity depend on whether consideration is limited to wage changes or to changes in total compensation. Using a data set that includes information on nonwage compensation (such as bonuses), Crawford and Harrison (1997) find for Canada that the wage-settlements data overstate downward rigidity. In adjusting to external shocks, firms may find it easier to reduce or modify nonwage compensation as a means of reducing total labor costs. In a study using panel data for U.S. firms, McLaughlin (1994) also finds evidence of a relatively high degree of downward flexibility in total labor compensation. In contrast to the results of McLaughlin, Kahn (1997) finds strong evidence for downward wage rigidity in the United States.

8.   Overall, the empirical studies of the U.S. and Canadian labor markets suggest that there is some degree of downward nominal wage rigidity. A question arises as to what extent this might be a function of the inflationary environment of the late 1970s and 1980s. As noted by Laidler (1997), the evidence for downward nominal wage rigidity is drawn either from a period of moderate-to-high inflation or from a period when high inflation was still a recent memory. Laidler (1997) and Howitt (1997), among others, have argued that resistance to nominal wage cuts might diminish or disappear once expectations adjust to a low-inflation environment. This is an important consideration. If the economic benefits of moving from a low to a lower inflation rate (or price stability) may be more than proportionally less than those resulting from a move from moderate to low inflation, then the net gain from reducing inflation further is likely to depend critically on how long it might take for nominal rigidities to become less prevalent or even disappear. In Canada, the rate of inflation has been reduced sharply over the last five years with little evidence that nominal wages have become noticeably more flexible downward..

9.   Moving from low to lower inflation also has implications for the effectiveness of monetary policy. Conducting policy in a very low-inflation environment implies that it becomes more difficult for the central bank to engineer significantly negative real interest rates in order to stimulate aggregate demand during periods of less than full employment.[10] Summers (1991) observes that real interest rates in the United States have been negative in about a third of the years since World War II, and that the real after-tax rate of interest has been negative in about three-quarters of the years during this period. In Canada, real short-term interest rates have remained positive in the past decade even during periods of slow and negative economic growth, especially since 1992 as the inflation rate has declined sharply. Fortin (1996) argues that these high real interest rates, induced by monetary contraction in

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[9]Hogan (1996), pp.8–9.

[10]See Summers (1991) and Fischer (1996). It should be noted, however, that the prevalence of negative real interest rates in Summers' data should not be taken necessarily as evidence of the relevance of his observation. The effect on aggregate demand of an expansionary monetary policy depends on whether there are induced changes in *expected* real rates, and such interest rates are more difficult to measure.

pursuit of essentially a zero inflation target, caused the Canadian economy to perform poorly in the early 1990s.[11]

10.   While the ability of monetary policy to generate negative real interest rates may be applicable to a large economy (like the United States), the scope for a small, open economy with open capital markets (like Canada) to engage in similar monetary policy actions would be substantially more limited. If the uncovered interest parity condition tends to hold,[12] and if expectations of changes in bilateral exchange rates are largely determined by relative purchasing-power parity (PPP),[13] real interest rates in Canada will tend to equal (in an *ex ante* sense) those in the United States. Moreover, in a Mundell-Flemming model of a small, open economy with flexible exchange rates and a high degree of capital mobility,[14] monetary policy influences aggregate demand principally through its effect on the exchange rate (and expectations regarding the change in exchange rates). In such circumstances, an inability to produce negative real interest rates need not undermine the effectiveness of expansionary monetary policy, as policy can still induce a real exchange rate depreciation (at least in the short term).

11.   Another factor to consider in moving to a lower-inflation environment is that the real cost of servicing outstanding government debt will tend to increase. As a consequence, a windfall transfer of wealth to public creditors (holders of government bonds) occurs because they will be repaid in money that has greater purchasing power than was anticipated at the time the debt was incurred. This shift in wealth from debtors (government) to creditors (the public) in a disinflationary environment is something that will have implications for the fiscal outlook.[15]

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[11]In Fortin's opinion, Canada's average inflation rate since 1991 of around 1½ percent effectively translates into zero inflation, given a potential upward bias in the change in the consumer price index of as much as 2 percentage points. The Bank of Canada estimates the upward bias in the CPI measure of inflation to be only about ½ percentage point.

[12]The *uncovered interest-parity condition* says that if capital is perfectly mobile between any two countries and economic agents are risk neutral, a nominal interest rate at home must equal the equivalent nominal interest rate abroad plus the expected rate of appreciation of the foreign currency. This is an *ex ante* relationship.

[13]*Relative PPP* says that changes in nominal bilateral exchange rates will tend to reflect inflation differentials. There is little, if any, empirical evidence that exchange rates are determined by relative PPP in the short to medium run.

[14]Empirical evidence suggests that capital is relatively immobile internationally.

[15]This shift in wealth would be a zero-sum transfer from the perspective of the economy as a whole if all debt were held domestically, however, a substantial amount of Canadian-dollar

12.   While the essential factors to be considered in reaching a judgement on adopting a lower inflation target (or moving to price stability) have been reviewed here, it is not possible from the available economic literature to draw firm conclusions on the desirability of such a policy choice. Both empirical evidence and theoretical considerations indicate that substantial benefits will accrue when moving from high or moderate to low levels of inflation. It is difficult, however, to find statistically significant evidence of a positive growth effect when inflation is reduced from low to lower rates, although this may in part reflect the lack of experience with very low rates of inflation. Nevertheless, reducing the rate of inflation further to a very low level would help to mitigate distortions caused by the lack of full indexation in the tax system. It may also help to reduce relative price uncertainty, thereby further improving resource allocation. How these benefits might stack up against the potential costs of further inflation reduction appear to depend principally on the extent and duration of nominal rigidities in the economy. Output and employment losses stemming from further disinflation could fall some-where along a spectrum from being permanent (as argued by Akerlof, Dickens, and Perry) to being short-lived, vanishing once economic agents become assimilated to a new lower inflation environment. If the output and employment losses are relatively long-lived, the present value of the costs arising from the move from a low to a lower inflation rate could exceed the present value of the benefits that would accrue from further inflation reduction. From a political economy perspective, the time that it might take the benefits to offset the initial losses from a policy of further disinflation may also be a determining factor in deciding on such a policy action; the longer the expected "payback period", the less likely the decision would be made to further disinflate.

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[15](...continued)
denominated fixed income debt is held by foreigners.

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IV. INFLATION VERSUS PRICE-LEVEL TARGETING[1]

1.   The move in recent years by a number of countries to using inflation targets in the conduct of monetary policy has also revived interest in the idea of targeting the price level as an alternative policy approach.[2] The substantive macroeconomic differences between an inflation target and a price level target result from the fact that neither target can be achieved with certainty.[3] While inflation will depend on the stance of monetary policy, it is also influenced by a variety of factors that are beyond the control of policymakers, including supply shocks such as commodity price changes, unanticipated shifts in the demand for money, and imperfect monetary control. Collectively, these factors cause randomness in the period-to-period outcomes for prices and inflation, and this fundamentally changes the nature of these two objectives because of what happens when the policy target is missed. If an inflation target is missed its effect on the price level is treated as a bygone, and the targeted inflation rate for the next period remains unchanged. When a price-level target is missed, policy is adjusted in the next period (or periods) to bring the price level back in line with its targeted path.

2.   Because of the potential for base drift, targeting the inflation rate results in uncertainty about the future price level that increases with the length of the planning horizon. Thus, even though economic agents may believe that on average the central bank will hit its inflation target, that belief is consistent with a relatively wide range of possible outcomes for the future price level.[4] A price-level target that is subject to the same degree of randomness, on the other hand, produces less price-level uncertainty since the authorities will systematically correct for past inflation errors (Chart 1); higher-than-targeted inflation outcomes will be followed by a lower target for inflation in subsequent periods (or vice versa) to bring the price level back in line with its targeted path. However, the greater price-level uncertainty associated with

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[1]Prepared by Michael Leidy.

[2]See, for example, Svensson (1996).

[3]Price-level targeting need not involve a stable price level (a zero inflation rate) as its objective. Instead, provision could be made for a predetermined rate of increase in the price level over time (a nonzero inflation rate).

[4]Chart 1 shows the results of four simulations in which the targeted inflation rate is set at 0.75 percent per period, and the inflation outcome in each period deviates from the target reflecting a random disturbance that is assumed normal with a mean of zero and a standard deviation of 0.25 percent. This implies that a 95 percent confidence interval for the inflation outcome in each period ranges from 0.25 percent to 1.25 percent.

inflation targeting generally is not considered to have significant adverse effects on economic decision making over the long term.[5]

3.   Although a price-level targeting regime offers reduced uncertainty about the future price level over longer planning horizons, it requires the monetary authorities to vary the stance of monetary policy (and the inflation rate that is targeted in any particular period) from period to period, depending on whether the price-level target was over- or undershot in previous periods. Indeed, in the special case of a fixed price-level target, the monetary authorities would need to aim for deflation on average half the time. The need for periodic deflation is often cited by critics of price-level targeting as a critical factor in favor of the inflation-targeting approach.[6] However, as indicated above, a price-level targeting regime need not necessarily target a fixed price level. The price level can be allowed to rise over time, and in such a price-level targeting regime, there would be fewer instances where deflation was needed; if the targeted price-level path is sufficiently steep (i.e., the implied inflation objective is sufficiently high) and/or the variance of inflation shocks is sufficiently low, very few periods of actual deflation need occur (Table 1).[7]

4.   Apart from the possibility of having to generate periodic deflation, a prominent concern in the literature regarding the use of price-level targeting is that it may tend to result in greater variability of real output, with attendant economic costs associated with frequent adjustments in goods and factor markets. In this view, the increased variability in the stance of monetary policy under price-level targeting results in greater inflation variance (as revealed, for example, in the simulation results displayed in Table 1) and, via nominal rigidities, greater variability in output and employment.

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[5]McCallum (1997, pp. 18–19), for example, points out that with a zero inflation target and a price level that behaves as a random walk with the error component's standard deviation at a quarterly frequency set at 0.45 percent (which he identifies as approximating the one-step ahead forecast errors for the United States from 1954 to 1991), a 95 percent confidence interval for the (log) price level in 20 years would be plus or minus 8 percent.

[6]See, for example, Fischer's (1994, p. 282) observation that, "... there are good reasons not to target negative inflation. Price-level targeting is thus a bad idea, one that would add unnecessary short-term fluctuations to the economy." However, the paper subsequently notes (p. 284) that a price-level target need not imply zero inflation.

[7]In the four simulations described in footnote 4, in no period would it have been necessary to pursue a deflationary monetary policy in order to achieve the predetermined price level for the next period. Over 1,600 observations, the per-period targeted inflation ranged from a low of 0.05 percent to a high of 1.56 percent. The corresponding per period inflation outcome (which reflects the targeted inflation and the random shock) did, however, produce 20 periods (1.25 percent of the total realizations) of deflation. Under the same stochastic properties, outcomes under an inflation targeting regime resulted in just one realization of deflation.

5.   However, some additional considerations serve to mitigate the concern about greater output variability with a price-level target. While an inflation targeting regime may produce less variance in inflation outcomes per period (say quarterly) than a price-level targeting regime, the variance of the average inflation rate over more than one period (say the annual average) tends to be lower under price-level targeting (see Table 1).[8] Given the long and variable lags associated with the effects of monetary policy, the possible existence of employment persistence in labor markets, and the complexity of expectations formation, it is not at all clear whether a greater variance in single-period inflation rates (price-level targeting), or a greater variance in the average inflation rate over more than one period (inflation targeting) will produce greater real output instability.

6.   In a rational expectations framework without nominal rigidities, it also is not inflation variance *per se* that generates variability in output and employment, but *unanticipated* changes in inflation (or the price level). Under an identical stochastic structure for inflation shocks, the unanticipated portion of the variance of an inflation-rate series is identical for a price-level or an inflation targeting regime. Consequently, the full amount of the increased inflation variance under price-level targeting would reflect predictable changes in the stance of policy, and this predictability would tend to mitigate the effects of inflation variance on real output and employment. Black, Macklem, and Rose (1997), for example, examined the role of expectations formation and find that when inflation expectations are given sufficient time to adjust to a price-level target rule, it is possible (although not guaranteed) to reduce real output variability relative to an inflation targeting rule.

7.   In addition, the literature is beginning to cast doubt on the proposition that inflation targeting as implemented in practice will produce lower single-period inflation variance. That proposition relies on the use of a mechanistic (exogenous) monetary policy rule. Svensson (1996) and Gavin and Stockman (1991) have evaluated price-level versus inflation targeting regimes when central bank behavior is endogenous, in the sense that the bank's decisions depend on the goals assigned by society (e.g., price-level versus inflation targeting), the institutional structure (including penalty rules for deviations), and the personal preferences of central bankers. Both papers point out that central bankers may have incentives to deviate from a designated inflation or price-level target. In Svensson's model, the inflation outcome under inflation targeting depends on the *level* of the unemployment rate, whereas it depends on the *change* in the unemployment rate under price-level targeting. If the unemployment rate has a moderate degree of persistence (firms are slow to lay off workers in the face of a

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[8]The reason is that while the inflation targeting regime ignores under and overshooting of targeted inflation rates, a price-level targeting regime corrects for over and undershooting and, in so doing, tends on average to be closer to the targeted trend increase over a series of periods. In technical terms, with an identical stochastic structure for serially independent inflation shocks, the inflation outcome in the case of price-level targeting will display negative serial correlation as a result of the policy rule, whereas the inflation outcome under inflation targeting will be serially uncorrelated.

negative demand shock), the *change* in the unemployment rate is less variable than the *level*, and thus, inflation variability will be *greater* under inflation targeting than under price-level targeting. A price-level targeting regime is unambiguously superior in Svensson's framework because it produces no price-level drift and because it results in lower inflation variability than an inflation-targeting regime. In a similar vein, Gavin and Stockman develop a model of central bank behavior in which inflation outcomes are observable but inflation (or price-level) targets are not. They show that under a reasonable penalty structure a central bank that is assigned a price-level target will have a greater incentive to adhere to that target than one assigned an inflation target. In their model, policymakers have an increased incentive under inflation targeting to blame overshooting on random events and to maintain an inflation bias.

8.   In sum, the superiority of a policy of inflation versus price-level targeting hinges largely on whether a price-level target will tend to induce greater macroeconomic instability. This issue remains unsettled. Until recently, the dominant view in the literature was that greater price-level uncertainty over distant planning horizons associated with inflation target-ing would impose relatively smaller social costs compared with the costs potentially arising from greater variability in output and employment associated with price-level targeting. The latter proposition, however, has been challenged on a number of grounds. If the expectations of economic agents are formed utilizing information about the nature of the monetary-policy regime, the increased variability in the stance of monetary policy associated with price-level targeting need not imply a concomitant increase in macroeconomic instability. The same conclusion can be reached if the actions of central bankers depend on the monetary policy rule assigned to the central bank, the institutional structure for implementing the policy rule, and the preferences of the central bankers. In that case, a price-level targeting regime need not produce increased single-period inflation variance and thus, regardless of assumptions about expectations, need not produce increased output and employment variability.

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Table 1. Price-Level Versus Inflation Targeting: Simulation Results

(In percent)

Descriptive Statistics	Inflation Targeting	Price-Level Targeting	
A. Simulation 1			
Mean π outcome	0.74	0.75	
SD π outcome	0.25	0.34	
Min quarterly π outcome (target)	-0.05	-0.25	(0.07)
Max quarterly π outcome (target)	1.43	1.89	(1.56)
Mean 4-quarter annualized moving average π	2.98	3.04	
Std Dev of mean 4-quarter annualized moving average π	0.54	0.35	
B. Simulation 2			
Mean π outcome	0.76	0.75	
SD π outcome	0.24	0.32	
Min quarterly π outcome (target)	0.09	-0.10	(0.08)
Max quarterly π outcome (target)	1.42	1.66	(1.42)
Mean 4-quarter annualized moving average π	3.07	3.04	
Std Dev of mean 4-quarter annualized moving average π	0.51	0.35	
C. Simulation 3			
Mean π outcome	0.74	0.75	
SD π outcome	0.24	0.36	
Min quarterly π outcome (target)	0.07	-0.33	(0.05)
Max quarterly π outcome (target)	1.45	1.93	(1.43)
Mean 4-quarter annualized moving average π	3.00	3.04	
Std Dev of mean 4-quarter annualized moving average π	0.49	0.37	
D. Simulation 4			
Mean π outcome	0.75	0.75	
SD π outcome	0.24	0.35	
Min quarterly π outcome (target)	0.12	-0.34	(0.10)
Max quarterly π outcome (target)	1.41	1.85	(1.38)
Mean 4-quarter annualized moving average π	3.03	3.04	
Std Dev of mean 4-quarter annualized moving average π	0.46	0.36	

Simulations include 400 observations based on a per-period (e.g., quarterly) inflation target of 0.75 per-cent and an inflation shock that is independent and identically distributed as normal with mean zero and standard deviation 0.25 percent.

CHART 1

CANADA

PRICE-LEVEL VARIATION UNDER INFLATION VS. PRICE-LEVEL TARGETING

(Percent deviation of price level from non-stochastic case)
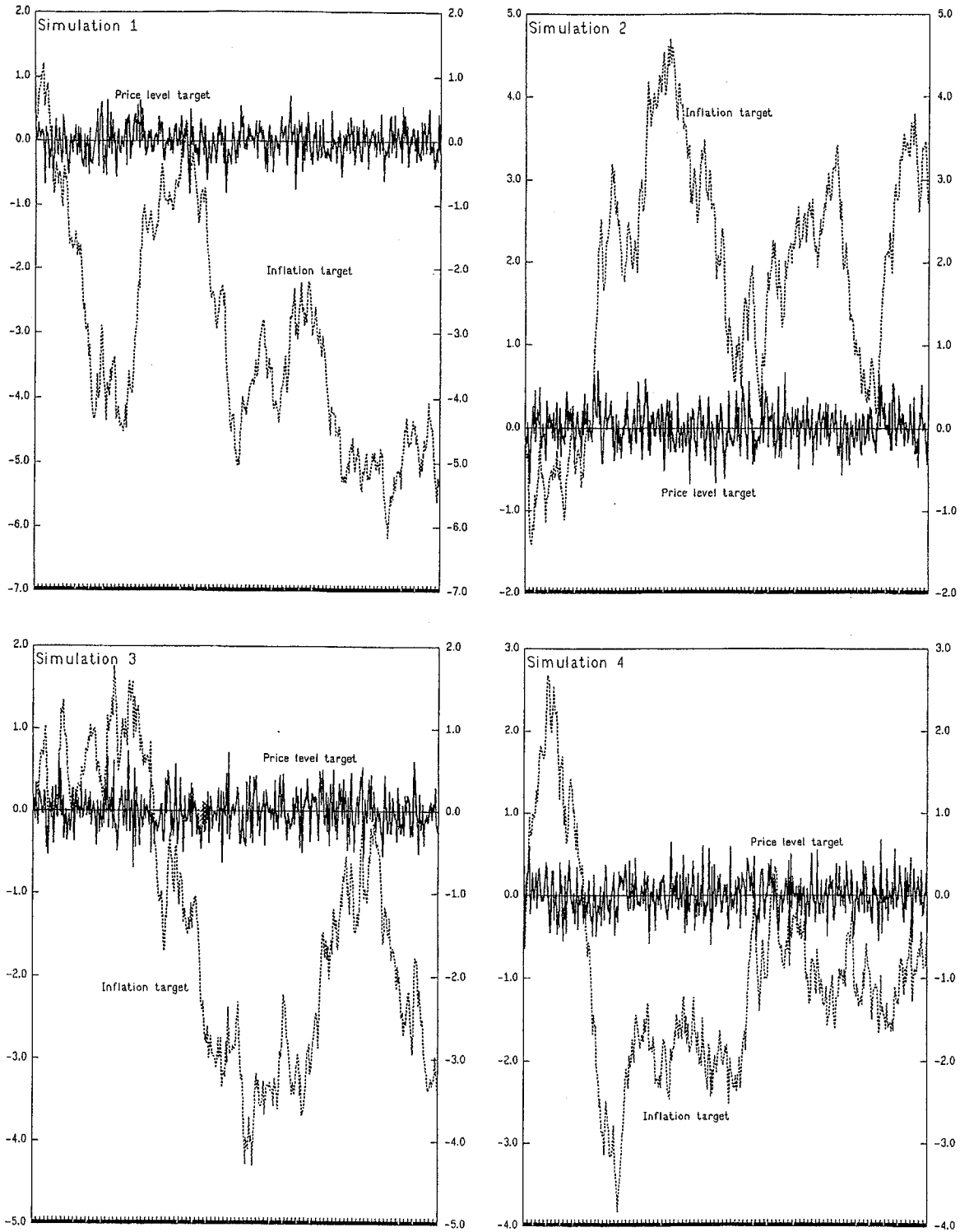
Source: Fund staff simulations.

V. MACROECONOMIC EFFECTS OF GOVERNMENT DEBT IN CANADA[1]

1.   In anticipation that the budget of the federal government will be balanced within the next year, the focus of the fiscal policy debate in Canada has shifted toward the extent to which the expected "fiscal dividend"—the surplus that would accrue under current policies—should be used to pay down the public debt, to lower taxes, or to increase program spending. Economic theory does not provide a clear guide on the "optimal" level of public debt. Paying down government debt in itself produces interest savings for the government. It also reduces interest rates as the government's demand on savings declines and the risk premium on its debt falls. Lower interest rates, in turn, crowd in investment and raise national income. However, the pace at which debt reduction takes place can have important transitional effects on output and employment. Moreover, there is an opportunity cost involved in running budget surpluses to reduce debt that has to be addressed, reflecting a question of whether resources used for debt reduction might produce higher returns to the economy if used instead to lower taxes or increase spending on public goods.

2.   To illustrate potential trade-offs, an analytical framework drawing on MULTIMOD is used to assess the effects of alternative paths for the fiscal balance and associated debt-to-GDP ratios. The framework captures the effects of debt reduction on investment and income. Assessing the potential benefits of alternative uses of the fiscal dividend would require a detailed analysis of specific possibilities, and is not attempted here.

3.   The analytical framework focuses on supply-side relationships between savings, investment, and output. It does not directly examine the effects of fiscal policy on short-term demand because in the kind of longer-term analysis presented here, the properties of the model are such that the economy would tend to move back to its potential level of output over time. It is worth noting, however, that the magnitudes of the fiscal surpluses that are simulated in this paper would not be expected to have a significant effect on output growth in the short run. Since economies do not typically operate at potential output for extended periods of time, the framework was adjusted so that the level of GDP was maintained over the long term at 1 percent below potential, which is slightly larger than the historical average of the output gap in Canada.

4.   The framework is based on the block of equations for Canada in MULTIMOD. Output is produced using a Cobb-Douglas production function with capital and labor as inputs. The labor supply is taken from long-term population projections that show a significant aging of the population in the first half of the twenty-first century.[2] Hence, over time, labor force growth is expected to slow, and growth in potential output would decline as a result. The capital stock evolves according to Tobin's Q theory, in which new investment depends

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[1]Prepared by Phillip Swagel, Brenda González-Hermosillo, and Yutong Li.

[2]Demographic changes in Canada are discussed in Section VI.

on the relationship between the book value of capital and its replacement cost, with the additional assumption that it takes time to build new productive capacity. This assumption slows adjustment in the capital stock, which smooths the response of output to changes in interest rates.

5.   Since Canada is a small, open economy with respect to global financial markets, the long-term interest rate in Canada is modeled as being equal to the long-term interest rate in the United States plus a premium that reflects risks specific to Canada. This premium vis-à-vis the United States is specified as reflecting differences in output growth, fiscal deficits, and the magnitude of the two countries' respective government debt-to-GDP ratios. Econometric analysis using data for the period 1965 to 1996 suggests that, ceteris paribus, a 1 percentage point fall in the ratio of government debt to GDP in Canada leads to a decline in long-term interest rates in Canada of between 5 and 10 basis points, with the smaller figures occurring for the average of the entire 32-year period, and larger responses found using data for the period after 1973. A response of 5 basis points is used in the simulations, since it is expected that the risk premium on Canadian debt will respond by less in the current and future environment of low inflation than in the more recent past when the specter of higher inflation made market participants particularly wary of, and quick to react to, adverse fiscal developments. Use of this relatively small response of interest rates may be considered as providing a lower bound estimate of the gains from debt reduction.

6.   Four alternative scenarios were developed for the federal government budget over the long term. In the current policy scenario, the federal government is assumed to broadly continue with current tax and expenditure policies, with the additional assumptions that expenditures affected by demographic shifts reflect the effects of these changes, that other program spending remains constant in real terms, and that the employment insurance premium is lowered in steps to a level where receipts are roughly in balance with benefit payments. On this basis, the budget surplus would grow sharply over time, and the federal government's debt would be eliminated by 2011/12 (Charts 1 and 2). The balanced budget scenario assumes that the federal budget is balanced in 1998/99 and that balance is maintained thereafter. Even on this basis, the government debt-to-GDP ratio would decline from 71 percent in 1996/97 to slightly less than 40 percent by 2012/13.

7.   Two additional scenarios were developed based on the assumption that current poli-cies would be generally maintained over the next three years, yielding budget surpluses of around 1 per-cent of GDP a year, and thereafter surpluses would be run that were sufficient to reduce the debt-to-GDP ratio to 30 percent and to 20 percent by 2012/13, respectively. A budget surplus of around ¾ percent of GDP a year over the period 2001–2013 would be required to bring the federal debt-to-GDP ratio down to 30 percent by 2013 and a surplus of 1½ percent of GDP a year over this period would be needed to reduce the debt-to-GDP to 20 percent by 2013. After 2012/2013, the budget is assumed to be maintained in balance in both of these scenarios.

8.   The path of federal government spending and debt from the balanced budget scenario was used to establish a baseline projection in the analytical framework.[3] This deficit and debt profile, together with assumptions for the government deficit and debt in the United States, determines the differential between long-term interest rates in the United States and Canada.[4] This interest rate feeds into the equations for investment and the production function to determine the capital stock and output and, in turn, future interest obligations and resources available for discretionary fiscal actions.

9.   Alternative paths for the deficit and the debt were then derived such that the ratio of federal government debt to GDP would decline by 2013 to 30 percent and 20 percent, respectively. As would be expected under both of these scenarios, long-term interest rates fall more rapidly and to a lower level than in the balanced budget scenario (Chart 3). Consequently, by 2013, the level of GDP is permanently higher by around ½ percent in the 30 percent debt-to-GDP ratio scenario and by 1¼ percent in the 20 percent debt-to-GDP ratio scenario (Chart 4).[5] As a result of the influences of the reduction in government debt, the decline in interest rates, and the rise in national income, the federal government's interest payments over time take up a substantially smaller portion of its total revenues in the scenarios where the debt-to-GDP ratio declines to 30 and 20 percent than in the balanced budget scenario (Chart 5).

10.   While the scenarios presented here do not provide a definitive answer regarding the optimal fiscal policy path for Canada, they do shed some light on possible trade-offs. With the decline in interest rates and the higher level of GDP, the primary budget surpluses (which provide an indication of fiscal effort) needed to achieve the debt-to-GDP ratios of 30 and 20 percent diminish rapidly over time (see Chart 2) suggesting that ample scope would be provided in time to use fiscal dividends for purposes other than debt reduction. Thus, a policy

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[3]Long-term projections for the rest of the general government sector were taken in the case of provincial governments from Scenario 1 in Section VI, and in the case of the Canada Pension Plan/Quebec Pension Plan from estimates prepared by the Office of the Superintendent of Financial Institutions (1997).

[4]Inflation is assumed to fall to 2 percent in the United States by 2005 (compared with 1 percent in Canada); the U.S. federal government budget is assumed to be balanced in 2002 and to remain in balance thereafter; and real GDP growth in the United States is assumed to slow from 2½ percent in 1998 to about 2¼ percent in 2015. These assumptions lead to a gradual decline in the U.S. debt to GDP, from nearly 52 percent in 1997 to around 25 percent in 2014.

[5]The effects on output arising from these more ambitious debt-reduction paths are probably understated. As noted above, the framework incorporates a conservative estimate of the effect of debt reduction on interest rate premia. It also does not include the possible effect of improved confidence on investment and saving and any positive response of labor supply or productivity growth to increased investment and saving.

of running small budget surpluses over the medium term would entail a relatively small sacrifice relative to pursuing a balanced budget, but it would provide a lasting benefit to the economy in terms of the economy's ability to reach a higher level of GDP. Moreover, increased resources would be made available to the public sector over time, which could be used to reduce taxes or increase program spending.

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CANADA

FEDERAL GOVERNMENT NET DEBT

(Public accounts basis, in percent of GDP)

Fiscal year
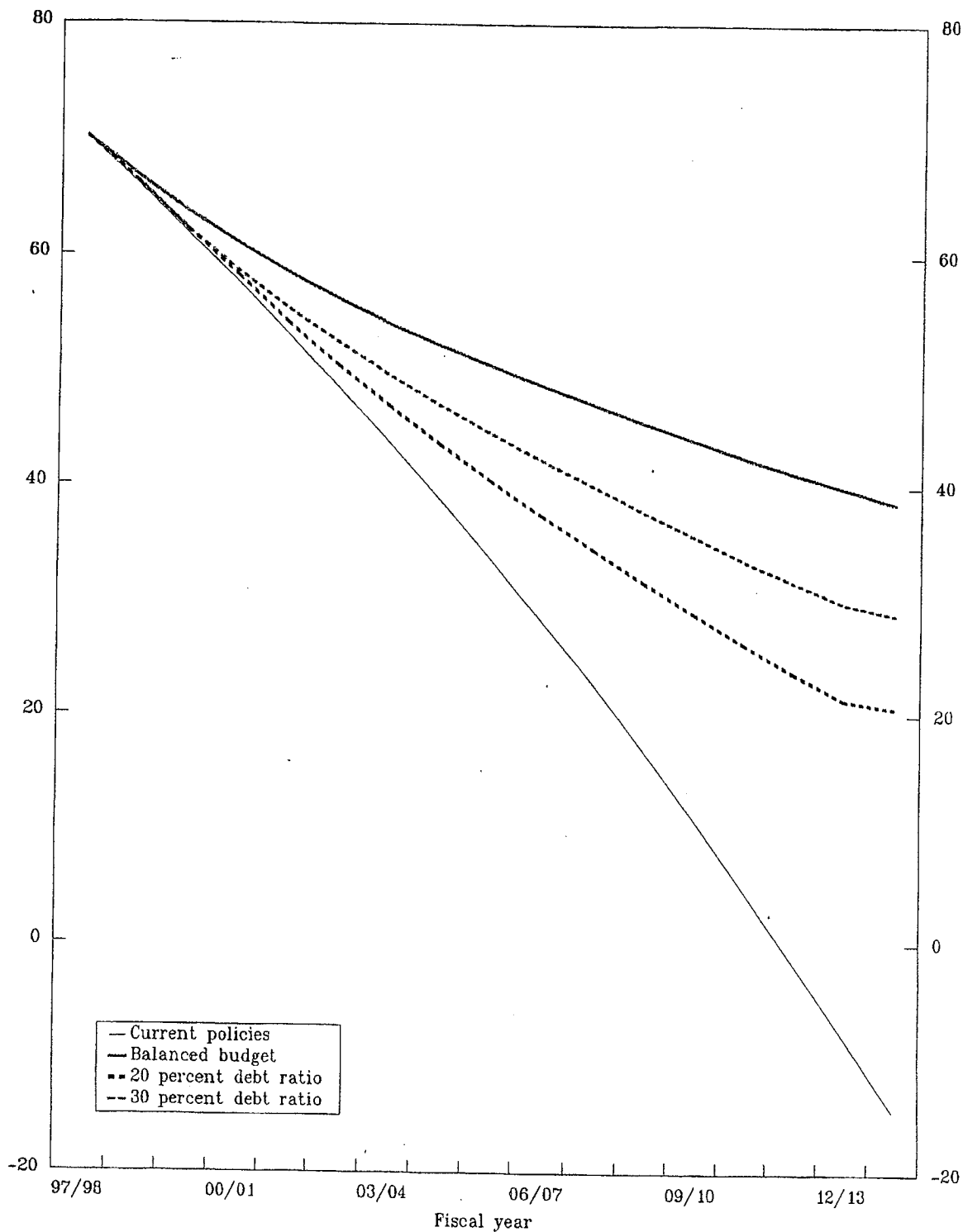
Source: Fund staff estimates.

CANADA

FEDERAL GOVERNMENT FISCAL BALANCES

(Public accounts basis, in percent of GDP)
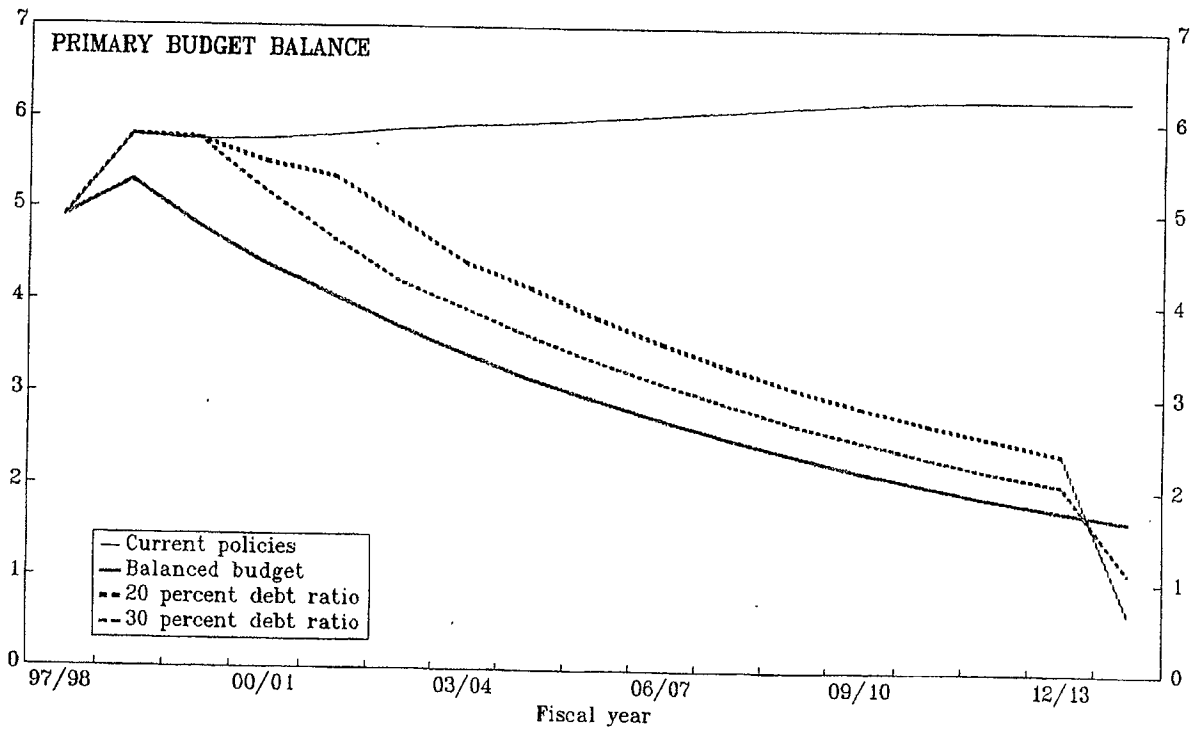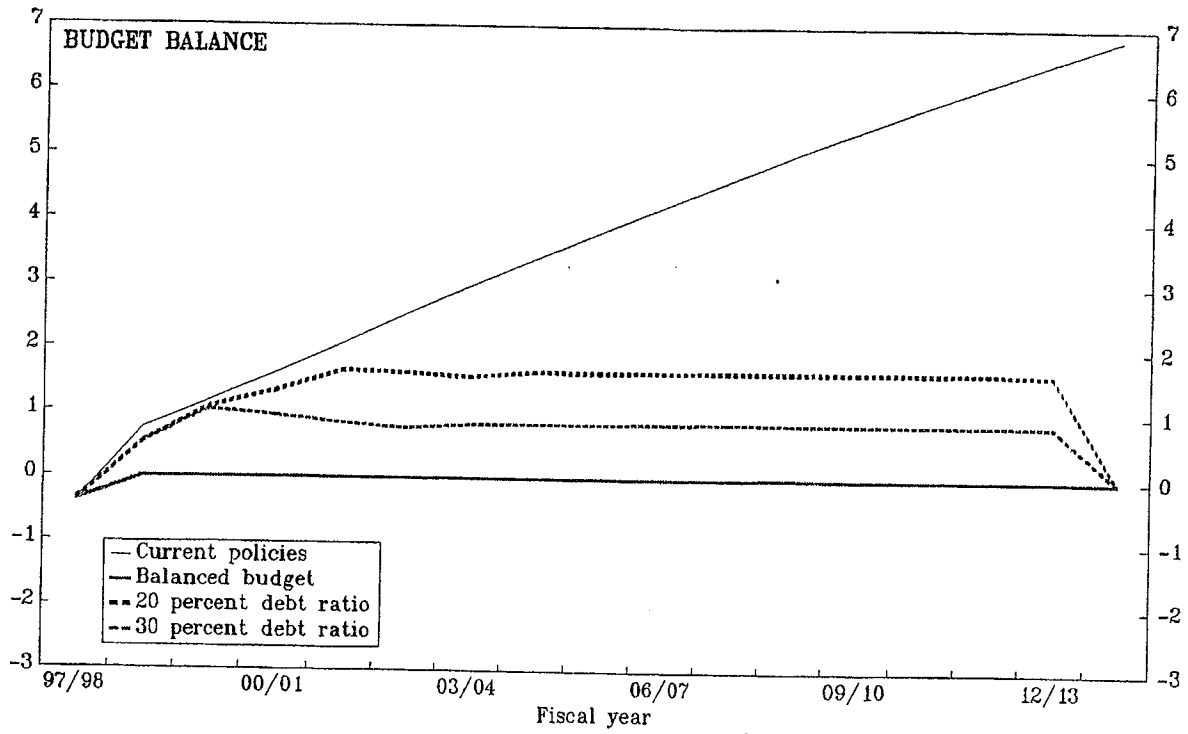
Source: Fund staff estimates.

CHART 3

CANADA
LONG-TERM INTEREST RATES
(In percent)

Source: Fund staff estimates.

CHART 4
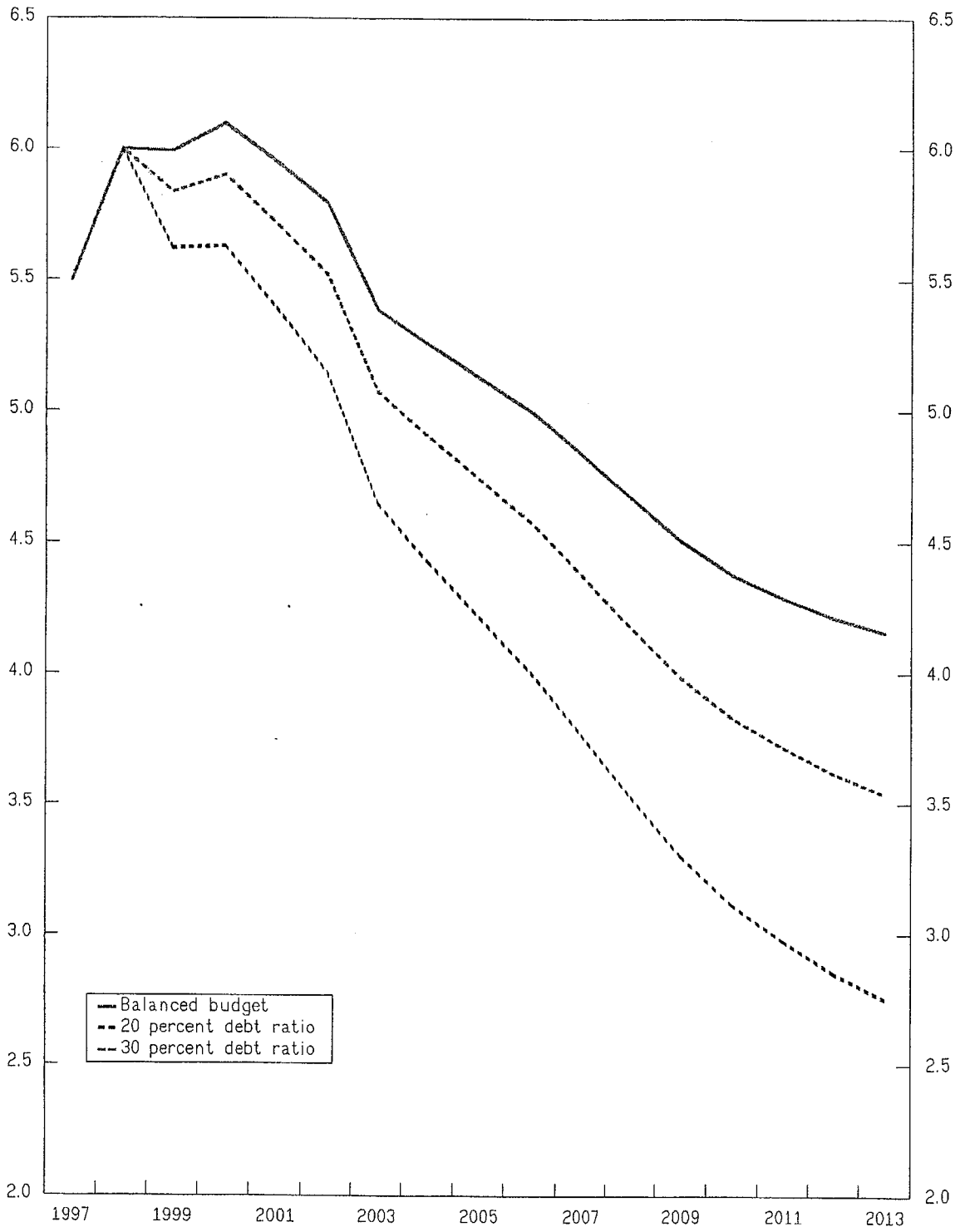
CANADA

INCREASE IN GDP 1/
(In billions of 1997 Canadian dollars)

Legend:
- ▪▪ 20 percent debt ratio
- ▬▬ 30 percent debt ratio
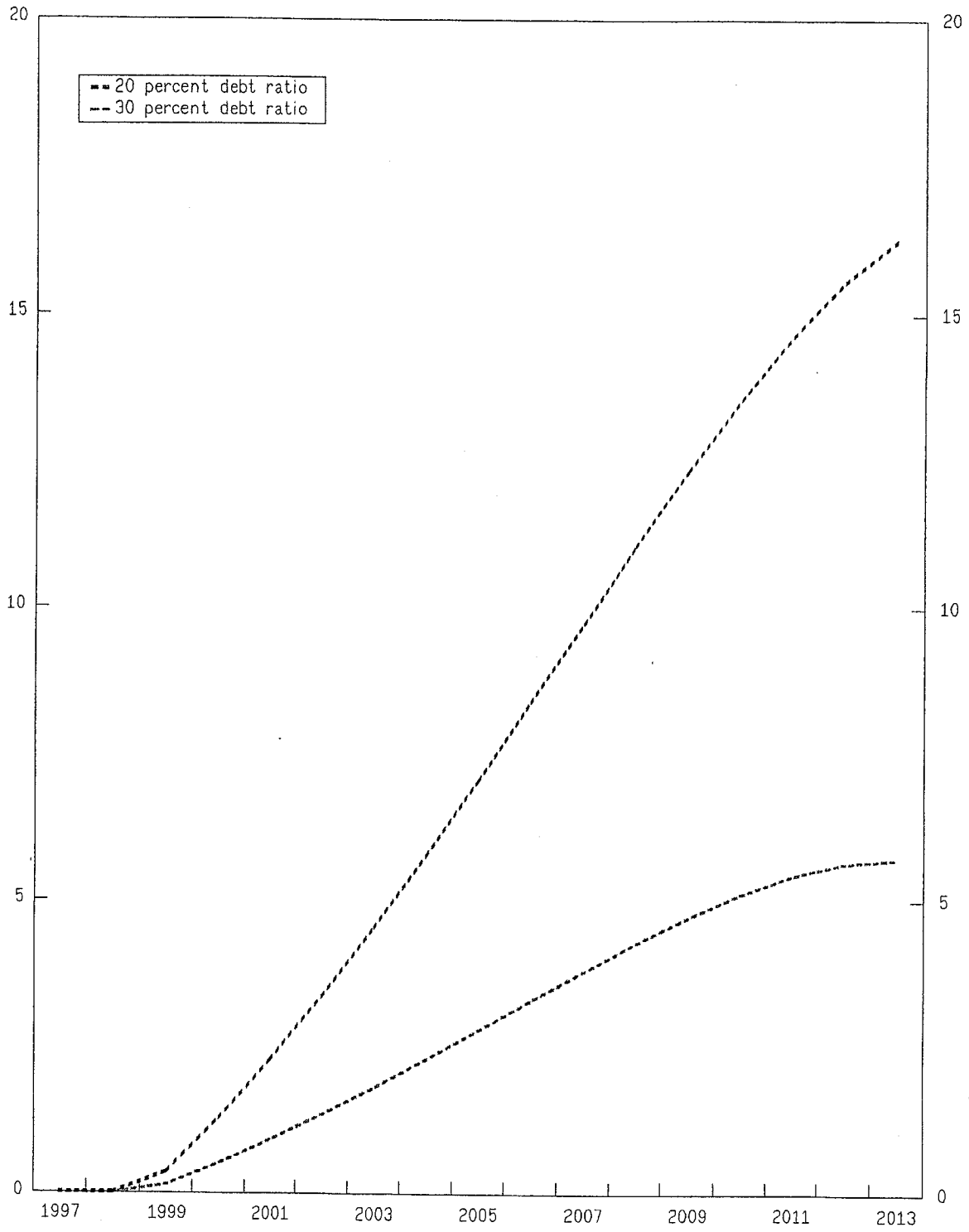
Source: Fund staff estimates.

1/ Relative to the balanced budget baseline.

CANADA

FEDERAL GOVERNMENT INTEREST PAYMENTS

(Public accounts basis, in percent of total revenues)

Balanced budget
20 percent debt ratio
30 percent debt ratio

Fiscal year
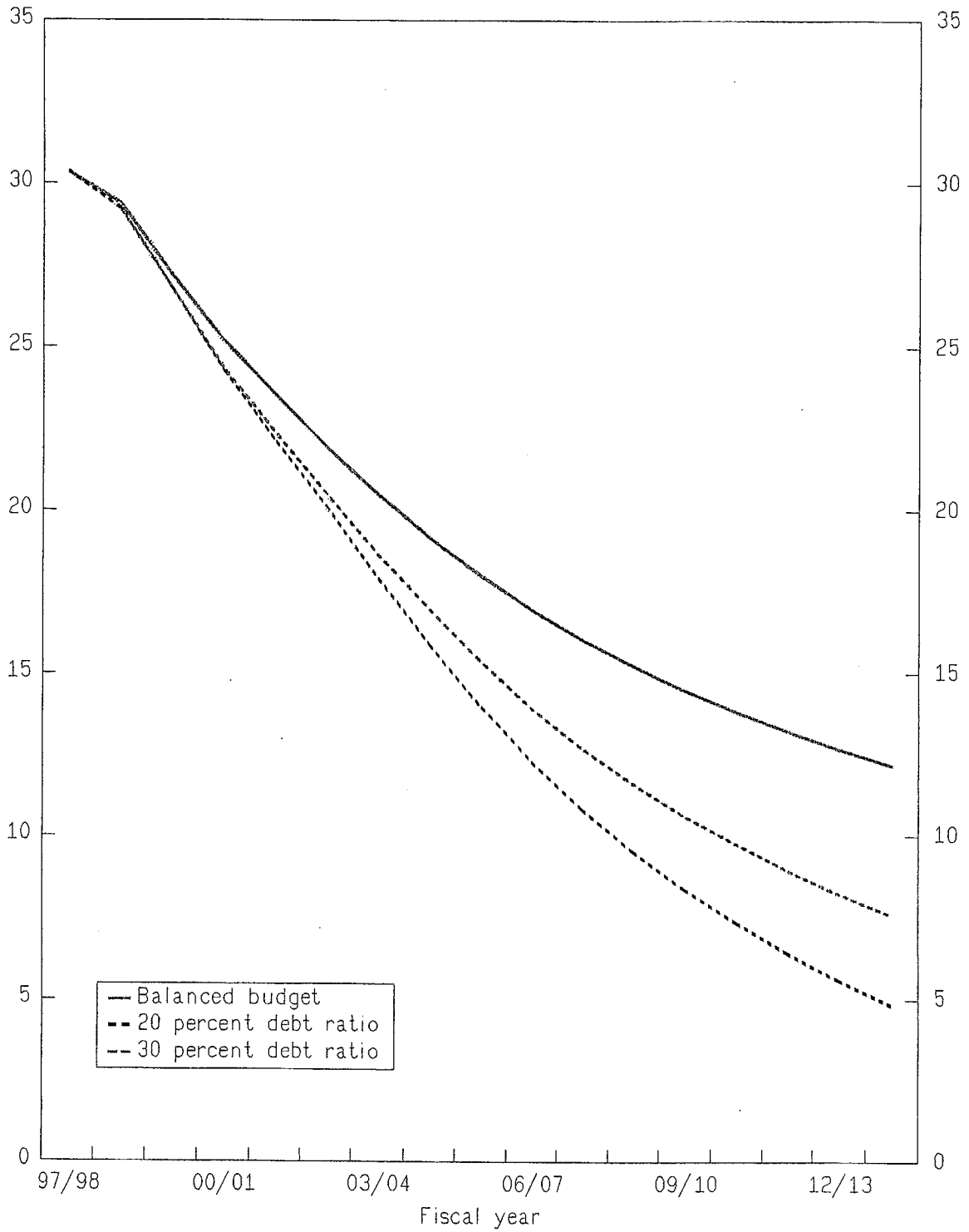
Source: Fund staff estimates.

VI. HEALTH CARE, DEMOGRAPHICS, AND FISCAL SUSTAINABILITY[1]

1.   Official projections of a more slowly growing and more rapidly aging population in Canada through the first half of the next century suggest that some demographically sensitive expenditure programs, most notably health care, will absorb a growing proportion of available resources (Chart 1).[2] In Canada, 70 percent of health care costs are publicly financed. Provincial governments, partially supported by transfer payments from the federal government, are primarily responsible for the funding of hospitals, physicians, and community care programs, as well as related research and education programs. Health care expenditure at present accounts for about 35 percent of total provincial government spending.

2.   The provinces have initiated measures in recent years to control health care costs more strictly and to restructure the health care industry to achieve greater efficiency in the delivery of services. As a result, total real health expenditures have actually declined since 1992. Nevertheless, the prospective demographic changes present a major challenge to the system's long-term viability. In addition, the effects of these demographic changes on potential economic growth, and therefore on the revenue of the public sector, complicate the long-term financing of health expenditures.

3.   To illustrate the long-term demographic pressures on health care expenditures and the resulting implications for provincial government finances, several scenarios are developed here. These scenarios reflect different assumptions regarding relative inflation in health care and trend changes in real health expenditures per capita. The results of these long-term simulations are highly conditional on the underlying assumptions, but they nevertheless illustrate the broad parameters of the problems and issues that policy makers may face.

4.   The results of the various simulations for total health expenditures are presented in Table 1. The impact of the projected demographic changes on total health expenditures is illustrated in the first scenario where long-term GDP growth is held constant at 2½ percent annually, real per capita health expenditures are constant, and the rate of increase in the health care price index (at 2 percent annually) is held to 1 percentage point above the overall

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[1]Prepared by Sean O'Connor, Brenda González-Hermosillo, Yutong Li, and Jeffrey Cole.

[2] There is a range of official projections for population growth and its composition because of uncertainty over fertility and mortality rates. The projections used in the simulations presented here are from the Chief Actuary in the Office of the Superintendent of Financial Institutions. They correspond closely to medium-growth projections from Statistics Canada. The projections generally reflect the continuation of current trends in birth rates, mortality, and immigration.

inflation rate.[3] In this scenario, the ratio of health expenditures to GDP declines over the long term from its current level of around 9 percent of GDP to about 5½ percent of GDP by 2070; however, the ratio is higher than it otherwise would be owing to the projected change in the age composition of the population. The relative size of the oldest population cohort (age 65 and over) grows rapidly over the medium term. Specifically, the "baby-boom" generation—those born between 1945 and 1965—begins to retire around 2010, with peak retirements for this generation occurring around 2030. By 2050, the "baby-boom echo"—the children of the baby boomers, those born between 1975 and the present—begins to retire, which maintains the relative size of the senior cohort in the population at a fairly constant rate between 2030 and 2070. Since real expenditures per capita for those aged 65 and over are about three times the average for all age cohorts, the demographic changes alone raise the ratio of health expenditures to GDP by 1¾ percentage points in 2030.

5.   If the differential in the inflation rate for health care costs relative to the GDP deflator were to return to its historic average of 2 percentage points (as illustrated in the second scenario), the ratio of health expenditures to GDP would rise to nearly 11½ percent by 2030, about 3 percentage points higher than in the first scenario. The ratio would decline slightly thereafter, but by 2070 it would be 5½ percentage points higher than in the first scenario.

6.   Health care costs may also be affected over time by innovations in medical technology, although the net effect of such innovations is not clear. While the cost of treating some medical conditions may come down over time as a result of such innovations, new treatment regimes introduced to deal with medical conditions that previously were not effectively treatable could possibly boost health care costs. In addition, the needs of the aging population may require some costly re-tooling of existing health care facilities and systems. The effects of changes in medical technology and of restructuring the health care system should be reflected in changes in real per capita medical expenditures. To capture the potential effects of medical care innovations on health care spending, real per capita expenditures by age group were allowed to increase in the third scenario at the same rate as between 1984 and 1990.[4] The impact on health expenditures of this assumption is similar to that of changing the assumption regarding relative inflation in medical costs.

7.   Projected demographic changes will also contribute to a slowdown in labor force growth. Slower labor force growth in turn may lead to slower growth in the economy's productive potential over time, especially if trend growth in total factor productivity is

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[3] This differential is about one-half the average difference between the annual rates of change in the CPI health care index and the overall GDP price deflator over the 1981–94 period.

[4] The period 1984–90 was chosen because no major changes in the coverage of health care programs were introduced during this period. Of the four population age groups considered, the upward trend in real per capita expenditures was most pronounced for the senior group (aged 65 and over).

assumed to be largely unchanged over the long term. As illustrated in the third scenario, such a slowdown in economic growth would significantly raise the portion of GDP required to meet health expenditures. The fourth scenario shows the effects on health expenditures of higher relative medical care inflation and rising real per capita expenditures assuming first a constant and then a declining rate of growth in real GDP. The scenario with declining real GDP growth illustrates how rapidly health expenditures as a ratio to GDP could grow.

8.   It is useful to note that the provincial governments moved decisively to restructure their health care systems in the early 1990s when the ratio of health expenditures to GDP rose to around 10 percent.[5] Looking ahead, only under the relatively favorable assumptions in the first scenario is this ratio consistently below 10 percent. In all of the others, it is exceeded by a growing margin as the key assumptions underlying the scenarios become less favorable (Chart 2). Thus, with less favorable conditions, questions may be raised about the long-term sustainability of the health care system.

9.   Adding to the questions about the sustainability of the health care system are the implications for the finances of the provincial governments of the alternative long-term scenarios for health expenditures (Table 2). In the estimates in Table 2, it is assumed that the private sector continues to finance an increasing share of total health expenditures as it has in the past. It is also assumed that the federal government continues to finance some of the provincial expenditures on health care through transfer payments, but with the share of health expenditures financed by federal transfers declining in most scenarios except the first one.

10.   In the first scenario assessing provincial government finances, it is assumed that the provinces balance their budgets by the end of the current century. Subsequently, they use their budget surpluses (which would occur on a current policy basis and with the favorable conditions assumed in the first health expenditure scenario) to reduce their aggregate debt-to-GDP ratio to around 10 percent by 2015 (a level roughly similar to where this ratio stood in the 1980s before provincial debt rose sharply). Thereafter, taxes are assumed to be cut as required to keep the debt-to-GDP ratio from falling below 10 percent, while no fiscal policy action is assumed to be taken as the provincial governments' finances slip back into deficit in the later part of the projection period, since the debt-to-GDP ratio remains below 16 percent, which was its average level in the late 1980s. All of the other scenarios assume the same tax polices as in the first scenario. However, with substantially higher health care expenditures in these scenarios, provincial budget deficits rise sharply over time, and the debt-to-GDP ratio reaches unprecedented levels in the absence of policy actions.

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[5]The 10 percent figure is used here as a simple benchmark for flagging potential problems. In the early 1990s, provincial governments faced general problems with persistent deficits, mounting debt loads, and high debt service costs all of which combined led them to embark on budget reduction programs. Given its relative size and rate of increase, health care expenditures received considerable attention in the formulation of plans to reduce spending.

11.   The results of the various scenarios suggest that, instead of using their expected fiscal dividend to reduce taxes, the provinces will need to consider using their prospective budget surpluses over the medium term to achieve more ambitious debt reduction (and maybe even to accumulate net financial assets on their own budgetary accounts) to meet the potentially large future health care obligations over the longer term illustrated in the other scenarios (Chart 3).[6] Such a policy approach would more equitably spread the cost of financing future health expenditures across generations. Otherwise, the pattern of tax changes implied by the more costly health care simulations would involve an intergenerational transfer that could benefit the baby boomers (and, to a lesser extent, the baby-boom echo). The boomers would enjoy the benefits of the enhanced health care programs for the aged and of decreases in provincial taxes in the latter part of their working life, while avoiding much of the burden of the tax increases in the longer term (when they have retired) that would be needed to finance health expenditures.

12.   The scenarios illustrating the potential demands for provincial financing of health expenditures assume that the medium-term schedule of transfer payments announced by the federal government will be followed. However, over the longer term, pressure would likely grow on the federal government to provide an increasing share of health care costs to the provinces, especially if the case were made that such resources would be required to help the provinces to maintain the health care standards mandated under the Canada National Health Act. Consequently, the federal government will also need to give consideration to the long-term financing requirements for health care in framing its medium-term decisions regarding its fiscal position.

13.   To meet the health care system's rising cost, substantial changes in the coverage of the publicly funded portion of the system might also need to be considered. Moreover, it is important that public policies or federal and provincial health care legislation not inadvertently restrain the development of private health care initiatives. Such private initiatives may be needed to help meet the demands of the aging population for health care services.

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[6]The provincial governments borrow to fund their own budgetary operations and in some cases to help finance the operations of provincially owned agencies and enterprises.

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Table 1. Canada: Total Health Expenditures

(In percent of GDP) 1/

	1994	2000	2010	2020	2030	2040	2050	2060	2070
Scenario 1:									
Assumes 1 percent relative price inflation difference for health care, constant growth in real GDP, and constant real expenditure per capita 2/									
A. No changes in age composition 3/	9.7	8.5	8.1	7.4	6.8	6.1	5.4	4.8	4.2
B. Projected changes in age composition	9.7	8.7	8.6	8.6	8.5	7.7	6.8	6.1	5.4
Scenario 2:									
Assumes 2 percent relative price inflation difference for health care, constant growth in real GDP, and constant real expenditure per capita									
A. Projected changes in age composition	9.7	8.7	9.5	10.5	11.4	11.4	11.0	10.9	10.8
Scenario 3:									
Assumes 1 percent relative price inflation difference for health care, demographic changes, and trend increases in real expenditure per capita 4/									
A. Constant growth in real GDP 5/	9.7	8.8	9.5	10.4	11.4	11.3	11.0	10.9	10.8
B. Slowing growth in real GDP 6/	9.7	8.8	9.5	10.6	11.9	12.5	12.7	13.2	13.7
Scenario 4:									
Assumes 2 percent relative price inflation difference for health care, demographic changes, and trend increases in real expenditure per capita									
A. Constant growth in real GDP 5/	9.7	8.8	10.5	12.7	15.2	16.7	17.9	19.5	21.3
B. Slowing growth in real GDP 6/	9.7	8.8	10.5	12.8	16.0	18.4	20.7	23.7	27.2

Source: Fund staff estimates.

1/ Although the output gap is closed by the year 2000, it is re-opened to 1 percent by 2005 and held constant at this percentage level for the rest of the projection period.

2/ Real expenditure per capita for each age cohort continues to decrease in the 1995-97 period, increases slowly to the 1994 level by 2005, and maintains this level over the rest of the projection period.

3/ The age composition of the population is held constant at its estimated 1997 level while the growth of the population changes over the long-term as projected.

4/ Real expenditure per capita for each age cohort continues to decrease in the 1995-97 period and then grows over the projection period at the average growth rate of the 1984-91 period.

5/ Real GDP growth is held constant at 2.5 percent between 2005 and 2080.

6/ Real GDP growth is assumed to be 2.5 percent for 2005-14, 2.25 percent for 2015-24, and 2 percent for 2025-80.

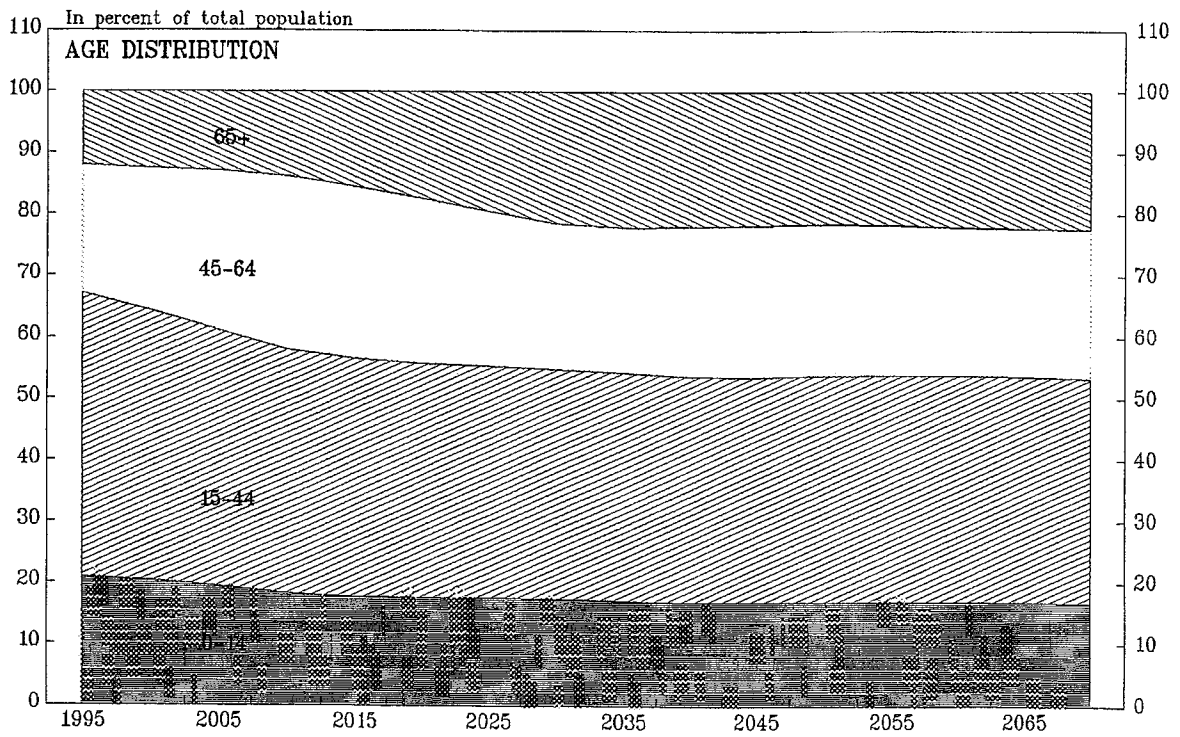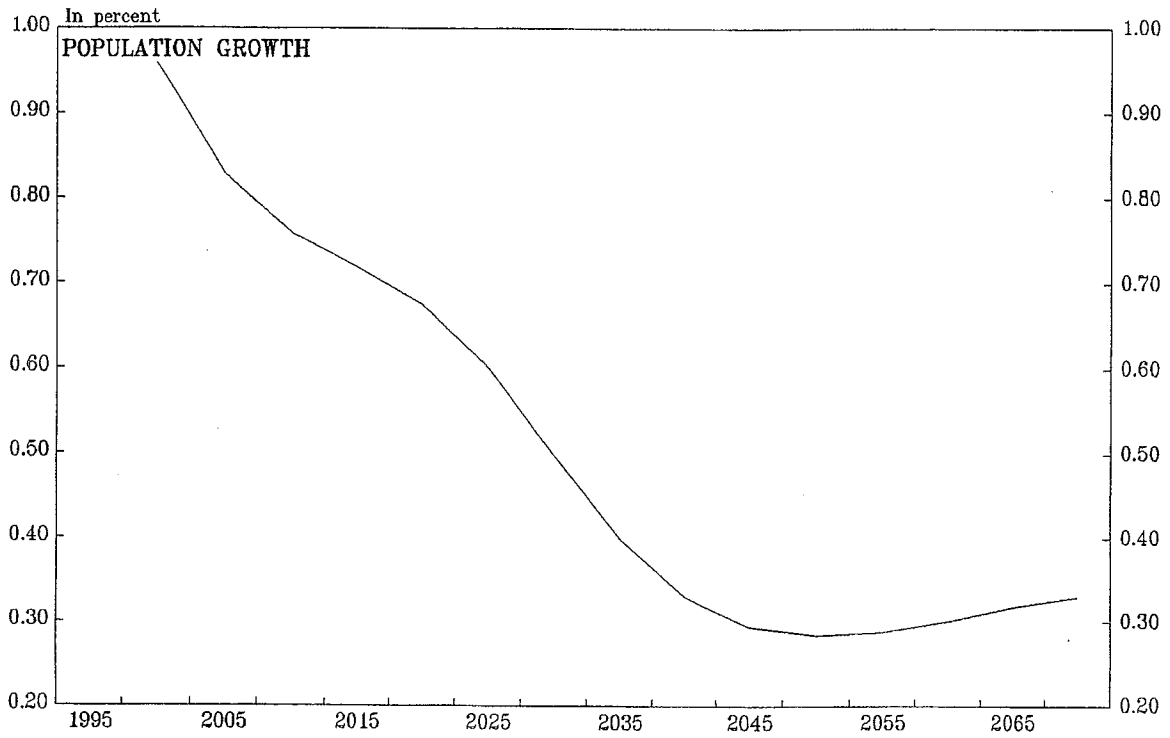Table 2. Canada: Provincial Health Expenditures and Net Debt 1/

(In percent of GDP)

	1994	2000	2010	2020	2030	2040	2050	2060	2070
Scenario 1B									
Provincial health expenditures	6.5	5.8	5.7	5.9	6.0	5.4	4.8	4.3	3.8
Budgetary deficit	2.1	-0.1	-0.5	0.4	0.8	0.6	0.3	0.3	0.2
Net debt	27.4	22.8	11.8	10.4	13.5	15.7	15.2	13.3	11.2
Scenario 2									
Provincial health expenditures	6.5	5.8	6.3	7.2	8.0	8.0	7.8	7.7	7.6
Budgetary deficit	2.1	-0.1	0.2	2.3	4.1	5.2	6.2	7.2	8.3
Net debt	27.4	22.8	15.3	24.7	46.5	74.1	102.3	130.8	160.0
Scenario 3A									
Provincial health expenditures	6.5	5.8	6.0	6.4	6.9	6.5	6.0	5.7	5.4
Budgetary deficit	2.1	0.0	-0.2	1.2	2.3	2.6	2.8	3.2	3.5
Net debt	27.4	22.9	13.6	16.8	28.0	41.3	52.9	63.4	73.8
Scenario 3B									
Provincial health expenditures	6.5	5.8	6.0	6.5	7.2	7.2	7.0	6.9	6.8
Budgetary deficit	2.1	0.0	-0.2	1.3	2.9	4.1	5.4	7.0	8.8
Net debt	27.4	22.9	13.6	17.2	32.1	55.6	84.0	117.8	158.0
Scenario 4A									
Provincial health expenditures	6.5	5.8	6.6	7.8	9.2	9.7	9.8	10.2	10.6
Budgetary deficit	2.1	0.0	0.6	3.2	6.0	8.1	10.0	12.1	14.3
Net debt	27.4	22.9	17.2	31.9	64.3	107.8	155.4	206.4	261.2
Scenario 4B									
Provincial health expenditures	6.5	5.8	6.6	7.9	9.7	10.7	11.3	12.4	13.5
Budgetary deficit	2.1	0.0	0.6	3.4	6.8	10.1	13.7	17.9	22.6
Net debt	27.4	22.9	17.2	32.6	70.2	128.8	202.6	291.6	397.3

Source: Fund staff estimates.

1/ Scenarios refer to those defined in Table 1.

CHART 1

CANADA

DEMOGRAPHIC PROJECTIONS

In percent

POPULATION GROWTH

In percent of total population

AGE DISTRIBUTION

65+

45-64

15-44

0-14

Source: Office of the Superintendent of Financial Institutions.

CHART 2

CANADA
TOTAL HEALTH EXPENDITURES 1/
(In percent of GDP)

Scenario 4B

Scenario 3B

Scenario 1B

Sources: Department of Finance Canada; and Fund staff estimates and projections.
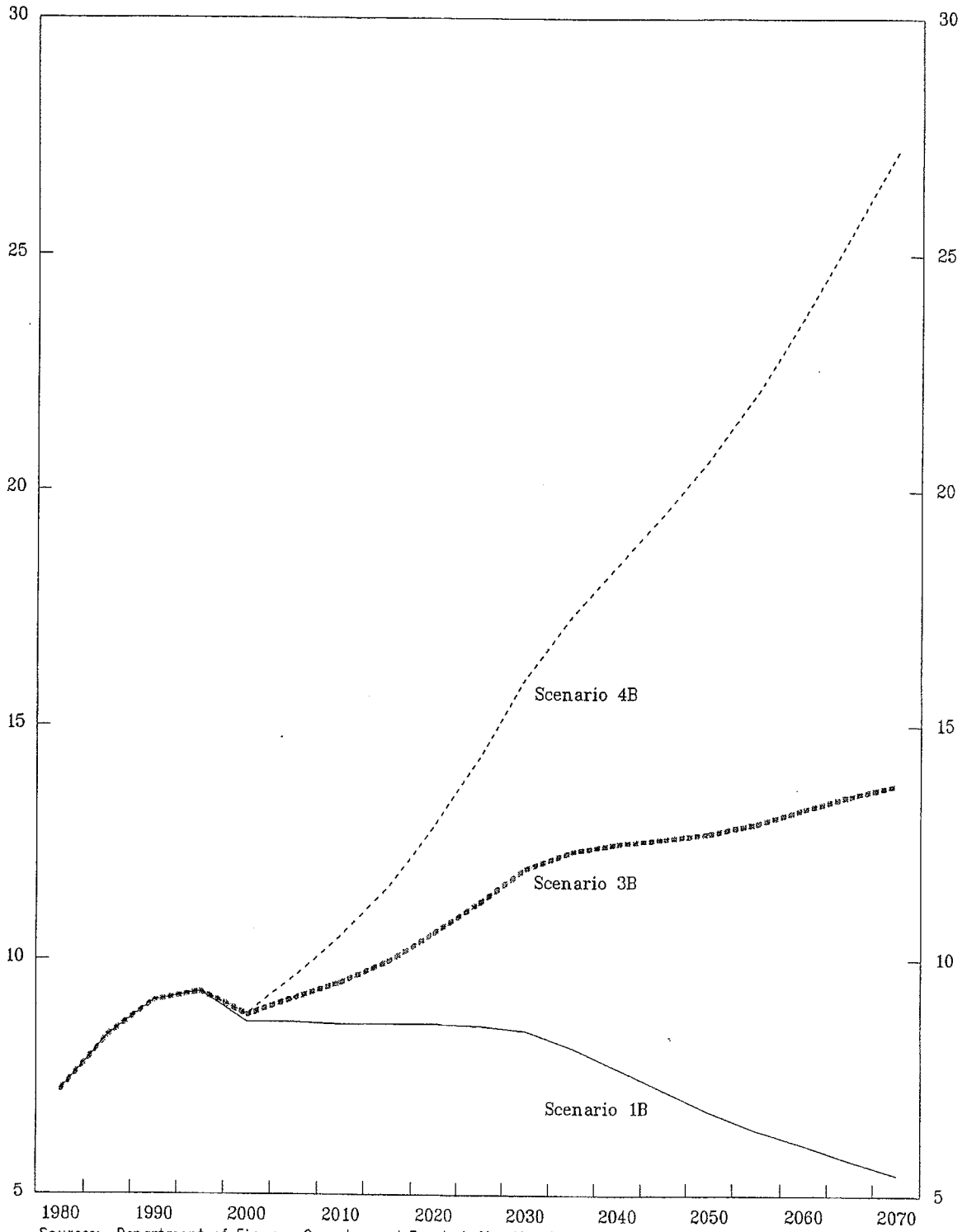
1/ Plotted at 5-year intervals.

CHART 3

CANADA
PROVINCIAL GOVERNMENT FINANCES
(In percent of GDP)

PROVINCIAL HEALTH EXPENDITURES

Scenario 4B

Scenario 3B

Scenario 1B

PROVINCIAL NET DEBT 1/

Scenario 4B

Scenario 3B
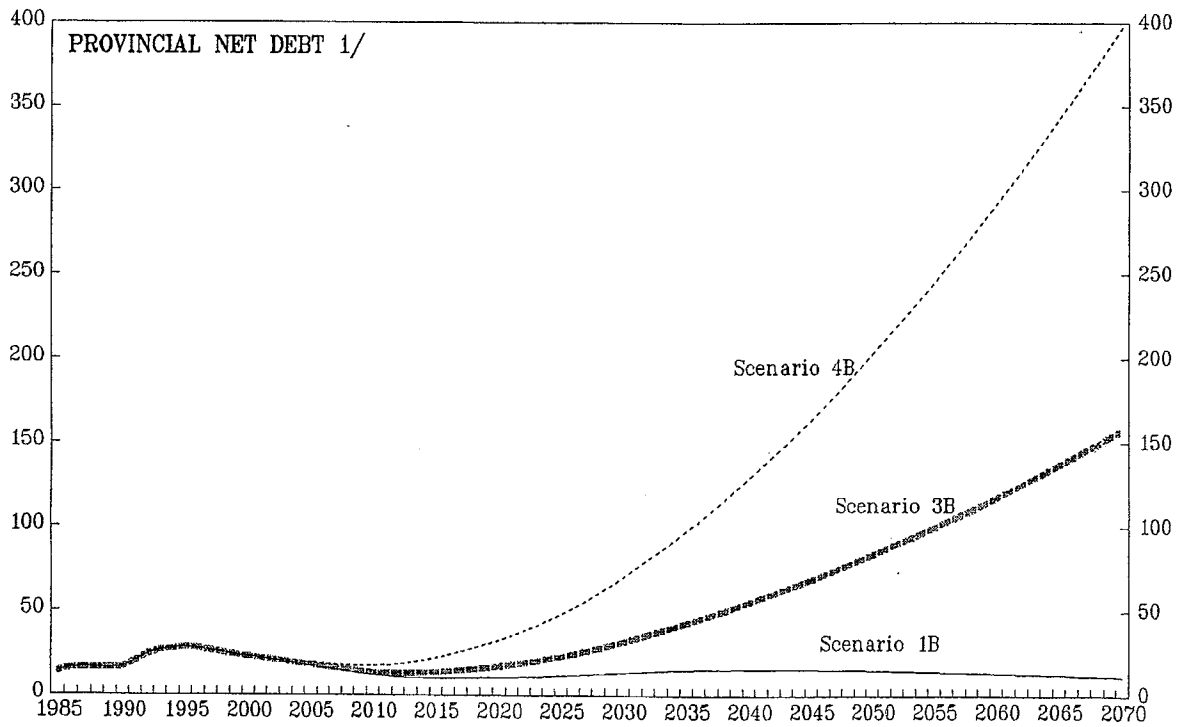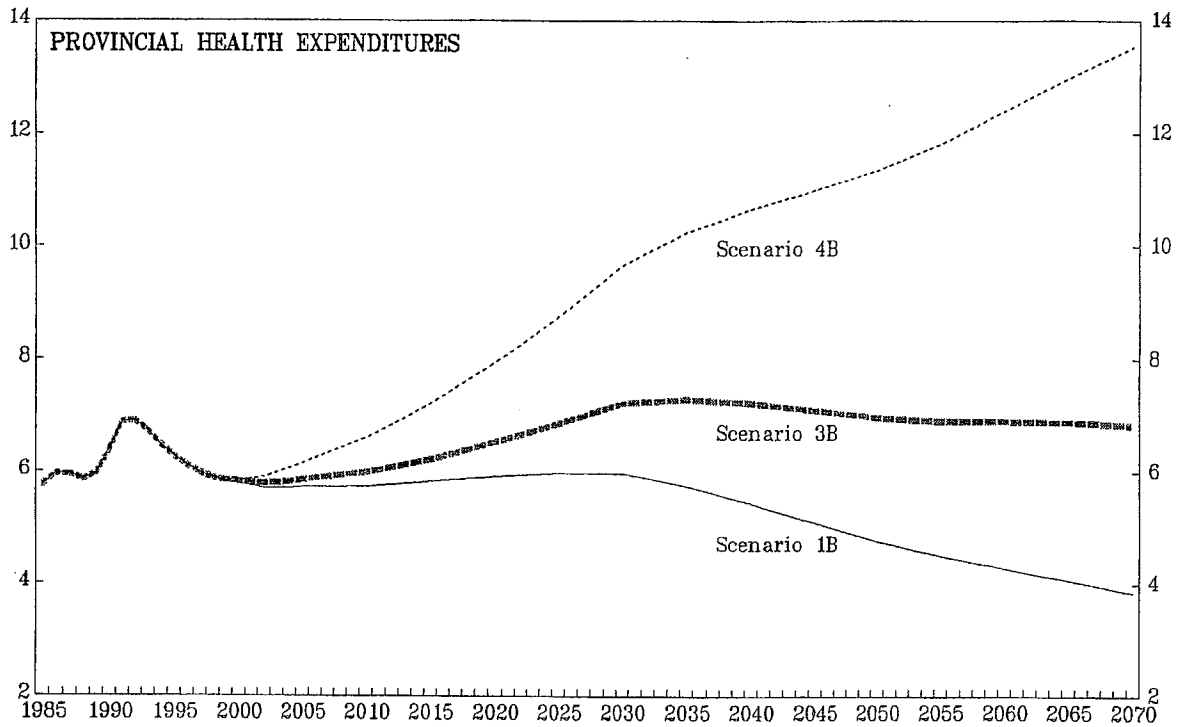
Scenario 1B

Sources: Department of Finance Canada; and Fund staff estimates and projections.

1/ In the provincial government finance simulations, Scenario 1B is supplemented by anchoring net
   debt between 10% and 16% of GDP.

CHART 4

CANADA

TOTAL AND PROVINCIAL HEALTH EXPENDITURES 1/
(In percent of GDP)

Sources: Department of Finance Canada; and Fund staff estimates and projections.

1/ Plotted at 5-year intervals.

VII. THE CANADIAN AGREEMENT ON INTERNAL TRADE: DEVELOPMENTS AND PROSPECTS[1]

1.   Under a federal system of government, the division of responsibilities between the federal, provincial/state, and local levels of government may create internal barriers to the free flow of goods, services, labo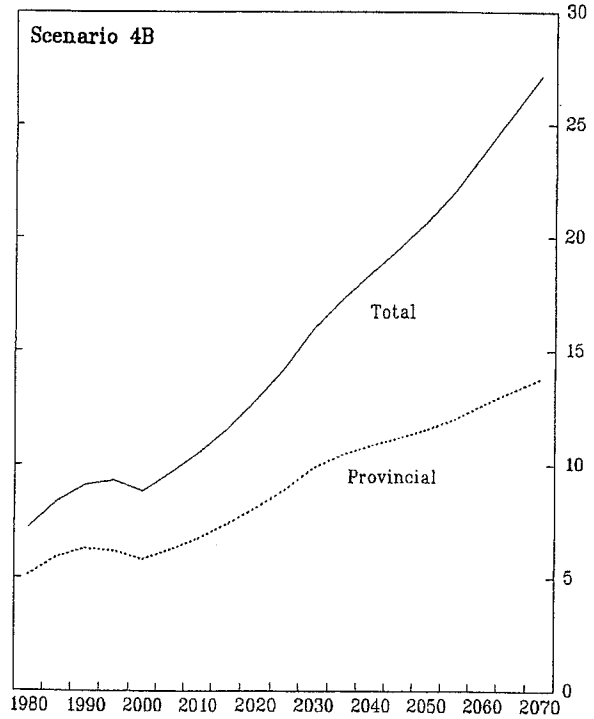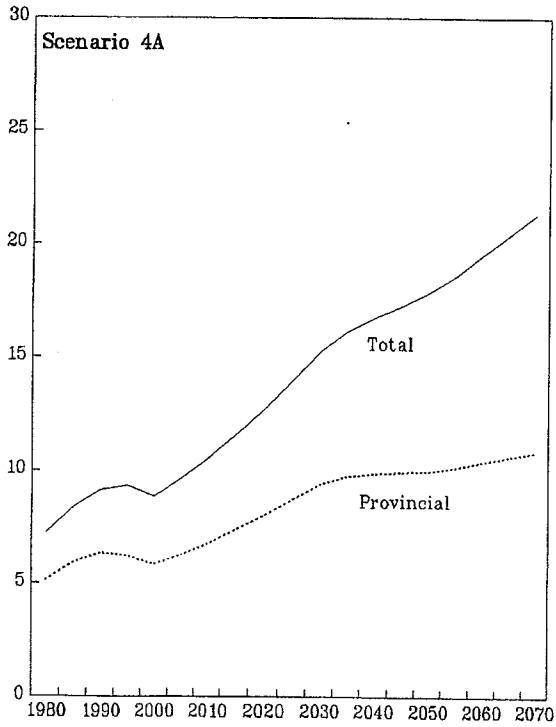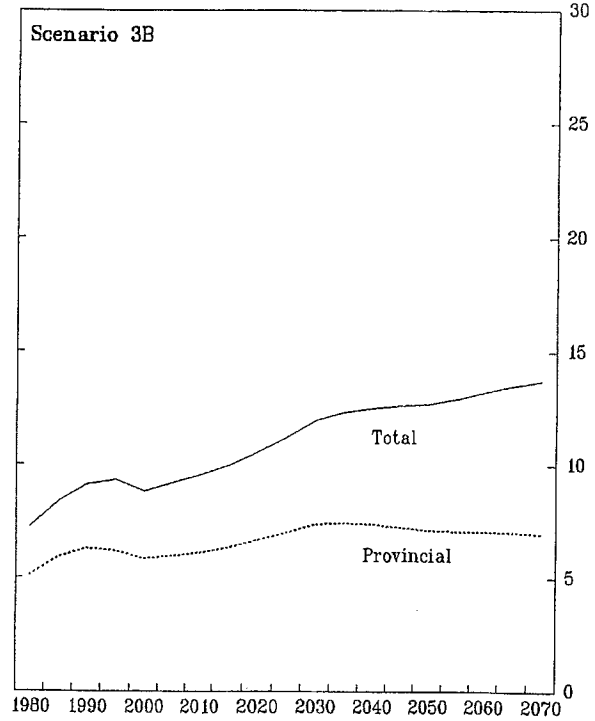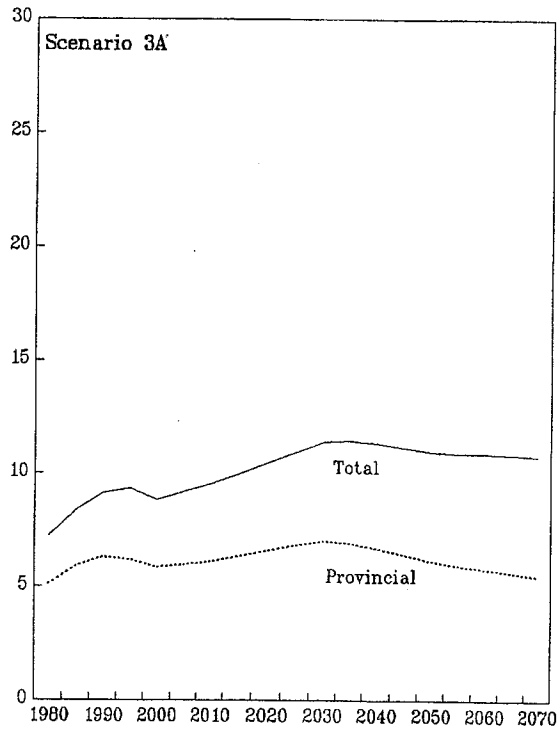r, and capital, that reduce the efficiency of the economy. To deal with this problem in a systematic fashion, the federal and provincial governments in Canada established the Agreement on Internal Trade (AIT), which entered into force on July 1, 1995. Along the lines of international trade agreements, the AIT set up a legal/institutional structure that is designed to diminish barriers to interprovincial trade flows. The signing of the AIT was an important step toward progressively liberalized interprovincial trade in Canada. This paper briefly takes stock of the achievements and shortcomings of the AIT.[2]

A.   Barriers to Internal Trade in Canada

2.   The Internal Trade Secretariat has identified three kinds of government practices that created barriers to internal trade: (i) discriminatory practices (e.g., preferences based on provincial residency); (ii) unharmonized practices (e.g., different product standards); and (iii) the inequitable application of administrative practices (e.g., publication of tender requests only locally). Discriminatory practices were identified in all areas except consumer protection and the operation of financial institutions, with provincial government procurement practices and discriminatory practices toward workers identified as among the most significant problem areas. Unharmonized provincial standards, business and product regulations, and licensing requirements presented difficulties in all areas except government procurement and natural resources trade. The inequitable application of administrative practices established barriers to internal trade in the areas of provincial government procurement and the sale of alcoholic beverages.

3.   Some indication of the significance of internal barriers to trade can be inferred from recent developments in interprovincial versus international trade. After remaining relatively flat from 1984–91, the real value of Canadian international trade expanded significantly, while real interprovincial trade has remained essentially flat since 1984 (Chart 1). The increase in the former reflects, in part, the implementation of the regional trading arrangements beginning in January 1989 (Canada-U.S. Free Trade Agreement) and January 1994 (North American Free Trade Agreement). The data on interprovincial trade suggest that the restrictiveness of internal trade barriers were more or less unchanged in the decade leading up to the AIT. Most provinces have also seen a decline in the significance of interprovincial trade flows as a

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[1]Prepared by Michael Leidy.

[2]A more complete description of the agreement and its implementation is available on request. Developments after January 15, 1998 are not reflected in the paper.

percent of provincial GDP; in 1996 *interprovincial* exports accounted for a smaller share of GDP than *international* exports for all but 3 of the 12 provinces and territories (Chart 2).

4.   Despite qualitative evidence that barriers to interprovincial trade have been significant,[3] the restrictiveness of these barriers do not appear to have been as large as international barriers to trade, particularly those that existed between Canada and the United States prior to implementation of the regional trading agreements.[4] McCallum (1995), using a gravity-type model of trade,[5] compared interprovincial trade flows within Canada to trade flows between Canada and the United States using 1988 data.[6] The data suggest that, other things equal, trade between two Canadian provinces is more than 20 times larger than trade between a province and a U.S. state.[7] Engel and Rogers (1996) investigate departures from the law of one price within Canada and between Canada and the United States. Using disaggregated price data from 9 Canadian cities in 6 Canadian provinces and from 14 U.S. cities, they compared the variation in relative prices of the same goods across cities, controlling for differences in geographical distance.[8] Engel and Rogers found, however, that crossing the

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[3]A study by Trebilcock, et al. (1983) identified hundreds of barriers to interprovincial trade and helped to initiate the national debate that led to the AIT.

[4]Research that has attempted to estimate directly the potential benefits of eliminating internal trade barriers shows gains ranging from 1 to 1½ percent of GDP (see Trebilcock and Behboodi (1995, p. 22) and Migué (1994)). In contrast, the Department of Finance Canada (1988) estimated the gains for Canada from tariff reductions under the original free trade agreement with the United states to be equal to 2½ percent of GDP.

[5]Gravity trade models specify regional trade flows as a function of economic activity in both regions (usually measured by regional GDP) and geographic distance between regions. Interregional trade flows are typically found to be positively related to the level of economic activity at home and abroad, and negatively related to the distance between regions.

[6]The most recent period for which province-to-province trade data was available at the time McCallum's study was done.

[7]McCallum points out, for example, that a gravity model without national borders would predict that Ontario and Quebec would export about ten times more to California than to British Columbia, because the distances are essentially similar and British Columbia's GDP is less than one-tenth that of California. But in 1988 Quebec and Ontario exported in excess of three times as much to British Columbia as to California.

[8]If Canadian interprovincial trade barriers were restrictive relative to barriers at the U.S. border, relative price dispersion for the same goods selling in two Canadian cities should exceed that between a Canadian city and a comparably close U.S. city.

border was comparable to adding about 75,000 miles of distance.[9] Whalley (1996), in reviewing earlier quantitative estimates of the costs of interprovincial trade barriers, suggests that these costs amount to only about 0.25 percent of GDP. Others, however, point out that it is difficult to quantify the full costs of interprovincial barriers, and point to costs deriving from, for example, foregone investment owing to foreigners' belief that Canada is a fragmented market (Courchene, 1983), and impediments to the development of world class competitive firms (Porter, 1991).

B. Elements of the AIT

5.   The AIT eliminates some existing barriers and impedes the introduction of new barriers. It does this through a number of general rules governing trade-related provincial policies, and through a set of specific sectoral provisions that address some of the direct and indirect barriers to internal trade. The Agreement also establishes a framework for settling internal trade disputes.

6.   Under the AIT, the parties to the agreement are guided by six general rules. A *nondiscrimination* provision requires that Parties accord equal treatment to all Canadian persons, goods, services, and investments regardless of their provincial origin.[10] A *right of entry and exit* prohibits measures (adopted or maintained) that restrict the movement of persons, goods, services, or investments across provincial boundaries. Parties must ensure that measures (adopted or maintained) create *no obstacles* to internal trade. It is recognized that provincial governments in pursuing important nontrade objectives may cause some deviation from the above rules, but in pursuit of such *legitimate objectives* governments must ensure that policies have a minimal adverse impact on interprovincial trade.[11] Different standards and

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[9]The data covered the period from June 1978 to December 1994. When the sample period was split into a pre- and post-1989 period (i.e, before and after the Canada-U.S. Free Trade Agreement), the authors surprisingly found a slight *increase* in the estimated border coefficients in the post-1989 period.

[10] In technical terms, the requirement is "no less favorable treatment" than that accorded resident persons, products, services, or investments. This is in line with the "national treatment" obligations under Article III of the General Agreement on Tariffs and Trade (1994) which prohibits discrimination on the basis of national origin once a product has been imported into the territory of a WTO member country. Moreover, the AIT explicitly notes that offering identical treatment might not be enough to meet the nondiscrimination standard.

[11] The AIT requires that a party demonstrate that the purpose of an otherwise nonconforming measure: (i) is in pursuit of a legitimate objective; (ii) does not impair internal trade unduly; (iii) is not more restrictive than necessary to achieve the legitimate objective; and (iv) does not

regulatory practices across provinces must be *reconciled* through harmonization, mutual recognition,[12] and other means, in order to underpin the freer movement of goods, services, labor, and investment. Parties must also ensure a high level of *transparency* respecting all matters covered by the AIT. These general rules, however, are not "general". They only apply to the extent they are specifically incorporated within sectoral chapters.[13]

7.   Eleven sectoral chapters govern the reduction of internal trade barriers in such areas as government procurement, labor mobility, and agriculture. While these specific rules institute important steps toward freer internal trade, significant exceptions remain. Major exceptions to the liberalizing elements of the agreement include: an exclusion for financial institutions or financial services;[14] an exclusion for energy products and related services until a specific agreement could be reached;[15] exceptions for measures that are part of a "general framework" of regional economic development; exceptions for a number of services and the exclusion of certain government agencies from the obligations on government procurement; a blanket

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[11](...continued)
create a disguised restriction on internal trade. The "legitimate objectives" are generally defined as "any of the following: public security and safety; public order; protection of human, animal, or plant life or health; protection of the environment; consumer protection; protection of the health, safety, and well-being of workers; or affirmative action programs for disadvantaged groups."

[12]In the event that regulatory rules and practices are not harmonized, under "mutual recognition" provinces could accept the regulatory standards of another province in order to facilitate interprovincial trade. Provinces, however, need only adopt mutual recognition if it accepts the regulatory measures of another as equivalent to its own.

[13]The AIT provides that, "the general rules established under this chapter apply only to matters covered by Part IV (specific rules), except as otherwise provided in this Agreement. In the event of an inconsistency between a specific rule in Part IV and a general rule in this chapter, the specific rule prevails to the extent of the inconsistency."

[14]Internal barriers to trade in the financial sector derive from unharmonized regulatory practices, including overlap and duplication in the area of prudential regulation, and unharmonized regulations governing insurance and securities firms.

[15]Barriers to internal trade in energy products and services are attributable to certain discriminatory practices (including, for example, monopoly provincial control over the transmission and distribution of electricity; and provincial restrictions on the use of local transmission lines by nonlocal utilities to provide electricity to third parties) and unharmonized regulations (including, for example, unharmonized standards on licensing and rate setting). Eliminating such obstacles would improve efficiency in the transmission and delivery of energy products and services.

exemption for measures adopted or maintained with respect to culture or cultural industries; and the potentially far-reaching "legitimate objectives" exceptions indicated in footnote 11. Moreover, numerous areas in which agreement could not be reached, or which required further clarification of obligations, were left for future implementation or further negotiations.

C. Developments Since Entry Into Force

8.   With the exception of a number of important time-specific obligations contained in the AIT, indications are that the terms of the Agreement are being met. Of the 20 complaints lodged since the agreement entered into force, 17 of which involved alleged barriers to labor mobility, investment flows, or government procurement contracts, at least 8 were dropped before a ruling was reached and none has resulted in a finding of a prohibited practice.[16]

9.   There have, however, been a number of significant delays in meeting the AIT's time-based commitments. Perhaps the most significant of these has been the inability to conclude an agreement on the energy sector, which was to have been concluded by July 1, 1995. Negotiations have produced a draft agreement, and a final agreement is expected to be finalized by July 1998. The commitment to extend the obligations of the Agreement in the area of government procurement to the so-called MASH sectors[17] also was delayed beyond the scheduled completion date of June 30, 1996. Since mid-1997, there has been a good deal of progress in the MASH extension talks, and it is likely that an agreement will be reached. However, British Columbia has been resisting an extension to the MASH sector. To get around this problem, because the AIT requires a consensus among all parties on new commitments, the other provinces and territories have been considering an agreement to accept new commitments on MASH sector procurement outside of the AIT. Finally, the Agreement called for negotiations to be concluded by June 1996, with a view to modifying the list of government entities (mainly Crown coporations) excluded from its scope. Discussions on extending procurement disciplines to include many more Crown corporations have been underway.

10.   In the area of labor mobility, a number of time-based commitments were specified with open-ended completion dates, and progress in these areas generally has been slow. The obligation to complete a work plan for the implementation of the agreement on labor mobility was completed, but the commitment to implement, within a "reasonable period of time," the agreement on the recognition of occupational qualifications and reconciliation of occupational standards remains incomplete. Most of the time-based commitments in the sensitive areas of

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[16]Internal Trade Secretariat (1997).

[17]Procurement activities of municipalities, municipal organizations, school boards and publicly funded academic, social service, and health entities (the MASH sector) were initially excluded from AIT obligations.

agriculture and food goods remain under discussion. In the area of trade in alcoholic beverages, a number of reviews on the implementation of the Agreement and mandated negotiations for further liberalization were delayed from July 1, 1996 to March 31,1997 before the reviews were completed. In the event, no changes in existing discriminatory practices resulted from these reviews. Negotiations to reach agreement on special provisions required to extend coverage of the transportation chapter to regional, local, district, or other forms of municipal government were not completed, and Ministers now recommend dropping this obligation. Efforts to reconcile ("by harmonization, mutual recognition, or other means") regulatory and standards-related measures affecting trade in transportation services are nearing completion.

D. Scope for Further Progress

11.　　Improving the record of compliance with agreed timetables for the implementation of existing obligations may require some strengthening of the AIT's institutional arrangements; for example, steps could be taken to increase transparency and thus heighten all Parties' interest in abiding by agreed timetables. There are also a number of open-ended commitments (particularly in the chapter on labor mobility) that could be set on a firm timetable. Beyond such steps, however, the AIT, as virtually all trade agreements, contains significant holes (exclusions and exemptions from the obligations of the Agreement) and loopholes (conditions under which exceptions to obligations arise), some of which could be narrowed over time.[18] In formulating an agenda for further progress, priorities should be set for gradually narrowing those holes and loopholes that are not necessary to accommodate important noneconomic objectives.

12.　　Exclusions for energy products and related services, financial institutions and services, and measures adopted or maintained with respect to culture or cultural industries are the most prominent sectoral holes in the AIT; the former two would appear to address no clearly defined noneconomic objective. The deadline for achieving agreement on the energy sector was missed, but negotiations have produced a draft agreement and a July 1998 completion date is envisaged. On the other hand, no timetable was established for integrating the financial sector or cultural industries into the Agreement.[19]

13.　　The general exception for "legitimate objectives" is a loophole with potentially far-reaching effects. Whether this escape clause will be applied sparingly or not remains unclear. However, the prospect that this provision could cast a wide net generates uncertainty, and efforts to narrow its potential reach could help solidify the liberalizing goals of the Agreement.

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[18] For an overview of the kinds of "holes and loopholes" that appear in a wide range of regional and multilateral trade agreements see Hoekman and Leidy (1993).

[19]Financial services are expected to be addressed under separate negotiations; see Canadian Chamber of Commerce (1996, p. 14).

This might be done, for example, by creating a short positive list of examples for each of the general areas of "legitimate objectives" that would apply; applications of the "legitimate objectives" escape clause in specific cases outside the list could then require a high burden of proof before being judged acceptable. Moreover, all of the various exceptions in the Agreement should be assessed according to whether they address specific legitimate noneconomic objectives. For those exceptions that do address a legitimate noneconomic objective, it would be desirable to determine whether nonconforming measures taken or maintained under these rules are serving the objective without creating undue barriers to trade.[20] For those exceptions that serve no clear noneconomic objective, it would be desirable to launch further negotiations to narrow or eliminate them.

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[20]Article 404 requires that such measures not be unduly trade restrictive, but does not provide for oversight. As under most international trade agreements, oversight takes place only via the dispute-settlement process, which implies a complaint must be registered by another Party.

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CHART 1

CANADA

CANADIAN INTERNATIONAL AND INTERPROVINCIAL TRADE
(In millions of 1986 dollars)

Total international trade (X+M)

Total interprovinicial exports
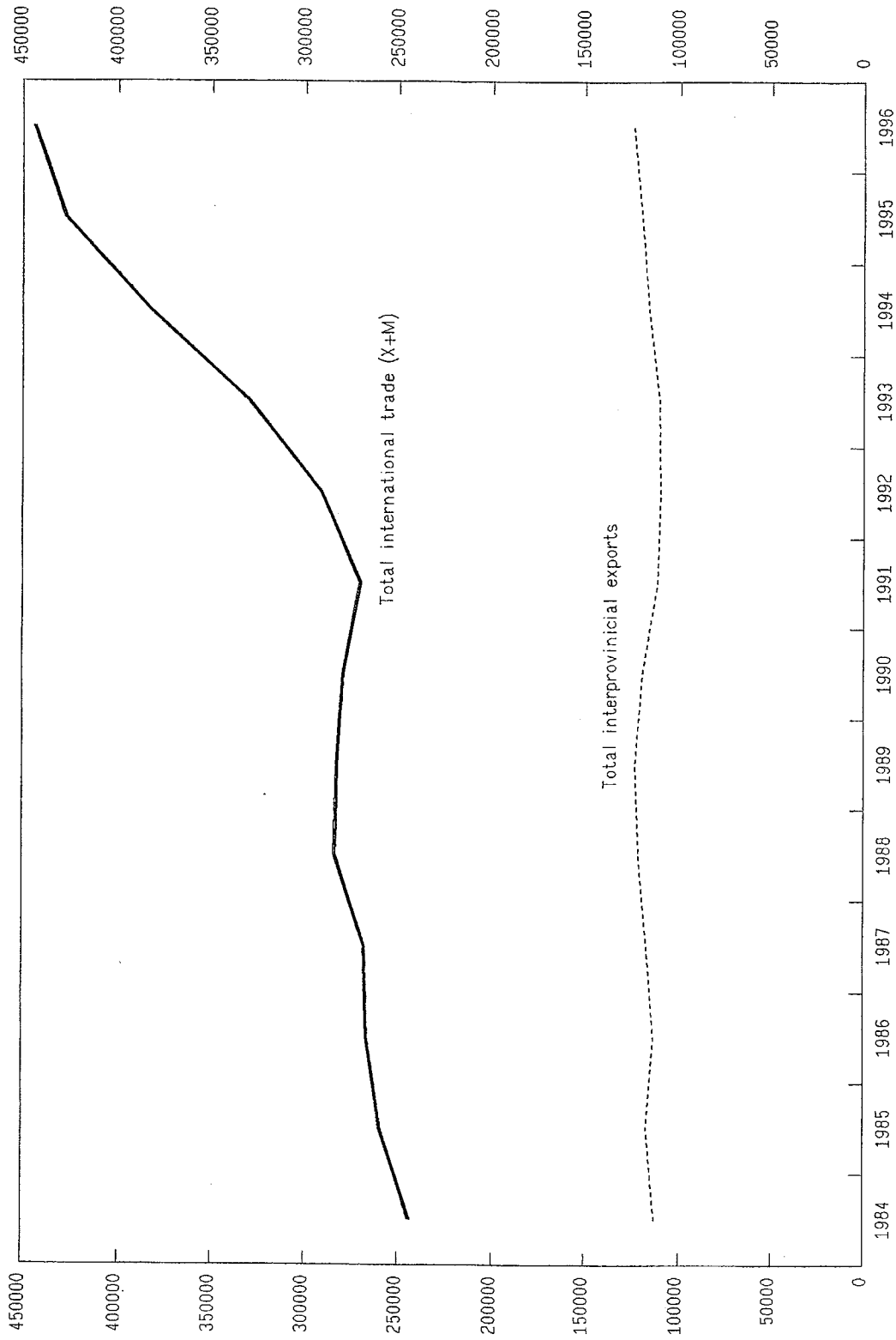
Source: Statistics Canada.

CHART 2

CANADA

INTERNATIONAL AND INTERPROVINCIAL TRADE, 1984 and 1996

(In percent of provincial GDP)
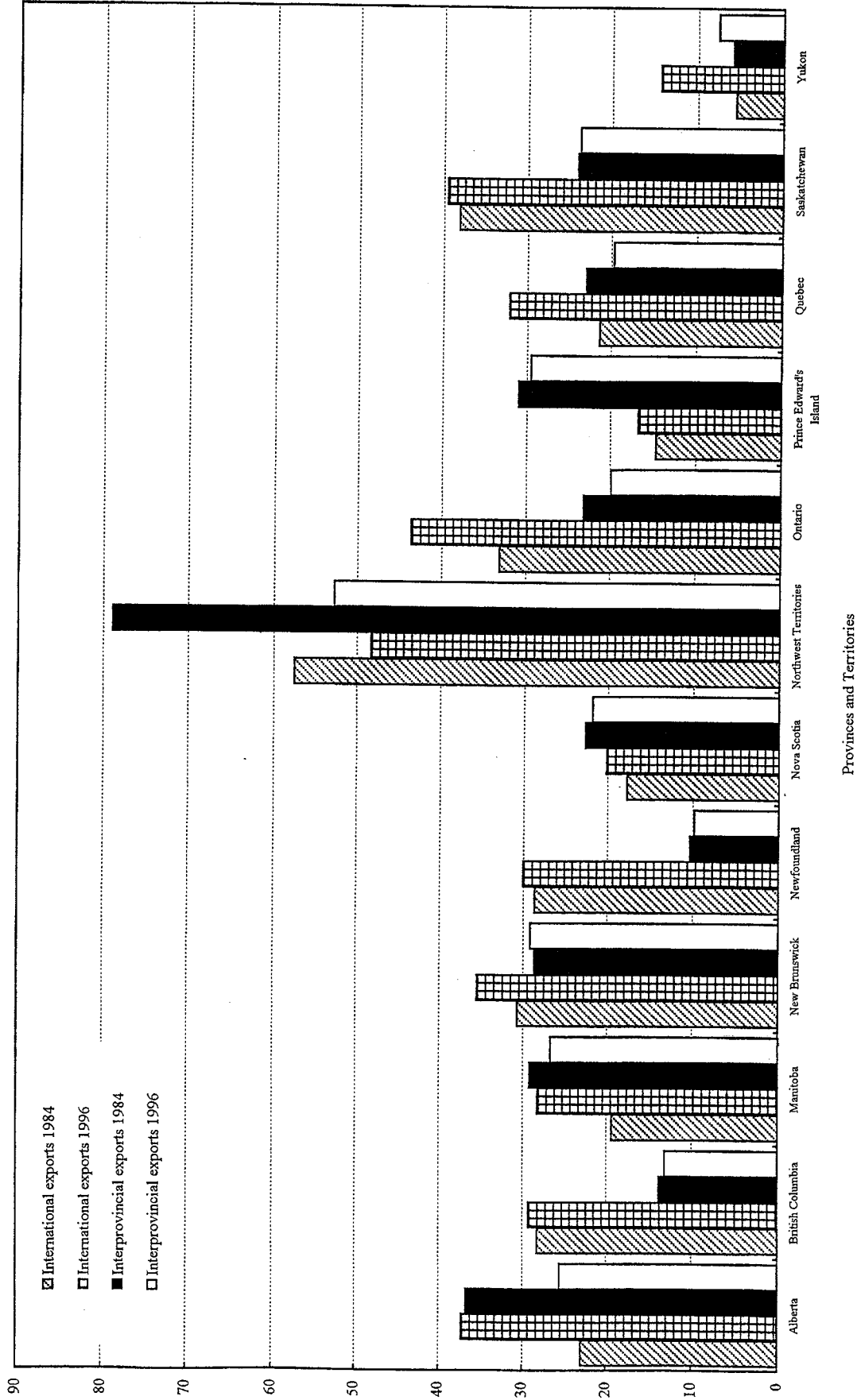
Sources: Statistics Canada.

VIII. Developments in Canadian Trade Policy[1]

A. Introduction

1.   This section reviews developments in Canadian international trade and investment policies during 1997, including selective aspects of: (i) matters related to the World Trade Organization (WTO); (ii) developments in regional trading arrangements; (iii) developments in Canadian trade policies; (iv) developments in foreign investment policies and the Multilateral Agreement on Investment (MAI); and (v) other issues.[2]

B. World Trade Organization

Implementation of the Uruguay Round

2.   Canada continued to implement its Uruguay Round commitments during 1997. In textiles and clothing, it submitted to the WTO the list of products to be liberalized during the second stage of the Agreement on Textiles and Clothing (ATC).[3] As of January 1, 1998, "liberalized" imports account for about 34 percent of 1990 imports of textiles and clothing products. Although only about a third of these previously were subject to restrictions, Canada is the only large industrial country that has included some restricted items in its liberalization lists so far.[4] Canada has not used any special safeguards provided by the agreement. Average tariffs on textiles and clothing products (simple MFN rates) are relatively high at 17 percent.

3.   In agriculture, high tariffs continue to be applied to imports of supply-managed products (dairy, eggs, poultry).[5] Such imports enter under a tariff-quota system established in

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[1]Prepared by Piritta Sorsa.

[2]Developments after January 15, 1998 are not reflected in the paper.

[3]The ATC requires WTO members to remove quotas on imports of textiles and clothing in four stages by 2005. The second stage was implemented on January 1, 1998. The liberalization does not include reductions in tariffs.

[4]The liberalized products were work gloves and liners, certain shirts, specialty yarns, and handbags of made-up textiles.

[5]Tariff rates on these products averaged 205 percent in 1995, and the average rate is expected to decline to 174 percent by 2000.

the Uruguay Round. Canada's aggregate level of support (subsidies and market price support) is below what is required by the Round, but support levels are high.[6]

4.   State trading enterprises are active in trade in wheat and barley (exclusive rights on exports and domestic sales of grain for human consumption in certain areas), dairy (exclusive import rights on butter), fish (exclusive intraprovincial trade and export rights for fish and fish products from freshwater commercial fisheries from certain provinces and territories)[7], provincial liquor boards, and dry beans in one province. The role and practices of the state trading enterprises have been subject to internal debate in Canada and to some criticism by Canada's trading partners. Legislation to modernize the governance of the Canadian Wheat Board is currently pending in Parliament.

Sectoral Negotiations

5.   In telecommunications, Canada made new liberalization commitments in the WTO negotiations that were concluded in February 1997. In the past several years, some deregulation has taken place in this sector in Canada, and these actions were incorporated in Canada's international bindings as part of the telecommunications agreement. In addition, the WTO bindings contain planned liberalization through the year 2000.[8] The sector in Canada has a two-tier structure: basic services[9] and "enhanced" services.[10] Basic telecommunication services are subject to restrictions on foreign access and ownership.[11] Enhanced services are relatively free from restrictions, including foreign ownership limits. In some services, provincial regula-tions pose additional restrictions (for example, by limiting local wireless telephone services). A number of "cultural industries" were excluded from the liberalization commitments (for example, broadcasting).

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[6]The producer subsidy equivalent in Canada was 27 percent for all agricultural products in 1995, but it was much higher for the supply-managed products, with subsidy equivalents amounting to 62 percent for milk and 44 percent for eggs (OECD 1996, Agricultural Policies, Markets and Trade in OECD Countries, Monitoring and Evaluation).

[7]Canadian Wheat Board, the Canadian Dairy Commission, and the Canadian Freshwater Fish Marketing Corporation.

[8]Future liberalization includes termination of Teleglobe Canada's monopoly on overseas voice services in October 1998 and Telesat Canada's monopoly on satellite services by March 2000.

[9]Includes domestic telephone, long-distance voice, and overseas services.

[10]Includes domestic long-distance business phone services, private voice-mail, and cellular phones.

[11]For example, foreign ownership of basic carriers is limited to 47 percent of equity, and basic carriers are required to be controlled by Canadians.

6.   Canada has been an active participant in the WTO negotiations on financial services, which were concluded in December 1997.[12] Gradual opening of the sector to foreign competition has continued, and actions in this area have been bound in the WTO. Recently, Canada offered to consolidate in the WTO by mid-1999 its partial opening to branches of foreign banks[13].

7.   Canada participated in the Information Technology Agreement that aims at the phased elimination of tariffs over the period July 1997–2000 on five categories of products: computers, software, telecommunications products, semiconductors, and scientific instruments. Canada has also continued to implement the WTO's Government Procurement Agreement, but has not extended its coverage to provinces.

Dispute Settlement Activity in the WTO

8.   During 1997, Canada was directly involved in a number of WTO dispute cases: one case brought against Canada was resolved at the Appellate Body; two cases brought by Canada are at the panel stage; and three others, two brought against Canada and one brought by Canada, are at the consultation stage. Canada is also a third party in another eight cases. The authorities have been very satisfied with WTO's dispute settlement activity and see it as having led to increased predictability of the multilateral trade rules.

9.   In "Certain Measures Concerning Periodicals," the WTO Dispute Panel ruled against Canada in a complaint by the United States, and most of the panel's ruling was upheld on appeal. The ruling challenged the 80 percent excise tax on the advertising revenues of split-run editions of foreign magazines as a discriminatory restriction on foreign magazines. A Canadian subsidy to postal rates for Canadian periodicals was also deemed WTO inconsistent violating the national treatment principle, and the existing ban on imports of some periodicals was also confirmed as against WTO rules. On September 15, 1997, Canada and the United States agreed to implement the ruling within 15 months of its adoption on July 30, 1997.

10.   The panel on "Measures Affecting Livestock and Meat" against the European Union (EU) ruled in Canada's favor in August 1997. The Panel found (as in a similar case brought to the WTO by the United States) that EU measures restricting or prohibiting imports of meat treated with growth hormones are inconsistent with WTO rules as they have no scientific

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[12]The financial sector has been gradually liberalized in Canada since 1982. Restrictions on foreign banking were relaxed in the NAFTA, and many of these actions were subsequently extended to WTO members during the Uruguay Round and negotiations on financial services.

[13]Apart from some provinces (Ontario, Quebec, and Manitoba), there are no specific restrictions on foreign ownership of banks as such. Branching of foreign banks was not previously allowed, and the opening of new branches by established banks has been subject to Ministerial approval.

basis. The EU has appealed the case. Another panel on "Measures Affecting the Importation of Salmon" brought by Canada against an Australian prohibition on imports of trout and salmon on the basis that imports could introduce disease was established in April 1997, and the panel is still deliberating. Canadian salmon has been denied entry in Australia since 1975, and Canada considers that the practice is against WTO rules on import restrictions and sanitary rules.

11.   Consultations are underway in three cases: Canada's complaint against Brazil's "Export Financing Programme for Aircraft" filed in June 1996, in which Canada considers that interest equalization payments under Brazil's export financing program would amount to export subsidies; Brazil's complaint against Canada's "Measures Affecting the Export of Civilian Aircraft" filed in March 1997 in which Brazil claims that Canadian policies result in subsidies for aircraft exports; and the U. S. complaint of October 1997 regarding pricing practices in Canada's dairy industry which allegedly results in subsized exports of dairy products, and on the implementation of the tariff quota on fluid milk.

Antidumping and Countervailing Duty Investigations

12.   In recent years the number of antidumping investigations in Canada has declined. In 1997, Canada initiated three antidumping investigations involving baby food from the United States, hot-rolled carbon steel plates from China, Mexico, Russia, and South Africa, and stainless steel round bar from Germany, France, Italy, Japan, Spain, Sweden, Taiwan Republic of China, and the United Kingdom. Four injury findings were issued in 1997 resulting in the imposition of final antidumping measures,[14] and in one case (dry pasta from Italy) no injury was found. No countervailing duty investigations were initiated during 1997, and one pending case (dry pasta from Italy) was terminated for lack of injury. At the end of 1997, Canada had antidumping duties in force on 30 products and countervailing duties on 4 products, which covered an estimated ½ percent of imports.

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[14]An antidumping duty as high as 72 percent was imposed on garlic from China; an antidumping duty as high as 41 percent was imposed on imports of polyiso-insulation boards from the United States; and an antidumping duty as high as 43 percent was imposed on imports of concrete panels from the United States.

C. Regional Trading Arrangements

North American Free Trade Agreement (NAFTA)

13.   Canada continues to be satisfied with the implementation of NAFTA .[15] Canada supports NAFTA enlargement, but has not received applications from other candidates. A bilateral agreement with Chile entered into force on July 5, 1997.[16] Canada continues to pusue trade liberalizing agreements with other countries in the region, and is actively working to achieve a trade and investment arrangement with Mercosur.

14.   Two disputes involving trade between Canada and the United States were resolved by negotiations outside the formal NAFTA dispute settlement system in 1997. In August 1997, Canada and the United States concluded an agreement, whereby the United States will provide Canada with guaranteed access for Canadian sugar exports.[17] Canada had challenged the U.S. Re-Export Program for Sugar-Containing Products, which was supposed to have been eliminated under NAFTA in 1996. In the area of cultural industries, a dispute concerning the elimination of a license for a U.S. country music TV channel was resolved through commercial negotiations. In addition, consultations are currently being held on a U.S. proposal requiring visas for the temporary entry of Canadian citizens into the United States.

15.   There were no new formal NAFTA dispute cases involving Canada in 1997 under Chapter 20 of NAFTA.[18] On December 2, 1996, a NAFTA Panel ruled in Canada's favor on a U.S. challenge of Canadian tariffs on imports of certain U.S. agricultural products (dairy, poultry, eggs, barley and barley products, and margarine). In its ruling, the panel agreed that provision in the Canada-U.S. Free Trade Agreement allowed Canada to maintain quantitative import restrictions against certain U.S. imports. It also concluded that Canada was not obligated to end these restrictions under the WTO Agreement and that Canada had the right to convert these into tariff equivalents under the WTO and the NAFTA.

16.   Consultations initiated by Canada and Mexico on the Cuban Liberty and Democratic Solidarity Act, enacted by the United States in March 1996, are ongoing. At present, the right of U.S. citizens to sue in U.S. courts regarding claims on confiscated property in Cuba under

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[15]Under the Canada-U.S. FTA (incorporated into the NAFTA), most tariffs were eliminated on Canada-U.S. trade by January 1, 1998, and will be eliminated on Canada-Mexico trade by January 1, 2003.

[16]For details see SM/97/3 Canada—Selected Issues.

[17]A minimum of 10,300 tons of refined sugar and 59,250 tons of sugar-containing products.

[18]Chapter 20 covers trade disputes over the interpretation or application of the free trade agreement.

Title III of the act has been suspended by Presidential order. However, potential liabilities for Canadian companies continue to accrue, and a number of Canadian companies and their personnel have received letters under Title IV of the act advising them that they may be barred from entry into the United States. To protect Canadian interests, Canada implemented an amendment to the Foreign Extraterritorial Measures Act on January 1, 1997 that will block any attempts to enforce judgements under the U.S. act in Canadian courts, and allows Canadian companies to sue in Canadian courts to recover any compensation damages awarded against them by U.S. courts.

17.   The review mechanism for national antidumping and countervailing duty actions under Chapter 19 of the NAFTA currently has four active reviews of actions involving Canada. One panel is reviewing an injury determination made by Canada in a case involving the dumping of concrete panels in Canada by U.S. firms. Others concern a Canadian challenge to U.S. anti-dumping duties imposed on Canadian steel products and Mexican antidumping duties on Canadian rolled steel plate and hot-rolled steel sheets. During 1997, one panel review was terminated concerning a Canadian dumping determination on U.S. exports of sugar.

Other Arrangements

18.   Canada continues to be an active supporter of the Free Trade Area of the Americas (FTAA). It is expected that formal negotiations of the FTAA will be launched after the Leaders Summit in Santiago in April 1998, with the objective of concluding the negotiations by December 2003 and beginning the implementation of the agreement in January 2005. Canada favors a comprehensive agreement following the NAFTA model that would include investment and services.

19.   Canada has been an active participant in the Asia-Pacific Economic Cooperation Forum (APEC) as a mechanism for consensus building on trade and investment liberalization. During 1997, Canada was APEC's chair and hosted its fifth Annual Summit in Vancouver in November 24–25, 1997. Canada's aim of advancing sectoral liberalization targets by two years was achieved and the Summit agreed to initiate further liberalization in nine sectors with implementation starting in 1999.[19] The Summit also reviewed implementation of various Action Plans after the first year of their implementation, and welcomed revisions to these plans. Canada's action plan is a comprehensive document listing recent and future planned liberalization in goods and services including policies related to investment, intellectual property and the regulatory framework, largely in line with Canada's existing commitments under the WTO and other regional trade agreements.

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[19]The sectors covering an estimated US$500 billion in world trade are environmental goods/ services, medical equipment/instruments, chemicals, energy goods/services, telecommunications equipment, forest products, fish and fish products, toys, gems, and jewelry.

20.   A free trade agreement with Israel entered into force on January 1, 1997. The agreement removes barriers to trade in goods (with limited exemptions mainly in the area of agricultural products) effective as of the implementation of the agreement. Only one product on each side (women's swimwear in the case of Canada and denim in the case of Israel) is subject to a 2½-year transition period. Negotiations on including investment continue and those on further inclusion of agricultural products will start by January 1, 1999. The agreement also covers goods originating from the West Bank and the Gaza Strip. During 1997, Canada also started consultations with the countries of the European Free Trade Association to deepen trade relations.

D. Canadian Trade Policies

21.   A comprehensive tariff reform entered into force on January 1, 1998. Its main aim is to increase transparency and reduce costs to industry by streamlining and simplifying customs treatment. The main provisions of the reform advance final Uruguay Round tariff cuts scheduled for 1999 by one year, eliminate "nuisance" tariff rates (those less than 2 percent), and reduce the number of tariff lines from 11,000 to 8,000 and tariff columns from 5 to 2.[20] The simplification exercise combined with Uruguay Round cuts in tariff rates will reduce Canada's average ad valorem MFN tariff from 5.8 percent in 1997 to 4.7 percent in 1998. The number of specific tariff rates will decline from 6 percent to 4 percent of total tariff lines.

22.   During 1996, sub-committees of the House of Commons reviewed Canada's antidumping and countervailing duty law, the Special Import Measures Act (SIMA), and in December 1996, released the final report. Generally, the report found that, " ... SIMA is working well and continues to be relevant to the competitive needs of the Canadian business community," and made a number of recommendations to improve SIMA's operation. The government tabled its response to the Parliamentary Report in the House of Commons on April 18, 1997 and indicated it would take steps to implement specific recommendations, including the drafting of any necessary legislative amendments. The changes proposed include:

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[20] The other changes include: (i) confirmation of earlier reductions in duties on imports of 1,500 items; (ii) elimination of "not made in Canada" conditions in tariff provisions covering about $1 billion in imports; (iii) elimination of concessionary tariff codes or their conversion to tariffs (reduced rates for specified uses) covering about 2,000 codes (most of these imports become duty-free in 1998 under NAFTA) and conversion of some of them to regular items under the same concessionary rates; (iv) replacement of the machinery remission program (duty remittals on machinery not available in Canada) with dutiable and duty-free tariff items and a three-year transition program for dutiable items (duties eliminated if not available in Canada during the transition period); (v) conversion of specific rates of duty to percentages (specific rates remain on alcoholic beverages, certain agricultural products, and wool fabrics); and (vi) elimination of tariff regulations or their conversion to tariffs (300 duty remissions eliminated, but 150 regulations retained).

(i) assigning responsibility for the preliminary injury investigation to the Canadian International Trade Tribunal (with Revenue Canada retaining responsibility preliminary investigation of dumping and subsidies); (ii) facilitating the participation of expert witnesses in proceedings; and (iii) strengthening and clarifying the public interest mechanisms, including the possibility of lesser duty recommendations.

E. Foreign Investment

23.   Canada has been an active participant in the OECD negotiations on a Multilateral Agreement on Investment (MAI) and in setting the stage for investment discussions in the WTO. The current deadline for the conclusion of the MAI negotiations is the end-April 1998. Canada's objective is to achieve NAFTA-style investment provisions. In the WTO, Canada's objective is to finish the background work to prepare for multilateral negotiations. Pending the negotiations, Canada continues to conclude bilateral investment agreements with various countries. Thus far, agreements have been concluded with 24 countries and negotiations are ongoing with several others. These agreements contain provisions on issues such as national treatment, transparency, post-establishment (including expropriation), and transfer of funds.

F. Trade Preferences for Developing Countries

24.   Canada offers preferential access to its market for over 180 countries under the General Preferential Tariff (GPT). Access conditions were reviewed after the Uruguay Round (see SM/97/3 for details). Following the review of the system in 1995, GPT imports increased by 26 percent in 1996. The benefits are heavily concentrated with ten countries accounting for 86 percent of all preferential imports in 1996.[21] Preferences apply to only 5 percent of the dutiable imports from the least-developed countries.

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[21]China, Korea, Thailand, Brazil, Malaysia, Indonesia, India, Hong Kong, Philippines, and Chile, in declining order of the value of Canadian imports.

IX. OFFICIAL DEVELOPMENT ASSISTANCE

1. Canada's official development assistance (ODA) to developing countries and multilateral institutions measured on a Development Assistance Committee basis, totaled 0.32 percent of GNP in 1996 (US$1,796 million), compared with 0.38 percent in 1995 and 0.46 percent in 1992 (see tabulation below). The government remains committed to reaching a target for ODA of 0.7 percent of GNP, as Canada's fiscal situation permits.

Canada: Official Development Assistance 1/

	1991	1992	1993	1994	1995	1996
(In billions of U.S. dollars)						
Total	**2.6**	**2.5**	**2.4**	**2.3**	**2.1**	**1.8**
Bilateral	1.8	1.7	1.6	1.5	1.4	1.4
Multilateral	0.8	0.8	0.8	0.8	0.7	0.4
(In percent of GNP)						
Total	**0.45**	**0.46**	**0.45**	**0.43**	**0.38**	**0.32**
Bilateral	0.31	0.31	0.30	0.28	0.25	0.24
Multilateral	0.14	0.15	0.15	0.15	0.12	0.08
(In percent of total ODA)						
Total	**100**	**100**	**100**	**100**	**100**	**100**
Bilateral	69	68	67	65	67	76
Multilateral	31	32	33	35	33	24

1/ Includes traditional ODA measured on a DAC basis, and excludes aid programs for transition economies.

2. ODA priorities are: (i) basic human needs; (ii) women in development; (iii) infra-structure services; (iv) human rights, democracy, and good governance; (v) private sector development; and (vi) the environment. Canada's ODA targets countries in Africa, Asia, and the Americas, and the majority of ODA is distributed to low-income countries, particularly in Africa. Canada also provides support to countries in Central and Eastern Europe and the former Soviet Union.