

The Effects of Recent Relative Price Movements on the Canadian Economy

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- *A sharp rise in real commodity prices has boosted Canada's terms of trade and exchange rate over the past five years. These relative price movements, underpinned by a strong global demand for commodities, have generated substantial real income gains, reduced Canadian cost competitiveness, and changed relative factor prices in favour of capital, thereby stimulating final domestic demand, depressing real net exports, and inducing intersectoral transfers of resources.*
- *While the standard of living of Canadians has improved as a result of the terms-of-trade gains, the frictions generated in adjusting to the relative price shock have likely contributed to hold back aggregate productivity growth.*
- *For the economy as a whole, both the investment rate and the employment ratio have increased markedly, and profit margins have risen. Wage pressures have been largely confined to industries and areas involved in resource extraction.*
- *Canada's ability to take advantage of commodity-price increases crucially rests on its capacity to adjust to price signals without undue pressure on costs. The required mobilization and reallocation of resources are facilitated by flexible product and labour markets and sound macroeconomic policies.*

Strong global demand for commodities has underpinned a major price realignment both in Canada and around the world since 2003. Commodity prices have soared relative to the prices of both manufactured goods in international markets and services in domestic economies. In real terms, the Bank of Canada commodity price index climbed 118 per cent between 2002Q4 and 2008Q2 as a result of a 200 per cent jump in energy prices and a 57 per cent increase in non-energy commodity prices (Chart 1). This unprecedented boom in the prices of raw materials was propelled by robust commodity-intensive growth in emerging-market countries, along with a muted supply response for many commodities, particularly energy.

Partly in response to these important price movements, the Canadian dollar has appreciated rapidly and substantially against its U.S. counterpart, as Canada is a net exporter of commodities.¹ After reaching its lowest level in early 2002, the Canadian dollar had appreciated by 58 per cent by mid-2008. Among other things, this has reduced Canada's cost competitiveness, as well as the price of machinery and equipment relative to labour. A further outcome of the surge in commodity prices and, to a limited extent, of the appreciation of the Canadian dollar, has been a remarkable improvement in Canada's terms of trade (the ratio of the price of exports of goods and services to the price of imports of goods and services), which increased by 22 per cent between the end of 2002 and

1. The appreciation of the Canadian dollar has also been part of a multilateral adjustment to global imbalances (Bailliu and King 2005).

the beginning of 2008 (Chart 2). This gain considerably boosted the real income of Canadians.

The commodity-price increase triggered structural adjustments by altering underlying economic incentives, leading to appreciable resource reallocations.

Chart 1
Bank of Canada Real Commodity Prices

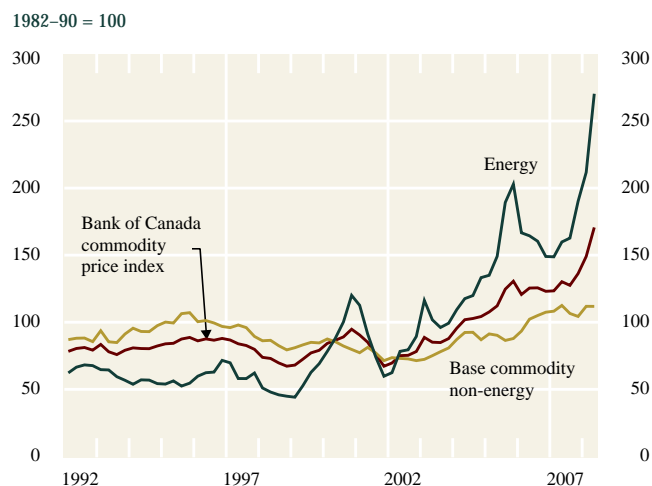
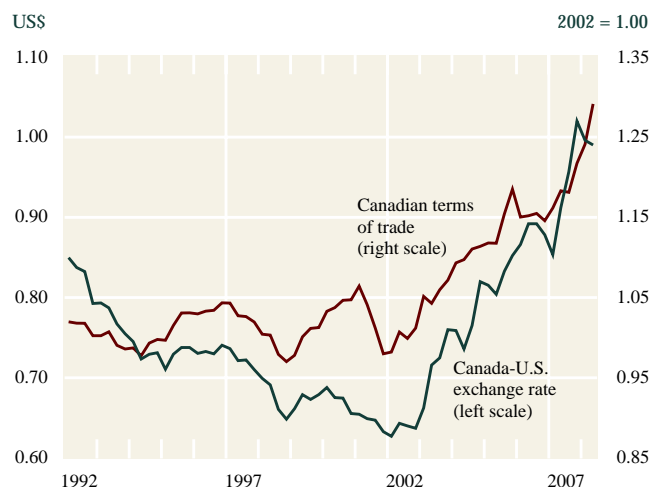


Chart 2
Canada's Terms of Trade, 1992–2008



The commodity-price increase, combined with the exchange rate appreciation and the real income gain, triggered structural adjustments by altering underlying economic incentives and has led to appreciable resource reallocations within the Canadian economy. This article examines these adjustments, in particular the resource reallocation between the different sectors of the economy and its effects on employment, output, and productivity. It also analyzes the responses of final domestic demand and external trade flows.

Sectoral Adjustments

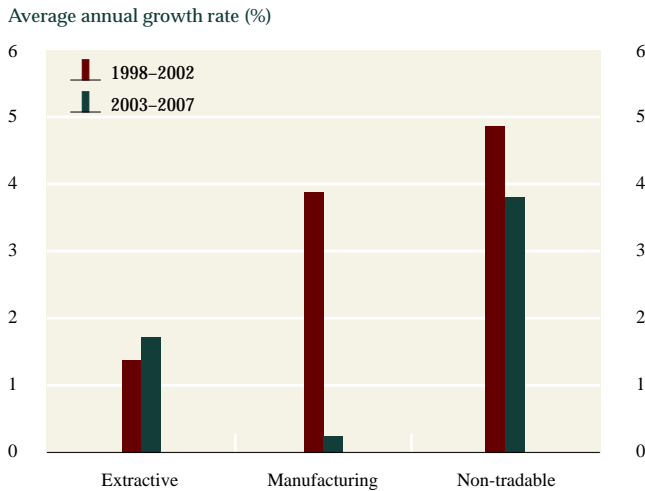
A rise in commodity prices is expected to cause resource firms to expand production and employment in the short term and to increase capacity in the longer term, through investment.² The resulting increase in labour demand pushes up wages in the natural resources sector. In an economy that is a net exporter of commodities like Canada, the accompanying gains in the terms of trade boost real gross national income (GNI), final domestic demand, and the value of the currency. The currency appreciation facilitates both the transfer of resources to the commodity-producing sector and the buildup of capacity in the non-tradable sector to accommodate the expansion of domestic demand. It does so by redirecting this demand towards imported goods and services, by discouraging the production of manufactured goods for exports, and by reducing the price of imported machinery and equipment relative to labour. As a result of these adjustments, the manufacturing sector contracts, and the non-tradable sector tends to expand provided that it remains relatively insulated from the ongoing wage pressures in the resources sector.

By and large, this is the scenario that has unfolded in Canada over recent years. This can be seen by comparing the performances of three sectors of the economy: mining, oil, and gas (the extractive sector); manufacturing; and the non-tradable business sector.³ While the extractive sector represents only 50 per cent of the overall resources sector, it has experienced the

2. For an analysis of the effects of changes in real commodity prices on the terms of trade, see Macklem (1993).

3. Unless otherwise specified, the non-tradable business sector comprises North American Industry Classification System (NAICS) sectors 23, 41, 44–45, 48–49, 51, 52, 53, 54, 56, 71, 72, and 81. We chose to exclude management of companies (55) as well as non-business-sector industries because quarterly data from Statistics Canada's productivity accounts are not directly available for these industries.

Chart 3
Real Gross Domestic Product by Sector

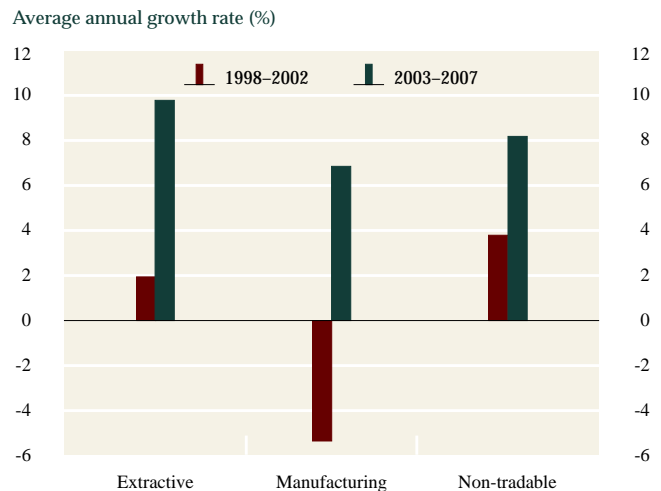


sharpest price increase by far.⁴ For this reason the analysis will focus on its performance.

Over the 2003-07 period, real gross domestic product (GDP) in the mining and oil and gas extractive sector rose 1.7 per cent per year on average, a somewhat faster pace than the 1.4 per cent observed over the 1998-2002 period (Chart 3). This relatively subdued pace in the face of high prices suggests that production was constrained by capacity. Responding with some delay to these pressures, real investment in the extractive sector, which had picked up temporarily in the mid-1990s, accelerated again, to an average growth rate of 9.8 per cent annually in the 2003-07 period (Chart 4). Employment in the sector jumped by some 30 per cent, and growth in hours worked shot up to 7.7 per cent per year on average over the same period (Charts 5 and 6), while operating profit margins oscillated between 15 and 20 per cent, a high rate by historical standards (Chart 7). Labour shortages quickly became apparent, particularly in Alberta, where wage growth picked up sharply beginning in 2005 and averaged 4.5 per cent annually between 2003 and 2007 compared with 2.9 per cent nationally (Chart 8). Taking advantage of the buoyant Alberta labour market and helping to alleviate further pressures on wages and production capacities, net inter-

4. A more complete coverage of the primary resources sector would also include agriculture; forestry, fishing, and hunting; and utilities. It is worth noting as well that the manufacturing sector itself includes resource-processing industries such as wood, paper, and primary metals, whose performance is affected by movements in commodity prices. For the purpose of this article, they have not been separated from the rest of manufacturing.

Chart 4
Real Investment by Sector



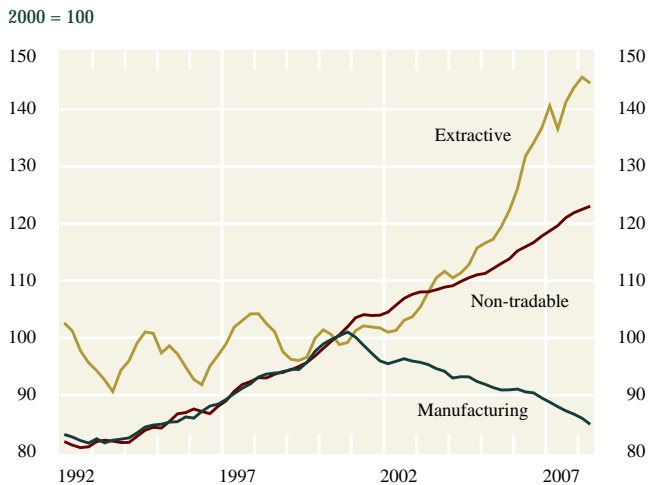
provincial migration to Alberta accrued to 120,000 in the 2004-06 period, before slowing markedly to 10,000 in 2007.

Wage spillovers from the resources sector to other sectors of the economy appear to have been contained. Labour compensation per hour grew on average by 5.3 per cent in the mining and oil and gas extractive sector in 2003-07 compared with 3.4 per cent and 4.1 per cent in the manufacturing and non-tradable sectors, respectively (Chart 9). A credible monetary policy kept inflation expectations well anchored during the period, which likely contributed to limit wage-inflation spillovers.

The manufacturing sector has meanwhile been confronted with a rapid appreciation of the Canadian dollar in addition to increased competition from emerging-market countries. Manufacturing output grew on average by a meagre 0.2 per cent per year over the 2003-07 period. This was a much slower pace than the 3.9 per cent annual average posted over the 1998-2002 period, when a depreciation of the Canadian dollar, driven in part by the weakness in commodity prices, stimulated growth in the sector (Chart 3).⁵ Benefiting from declining import prices for investment goods, real investment growth in the sector nevertheless picked up substantially, averaging

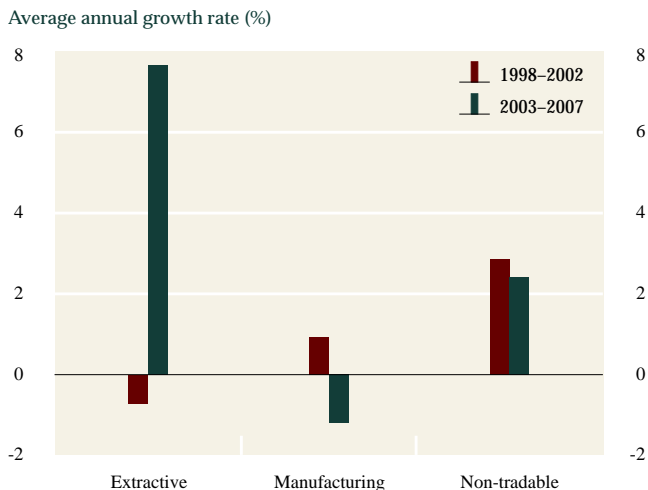
5. The share of the manufacturing sector in total nominal GDP rose to a peak of 19 per cent in 2000 and steadily declined to 16 per cent by 2004, a level still higher than that in several advanced countries. Nominal GDP for Canadian manufacturing is not available beyond 2004 from the economic accounts released by Statistics Canada. Rough estimates suggest that it may have fallen to 13-14 per cent of total GDP by 2007.

Chart 5
Employment Trend by Sector



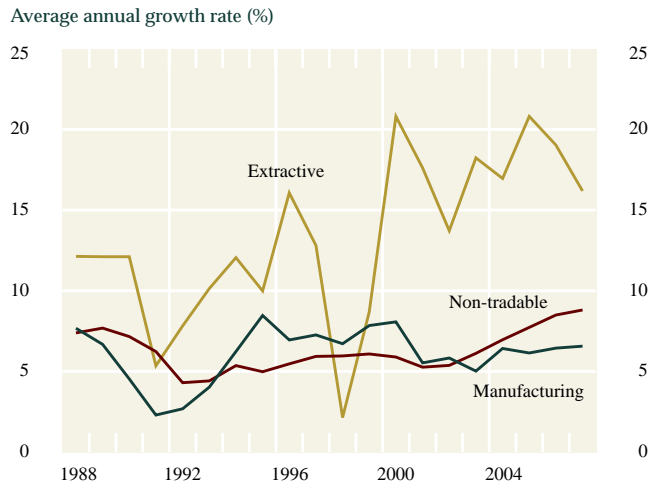
6.9 per cent over the 2003–07 period, compared with a decline of 5.4 per cent over the 1998–2002 period (Chart 4). Employment in the sector declined some 10.9 per cent between January 2003 and July 2008, as a little over 221, 000 jobs were shed,⁶ while hours worked dipped 1.2 per cent per year on average over 2003–07 (Charts 5 and 6). This has contributed to maintaining the rate of increase in hourly compensation close to its decade-long average of 3.4 per cent (Chart 9) and the operating profit margin close to its historical norm of around 6 per cent (Chart 7). Some

Chart 6
Hours Worked by Sector



6. From its peak employment in November 2000, the manufacturing sector shed close to 320, 000 jobs.

Chart 7
Operating Profit Margins by Sector



manufacturing industries have fared much worse than others, however, in terms of profitability because of relatively high external trade exposure or because other, longer-term factors compounded the competitiveness problem arising from the appreciation of the Canadian dollar. This is particularly true for the clothing, textile, and leather; wood and paper; and motor vehicle and parts industries.

New income and wealth deriving from the rise in commodity prices fed demand for non-tradable goods and services, including housing whose relative price has considerably increased, particularly in Alberta, where substantial immigration contributed to the demand pressures. As a result, starting in 2003 after having slowed for four years, output growth picked up in the non-tradable sector. Gains have been particularly important in the construction; finance, insurance and real estate; and wholesale and retail trade sectors.⁷ Real investment spending in the non-tradable sector as a whole increased on average by 8.2 per cent per year over the 2003–07 period, an acceleration after a two-year slump (Chart 4). In addition, as a result of its dynamism, the non-tradable sector of the economy created close to one million new jobs between January 2003 and July 2008, while operating profit margins for the sector as a whole posted steady increases from 2003 to 2007 (Chart 7).⁸

7. To a significant extent, output growth in construction has been directly stimulated by increased investment in the resources sector.

8. Operating profit margins are calculated for the non-tradable sector using NAICS sectors 23, 41, 44–45, 48–49, 51, 52, 53, 54, 56, 71, and 72, since there are no data available for NAICS code 81 (other services).

Chart 8
Labour Force Survey: Wages by Provinces

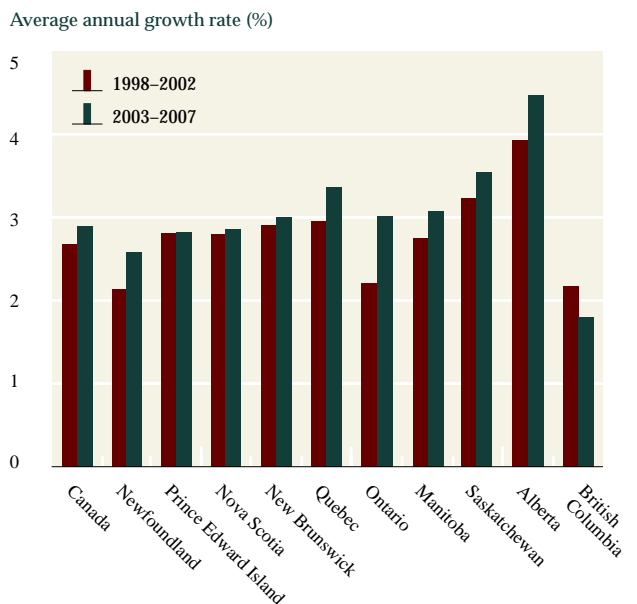
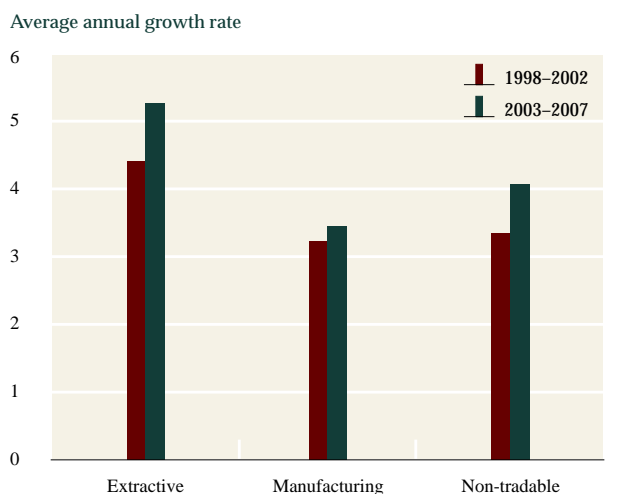


Chart 9
Labour Compensation by Sector



Overall, the Canadian economy has responded well to the latest global price realignment. In fact, the adjustment process appears to have been much smoother than in the commodity-price cycles of the 1970s and 1980s. One reason is that the current round of commodity-price gains has been driven by a strong global expansion rather than by supply cutbacks. As well, stronger competition and increased flexibility in the

product and labour markets have facilitated the mobilization and reallocation of resources. These structural improvements reflect, among other things, less anti-competitive regulation; a reform of the employment insurance regime; improved labour market information; and easier access to foreign goods, services, and workers. Finally, better macroeconomic policies have defused potential pressures on costs and prices by firmly anchoring inflation expectations and making the public sector a net saver rather than a net spender.

Potential Impact on Productivity

Productivity growth has been an issue in Canada in recent years. While labour productivity in the business sector posted a robust 2.3 per cent average annual growth rate between 1998 and 2002, its progression dropped to 1.1 per cent over the 2003-07 period. One hypothesis concerning the slower growth is that adjusting to the large relative price movements has had negative effects on aggregate productivity growth. This section investigates three possible effects that the economic adjustments discussed in the previous section may have had on productivity: i) an accounting effect, ii) an incentive effect, and iii) an adjustment-cost effect. The key conclusion of the analysis is that adapting to the changes in relative prices has likely contributed to hold back productivity growth by increasing adjustment costs.

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Given that productivity levels and growth rates differ markedly between sectors, the intersectoral shifts of labour that have occurred in the past five years have had the potential to affect aggregate productivity growth, since they have changed the relative importance of the various sectors of the economy. This is the accounting effect.⁹ As Table 1 shows, labour-productivity growth for the business sector as a whole over

9. See Fagerberg (2000) for a decomposition of aggregate productivity growth that explicitly identifies the effects of labour shifts between sectors with different productivity levels (static shift) and with different productivity growth rates (dynamic shift).

Table 1

Decomposition of Labour-Productivity Growth, 2003–07

	Labour productivity level 2002	Change in share of hours worked 2002–07 (%)	Static shift	Dynamic shift	Within-industry growth	Total effect (%)
Total business sector	41.4	0.0	1.3	-0.9	5.5	5.9
Extractive sector	158.1	33.2	1.5	-0.5	-1.5	-0.5
Manufacturing	46.7	-14.2	-0.3	-0.2	1.7	1.2
Non-tradable*	37.1	3.5	-0.3	0.0	4.9	4.6
Construction	32.4	17.2	-0.3	0.1	0.3	0.0
Agriculture, forestry, fishing and hunting	263.0	-15.8	0.2	-0.1	0.7	0.8
Utilities	167.2	7.6	0.2	0.0	-0.3	-0.1

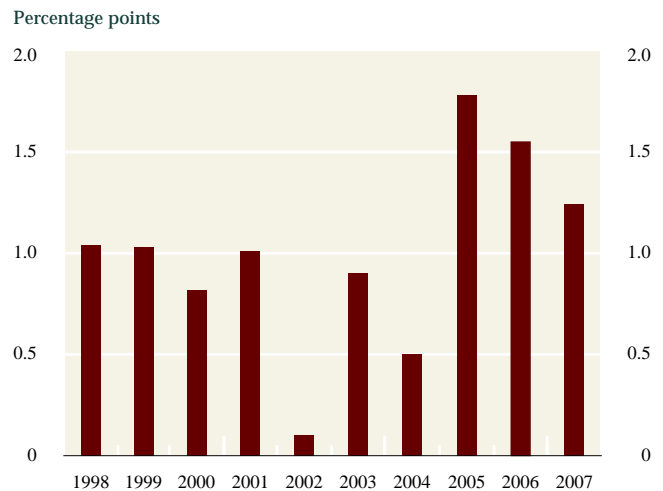
* The non-tradable sector includes: North American Industry Classification System (NAICS) sectors 23, 41, 44–45, 48–49, 51, 52, 53, 54, 56, 71, 72 and 81.

the past five years benefited from a reallocation of hours worked towards sectors with relatively high productivity levels (static shift, fourth column). These specific gains, which account for 22 per cent of the total increase, essentially originated from the large inflow of labour in the extractive sector (third column), which enjoys one of the highest levels of productivity among all sectors of the economy (second column). Manufacturing, with above-average productivity levels, contributed negatively, since its share of hours worked declined over the period, thereby offsetting a similar but positive contribution from the non-tradable sector, where the effect of a shift of labour towards the high-productivity finance, insurance, and real estate industry played a major role. Within the non-tradable sector, the influx of labour in construction exerted a negative but far less important effect. Aggregate labour-productivity growth was also affected negatively by the effect of a dynamic shift (fifth column) as labour moved out of manufacturing, a sector with comparatively high positive productivity growth over the period, and into the mining and oil and gas extractive sector, which posted negative productivity growth over the 2003–07 period.

Large movements in relative prices such as those recently experienced in Canada alter economic incentives and should prompt adjustments that would affect productivity in several ways.¹⁰ One way this incentive effect works is through raising the capital-to-labour ratio as the currency appreciation that accompanies the commodity-price increase lowers the costs of imported machinery and equipment relative to labour. This effect, which can be significant because machinery and equipment are largely imported in Canada, likely contributed to the observed faster rise in the capital intensity of the business sector and its contribution to labour-productivity growth over 2005–07 (Chart 10). Another way, as suggested by Harris (2001), is through intensified competitive pressures, particularly in the manufacturing sector, in view of its high external trade exposure. These pressures could lead to closure of the least-efficient plants and exit of the least-efficient firms, improvement in technology, changes in work practices, and other productivity-enhancing adjustments. While incentive effects have no doubt taken place in many firms, aggregate data suggest that they played a secondary role over the 2003–07 period, when in fact productivity growth in manufacturing slowed to 1.7 per cent per year, compared with 2.8 per cent over the previous 20 years (1983–2002).

Chart 10

Contribution of Capital Deepening to Labour-Productivity Growth in the Business Sector



10. See Lafrance and Schembri (1999–2000) for a discussion of the possible links between the exchange rate and productivity.

Chart 11
Labour Productivity by Sector



When an economy is reallocating resources following an important change in relative prices, higher adjustment costs likely reduce the pace of efficiency gains. This is the adjustment-cost effect, which has probably slowed productivity growth more over the past five years than it did previously. Intersectoral labour transfers lead to some disruption of regular work in both declining and expanding sectors, with negative effects on productivity (Hamermesh and Pfann 1996). In the declining sector, the remaining workers have to take over unfamiliar tasks when colleagues leave, and the work has to be reorganized. At the same time, in the expanding sector, new workers have to be trained and experienced workers will see their productivity decline as they contribute to the integration of new employees. These costs are likely exacerbated in a period of rapid absorption of labour, when the labour market is tight and marginal workers have relatively little experience or skills. This may have been the case recently, particularly in the oil and gas and construction sectors, which have seen their share of total hours worked jump during the 2003–07 period. Adjustment costs also intensify when the investment rate (the ratio of investment to capital) increases, as it did in the 2004–07 period, partly in response to relative price changes. One sector in which the investment rate has reached higher levels is mining and oil and gas extraction. Developing costly marginal reserves has exacerbated normal adjustment costs or amplified diminishing returns to investment in the sector. In addition, the longer time-to-build required for oil sands projects, which have risen in relative importance in

Canada, would have temporarily depressed the productivity of capital.¹¹ These factors explain at least in part the relatively steep decline of productivity in the mining and oil and gas extractive sector since 2003 (Chart 11). This decline alone, weighted by the share of total hours worked by the sector, has subtracted 1.5 per cent from the rate of aggregate productivity growth between 2003 and 2007, as indicated by the within-industry effect presented in column 6 of Table 1.

Measuring Income and Trade-Flow Adjustments

The improvement in the terms of trade resulting from higher commodity prices and the appreciation of the Canadian dollar have created significant income effects in Canada. These effects are not adequately captured by traditional measures of output, such as real GDP. In this context, a more appropriate measure, used by Duguay (2006) and Macdonald (2007) and consistent with the approach proposed by Kohli (2006), is gross national income (GNI), representing the amount of real final domestic spending that Canadians can afford out of their income from production in Canada and net investment abroad.^{12, 13}

The improvement in the terms of trade resulting from higher commodity prices and the appreciation of the Canadian dollar have created significant income effects in Canada.

From 2003 to 2007, GNI grew much faster than GDP as the escalation of the terms of trade pushed the price obtained for Canadian production much higher than the price paid for final goods and services used in Canada (Chart 12).

11. The time-to-build factor should have only a moderate effect on aggregate productivity because the temporarily forgone output in the extractive sector is compensated for by higher output in the construction sector. The net impact on aggregate productivity should be negative because labour productivity is much higher in the extractive sector than in construction.

12. $GNI = \text{nominal GNP} / \text{price of final domestic demand}$.

13. Net investment income from abroad is negative because the investment income earned in Canada by non-residents exceeds that earned abroad by Canadians.

Chart 12
Comparative Growth of Gross National Income and Gross Domestic Product

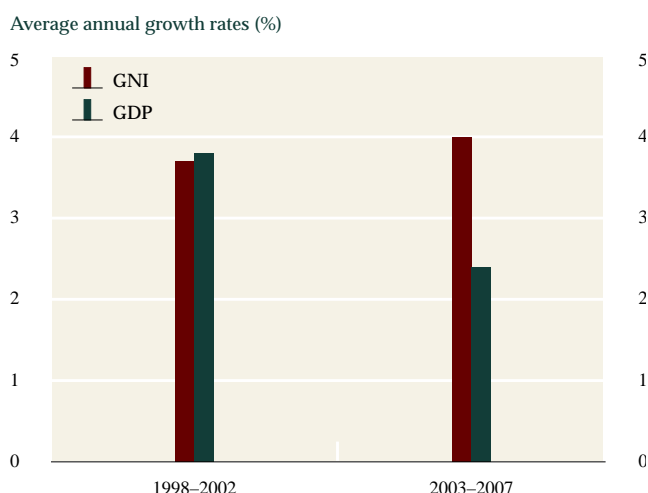
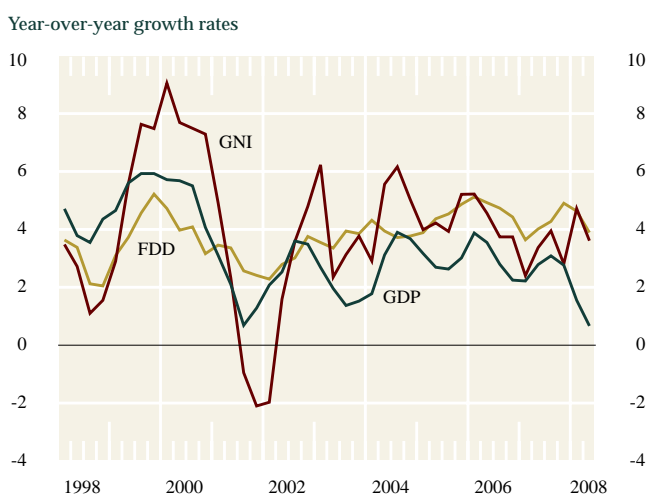


Chart 13
Change in Gross National Income, Gross Domestic Product, and Final Domestic Demand



Income and wealth effects attributable to better terms of trade have in fact stimulated final domestic demand (FDD), which has posted robust growth during the past five years (Chart 13). A decomposition of the growth of real per capita consumption over this period highlights the exceptional contribution of improved terms of trade via their effect on the relative price of GDP to consumption (Table 2).¹⁴ During the past five years, the resulting "trading gains" alone account for more than half of the expansion in real

Table 2
Decomposition of Real Per Capita Consumption Growth

Annual composite rates

	2003Q1-2008Q1	1984Q1-2008Q1
Real per capita consumption	2.9	2.0
= Consumption \$ / disposable income \$	-0.1	0.6
+ Disposable income \$ / labour income \$	-0.3	-0.4
+ Labour income \$ / GDP \$	0.2	-0.1
+ Relative price of GDP to consumption ("trading gains")	1.6	0.1
+ Labour productivity	0.7	1.2
+ Hours worked / total population	0.8	0.6

per capita consumption. Typically, in the longer term, growth in labour productivity provides the principal engine of growth in real income and consumption.

Despite the remarkable pace of growth posted by domestic demand, the imports that sustained it expanded even more rapidly, owing to the appreciation of the Canadian dollar and a shift in spending to import-intensive components. Conversely, this same appreciation exerted a drag on exports. In the following sections, these adjustments are examined more closely.

Imports

Between 2003 and 2007, the pace of import growth accelerated, exceeding that of GDI. The contribution of various factors to this growth in imports can be assessed using the error-correction model developed for the Bank of Canada by Jean-Philippe Cayen.¹⁵ To focus the analysis on underlying trends, only the long-term equation from the model is used. This equation can be written as follows, when re-estimated for the period 1973Q1-2008Q1 (t values in parentheses):

$$\log(M_t) = -0.77*\log(PM_t/PY_t) + 0.24*\log(C_t) + 0.14*\log(I_t) + 0.63*\log(X_t) \quad (1)$$

(-4.57)
(3.85)

(0.86)
(5.60)

This equation specifies that imports of goods and services are stimulated by a decline in the price of

14. See Freedman (1977) for an earlier but similar analysis of real income and expenditure per capita.

15. For details of the model, see Dion, Laurence, and Zheng (2005).

Table 3
Modelling Contributions to the Growth in Imports*

	1998Q1– 2002Q4	2003Q1– 2008Q1
Imports	3.1	5.5
Growth forecast by the model	4.0	7.8
Contribution of Canadian demand (<i>C + I</i>)	1.1	2.2
Contribution of Canadian exports	2.9	0.5
Contribution of import prices	0.0	4.7

* Growth rates are expressed in mean annualized geometric terms.

imports relative to the GDP deflator (PM/PY) and by growth in total consumption of goods and services (C), business fixed investment (I), and exports of goods and services (X). Calculations based on equation 1 indicate that the appreciation of the Canadian dollar (reflected in the relative price of imports) accounts for approximately 60 per cent of the growth in imports between 2002 and 2007 (Table 3). This appreciation of the Canadian dollar contributed substantially to the accelerating growth in imports over this period, relative to the previous period, despite the pronounced slowdown in export-based demand, as the following section will show.¹⁶

Among the components of consumption, it appears that semi-durable goods and goods and services associated with foreign travel responded most strongly to the appreciation of the Canadian dollar, judging by the growth in both consumption and imports in these categories (Table 4). Imports in machinery and equipment, including equipment parts, also surged over the past five years. Their expansion relative to the corresponding spending on business investment has been hampered, however, by flagging demand for parts following the slowdown in equipment exports from Canada. Nevertheless, precisely because of its high import content, investment in machinery and equipment was directly stimulated by the appreciation of the Canadian dollar. The content of imported industrial products in industrial output has expanded considerably as Canadian firms, especially in the manufacturing sector, have taken advantage of

16. In fact, the model overpredicts the growth of imports over both the 1998Q1–2002Q4 and 2003Q1–2008Q1 periods. This may have several causes, including omitted variables and a structural break in the determination of imports. It is worth noting that the elasticities of imports to the demand components, which sum to one, have been estimated freely.

Table 4
Growth in Total Real Imports and Selected Components*

Chained 2002 dollars

	1998Q1– 2002Q4	2003Q1– 2008Q1
Total imports	3.1	5.5
Machinery and equipment	2.1	9.4
Consumer goods	6.5	9.0
Industrial products	2.4	4.1
Services	2.1	5.6
Travel services	-1.3	11.5

* Growth rates are expressed in mean annualized geometric terms.

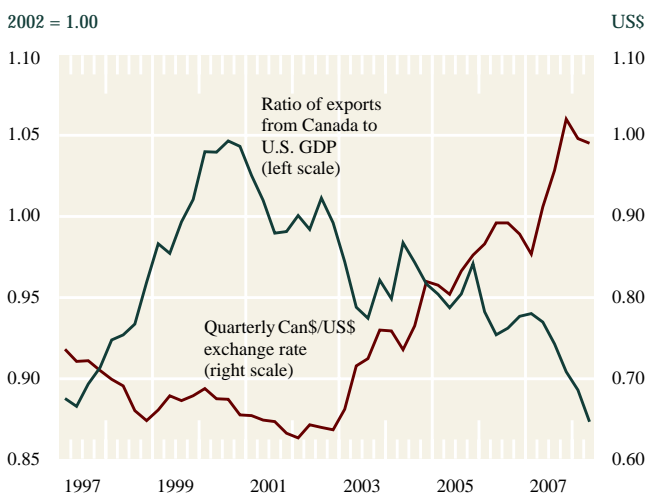
cheaper imported physical inputs to maintain their profit margins.

Exports

The marked appreciation of the Canadian dollar since 2003 has severely curtailed export growth. Indeed, the ratio of Canadian exports to U.S. GDP continued to fall well after the fallout from the bursting of the tech bubble had dissipated in the early 2000s (Chart 14).

As in the case of imports, the long-term equation for exports from Cayen's error-correction model provides an order of magnitude for the impact of the appreciation of the exchange rate on Canadian exports while excluding the volatility inherent in short-term dynam-

Chart 14
Ratio of Canadian Exports to U.S. Gross Domestic Product



ics. Re-estimates for the period 1973Q1–2008Q1 are as follows (*t* values in parentheses):

$$\log(X_t) = -0.64*\log(RER_t) + 0.39*\log(C_{US_t}) + \quad (2)$$

(-8.86) (3.71)

$$0.32*\log(IME_{US_t}) + 0.41*\log(X_{US_t}).$$

(3.06) (5.33)

As expected, this equation shows that exports contract in response to an appreciation in the real exchange rate (*RER*) and expand when the United States posts growth in consumption (*C_{US}*), investment in machinery and equipment (*I_{MEUS}*), or exports (*X_{US}*).¹⁷ A simulation reveals that the negative effects of the appreciation of the Canadian dollar partly offset the positive impact of robust growth in final demand and production in the United States during the period 2003–07 (Table 5). Moreover, the pronounced slowdown in export growth from earlier levels is owing entirely to the increased value of the Canadian dollar relative to the U.S. dollar. In recent quarters, however, the softening of U.S. activity, particularly motor vehicle sales and residential construction, which are intensive in Canadian exports, has been the major source of further weakness in Canadian exports.¹⁸

Table 5
Modelling the Contribution of Exports to Growth*

	1998Q1– 2002Q4	2003Q1– 2008Q1
Exports	4.6	0.6
Growth forecast by the model	4.1	1.1
Contribution of U.S. demand (<i>C + X + I</i>)	2.5	5.8
Contribution of real exchange rate	1.5	-4.7

* Growth is expressed in mean annualized geometric terms.

Relative to the United States, all regions of the globe saw their share of Canadian exports expand (Table 6) and, aside from Japan, posted rapid growth in their imports from Canada. Canadian exports to the European Union rose nearly as fast as those to countries

17. Indeed, Canadian and U.S. production are so intertwined that an increase in exports from the United States usually coincides with an increase in U.S. imports of commodities, parts, and semi-manufactured goods from Canada.

18. An unfavourable composition of U.S. activity, not properly captured by the export equation, may have contributed to the overestimation of Canadian export growth over the 2003Q1–2008Q1 period, as shown in Table 5.

Table 6
Regional Shares of Canada's Exports of Goods and Services

%	2003	2007
World	100.0	100.0
United States	79.1	73.9
European Union	7.5	9.6
Japan	2.4	2.2
Other OECD countries	3.6	4.3
Non-OECD countries	7.5	9.9

OECD = Organisation for Economic Co-operation and Development

that do not belong to the Organisation for Economic Co-operation and Development (OECD), despite much slower economic growth in Europe. These developments suggest that the appreciation of the euro and of the pound sterling relative to the U.S. dollar stimulated Canadian exports to Europe relative to exports to non-OECD countries and the United States.

Exports of machinery and equipment and of consumer goods other than automobiles seem to have been most affected by the appreciation of the Canadian dollar, although their sluggishness also reflects, in part, the expanding penetration of emerging economies, especially China, in U.S. markets for these products (Table 7). Exports of automotive products showed slightly more strength until 2006, for at least two reasons: (i) their high content in imported parts, the cost of which declined with the appreciation of the Canadian dollar, and (ii) the success in the U.S. market of Japanese models manufactured in Canada. With the decline in real spending by tourists and other foreign

Table 7
Growth in Total Real Exports and Selected Components*

Chained 2002 dollars	1998Q1– 2002Q4	2003Q1– 2008Q1
Total exports	4.6	0.6
Natural resources and products	2.5	2.3
Highly manufactured goods	5.2	0.3
Machinery and equipment	6.1	0.5
Automotive	4.1	-1.5
Other consumer goods	8.6	-1.8
Services	5.7	-1.5

* Growth is expressed in mean annualized geometric terms.

visitors to Canada, exports of services, especially travel services, seem to have been particularly affected by the appreciation.

The growth in real exports of commodities between 2003 and early 2008 remained virtually unchanged compared with the previous five-year period. The stimulus created by higher commodity prices in international markets apparently offset the detrimental effects of the appreciation of the Canadian dollar and of certain sector-specific factors, especially the outbreak of mad cow disease (BSE) in 2003, the relative weakness in the U.S. residential construction market since 2006, sluggish trend growth in the consumption of newsprint in favour of electronic media, and oil reserves that are time-consuming and costly to develop.

Concluding remarks

Most certainly, as a small open economy well endowed in natural resources, Canada will continue to face important challenges and opportunities as commodity prices fluctuate on the world market and affect the exchange rate, the terms of trade, and the allocation of resources. Overall, the Canadian economy has responded well to the latest global price realignment. Its ability to take advantage of higher commodity prices crucially rests on its capacity to adjust without undue pressure on costs. Flexibility in the product and labour markets, which has further room to improve, as well as sound macroeconomic policies, are key elements in the economy's current and future prosperity.

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