

Canada: Selected Issues

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CANADA

Selected Issues

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Approved by Western Hemisphere Department

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INTRODUCTION

- 1. The Canadian economy has performed strongly in the last few years but weaker external conditions will likely place a toll going forward.** Output growth has been strong in the last four years and domestic economic indicators remain robust. However, with the envisaged U.S. slowdown and tighter financial conditions around the globe, an open economy such as Canada is bound to suffer. This selected issues paper addresses the following key questions: How closely linked is Canadian growth to U.S. growth? What are the main spillover channels from U.S. conditions to Canada? How well is the monetary framework operating? How adaptable is the Canadian economy to economic shocks?
- 2. The first two Chapters address the risks to the Canadian economy by studying links to the U.S. economy.** Chapter I summarizes staff research indicating that spillovers from the United States to Canada have remained remarkably stable over time, with a one-percent decline in U.S. real GDP resulting in a $\frac{3}{4}$ percent reduction in Canadian output after 2 years. In addition, it seems that, while trade linkages are sizeable, financial conditions—broadly defined as changes in U.S. bond yields, equity prices, and short-term interest rates—are the largest source of U.S. spillovers to Canada. Chapter II presents the main results of staff research on the financial-spillover channel, which confirms and extends the findings in Chapter I. Financial spillovers are crucial because U.S. markets play a direct role in funding Canadian corporations, while U.S. financial conditions are key in determining financial conditions in Canada.
- 3. These results suggest that Canada is unlikely to decouple from the U.S. downturn and, in particular, tighter U.S. financial conditions will probably dampen Canadian growth.** Indeed, spreads on Canadian money market borrowing have risen in tandem with U.S. rates, while problems in U.S. structured products have put pressure on Canadian bank balance sheets.
- 4. The Bank of Canada has begun a research agenda on the net benefits of price-level-path-targeting (PLPT) over the current inflation-targeting framework.** Chapter III summarizes Fund staff work and indicates that the evolution of Canadian macroeconomic variables since the mid-1990s has been consistent with the inflation-targeting monetary regime including elements of PLPT. Thus, Canada may already be reaping some of the benefits from greater certainty about the future path of the price level, and possible changes toward a PLPT regime would likely be treated by the markets as an evolutionary step.
- 5. To limit the fallout from U.S. developments and raise long-term growth, staff research suggests that Canadian product markets could be more flexible.** As argued in Chapter IV, dynamic small and medium enterprises may have limited access to credit,

with the constraint likely rooted in weak competition in the banking sector. Rigidities are not, however, circumscribed to access to finance. The evidence discussed in Chapter V suggests that, in general, product markets do not appear as flexible in Canada as in the United States. Canada has a lower rate of job churning associated with firm turnover than the United States, implying that the U.S. economy facilitates creative destruction better. However, Canada has a similar rate of job churning for continuing firms, which is a sign that labor markets are about equally flexible in both countries. The work also suggests significant regional disparities in Canada, with rigidities being more pronounced in the central provinces than in the west. Raising product market flexibility, in particular in the central provinces, could serve to close the productivity growth gap between Canada and the United States.

I. U.S. SPILLOVERS TO CANADA¹

1. **The working paper examines the spillovers from the U.S. economy to Canada, focusing on the effects of rising integration between the two countries.** Integration has risen rapidly in the two decades since implementation of the Canada-U.S. Free Trade Agreement (CUSFTA). From 1988 through 2006, the sum of Canada-U.S. exports and imports expanded from 37 percent of Canadian GDP to 49 percent, while cross-border holdings of financial assets increased from 53 percent of Canadian GDP to over 90 percent.
2. **The main challenge in determining the size and source of spillovers across countries is identifying the sources of comovement in real growth.** Business cycle synchronization could come from common shocks, domestic factors that are correlated over the sample period but are unrelated across countries, or true spillovers—the response of growth in one country to conditions emanating from another country.
3. **The approach in the paper differentiates between global shocks, those originating in the United States or other major regions, and fluctuations specific to Canada.** More specifically, a vector autoregression (VAR) is estimated using quarterly growth for five regions since the early 1970s—the United States, the Euro area, Japan, Canada, and an aggregate comprising relatively small advanced and developing countries that are varied in location and economic structure (“the rest of the world”). Shocks to the rest-of-the-world aggregate are interpreted as global shocks. In addition, we identify the channels through which spillovers are transmitted by adding trade, commodity price, and financial variables to the baseline VAR.
4. **Results across a range of specifications suggest that U.S. spillovers are large and statistically-significant drivers of the Canadian business cycle.** Canadian real GDP rises steadily over time in response to a positive shock to U.S. output, increasing by almost one percentage point after two years (Figure 1). The magnitude of this response is around three-quarters of the impact on U.S. output. By contrast, there is almost no influence on Canadian output from shocks to the Euro area or Japan. Canada’s response to rest-of-the-world growth shocks is just below ½ percentage point, only around half of the impact from the United States.
5. **Results by subsample indicate that spillovers from the United States are stable over time once a decline in the volatility of U.S. output is taken into account.** The response of Canadian GDP to U.S. shocks has been nearly halved since implementation of the CUSFTA, but this reduction can be attributed to lower U.S. volatility. The magnitude of a typical (one standard deviation) U.S. growth shock has fallen from 1.5 to 0.8 percentage

¹ Summary of IMF Working Paper, WP/08/3, “Spillovers Across NAFTA”, by Andrew Swiston and Tamim Bayoumi.

point, while the 70 to 80 percent response of Canadian GDP to U.S. shocks has remained broadly stable (Figure 2). Apparently, the effects of increased integration have been minimal, or they may have been offset by other factors, for example the increased independence of Canadian monetary policy after the implementation of inflation targeting in the early 1990s.

6. **Sources of spillovers are investigated by extending the initial VAR to encompass the main possible conduits—trade, commodity prices, and financial conditions.** More specifically, the effects on spillovers of real exports' contribution to growth, commodity prices, short-term interest rates, bond yields, and equity prices were estimated by adding these variables to the VAR.

7. **Both trade and financial channels play important roles in transmitting U.S. shocks to Canada (Figure 3).** Trade explains about one-half of U.S.-Canada spillovers before the CUSFTA and somewhat less subsequently, while the contribution of financial conditions has increased from one-quarter to one-half. The role of commodity prices has diminished in the last two decades, possibly reflecting the fall in the magnitude of global commodity shocks or the reduced commodity-intensity of real GDP in industrial countries.

8. **The aggregate impact estimated from these separate sources corresponds reasonably closely to the overall impulses, providing a useful check on the results.** Since the impact of each source of spillovers is estimated from a separate VAR, these effects can be added together to provide an independent estimate of the size of the spillovers. As can be seen in Figure 3, there is a relatively close correspondence between the two approaches.

Conclusions and Policy Implications

9. **To summarize our findings:**

- **A one percent rise in U.S. real GDP is estimated to result in a $\frac{3}{4}$ percent increase in Canadian output.** The magnitude of this spillover has been stable over time. The effects of global shocks depend more on the specification, but can also be large, while developments in the Euro area and Japan generally do not affect Canada.
- **While trade linkages are sizeable, financial conditions currently appear to be the largest source of U.S. spillovers to Canada.** Movements in U.S. bond yields and equity markets, as well as short-term interest rates, help transmit spillovers to Canada.

10. **These results suggest that the Canadian economy is unlikely to decouple from the current U.S. downturn.** Spillovers have likely been modest until recently as U.S. weakness was concentrated in the housing sector, which has limited trade linkages, and U.S. financial conditions remained accommodative through the summer. However, trade spillovers will increase as U.S. weakness spreads beyond residential investment, at the same time that U.S. financial market strains feed through onto Canadian activity.

Figure 1. Spillovers to Canada from Major Regions

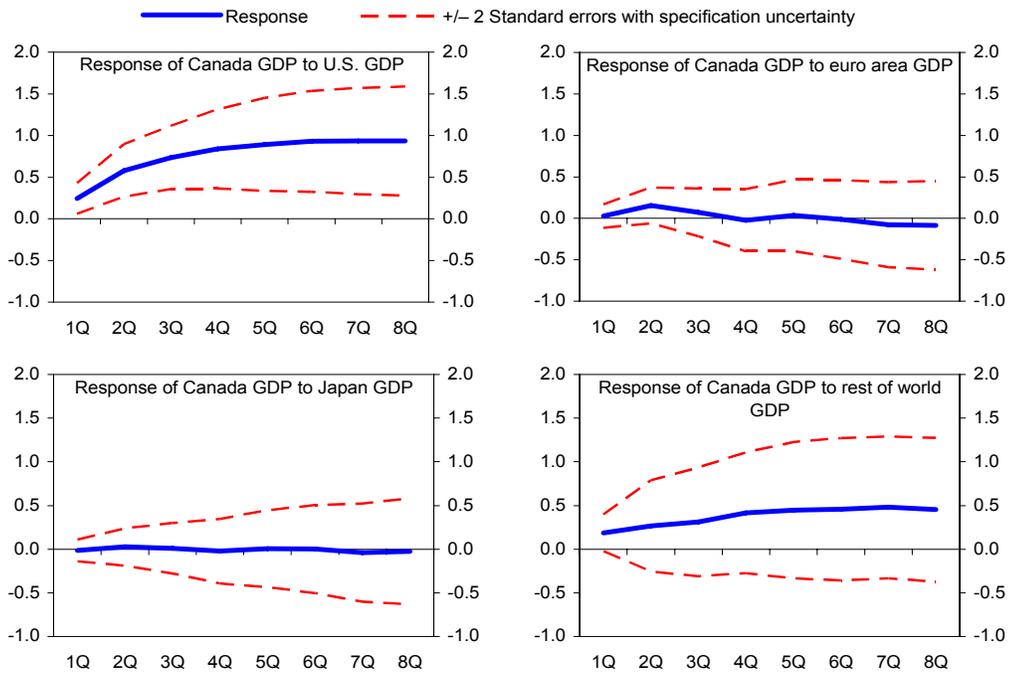


Figure 2. U.S. Shocks and Canadian Responses by Subsample

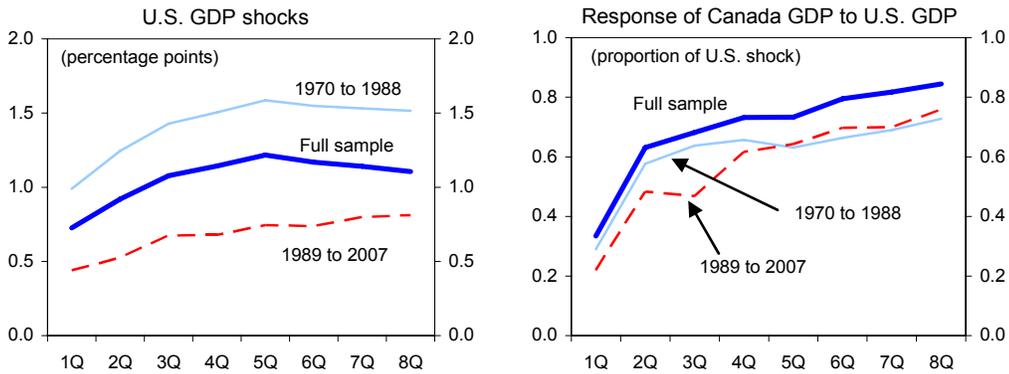
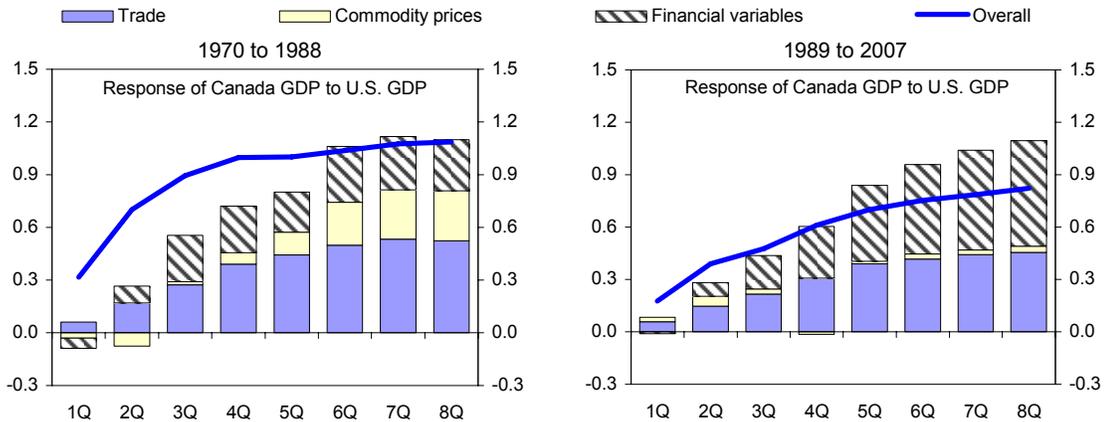


Figure 3. Decomposition of U.S. Spillovers to Canada by Subsample



Source: IMF staff calculations.

II. REAL IMPLICATIONS OF FINANCIAL LINKAGES BETWEEN CANADA AND THE U.S.¹

1. **Trade links between Canada and the United States have been analyzed extensively.** Over three quarters of Canada's merchandise exports (i.e. about one quarter of Canada's GDP) are destined to the United States. Reflecting this trade channel, estimates of the impact of a one-percentage-point change in U.S. real GDP growth on Canada's real GDP growth range between 0.3 and 0.7 percentage point.
2. **While financial linkages between the two countries are also substantial, their implications have been examined much less thoroughly.** Canadian non-financial firms use U.S. financial markets extensively for equity, bank, and (particularly) bond financing, with about one-quarter of their funding being raised south of the border. In addition, Canadian households and businesses hold large amounts of U.S. assets—for example, at end-2006 Canadian residents held U.S. securities worth close to 13 percent of GDP
3. **The working paper uses structural vector autoregressions (SVARs) to analyze the role of financial linkages in real and financial spillovers from the United States to Canada.** The baseline SVAR includes three variables for each country—CPI inflation, real GDP growth, and the interest rate on a 3-month Treasury bill. This system has been widely used in a single-country setting and provides a good starting point for a study of inter-country linkages. Given the relative sizes of the two countries, it is assumed that U.S. variables can affect Canadian variables but not the other way around. Standard assumptions about ordering are used to identify structural shocks, while the sample covers 1983Q1 through 2007Q1.
4. **The impulse responses of Canada's real GDP growth and interest rate to one-percentage-point shocks to corresponding U.S. variables are reported in Figure 1.** In line with conventional wisdom, a one-percentage-point shock to U.S. growth raises Canada's growth by around ½ percent in the short term—broadly consistent with the results in Chapter I—while Canada's short-term interest rate rises to help offset this stimulus and re-equilibrate aggregate demand and aggregate supply.
5. **A change in U.S. financial conditions, proxied by a shock to the short-term interest rate, has a major impact on both financial conditions and real economic activity in Canada.** Canadian short-term interest rates increase by around the same amount as U.S. rates. Canada's annualized real GDP growth slows by about one percentage point in two to four quarters in response to a percentage-point tightening in U.S. financial conditions—an effect that is both economically and statistically significant.

¹ Summary of IMF Working Paper, WP/08/23, “Real Implications of Financial Linkages between Canada and the United States”, by Vladimir Klyuev.

6. **Conceptually, tighter financial conditions in the United States can affect real activity in Canada in three ways:**

- **The direct financial channel**, whereby tighter financial conditions in the United States make it more difficult and expensive for Canadian companies to obtain U.S. funding;
- **The indirect financial channel**, whereby tighter financial conditions in the United States result in less accommodative Canadian financial markets, hurting companies that rely on domestic credit;
- **The trade channel**, whereby tighter financial conditions in the United States lead to slower U.S. growth and lower demand for Canadian exports.

7. **These effects are isolated by eliminating the relevant links in the SVAR.** For example, the trade channel is turned off by setting the impact of U.S. growth on Canadian variables to zero. Similarly, the indirect financial channel is shut down by not allowing Canada's interest rate to change in response to U.S. shocks. Alternative ways of isolating the channels produce nearly identical results.

8. **The bulk of the impact of tighter U.S. financial conditions on Canada's growth comes through financial effects.** As can be seen from Figure 2, the trade channel has little impact on activity. By contrast, a higher cost of accessing U.S. financing (the direct financial channel) accounts for most of the initial decline in output growth while the indirect financial channel has smaller but more persistent effects.

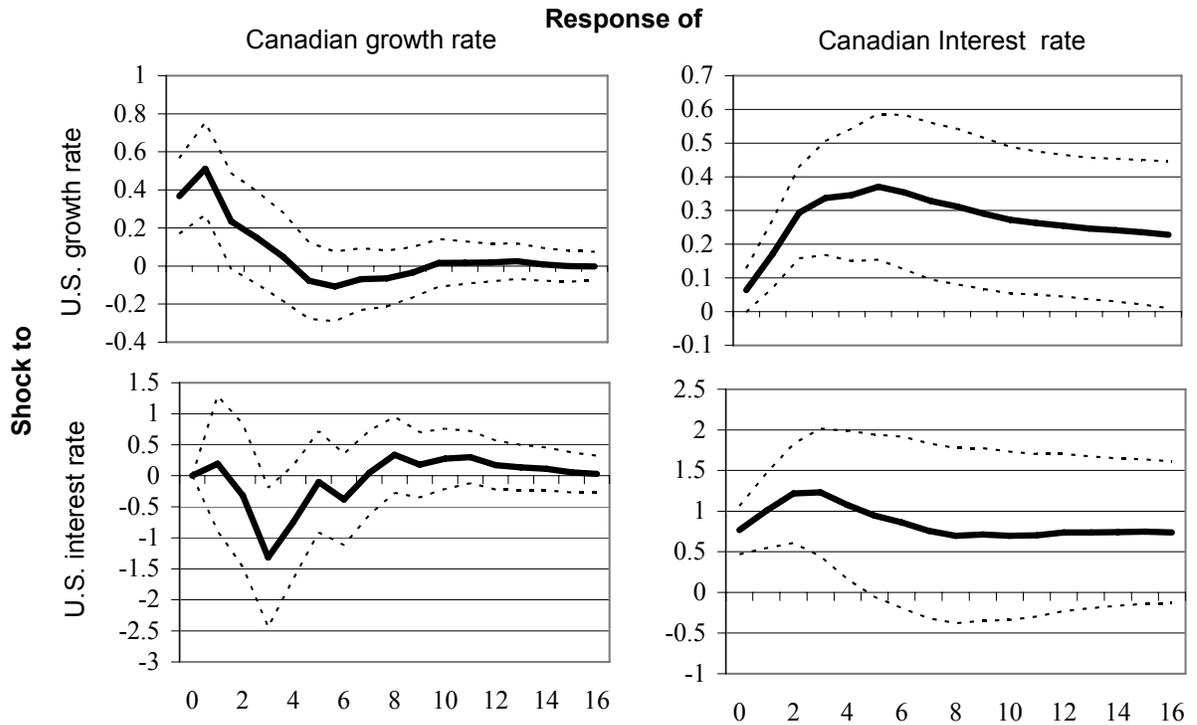
9. **These results are robust to various specification changes.** Similar results are obtained in SVARs that are extended to include additional macroeconomic variables (the oil price, the exchange rate) and financial ones (stock prices, spreads on corporate bonds, financial conditions indices), and alternative lag structures.

Conclusions and policy implications

10. **U.S. financial markets have a substantial influence over financial and real economic conditions in Canada.** This reflects the direct role of the United States in funding for Canadian corporations and the importance of U.S. financial conditions in determining Canadian ones.

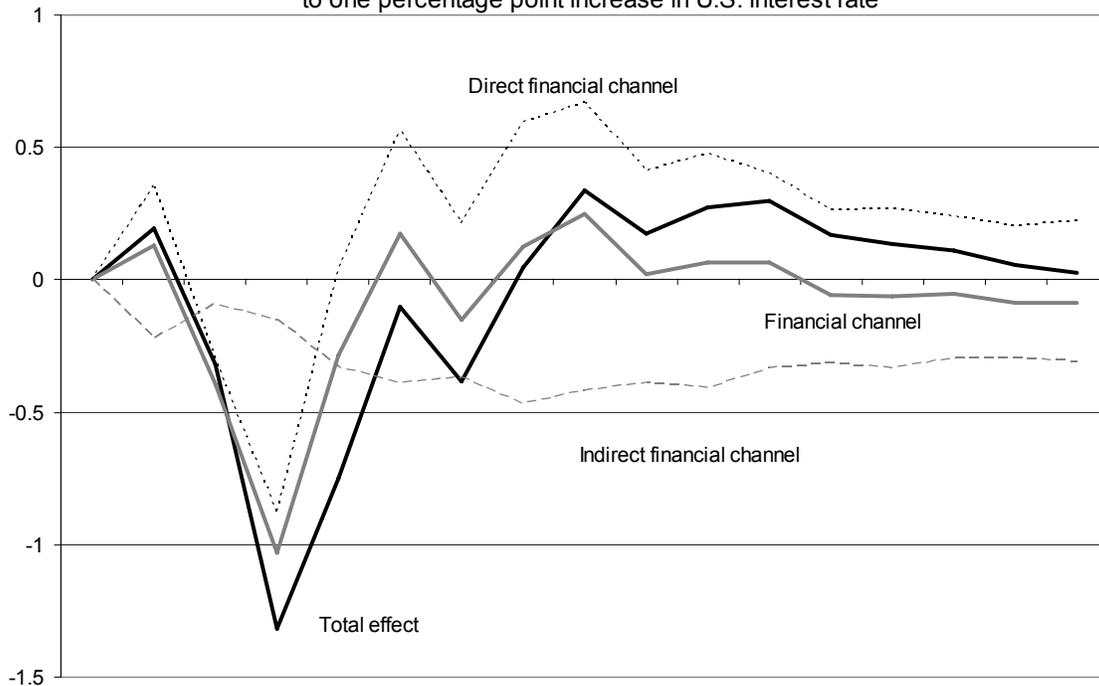
11. **The current tightening in U.S. financial markets is thus likely to slow Canadian growth.** The financial channels appear to be operating. Spreads on Canadian money market borrowing have risen in tandem with U.S. rates, while problems in U.S. structured products have put pressure on Canadian bank balance sheets. A more precise measurement of the impact will require further research as the measure of U.S. financial conditions used in this exercise—the 3 month Treasury bill—is unable to fully capture the complexities of developments over the last 6 months.

Figure 1. Impulse response to a one-percentage point shock



Note: Solid line - impulse response functions; dashed lines - 95 percent confidence bands.
 Source: IMF staff calculations

Figure 2. Decomposition of impulse response of Canada's real GDP growth to one percentage point increase in U.S. interest rate



Source: IMF staff calculations.

III. WHY IS CANADA'S PRICE LEVEL SO PREDICTABLE?¹

1. **The Bank of Canada, which was one of the pioneers of inflation targeting (IT), is now studying the possibility of switching to price-level-path targeting (PLPT).** The Bank has initiated a research program to examine the relative merits of the two regimes (as well as the costs and benefits of an inflation target lower than the current 2 percent) and intends to come to a view on this issue well before the renewal of the current monetary policy agreement with the government in 2011. In the current framework, the inflation target is the 2 percent mid-point of the 1 to 3 percent inflation-control range.

2. **The main difference between the two regimes is the treatment of past deviations of inflation from the target.** Figure 1 illustrates a forecast path for inflation and price gap (the deviation of the price level from a constant-growth path) under IT and PLPT after a shock that pushes inflation above the target. While IT lets “bygones be bygones,” under PLPT past deviations of inflation from the target have to be offset in the future so as to bring the price level back to a predetermined path. Figure 1 also includes measures of forecast confidence bands and shows clearly that under PLPT there is less uncertainty about the future price level. Reducing that uncertainty can raise welfare by allowing individuals to better plan future decisions. In addition, the commitment to a price level path may be useful in response to a deflationary shock, as expectations of a high future inflation would lower the ex-ante real interest rate without requiring sharp reductions in nominal interest rates toward the zero bound. PLPT also reduces uncertainty in inflation and would be consistent with keeping inflation inside the 1–3 percent target range a large proportion of the time.

3. **The working paper analyzes the implications of the fact that Canada's price level has strayed little from the path implied by the two percent inflation target since its introduction.** As Figure 2 shows, the CPI has tended to revert to that path, so that average inflation has been very close to 2 percent since the adoption of this target in December 1994. A similar observation holds for a number of other industrial country inflation targeters.

4. **Such an outcome could be due to chance, with inflationary and disinflationary shocks nearly exactly offsetting each other over the sample period.** Indeed, the Bank of Canada has emphasized that under current arrangements the future price level may well deviate from the long-run predetermined path if a series of shocks moves inflation mainly in one direction.

¹ Summary of IMF Working Paper WP/08/25, “Why is Canada's Price Level So Predictable” by Ondra Kamenik, Heesun Kiem, Vladimir Klyuev, and Douglas Laxton.

5. **Another possibility is that the mean-reverting nature of the price gap reflects the interpretation of the monetary policy framework.** The Bank of Canada aims to keep inflation within the 1–3 percent control range. This could imply maintaining inflation within this range a larger proportion of the time than would be consistent with a more flexible regime, where inflation could potentially deviate a lot from the mid-point of the target range before being steered smoothly back to it. Hence, in response to, say, a positive shock to inflation the Bank would tighten by more than needed to reach the mid-range to avoid the risk of having inflation above 3 percent. As periods of high inflation would tend to be followed by periods of low inflation, an IT central bank could act “as if” there was an element of PLPT.

6. **An inflation-targeting central bank could also pay attention to the price gap for accountability reasons.** As noted by Governor King of the Bank of England, evaluation criteria for performance tend to be backward looking—an IT central bank will be perceived to be successful if the average inflation over the IT period is close to the target. However, aiming to keep average inflation close to the target is equivalent to PLPT.

7. **In addition, the lags in the monetary transmission mechanism may have turned out to be shorter than previously estimated.** As a result, the Bank may have responded more aggressively in hindsight than what was necessary to bring inflation gradually back to the target, again giving the impression that monetary policy contains an element of PLPT.

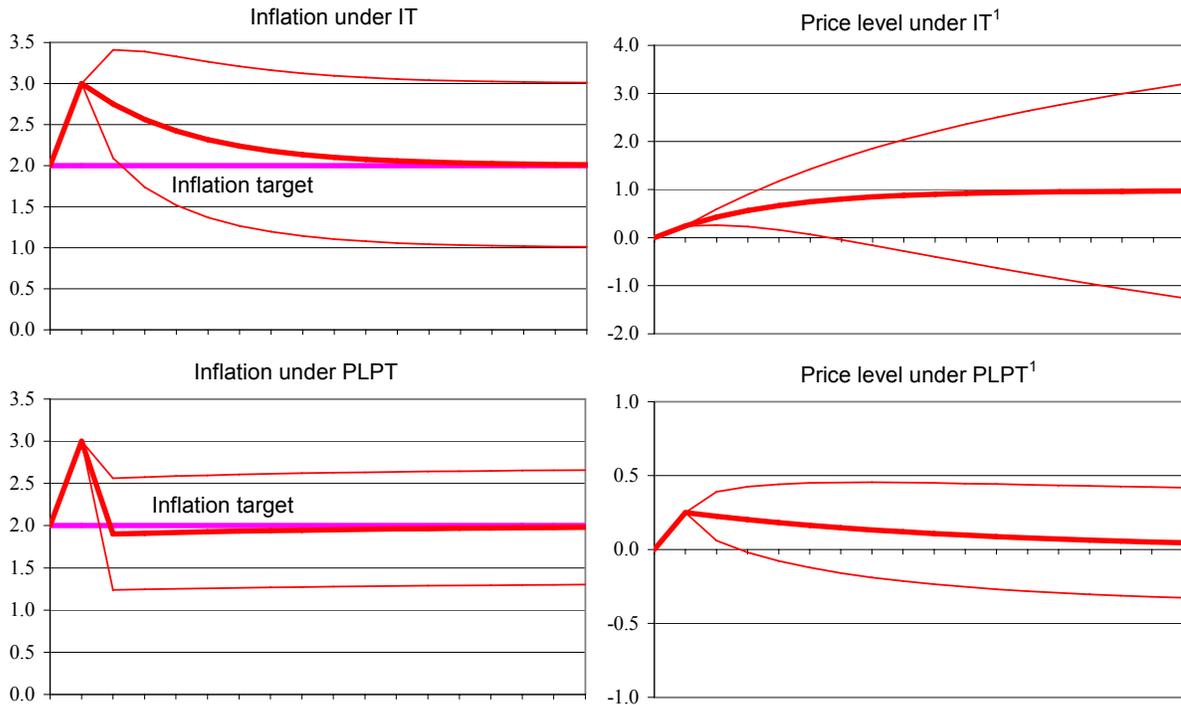
8. **The predictions from happenstance and a perceived element of PLPT are compared using a small macroeconomic model of the Canadian and U.S. economies.** The model for each country combines three basic equations—a forward- and backward-looking Phillips curve, an output gap equation, and an inflation-forecast-based interest rate reaction function—with an interest parity condition linking the two countries and stochastic processes for equilibrium variables.

9. **The results suggest that it is highly unlikely that the apparent stationarity of the price gap reflects a lucky outcome.** The data are more consistent with a model in which inflation expectations and interest rates are determined assuming that monetary policy includes an element of PLPT.

Conclusions and policy implications

10. **Canadian inflation dynamics since the mid-1990s has been consistent with the perception that the monetary policy rule has an element of PLPT.** As a result, Canadians may already be benefiting from greater certainty about the future path of the price level. This implies that the net benefits of switching to the PLPT regime may be smaller than implied by simple comparisons between IT and PLPT regimes, and that a move to PLPT would likely be treated by the markets as an evolutionary step.

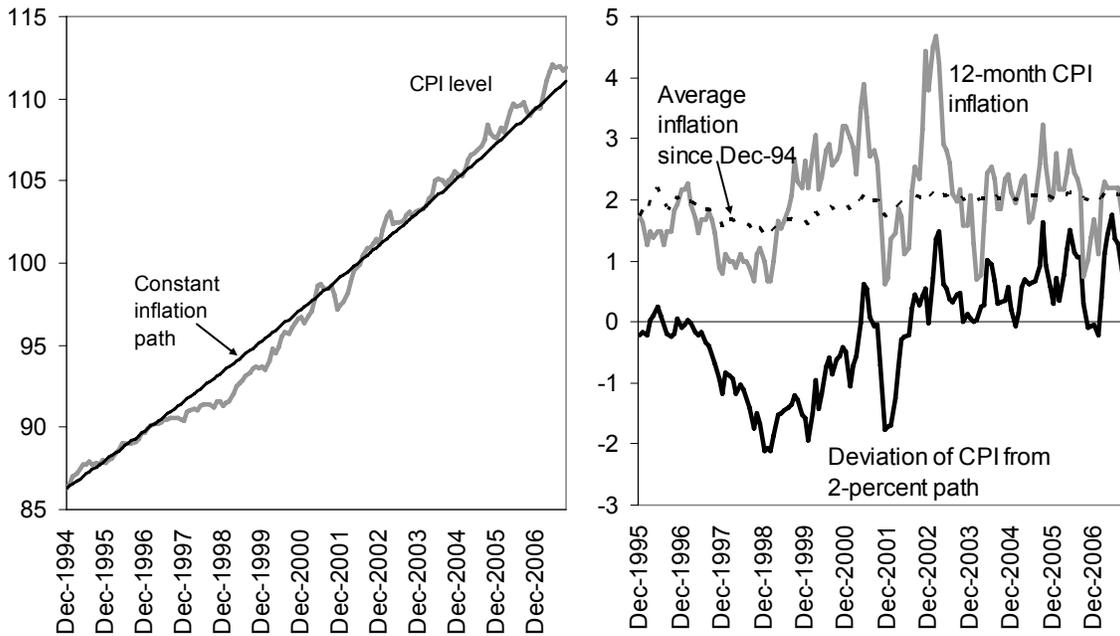
Figure 1. Inflation rate and the deviation of the price level from constant growth path after one-period shock under IT and PLPT.



1/ Deviation from constant-growth path.
 Note: Thin lines show two-standard-deviation bands.

Source: IMF staff simulations.

Figure 2. Consumer price index and inflation in Canada



Sources: Statistics Canada; and IMF staff calculations.

IV. SHOW ME THE MONEY: ACCESS TO FINANCE FOR SMALL BORROWERS IN CANADA¹

1. **The Canadian banking system is relatively highly concentrated and protected.** The five largest banks, which account for 85 percent of total bank assets, are sheltered from takeovers by the “widely-held” rule and from mergers through an effective prohibition. The banks maintain low-risk balance sheets while enjoying high returns on equity.
2. **This has given rise to concerns about access to finance for smaller borrowers.** A range of analysts and business representatives have argued that the major banks, comfortable in their entrenched positions, have little incentive to venture into areas where borrowers are small, the cost of ascertaining creditworthiness may be higher, and returns are more uncertain. The working paper focuses on their performance in two such areas: the financing of small and medium-size enterprises (SMEs) and mortgage lending, particularly to borrowers with weaker credit.

SME financing

3. **Access to finance does not appear to be a major problem for most Canadian SMEs.** About 80 percent of loan requests by SMEs are approved, and a range of surveys indicate that other obstacles to growth seem more pertinent. While the degree of dissatisfaction with access to finance among SME owners is somewhat higher than in the United States, it is lower than in most other OECD countries (Figure 1).
4. **There is, however, less satisfaction with finances more broadly defined, reflecting concerns about ancillary services.** Almost half of Canadian entrepreneurs report dealing with finances as a major challenge of operating an SME. They are particularly unhappy about high account manager turnover, which makes it difficult to establish a stable and predictable relationship with their banks. In addition, the major banks acknowledge that more could be done to support SMEs in such areas as record keeping, account reconciliation, and tax preparation.
5. **In addition, more risky, innovative SMEs appear to have significantly greater difficulty in obtaining financing.** The level of satisfaction with credit suppliers is substantially lower among SMEs operating in knowledge-based industries than elsewhere, and only 70 percent of their loan requests are accepted.
6. **Limited access to financing for innovative firms may reflect a reluctance by the banks to price risk.** Survey and anecdotal evidence suggests that there is relatively little variation in loan terms across firms, so that enterprises that exceed the Canadian banks’

¹ Summary of IMF Working Paper, WP/08/22, “Show Me the Money: Access to Finance For Small Borrowers in Canada”, by Vladimir Klyuev

fairly low risk tolerance may well be denied credit rather than being charged a higher premium.

7. **Problems in Canada's venture capital (VC) market exacerbate difficulties experienced by the more innovative enterprises.** Compared to their U.S. counterparts, Canadian VC funds invest relatively small amounts per company, provide too little managerial support, and achieve paltry average returns. These problems appear to be particularly acute among the tax-advantaged labor-sponsored venture capital corporations.

Housing finance

8. **With high percentages of self-employed and recent immigrants, there seems to be a potential market for non-prime mortgages in Canada.** Nonetheless, the market is much smaller than in the United States (Figure 2). While this has confined the contagion from the mortgage sector crisis south of the border, it may also limit access to wealth creation.

9. **The choice of mortgage instruments available to Canadian homeowners is also relatively limited.** The virtual absence of mortgages with maturities exceeding 7 years is notable. This can be explained by limited competition and banks' desire to match assets with their short-maturity liabilities, as they fund mortgages primarily from their deposit base.

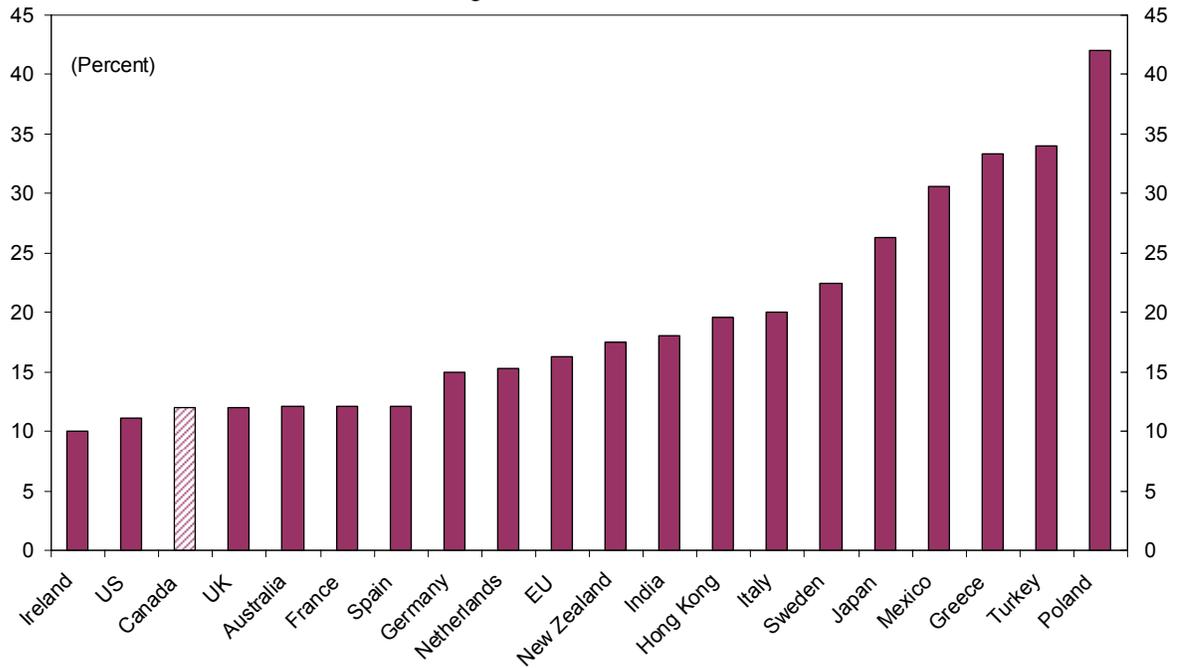
10. **Higher volumes of mortgage securitization could minimize banks' balance-sheet mismatches and raise competition in the sector.** Institutions specializing in non-prime mortgages would have a greater access to finance, and longer-term securities could fund longer mortgages. The prevalent program of mortgage securitization in Canada does not address these issues adequately, as it is only open to insured mortgages and issues securities mostly with a 5-year tenor.

Conclusions and policy implications

11. **Large Canadian banks seem unwilling to price risk.** As a result, some economic sectors may well be underserved by the financial system:

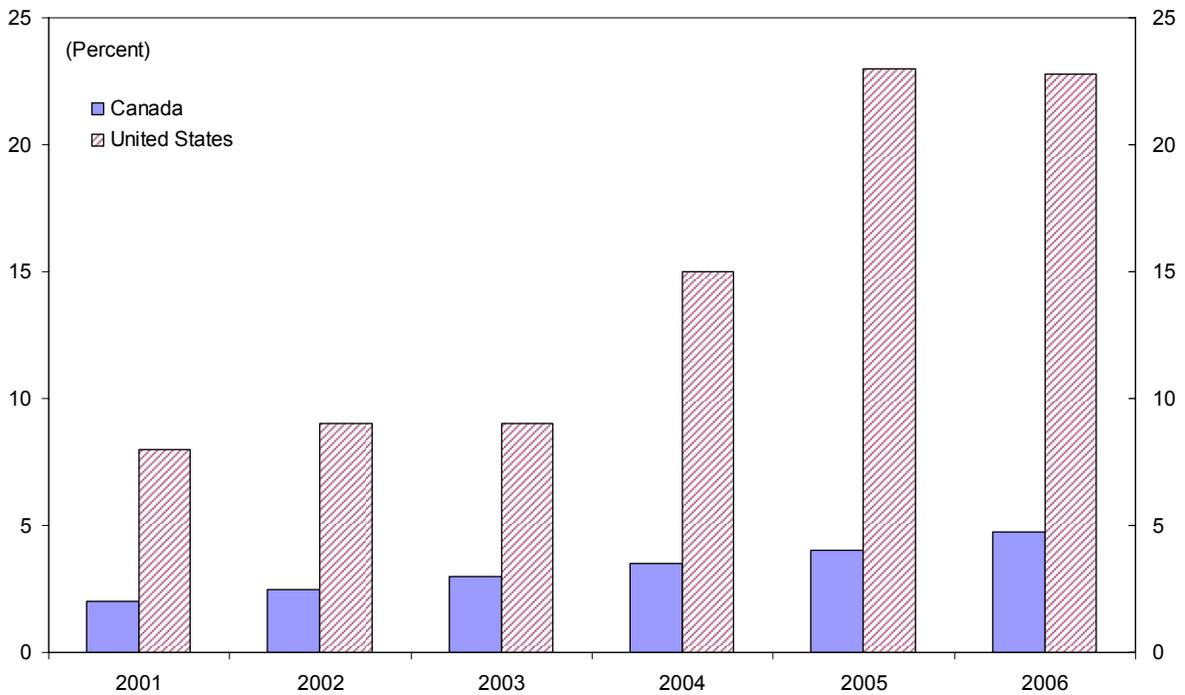
- **There appear to be obstacles to financing of more innovative, potentially high-growth SMEs.** This issue is exacerbated by problems in the market for venture capital.
- **Consumer choice seems to be limited in mortgage finance.** The non-prime mortgage market is in its infancy, and some instruments available in other countries are not offered in Canada.

Figure 1. Percentage of all respondents saying "cost of finance" is constraining their ability to grow, OECD countries



Source: Grant Thornton International Business Owners' Survey

Figure 2. Share of subprime mortgage originations in Canada and the United States



Source: U.S. Mortgage Bankers Association and CIBC World Markets

V. CANADIAN FIRM AND JOB DYNAMICS¹

1. **While Canada has responded to the commodity price boom by reallocating resources smoothly, productivity growth has been disappointing.** The commodity price hikes of the last 5 years have led to large transfers of capital and labor from the manufacturing-based central provinces to the more natural resources-based western provinces (Figure 1). Despite the large labor market frictions this has created, unemployment rates have steadily declined across all provinces, as job losses in manufacturing have been more than offset by gains in construction, mining, and services, as well as interprovincial migration. Both in terms of overall labor and total factor productivity, however, Canada's productivity performance has been poor when compared to that of the United States.
2. **The working paper provides more texture to this picture by looking at firm and job dynamics in Canada.** As is well known in the academic literature, looking at the evolution of unemployment rates alone only gives a partial picture of labor market efficiency. Indeed, a region can have a low unemployment rate but be considered sclerotic if job and worker flows are low because of labor market rigidities such as high hiring and firing costs.
3. **Because the United States is considered to have a flexible labor market, Canadian data can be usefully benchmarked against U.S. figures.** However, a common problem when looking at flows across countries is the comparability of the underlying data. Indeed, for this reason, most previous studies have only compared job flows in the manufacturing sector, and have generally found that job creation and job destruction patterns are similar in Canada and the United States. But to get a comprehensive picture of reallocation across sectors, one needs to look beyond manufacturing data. The recently-started U.S. business employment dynamics database, covering about 98 percent of nonfarm employers, is a good match for the comprehensive Canadian Longitudinal Employment Analysis Program database. The paper compares job flows in the two countries using these databases.
4. **U.S. product and labor markets appear to be better than their Canadian counterparts at facilitating the creative-destruction process.** In particular, while job churning at continuing firms have been similar in both countries during 1993-2004, those associated with firm births and deaths are higher in the United States. Moreover, panel regressions controlling for differences in the size of firms across countries show that for job reallocation associated with firm births and deaths, a Canada dummy is substantially

¹Summary of IMF Working Paper, WP/08/31, "Canadian firm and Job Dynamics", by Ravi Balakrishnan

negative and significant. This effect is smaller and only marginally significant when data on overall job reallocation is used, likely reflecting the similar level of job creation and destruction at continuing firms in Canada and the United States.

5. **Canada's central provinces appear more sclerotic than its western ones, although differences in industrial structure and firm size explain much of the variation.**

Raw data on overall job flows indicates that job creation and destruction rates have been higher in British Columbia and Alberta than in Ontario and Quebec. However, this could reflect regional differences in industries and firm size rather than provincial differences in labor and product market flexibility. Indeed, some have suggested that the larger share of manufacturing in the central provinces could explain their lower rates of job reallocation relative to the western provinces. To try to discriminate between these explanations, panel regressions were run that include dummy variables reflecting geographic region, industries, firm size, and year. These show that differences in job creation and job destruction are mainly explained by sector and firm size dummies rather than time or province dummies. At the same time, the province dummies are significant, suggesting that British Columbia and Alberta have more dynamic product and labor markets than Ontario and Quebec.

6. **In line with previous studies, in Canada, job reallocation caused by sectoral shifts is small compared to job reallocation within sectors.** One might expect the recent commodity boom to have resulted in a significant uptick in job reallocation. However, shifts in workers across sectors account for less than ten percent of job creation and destruction. Moreover, this share fell during 1999-2003, or the early part of the recent commodity boom. This confirms previous evidence from the manufacturing sector for the United States and Canada that idiosyncratic within-sector shocks, rather than reallocative ones, are the dominant force in determining levels of job reallocation.

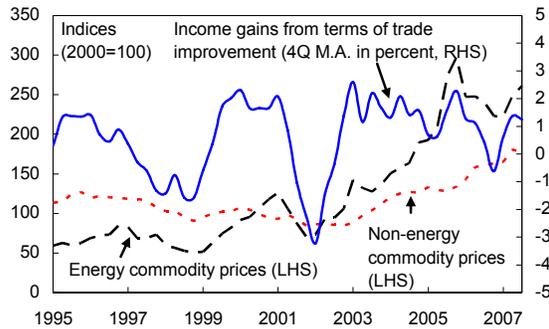
Conclusions and Policy implications

7. **One explanation for the relative ease of the commodity-related reallocation process is that the implied job flows have been small compared to usual flows.** This suggests that while not as dynamic as the United States, Canada has sufficiently flexible labor markets to absorb significant sectoral shocks—such as a commodity-price shock—without creating a high level of frictional unemployment.

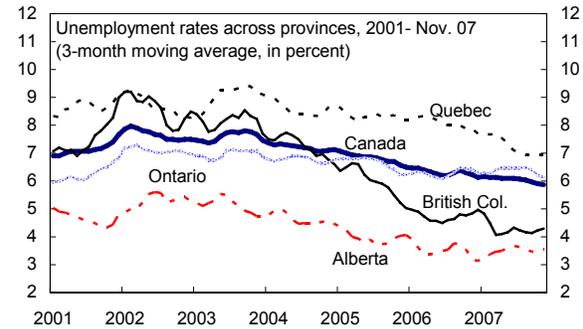
8. **However, the U.S. economy appears better at facilitating creative destruction, which may in part explain its relatively better productivity performance.** Compared to the United States, Canada has similar rates of job churning for continuing firms but lower rates associated with firm births and deaths. The latter, which implies more limited opportunities to raise productivity through creative destruction, suggests that rigidities may be more pervasive in product markets than in labor markets. Moreover, such rigidities appear to be more pronounced in the central provinces than those in the west. This suggests that reducing product market restrictions in the central provinces could enhance productivity.

Figure 1. Job Dynamics and Reallocation

Canada has faced a major commodity price shock in recent years.



Yet unemployment has fallen across all provinces as reallocation has been smooth.



Labor churning associated with firm births and deaths has been higher in the United States than in Canada...

	Job Creation		Job Destruction			
	Total	By continuers	Total	By deaths	By continuers	
Canada						
period average	10.7	2.0	8.7	9.0	2.0	7.0
93-98 average	10.6	2.2	8.4	9.2	2.1	7.1
99-04 average	10.8	1.9	8.9	8.8	1.8	7.0
United States						
period average	11.5	3.1	8.3	10.3	3.1	7.2
93-98 average	12.0	3.3	8.7	10.5	3.2	7.3
99-04 average	10.9	3.0	7.9	10.1	3.0	7.1

...reflecting mainly differences in the size of firms, but also an important country effect.

Dependent variable	Job reallocation		Job reallocation	
	Coefficient	P-value	Coefficient	P-value
Job Reallocation rate associated with births and deaths				
Country <i>Canada</i>	-2.26	0.00		
Size <i>0 to 19</i>	16.35	0.00	16.35	0.00
Size <i>20 to 99</i>	3.57	0.00	3.57	0.00
Size <i>100 to 499</i>	1.56	0.04	1.56	0.07
C	1.03	0.34	-0.11	0.93
No. of Obs.	96		96	
R-squared	0.88		0.86	

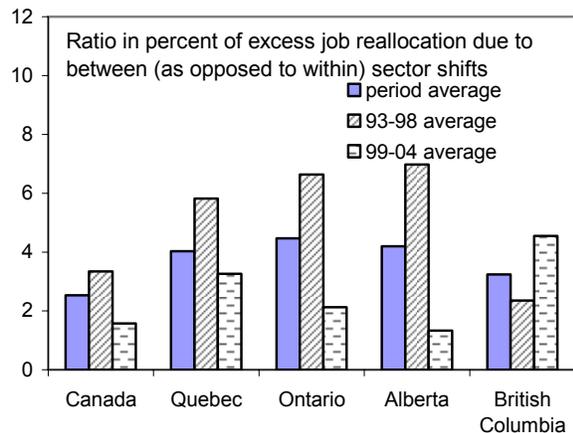
Note: Database comprises 12 years, 4 size categories, and 2 countries (All regressions include time dummies)
Benchmark for size class is above 500 employees
Benchmark country is the United States

Eastern provinces appear to be more sclerotic than Western provinces...

Dependent variable	Job reallocation		Job reallocation	
	Coefficient	P-value	Coefficient	P-value
Job Reallocation rate				
Province <i>Quebec</i>	-0.11	0.77		
Province <i>Alberta</i>	3.85	0.00		
Province <i>British Columbia</i>	1.64	0.00		
Size <i>0 to 19</i>	24.92	0.00	24.92	0.00
Size <i>20 to 99</i>	12.71	0.00	12.71	0.00
Size <i>100 to 499</i>	9.15	0.00	9.15	0.00
C	11.34	0.00	12.68	0.00
No. of Obs.	192		192	
R-squared	0.96		0.93	

Note: Database comprises 12 years, 4 size categories, and 4 provinces (All regressions include time dummies)
Benchmark province is Ontario
Benchmark for size class is above 500 employees

...and most job reallocation has been caused by within sector rather than between sector shifts.



Sources: Haver Analytics; the Longitudinal Employment Analysis Program, Business and Labour Market Analysis Division; CANSIM; the Business Employment Dynamics database, United States Bureau of Labor Statistics; and Staff calculations