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Canada's Hub Cities
A Driving Force of the National Economy

The CANADA Project

ECONOMIC PERFORMANCE AND TRENDS

Canada's Hub Cities: A Driving Force of the National Economy
by *Mario Lefebvre* and *Natalie Brender*

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Preface

Canada's cities are not receiving the investment they need to fulfill their role as economic drivers of national prosperity. This study on city convergence bolsters the case for a strategically focused and genuinely productive cities agenda by demonstrating that when economically dominant cities in Canada prosper, so do smaller communities in their province or region. Concentrating investment strategically in nine "hub cities" across the country, we find, would produce gains for smaller communities in each province and for the country as a whole. In showing that helping big cities reach their potential is a "win-win game" for all citizens, the report provides an important new insight into how strategic funding for cities can maximize economic growth across Canada.

Contents

Executive Summary i

Chapter 1—Introduction 1

Chapter 2—Assessing Cities as Drivers of the Overall Canadian Economy 3

Chapter 3—Previous Research on Convergence 5

Chapter 4—Methodology 7

Chapter 5—Pan-Canadian Convergence 8

Chapter 6—What's Restraining Pan-Canadian Convergence? 10

Chapter 7—Hub Cities and Intraprovincial Convergence 13

Chapter 8—Implications of the Results 16

Chapter 9—Policy Conclusions 18
- What Should New Funding for Hub Cities Be Spent On? 18
- What Proportion of New Funding for Cities Should Be Concentrated on the Hub Cities? 18
- Will a Policy of Strategic Investment in Hub Cities Benefit Every Small Community in Canada? 19

Appendix A—Bibliography 20

Appendix B—Related Reports and Services 22

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EXECUTIVE SUMMARY

Canada's Hub Cities
A Driving Force of the National Economy

At a Glance

- Economic growth in nine Canadian "hub cities" (i.e., economic leaders of their province or region) drives an even faster rate of growth in smaller communities within the same province or region.
- This finding has important policy implications: Canadian governments aiming to increase prosperity should concentrate new funding strategically to meet the investment needs of hub cities—thereby boosting economies regionally and nationwide.

In recent years, The Conference Board of Canada has repeatedly documented that Canada's cities are not receiving the investment they need to fulfill their role as economic drivers of national prosperity. This study on city convergence bolsters the case for a strategically focused and genuinely productive cities agenda by demonstrating that when economically dominant cities in Canada prosper, so do smaller communities in their province or region. Concentrating investment strategically in nine "hub cities" across the country, we find, would produce gains for smaller communities in each province and for the country as a whole. In showing that helping big cities reach their potential is a "win-win game" for all citizens, the report provides an important new insight into how strategic funding for cities can maximize economic growth across Canada.

The chief economic finding of the study is that growth in a province or region's hub city—that is, its economically leading census metropolitan area (CMA)—drives an even faster rate of growth in smaller communities within the same province or region. The Conference Board based its research on criteria identifying eight metropolitan areas that function as hub cities for their provinces—Vancouver, Calgary and Edmonton, Regina and Saskatoon, Winnipeg, Toronto and Montréal—and a ninth metropolitan area—Halifax—that acts as a hub city for the entire Atlantic region.

When we examined real gross domestic product (GDP) per capita between 1987 and 2004 for each hub city and for the other communities within that province or region, we found that across Canada (except in Manitoba), smaller communities are closing the economic gap with (i.e., converging to) their respective hub city or cities. Montréal's increase in real GDP per capita over those years, for instance, was matched by an even faster increase in that of the combined group of other Quebec CMAs (Saguenay, Sherbrooke, Trois-Rivières and Québec City).

Conference Board research reveals that across Canada (except in Manitoba), smaller communities are closing the economic gap with—or converging to—their respective hub city or cities.

However, hub cities do not appear to be converging to each other. Between 1987 and 2004, the gap in real GDP per capita between Calgary (Canada's economic leader) and other major cities across the country did not close significantly. Limited labour mobility—a prominent interprovincial trade barrier—is a likely reason for this absence of pan-Canadian convergence.

Important public policy implications flow from the finding that convergence occurs mainly within provinces or regions. Our research suggests that a policy of focusing investment in, say, the country's three biggest cities

of Vancouver, Toronto and Montréal would not produce an economic boost across all provinces. By contrast, allotting strategic funding to all of Canada's hub cities based on their needs would indeed produce a nationwide "boost" for them and for smaller communities alike.

Such a strategic needs-based approach to hub city investment would also yield a bigger economic impact than the per capita funding approach used in the federal government's 2005 budget, which allocated a gas tax rebate to Canadian communities on a uniform per capita basis.

CHAPTER 1

Introduction

Chapter Summary

- A driving force of Canada's economic prosperity is its big cities, which are seriously under-resourced and in need of a new fiscal deal.
- Rather than spread new government investment on a per capita basis across all Canadian communities, a better approach is to strategically invest in meeting the needs of big cities.
- Until now, it has been unclear how many big cities should be targeted for strategic investment in order to produce a truly nationwide economic impact.
- Studying the phenomenon of convergence between the performance of leading and lagging economies can help answer that question.

In recent years, two points of consensus have emerged about Canada's big cities: their economic success is vital to the success of Canada as a whole, and they are seriously under-resourced to fulfill their potential as drivers of national prosperity. Among the considerable evidence showing that Canada's cities are in need of a new fiscal deal is The Conference Board of Canada's work documenting fiscal difficulties for Quebec municipalities as a whole (2003), selected Quebec municipalities and the cities of Winnipeg (2004) and Toronto (2005).[1]

Recognizing these difficulties—and the fact that not only urban but also national prosperity is at stake in setting cities on a better fiscal course—the federal government has taken action in recent years to give big cities the resources they need to succeed. In the February 2004 budget, the Martin government offered municipalities a full exemption from paying the goods and services tax (GST) on all purchases of goods and services. In the February 2005 budget, it allocated a share of gasoline tax revenues to municipalities. In the Harper government's 2006 budget, an additional $2.2 billion over the next five years was provided to support the existing Municipal Rural Infrastructure Fund.

However, advocates of the "cities agenda" were dismayed when the long-talked-of "New Deal for Cities" materialized as a "New Deal for Cities and Communities," with gas tax funds for new infrastructure being allocated on a per capita basis to communities of all sizes. This was seen by many as a politically motivated watering-down of a policy that should have been concentrated on big cities, loci of the greatest potential for far-reaching economic growth.

The call for concentrating strategic investment in big cities was championed in 2001 by Jane Jacobs and five big-city mayors, who launched the "C5 agenda" that contended that Canada's economic growth would be best served through public investment in the country's biggest cities. That argument was revisited in a recent research paper asserting that Canada's economic success is bound up with the performance of six broadly defined city-regions: Toronto, Vancouver, Montréal, Ottawa–Gatineau, Calgary and Edmonton.[2]

City advocates were dismayed when the "New Deal for Cities" allocated new funds on a per capita basis to communities of all sizes.

Although those cities are undoubtedly among Canada's most economically robust, that fact alone does not establish that their performance is driving economic success in the country as a whole. In light of the contention that these cities' success should be strategically aided with provincial or federal government funds as a way of producing pan-Canadian benefits, citizens of Saskatchewan or the Atlantic Provinces might reasonably ask what reason there is to think that they will benefit from distant cities' growth. Similarly, small towns in Quebec, Ontario or British Columbia might well wonder whether their economic growth would be better promoted by a direct injection of funds rather than a purported "ripple effect" from the growth of Montréal, Toronto or Vancouver.

This paper, therefore, investigates three issues: Is there evidence that the growth of Canada's major cities has positive effects on the economic performance of smaller communities? How widely does this ripple effect extend from big cities to smaller communities? And if federal and provincial governments allot strategic funding for cities with the aim of producing a truly pan-Canadian boost in economic growth across big and small communities alike, which big cities should be targeted for strategic infusions of funds?

The rate of pan-Canadian convergence is slow, but it occurs relatively quickly within provinces.

We conduct this investigation by looking at the phenomenon of *convergence*, whereby economic growth in a leading economy an even faster rate of growth among following ones. Over time, convergence means that the level of real gross domestic product (GDP) per capita in the "follower" economies catches up to that of the relevant "leader economy."[3] In the context of Canadian municipalities, we set out to investigate whether the country's smaller communities are catching up to the large urban centres (which also turn out to be those with the highest level of real GDP per capita).

A critical dimension of convergence is that of *scope*, or the territorial range within which convergence operates. As this study shows, although the rate of *pan-Canadian* convergence between major cities is slow at best, convergence does occur relatively rapidly *within* provinces. We conclude, therefore, that a strategy of concentrating fiscal investment in a few large urban centres is not the best way to spur cross-Canada economic growth. Instead, a better approach would be to concentrate fiscal resources among a slightly larger group of Canadian cities that are proven economic leaders within their province or region.

The paper opens with a brief discussion of the role of cities as drivers of the Canadian economy. It then investigates the phenomenon of inter- and intra-provincial convergence between municipalities across Canada.[4] We conclude with an interpretation of the results and a discussion of their policy implications.

1 See Slack, Bourne and Gertler (2003), Courchene (2005), Federation of Canadian Municipalities (2005), Slack, Bourne and Priston (2006) and TD Economics (2002). The Conference Board also conducted work on the fiscal situation of several cities in Quebec, including Gatineau (2003 and 2005), Lévis (2005), Montréal (2003), Québec City (2005), Saguenay (2005), Sherbrooke (2005) and Trois-Rivières (2005). Each of these studies concluded that under current settings, cities are unable to provide the services for which they are responsible while securing a level of infrastructure sufficient to meet current demands and accommodate future growth. In its 2004–05 edition of *Performance and Potential*, The Conference Board of Canada devoted an entire chapter to this topic.

2 See Slack, Bourne and Priston (2006).

3 This paper uses real GDP per capita as a measure of economic prosperity, as it is widely regarded as the broadest measure of overall economic wealth in a given jurisdiction.

4 The work conducted in this paper does not include Canada's three northern territories because none of these contain or are located near a census metropolitan area (CMA), a criterion that shapes the present research.

CHAPTER 2

Assessing Cities as Drivers of the Overall Canadian Economy

Chapter Summary

- Canada's big cities have gained an increasing share of national and provincial activity over the past 20 years, and will likely continue to do so.
- While the three biggest cities of Toronto, Montréal and Vancouver have been key drivers of the national economy, other census metropolitan areas (CMAs) are also regional leaders in economic growth.
- In seven provinces, more than 40 per cent of economic activity is accounted for by either one or two CMAs within each province.

A significant share of Canada's economic activity is located in its largest centres. In 2004, the census metropolitan areas (CMAs) of Toronto, Montréal and Vancouver accounted for over a third (35.2 per cent) of national economic activity. A major factor behind the relative importance of these three CMAs is the large share of international immigrants they have received.[1] This high share of immigrants boosted population growth in these three CMAs, causing sharper increases in domestic demand and hence stronger overall economic growth.

In this era of the knowledge-based economy, cities' economic importance will likely keep growing.

Big cities' share of national and provincial economic activity has been increasing (on an absolute basis) over the past 20 years for a number of other reasons, including the declining share of the primary sector and the rise of the services sector, free trade, and the emergence of the information and communications technology (ICT) sector.[2] Moreover, in this era of the knowledge-based economy, it seems likely that cities' economic importance will keep growing. As Orlando and Verba (2005) show, relatively populous regions are the most conducive to innovative activity because they offer more developed markets for the specialized inputs used in innovation. As well, populous places offer the proximity that gives innovators greater opportunities to learn from one another.

Although Canada's three largest CMAs have undeniably been key drivers of the national economy over the past two decades, it is worth noting that several smaller CMAs have also achieved economic growth well above the national average. From 1987 to 2004, Abbotsford, Calgary, Edmonton and Oshawa each posted an average annual increase in real GDP that was more than half a percentage point above the national average—a significant spread when compounded over this time period.

Canada's three largest CMAs have been key drivers of the national economy over the past two decades, but several smaller CMAs have also achieved economic growth well above the national average.

In seeking to explain these results, it must be noted that the energy sector was a major element in the strong economic performance of Calgary and Edmonton. This sector played a major role both directly (by creating jobs in both cities) and indirectly (by putting the province's fiscal situation on a very sound footing). In turn, the relatively attractive labour market and sound provincial fiscal situation partly explain why these two cities are attracting several thousand interprovincial migrants each year, boosting domestic demand and propelling growth in services-sector activity. As for Abbotsford and Oshawa, their proximity to Vancouver and Toronto, respectively, has played a key role in their economic growth over the last two decades.

Looking more broadly at the role of CMAs in driving the economy, it is noteworthy that in seven of Canada's 10 provinces, over 40 per cent of economic activity is accounted for by either one or two CMAs within each province. The same would hold true for Prince Edward Island if Charlottetown's population was not too small to meet the CMA threshold.[3] As for the other provinces, St. John's accounted for 35 per cent of Newfoundland and Labrador's GDP in 2004,[4] while Saint John accounted for 16 per cent of New Brunswick's economy.

In total, the nine CMAs listed in Table 1 accounted for 47.6 per cent of Canadian GDP in 2004. This share, which stood at 45.7 per cent in 1992, has been rising steadily over the past 12 years.

Table 1
Leading Canadian CMAs and Their Share of Provincial GDP in 2004*
(per cent)

Province	CMA(s)	Share of provincial GDP
Nova Scotia	Halifax	46.3
Quebec	Montréal	49.0
Ontario	Toronto	43.8
Manitoba	Winnipeg	65.0
Saskatchewan	Regina and Saskatoon	44.7
Alberta	Calgary and Edmonton	64.8
British Columbia	Vancouver	53.2

*The CMA of Ottawa–Gatineau, while the fourth largest in Canada in terms of population, is absent from this chart because it is not a provincial economic leader.
Source: The Conference Board of Canada.

1 From 1987 to 2004, these three CMAs became home to 68.1 per cent of the international migrants to Canada.

2 For a more detailed analysis, see Lefebvre and Swettenham (2004).

3 Employment data from Statistics Canada show that Charlottetown accounted for 44 per cent of total employment in Prince Edward Island in 2004. There is only one CMA in New Brunswick and one in Newfoundland and Labrador. Table 1 would likely contain a line for New Brunswick if the Conference Board had all the information to compute a GDP for Fredericton and Moncton.

4 Although the Newfoundland and Labrador provincial government and the City of St. John's argue that the St. John's GDP accounts for 47 per cent of the Newfoundland and Labrador GDP, The Conference Board of Canada believes that the correct figure is actually 36 per cent. This difference in figures is mostly due to divergent methodologies used for calculating the share of the province's offshore oil output attributed to St. John's GDP. In the Conference Board's calculations, this share is determined by the number of mineral fuel output workers residing in St. John's as a proportion of the province-wide number of workers in the mineral fuel industry. It has been argued that this methodology is wrong because it does not account for the fact that several St. John's residents leave St. John's to work on the offshore platforms. But this argument does not hold since the Conference Board uses Statistics Canada's Labour Force data to compute its GDP estimates at the CMA level, data that are computed by place of permanent residence rather than place of work. A permanent resident of St. John's who works on the offshore platforms will therefore still end up in the St. John's employment count and be captured in the Conference Board's GDP calculations. Moreover, the Conference Board believes it is wrong to assume that workers involved in the oil-related services industries of St. John's should boost the CMA's share of provincial oil output; these workers belong to other GDP categories. This is a flaw in the methodology used by the Newfoundland and Labrador provincial government and the City of St. John's.

CHAPTER 3

Previous Research on Convergence

Chapter Summary

- At the international level, economic models suggest that poorer countries converge in income to richer ones due to the circulation of technology and capital.
- In Canada, studies prior to 1990 found persistent regional economic disparities, but post-1990 studies have found evidence of economic convergence among provinces.
- Convergence can be derailed by the asymmetrical response of provinces to commodity price shocks.

At the international level, discussions of economic convergence suggest that the growth of one area does not come at the expense of another—or as Sachs (2005) recently put it, economic development is not a zero-sum game. Given the increased freedom with which technology and capital are circulating, the neo-classical growth model suggests that worldwide levels of income should converge at a faster pace than ever. The argument is as follows: Relatively poorer countries offer lower real wages. This implies that the rate of return of capital is higher in those countries, which should cause a capital shift from richer to poorer countries. As the adjustment takes place, real wages in poorer countries should rise at a quicker pace than those in richer countries, reducing the wage gap between richer and poorer countries.

According to another argument, countries posting relatively low productivity levels reap the benefits of the "public good" nature of technology, which eventually boosts their productivity levels and causes them to catch up to those leading nations.[1] Several studies have found support for these arguments in discovering that real per capita income levels are indeed converging between Organisation for Economic Co-operation and Development (OECD) countries.[2]

In the case of Canadian provinces, the literature abounds with studies documenting the existence of persistent regional disparities—but most of those studies were conducted before 1990.[3] Studies conducted since the early 1990s have found different results in testing for convergence among Canadian provinces.[4] However, Lefebvre and Poloz (1996) found that the path to convergence in Canada can be derailed by the asymmetrical response of Canadian provinces to commodity price shocks: Episodes from 1974, 1978 and 1987 show that a rise in world commodity prices tends to boost output in regions that produce primary products, while dampening output in regions that use primary products as inputs.

The path to convergence in Canada can be derailed by the asymmetrical response of Canadian provinces to commodity price shocks.

The next sections of this paper break new research ground by analyzing convergence at the Canadian city level. By exploring more closely how convergence is occurring across and within provinces, we will be able to assess whether boosting economic performance in selected Canadian cities will stimulate an even faster increase in smaller communities nationwide.

1 Färe et al. (1994) argued that this could explain in part why productivity growth was so much faster in Japan than in the United States in the 1960s and 1970s.

2 See Abramovitz (1986 and 1990), Baumol (1986), Baumol and Wolff (1988) and Baumol et al. (1989). Dowrick and Nguyen (1989) tested and found evidence of convergence among OECD countries but on a different economic indicator: the level of total factor productivity. The work testing the convergence hypothesis among OECD countries has been criticized in studies by De Long (1988), Romer (1990) and Mankiw, Romer and Weil (1990). These studies argue that conclusive evidence of convergence can be found only among country samples containing exclusively developed countries; adding developing countries to the sample yields a different result, as the latter tend constantly to post less rapid economic growth. It could be argued, however, that such a conclusion is reached because developing countries frequently lack critical infrastructure and governance, keeping them from converging. Other studies, including those of Barro and Sala-i-Martin (1990, 1991 and 1992) and Carlino and Mills (1990 and 1993) found evidence of convergence among U.S. states.

3 See McInnis (1968), Mansell and Copithorne (1986) and Day (1989).

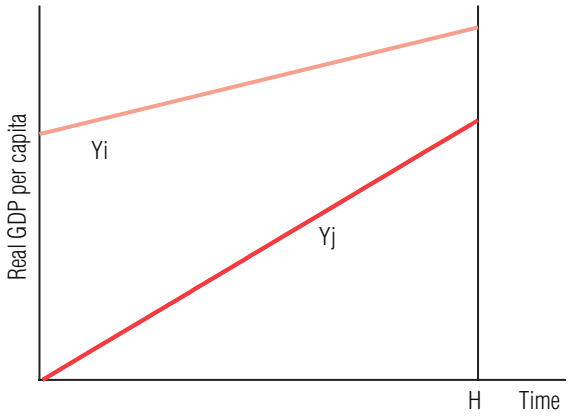
4 Coulombe and Lee (1993), Lee and Coulombe (1993), Helliwell (1994) and Lefebvre (1994) all found evidence of convergence among Canadian provinces, whether tested for using real per capita income, real GDP per capita, labour productivity, or total factor productivity.

CHAPTER 4

Methodology

The methodology this paper uses to test for convergence among and within Canadian provinces can be explained first through a textbook illustration of convergence, as shown in Exhibit 1. Assume that Yi in Exhibit 1 represents the level of real per capita GDP in region "i" over time and that Yj stands for the level of real per capita GDP in region "j" over the same time period. In this example, we refer to Yi as the leader and Yj as the follower. In a classic case of convergence, the follower's level of real GDP per capita approaches that of the leader.

Exhibit 1
A Textbook Case of Convergence



Source: Statistics Canada.

Let's now focus on the evolution of the income difference between Yi and Yj up to time period H. The income difference (the distance between both lines) is decreasing throughout the historical period (which ends at year H in the exhibit). So the ideal test for convergence is one that tests whether the spread is following a declining trend. The equation to be used can then be written in the following way:

Equation 1:
(1) $Yi - Yj = a - b*(time) + e$

Income difference is a function of the starting income difference (a) and the average speed at which it decreases each year (b); e is the error term of the equation. The higher the value of b, the more quickly convergence is taking place. This test will conclude that there is convergence if b is positive and statistically significant.

CHAPTER 5

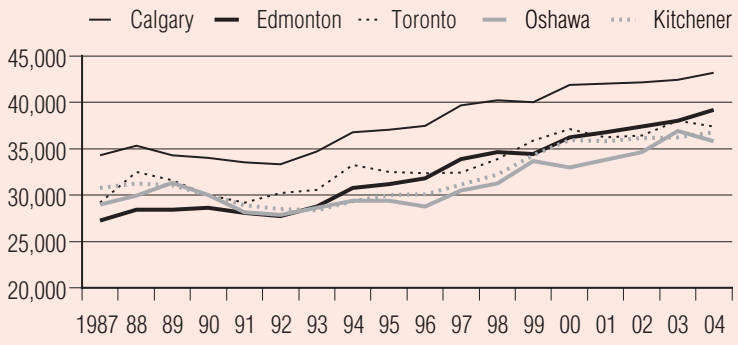
Pan-Canadian Convergence

Chapter Summary

- Previous findings of pan-Canadian convergence did not determine whether convergence occurs principally between the country's leading CMAs or is a broader phenomenon among provinces as a whole.
- We find that pan-Canadian convergence was slow at best between Canadian cities from 1987 to 2004.

Previous research on convergence in Canada has shown that nine lagging provinces converge in their economic performance to a leading province (the identification of which can change depending on the measure being used). However, research to date has not examined whether this convergence finding reflects merely the convergence of CMAs to a leading CMA, or instead a broader phenomenon that includes smaller communities within provinces as well. Because CMAs have a huge influence on the economic activity of their provinces, this distinction is an important one to address. In our analysis of pan-Canadian convergence, we will test whether convergence is occurring principally between the country's leading CMAs or whether it is a broader phenomenon.

Chart 1
Real GDP Per Capita
(dollars)



Source: The Conference Board of Canada.

But before actually applying the test for convergence as per Equation 1 in the previous chapter, the leading economy (i.e., the one to which all other economies are trying to catch up) must be identified. Chart 1 shows the five highest levels of real GDP per capita found among Canada's 27 CMAs.[1] The topmost line represents real GDP per capita for Calgary, which led Canadian CMAs in real GDP per capita throughout the 1987 to 2004 sample period.

We will test whether convergence is occurring principally between the country's leading CMAs or whether it is a broader phenomenon.

With our leader now established, Chart 2 contains real GDP per capita figures for Calgary (the national leader) and the three groupings we want to test for convergence. These groupings are: 1) the combination of the other eight CMAs contained in Table 1; 2) the remaining 16 CMAs of Canada combined; and 3) the rest of Canada. This, we believe, is the best way of verifying whether convergence is a nationwide phenomenon in Canada. As already noted from Chart 1, Calgary posted the highest level of real GDP per capita, with the combined other eight province-leading CMAs from Table 1 coming in second, and the remaining 16 CMAs ranked third.[2] The level of real GDP per capita is lowest for the group comprising the rest of the country.

From 1987 to 2004, this ranking did not change once among these four groups—but it is still possible that the spread among them got smaller. To see if such convergence did occur, we turned to Equation 1 (the results of which are reported in Table 2). Each group was tested against the Calgary economy (the one economy to which every other city is trying to catch up, as per the previous two charts).

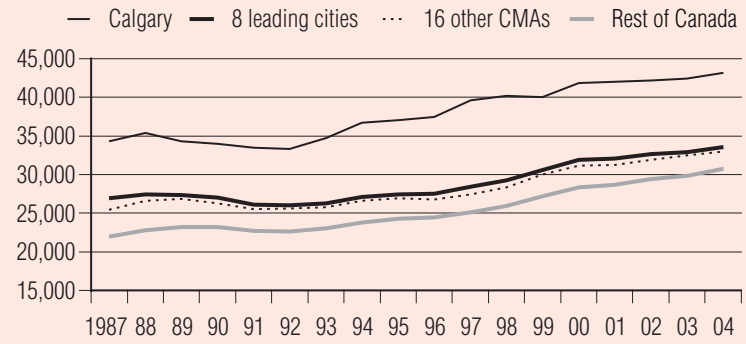
Table 2 reveals that convergence is not occurring between Calgary (the national leader) and the group of eight province-leading cities identified in Table 1. In fact, the convergence coefficient b is negative and statistically significant, suggesting that the gap in real GDP per capita between Calgary (YCal) and these other eight cities (Y8) has been increasing over the 1987 to 2004 period. This first result seems counterintuitive, since one would expect that if any convergence were to occur, it would take place between the largest urban centres in each province.

We found that pan-Canadian convergence was at best slow between Canada's cities from 1987 to 2004.

Table 2 also shows that there is no convergence in real per capita GDP between the other 16 CMAs (Y16) and that of Calgary (YCal). At this point, it might be speculated that Calgary simply is in a league of its own, and its superiority is biasing the empirical analysis around convergence. However, the third column of Table 2 shows convergence occurring between real per capita GDP of the rest of Canada (Yoth) and that of Calgary (YCal). Therefore, the "league of its own" hypothesis seems invalid.

A further lesson of Table 2 is that while there has been convergence between the rest of Canada (Yoth) and Calgary (YCal), the speed at which this convergence is taking place has been relatively slow (as indicated by a coefficient b of 0.0008). To put this in perspective, we conducted a simulation, which allowed us to determine that a coefficient b of 0.0008 implies that it would take 89 quarters starting in the first quarter of 2005 to close the gap in real GDP per capita between the rest of Canada (Yoth) and Calgary (YCal). This is a little over 22 years, implying a closed gap by 2027.

Chart 2
Real GDP Per Capita
(dollars)



Source: The Conference Board of Canada.

Notwithstanding previous research showing evidence of convergence between Canadian provinces, these results show that pan-Canadian convergence was at best slow among Canada's cities from 1987 to 2004. The next section of this paper investigates what might be causing this phenomenon.

Table 2
Pan-Canadian Convergence

Variables	Y_{Cal}-Y_8	Y_{Cal}-Y_{16}	Y_{Cal}-Y_{oth}
α	0.255	0.288	0.431
(T-stat)	–35.9	–36.3	–63.4
β	–4E-04	–2E-04	**8E-04**
(T-stat)	(–2.35)	(–1.0)	**–5.1**
Adjusted R^2	0.08	0.02	0.27

Note: Coefficients appear in bold where convergence occurs.
Source: The Conference Board of Canada.

1 Real GDP statistics used in this paper were computed by The Conference Board of Canada. These statistics are available through a subscription to the *Metropolitan Outlook*, a quarterly Conference Board of Canada publication providing economic insights into Canada's 27 CMAs.

2 The CMA of Ottawa–Gatineau, although the fourth largest in population, falls in the group of the "remaining 16 CMAs," since it is not a provincial leader on a real GDP per capita basis. Adding Calgary, the eight provincial-leading CMAs and the remaining 16 CMAs means that this study focuses on 25 CMAs, while Canada comprises 27. This is because the data available for Kingston and Abbotsford have a very short history and would have limited the time period of the analysis conducted here.

CHAPTER 6

What's Restraining Pan-Canadian Convergence?

Chapter Summary

- The likeliest explanation for the finding of minimal pan-Canadian convergence between CMAs is the lack of labour mobility across provinces.
- Lack of interprovincial labour mobility explains the high persistence in relative unemployment rates across Canadian provinces.
- Provinces with more than one CMA experience changes in the rankings of unemployment rates among these cities, suggesting high intraprovincial labour mobility.

A few reasons might be offered to explain the finding that pan-Canadian convergence between CMAs is minimal at best.

First, convergence is a long-term phenomenon and the sample used to conduct the analysis covers only 17 years. (Unfortunately, data compiled by Statistics Canada at the CMA level goes back only to 1987.) Although this is not the optimal sample length, it is the longest that can be used.

Second, interprovincial trade barriers, which lead to a misallocation of resources, could be derailing the convergence process by keeping several areas of the country from reaching their economic potential. It could then be supposed that without these barriers, convergence between Canadian provinces would be occurring at a quicker pace than was found in previous studies.

A third explanation might invoke commodity price cycles, a phenomenon that could have a pronounced effect within a relatively short sample period. (That is, given the premise that a commodity price shock plays out differently in different areas of the country, a commodity price shock that derails pan-Canadian convergence might not be corrected within the 17-year sample period studied.)

The most likely explanation, however, is the relative immobility of Canada's labour force.[1] Because Canada is a single currency area, the adjustment to any given shock cannot take place through the exchange rate, and must therefore take place through factors such as the labour force. A large increase in the price of crude oil, for instance, would have a positive impact on Alberta but a detrimental one on Ontario. The Ontario economy could not rely on a depreciation of the Canadian dollar to counter part of the negative impact; in fact, there would likely be an appreciation of the dollar, putting even more strain on Ontario's manufacturing sector. Assuming that the oil price shock is permanent, this would lead (everything else being equal) to a permanent increase in the level of employment in Alberta and a permanent decline in the level of employment in Ontario. Unless the labour force of each area adjusts, the result will be a permanent decline in the unemployment rate in Alberta and a permanent increase in the unemployment rate in Ontario.

Potential reasons for the minimal pan-Canadian convergence between CMAs include the short period studied, interprovincial trade barriers, commodity price cycles, and our relatively weak labour mobility.

This is precisely what Lefebvre (1997) found. Lefebvre's paper shows that a permanent increase (or decline) in employment in any given Canadian province leads to a permanent decline (or increase) in the province's rate of unemployment relative to the national average. Lefebvre's finding runs counter to results found in the United States by Blanchard and Katz (1992), which showed that a permanent employment shock in a given U.S. state does not lead to a permanent change in the state's unemployment rate relative to the national average. Following a positive employment shock in a U.S. state, they found, the

unemployment rate of that state first declines relative to the national average; but within two to three years, as people move to the state to reap the benefits of these new jobs, the unemployment rate returns to its original level.

This adjustment mechanism does not take place in Canada, at least not to the extent that would allow the unemployment rate to return to its original relative position. A positive (or negative) employment shock in a Canadian province leads to a permanent negative (or positive) change in the unemployment rate.[2]

While persistence is high in the relative ranking of unemployment rates *across* Canadian provinces, *within* provinces the situation is quite different.

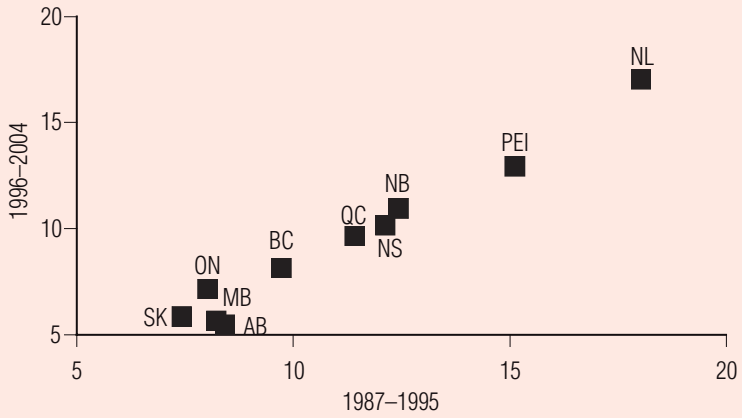
The lack of labour mobility in Canada also helps to explain why the unemployment rate ranking among Canadian provinces barely changes over the sample period. In that respect, consider Chart 3, which compares the average unemployment rate in every Canadian province over two sample periods: 1987 to 1995 and 1996 to 2004.[3] Chart 3 shows an almost perfect 45-degree line through all observations—a finding that indicates a strong degree of persistence in provincial unemployment rates.

Another peculiarity of the Canadian labour market is highlighted in Chart 4, which shows that when a province has an unemployment rate above the national average, it never dips below the national average. The one exception to that is British Columbia, where the unemployment rate does move back and forth above and below the national average. (Alberta may also be seen as an exception since its unemployment rate was above the national average in 1987 and then dipped below.) Again, this finding is in contrast to the situation in the United States, where almost all states have unemployment rates that move back and forth above and below the national average.

While persistence is high in the relative ranking of unemployment rates *across* Canadian provinces, *within* provinces the situation is quite different. The following two charts repeat the same exercise as above but for the province of Ontario only. Chart 5 shows the average unemployment rate in each of Ontario's 11 CMAs: Hamilton (HA), Kingston (KN), Kitchener (KW), London (LO), Oshawa (OS), Ottawa–Gatineau (OG), St. Catharines–Niagara (SC), Greater Sudbury (SU), Thunder Bay (TB), Toronto (TO) and Windsor (WI). Completing this chart is a group referred to as "the rest of Ontario" (RO). There is no 45-degree line to be drawn from this chart, unlike the finding from Chart 3.

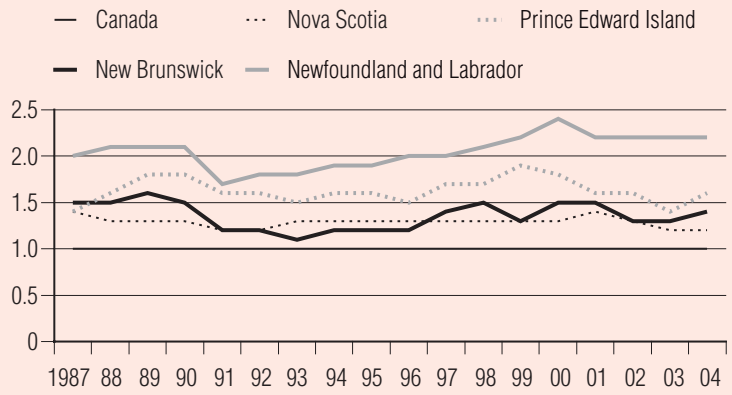
Chart 6 illustrates that the unemployment rate of each CMA dips above and below the provincial average over time—a finding quite different than that in Chart 4.

Chart 3
Average Unemployment Rate by Province
(per cent)



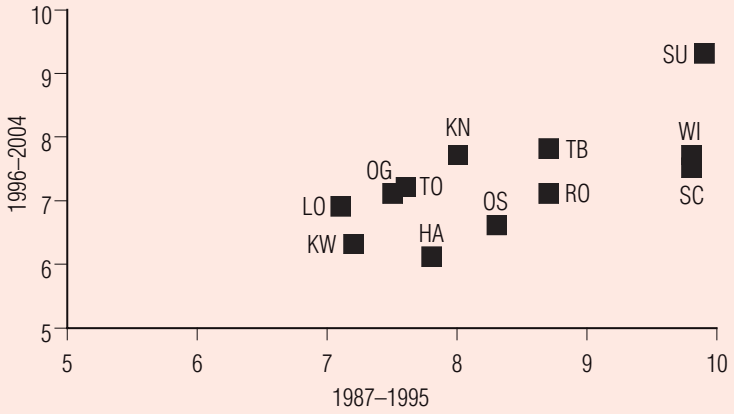
Source: Statistics Canada.

Chart 4
Ratio of the Unemployment Rate Between Provinces and Canada



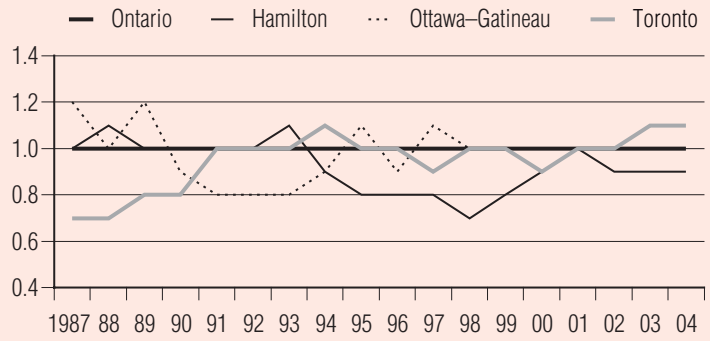
Source: Statistics Canada.

Chart 5
Average Unemployment Rate by CMA in Ontario
(per cent)



Source: Statistics Canada.

Chart 6
Ratio of the Unemployment Rate Between CMAs and Ontario



Source: Statistics Canada.

The finding that there is no persistence in unemployment rates within the province of Ontario suggests that labour is very mobile within the province. Similar results are found in all other provinces that contain more than one CMA (i.e., Quebec, Saskatchewan, Alberta and British Columbia).

This result has important implications bearing on the tests for intraprovincial convergence, which will be discussed in the next chapter. If labour mobility is indeed responsible for restraining pan-Canadian convergence, we should find much stronger results for intraprovincial convergence than we did for interprovincial convergence.

1 Although we make labour mobility a stand-alone reason, labour mobility could righly be considered a category of interprovincial non-tariff barrier.

2 Lefebvre (1997) suggested that the generosity of Canada's welfare programs is a likely explanation of this phenomenon.

3 These sample periods were chosen in order to split the overall sample into two sub-periods of equal length.

CHAPTER 7

Hub Cities and Intraprovincial Convergence

Chapter Summary

- To test for intraprovincial convergence between cities, we identify nine hub cities that are economic leaders (in real GDP per capita) within their province or region.
- We find that (except in Manitoba) convergence is clearly occurring between hub cities and smaller economies in their province or region.
- In Canada, convergence evidently happens much more readily between communities at the intraprovincial or intraregional level than at the national level.

In this section of the paper, Equation 1 will be used again to test whether convergence occurs at the intraprovincial level. From the convergence tests conducted at the intraprovincial level, we are interested in finding out not only whether convergence occurred, but also whether it occurred at a faster pace at that level than at the pan-Canadian level. If this is the case, the value for b will be positive and stronger than those found in the pan-Canadian tests reported in Table 2.

As in the analysis of convergence at the pan-Canadian level, we first identify our leading economies (i.e., the CMAs that are leading their provinces on a real GDP per capita basis). They are Halifax, Montréal, Toronto, Winnipeg, Regina, Calgary and Vancouver.[1] As for the notable absence of the Ottawa–Gatineau CMA from this list, it is true that this CMA is the fourth largest in Canada on a population basis; but since our criterion for determining provincial leaders is real GDP per capita, the CMA of Toronto wins that designation for the province of Ontario. This does not reflect any evaluation of the relative importance of Ottawa–Gatineau, nor of any other municipality that fails to make our list of provincial leaders.

At this point, we made some modifications to the list of cities studied to reflect salient realities. We included Saskatoon as well as Regina in Saskatchewan to account for the fact that over the past decade, Saskatoon has almost caught up to Regina in real GDP per capita. As well, Edmonton was added in Alberta because of the influence that the Edmonton–Calgary corridor has on the economic well-being of the province.[2] And finally, for Atlantic Canada we grouped the provinces together and conducted tests using Halifax as the regional leader. This decision reflects the fact that there are only three CMAs in the Atlantic Provinces; and in Prince Edward Island, which has no CMA, no information at the city level exists. Moreover, the fact that the level of real GDP per capita in Saint John is actually lower than that of the rest of New Brunswick means that there is no leading CMA in this province. We therefore grouped these four provinces, finding that the leader for Atlantic Canada is Halifax.

Nine "hub cities" have now been identified that are economic leaders for their respective province or region. The next step is to test whether convergence exists between these hub cities and other communities in their province or region.

Test results for the Atlantic Canada region appear in Table 3.

Table 3
Convergence in the Atlantic Provinces

Variables	Y_{Hal}-Y_{NS}	Y_{Hal}-Y_{PEI}	Y_{Hal}-Y_{NB}	Y_{Hal}-Y_{NL}	Y_{Hal}-Y_{AC}	Y_{Hal}-Y_{Atl}
α	0.021	0.334	0.218	0.437	0.135	0.26
(T-stat)	–7	–55.3	–75.1	–29.5	–41.5	–52.5
β	**0.003**	**0.002**	**0.002**	**0.005**	**9E-04**	**0.003**
(T-stat)	**–37.1**	**–12.6**	**–24.4**	**–13.1**	**–11.3**	**–26.3**
Adjusted R^2	0.95	0.69	0.89	0.71	0.64	0.91

Note: Coefficients appear in bold where convergence occurs.
Source: The Conference Board of Canada.

In sharp contrast to the results reported in Table 2, convergence is found in every test conducted for the Atlantic Provinces. In the first column, one can see that the gap between real GDP per capita in Halifax (YHal) and that of the other communities of Nova Scotia (YNS) is declining rapidly, given that the b coefficient, which stands at 0.0027, is much higher than that of any of the other b coefficients presented in Table 2. Table 3 also shows that the level of real GDP per capita of every other Atlantic province, be it Prince Edward Island (YPEI), New Brunswick (YNB) or Newfoundland and Labrador (YNL), is converging to that of Halifax (YHal). Convergence is also observed between Halifax (YHal) and the other CMAs of the Atlantic Provinces (YAC), namely St. John's and Saint John. Finally, the last column of Table 3 illustrates that convergence is particularly pronounced between the real GDP per capita of the non-CMA communities of the Atlantic Provinces (YAtl) and that of Halifax (YHal).

The most rapid rate of convergence found in Table 3 is that between real GDP per capita in Halifax and in Newfoundland and Labrador. To put this result into context, we determined that it would take 40 quarters from the first quarter of 2005 to close the gap between the real GDP per capita of Halifax and that of Newfoundland and Labrador. But this is our strongest result. Using the average speed of convergence as per all our provincial tests, we found that a period of 89 quarters would be necessary to close the gap between real GDP per capita of the follower and that of the leader.

Convergence is found in every test conducted for the Atlantic Provinces.

The relatively high rate of convergence found for Newfoundland and Labrador raises a further point: Exogenous factors (i.e., external factors not encompassed within the convergence model) can affect the convergence phenomenon. In the case of Newfoundland and Labrador, the developments around offshore oil (which is more a structural shift than an exogenous factor per se) certainly had an impact on the overall result, and must explain in large part why this province has been converging so rapidly to Halifax.

Table 4 displays the results for Quebec and Ontario, with Montréal and Toronto as their respective leaders. Results support the convergence hypothesis again, albeit at a slower pace than in Table 3. Convergence occurs slowly between Montréal (YMtl) and the other CMAs located in Quebec (YQC): Québec City, Sherbrooke, Saguenay and Trois-Rivières. Here the rate of convergence may be slow because the starting point gap is relatively small. A relatively quicker rate of convergence is found between Montréal and the non-CMA communities of Quebec (YQUE). Likewise, convergence between Toronto (YTor) and the other CMAs in Ontario (YOC) is slower than convergence between Toronto (YTor) and the non-CMA communities of Ontario (YONT). One explanation for this result is that the level of real GDP per capita in Ottawa–Gatineau, which was negatively affected by the federal government restructuring of the mid-1990s and the high-tech meltdown of the early 2000s, diverged from that of Toronto over the period considered. In turn, this limited the convergence result for the other CMAs of Ontario (YOC). This is yet another case of exogenous factors affecting convergence.

Finally, Table 5 contains the results for the four western provinces, whose leaders are Winnipeg, Regina/Saskatoon, Calgary/Edmonton and Vancouver. (Note

Table 4
Convergence in Quebec and Ontario

Variables	Y_{Mtl}-Y_{QC}	Y_{Mtl}-Y_{QUE}	Y_{Tor}-Y_{OC}	Y_{Tor}-Y_{ONT}
α	0.074	0.144	0.073	0.216
(T-stat)	–18.7	–55.8	–19.2	–11.8
β	**0.0003**	**0.0011**	**0.0004**	**0.0018**
(T-stat)	**–2.7**	**–18.3**	**–3.9**	**–6.2**
Adjusted R^2	0.08	0.82	0.17	0.72

Note: Coefficients appear in bold where convergence occurs.
Source: The Conference Board of Canada.

Table 5
Convergence in the Western Provinces

Variables	Y_{Win}-Y_{MA}	Y_{RS}-Y_{SASK}	Y_{CE}-Y_{ALB}	Y_{Va}-Y_{BCM}	Y_{Va}-Y_{BC}
α	0.197	0.059	0.095	0.158	0.106
(T-stat)	–31.1	–4.4	–11.2	–10.8	–42.4
β	–1E-04	**9E-04**	**0.001**	**0.002**	**8E-04**
(T-stat)	(–0.5)	**–2.9**	**–5.3**	**–7.8**	**–13.3**
Adjusted R^2	0.01	0.11	0.28	0.8	0.71

Note: Coefficients appear in bold where convergence occurs.
Source: The Conference Board of Canada.

that where the leader is made up of two CMAs, the combined GDP per capita of the two CMAs is used.)

Table 5 shows that some convergence is also taking place within Saskatchewan, Alberta and British Columbia. In fact, convergence occurs between Regina and Saskatoon (YRS) and the other communities of Saskatchewan (YSASK), between Calgary and Edmonton (YCE) and the other communities of Alberta (YALB), between Vancouver (YVa) and the other CMAs in British Columbia (YBCM) (Victoria and Abbotsford), and between Vancouver (YVa) and the non-CMA communities of British Columbia (YBC).

Convergence is more apparent at the intraprovincial level than at the national level, likely due to more labour mobility within (rather than among) provinces.

The one exception to all the convergence tests conducted is in Manitoba, where the level of real GDP per capita in the other communities of Manitoba (YMA) does not converge to that of Winnipeg (YWin). However, the gap between real GDP per capita in the other communities of Manitoba and that of Winnipeg was smaller in 2004 than in 1987, though it was probably not enough of a reduction to pass the test of convergence.

These findings demonstrate that convergence is more apparent at the intraprovincial or intraregional level than at the national level. Although investigating the source(s) of this result is beyond the scope of this paper, a much higher level of labour mobility within (as opposed to among) provinces is likely a prime reason, along with the absence of trade barriers within provinces.[3] A further factor is the industrial composition, which is more homogenous within provinces than across them. This allows for a faster pace of technology transfer. Lastly, it might be thought that fluctuations in commodity prices could have derailed the pan-Canadian convergence process over our sample period (1987–2004). However, using the Bank of Canada commodity price index, we can see that this index posted an average annual increase of 2.9 per cent in nominal terms. Deflating the index using the producer price index, we find that the commodity price index barely grew in real terms over our sample period. This leads us to believe that commodity prices were not significantly at play over the period studied.

1 For reasons of brevity, the provincial charts are not included in this paper.

2 Coincidentally, it turns out that the cities posting the highest level of real GDP per capita in their province or region also happen to be the largest (in absolute GDP as well as population terms) in their respective province or region (as highlighted in Table 1).

3 For an analysis of the impact of interprovincial trade barriers on Canada's competitiveness, see *Death by a Thousand Paper Cuts: The Effect of Barriers to Competition on Canadian Productivity*, The Conference Board of Canada, May 2006.

CHAPTER 8

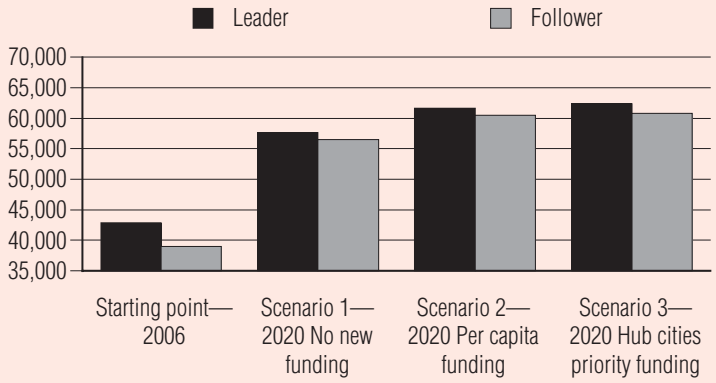
Implications of the Results

Chapter Summary

- The finding of intraprovincial or intraregional convergence suggests that targeting investment to Canada's hub cities would produce a faster rate of economic growth across all provinces.
- A comparison of different funding scenarios among hub cities and smaller communities shows that both hub cities and smaller communities would benefit most from new funding strategically allocated to meet hub cities' needs, rather than allocated on a per capita basis across all communities uniformly.

These findings of intraprovincial or intraregional convergence shed an important new perspective on the question of how to allocate new funding most efficiently to improve the fortunes of big and small communities nationwide. While devotion of funds primarily to a few of the largest cities would not boost nationwide economic growth, concentration of funding within nine province- or region-leading hub cities would indeed result in a faster rate of per-capita GDP growth in smaller communities across Canada.

Chart 7
Three Convergence Scenarios



Note: The leader stands for the province-leading hub city, while the follower stands for the collectivity of smaller communities in the province.
Source: The Conference Board of Canada.

Hence, there is a very strong policy rationale for concentrating any additional funding toward spurring economic growth in these nine cities, since this option is most likely to result in the greatest rate of growth for smaller cities and towns across all provinces.

To see how the country as a whole would benefit from such a policy, consider Chart 7, which presents three different scenarios for funding distribution among hub cities and smaller communities. This chart contains four pairs of bars. In each pair, the left bar represents the level of real GDP per capita for a hypothetical province- or region-leading hub city (referred to as the leader). The right bar represents the collective real GDP per capita of smaller communities in its province or region (referred to as the follower).

Concentrating funding to meet the needs of hub cities would best promote economic growth in smaller communities.

The first two columns present the starting point in real GDP per capita for both leader and follower. The next two columns show the endpoints under a status quo scenario (referred to in Chart 7 as Scenario 1), in which no new funding is devoted to Canada's cities. Economic growth continues apace in both the hub city and smaller communities, with the level of real GDP per capita in the latter slowly approaching that of the former over the sample period (2006–20), as per the average rate of convergence found in the provincial tests performed above.

The third pair of bars represents the endpoint of a second scenario in which new funding is distributed equally on a per capita basis to every community in a province or region, regardless of size. Assuming a 50:50 population split between the hub city and smaller communities in the province or region,[1] the level of real GDP per capita in both economies increases by the same amount during the year in which additional

funding begins to flow. Following this injection of funds, real GDP per capita in the hub city returns to its original annual growth pattern, and the level of real GDP per capita in the smaller communities grows at a pace that allows it to converge to the leader at the same rate that existed prior to the injections of funds. Again, the rate of convergence used is the average rate found in our provincial tests. Under this scenario, both the hub city and the smaller communities are better off than in the first scenario.

The last two columns show the endpoint of a third scenario in which a hub city is given a per capita disproportionate share of new funding—we stipulate 60 per cent, with 40 per cent given to other communities in the province or region.[2] In the first year of this new funding regime, the hub city gets a larger boost than the follower in the level of its real GDP per capita. In later years, however, the phenomenon of convergence brings the level of real GDP per capita among smaller communities to a higher level than that achieved in the previous scenario. And again, we have used the same rate of convergence as in the previous two scenarios. In other words, a disproportionate allocation of funding to the hub city will, over time, produce better results for both it *and* smaller communities than would be achieved by an equal per capita distribution of funding. At the same time, the overall province or region is better off in each and every year under this last scenario than in either of the first two scenarios.

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1 The assumption of a 50:50 population split between the hub city and the smaller communities makes sense because our hub cities' shares of their respective provincial population in 2004 were these: 40.6 per cent for Halifax, 47.9 per cent for Montréal, 42.1 per cent for Toronto, 60.1 per cent for Winnipeg, 43.5 per cent for the combination of Regina (20 per cent) and Saskatoon (23.5 per cent), 63.8 per cent for the combination of Calgary (32.4 per cent) and Edmonton (31.4 per cent) and 51.5 per cent for Vancouver. Overall, these nine hub cities combined accounted for 45.5 per cent of Canada's population in 2004.

2 This stipulated 60:40 split is based on an anecdote: While conducting work in Quebec, the Conference Board heard representatives of numerous Quebec cities agree that while the Montréal CMA comprises about half of the province's population, it accounts for 60 per cent of the province's infrastructure gap. We suspect that this proportion likely holds true for Canada's other CMAs in relation to the smaller communities in their province or region; however, hard evidence here is lacking in the absence of a definitive detailed survey of infrastructure needs nationwide. Moreover, the infrastructure spending required to allow for a hub city to reach its maximum potential may have to be done outside its jurisdiction. An example of that is the Vancouver CMA. A conversation between the Conference Board and the British Columbia Ministry of Transportation revealed that the critical bottlenecks currently experienced at the Port of Vancouver would be best resolved through investment in a double-tracked railroad bridge over Burrard Inlet and a double-tracked railroad tunnel at the Kicking Horse Pass. Thus, an analysis of the infrastructure needs of a hub city may not automatically lead to investment in the hub city itself.

CHAPTER 9

Policy Conclusions

Chapter Summary

- New funding for hub cities should address the full spectrum of assets supporting thriving urban economies—and infrastructure in particular.
- Convergence findings do not dictate how many big cities should be targeted for strategic investment or what proportion of new funding they should receive; only that new funding should be targeted to address their demonstrable needs.
- Not all smaller communities in Canada will be able to converge toward their proximate hub city, but on the whole, helping big cities reach their potential is a win-win game for all citizens.

These convergence findings show that the best way to help cities and smaller communities across Canada is by making it a clear funding priority to help hub cities fulfill their economic potential, since that would indirectly help smaller communities achieve a faster rate of economic growth. Such a policy priority would allow for hub cities to be given a share of new funding that is based not on a per capita allotment, but rather on what these cities need to reach their economic potential.

New funding would best be spent on helping hub cities fulfill their economic potential.

Obviously, this conclusion still leaves many details to be spelled out. Important policy questions lie beyond the scope of this paper. These include the kinds of uses to which new funding should be put, the needs of individual hub cities, and the proportion of funding that should go toward fulfilling the potential of economically vibrant CMAs not included among the nine hub cities. We can, however, recommend some general approaches to these questions.

WHAT SHOULD NEW FUNDING FOR HUB CITIES BE SPENT ON?

The question of what policy priorities should be targeted with new funding in order to maximize cities' economic growth should be approached with an eye to the full spectrum of assets that make for thriving urban economies. Recent research into this topic indicates that cities' economic performance depends not just on business activity per se, but also on the existence of environmental, social, housing and quality-of-life assets that attract mobile workers and affect corporate decisions about where to locate and expand.[1]

It also critically depends on the existence of infrastructure adequate to support modern communications, transportation and utilities. The backlog in maintenance of existing infrastructure, as well as the need for new infrastructure to accommodate growth, places some of the most taxing demands on the budgets of Canada's big cities, which have distinctively high infrastructure needs. A prerequisite to meeting these needs, however, is a definitive estimate of the infrastructure gap, since current estimates range from $50 billion to $125 billion.[2] It is time to get this figure authoritatively quantified through a micro-level national survey so that infrastructure investment funds can be appropriately directed and balanced with other funding components to promote the realization of hub cities' economic potential.

WHAT PROPORTION OF NEW FUNDING FOR CITIES SHOULD BE CONCENTRATED ON THE HUB CITIES?

Although our research findings suggest that using new funding to allow hub cities to fulfill their economic potential is the best way of spurring economic growth in large and small communities nationwide, the findings do not deliver a verdict on how intensively this funding should be concentrated on the hub cities. We do not take the striking findings of the convergence study to indicate that a grossly disproportionate allocation of

funding to the nine hub cities—say 80 or 90 per cent—would be the best policy for promoting national economic prosperity. Important national economic benefits could be produced by targeting funding toward other CMAs and smaller towns as well. A large and thriving city such as Ottawa–Gatineau would be an important target for strategic funding, even though it pales beside Toronto as a provincial growth leader. Smaller towns also certainly need strategic resource allocations to help them realize their economic potential—as do fast-growing cities such as Abbotsford, British Columbia, or Kitchener–Waterloo and Oshawa in Ontario.

We do not suggest, therefore, that the convergence findings deliver upper-limit policy prescriptions for *how many* cities and communities should be targeted. What the findings do imply, however, is that urban investment dollars *should be strategically concentrated* on the economic leaders, in proportion to their demonstrable needs, rather than be dispersed among all communities on a per capita basis. And the results of this research do make it clear that *there is a lower limit* for the number of cities where new strategic funding should be focused. Given the policy objective of producing country-wide economic growth, it will not suffice to focus on boosting the economic potential of just five or six of Canada's largest CMAs.[3] The finding that intraprovincial convergence is a much stronger force than national convergence indicates that the most efficient way to maximize the economic growth potential of the whole country is to provide strategic funding to every province or region, with support going to hub cities according to their needs.

WILL A POLICY OF STRATEGIC INVESTMENT IN HUB CITIES BENEFIT EVERY SMALL COMMUNITY IN CANADA?

Admittedly, not all smaller communities in Canada will be able to converge to the real GDP per capita level of their province- or region-leading hub city.[4] As smaller and more remote communities continue to lose population, some of them will see their economic strength dwindle as well. However, it might also be possible for these towns to downsize without losing their economic viability and quality of life. As a few experts have pointed out, there is a great need for policy research into how to help such communities "downsize with dignity."[5]

Smaller towns could possibly downsize without losing their economic viability and quality of life.

When it comes to the vast majority of communities, however, the findings of intraprovincial convergence do strongly suggest that *helping Canada's big cities reach their potential is a win-win game for all citizens*. Smaller cities and towns, and indeed the country as a whole, will thrive most and fastest when their growth is fuelled by that of the country's hub cities, which are demonstrably effective in pulling up smaller communities in their wake. With a wider endorsement of this view by citizens and leaders alike, the way would be opened to the adoption of a more strategic approach to helping Canada's hub cities to thrive.

1 This thesis has been most prominently advanced in Richard Florida's *The Rise of the Creative Class* (New York: Basic Books, 2002). For its application to the Canadian context, see, for example, Federation of Canadian Municipalities (2005).

2 For an estimate of the infrastructure shortfall, see Mirza and Haider (2003) and The Canadian Society for Civil Engineering (2002).

3 Of course, certain kinds of resources should be concentrated in the very biggest cities, since only they have populations large enough to warrant high-cost investments such as integrated mass transit systems or major cultural institutions. In general, however, a strategic city investment focus needs to broaden out more widely.

4 It is worth noting that some of the communities that converge do so, not because their rates of GDP increases are so fast, but because their population is declining. This is not a happy story.

5 See Slack, Bourne and Priston (2006) and Bourne and Simmons (2003).

APPENDIX A

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APPENDIX B

Related Reports and Services

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