



**Atop the Urban Hierarchy.** Toronto, October 2005 (Elvin Wyly). Between 2001 and 2006, the Toronto urban region enjoyed net population growth of more than 377 thousand people. Toronto comprises 15 percent of Canada's population, but accounted for 23.5 percent of the nation's net population growth between 2001 and 2006. The title refers to Robert A. Beauregard, ed. (1989). *Atop the Urban Hierarchy*. Lanham, MD: Rowman & Littlefield.

### **Recent Changes in the Canadian Urban System**

Project background paper

Geography 350, *Introduction to Urban Geography*

October 3, 2012

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“The scale and rapidity of the urban transformation of Canadian society and economy has been dramatic. ... The twentieth century, we might conclude, was indeed the ‘urban’ century, during which urbanization was the fundamental process of economic, social, and territorial transformation. ...” The average Canadian “now lives and works in a large metropolitan environment...” and “traditional contrasts drawn between rural and urban areas, and the living experiences of their residents, may now have lost much of their meaning. In the

twenty-first century, almost everywhere and everyone may be considered 'urban.'"<sup>1</sup>

Between 2001 and 2006, Canada's population increased by slightly more than 1.6 million, to 31.6 million, translating to a growth rate of 5.3 percent. The vast majority of the 1.6 million increase, however, took place in large urban areas; Toronto's growth, more than 377 thousand people, accounted for almost a quarter of the total national growth in this period. Half of the nation's population increase took place in five urban areas: Toronto, Montreal, Vancouver, Calgary, and Edmonton. Growth is increasingly concentrated, and all projections suggest that this trend will continue and perhaps intensify. A team of prominent urbanists put it this way in a report to Toronto's External Advisory Committee on Cities and Communities:

"As much as 80 percent of the country's economic and population growth over the next few decades will occur in only six broadly-defined city regions: the Greater Toronto Area, Vancouver and the lower mainland, Montreal and its environs, Ottawa-Gatineau, and the Calgary and Edmonton regions. What happens in these six urban regions will define the country's future, both positively and negatively. If our large cities succeed, the country will prosper; if they fail, the consequences will be severe for everyone and every region of the country."<sup>2</sup>

*"In the twenty-first century, almost everywhere and everyone" in Canada "may be considered urban." -- Larry Bourne*

And yet this story of concentrated growth in the nation's big cities conceals important, subtle variations. We can see some of the diversity in growth and decline if we look closely at the population figures compiled by the demographers, statisticians, and geographers working at Statistics Canada. In addition to the six large city-regions that will account for most of the nation's projected growth, the analysts at 'StatsCan' keep track of population trends in many other places: 895 urban areas, and 1,289 "designated places" – areas that fall short of the density thresholds for urban areas, and that have no formal municipal status, but can still be considered small communities or settlements. If we set aside the 49 designated places with no recorded permanent populations in 2006, we have comparable data for 2,135 communities across Canada, accounting for a combined total of 25.8 million people in 2006, 81.6 percent of the national total.

These data allow us to explore many different parts of the Canadian urban system. An urban system is "a set of interdependent urban places" that have become "articulated into a working system through networks along which goods, services, ideas, capital, and labour flow."<sup>3</sup> In

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<sup>1</sup> Larry Bourne (2000). "Urban Canada in Transition to the Twenty-First Century." In Trudi Bunting and Pierre Filion, eds., *Canadian Cities in Transition, Second Edition*. Don Mills, ON: Oxford University Press, pp. 28-29.

<sup>2</sup> Enid Slack, Larry S. Bourne, and Heath Priston (2006). *Large Cities Under Stress: Challenges and Opportunities*. Report to the External Advisory Committee on Cities and Communities. Toronto: Munk Centre for International Affairs, University of Toronto, quote from p. 1.

<sup>3</sup> R.J. Johnston (2000). "Urban System." In R.J. Johnston, Derek Gregory, Geraldine Pratt, and Michael Watts, eds., *The Dictionary of Human Geography, Fourth Edition*. Oxford: Blackwell, 882-883, quote from p. 882.

general, these networks have become much more concentrated at the top of the urban hierarchy over the last forty years, as transnational economic linkages and immigration to cities in the world's wealthiest economies have created what has been widely described as a world urban system, or a planetary network of world cities. In most cases, however, this concentration has simply reinforced the existing contrasts between large and small urban areas. Consider the case of Montreal. Between 2001 and 2006, Montreal accounted for 155 thousand of the total national population increase – an apparently large figure. But Montreal is big – well over three million people – and so it should not surprise us that the place would get a good share of any growth that happens nationwide. In fact, Montreal's growth rate of 4.89 percent fell a bit short of the national pace of expansion (5.35 percent). A better picture of the changing relations between different cities, then, might be possible if we standardize growth rates with a simple growth quotient:

Absolute city population change, as a share of national population change

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Total city population, as a share of national population

The denominator can refer either to the population at the beginning or the end of the period.<sup>4</sup> In this case we'll use the end of the time period (2006), and so for Montreal, the calculation is:

$$154,648 / 1,605,803 = 0.09630$$

$$3,316,615 / 31,612,897 = 0.10491$$

$$0.09630 / 0.10491 = \text{growth quotient of } 0.92$$

Montreal's growth during this period, then, was only 92 percent of what we would expect given its relative size in the national framework. This shortfall reflects the recent history of the "Montreal vs. Toronto" competitive dynamic in Canada's historic core of urban settlement stretching from Quebec city to Windsor, as described by Jim Simmons and Larry McCann. But "just as Toronto surpassed Montreal to earn first rank in the Canadian urban hierarchy, other Canadian cities are stepping to the fore"<sup>5</sup>; this becomes clear if we calculate the same growth quotient for the ten most populous urban areas (see the table below).

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<sup>4</sup> The choice makes little difference for large cities, but does have a significant effect on the size of the growth quotients for places with very small populations. Using the 2006 figure in the denominator allows us to calculate growth quotients for very small places that had permanent residents in 2006, but not in 2001; as such, this approach provides a more complete portrait of the entire urban system.

<sup>5</sup> Jim Simmons and Larry McCann (2006), "The Canadian Urban System: Growth and Transition." In Trudi Bunting and Pierre Filion, eds., *Canadian Cities in Transition: Local Through Global Perspectives*. Don Mills, ON: Oxford University Press, 40-64, quote from p. 55.

## Population Changes at the Top of Canada's Urban Hierarchy, 2001-2006.

	Population		Population change	Percentage change	Growth Quotient
	2006	2001			
Canada	31,612,897	30,007,094	1,605,803	5.35	
Toronto (Ont.)	4,753,120	4,375,899	377,221	8.62	1.56
Montréal (Que.)	3,316,615	3,161,967	154,648	4.89	0.92
Vancouver (B.C.)	1,953,252	1,834,849	118,403	6.45	1.19
Calgary (Alta.)	988,079	879,252	108,827	12.38	2.17
Edmonton (Alta.)	862,544	782,163	80,381	10.28	1.83
Ottawa - Gatineau (Ont./Que.)	860,928	834,799	26,129	3.13	0.60
Québec (Que.)	659,545	635,512	24,033	3.78	0.72
Hamilton (Ont.)	647,634	620,232	27,402	4.42	0.83
Winnipeg (Man.)	641,483	626,956	14,527	2.32	0.45
Kitchener (Ont.)	422,514	387,319	35,195	9.09	1.64

Data Source: Statistics Canada (2007), *Population and Dwelling Count Highlight Tables, 2006 Census, Urban Areas and Designated Places*. Catalog 97-550-XWE200602. Ottawa: Statistics Canada. Available at <http://www.statcan.ca>.

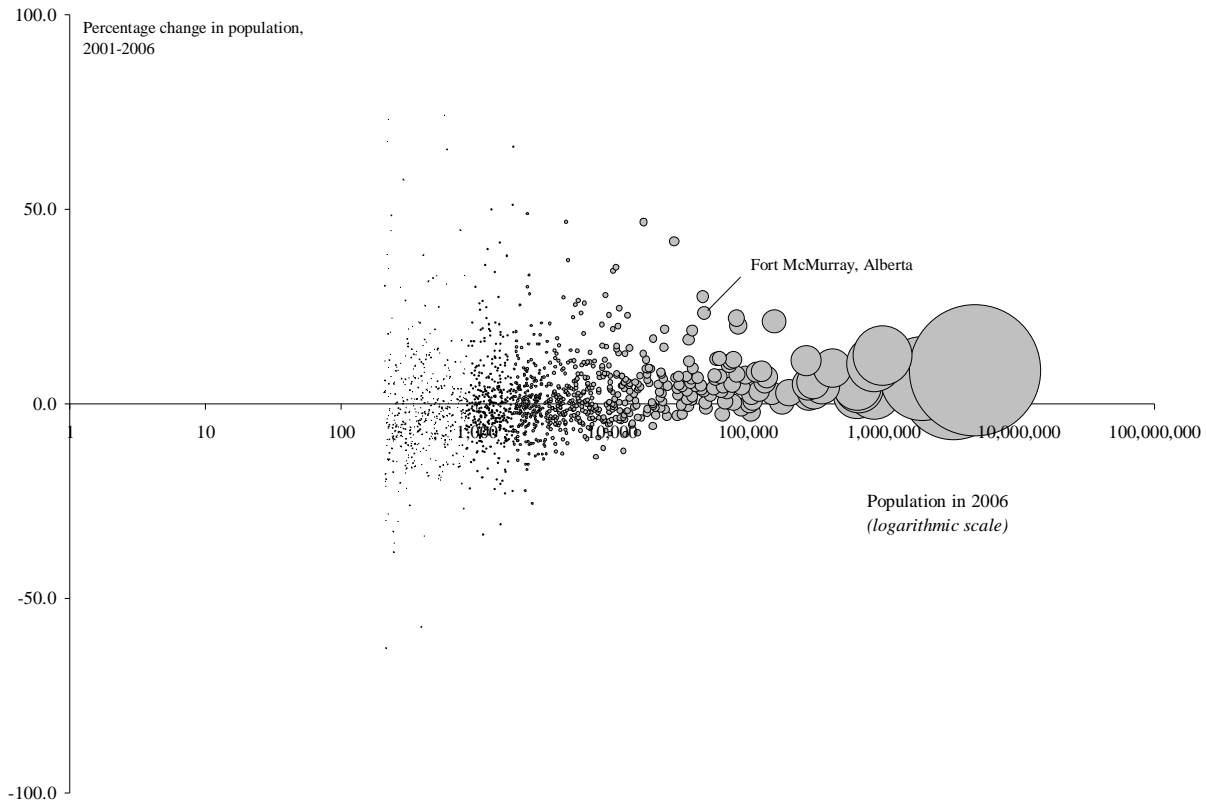
Notice the considerable variation in growth trajectories, from Montreal's just-keeping-pace, to Calgary's acceleration twice as fast as its expected proportional rate, to Winnipeg's stagnant growth at less than half the rate we would expect with proportional growth. Some places, however, even fall short of the low expectations of slow growth, and endure absolute decline. "The problem of declining urban centres will become prominent," write Simmons and Bourne, "as more and more households find that their jobs, their assets (houses) and the public services they expect are eroded by factors beyond their control. Sixty-four cities lost population between 1996 and 2001."<sup>6</sup> Between 2001 and 2006, 1,098 of the entities in our database – most of them very small "designated places" – saw population declines. In the vast majority of cases, these declines were very small, and the population figures involved are dwarfed by the large numbers involved at the peak of the national urban system.

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<sup>6</sup> Jim Simmons and Larry S. Bourne (2003). *The Canadian Urban System, 1971-2001: Responses to a Changing World*. Bulletin 18. Toronto: Centre for Urban and Community Studies, University of Toronto, quote from p. 1.



**Calgary**, August 2010 (Elvin Wyly). The tower under construction in the distance at left is the 58-story Bow, future corporate headquarters for the giant energy firm Encana Corporation. The Calgary urban region grew by 109 thousand people between 2001 and 2006 -- a growth rate more than twice the expected proportional rate. Calgary benefitted from “the rise in demand and prices for most commodities” that helped most of Alberta as well as Newfoundland, and it also benefitted from the expansion of the financial services sector in large centers in Western Canada. Richard Shearmur (2009). *Growth in the Canadian Urban System, 2001-2006*. Montreal: INRS, p. 2.



**Urban System Stability.** Canada's urban areas and census-designated places are plotted here by total population (2006, on a logarithmic scale) and growth rate (2001-2006). Circle sizes are scaled proportional to 2006 population. The range of growth rates narrows with increasing population: it is exceedingly rare to see very high rates of growth or decline for very large cities. Data Source: Statistics Canada (2007). *Population and Dwelling Count Highlight Tables, 2006 Census, Urban Areas and Designated Places*. Catalogue 97-550-XWE200602. Ottawa: Statistics Canada.

But small communities can certainly be affected by (for example) the departure of a comparatively small number of talented high-school graduates who leave for jobs, higher education opportunities, and/or promising careers. Such departures can take valuable talent and ambition away from the small town, along with all the future economic demand and tax revenues, to Toronto, Montreal, Vancouver, Calgary, and other growth centers.

Moreover, in some cases the losses are quite significant. Prince Rupert, B.C., lost 12.1 percent of its population between 1996 and 2001,<sup>7</sup> only to endure another decline of precisely 12.1 percent in the next five years. In this case, the growth quotient becomes a loss quotient, with the notion of proportional gain becoming a mirror-image story of exposure to potential losses. Prince Rupert's population decline was 2.71 times larger than Prince Rupert's share of the total national population (see the table below). The place has endured more than a generation of economic and demographic restructuring, creating a poignant, contemporary memory of the expansion associated with staples-driven urbanization in the early years of the twentieth century:

<sup>7</sup> Simmons and Bourne, "Canadian urban System, 1971-2001," p. 1.

“Prince Rupert is young, younger than the Alaskan ports that were founded during the gold rush at the turn of the century. Yet in the short time since the city was founded (1910), its dominant functions and cultural landscape forms have undergone marked changes ... [it] was designed and built to function as a potential world port, the Pacific terminus of the new National Transcontinental – Grand Trunk Pacific Railway. Soon (1920) the railway became bankrupt .... The young city, thus deprived of its chief financial support, and further handicapped by slow development of its hinterland, never became an important commercial center. ... At present an attempt is being made to secure bonds for the construction of a wood pulp mill within the city. The establishment of this new industry would change again the economic life of the community.”<sup>8</sup>

#### Population Decline in Canada’s Urban System, 2001-2006.

	Population		Population change	Percentage change	Growth Quotient
	2006	2001			
Canada	31,612,897	30,007,094	1,605,803	5.35	
Chicoutimi - Jonqui�re (Que.)	106,103	108,409	-2,306	-2.13	-0.43
Prince George (B.C.)	65,082	66,871	-1,789	-2.68	-0.54
Prince Rupert (B.C.)	12,128	13,799	-1,671	-12.11	-2.71
Terrace (B.C.)	15,415	16,659	-1,244	-7.47	-1.59
Glance Bay (N.S.)	19,968	21,187	-1,219	-5.75	-1.20
Kitimat (B.C.)	7,600	8,800	-1,200	-13.64	-3.11
Angus - Borden CFB-BFC (Ont.)	8,615	9,722	-1,107	-11.39	-2.53
Quesnel (B.C.)	12,641	13,727	-1,086	-7.91	-1.69
Timmins (Ont.)	30,243	31,188	-945	-3.03	-0.62
Cape Breton - Sydney (N.S.)	33,012	33,913	-901	-2.66	-0.54

Data Source: Statistics Canada (2007), *Population and Dwelling Count Highlight Tables, 2006 Census, Urban Areas and Designated Places*. Catalog 97-550-XWE200602. Ottawa: Statistics Canada. Available at <http://www.statecan.ca>.

These words were written before a turbulent half-century of boom-and-bust cycles that are common in resource economies shaped by “staples” urbanization processes. These processes effectively built Canada’s dichotomy between a heavily-developed core urban network with dense concentrations of wealth and economic dynamism, and a periphery

“distinguished by opposite qualities: fewer economic opportunities; an emphasis on primary resource production; a more dispersed population; restricted innovative capacity; limited political power; specialized (and vulnerable) urban economies; and sometimes – particularly on Canada’s east coast – weakly integrated urban systems.”<sup>9</sup>

Prince Rupert experienced many of these problems, but it did enjoy several periods of pronounced growth, and well into the 1970s analysts could plausibly suggest that “Its future

<sup>8</sup> John Q. Adams (1938). “Prince Rupert, British Columbia.” *Economic Geography* 14(2), 167-183.

<sup>9</sup> Simmons and McCann, “Canadian Urban System,” p. 41.

growth prospects appear promising.”<sup>10</sup> In subsequent years, however, the accumulated effects of an unstable economic base have collided with long-term demographic changes. Among many local consequences of decline are the distinctive webs of challenges associated with changes in federal and provincial governmental activities, and the ‘downloading’ of many social-services functions to lower units of government. “For rural and remote communities in resource hinterlands, population ageing driven by industrial restructuring presents a significant departure from past experience,” and places severe burdens on the system for local services – especially health care.<sup>11</sup>



**Slow Decline.** The old Nova Scotia Textiles Limited factory, Windsor, Nova Scotia, April 2010 (Elvin Wyly). Between 2001 and 2006, Windsor’s population declined only slightly -- a net loss of 26 people, to 3,986 residents. But the community illustrates two of the key factors identified by Bunting and Filion as “foreshadowing the demographic decline of small urban centres.” The population is aging quickly, and older residents and out-migrants are not being replaced quickly enough by new immigrants. The median age of Windsor residents in 2006 was 45.7 years, well above Nova Scotia’s 41.8; for comparison, the median age for the City of Vancouver was 38.6. Only 1.5 percent of Windsor’s residents are recent immigrants to Canada (defined as those immigrating since 1991), compared to 23.5 percent for the City of Vancouver. Trudi Bunting and Pierre Filion (2010). “Epochs of Canadian Urban Development.” Chapter 2 in Trudi Bunting, Pierre Filion, and Ryan Walker, eds., *Canadian Cities in Transition, Fourth Edition*. Don Mills, ON: Oxford University Press, 19-38, quote from p. 30. *Data Source:* Statistics Canada (2010). *2006 Community Profiles*. Ottawa: Statistics Canada.

<sup>10</sup> J. Arwell Edwards (1976). “Industrial Structure and Regional Change: A Shift-Share Analysis of the British Columbia Economy, 1961-1970.” *Regional Studies* 10, 307-317, quote from p. 316.

<sup>11</sup> Neil Hanlon and Greg Halseth (2005). “The Greying of Resource Communities in Northern British Columbia: Implications for Health Care Delivery in Already-Underserved Communities.” *Canadian Geographer* 49(1), 1-24, quote from p. 1.





**“Fort McMoney.”** New suburban development just northwest of Fort McMurray, Alberta, in the Regional Municipality of Wood Buffalo, August 2010 (Elvin Wyly). Between 2001 and 2006, Fort McMurray added about a quarter to its population -- posting a growth quotient of 3.73. The dramatic expansion of oilsands operations has propelled vigorous urban growth, testing a modern-day version of Innes’ staples theory and intensifying national and international controversy over the sustainability of petroleum-based society. The transnational linkages of contemporary corporations and resource flows also force us to rethink the very meaning of locality, and the meaning of national urban systems. Between 2007 and 2011, companies invested about \$73.6 billion in oilsands production infrastructure in Canada; about one-sixth of this investment came from China. More than half of the profits of all of Canada’s oilsands production went to corporate shareholders outside Canada. Mike de Souza (2012). “Foreigners Reaping Benefits of Oilsands.” *Winnipeg Free Press*, May 11, p. A15.



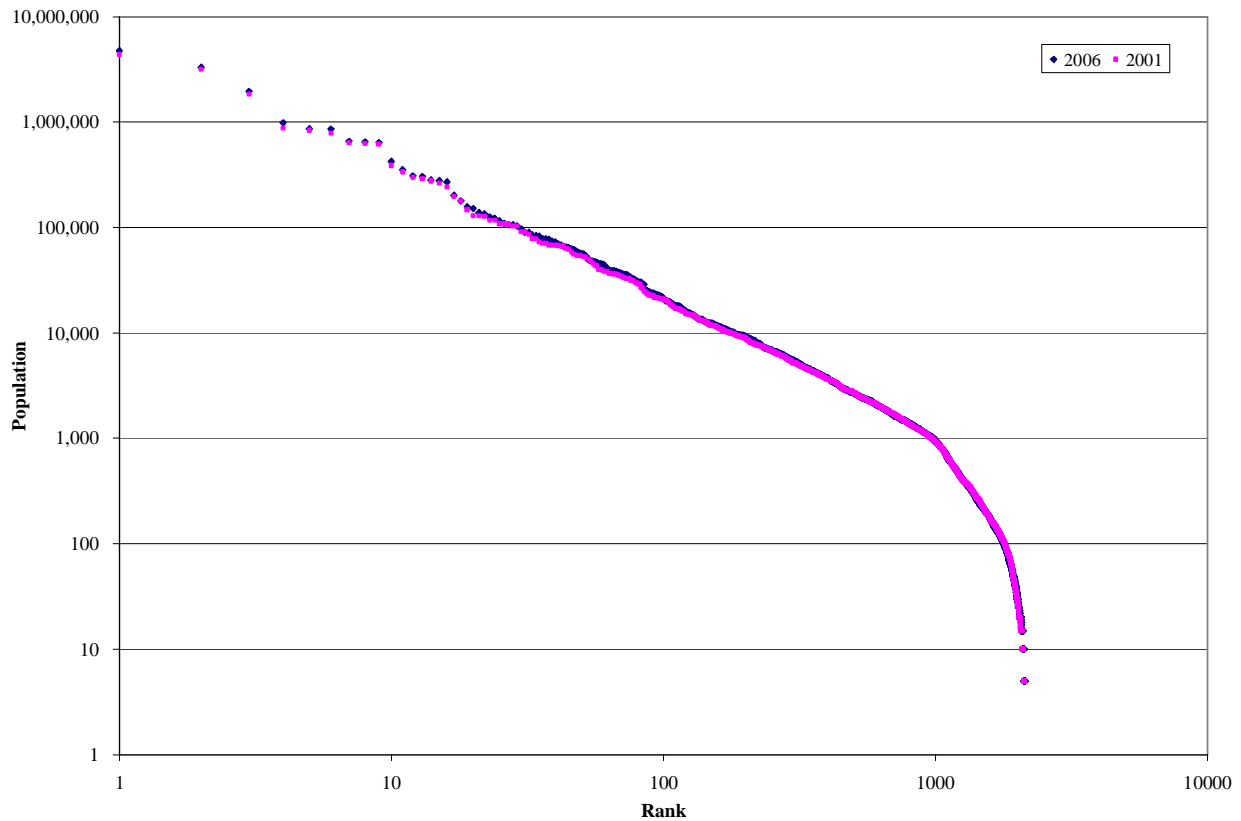
**Postindustrial Staple?** Alberta oil sands, August 2010 (Elvin Wyly). So many discussions of urban economic development today emphasize the growth of post-industrial service-sector firms and jobs. This creates the widespread perception that today's service economy has entirely replaced the old heavy manufacturing economy, which itself replaced the earlier agricultural and staples-based economies. To be sure, there have been broad structural changes. But "new" and "old" types of industries always coexist, just with evolving urban, regional, and transnational geographies. Bunting and Filion note that Canada, for example, has a paradoxical blend of deindustrialization alongside a growth boom driven by a resurgent staples economy. "The rapid development of the economy of emerging countries, such as China and India, will assure ever-growing demand for resources in the future. Therefore, while economic globalization is having adverse effects on the heartland" of urban Canada along the Quebec City-to-Windsor corridor, "it is having opposite impacts on portions of the hinterland harvesting or extracting commodities in high demand on world markets." Trudi Bunting and Pierre Filion (2010). "Epochs of Canadian Urban Development." Chapter 2 in Trudi Bunting, Pierre Filion, and Ryan Walker, eds., *Canadian Cities in Transition, Fourth Edition*. Don Mills, ON: Oxford University Press, 19-38, quote from p. 30.

This kind of descriptive-analytical narrative is just a small sample of the kinds of stories behind each of the figures that appear in tabulations of population change. When viewed from the top of the urban hierarchy, the allocation of the nation's growth trends appears to be remarkably stable: big cities continue to capture most of the ongoing growth and expansion in national economic activity, productivity improvements, and technological and cultural innovations. Over time, the entire urban system remains remarkably stable. If we reproduce Knox and McCarthy's graph of changes in the U.S. rank-size distribution<sup>12</sup> for Canada's urban areas and designated places, we see almost perfect stability between 2001 and 2006 (see the figure below). But it is important to note that the dots on this rank-size graph have no labels: one of the key insights of urban-

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<sup>12</sup> Paul Knox and Linda McCarthy (2005). *Urbanization, Second Edition*. Upper Saddle River, NJ: Pearson Prentice-Hall, p. 66.

systems analysis, ever since Brian Berry’s landmark article,<sup>13</sup> has been that the nature of change in the urban network does not depend on the performance of any one particular city: if a city loses ground, then another place is likely to gain the growth and vitality that will allow it to move a bit higher in the ranking. And so even if the system remains stable and apparently unchanging in the short period between 2001 and 2006, a closer look at the individual points on this graph would show substantial realignments that have affected smaller urban communities. More than 415 places on this graph of purported stability posted decline quotients of more than 2.0 – meaning that their population losses were twice the community’s share of the total national population. At the other extreme, 361 places saw growth quotients over 2.0 – meaning that their share of national population growth was more than twice what would be expected on the basis of the community’s size.

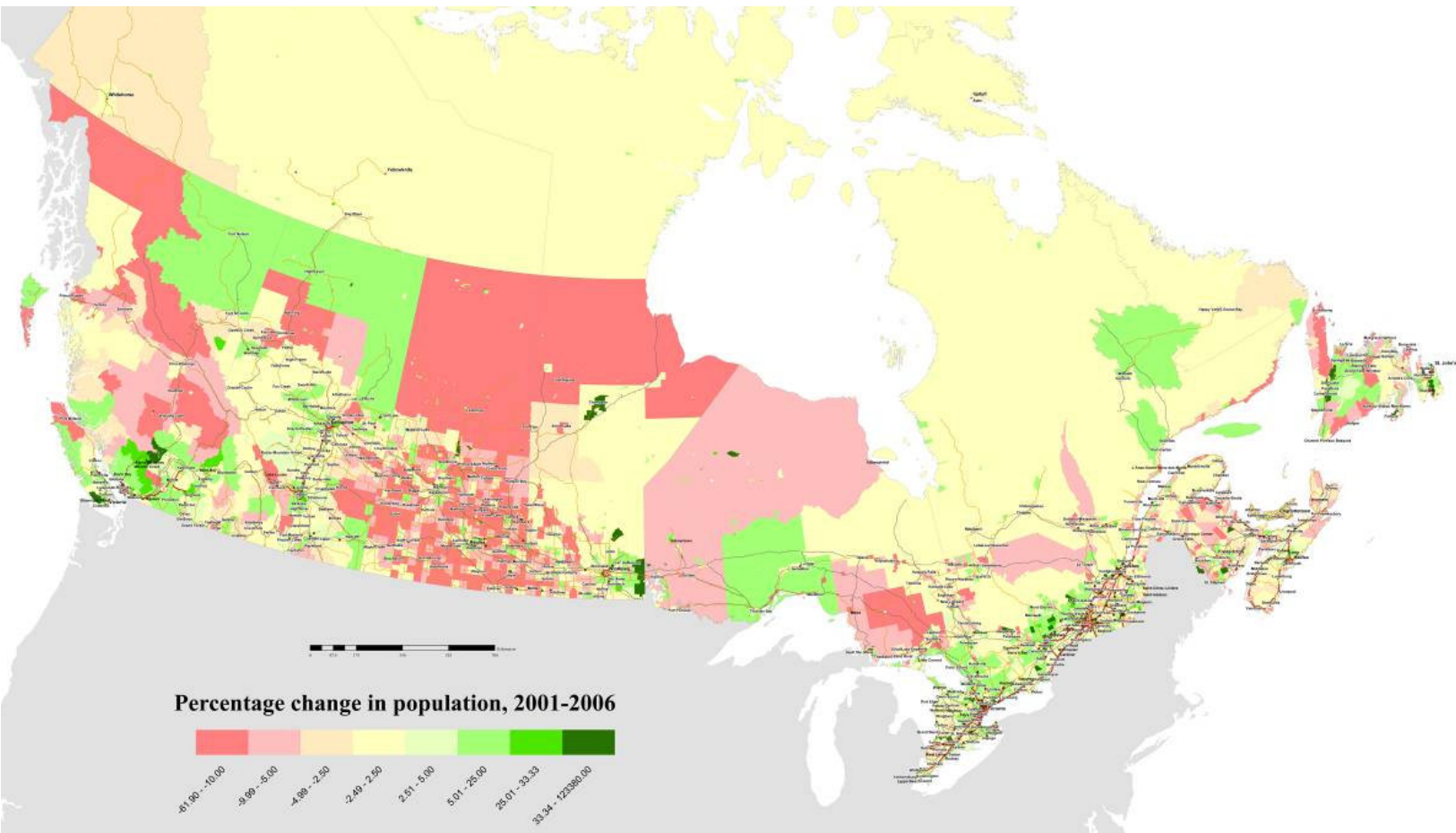


**The Rank-Size Distribution of Urban Canada, 2001-2006.** Data Source: Statistics Canada (2007), *Population and Dwelling Count Highlight Tables, 2006 Census, Urban Areas and Designated Places*. Catalog 97-550-XWE200602. Ottawa: Statistics Canada.

It is crucial to remember, of course, that each of the dots on this sterile, abstract graph represent local, human communities. Growth and decline shape opportunities for individuals and firms, and they also condition local discussions of policy and politics. Pierre Filion identifies a serious divergence in the fortunes of Canada’s small and large urban centers from the 1970s through 2006. “We can expect growing polarization between growing and shrinking portions of the urban system,” he writes, “in a neo-liberal policy context that is unfavourable to regional

<sup>13</sup> Brian J.L. Berry (1964). “Cities as Systems Within Systems of Cities.” *Papers of the Regional Science Association* 13, 147-163.

economic development interventions.”<sup>14</sup> In other words, officials at the most powerful levels of government -- the provincial and federal levels -- are less supportive of doing anything to interfere with market-driven declines in particular cities or towns. A generation ago, public-sector officials generally regarded their role as managing the negative consequences of market processes, and cushioning the resulting inequalities; today, public policies tend to reinforce market processes rather than guiding or mediating them.



**Growth and Decline in Canada, 2001-2006.** Data Source: Statistics Canada (2008). *Cumulative Profile of Census Tracts and Census Subdivisions, 2006 Census of Population and Housing*. Ottawa: Statistics Canada. Map prepared by Elvin Wyly, using database compiled by Anna Glasmacher and Markus Moos, School of Planning, University of Waterloo.

Demographic, economic, and policy shifts have thus combined to redraw the evolving map of Canadian urban settlement. Look closely at that map above, and consider all the difficult choices facing those areas of population decline -- the darkest pink areas lost more than ten percent of their population in five short years; and then consider the very different but no less urgent problems facing the fast-growing areas.

<sup>14</sup> Pierre Filion (2010). "Growth and Decline in the Canadian Urban System: The Impact of Emerging Economic, Policy, and Demographic Trends." *GeoJournal* 75(6), 517-538, quote from p. 517.

## Your Job

I would like you to undertake an analysis of change in the Canadian urban system. Consider using the dataset on population changes used for this background paper, or the more recently updated tabulations on the course projects web page; what I've written above provides one kind of model for the kinds of simple calculations you can design to shed light on patterns of growth, stability, and decline. You should also consult one of the course texts, for extended discussions of theories of urban systems development and change.

But use this background paper as a guide, not a straightjacket: be creative. In general, you will find it easier to tell an interesting story if you choose cities that are not at the very peak of the national urban system: if you do choose to focus on the largest cities, you should adopt a comparative perspective, to discuss (for example) the causes and consequences of the contemporary historical competition between Montreal and Toronto, or the rise of Calgary and Edmonton to rival, in their own distinctive ways, the urban centrality of Toronto and Montreal. The story is very hard to tell if you focus solely on one large city, because over a five-year period it is very unlikely that a large city will deviate too far from the national growth trend. For big cities, the growth quotients tend to be more moderate; smaller places are more likely to have growth quotients that are extremely high or extremely low.

You have several options for designing an interesting study. First, you could analyze how recent trends compared with earlier trends, based work presented in the Bunting & Filion text and other published articles on Canadian urban growth and decline.<sup>15</sup> What places have reversed decline, or have stagnated after substantial growth in earlier periods? Second, you could define a particular geographic region and narrow your focus to the urban areas and designated places within that region. Are all the places in your region experiencing the same kinds of growth trajectories? Or do you see a pattern of regional restructuring, with a number of smaller settlements stagnating or losing population while one city becomes the dominant regional center for economic growth, shopping and cultural opportunities? Third, you could identify a small number of individual communities that seem to have distinctive profiles in the population data – very high or very low growth quotients, or a very large share of what the StatsCan folks call 'temporary or foreign-occupied dwellings.' (Take a look at the row for Whistler in the data worksheet.) What makes these places distinctive, and what are the implications of their growth trajectories? There are certainly other options; the main point is to think creatively about how to tell a geographical narrative about recent changes in population and urban settlement.

Regardless of which path you choose, you should begin by reviewing the class outline on urban systems, and then selected passages from one of the course texts. You should then undertake a preliminary exploration of the data, which are provided in a simple Excel worksheet on the course website; you'll be able to see some of the calculations and simple tools I used to prepare the tables and figures for this background paper. Then you should undertake a search for additional materials to help you describe, interpret, and explain what is happening in different

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<sup>15</sup> See, for example, Jim Simmons and Larry S. Bourne (2003). *The Canadian Urban System, 1971-2001: Responses to a Changing World*. Bulletin 18. Toronto: Centre for Urban and Community Studies, University of Toronto.

parts of the urban system – just like the short literature search I did to find articles documenting Prince Rupert’s growth and decline at various points in time. Search for academic articles in refereed journals, as well as reports by municipal, provincial, or federal government sources. You may also track down local newspaper accounts to describe community reactions to growth and decline -- which often appear as soon as the latest Census data are released. I recommend Canadian Newsstand, or Lexis-Nexis, for these kinds of media searches. Finally, you should draft a paper presenting your findings and interpretations.

Follow the “General Guidelines” presented on the course webpage.