
***Labour Mobility
and a North American
Common Market:
Implications for Canada***

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One hallmark of a true common market is labour mobility. The North American Free Trade Agreement (NAFTA) is, of course, not a common market, but it does contain some provisions on labour mobility — in particular, the extremely successful U.S. TN visa program allows the temporary migration of business people and professionals. Otherwise, migration within NAFTA is limited, and all three NAFTA countries view traditional immigration controls as instruments of national social and economic policy.

To the extent that there has been much discussion within NAFTA on migration, it has largely focused on the movement of Mexicans northward into the United States. Here in Canada, the discussion has revolved around the movement of highly skilled individuals southward. There has been almost no discussion, however,

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of moving toward a common continental labour market with mobility rights for all NAFTA workers. In contrast, one of the central features of the European Union is its single-market program and the free mobility of labour. This has led to a new and growing literature on the consequences of increased labour mobility for labour markets, economic growth, trade, investment, and social policy.

Crossborder Labour Mobility: An Issue of Growing Importance

Although labour mobility is not currently high on the policy agendas of the NAFTA countries, the issue is likely to become increasingly important as deeper North American integration evolves, with or without the help of governments, for several reasons.

First, the growth in both goods and services trade is expanding rapidly among the three countries. Given the potential size of this market, it is reasonable to assume that the after-market and complementary aspects of most services activities often are both firm and place specific, in the sense that customers want to be serviced in their home locations. The United States' existing TN visa program goes partway toward meeting these needs, but opening borders completely to these types of labour flows would facilitate better integration of services markets and promote the growth of Canadian services exports to the United States.

Second, since multinational enterprises (MNEs) routinely wish to move staff across borders for short-term work assignments, the ease with which they can do so affects foreign direct investment (FDI) decisions. Thus, making it easier for MNEs to move staff between Canada and the United States could help to remove the bias against Canadian locations for North American-based FDI.

Third, in many areas of business, virtual labour mobility is already a substitute for physical labour mobility. For example, the call centres that exist in various Canadian cities to serve the entire NAFTA market provide, in essence, a form of mobile labour service. As another example, the Internet has dramatically enhanced the ability of firms and individuals to deliver labour services via digital-based

telecommunication networks, giving rise to the vision of a continental e-labour market. Still other examples include doctors located in one city who perform surgery in another and university professors who deliver courses via Distance Learning Technology.

Fourth, serious concerns in Canada about the loss of highly skilled workers to the United States, particularly in high-technology areas, may lead to public resistance to initiatives to further ease the movement of workers between the two countries.

Fifth, border controls are becoming increasingly difficult to enforce without impeding other forms of commerce, yet business demands to expedite crossborder business visits, as well as flows of goods and services, are increasing. The appeal of reducing border costs, however, carries with it a cost: the growing inability to control illegal immigration and perform necessary security checks. At the same time, in the post-9/11 era, the conflict between crossborder mobility and security is increasingly evident.

Finally, the increasing average age of the Canadian population presages future labour shortages in this country. Although such shortages, in turn, may increase the demand for more immigrants, some of these pressures could be met by improving labour mobility within NAFTA.

Welfare and Labour Market Integration

What are the welfare and efficiency consequences of taking NAFTA from a free trade area to an arrangement in which there is full mobility of labour? The standard economic view is that the greater the increase in the degree of mobility, the larger the efficiency gains. Different theories give rise, however, to quite different predictions of the potential welfare gains. In some models, countries lose when the mobility of factors such as labour are increased. In almost all theories, distributional consequences are negative for some groups and positive for others. Robert Mundell argued many years ago (1957) that, within one well-known model of international trade, allowing for the mobility of factors was irrelevant for economic efficiency. NAFTA has certainly moved us a long way toward free

trade. Does that imply that the efficiency gains from increased labour mobility are negligible?

In seeking to address this and related questions, we must add the important caveat that, in this paper, we do not explore the complex social and fiscal policy implications of formal labour market integration. Within a true common market, there is labour mobility but not necessarily citizenship mobility, which comes only with more formal political integration. Thus, in the absence of political union, an individual's rights to social and transfer programs may be defined by citizenship and may not be available outside his or her home country — indeed, in both Canada and the United States, most citizenship rights currently go more or less in hand with residency. Increasing labour mobility, therefore, may not necessarily imply access to local social programs and public goods for noncitizens; for example, in Switzerland an individual who leaves his or her home canton to take up work in another canton is not entitled to access to social programs in that canton. Free mobility of labour within NAFTA, therefore, would not necessarily imply that someone who moves from one country to another for work would have access to the social services generally available to citizens.

The essay proceeds as follows. In the next section, we discuss recent trends in international labour flows and some historical data. In the following section, we review theories of international factor movements, and amendments to deal with a number of medium-term considerations such as uncertainty, labour market rigidities, and short-run factor specificity. We also draw out the implications of these theories should Canada-U.S. labour market integration proceed. We then deal with the implications of increased labour mobility for regional and industrial structures, looking in particular at the question of whether increased labour mobility could lead to a pattern of economic development in North America that would be biased against Canada, given the existence of continental free trade.

We then move on to discuss some dynamic factors, including those surrounding the brain drain debate; new forms of labour mobility, including temporary workers and virtual labour mobility; and the

macroeconomic adjustment implications of labour mobility and the lessons that can be drawn from European and U.S. experience. In the final section, we offer some conclusions and possible policy implications of these developments for future Canada-U.S. integration and NAFTA.

Trends in Migration and Mobility

Historical Canadian census data show that rates of permanent out-migration are currently near an all-time low and that, for a long time, Canada has enjoyed a net inflow of permanent migrants.¹ At one time, however, particularly between 1870 and 1901, there were large flows of people from Canada to the United States, as Table 1 shows. Since then, however, immigration has usually exceeded emigration in Canada (an exception was during the Great Depression). The early postwar period also saw large flows from Canada to the United States, but relatively little reverse migration (Tables 2 and 3).

The current debate on the brain drain from Canada to the United States nevertheless has attracted a great deal of media attention, and researchers have made a number of attempts to estimate this flow more accurately. In one such attempt, Finnie (2001) suggests that the number of tax filers leaving Canada each year to all destinations increased steadily from about 15,360 in 1991 to 28,870 in 1997, with an average of about 21,700 per year over the period. In summarizing his evidence, Finnie says that

178,000 people left Canada to go to the U.S. between 1991 and 1996, and past experiences indicate that 126,000 of these would be expected to remain permanently in the United States and 52,000 to return to Canada. Emigration to the U.S. was, furthermore, 30 percent higher in this period than from 1986 to 1991, [with] permanent migration increasing by 15 percent and temporary migration doubling. (2001, 3.)

1 For many years, annual immigration rates have been between 0.5 and 1 percent of the population, while annual emigration rates have range between 0.2 and 0.3 percent of population.

Table 1: Canadian Population and Growth Components, 1851–1996

Period	Net Natural Increase	Immigration	Emigration	Emigration / Immigration	Census Population, end of Period
	(thousands)	(thousands)	(thousands)	(%)	(thousands)
1851–61	611	352	170	0.48	3,230
1861–71	610	260	411	1.58	3,689
1871–81	690	350	404	1.15	4,325
1881–91	654	680	826	1.21	4,833
1891–1901	668	250	380	1.52	5,371
1901–11	1,025	1,550	739	0.48	7,207
1911–21	1,270	1,400	1,089	0.78	8,788
1921–31	1,360	1,200	971	0.81	10,377
1931–41	1,222	149	241	1.62	11,507
1941–51	1,972	548	379	0.69	13,648
1951–56	1,473	783	184	0.24	16,081
1956–61	1,675	760	278	0.37	18,238
1961–66	1,518	539	280	0.52	20,015
1966–71	1,090	890	427	0.48	21,568
1971–76	931	1,053	492	0.47	23,518
1976–81	977	771	366	0.47	24,900
1981–86	987	677	360	0.53	26,204
1986–91	987	1,199	279	0.23	28,111
1991–96	908	1,170	230	0.20	29,959

Source: Helliwell 2000, table 2.

One of the interesting trends since the implementation of the Canada-U.S. Free Trade Agreement (FTA) in 1989 has been the shift toward temporary forms of migration from Canada to the United States. Of particular interest is the dramatic increase in the number of people using the TN visa program (see Table 4). Although, for a number of reasons, TN visas are thought to be unreliable as an indicator of permanent migration flows, nevertheless the dramatic increase in their use is undoubtedly indicative of increased interactions of Canadians in the US labour market in some form. Likewise, as Table 4 shows, the number of MNE employee transfers has also

Labour Mobility and a North American Common Market 7**Table 2: Immigration between Canada and the United States**

Years	Average Annual Flows
	(thousands)
<i>Canadian-Born Immigrants to the United States, 1961-98</i>	
1961-1970	41.3
1971-1980	17.0
1981-1990	15.7
1991-1996	16.2
1991-1998	14.1
<i>U.S. Immigration to Canada, 1951-2000</i>	
1951-1960	10.1
1961-1970	16.7
1971-1980	17.9
1981-1990	7.9
1991-1994	7.1
1991-2000	6.1

Source: Authors' calculations based on data from Citizenship and Immigration Canada and the U.S. Immigration and Naturalization Service.

Table 3: The Flow of Non-Immigrant Professional Workers and Their Families from Canada to the United States, 1989-98

	Professional Workers under FTA (TC)	Spouses and children of FTA workers	Professional Workers under NAFTA (TN)	Spouses and children of FTA workers (TD)
<i>Canada-US Free Trade Agreement</i>				
1989	2,677	140		
1990	5,293	594		
1991	8,123	777		
1992	12,531	1,271		
1993	16,610	2,386		
<i>North American Free Trade Agreement</i>				
1994			19,806	5,535
1995			23,904	7,202
1996			26,987	7,694
1997			n.a.	n.a.
1998			59,061	17,816

Sources: U.S. Immigration and Naturalization Service; various statistical yearbooks.

8 *Richard G. Harris and Nicolas Schmitt***Table 4: *The Flow of Temporary Workers to the United States under the FTA and NAFTA, 1989–98***

	Categories ^a				Total
	Traders	Investors	Intracompany Transferees	Professionals	
1989	24	27	867	1,741	2,659
1990	18	27	1,297	2,756	4,098
1991	11	28	1,139	3,466	4,644
1992	3	29	1,101	3,673	4,806
1993	5	16	1,090	4,348	5,459
1994	6	12	1,474	5,109	6,601
	(0)	(0)	(7)	(19)	
1995	7	22	1,333	5,082	6,444
	(0)	(0)	(15)	(66)	
1996	5	11	1,299	6,240	7,555
	(0)	(3)	(15)	(88)	
1997	6	18	1,633	7,572	9,229
	(1)	(2)	(25)	(69)	
1998	5	22	1,922	8,502	10,451
	(1)	(0)	(42)	(96)	
1999	11	14	1,734	7,331	9,090
	(4)	(2)	(44)	(77)	

a Temporary workers who qualify in these categories are business persons who require an employment authorization but are exempt from labour market assessment (employment validation). Business Visitors are not included since an employment authorization is not required.

Note: The numbers are based on persons, not on employment authorization documents. The numbers in parentheses indicate workers coming to Canada from Mexico.

Source: Unpublished data provided by Citizenship and Immigration Canada.

been rising at a rapid rate, representing both the increased importance of FDI in the economy and the shift toward shorter-term assignments for MNE employees.

*Canadian Interprovincial Migration:
A NAFTA Template?*

In thinking about improving the mobility of workers in the NAFTA context, it is useful to review Canadian interprovincial migration, which, since it is a right of all Canadians, provides some evidence on what might be expected should barriers to the movement of people between Canada and the United States be removed.

Rosenbluth (1996) finds that approximately 1 percent of Canada's population migrates between provinces each year, a large amount relative to the annual increase in the total population. Indeed, Gunderson (1994) says that regional migration is of greater significance to Canada than immigration from abroad. He finds that two-thirds of all migration into and within Canada is regional, ranging from 40 percent in Quebec to 94 percent in the Northwest and Yukon Territories.

In general, an increase in provincial demand for labour leads to an increase in in-migration and a decrease in out-migration. Yet considerable barriers to labour mobility still exist in Canada. Gunderson (1994) cites two kinds: natural and economic barriers (such as distance, culture, and language) and artificial barriers (such as professional and trade licensing and educational and language requirements). Global competition, free trade, technical change, and industrial restructuring have heightened the importance of reducing these barriers so that a strong and competitive Canadian economy can allocate labour more efficiently.

As Table 5 suggests, flows of labour tend, not surprisingly, to be from low-wage, high-unemployment regions to higher-wage, low-unemployment regions. Moreover, the flows are negatively affected by distance. Mobility also tends to be higher among younger people, since the young have a longer period in which to benefit from the move, experience less family disruption, and, typically, have lower

**Table 5: Domestic and International Migration,
Canada, 1994–2000**

	Total Immigration	Number by Source		Percentage by Source	
		Other Provinces	Other Countries	Other Provinces	Other Countries
Canada	3,553,298	1,469,023	2,084,275	0.41	0.59
British Columbia	728,810	302,397	426,413	0.41	0.59
Alberta	557,437	97,133	460,304	0.17	0.83
Saskatchewan	135,428	12,926	122,502	0.10	0.90
Manitoba	134,632	26,686	107,946	0.20	0.80
Ontario	1,310,240	800,292	509,948	0.61	0.39
Quebec	355,242	200,364	154,878	0.56	0.44
New Brunswick	84,900	4,839	80,061	0.06	0.94
Nova Scotia	131,803	18,621	113,182	0.14	0.86
P.E.I.	20,372	1,084	19,288	0.05	0.95
Nfld. & Labrador	57,401	3,452	53,949	0.06	0.94
Yukon Territory	12,795	575	12,220	0.04	0.96

Sources: Human Resources Development Canada; authors' calculations.

forgone wages. Finnie (1999) reports that, over the 1982–95 period, no less than 7.4 percent of the Canadian population moved from one province to another, with one-time movers representing 4.5 percentage points, multiple movers 1 percentage point, and returnees 1.9 percentage points. Overall, annual rates of provincial out-migration held constant at 1.5 percent of the population through most of the 1980s, then fell to 1.2 percent by the mid-1990s for all provinces except Newfoundland and Labrador, where the rate remained higher. Finnie argues that this apparently small drop actually indicates a downward structural shift in interprovincial migration rates. The Atlantic and Prairie provinces had the highest rates of out-migration relative to their populations, and their out-migrants tended to go to the larger, nearby provinces of Ontario, Quebec, and British Columbia. Mobility in and out of Quebec was relatively lower than for most provinces, probably due to language and cultural differences.

Trade and Migration: Theories and Implications

Over the past 25 years, although world trade and investment flows have been considerably liberalized, the mobility of people has remained steady, particularly relative to earlier periods in history. During the first great era of globalization in the decades prior to World War I, immigration from Europe to the New World and within Europe itself occurred on a vast scale (see, for example, O'Rourke and Williamson 2000). Some 60 million Europeans moved to the resource-rich and labour-scarce Americas in the century following 1820, three-fifths of them to the United States; in the 1890s, even more Italians emigrated to France and Germany than to the United States. This migration had profound effects on many countries. For example, between 1870 and 1910, it swelled the United States' labour force by 24 percent and cut Ireland's by 45 percent. Moreover, just as trade caused global commodity prices to converge, so mass migration contributed to the convergence of wage levels.

In the new era of globalization since 1980, however, although trade has been growing about twice as fast as economic output, migration flows have been relatively stable. Economists naturally are concerned with both the positive and normative implications of labour migrations, policy induced or otherwise, and changes in the labour mobility regime — such as the formation of common markets. For the purposes of this paper, we assume that NAFTA approximates a classic free trade area, including free movement of capital, even if it does little to facilitate the international mobility of workers. Has the emergence of greater trade flows within NAFTA increased or decreased migration pressures within the NAFTA countries? Alternatively, does increased labour mobility tend to increase or decrease trade?

These questions can be addressed in a number of ways. One familiar line of attack is to ask whether labour migration and international trade are substitutes or complements in terms of achieving a given pattern of economic output and welfare. If they are substitutes, for example, then freer trade ought to reduce migration pressures.

Economic theory is, however, ambiguous on the answer to this question. Theories emphasizing that trade is driven by differences in relative supplies of factors of production tend to argue that trade and migration are substitutes: countries that need to import labour-intensive goods can achieve the same outcome by trading less and by “importing” workers. In the NAFTA context, that Mexico has a huge abundance of unskilled labour carries the obvious and important implication that imports from Mexico will be in labour-intensive production activities and that this trade is, in part, a substitute for increased migration of Mexican labour to the north. On the other hand, theories in the Ricardian tradition, which emphasize that trade reflects relative productivity differences across countries, predict that factor movements tend to increase trade by reinforcing the initial patterns of comparative advantage: workers move from where their productivity is low to where it is high. Some recent theories emphasize a third set of linkages: the role of network effects among immigrants and their home-country contacts, which tend to be trade creating.

Complements or Substitutes?

Theory, therefore, does not tell us whether greater labour mobility within NAFTA would increase or decrease crossborder trade. Is there any empirical evidence one can appeal to on this question? Unfortunately, the literature on the relationship between trade and migration is relatively sparse, and little of it deals with the difficult issue of causality. Some positive and significant relationships between trade and immigration have, however, been found. Head and Ries (1998) estimate that a 10 percent increase in immigrants to Canada leads to an increase of 1 percent in exports and 3 percent in imports, while Head, Ries and Wagner (1998) find that immigration-creating trade networks might explain as much of 10 percent of Canadian trade over the first half of the 1990s.²

² See also Gould (1994) for a study of the U.S. context.

Trade is commonly thought to be a major factor driving new FDI. The more important FDI is in the economy, the more likely it is that there will be increased demands for highly specialized workers to provide transactions services within firms.³ Certainly, within members of the Organisation for Economic Co-operation and Development (OECD), there is a strong connection between FDI and trade. Fontagné (1999), for example, finds that each dollar of outward FDI from OECD countries increases exports by two dollars. The overall relationship between trade and migration, therefore, may depend in part on the role of FDI as a force for trade creation. For example, Globerman (1999) finds some evidence that closer links between trade and FDI links are driving the increased migration of specialized workers from Canada.

The European Union — as an example of the relaxing of migration rules once free trade has been reached — is probably the most interesting recent case relevant to NAFTA. Indeed, the 1992 Single Market Program, which introduced free labour mobility within the EU, followed a long process of trade liberalization. By all accounts, however, the 1992 changes have produced very little movement of people within the EU, which suggests that trade and migration have become substitutes in that region (and in its predecessor, the European Community; see Straubharr 1988).

Table 6 illustrates the substitution effect of trade and migration for six EU countries over the 1988–97 period. Although migration takes time to adjust to the elimination of restrictions, migration within the EU as a proportion of all migrants remained quite stable after the introduction of the Single Market Program in 1992 compared with previous years, and its share with respect to total population has been very low.⁴ Of course, “distance” and the presence of different cultures may be important factors restricting migration within the EU, which Krueger (2000) does not expect will change

3 FDI in this case is mainly intended for the provision of such services, not for production in another country. Hence, FDI and trade here are complements, an outcome often found in the empirical literature.

4 The proportion of EU citizens migrating to other EU countries tends to be larger in smaller countries, but it has remained stable.

**Table 6: Inflows of Foreign Population,
Selected EU Countries, 1988–97**

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	<i>(thousands)</i>									
Belgium										
Total	38.2	43.5	50.5	54.1	55.1	53.0	56.0	53.1	51.9	49.2
From EU (%)	52	52	49	46	49	50	48	50	55	56
Denmark										
Total	n.a.	n.a.	15.1	17.5	16.9	15.4	15.6	33.0	24.7	n.a.
From EU (%) ^a			15	15	16	20	24	13	16	
France										
Total ^b	44.0	53.2	102.4	109.9	116.6	99.2	69.3	56.7	55.6	80.9
From EU (%)	n.a.	n.a.	11	11	22	15	16	14	13	8
Germany										
Total	648.6	770.8	842.4	920.5	1,207.6	986.9	774.0	788.3	708.0	615.3
From EU (%)	22	18	17	16	12	14	20	23	24	25
Luxembourg										
Total	8.2	8.4	9.3	10	9.8	9.2	9.2	9.6	9.2	9.7
From EU (%)	85	82	82	78	72	77	77	73	n.a.	n.a.
Netherlands										
Total	58.3	65.4	81.3	84.3	83	87.6	68.4	67	77	76.7
From EU (%)	27	24	23	25	27	23	23	22	25	27
Sample of 6 EU countries										
Total foreign inflow										
as % of population	0.65	0.8	0.6	0.59	0.75	0.62	0.45	0.45	n.a.	n.a.
EU migrants										
as % of population	0.2	0.21	0.13	0.12	0.13	0.11	0.12	0.13	n.a.	n.a.

a Includes Finland and Sweden from 1995.

b From 1990, spouses of French nationals, parents of French children, refugees, the self-employed, and others eligible for a residence permit are included.

Sources: OECD 1998; Krueger 2000.

much in the future. Indeed, Krueger finds that migration within the EU takes place at only half the rate found in the United States — 2.8 percent of Americans moved across state boundaries in 1987, but only 1.1 percent of Germans, 1.1 percent of Britons, and 0.5 percent of Italians moved from one region to another within their respective countries that year. In Europe, at least, the gains from integration thus far have been through international trade, not free mobility of labour.

Canada within a Continental Labour Market

Any attempt to address the potential implications of reducing barriers to labour mobility or even going so far as to create a common market in labour in North America requires some quantitative assessment of the current state of trade and wages in Canada and the United States.

The 1990s saw a number of important developments in both product and labour markets in the two countries that bear directly on the issue of how the Canadian economy would adjust to an open continental market in skilled labour. The relevant literature on Canada-U.S. comparisons is of three types: explanations of the observed increase in wage inequality across skills groups in Canada and the United States, explanations of the Canada-U.S. productivity gap, and explanations of the large growth in trade and investment subsequent to the implementation of the FTA in 1988 and NAFTA in 1993. A single economic theory or model that accommodated all of the main facts in these areas would be an extremely useful aid to evaluating the potential consequences of Canada-U.S. labour market integration.

From the literature, four important stylized facts emerge about Canada-U.S. trends, post-free trade. First, significant differences remain between wages in the two countries — although there are measurement problems, the average gap in real incomes is in the range of 20 to 30 percent. More relevant, perhaps, to the issue of the mobility of skilled labour are starting salaries for recent university graduates. According to a Canadian government report,

After taking inflation and purchasing power parity into account, the median annual earnings of bachelor's graduates working in applied and natural sciences jobs upon arrival in the U.S. was \$47,400, considerably higher than the \$38,400 earned by their counterparts in Canada. The gap in salaries between bachelor's graduates in health occupations upon arrival in the U.S. and those who remained in Canada was similar. (Canada 1999, x.)

Second, overall earnings inequality has increased in both countries. In 1971, a worker at the ninetieth percentile of the wage distribution in the United States earned 266 percent more than a worker at the tenth percentile; by 1995, that worker was earning 366 percent more (Acemoglu 2000). Moreover, education does not explain much of this growth in inequality — studies show that as much as 60 percent of the observed increase in wage inequality has been within groups that have the same education and age.

Third, the labour productivity gap between the two countries' total economies and their manufacturing sectors not only remains substantial, but appears to have widened in the latter part of the 1990s — in manufacturing, the gap widened from 12.3 percent to 29.6 percent between 1995 and 2000, largely, it is thought, to the superior performance of the United States in “new economy” sectors such as information technology (IT).

Fourth, trade and FDI between the two countries have grown dramatically. For Canada, exports as a percentage of gross domestic product grew from around 26 percent in the mid-1980s to 46 percent in 2000, mostly in “old economy” sectors. By 2000, the United States accounted for almost 85 percent of Canada's merchandise exports and for 63.9 percent of inward FDI stocks in Canada.⁵

An Explanation of the Divergent Canadian and U.S. Economies

Most static theories of trade predict economies to converge in response to increased and more open trade. Therefore, to explain the divergence of the Canadian and U.S. economies during the 1990s one needs, at a minimum, to append some dynamics to the basic international trade framework.

5 It is also interesting that the cost of capital equipment relative to that of labour rose by about 30 percent in Canada compared with the costs of such factors in the United States during the 1990s, while the intensity of investment of Canadian industry in machinery and equipment fell (see Harris 2001; Lafrance and Schembri 2000).

The 1990s were, of course, characterized by a number of events — such as domestic macroeconomic policy developments, the Asian monetary crisis of 1997–98, and internal domestic political events - that might be sufficient to explain the divergent Canadian and U.S. economies, but it is tempting to look for broader factors that might be at work.

In the past few years, some promising new theories have emerged — having to do with the acceleration of skill-biased technological change (SBT), or the wide-scale introduction of a new general purpose technology (GPT) — that add a significant dynamic element to otherwise static theories and offer a reasonable explanation of recent Canada-U.S. trends.⁶ A basic assumption of these theories is that an economy-wide acceleration of technological change rooted in the IT sectors is taking place, which is increasing both the wages of skilled labour in the United States and within-group inequality.

The same forces are at work in Canada, but the pace of change in this country lags that in the United States. Canada's weak productivity performance in manufacturing, together with the fact that most IT capital is imported, jointly explain the two countries' real wage gap, particularly for skilled workers. Also, the much faster growth of the relative supply of highly educated labour in Canada than in the United States means that the premium placed on skills has increased less dramatically in Canada than in the United States.

More important, however, is that fact that, if historical experience is a guide, returns to learning and highly specialized skills that come with the introduction of a new GPT will persist for some time, which has a number of implications both for labour markets and for the process of globalization, including labour migration. The dramatic increase in bilateral Canadian-U.S. trade since the late 1980s is a consequence not only of policy — the free trade

⁶ An extensive literature exists on this issue; see, for example, Acemoglu (2000) for a survey of SBT, and Helpman (1998) for discussion of the implications of GPT-based technological change.

agreements — but also of new technologies that have reduced the costs of trade in final goods and made possible the reorganization of production processes across borders, leading to greater specialization and increased trade in intermediate products. It is likely that this process will continue for some time, leading to increased dispersion of outcomes across workers, industries, and firms and increased innovation over a number of decades. Productivity growth will continue to forge ahead before levelling off as the IT-based GPT matures.

In light of this framework in which to think about economic development of the North American economies, what implications does it carry for the consequences of crossborder labour market integration over the next few years? The facts dictate a starting point where the average level of labour productivity is lower in Canada than in the United States but perhaps converging toward U.S. levels. With growth driven by an IT-based GPT, certain skills will be in high demand but in increasingly short supply, and the wages of people with those skills should remain high. Since Canada is both geographically close to the United States and relatively abundant in skilled labour, medium-term migration pressures on such people will remain high.

What about the fate of unskilled Canadian labour in the context of continental free labour mobility? In fact, by Mexican standards, “unskilled” Canadian workers are mid-skilled and, in any case, Canada no longer has manufacturing sectors that make intensive use of low-skilled workers — such products are already imported from developing countries such as China and Mexico. Moreover, the wage gap between U.S. and Canadian mid-skilled labour is much lower than for skilled labour. Thus, the introduction of continental free labour mobility probably would not have much of an effect on Canada’s pattern of comparative advantage (including outsourcing) nor would it bring much pressure from low-skilled Mexican or mid-skilled U.S. migrants, simply because NAFTA has already induced most of the adjustments in sectors making intensive use of low- and mid-skilled labour.

The only remaining issue is whether, with free mobility, Canada would absorb some very low skilled Mexican workers and start building some of the labour-intensive export industries one sees in the southern U.S. states. Without detailed quantitative modelling, one cannot be sure, but, with the possible exception of agriculture, the likely answer is no, since these kinds of industries are also absent from northern U.S. states. To the extent that Canada absorbed more very unskilled labour, it would likely be in parts of the services sector.

Productivity Effects

What effect would the increased migration of skilled workers from Canada to the United States likely have on the labour productivity gap between the two countries? In general, the out-migration of skilled labour would reduce the average labour productivity of unskilled labour if skilled labour and capital substitute for unskilled labour — which certainly seems to be the case empirically.⁷ A potentially more damaging effect of the out-migration of skilled labour would be to slow the pace at which the new GPT was being absorbed and adjusted to within the Canadian economy.

At the same time, however, greater competition for skilled workers could have a beneficial effect on productivity growth as firms are forced to innovate and adapt in those areas where productivity improvements through the use of technologies based on the new GPT are most suitable. Further, one of the most important lessons about GPT-based technological growth is that it makes technology-specific learning necessary — that is, people who are otherwise highly educated have to learn to use the new technologies if their productivity is to rise. For Canada, increased labour mobility should have two important effects in this regard. First, since increased mobility should expose more workers to a wider range of technological experiences, such experiences will prove

⁷ The large literature on SBT deals with this issue. The elasticity of substitution between skilled and unskilled labour is on the order of 0.5 to 1.0 (see Murphy, Riddell, and Romer 1998).

more valuable when these people are employed within Canada. Second, greater competition for the technologically adept should raise the wages of such people and, by demonstration, encourage other highly skilled people to acquire the knowledge necessary to take advantage of the new technologies.

Overall productivity convergence should also lead to real wage convergence, thus reversing the trend of the 1990s. This may also occur in the absence of labour market integration. The only difference would be that the pace of average real wage convergence would be faster with labour market integration than without.

Wage Inequality

As we have seen, most SBT-GPT hypotheses emphasize that some form of technology-specific learning allows some individuals to capture the benefits of the new technologies, leaving those working with old technologies facing reduced demand for their services and, ultimately, obsolescence. Then, as the new GPT moves toward the middle phase of its adoption, wage inequality tends to rise. This hypothesis explains the fact that wage inequality rose less in the 1990s in Canada than in the United States simply because the new technologies arrived somewhat later in Canada. Thus, holding existing barriers to labour mobility constant, one would expect that Canada's inequality levels should rise with the introduction of the new GPT, then subsequently fall as the GPT matures. If one assumes that the new GPT is now moving into its middle phase in the United States, the integration of the Canada-U.S. labour market most likely would accelerate the pace at which Canada would have to adapt to U.S. technological standards. In some sectors, this has already happened; in others, it would almost certainly quicken the pace of structural adjustment. Thus, over the longer term and given a fully integrated labour market, wage distributions would tend to converge across the two countries, and remaining wage inequality would reflect the relative returns to GPT-based skills on both sides of the border.

Agglomeration, Convergence, and Regional Development

When looking at the positive and normative effects of increased labour mobility, a key issue is its potential effect on the geographical distribution of economic activity within a more integrated North American market. Traditional trade theory has little to say on this subject, but it has become the central question in theories based on the so-called new economic geography initiated by Krugman (1991). These theories predict that, in some circumstances, increased factor mobility can lead to divergence in regional income levels and the concentration of economic activity in some regions at the expense of others. On the other hand, a considerable body of theory and evidence also suggests that increased integration leads to convergence of regional income levels. Which of these two views offers a better explanation of what might happen in North America in the event of increased international labour mobility?

Agglomeration and Divergence

The new economic geography generates forces of agglomeration by assuming both economies of scale and costs to trade — including transport costs, border costs, and other transaction costs associated with interregional goods trade, or more formal barriers to trade such as tariffs and quotas. With or without factor mobility, these models are subject to cumulative causation effects. In particular, factor mobility reinforces gains to regions that tend to attract industries characterized by economies of scale due to their size. This advantage translates into higher productivity and higher real incomes, which then attracts additional factors by migration. Manufacturing production (assumed to exhibit economies of scale) tends to concentrate where there is a large market, and a market is large where manufacturing production is concentrated — a force known as “backward linkage.” This is reinforced by the fact that costs of living are lower in the region with the larger manufacturing

sector because consumers there rely less on imports that are subject to transport costs — a force known as “forward linkage.” Both forces tend to favour the agglomeration of people and firms in the core, leaving other regions (or countries) de-industrialized. Large regions become larger, and a core-periphery pattern of economic development emerges.

The predicted outcome of this theory is sensitive to the specification of trade costs. Assuming free trade and no trade costs, this asymmetric pattern of development cannot occur. Trade costs, however, are unlikely to be zero, which lends credence to the view that freeing up labour mobility may “hollow out” some regions of a free trade area — particularly the smaller ones — resulting in the loss of industry and skilled people. In the absence of labour mobility, the cumulative causation effect is reduced and de-industrialization is less likely. The models still predict the possible emergence of permanent income and productivity differences but, in the absence of a migration channel, the de-industrialization effects are much less pronounced.

Thus, for small regions within existing common markets, the policy issue is clear: free movement of labour may, in fact, lead to lower incomes. For existing free trade areas contemplating reducing barriers to labour mobility, the possibility that some regions might become peripheral in a large integrated economic area is obviously worrisome. The applicability of this question to the European Single Market is obvious and has generated a great deal of research on regional development patterns within Europe. Although the evidence is not yet clear, early comparisons of U.S. states to EU countries suggested that actual outcomes differed from those the model predicted. In the United States, where labour mobility is high, it appears that incomes were levelled but that industrial development was relatively uneven. In Europe, however, where labour mobility historically has been low, income levels across countries exhibited a great deal of variability but industrialization patterns were more balanced.

The early models generated by the new economic geography worked with the polar cases of perfect mobility or complete

immobility of labour. Moving to the more realistic case of imperfect mobility leads, however, to some important differences. As Ludema and Wooton (1999) show, with imperfect labour mobility and the appropriate choice of the sequence of trade versus labour market integration, it is possible to avoid the potentially negative effects of agglomeration on smaller regions. Of particular interest, they find that, *for a given level of trade costs, increased labour mobility tends to level the agglomeration effect*. Regions within NAFTA, now characterized by relatively free but not costless trade, are subject to agglomeration forces. Since there is free mobility of labour between U.S. regions but not across the Canada-U.S. border, Canada (the smaller region) may have been pushed to some degree toward specialization in sectors not subject to the benefits of agglomeration under free trade. The Ludema-Wooton model then predicts that, holding the trade regime constant, increased labour mobility would tend to lead to more even patterns of industrial development across international borders. The policy implication of the Ludema-Wooton result is that an increase in labour mobility between Canada and the United States could benefit Canada, the smaller country, even if agglomeration economies are significant.

For a more practical look at the likely effect of a common market in labour, the U.S. experience is instructive. It seems reasonable to assume, for example, that the variability of incomes (before tax and transfers) and industrial specialization among U.S. states reflects what might occur between U.S. and Canadian regions. Clearly, opening up the U.S. labour market to Canadian labour would have a much greater effect on regional development in Canada than would the converse. It is also useful to note that local demand linkages for some smaller Canadian regions would not likely be important even with some trade costs — exports of manufactured goods would tend to be relatively more important for these regions than would production for local use. Assuming that skilled labour is the main target of mobility-enhancing policies, those Canadian regions with the widest wage gaps with their crossborder U.S. neighbours and with the smallest markets would be affected most visibly in the short run. Over the longer run, however, the reduction in trade

costs and the benefits of specialization could lead to a convergence of income levels. On the other hand, since proximate regions on both sides of the Canada-U.S. border tend to resemble each other, the effect on smaller Canadian regions of reducing labour mobility costs might not be large if labour is attracted to move to the adjacent U.S. border region. To put it another way, most of the potentially damaging effects of labour mobility have already occurred in small markets such as Atlantic Canada by virtue of free labour mobility with the rest of Canada. Opening the border to free movement of labour is less likely to affect Atlantic Canada given the similarity of wages there and in neighbouring New England states.⁸

Convergence

An alternative empirical approach to regional development is based on the convergence hypothesis, which states that increased economic integration leads to faster rates of convergence of income and productivity levels. The evidence supporting this hypothesis is mixed, and much of it relates to trade integration — for example, Ben-David (1993) finds that trade integration has a large effect on convergence, while Barro and Sala-i-Martin (1992) and Coulombe and Lee (1995) claim to find similar effects using U.S. state and Canadian provincial data.⁹ Generally, however, there appears to be no strong case that greater labour mobility leads to faster rates of convergence in productivity. Hulten and Schwab (1993), in fact, find the opposite for U.S. states. More recent work on European regions finds significant evidence of productivity convergence over the 1990s (see Gugler and Pfaffermayr 2000).¹⁰ Important examples remain,

8 For an interesting look at the potential effect of the economic integration of Quebec with its neighbours in the U.S. northeast, see Proulx (1993); see also Courchene and Telmer (1997) on the relationship of Ontario and the mid-Atlantic and Midwest U.S. states.

9 For a review of the theories and evidence, see Harris (1996).

10 One prominent example of a complete failure of convergence despite free trade and full labour mobility is that between the former East and West Germany.

however, of subnational regions where convergence has failed to occur despite free mobility of labour, raising fears about the possible consequences of greater economic integration.

The Brain Drain and Knowledge Transfers

The Canadian policy debate on North American labour migration has focused almost exclusively on the brain drain from Canada to the United States of professionals in the medical and high-technology fields, business managers, and scientists and engineers. The major concern is that current flows represent the best and brightest Canadians, and there is some evidence that this is indeed the case. It is important, however, to gauge the actual extent of the mobility of both people and ideas, in order to assess the incremental effect of moving to a common Canada-U.S. labour market.

How Mobile Is Highly Skilled Labour in North America?

Some people argue that skilled labour is already highly mobile across the Canada-U.S. border and, thus, that any further freeing of labour mobility is likely to have little incremental effect. Perhaps the analogy most frequently made is between mobile brains and FDI. Since both factors are regarded as highly desirable and in short supply, competition for them has created a seller's market that allows them to choose among competing locations. Moreover, since both brains and FDI are viewed as engines of economic growth and employment, there is considerable tax competition to keep and attract these highly internationally mobile factors.

This analogy between brains and investment is instructive and contains a lot of truth. Recent surveys report a dramatic willingness on the part of students in science, engineering, and business to move to the United States for employment purposes. One survey reports that "[t]he majority of respondents (78%) indicate that they are willing to relocate to the United States, and 88% are willing to

relocate within Canada. Overall, only 12% of respondents indicate that they would *not* consider relocation [emphasis in original].”¹¹

It useful to remember, however, that the recent drain of Canadian brains to the United States emerged from a decade-long economic boom coupled with shortages of certain critical skilled labour south of the border. In addition, the expansion of the United States' H1-B visa program has, to a considerable extent, been an endogenous response to that boom. Tax competition between jurisdictions, which lowers effective marginal rates on income earned by human capital, can be viewed as an efficiency-enhancing outcome of this process — but is it permanent?

The United States continues to attract large numbers of able people wishing to study in specialized fields such as science and engineering, and many of them wish to pursue careers in that country upon graduation. A National Science Foundation study notes, for example, that

Between 1988 and 1996, foreign students from major Asian and European countries, Canada, and Mexico earned over 55,000 U.S. [science and engineering] doctoral degrees....During this period, about 63 percent of these doctoral recipients planned to remain in the United States after completion of their studies, and about 39 percent had firm plans to do so. (Johnson and Regets 1998.)

The same study reported that 43 percent of the Canadians in its survey intended to stay in the United States.

Controlling the supply of labour for specific occupations is, of course, one of the conventional rationales behind national immigration policy. A firm commitment to increase mobility permanently within a common market for labour essentially forgoes that margin of immigration control in favour of a more liberal regime. Indeed, Canada has reasons to favour a more permanent labour mobility regime for human capital that are similar to those that were used to

¹¹ “Today’s Technology Graduate: Mobile, in Demand & Demanding!” *Personnel Systems*, Ottawa, 1999, p. 3.

argue in favour of removing the power to tax trade under the FTA. Given the increasingly highly specialized nature of human capital, any Canadian who undertook the lengthy training required to qualify for employment in one of these areas would greatly reduce his or her risk of not finding a suitable position if the relevant job market was expanded to include the United States. Thus, an expanded job market would benefit not only Canadian suppliers of labour, but also the sectors providing the necessary training and the economy at large. Moreover, there is always the risk that, as it has done with tariffs, the United States will use immigration controls as political devices for rent sharing, and in highly unpredictable ways, which could be detrimental to Canada.

Growth and Knowledge Transfers

The traditional concern about the brain drain is that the transfer of scarce human resources from one country to another increases the rate of economic growth in the receiving country relative to that of the country the migrants are leaving. Part of the Canadian concern about allowing the increased mobility of skilled labour, therefore, is that doing so would simply exacerbate the brain drain to the United States to the detriment of Canada's economic growth rate.

One could argue, however, that there are at least two ways in which a brain drain could lead to *faster* growth in the country that is losing talented individuals. First, a brain drain might foster investments in human capital (see, for instance, Stark, Helmenstein, and Prskawetz 1998); second, a brain drain could lead to higher growth rates through the transfer or spillover of knowledge generated by the brain drain.

Consider the first argument. Although any individual contemplating migration will be uncertain about the level of income he or she is likely to receive in the new country, that income is likely to be higher if the individual's skill level is high. In turn, that skill level is a positive function of training and investment in human capital. Thus, someone who is thinking about migrating is likely to

invest more in human capital than someone who does not want to migrate because such an investment would improve that individual's chances of success abroad. Of course, this additional investment in human capital also increases the probability that the individual will actually migrate. Not everyone who invests in human capital will migrate, however, and not everyone who migrates will be successful abroad — at least some of those who are unsuccessful will return to their country of origin. As a result, the average human capital could increase in the source country even in the presence of a brain drain. In addition, if these effects are strong enough, the growth rate could increase, rather than decrease. Indeed, in a study of 37 developing countries, Beine, Docquier, and Rapoport (2001) find evidence of just such a “beneficial brain drain” growth effect. This effect applies to developed countries as well, at least insofar as investments in human capital are a form of insurance: individuals who invest in human capital are simply retaining their option to move abroad if the possibility arises.¹²

The second argument, to repeat, is that the migration of the highly skilled could have a positive impact on knowledge spillovers between countries, in the following way.¹³ When international knowledge transfers are low or if other inputs, such as knowledge capital, are not readily available in a particular country, skilled individuals in that country could be obliged to migrate in order to take advantage of their skills — to carry out innovation activities, for example. From the point of view of the world economy, it would be efficient if such skilled individuals were permitted to migrate to the country where they can find the inputs that best complement their skills. Thus, if knowledge spillovers are important, the country that experiences the brain drain could benefit

12 Non-English-speaking immigrants to Canada who choose to locate in an English-speaking, rather than in a French-speaking, part of the country represent a simple form of the same phenomenon, since learning English gives them more options and greater potential mobility, than learning French.

13 This second argument is developed in more detail in the essay by Harris elsewhere in this volume.

from an economic growth rate that was higher than if the brain drain did not occur. Indeed, in this scenario, both the country that loses brains and the country that gains them would benefit from higher growth rates than would have occurred if labour were completely immobile.

Moreover, network effects could benefit the country of emigration even further, in the sense that skilled nationals who have migrated are better able than others to use their insiders' knowledge of their country of origin to channel FDI and other resources back home. This process has given rise to the suggestion that the phrase "brain drain" be replaced with "brain circulation," particularly in reference to scientists, the idea being that the creation of knowledge is increasingly a global industry with relatively rapid international spillovers. Thus, freeing the international mobility of labour could increase the pace at which knowledge moves from one country to another.

New Forms of Labour Mobility

The TN visa program that the United States established in the wake of NAFTA is a case of "policy ahead of theory." The original motivation for the program was to allow business to provide customer and related technical support essential to the modern economy. Often, highly firm-specific tacit knowledge can be transferred only in close physical proximity to the customer. In addition, activities such as sales, advertising, and management of subsidiaries of multinational enterprises often require repeated visits to the foreign market. The TN program was explicitly designed to facilitate these types of activities across NAFTA borders. Although the program has evolved into much more than that — a form of temporary mobility for certain types of professionals — it stands as an important example of a successful policy designed to facilitate modern international business. It also allows one to imagine the delivery of labour services across borders through means other than those that reflect a permanent migration decision. In this section, we outline some of those types of labour market activities.

Temporary Visits Associated with Related Business Services

The motivation of allowing temporary visits associated with business services, as under the TN visa program, is, as noted above, to facilitate trade, particularly where close interaction with the customer at the point of delivery, follow-up service related to previous sales, or preliminary interactions with the customer prior to sale are important aspects of the job. For many types of modern goods and services, these activities are an essential part of business. In general, NAFTA already provides a fairly high degree of mobility for many of these activities, but improvements are possible, particularly with respect to border procedures.

Border communities, such as Detroit-Windsor, are particularly affected by impediments to the free flow of labour services. Labour market regulations not covered by trade agreements — such as union membership restrictions — also impede the free flow of labour services, particularly in the film industry, for certain types of health professionals, and for pilots, engineers, technicians, and the construction trades. “Deeper integration,” which would facilitate temporary labour movements in these areas, will require fairly major changes in the way in which some occupations are organized and regulated.

Virtual Mobility and E-Labour Markets

Innovations in communications technology such as the Internet and private data networks have given firms and individuals the ability to transmit large volumes of voice, text, and image data instantly and at close to zero marginal cost to anywhere in the world. These innovations have already had a major economic effect on many forms of business. Their effect on labour markets is also under way in areas such as the delivery of software coding and the growth of call centres.

Of particular relevance is the ability of such communications innovations to remove the barriers to delivery of certain types of

services. The international trade literature draws a common distinction between services and goods. For commodities with a sufficient degree of durability and transportability, production can be divorced from consumption. Trade is realized by the transport of goods from the location of production to the location of consumption. Services transactions, on the other hand, are often characterized by the requirement that buyers and sellers physically meet. Delivery of labour services has also traditionally been characterized by the proximity of the worker and firm. Yet many labour services — such as software engineering, data entry, translation services, and distance teaching — could, in principle, be delivered electronically, which raises the prospect of a continental e-labour market for such services. As in the definition of any market, the key issue is the degree of substitutability between alternative sources of supply — in this case, the virtual and the physical supply of factors. Firms could source labour via the Internet when it is technically possible and cost effective.

The economic literature on this subject is not yet large but it is certain to grow in conjunction with the emerging field of Internet economics. One issue related to the earlier discussion of agglomeration and regional development is the effect of e-labour markets on particular regions within NAFTA (for a theoretical discussion, see Harris 1998). In this case, however, the general fear that agglomeration might be biased against the smaller country is unfounded. On the contrary, the emergence of e-labour markets is likely to result, not just in greater specialization by skilled labour in the integrating region as a whole, but also in a dramatic increase in market size for the specialized labour services provided by the smaller regions. With virtual labour market integration, smaller regions could sell more specialized labour services to a much larger market.

In a fully integrated, virtual labour market, the geographic location of the point of origin of labour services should not, in principle, be a barrier to sourcing. However, it will be necessary to reduce regulatory and trade barriers to firms and individuals in these types of virtual employment arrangements for North American e-labour markets to evolve. Most contractual relationships between

workers and the firms that employ them are heavily conditioned by local labour laws and various tax policies. New forms of cross-border worker-firm contractual relationships would facilitate the virtual mobility of labour services, expand the North American market for such services, and potentially increase the employment of skilled labour in regions where job growth has been inadequate.

Although few restrictions on the development of e-labour markets currently exist beyond general labour market regulation, this could change in the event of opposition from labour groups that might be adversely affected by such competition. Thus, further integration of the NAFTA economies should include provisions that guarantee the right of North American labour to deliver services electronically to any location in North America when this is technically possible and economically desirable.

Crossborder Variations in Labour Demand

Regional labour markets and particular industries in those regions are subject to idiosyncratic demand and supply shocks that are not the result of macroeconomic or cyclical shifts in demand (which we discuss in the next section).

The risk of such shocks has two implications. First, it gives rise to demands for insurance arrangements to reduce the income risk associated with these shocks. Second, efficiency gains may be had if it is possible to move labour from locations where productivity is temporarily low to locations where it is high. At the same time, however, the increasing specialization of labour has compounded the potential severity of the problem, in that the supply of highly specialized talents is often quite inelastic in the short run. In such cases, therefore, increasing the mobility of these skilled individuals would be critical. Regions that lose people with highly specialized skills to other locations would, it is true, suffer obvious short-run costs. In the longer run, however, the larger labour market that would be open to specialized labour through increasing economic integration would tend to reduce income variability and unemployment risk

in such occupations and increase the long-run supply of individuals with these talents.

As we discussed earlier, the regional mobility of labour, even within existing common markets, is quite low. The actual extent to which region-specific variations in labour demand could be facilitated by moving workers in a short time frame is an unresolved empirical question. Historically, however, Canada has seen some large interprovincial labour flows in response to economic booms and busts in particular regions. In principle, therefore, there is no reason this could not occur across international borders. Canadian labour flows historically have been East-West, but the existence of a North-South option might change this pattern considerably. The closer proximity of northern U.S. states, rather than distant Canadian provinces, might lead Canadians to respond to local employment shocks by temporarily moving southward. Likewise, booms in proximate Canadian provinces might give rise to temporary inflows of more closely available U.S. labour.

To the extent that workers' choices expanded through the creation of a North American labour market, their increased mobility would lead to an unambiguous welfare improvement and, moreover, would tend to raise expected income. Note that the total welfare benefits to this type of mobility are particularly important for nontraded sectors such as construction or health care, where imports cannot provide an alternative source of supply. The welfare benefits of greater labour mobility thus would include a more secure source of supply with more stable prices than would otherwise be the case; furthermore, these benefits would accrue not just to mobile labour but also to local consumers.

Historically, workers who are the most easily mobile tend to be younger, whether skilled or unskilled, for whom the costs of a temporary move are much lower than for older workers and those with working spouses or dependents who are not mobile. Canada's aging population thus implies that the potential supply of temporarily mobile workers is falling. One obvious response to this declining supply is to make a particular effort to encourage the immigration of younger workers to Canada; another response,

however, is to increase the temporary crossborder mobility of workers, both skilled and unskilled, from the United States.¹⁴

Seasonal Labour Demand and Supply

One of the most important differences between Canada and at least the southern United States is weather. Winter is a reality many Canadians would like to forget, and it affects labour supply and demand in a large number of sectors. Currently, however, beyond a few isolated occupations (golf instructors, professional hockey players), there is little in the way of seasonally oriented North-South labour flows. There are, however, many climate-motivated moves — it has been estimated that more than 2 million Canadian-born people live in California. A significant fraction of the population of retired Canadians winters in the southern United States; these people do not work, of course, and from a macroeconomic perspective they contribute significantly to a tourism deficit. The full extent of the “snowbird” migration is unknown, but a 1997 estimate put the number at about 1.5 million and growing rapidly.¹⁵

A full common market in labour services between Canada and the United States could affect the movements of these people, although to what degree remains unclear to us. Winter certainly would induce a larger number of people who possess skills that are transportable to southern U.S. locations to make this seasonal move. Most of us in the education business, for example, already know of people who do this. Other occupations, such as the building trades, tourism, consultants of all types, health workers, and agricultural workers, also contain large numbers of people who might take advantage of increased mobility.

¹⁴ Although both Canada and the United States have aging populations, the aging trend is less dramatic in the United States than in Canada largely due to differences in the two countries' birth rates. The United States, therefore, is more likely to be a source for young temporary workers for Canadian labour markets than the reverse.

¹⁵ “Canadian snowbirds face taxing plight,” *Financial Post*, October 8, 1997, p. F7.

For retired Canadians, the issue of crossborder labour mobility is almost never discussed, but an aging population and its implications for pensions and health programs could move the issue higher on the agenda. To the extent that part-time or temporary work is a viable policy option for the aging, making this option available to retired Canadian snowbirds would be highly significant and valuable both to them and to Canada. The two countries could arrange, for example, for unemployment or pension benefits not to be portable across national borders for workers past a certain age, which would increase the attractiveness of such people to potential employers and increase the number of older workers who want to stay in the labour force after the normal retirement age. For both countries, the fiscal and real output benefits would be favourable.

Mobility and Macroeconomic Adjustment

An alternative perspective on labour mobility is provided by the macroeconomic literature on regional adjustment mechanisms and the related literature on the costs and benefits of optimal currency areas.¹⁶ Within an integrated economic area characterized by high factor mobility, factor flows could be an important adjustment mechanism to asymmetric shocks across regions. The alternatives to adjustment through migration are changes in wages, exchange rates, labour force participation rates, and unemployment rates. A potential benefit of increased labour mobility within a larger economic area would be the ability of more flexible labour markets to deal with asymmetric regional macroeconomic shocks.

In principle, the literature assumes that adjustment is more efficient and flexible the greater the response of wages and migration

¹⁶ Most of the empirical literature on optimal currency areas and asymmetric shocks takes the state of labour mobility as fixed. The question in this section is how those adjustment costs would change if formal restrictions on cross-border flows were reduced. This may or may not result in increased labour mobility.

to a shock, as opposed to changes in unemployment or participation rates. Indeed, this issue is central in the empirical literature on adjustment mechanisms within the EU. Given the completion of the European Monetary Union and the arrival of the euro, with substantial wage rigidity and other forms of labour regulation in the EU, the loss of the exchange rate as an adjustment mechanism puts greater weight on the migration channel for adjustment. The general worry is that the EU's labour markets are relatively poor at adjusting — in particular, that labour mobility is quite low among EU countries. As we discuss below, the usual benchmark for comparison is the interregional migration of labour within the United States.

It is important to note, however, that this question is of interest independently of whether NAFTA countries are on a flexible or some form of fixed exchange rate regime — even under flexible exchange rates, increased crossborder labour mobility would be a valuable adjustment mechanism.

European and U.S. Evidence

In considering how an integrated labour market in North America might adjust to macroeconomic shocks, we might usefully examine the cases of the EU and the United States. Both have formal common labour markets with permanent labour mobility rights for all workers. If Canada's labour market were to be integrated with that of the United States, an obvious question is whether, on a North-South basis, the degree of labour mobility would converge toward U.S. levels or toward European levels. The difference is significant.

The general view of labour mobility within the EU is that, in contrast to the United States, it is exceptionally low. In addition, labour market shocks in the EU are mainly accommodated by changes in the labour force participation rate, rather than by migratory responses. The lagged response of migration to changes in employment in the EU is, moreover, exceptionally long. Decressin and Fatas (1995), for example, find that, after the first year, the response is precisely zero, while after two, three, and four years, 27, 45, and 80 percent, respectively, of the shock in labour demand is

accommodated by migration. In contrast, Decressin and Fatas find that, in the United States, the relevant number is 52 percent within the first year, a result confirmed by Barro and Sala-i-Martin (1995, 195), who, interestingly, also find evidence that income differences seem to play a relatively minor role in explaining migration in the EU but a more significant role in the United States. Puhani (2001) finds that, over 1.66 years, 29.6 percent of a decrease in unemployment in Germany is accommodated by an increase in migration, while in France and Italy it is a much lower 8.4 and 3.7 percent, respectively, which leads him to conclude that labour mobility is an inconsequential adjustment mechanism within the EU.

The contrast between the U.S. and European experience carries mixed messages for the Canada-U.S. case. Most labour market specialists view Canada as lying somewhere between the United States and the EU in terms of its labour market adjustment mechanisms and unemployment experience. This perspective suggests that full labour mobility between Canada and the United States might serve to increase Canada's macroeconomic adjustment capacity by more than has been observed in the EU but less than has been the case in the United States. An alternative view, however, is that these types of changes come about only very slowly, and involve fundamental changes in the life experiences and perspectives of workers. It is worth recalling that, historically, flows of labour across the Canada-U.S. border have been very large. Under a more liberal migration regime — particularly one that eliminated uncertainty as to access rights — it is quite possible that the U.S. benchmark could prove more relevant and that Canada's ability to make macroeconomic adjustments would improve.

Policy

In this paper, we have examined potential interactions between deeper North American economic integration and increased labour mobility between Canada and the United States. We have also identified a number of channels through which increased labour mobility

might affect the Canadian economy and some its positive and normative implications. While NAFTA is still a long way from a common market with permanently enshrined mobility rights for workers, a number of factors are pushing in that direction. The terrorist attacks of September 11, 2001, and subsequent concerns about border security certainly raise additional concerns as to how to manage the border. They do not, however, fundamentally change the economic case for improved labour mobility within the NAFTA countries.

There is, admittedly, little formal discussion of taking NAFTA toward a common labour market. At the same time, ongoing integration from the bottom up is giving rise to greater crossborder labour flows and to demands to facilitate these flows.¹⁷ Policy can be either in front or behind on this process. Canada's entering a formal agreement to open its labour markets in some permanent way to the free movement of labour from other NAFTA countries undoubtedly would be seen as sacrificing national sovereignty. With this cost, however, would come benefits. It is possible that, as in the case of freer trade in goods, the forces of integration and globalization benefit most those countries that successfully adapt to the demands for greater mobility of people. For relatively small economies such as Canada's, failure to do so could mean losing investment and human capital to jurisdictions that adapt more effectively.

The issues we have raised suggest a number of medium-term policy options for Canada and the United States, short of a common labour market, that would enhance labour mobility in the northern part of the continent. Each of these options deserves a more serious examination.

First, the NAFTA TN visa program, which has increased mobility for professionals and others with a technical university degree, should be expanded to cover other classes of labour by creating a negotiated schedule of dates for liberalizing the movements of various occupations. Generally, one could imagine moving from the highest to the lowest skill categories. Certainly, it would be relatively easy to extend the program to technical and trade workers, for example.

¹⁷ For a discussion of bottom-up versus top-down integration, see Harris (2001).

Second, ways should be found to amend procedures at the Canada-U.S. border to reduce transactions costs for citizens of one country who seek work in the other. Furthermore, it would be useful for the two countries to coordinate border management with respect to non-NAFTA nationals.

Third, the two countries should seek to encourage the growth of e-labour markets by reducing barriers to firms that are, or might be, virtual employers. New legal forms of crossborder worker-firm contractual relationships should be created to facilitate the e-mobility of labour services across the border. This, in turn, would expand the North American market for virtual labour services, and potentially increase employment opportunities for skilled labour in rural and resource-poor regions. At the same time, governments should spurn calls for restrictions on e-mobile labour services by groups that might be adversely affected by this type of competition.

Fourth, a joint Canada-U.S. task force should be struck to work on harmonizing professional and occupational standards and eliminating entry barriers such as residency requirements for licensing. In many instances, removing such obstacles would require cooperation between U.S. states and Canadian provinces. In some areas, the issue of standards could be dealt with by resorting to the principle of mutual recognition; in others, a common Canada-U.S. standard might be required.

Currently there seems to be little will in either Ottawa or Washington to pursue these types of policies or deeper integration of Canadian-U.S. labour markets. Given the economic pressures on both countries to adjust to increasing global competition, however, it is only a matter of time before the issue surfaces on the political and policy agenda. It is our hope that this paper will help to focus attention on the policy-relevant issues and research that will need to be examined when that opportunity arises.

References

- Acemoglu, D. 2000. "Technical Change, Inequality and the Labor Market." NBER Working Paper 7800. Cambridge, MA: National Bureau of Economic Research.
- Barro, Robert J, and Xavier Sala-i-Martin. 1992. "Convergence across States and Regions." In *Political Economy, Growth, and Business Cycles*, edited by Alex Cukierman, Zvi Hercowitz, and Leonardo Leiderman. Cambridge, MA; London: MIT Press.
- . 1995. *Economic Growth*. New York: McGraw-Hill.
- Beine, Michel, Frederic Docquier, and Rapoport Hillel. 2001. "Brain Drain and Economic Growth: Theory and Evidence." *Journal of Development Economics* 64 (1): 275–89.
- Ben-David, Dan. 1993. "Equalizing Exchange: Trade Liberalization and Income Convergence." *Quarterly Journal of Economics* 108 (3): 653–79.
- Canada. 1999. Human Resources Development Canada and Statistics Canada. *An Analysis of Results from the Survey of 1995 Graduates Who Moved to the United States*. Statistics Canada Cat. No. 81-587-XIE. Ottawa: Statistics Canada.
- Coulombe, Serge, and Frank C. Lee. 1995. "Convergence across Canadian Provinces, 1961 to 1991." *Canadian Journal of Economics* 28 (4a): 886–98.
- Courchene, Thomas, and Colin Telmer. 1997. *From Heartland to North American Region State: The Social, Fiscal and Federal Evolution of Ontario*. Toronto: University of Toronto, Faculty of Management.
- Decressin, Jorg, and Antonio Fatas. 1995. "Regional Labor Market Dynamics in Europe." *European Economic Review* 39 (9): 1627–55.
- Finnie, Ross. 1999. "Inter-Provincial Migration in Canada: A Longitudinal Analysis of Movers and Stayers and the Associated Income Dynamics." *Canadian Journal of Regional Science* 22 (3): 227–62.
- . 2001. "The Brain Drain: Myth and Reality — What It Is and What Should Be Done." Working Paper 13. Kingston, Ont.: Queen's University, School of Policy Studies.
- Fontagné, Lionel. 1999. "Foreign Direct Investment and International Trade: Complements or Substitutes?" Working Paper 1999(3). Paris: Organisation for Economic Co-operation and Development, Directorate for Science, Technology and Industry.
- Globerman, Steven. 1999. *Trade Liberalization and the Migration of Skilled Workers*. Ottawa: Industry Canada.
- Gugler, Klaus, and Michael Pfaffermayr. 2000. "Convergence in Structure and Productivity in European Manufacturing?" Vienna: Austrian Institute of Economic Research.

- Gunderson, Morely. 1994. "Barriers to Interprovincial Labour Mobility." In *Provincial Trade Wars: Why the Blockade Must End*, edited by Filip Palda. Vancouver: Fraser Institute.
- Harris, Richard G. 1996. "Evidence and Debate on Economic Integration and Economic Growth." In *The Implications of Knowledge-Based Growth for Micro-Economic Policies*, edited by Peter Howitt. Industry Canada Research Series, Calgary: University of Calgary Press.
- . 1998. "The Internet as a GPT: Factor Market Implications." In *General Purpose Technologies and Economic Growth*, edited by Elhanan Helpman. Cambridge, MA; London, MIT Press.
- . 2001. "North American Economic Integration: Issues and Research Agenda." Industry Canada Discussion Paper 10. Ottawa: Industry Canada; available at website: www.strategis.ic.gc.ca.
- Harris, Richard G., and Nicolas Schmitt. 2003. "The Consequences of Increased Labour Mobility within an Integrating North American Economy." In *North American Linkages: Opportunities and Challenges for Canada*, edited by Richard G. Harris. Calgary: University of Calgary Press.
- Head, Keith, and John Ries. 1998. "Immigration and Trade Creation: Econometric Evidence from Canada." *Canadian Journal of Economics* 31 (1): 47–62.
- Head, Keith, John Ries, and Don Wagner. 1998. "Immigrants and the Trade of Provinces." RIIM Working Paper 98-21. Vancouver: Research on Immigration and Integration in the Metropolis.
- Helliwell, John. 2000. "Checking the Brain Drain: Evidence and Implications." Vancouver: University of British Columbia, Department of Economics. Mimeographed.
- Helpman, Elhanan, ed. 1998. *General Purpose Technologies and Economic Growth*. Cambridge, MA; London: MIT Press.
- Hulten, C., and R.M. Schwab. 1993. "Endogenous Growth, Public Capital, and the Convergence of Regional Manufacturing Industry." NBER Working Paper 4538. Cambridge, MA: National Bureau of Economic Research.
- Johnson, Jean M., and Mark C. Regets. 1998. "International Mobility of Scientists and Engineers to the United States: Brain Drain or Brain Circulation?" Issue Brief. Washington, DC: National Science Foundation, Directorate for Social, Behavioral, and Economic Sciences, Division of Science Resources Studies.
- Krueger, Alan. 2000. "From Bismarck to Maastricht: The March to European Union and the Labor Compact." NBER Working Paper 7456. Cambridge, MA: National Bureau of Economic Research.
-

- Krugman, Paul. 1991. "Increasing Returns and Economic Geography." *Journal of Political Economy* 99 (3): 483–99.
- Lafrance, R., and L. Schembri. 2000. "The Exchange Rate, Productivity and the Standard of Living." *Bank of Canada Review*, Winter 1999–2000, pp. 17–28.
- Ludema, Rodney, and Ian Wooton. 1999. "Regional Integration, Trade and Migration: Are Demand Linkages Relevant for Europe?" In *Migration: The Controversies and the Evidence*, edited by Ricardo Faini, Jaime de Melo, and Klaus Zimmermann. Cambridge: Cambridge University Press and the Centre for Economic Policy Research.
- Mundell, R.A. 1957. "International Factor and Factor Mobility." *American Economic Review* 47 (3): 321–35.
- Murphy, Kevin M., W. Craig Riddell, and Paul M. Romer. 1998. "Wages, Skills and Technology in the United States and Canada." In *General Purpose Technologies and Economic Growth*, edited by Elhanan Helpman. Cambridge, MA; London, MIT Press.
- OECD (Organisation for Economic Co-operations and Development) 1998. *Trends in International Migration, Annual Report*. Paris: OECD.
- O'Rourke, Kevin, and Jeffrey Williamson. 2000. *Globalisation and History: The Evolution of a Nineteenth-Century Atlantic Economy*. Cambridge, MA: MIT Press.
- Proulx, Pierre-Paul. 1993. "Quebec in North America: From a Borderlands to a Borderless Economy." *Quebec Studies Journal* 16 (Spring-Summer): 23–38.
- Puhani, Patrick A. 2001. "Labour Mobility: An Adjustment Mechanism in Euroland? Empirical Evidence for Western Germany, France and Italy." *German Economic Review* 2 (2): 127–40.
- Rosenbluth, Gideon. 1987. "The Causes and Consequences of Interprovincial Migration." Discussion paper 87-29. Vancouver: University of British Columbia, Department of Economics.
- . 1996. "Interprovincial Migration and the Efficacy of Provincial Job Creation Policies." *Canadian Business Economics* 4 (2): 22–35.
- Stark, Oded, Christian Helmenstein, and Alexia Prskawetz. 1998. "Human Capital Depletion, Human Capital Formation, and Migration: A Blessing or a 'Curse'?" *Economics Letters* 60 (3): 363–67.