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PERSPECTIVES ON NORTH AMERICAN FREE TRADE

TRADE LIBERALISATION AND THE MIGRATION OF SKILLED WORKERS

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PERSPECTIVES ON NORTH AMERICAN FREE TRADE

TRADE LIBERALISATION AND THE MIGRATION OF SKILLED WORKERS

*By Steven Globerman,
Western Washington University and Simon Fraser University*

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Comments should be addressed to:

Someshwar Rao
Director
Strategic Investment Analysis
Micro-Economic Policy Analysis
Industry Canada
5th Floor, West Tower
235 Queen Street
Ottawa, Ontario
K1A 0H5

Tel.: (613) 941-8187

Fax: (613) 991-1261

E-mail: rao.someshwar@ic.gc.ca

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PREFACE

Toward the mid-1980s, as international markets and production were becoming more global in scope and outlook, Canada was in danger of being pushed to the margin of the world economy. We were not equipped to expand our participation in global markets, and we were in danger of losing our own markets. Moreover, with over two-thirds of our exports destined for the United States and the share steadily climbing, we were highly exposed to rising U.S. protectionist sentiments. In essence, our past prosperity had made us complacent about the precarious position we faced as a trading nation.

It was in such a climate that the government undertook the steps necessary to renew and strengthen the economy, rather than resist the forces of global change. The government's approach was to make the private sector the driving force of this economic renewal. Policies were adopted to encourage and reward entrepreneurship and facilitate adaptation to the changing economic environment.

As a trading nation, getting our trade relations with the United States right was an obvious goal. It was decided that a free trade agreement was needed in order to forestall protectionist tendencies in the United States, enhance Canada's security of access to the American market and improve the predictability of trade relations with our neighbour to the south.

The Canada-United States Free Trade Agreement (FTA) was implemented in 1989. Five years later, in 1994, the North American Free Trade Agreement (NAFTA) came into effect and basically extended the FTA to the fast-growing Mexican market.

These free trade agreements were expected to increase prosperity in Canada by raising the efficiency and productivity of Canadian businesses. Such agreements are known to be mutually beneficial to the economies of the parties involved, and are particularly beneficial to the relatively small economies, such as that of Canada. They first expose domestically protected firms to international competition. Second, they reward innovative and productive firms by giving them access to larger markets. This increases trade flows between participating countries and improves the overall efficiency of their economies. The FTA and NAFTA were no exception; they were signed in the hope of obtaining those benefits for the Canadian economy after an initial adjustment period. Yet concomitantly, there were legitimate concerns about possible plant closures and job losses in Canada.

More than ten years have passed since the implementation of the FTA — enough time to reliably assess the implications of the agreement for the Canadian economy. In this context, the Micro-Economic Policy Analysis Branch has asked a group of experts to examine the Canadian economy in light of the FTA. The six papers coming out of this exercise are now being published under the general heading of *Perspectives on North American Free Trade*. These papers analyse a broad spectrum of issues ranging from the impact of the FTA on interprovincial trade flows to its impact on the productivity performance of the Canadian economy. In addition, the viability of the Canadian manufacturing sector is assessed, as is the relationship between outward foreign direct investment and trade flows. The papers also explore the implications of trade for the evolution of Canada's industrial structure and skill mix along with an assessment of Canada's migration patterns with the United States.

Steven Globerman's report discusses and evaluates the relationship between trade liberalisation and the migration of skilled professional and managerial workers from Canada. Globerman argues that two competing forces influence bilateral migration. On the one hand, classical economic theory suggests that trade and factor movements are substitutes. Hence, according to this theory, free trade between Canada and the United States should lower the outflow of knowledge-based workers from Canada. On the other hand, the theory of the multinational corporation stresses the need for factor movements, especially the relocation of managers and technical experts, to expedite the rationalization of production. According to this theory, trade liberalisation should increase the outflow of knowledge-based workers from Canada. Moreover, changes in immigration laws and regulations implemented by both the United States and Canada have made permanent bilateral immigration more difficult while lowering the costs and difficulties of temporary immigration.

Globerman reviews the available evidence and concludes that trade liberalisation has had little impact on permanent immigration. However, temporary migration of Canadians to the United States has increased by approximately 3,000-4,000 visas granted per year. The evidence also points to an increase in the flow of U.S. professional workers emigrating to Canada since the FTA.

These findings, concludes Globerman, caution against the perception that Canada is suffering a substantial or economically damaging "brain drain". In fact, he reasons that Canada may be benefiting from these trends. First, some of the temporary migration is facilitating the economic integration with the United States, which is of benefit to Canada. Second, some temporary Canadian immigrants are acquiring managerial and technical skills in U.S. companies, which is beneficial to the Canadian economy when those immigrants are returning to Canada.

EXECUTIVE SUMMARY

This report discusses and evaluates the relationship between trade liberalisation and the migration of skilled professional and managerial workers in the Canadian context. In particular, it considers whether and how the Canada-U.S. Free Trade Agreement (FTA) and the North American Free Trade Agreement (NAFTA) may have affected bilateral flows of permanent and non-permanent immigrants between Canada and the United States.

Classical economic theory leads to a prediction that trade and factor movements are substitutes, so that freer trade between Canada and the United States could be expected to reduce incentives for bilateral migration. On the other hand, the modern theory of the multinational corporation stresses the potential need for factor movements, especially the relocation of managers and technical experts, to expedite production rationalization and increased international trade following trade liberalisation. Since the overwhelming bulk of international trade is carried out by multinational companies (MNCs), foreign direct investment theory suggests that freer trade between Canada and the United States, to the extent that it encourages increased intra-industry trade and investment, might be expected to increase economic incentives for bilateral migration.

The report briefly reviews available evidence on the economic effects of the FTA and the NAFTA and concludes that the former, if not the latter, arguably contributed to increased bilateral trade and direct investment over and above what might have been expected had the relevant Agreement not been implemented. Hence, to the extent that factor mobility and international trade and direct investment are net complements, as the modern theory of the MNC argues, the implementation of the FTA should have increased incentives for bilateral migration. Economic incentives for temporary migration would arguably be particularly strengthened by the need for North American MNCs to adjust their production and marketing strategies to the liberalised trade environment.

Laws and regulations establishing criteria and quotas for permanent and temporary immigration will obviously have an important influence on actual immigration patterns. The report briefly discusses major recent changes in immigration laws and regulations implemented by the U.S. and Canadian governments. The net impact of those changes is to make permanent bilateral immigration more difficult but to lower the costs and difficulties associated with temporary immigration. The report then goes on to consider the following issues: 1) Has there been a significant increase in bilateral temporary immigration between Canada and the United States? 2) Is any such increase primarily the result of complementarity between increased trade, investment and factor mobility, or does it primarily reflect other factors, such as better earnings prospects in the other country?

Consideration of these issues proceeds first by examining data on permanent and temporary migration. Patterns of permanent bilateral immigration have been fairly constant over the past two decades, suggesting that trade liberalisation *per se* has had little impact on permanent immigration. This result could reflect conflicting influences of trade liberalisation on incentives to immigrate. It undoubtedly reflects the fact that immigration laws in the two countries provide only limited scope for increased permanent immigration based upon economic criteria. On the other hand, temporary migration under the new visa arrangement introduced by the FTA (the TC visa) and continued under the NAFTA (the TN visa) has increased consistently since the implementation of the FTA. In particular, the migration of Canadians to the United States using the TC/TN visa has increased by approximately 3,000 to 4,000 (visas granted) per year. It is suggestive that the number of American professional workers emigrating temporarily to Canada has also increased consistently since 1989, although at a substantially slower rate than comparable migration of Canadian TC/TN visa holders. By itself, these observations would suggest

that the increase in temporary migration reflects the adjustments of North American MNCs to trade liberalisation. This observation is also consistent with increased bilateral flows of intra-company transferees. On the other hand, the number of temporary Canadian immigrants using the H-1B visa has declined since 1989 suggesting that the TC/TN visa route may have substituted for the H-1B route at the margin.

The motives for increased Canadian out-migration using the TC/TN were also evaluated through two small-scale surveys carried out through electronic mail. In one survey, a set of Canadian employers was interviewed. A second survey interviewed a set of U.S. companies. The survey responses were fairly consistent in pointing to career development as being a strong motivation for Canadians to migrate temporarily to the United States. Higher salaries in the United States were also identified as a strong motivator with lower taxes being acknowledged as relevant but less important. It is interesting that American employers view their hiring of Canadians as being "long-term". That is, they do not contemplate the employment relationship as likely to be terminated in the near future. It is also relevant in this regard that a growing percentage of Canadians entering the United States under various temporary visas are converting their status to permanent residents. It is possible that the substantially stronger American labour market is encouraging Canadians who would otherwise return to Canada after participating in the U.S. market to remain indefinitely.

The report concludes with a brief assessment of the policy implications of the main findings. While these findings do not permit strong or unambiguous conclusions, they caution against a growing perception that Canada is suffering a substantial and economically damaging "brain drain." First, the number of temporary migrants is absolutely and relatively small. Second, some (unknown) portion of temporary migration is facilitating increased integration with the U.S. economy, and that, by itself, is a benefit to Canada. As well, some temporary Canadian immigrants are acquiring managerial and technical skills in U.S. companies that may impart benefits to the Canadian economy when those immigrants return to Canada. At the same time, the survey results provide some grounds for concern to policymakers about the labour market environment for highly skilled workers in Canada. In particular, higher after-tax incomes in the United States are an attraction for skilled Canadians to migrate. While policies to address this situation, such as lowering marginal tax rates for high-income earners, can be identified, it can be argued that their implementation should not be motivated purely by a desire to reduce temporary emigration. However, if policy changes are desirable for broader macroeconomic considerations, their implementation might also have a desirable indirect impact on temporary migration. Specifically, temporary migration motivated by "tax arbitrage" and related motives will be reduced. As a consequence, it is more likely that the temporary migration of Canadians will be of net benefit to the Canadian economy as a whole.

INTRODUCTION

The emigration of educated and skilled Canadians to the United States has always been of concern to policymakers. Recently, the phenomenon has literally made front-page news in the Canadian media.¹ These news reports highlight the exodus of young, highly skilled Canadian workers to the United States, and speculate about the potential causes of this exodus. Frequently mentioned possibilities include substantial and growing differences between before- and (especially) after-tax incomes between the two countries, as well as differences in long-run prospective career development paths for skilled and professional workers.

The fact that an increasing number of Canadians migrating to the United States are entering under temporary worker provisions established under the Canada-U.S. Free Trade Agreement (FTA), and continued under the North American Free Trade Agreement (NAFTA), invites a consideration of possible linkages between recent immigration patterns and recent trade liberalisation initiatives. The issue of immigration was not a prominent feature of the public debate surrounding the NAFTA. Defenders of the NAFTA, particularly in the United States, highlighted the potential for faster economic growth in Mexico, a presumed result of the NAFTA, to discourage illegal immigration from Mexico, at the margin.² Virtually no attention was paid to the NAFTA's impact on bilateral migration flows between Canada and the United States, other than an occasional acknowledgment that the NAFTA "temporary worker" visa provisions (to be discussed below) would expedite temporary labour mobility, primarily among affiliates of multinational corporations (MNCs).

The major labour market concerns raised by the NAFTA were related to Ross Perot's infamous warning about the "giant sucking sound" that the Agreement would produce, as physical capital and employment opportunities fled the United States for Mexico. Canadian opponents of the NAFTA added their concerns about Canadian investment and employment following in the wake of the U.S. tidal wave. Hence, much of the early economic analysis surrounding the likely impact of the NAFTA focused on the Agreement's consequences for capital investment with their derived implications for labour demand in the member countries.³ The potential labour market consequences of the NAFTA were, therefore, primarily seen as derived from changes in the geographical preferences of MNCs as far as investment was concerned. Potential consequences were also associated with changes in trade flows, e.g. Mexican "low-wage" goods flooding other North American markets. The potential impact on immigration, as noted above, hardly featured in the debate.

In fact, there has been relatively little systematic study of recent bilateral migration patterns.⁴ A better understanding of the forces motivating recent bilateral migration is desirable if policy measures to address the net out-migration of Canadians are being contemplated. This is because, among other things, the welfare consequences of Canadian emigration will depend, in part, upon the motives for such emigration.

The broad purpose of this study is to identify and assess how closer economic integration between Canada and the United States as manifested in the FTA and the NAFTA may have affected bilateral migration flows between the two countries. The study proceeds as follows. In the second section, we provide a brief theoretical overview of the linkages between trade liberalisation and labour markets that, in turn, imply linkages with incentives to migrate. Section three discusses recent legislative changes affecting the incentives and abilities of Canadians to migrate to the United States, and briefly considers the associated welfare implications for Canada. Section four presents and evaluates data on bilateral migration patterns, especially temporary migration under the NAFTA, which, this paper contends, has been the major single impact of the NAFTA on Canadian labour markets. Section five briefly addresses the policy implications of temporary migration under the NAFTA.

TRADE LIBERALISATION AND LABOUR MARKETS

There are a number of potential linkages between trade liberalisation and labour markets, and these linkages are obviously conditioned both by the precise nature of the trade liberalisation, as well as by the pre-existing degree of economic integration among the trading partners. The theoretical and institutional complexities surrounding the potential linkages are difficult to address in a "unified" model of international trade.⁵ Hence, most analyses adopt a "comparative statics" approach in which key relationships are identified and discussed assuming other potential influences are held constant. This is the approach taken here, albeit in a relatively non-technical way.⁶

Trade Flows and Labour Market Impacts – Simple Substitution

Most simple models of the labour market effects of trade liberalisation build upon two theorems: the Heckscher-Ohlin theorem and the factor-price equalization theorem. The essence of the Heckscher-Ohlin theorem can be illustrated with a simple example. Assume that there are two countries ($C1$ and $C2$), two goods ($G1$ and $G2$) and two inputs: capital (K) and labour (L). If the amount of capital relative to labour is higher in both countries to produce, say, $G1$ than $G2$, then $G1$ is said to be a capital-intensive good. Therefore, $G2$ would be a labour-intensive good. Furthermore, if the price of capital (R) relative to the price of labour (W) is lower in $C1$ than in $C2$, $C1$ would be considered the capital-intensive country, while $C2$ would be the labour-intensive country.

The Heckscher-Ohlin theorem asserts that a nation will export the commodity whose production requires the intensive use of the nation's relatively abundant and cheap factor and import the commodity whose production requires the intensive use of the nation's relatively scarce and expensive factor. In this case, $C1$ would export $G1$ and import $G2$ with the opposite being true for $C2$.⁷

The factor-price-equalization theorem holds that international trade will bring about equalization in the relative and absolute returns to homogeneous factors of production across countries. In the example above, international trade will ensure that W and R are identical in $C1$ and $C2$. This outcome is fairly intuitive if one focuses on relative factor prices in the two countries. For example, since $C1$ will export $G1$ and import $G2$ under trade liberalisation, domestic demand for the capital input increases relative to domestic demand for labour in $C1$. This implies that R will increase relative to W in $C1$. The opposite would be true in $C2$, since the domestic demand for labour increases relative to the domestic demand for capital. Trade between the two countries therefore drives relative factor prices into equality.

That trade liberalisation can also lead to absolute factor price equality is a much less intuitive result. It is true under a set of assumptions that are fairly stringent including perfect competition in the relevant goods and factor markets, constant returns to scale in the production of the goods in question and identical technologies in the two countries.⁸ These conditions are obviously violated in the "real world", as well as other (less important) assumptions that underlie the simple Heckscher-Ohlin model. Nevertheless, the "classical" view that trade and factor movements are substitutes rests upon the factor-price equalization feature of the standard "comparative" advantage model of trade.⁹

To the extent that the classical view is valid, the implications of the NAFTA are that Mexico, as a (non-human capital-intensive) labour-abundant country, should see its wages rise absolutely and relatively to wages in the United States and Canada. The United States, and to a lesser extent Canada, as human capital-intensive abundant countries should see the incomes of educated, professional workers increase absolutely and relatively to the incomes of comparable workers in Mexico. Another implication is that incentives for international migration within North America should be reduced by the changes in

rewards to factors of production. A similar inference would be drawn about the impacts of the FTA on incentives to migrate. That is, whatever factor price differences existed prior to the FTA, the latter's implementation could be expected to encourage smaller differences, all else constant, and thereby discourage cross-border factor movements.

Trade and Migration as Complements

The substitution relationship between trade and labour migration rests upon a number of assumptions that may be more often violated than not in the "real world". In particular, Markusen (1983) and others have shown that in the presence of imperfect competition, non-constant returns to scale, tax and technology differences, international migration can lead to increased, rather than decreased trade, contrary to the implications of the classical view of trade and factor movements as substitutes. The Markusen (1983) model focuses on how labour migration affects gains-from-trade starting from the extreme premise that factor endowments are identical in the potential trading countries. This reverses the usual line of causality that starts from increased trade to derived consequences for factor markets. In effect, migration in the Markusen model leads to a divergence rather than a convergence of factor and product prices which, in turn, encourages increased trade.

Other studies also implicitly relax a key assumption of the classical model to show that immigration can promote increased international trade. The key assumption in these latter studies is that information about international trade opportunities is costlessly available to market participants. Equivalently, transactions costs related to surmounting linguistic and cultural differences in international business are insignificant. If this assumption is unrealistic, immigration might lower the cost of doing international business by "relocating" linguistic and cultural expertise. For example, Hong Kong Chinese immigrants in Canada might use their superior knowledge of Chinese culture, along with their contacts among family and friends in Asia, to carry out profitable international trade with Southeast Asian countries that would be unprofitable for native-born Canadians to carry out. In effect, immigration might lower the transaction costs of conducting certain types of international business.

In fact, there is some empirical evidence that increased immigration does lead to increased trade, at least for certain paired regions.¹⁰ However, the potential linkage between immigration and transaction costs is unlikely to be important in the Canada–United States context where cultural differences and related considerations are relatively minor. As well, the stylized assumptions of the Markusen model, including identical initial factor endowments, are also unlikely in the Canada–United States context. Nevertheless, the main point of the non-classical treatments of trade and migration cannot be gainsaid. Namely, that the existence of market imperfections can significantly alter conclusions drawn from the simple classical model.

Perhaps the most relevant market imperfection to introduce explicitly into our discussion is the previously mentioned transaction costs associated with international business. These can be more broadly thought of as the costs associated with identifying, carrying-out and monitoring mutually beneficial trade between parties. Transportation costs are an obvious manifestation of a set of transaction costs. A less obvious manifestation are the costs a company must incur to ensure that its partner-in-exchange does not intentionally or unintentionally extract an "undue" share of the potential gains-from-trade, especially after the company has made significant sunk cost investments in the exchange.¹¹

There are a host of transaction costs associated with international business that can lead to the movement of goods and the movement of factors of production being complements rather than substitutes. An illustrative example is provided by a firm that produces technologically complex goods requiring substantial amounts of before- and after-sales servicing by skilled technicians. Increased sales of these products must therefore be accompanied by increased outlays on the services of skilled technicians.

One solution for the company in question is to invest in training skilled technicians located in the importing country and then hiring them as independent contractors or as company employees. In this case, no migration of labour from the exporting country need occur. Alternatively, the firm might see it as more economical to relocate employees from the home country to perform the requisite services in the importing country. In this case, trade and factor migration will be complements, all else constant.

There are many other stylized examples one can describe of the "make-or-buy" decision that firms engaged in international trade ordinarily face with respect to critical and specialized services in activities such as management, quality control and so forth. Increased international trade usually increases the demand for performance of those activities, and it is often more economical for firms to supply those services from within than contract with suppliers in the importing country. Similarly, the costs of identifying and implementing strategies to service foreign markets may be minimized by transferring managers to the "host" market in order to effect the transfer of corporate strategies and competencies.

In the typical "life-cycle" model of human resource management in a multinational enterprise, managers and skilled technical personnel from the parent affiliate are sent to the "target" market, either to work with foreign partners or with a wholly owned affiliate to implement expansion strategies.¹² Over time, these expatriate workers are replaced by home country personnel; however, in an environment of expanding trade and investment, there should always be a flow of human capital-intensive workers migrating across countries within the expanding trading area. The flow of skilled managers and workers associated with increased trade carried out by multinational enterprises provides a significant and complementary theoretical linkage between trade liberalisation and labour migration.

The implications of this complementarity for labour markets in the trading area are not as obvious as in the simple classical case described above. For purposes of discussion, imagine that increased exporting (and/or importing) is more efficiently accomplished by some accompanying foreign direct investment from the exporting country, along with accompanying flows of human capital. To make the analogy back to our earlier example more transparent, assume that human capital and physical capital are completely fungible, so that by saying that *C1* is a capital-intensive country, we mean equally that it is human-capital intensive, and (symmetrically) that *G1* is a human capital-intensive good. Now exporting *G1* implies "exporting" some human-capital. Equivalently, importing *G1* implies some importing of human-capital. As a result, the supply of human capital in the *C1* market decreases at the same time as demand increases, whereas supply of human capital in the *C2* market increases, while demand for domestic human capital in the *C2* market decreases, because it is, at least temporarily, a poor substitute for the more desirable *C1* human capital. The result (if anything) should be a faster convergence of relative and absolute wage rates in *C1* and *C2* than would be true in the absence of labour mobility. The key notion here is that labour flows are inseparable from trade. In the longer-run, especially if there is a transfer of human capital from the *C1* to the *C2* labour force, one could have a return of *C1* human capital with *C2* human capital replacing it.

The relevant point to summarize here is that tying movements in skilled labour to increased international trade (most typically through the activities of multinational enterprises) does not mitigate the basic labour market impacts of the classical Heckscher-Ohlin, factor-equalization model. Namely, trade liberalisation will lead to increased (decreased) returns to relatively abundant (scarce) factors of production in individual countries. From the perspective of Canadian labour markets, if trade liberalisation encourages increased trade within the North American region, demand (and payments) will increase for factors used intensively in Canadian industries enjoying a comparative advantage within North America, while demand (and payments) will decrease for other industries. If increased trade in skill and human capital-intensive activities is facilitated by increased migration of human capital, Canada will enjoy a net increase in human capital inflows if it suffers a comparative disadvantage in human capital-intensive activities, with the opposite being true if Canada enjoys a comparative advantage in human

capital-intensive activities. More realistically, since human capital is sometimes fairly specialized, Canada will be relatively abundant in some types of human capital, while Canada's major trading partner will be relatively abundant in other types. In this case, one might observe two-way flows of human capital associated with increased international trade.¹³

Summary of Theoretical Relationships

Theoretical considerations suggest that trade liberalisation can create incentives for increased international factor mobility. Such incentives will be created if significant changes in the relative prices of goods and services (i.e. gains from trade) occur, and if the potential gains from increased trade are most efficiently captured through international business modes that involve the migration of factor inputs. The latter most typically takes the form of foreign direct investment (FDI) flows accompanied by the international relocation of managers and other skilled personnel. On the other hand, if trade liberalisation primarily leads to decreased investment in overseas' affiliates with a repatriation of production to (and increased exporting from) the parent company affiliate, there could well be less international movement of skilled personnel associated with trade liberalisation.

Even if trade liberalisation is accompanied by increased outward FDI by MNCs, the international migration of managers and other skilled workers might be quite limited if the gains from relocating labour are exceeded by the associated costs. Thus, while the available empirical evidence is fairly persuasive that FDI and international trade are complements in the aggregate (Rao, Legault and Ahmad, 1994), labour migration and international trade need not be net complements.¹⁴

International migration has obvious costs to the emigrant, as well as to corporate sponsors of the emigrant when migration occurs through intra-corporate transfers. The costs are both economic and social. Economic costs encompass outlays associated with purchasing relocation services, including legal assistance, as well as any foregone income associated with periods of unemployment in the host country, delayed promotions in the home country and so forth. Social costs encompass a broad range of considerations including reduced contact with friends and family, uncertainties surrounding the continuity of health care and other personal services and so forth. The point here is not to be comprehensive in the identification of the precise nature and incidence of the costs of migration. It is that such costs exist and can be substantial, and (in many cases) they may outweigh any economic benefits of migration, either for the individual migrant and/or for the migrant's sponsor.

Empirical Evidence Linking Trade Liberalisation To Migration

There is a limited amount of empirical evidence relating trade liberalisation to immigration, and the evidence pertains to the European experience.¹⁵ Specifically, Straubhaar (1988) and Molle and Van Mourik (1988) offer tests of the relationship between trade and immigration in the European context. The former provides a time series test by examining intra-EC-6 labour flows between 1960 and 1984.¹⁶ He found patterns of geographical specialization for immigration. For example, German (French) migrants preferred France (Germany), and so forth. He interprets this finding as evidence that culture and distance play a role in restricting the geographic scope of immigration. He also compares changes in the intra-EC-6 flows relative to in-migration from outside the community into the EC-6. If increased economic integration mattered, according to Straubhaar, within-movement should exceed outside movement in the EC. In fact, this hypothesis was rejected. He concludes that trade and migration are substitutes in the EC and that commodity flows substitute for labour migration owing to individual, social, cultural and language restrictions on European mobility. Molle and Van Mourik, in a cross-sectional study, find no relationship between foreign labour intensity and an index of trade-intensity, which also leads them to conclude that social programs and cultural and linguistic differences within EU countries reduce factor mobility.

It is difficult to generalize from the European experience to the North American experience, since background conditions affecting migration costs arguably differ substantially. In particular, the legislative environment surrounding immigration differs, and immigration quotas and restrictions can act as an absolute barrier to immigration regardless of the private incentives to migrate. Certainly, in the North American context, permanent immigration from Canada to the United States has been strongly conditioned by U.S. immigration laws and procedures.¹⁷ On the other hand, for English Canadians at least, cultural and linguistic differences between Canada and the United States may be relatively small compared to those between individual European countries.

Government laws and regulations affecting immigration can obviously act as prominent constraints on migration flows regardless of economic incentives to migrate. Moreover, in most cases, the relevant laws and regulations will be unrelated to trade agreements. Hence, it is useful to highlight the legal and regulatory environment surrounding the bilateral migration process including the changes directly introduced by the FTA and the NAFTA.

RECENT CHANGES AFFECTING CANADA–U.S. MIGRATION FLOWS

Legislation dealing with immigration in both the United States and Canada has traditionally focused on permanent immigrants. It is neither possible nor desirable for this paper to discuss such legislation in detail. Hence, we will focus on changes in the relevant legislation in the 1990s; however, several features of earlier immigration policy changes are worth noting briefly. In the United States, amendments to the relevant legislation introduced in 1965, and in subsequent years through the 1980s, effectively abolished the national-origins quota system and institutionalized the humanitarian goal of family reunification as the central objective of U.S. immigration policy. One effect of these changes was to make it more difficult for Canadians to obtain permanent resident status in the United States by devaluing occupational skills criteria for obtaining permanent residence. A comparable change took place in Canada in 1978 when the relevant legislation was revised so that family and refugee class applicants for permanent resident status were given top priority. The net result was to leave applicants accepted primarily against economic criteria as a small residual of the total flow of immigrants. This change significantly disadvantaged U.S. applicants. All other things constant, therefore, bilateral permanent migration should have slowed in the 1970s and 1980s compared to earlier periods.

The Immigration Act of November 29, 1990 implemented a major overhaul of U.S. immigration law. Specifically, it increased total immigration under a flexible cap beginning in fiscal year 1995. It also revised existing non-permanent admission categories and established new ones. For example, it redefined the H-1B temporary worker category and limited the number of aliens who could be issued visas or otherwise provided non-immigrant status under this category to 65,000 annually. Of particular relevance to Canadians were the provisions under the FTA governing temporary entry on a reciprocal basis between the United States and Canada. The FTA facilitated temporary entry on a reciprocal basis by waiving requirements for a non-immigrant's visa, prior petition, labour certification or other prior approval, as long as appropriate documentation was presented establishing citizenship and showing professional engagement in one of the occupations listed in the qualifying occupation schedule.

The NAFTA Implementation Act of December 8, 1997 superceded the FTA. It facilitated temporary entry on a reciprocal basis between the United States, Canada and Mexico. For Canadians and their spouses and minors seeking to enter the United States on a temporary basis, or for Americans and their families seeking to enter Canada, there is again no requirement for visa, prior petition, labour certification and so forth, as long as the applicant and family can prove Canadian (or American) citizenship, and the principal applicant can document professional engagement in one of the qualifying occupations. There is no limit on the number of temporary immigrants from Canada (or the United States) under the NAFTA.

The procedures for immigration as a temporary worker under the NAFTA are very similar to those expressed in the prior FTA and cover the same non-immigrant classifications. It is worth highlighting the differences between the temporary worker provisions of the NAFTA and the provisions for immigration as a permanent worker. The differences are summarized in Figure 1. Specifically, Figure 1 highlights the differences between the TN-1 (NAFTA) visa issued by the United States and the B visa status which also governs temporary entry of professional workers into the United States.¹⁸ While there are a number of salient differences, the most substantive include: 1) Canadians cannot work for a U.S. employer under H-1B status; 2) There is no requirement under the TN visa for an employer to show that the temporary hire(s) will not be hurting U.S. workers;¹⁹ 3) Although granted for one year at a time, the number of TN renewals permitted is unlimited, whereas H-1B has a time cap. Specifically, there is a six year time limit with an initial (and subsequent) three year duration of status.

Figure 1
Differences between TN and H-1B professionals

1. TN professionals without a bachelor's degree cannot easily make transition to H-1B status.
2. Canadians cannot work for a U.S. employer under H-1B status.
3. Under H-1B, requirement to show that employer (by hiring) will not be hurting U.S. workers.
4. Although granted for one year at a time, the number of TN renewals permitted is unlimited whereas H-1B has a time cap.
5. Processing time for TN visa shorter than for H-1B.

Two other non-permanent U.S. immigration categories are worth mentioning. The B-1 status is usable for international commercial purposes, but applies only to businesses that export goods to the United States and have no operations in that country. Thus, compensation must come from a source outside the United States. It requires no work permit or prior application. That is, it can be granted right at the border or at U.S. consulates abroad. B-1 visas are usually "multiple entry" for up to 10 years, meaning that a person may repeatedly enter the United States in B-1 status during that time without obtaining a new visa. The duration of stay in B-1 status can be anywhere from 3 weeks to 6 months upon initial entry. Once in the United States, the visa can be extended by the immigration authorities for up to 18 months on a given trip. The visa applicant must demonstrate to immigration authorities an ability to support him or herself in the United States and an intent to return to an unabandoned foreign residence. B-1 visas are most typically obtained for carrying out consulting projects in the United States, selling products, attending conferences or business meetings or evaluating investments.

The E1 and E2 visas cover treaty traders and investors, respectively. An E1 treaty trader is someone who enters the United States primarily to carry on trade between the United States and a foreign country that has a treaty of commerce with the United States. The initial period of admission is one year with indefinite extensions of stay possible. An E2 investor is someone directing and developing a business in which he or she has invested a substantial amount of capital. A one year initial period of admission is possible with extensions available in certain circumstances.

Finally, an L1 (intra-company transferee) visa covers foreign nationals who have worked abroad for at least one out of the three years immediately prior to entry to the United States as a manager, executive, or specialized knowledge employee of a foreign affiliate of a U.S. company, and who will be transferred to the U.S. affiliate to work in a similar position. Multinational firms can obtain a blanket L1 visa petition enabling it to file once with the authorities, attaching a schedule of all affiliates. If approved, foreign personnel may simply appear at a U.S. embassy bearing a copy of the L1 blanket approval and a job letter and obtain an L1 visa.²⁰

In summary, there are a variety of temporary immigration visas available to Canadians. Perhaps the single most salient distinction of the TN visa is that it allows Canadians to work for U.S. companies in the United States with greater ease than the alternative (the H-1B visa). This distinction also suggests a way to interpret trends in various categories of temporary Canadian migration to the United States. Specifically, if the major impetus to increased Canadian migration is the increased trade and investment stimulated by the FTA and the NAFTA, one would expect to see increases in most or all categories of temporary immigration. On the other hand, if the primary impetus is better job or income prospects in the

United States, the TN visa category should show a faster rate of growth than other temporary visa categories, especially the B, E and L categories.

The provisions under the FTA and the NAFTA affecting the environment for bilateral direct investment are also potentially relevant in the context of immigration, since (as noted above) temporary immigration may be less costly for the immigrant when there is a corporate sponsor with affiliates in both countries. It is beyond the scope of this study to summarize in detail the provisions of the FTA and the NAFTA affecting the direct investment environment.²¹ The main points that might be made in this regard are that the Agreements: 1) Expanded the scope for (primarily) U.S. acquisitions of Canadian companies; 2) Substantially reduced the extent to which investments made by member country firms could be treated differently by signatory governments from those made by domestic firms; 3) Increased the transparency of the foreign investment regimes in the signatory countries and made foreign-held property rights more secure.

The practical significance of the investment provisions of the FTA and the NAFTA is a matter of debate. Among other things, the Agreements effectively excluded from coverage a range of prominent sectors, including telecommunications, broadcasting, health care and education. Also, as noted above, the NAFTA promised only incremental modifications to the Canada-U.S. business environment. In this regard, survey evidence suggests that the adjustments of North American MNCs to trade liberalisation had been largely completed by the time of NAFTA's implementation (Blank, 1993).

To be sure, bilateral direct investment between Canada and the United States increased in absolute terms throughout the 1990s. Moreover, inward FDI from the United States to Canada was substantially larger relative to inward FDI from other countries in the 1990s compared to the 1980s, although there is no evidence that Canada became an increasingly important source of inward FDI to the United States during the 1990s (Blomstrom, Kokko and Globerman, 1998). On balance, there was a substantial amount of FDI, particularly by U.S.-owned MNCs, before and after the implementation of the FTA. This FDI could have stimulated the desirability of increased labour mobility as a complement to increased capital mobility; however, this phenomenon was arguably less important in the post-NAFTA period than in the pre-NAFTA period.

The incentive for increased bilateral trade related to trade liberalisation depends upon the scope and depth of the liberalisation provisions of the Agreements. The essence of the FTA was the phased bilateral elimination of tariffs. Again, the significance of this feature of the FTA is debatable, since bilateral trade between Canada and the United States had been substantially liberalised before the implementation of the FTA through successive GATT Rounds, as well as special bilateral agreements such as the Auto Pact and the Defense Sharing Agreement. Obviously, the absolute volume of trade between Canada and the United States has increased substantially over the 1990s.²² That the FTA may have played a significant role is suggested by the fact that there was an increase in the relative importance of U.S. trade post-1989 for Canada; however, no similar pattern is identifiable for the United States with respect to its trade with Canada.

Additional evidence that bilateral trade liberalisation did affect trade flows and, hence, potential incentives for labour migration to facilitate trade flows is provided in Schwanen (1997). He found that growth in trade in sectors liberalised by the FTA (through 1995) exceeded that which occurred in bilateral trade in other sectors and in trade with other countries. On the other hand, Gaston and Trefler (1997) offer some evidence of a contraction of employment in every Canadian tradeables sector throughout the period of the FTA, although the primary explanation of this phenomenon was the recession affecting the Canadian and U.S. economies.

The continuing bilateral trade experience under the NAFTA suggests that adjustments to trade liberalisation, *per se*, offer only weak incentives for increased bilateral migration. For example, a recent report of the U.S. Department of Commerce (1997) concludes that trade patterns between the United States and Canada did not change discernibly over the first three years of NAFTA's implementation. Moreover, econometric evidence suggests that the U.S. economy was more strongly impacted than the Canadian economy by trade liberalisation with Mexico; however, the measured impacts on the U.S. economy are relatively small, and they do not seem capable of contributing to significant change in the U.S. wage structure. The measured impacts on the Canadian economy are almost unobservable.²³

Summary

Trade liberalisation agreements such as the FTA and the NAFTA have potential direct and indirect linkages to both the incentives and legal abilities of skilled workers to migrate within the free trade area. Specifically, in classical economic models, free trade leads to relative and absolute factor price convergence that, by itself, should reduce economic incentives for international immigration. On the other hand, various types of market imperfections may require increased international capital and labour mobility in order to facilitate increased trade. The relevant trade agreements themselves may facilitate increased factor mobility as the FTA and NAFTA did, for example, in creating the TC and TN visa categories.²⁴ At the same time, a reduction in the legal and related costs of migration, perhaps associated with initiatives such as the implementation of the TN visa, might be the primary motive for increased immigration. That is, the increased immigration is only incidental to any increased trade that is stimulated by the relevant trade agreements.

Identifying the empirical relevance of the various linkages is not purely a matter of academic interest. The economic welfare consequences of international migration will be a function of the reasons for and the nature of the migration. For example, to the extent that the cross-border migration of skilled workers is primarily facilitating increased trade flows that, in turn, reflect the gains-from-trade created by trade liberalisation, it would seem reasonable to infer that such migration is welfare-enhancing for both the sending and receiving countries. This is especially likely to be true if the migration is temporary — i.e. migrating managers and skilled workers return to their country of origin after having “transplanted” the knowledge and intangible assets required to facilitate welfare-creating trade flows. Indeed, it may be the case that temporary migration facilitates a two-way flow of knowledge, e.g. the immigrant manager brings knowledge of home country operating procedures to host country importers, while taking back improved knowledge about customer needs, operating conditions and so forth in the host country. The latter knowledge, in turn, may enable exporters at home to better design and produce goods for export. In this scenario, it seems reasonable to expect international migration to bring welfare gains to both the (immigrant's) sending and receiving countries.

On the other hand, if the motivation for migration is higher taxes in the “sending” country than in the “receiving” country, and if easier access to work visas facilitates “tax avoidance” migration, the welfare effects are more complex. Clearly the immigrant is better off, by her revealed preference. To the extent that the immigrant brings a substantial amount of human capital with her, it is likely (although not certain) that her contribution to output in the host country will exceed the payments she receives — i.e. there are positive externalities for the host country associated with accepting highly educated/skilled immigrants. On the other hand, the home country is likely to suffer a net income loss associated with the foregone productivity externalities that disappear with the emigration of highly educated/skilled workers²⁵.

A related consideration is the sunk-cost investment that the home country has made in educating the immigrant, providing tax-funded health care and so forth. Once incurred, of course, sunk costs are supposed to be ignored, but if home country policymakers anticipate a steady outflow of highly educated

and skilled citizens in the future, it makes sense to reconsider the existing universal subsidy schemes embedded in education and Medicare policies.

On the other hand, migration that is motivated by prospects of pecuniary gain, in turn related to differences between the host and home countries' regulatory and tax regimes, could inspire changes in the home country's regimes which ultimately contribute to improved economic welfare in the home country. For example, if marginal tax rates in Canada are imposing large efficiency costs on the Canadian economy, the migration of high-income Canadians to the United States may contribute to increased "visibility" of the associated losses in real income. Increased emigration might therefore contribute to greater political pressure on Canadian authorities to lower marginal income tax rates. Hence, when home government policies (such as relatively high marginal tax rates) have significant net adverse economic (and social) domestic impacts, outward migration could have salutary long-run consequences by increasing pressure on decision-makers to abandon or modify those policies. On the other hand, policies such as relatively high tax rates may be consistent with a general preference of the home country population for a higher level of spending on social services than is consistent with the preferences of the host country population. In this case, the migration of high-income earners could render widely preferred policies unsustainable over time, and their abandonment might not be a welfare-enhancing consequence from the perspective of many home country citizens.

Unfortunately, it is extremely difficult to identify the relative importance of different potential motives for immigration as they relate to the FTA and the NAFTA. One reason is that these initiatives altered both the potential gains from trade (and the potential gains from factor mobility) between Canada and the United States, as well as the legal ease with which Canadians and Americans could migrate within North America. Simply observing increased bilateral migration is potentially consistent with positive or negative welfare consequences for the home country as outlined in the preceding paragraphs. On the other hand, increased "one-way" migration is suggestive of non-trade related motives for migration, since it is unclear why increased trade is facilitated by increased emigration from one country but not the other.

Another reason is that a number of economic and non-economic motives for migration may operate at the same time, some having nothing at all to do with trade liberalisation other than with the legislative changes affecting immigration that are embodied in the relevant trade agreement. Ideally, it would be possible to perform a statistical analysis that could identify the separate influence of each of the relevant motives. This is impractical in this case given, among other things, the relatively short span of time that the FTA and the NAFTA have been in place.

The net result is that an analysis of the bilateral immigration experience of the 1990s is inevitably a speculative exercise. The analysis reported in the next section has two components. The first is a qualitative evaluation of the basic data regarding immigration to see if any inferences can be drawn with any degree of confidence. The second is survey information gathered from Canadian and American firms focusing on the most notable development in bilateral migration in the 1990s: the migration of temporary professional workers from Canada to the United States.

BILATERAL MIGRATION PATTERNS AND OTHER DATA

Migration can occur under both permanent and temporary status; however, since recent legal changes (discussed above) primarily affected the legal environment surrounding temporary migration, changes in temporary migration are more likely to be identifiable than changes in permanent migration.

Permanent Migration Flows

Indeed, Table 1 suggests that bilateral permanent immigration flows have not changed markedly in the 1990s compared to the 1980s. The sharp decline in annual average migration flows from Canada to the United States after the 1960s is largely related to changes in U.S. immigration laws described earlier. The sharp decline in average annual permanent immigration from the United States to Canada in the post-1980 period reflects similar (previously discussed) changes in Canadian government policy giving top processing priority to family reunification and refugee class immigrants.²⁶

The data in Table 1 document the well-known historical phenomenon of net out-migration of permanent immigrants from Canada to the United States. Against the background of an economy the size of Canada's, this net out-migration is relatively small. For example, the annual net deficit in bilateral migration of around nine thousand for the period 1991-96 is miniscule compared to the approximately 14 million participants in Canada's labour markets.

While the magnitude of overall permanent migration flows does not appear to be much different comparing the period prior to the period after the FTA and the NAFTA implementation, the composition may have changed somewhat. Specifically, professional and managerial workers appear to have become somewhat more significant in the overall number of permanent bilateral immigrants. For example, between 1982 and 1989, 13,940 Canadian professionals migrated to the United States, while 8,176 of their U.S. counterparts migrated to Canada. Over the period 1990-96, the number of Canadian professionals emigrating to the United States increased to 18,823, while the corresponding estimate for U.S. professionals emigrating to Canada declined to around five thousand. Hence, the number of professionals emigrating from Canada is a greater share of total Canadian permanent emigration in the 1990s compared to the 1980s. Conversely, the decrease in U.S. professional emigration to Canada appears to be steeper than the corresponding decrease in overall U.S. emigration to Canada over the same period.

A similar story can be told with respect to the managerial category. Specifically, 7,883 Canadian managers left Canada to become permanent immigrants in the United States over the period 1982-89. The number of American managers becoming permanent immigrants in Canada was 3,783 for the same period. The corresponding numbers for the period 1990-96 were 12,294 and 2,089, respectively.²⁷

From a policy perspective, the concern about net outward migration is that it represents a net loss of human capital that, in turn, may imply net losses to the economy if the social returns to human capital investment exceed the private returns. Some perspective on this issue is provided by Devoretz's (1998) estimate that Canada's net human capital deficit associated with bilateral immigration over the period 1982-96 is equal to around \$4 billion for professionals lost and around \$2.7 billion for managers lost expressed in 1994 dollars. These numbers can be interpreted as the cumulated reduction in the stock of Canadian human capital over the period of analysis. Unfortunately, it is difficult to put this number into context, since convenient estimates of the total stock of human capital in Canada over that period are not available; however, any reasonable estimate is bound to be small, since Canadian emigrants in the professional and managerial categories as a percentage of the professional manpower stock in Canada averaged one percent over the period 1989-96 (Devoretz and Laryea, 1998, p.21).

Table 1
Bilateral immigration flows

Canadian born Immigrants to the United States, 1951-96	
Years	Average annual flows ('000s)
1951-60	n.a.
1961-70	41.3
1971-80	17.0
1981-90	15.7
1991-96	16.2

Source: U.S. Department of Justice, Immigration and Naturalization Service, *Statistical Yearbook*, Washington, D.C., U.S. Government Printing Office, 1992.

U.S. immigration to Canada, 1961-94	
Years	Average annual flows ('000s)
1951-60	10.1
1961-70	16.7
1971-80	17.9
1981-90	7.9
1991-94	7.1

Source: Statistics Canada, *Annual Demographic Statistics*, various years.

Note: U.S. immigration to Canada is on a calendar year basis. Canadian immigration to the United States is on a fiscal year basis. Immigrants to Canada are identified on the basis of country of last permanent residence. It is assumed that in almost all cases this will represent the country of birth.

In summary, overall permanent bilateral migration patterns seem not to have been much affected by the implementation of the FTA and the NAFTA. There is some evidence that professional and managerial emigration from Canada increased both absolutely and relative to total permanent Canadian migration to the United States in the 1990s. One should not conclude, however, that this increase in managerial and professional immigration was related to trade liberalisation *per se*, since the corresponding migration of professionals and managers from the United States to Canada decreased in both absolute and relative terms. Since increased trade and investment was bilateral in nature, one would not expect migration flows designed to facilitate increased trade to decrease in absolute value for one of the trading partners and increase relatively rapidly for the other.

One should not, perhaps, make too much of the observed difference in professional and managerial immigration flows between the United States and Canada given the small numbers of immigrants involved; however, it is suggestive of labour market changes in the two countries which may

have widened after-tax income differences between American and Canadian managers and professionals. More will be said about this possibility in a later section.

Temporary Migration Flows

Table 2 reports the flow of non-permanent (i.e. temporary) immigrant professional workers and their families from Canada to the United States under the previously described FTA (TC) and NAFTA (TN) visa provisions. It should be noted that the TN visa is good for 12 months, after which it must be renewed (although there is no limit on the number of allowable renewals).²⁸ Hence, the increased number of Canadians receiving TN visas presumably corresponds to the increase in the number of visas issued from year-to-year, although this correspondence will be less than exact, since some previous holders of visas may not reapply for one reason or another.

What seems noteworthy about the TN time series is the relative constancy in the growth of visas outstanding. Specifically, the stock of such visas outstanding grew by between approximately 3,000 and 4,000 units per year over the period 1989-96. To the extent that economic adjustments to the FTA were the primary motivator for increased temporary migration, one would have expected to see substantially higher numbers of temporary visas issued in the years immediately following 1989 with the numbers trending down as the 1990s wore on. It is also suggestive that the stock of TN visas increased almost nine-fold over the study period, which far exceeds the roughly 75 percent increase in nominal (U.S. dollar) Canadian exports to the United States over the same period. If the migration of temporary Canadian workers under this visa category were primarily driven by adjustments to trade-related resource reallocations, one would have anticipated a more modest growth in the outstanding stock of visas.

Table 3 reports the flow of workers to Canada from the United States under various temporary visa arrangements. The main category of interest is professionals, the bulk of whom are presumably entering under NAFTA status arrangements.²⁹ While the virtual five-fold increase in temporary migration from the United States is lower than the Canadian counterpart number, it still represents a large increase relative to the growth in U.S. trade with Canada. The growth in intra-company transferees is, perhaps, a more direct indication of the linkages between temporary migration and international production adjustments made by MNCs. The growth in this category, while modest compared to the growth of the professional worker category, is still substantially faster than the growth in U.S.-Canada trade over the period.

Table 4 reports temporary visas issued to non-permanent Canadian immigrants to the United States for categories other than TN status. As noted earlier, temporary business visas are granted to individuals conducting temporary and intermittent business activity in the United States. No work permit or application is required. The duration of the visa is for up to one year, but each business trip must not exceed six months. Under this visa, the individual cannot work for a U.S. employer. The visa is typically used by its holders to attend conferences and training sessions in the United States. The higher values for this series in 1989 and again in 1994 are suggestive, inasmuch as those were the years in which the FTA and NAFTA were implemented. One would expect that the demand to attend conferences and other activities explaining business risks and opportunities under trade liberalisation would be relatively high in those years. Clearly, any such inference drawn about the series is purely speculative given the small number of observations.

The visa for intra-company transferees is issued to executives, managers and workers with specialized knowledge who are transferred to the United States to work for their company or its parent affiliate. The duration of this visa is valid for up to seven years for management and up to five years for other employees. In this case, the almost 70 percent increase in the number of intra-company transferees over the period 1989 to 1996 is strikingly close to the roughly 76 percent increase in Canadian exports to the United States over the same period.

Table 2
Flow of non immigrant professional workers and their families to the United States

	1989	1990	1991	1992	1993	1994	1995	1996
	Canada-U.S. Free Trade Agreement					North American Free Trade Agreement		
Professional workers under FTA(TC)	2,677	5,293	8,123	12,531	16,610			
Spouses and children of FTA workers	140	594	777	1,271	2,386			
Professional workers under NAFTA (TN)						19,806	23,904	26,987
Spouses and children of NAFTA workers (TD)						5,535	7,202	7,694

Source: U.S. Department of Justice, Immigration and Naturalization Service, *Statistical Yearbook*, various years.
 Note: Admissions under the FTA began January 1989 and ended December 31, 1993. Admissions under NAFTA began January 1, 1994.

Table 3
Flow of workers to Canada under the Canada-U.S. Free Trade Agreement and the North American Free Trade Agreement

	1989	1990	1991	1992	1993	1994	1995	1996	1997
	Canada-U.S. Free Trade Agreement					North American Free Trade Agreement			
Traders	26	29	20	14	9	12 (0)	9 (0)	6 (0)	6 (1)
Investors	31	41	41	59	28	22 (0)	33 (0)	17 (3)	26 (4)
Intracompany transferees	896	1,596	1,531	1,793	1,899	2,272 (11)	2,216 (18)	2,286 (31)	2,470 (40)
Professionals	1,807	3,284	3,966	5,173	6,245	7,339 (24)	7,629 (80)	9,055 (137)	10,800 (135)

Source: Unpublished Data provided by Citizenship and Immigration Canada.

Note: The numbers are based on employment authorizations. The numbers in parenthesis indicate those workers coming to Canada from Mexico.

Table 4
Flow of temporary workers to the
United States by admission category (other than TN)

Category	1989	1990	1991	1992	1993	1994	1995	1996
H1-B	6,267	5,758	5,742	4,633	3,346	3,527	3,431	4,192
Intracompany transferees	4,138	4,194	5,128	5,664	6,140	6,482	7,054	7,037
Temporary business visitors	19,839	17,438	15,777	1,5322	16,672	24,223	24,406	11,471
Treaty traders and investors	805	1,904	2,449	2,924	3,103	3,123	2,705	2,620

Source: U.S. Department of Justice, Immigration and Naturalization Service, *Statistical Yearbook*, various years.

The H1-B visa category is, perhaps, the closest substitute for the TN visa category, inasmuch as it primarily encompasses many of the professional worker classifications subsumed under the TN visa. In this regard, the absolute decline in the number of H1-B visas issued over the period 1989-96 is interesting, and suggests the possibility that the increase in TN visas came partly at the expense of H1-B visas reflecting the greater ease with which TN visas can be obtained.

The visa issued to treaty traders and investors covers two categories of individuals, as noted above. One category is investors wanting to manage a substantial personal investment in the United States. The other is traders who go to the United States to work with a company that conducts its primary business with the visa holder's country of origin. The duration of the visa is for one year with one-year extensions available. While the investor category of visa holder may not be particularly responsive to opportunities created by trade liberalisation, the trader category should be. The steady growth in the combined categories through 1994 followed by a decrease in the following two years is not obviously explicable by corresponding patterns of bilateral trade, although the pattern is not too dissimilar to that of intra-company transferees.

In summary, non-permanent immigrants using the TN visa status are becoming a growing share of the total pool of temporary Canadian immigrants to the United States. Based upon the available information, it is impossible to identify how much of the growth in the stock of TN visas is directly or indirectly ascribable to trade liberalisation; however, there are grounds for arguing that the TN visa has displaced the use of the H1-B visa to some extent. Hence, any net impact of the availability of the TN visa on temporary immigration patterns could be less than the growth in the number of outstanding TN visas might suggest.

In any event, the associated loss in human capital, even if all TN visa holders never returned to Canada, is arguably small in relation to the total stock of human capital in Canada.

Other Data

The relevance of the TN visa category as a determinant of Canadian net immigration to the United States might be inferred from other information. In this regard, the percentage of temporary Canadian immigrants in the United States who change their status to permanent residents might be of interest. A simple hypothesis here is that this percentage should have risen substantially if the primary motive of Canadian emigrants was to escape Canadian taxes and relatively low Canadian wages rather than assist in the North American economic integration process and then return to Canada.

Table 5
Percentage of non-immigrants from Canada changing status to permanent residents

Category	1989	1990	1991	1992	1993	1994	1995	1996
Exchange visitors	2.01	1.94	1.25	1.90	1.78	1.5	.88	2.24
Intracompany transferees	13.68	12.92	7.72	30.72	31.63	27.78	22.84	37.05
Temporary workers	4.89	5.30	6.20	13.32	13.37	9.28	7.74	11.59
Students	3.02	4.09	2.78	3.16	4.16	3.81	3.94	5.82
Visitors for business	0.23	0.37	0.46	0.31	0.37	0.30	0.26	0.62
Visitors for pleasure	24.50	20.54	11.21	14.92	21.22	24.35	24.20	31.63

Source: U.S. Department of Justice, Immigration and Naturalization Service, *Statistical Yearbook*, various years.

Table 5 reports this percentage for different categories of non-permanent Canadian immigrants in the United States. The table shows that the percentages increased in every category. In the case of intra-company transferees and temporary workers, the increase was quite substantial (in relative terms). Obviously, there are a number of reasons that Canadians might become permanent residents in the United States, having lived there for awhile, that are unrelated to expectations of higher after-tax real (pecuniary) income levels (e.g. they might form romantic attachments with U.S. residents). Nevertheless, the fact that the percentage is increasing for presumably skilled professional and managerial workers (e.g. intra-company transferees) is at least suggestive that the U.S. labour market is becoming increasingly attractive (all things considered) to more highly skilled Canadians.

A complementary piece of analysis that would seemingly be useful is to compare real after-tax income levels across similar occupations in Canada and the United States to see if any differences grew systematically larger or smaller over the 1990s, and then relate these differences to patterns of bilateral migration. This daunting task was not undertaken both because of the tremendous difficulties associated with creating a meaningful data set, as well as practical limitations of time and resources. The problems that would be encountered in trying to compare real disposable income levels for similar occupations in the two countries are suggested by attempts to compare effective tax rates at similar income levels, a seemingly more tractable task. While it is relatively straightforward to estimate differences in marginal tax rates, the real differences will depend upon precisely where in the United States and Canada it is assumed an individual will live. Moreover, and more importantly, the benefits from government expenditures should also be taken into account. The most important item here is medical insurance. In the United States, even middle-class individuals with pre-existing health conditions may find it onerously expensive to purchase health insurance outside of a group-rated (usually employer sponsored) system. The higher (private) costs of education in the United States may also be relevant to many Canadians. In short, an improved real income status is not necessarily assured for most Canadians who might contemplate permanent residence in the United States.

A more direct initiative to learn a bit more about the nature of Canadian migration to the United States took the form of two electronic mail surveys. One focused on companies located in Canada, the details of which are reported in Globerman and Devoretz (1998). A second focused on a sample of U.S.-based companies and was undertaken by the author specifically for this study. It should be emphasized that the samples were quite small and non-randomly chosen. Only a few questions were asked to keep the questionnaire from being a burden to respondents. In short, the results may not be generalizable. Hence, they are presented as a matter of additional interest for the reader.³⁰

Out of an original sample of 35 U.S. companies, 18 responded to an electronic mail questionnaire regarding their hiring of Canadians. More than half indicated that they made no special effort to recruit Canadians, and a majority indicated that they had no significant number of Canadian employees. Those who have hired Canadians have used the TN visa process because it is faster and involves less cost than other visa category applications. Given relocation costs, those companies hiring Canadians expect their period of employment to be indefinite.

The American employers were asked to identify the relative importance of a set of factors enabling them to recruit Canadian workers. Given the very small sample, especially for those responding to this particular question (12 companies), as well as the variation in responses, it is difficult to draw any reliable conclusions. Nevertheless, it might be worth reporting that no respondent indicated that higher Canadian taxes were a very important reason (in their opinion) for being able to recruit Canadians, while four reported that it was unimportant. Three respondents reported that higher U.S. salaries were a very important consideration while six others reported that it was important. Only one said it was not an important consideration. Six respondents said that better career opportunities in the United States were a very important reason, while five others said it was important. None of the respondents indicated that their Canadian employees were intra-company transferees, and only one cited better opportunities in the United States for education and training as being a very important factor.

The Canadian sample of respondents was somewhat smaller, i.e. 17 organizations. Less than a third of the organizations strongly indicated that they were losing more highly trained employees or doing more international intra-company transfers than in the past. Another third answered that there was a modest trend in this regard. Less than one-quarter reported that the employees lost represented permanent movers, and two of these respondents were universities. Other respondents indicated that employee moves to the United States were expected to be temporary. Slightly over half of the respondents suggested that the FTA and/or the NAFTA were a moderate or strong motivation to transfer workers temporarily to the United States. Since two respondents indicating that the FTA/NAFTA was not a moderate or strong motivation were universities, the commercial relevance of trade liberalisation as an influence on temporary migration is probably understated by this response.

The responding organizations clearly indicated that it was their youngest, most ambitious and better trained personnel that were moving, and that this group saw their movement as part of their "career development." Slightly over half of the respondents indicated that tax and/or income differentials were a strong motivation for permanent or temporary emigration to the United States (and, in two organizations, to Asia). Approximately one-third cited career development as a strong motivating factor, where the latter included promotion within the Canadian affiliate upon return to Canada.

In summary, both surveys support a view that the FTA/NAFTA visa provisions have facilitated the movement of temporary Canadian immigrants, and they also both suggest that much of this movement in the private sector is related to career development. Higher after-tax income is a relevant incentive for Canadians to migrate, although tax differences *per se* may not be a critical factor. Canadians returning to Canada can apparently look forward to faster promotions and higher incomes than if they had remained in Canada, an observation consistent with the notion that foreign work experience makes them more valuable to their Canadian employers. A percentage of Canadian immigrants seek sponsorship for permanent residence in the United States after emigrating there, although it is unclear whether they had this objective in mind when they left Canada.

SUMMARY AND POLICY IMPLICATIONS

The major political concern raised by the FTA (in Canada) and the NAFTA (primarily in the United States) was that massive net capital outflows would result in a substantial loss of jobs in the local economy. This concern was considered by most economists to be unrealistic given the historical propensity for trade to be intra-industry in nature. Likewise, the expectation of economists was that trade liberalisation would likely lead to increased bilateral (Canada-U.S.) direct investment flows as a result of increased production specialisation.

The Heckscher-Ohlin and factor price equalization theorems suggest that trade liberalisation should lead to increased trade following lines of comparative advantage, and that this increased trade would contribute to relative and absolute equalization of factor prices between the trading partners. This process, in turn, suggests that economic incentives for international migration should be mitigated by trade liberalisation; however, modern theories of the multinational corporation emphasize the role that international factor mobility plays in facilitating the capture of gains from trade. In this context, trade liberalisation, to the extent that it creates significant gains to trade (at the margin), could stimulate increased international labour mobility.

The extent to which North American trade liberalisation has affected migration flows is extremely difficult to identify. Certainly, the introduction of new visa arrangements for temporary workers under the FTA and the NAFTA has made it much easier and cheaper for skilled professionals and managers to migrate across national labour markets. Moreover, the data show a strong and consistent growth in temporary immigration tied to the new TN visa. It is much less clear whether this latter form of migration is directly associated with new production arrangements stimulated by trade liberalisation or whether it reflects the use of an "open gate" to arbitrage national differences in tax rates, living costs, salary scales and the like.

To the extent that temporary migration of skilled Canadians to the United States under the TN visa has been motivated by considerations such as facilitating long-term trade with the United States and/or acquiring skills that are more costly (or impossible) to obtain in the Canadian market, there is a strong *a priori* presumption that migration will be welfare-enhancing for the Canadian economy. The welfare consequences associated with some other potential motives for migration are less clear; however, it should not be concluded that they are necessarily unfavourable in the long-run.

My interpretation of the available data is that at least some portion of the increased temporary Canadian migration to the United States in the 1990s has been associated with adjustments occasioned by trade liberalisation. Other motives may also be at work. One is enhanced career development. To the extent that Canadians improve their productivity in the U.S. labour market and return to Canada with enhanced skills, there is again likely to be a net "spillover" benefit to the Canadian economy. Some survey evidence suggests that this motive may well be important in a substantial number of cases. Another motive frequently suggested as important in the press is the higher Canadian tax burden. In fact, the limited survey evidence downplays the importance of this motive.

It is not possible to draw strong or extensive policy implications from this study; however, several observations seem appropriate. One is that the net out-migration of Canadians under the NAFTA visa arrangements is not necessarily a problem for the Canadian economy. It could well be a long-term benefit. This consideration, plus the relatively small number of skilled Canadians who are (currently) migrating to

the United States, serves as a caution against elevating the temporary migration issue into a national economic emergency.

Along the same lines, while Canadian tax rates and the compression that characterizes the wage structure in many Canadian organizations may be harmful to domestic economic growth, public policy initiatives to change these characteristics are not necessarily recommended simply by the prevalence of net outward migration of skilled workers from Canada. Of course, if the policies in question have harmful long-run economic impacts on the Canadian economy, as I believe the high marginal tax rates in Canada do, they should be altered independently of whether the changes will discourage net out-migration, at the margin.

An interesting and open question is why private-sector organizations in Canada are not doing more to offer better career opportunities to their young and promising employees.³¹ An argument frequently heard is that Canadian companies cannot afford to pay highly skilled employees the same wages as their U.S. counterparts, since it will oblige the employer to increase wages of less productive employees, as well. If this is true, it represents a potentially serious rigidity in Canadian private sector labour markets and invites consideration of the associated causes. If it simply reflects the fact that individual Canadians have higher productivity levels when working for American companies, international migration is simply another manifestation of the international specialization of production.

NOTES

- 1 See, for example, Greenspon, 1998.
- 2 For one example of this argument in the context of evaluations of the NAFTA prior to its implementation, see Hufbauer and Schott, 1992.
- 3 The relevant literature is too extensive to summarize; however, the emphasis on capital investment flows is illustrated in various studies in Fry and Radebaugh (eds.), 1991, and Rugman (ed.), 1994.
- 4 Recent studies include Devoretz and Laryea, 1997, and Devoretz and Laryea, 1998.
- 5 Even Computible General Equilibrium (CGE) models are required to make numerous simplifications and assumptions. See, for example, Deardorff and Stern, 1991.
- 6 More technical treatments of the linkages between trade liberalisation and labour market outcomes can be found in most international economics textbooks.
- 7 The Heckscher-Ohlin model isolates the influence of relative factor input abundance on the distribution of comparative advantage across countries by assuming, among other things, similar demand and technological conditions in the various countries.
- 8 For a relatively simple proof of absolute factor-price equalization under these assumptions, see Salvatore, 1998, p.145.
- 9 The classical view of trade as a substitute for migration is set out in Mundell, 1957.
- 10 Recent empirical evidence is presented in Head and Ries, 1998.
- 11 For a seminal discussion of how independent agents can act opportunistically towards their trading partners after trading agreements are made, see Klein, Crawford and Alchian, 1978. There is an enormous literature concerned with defining transaction costs and identifying their relevance to the organization and behaviour of markets. For overviews of this literature, see Williamson, 1979 and 1985.
- 12 A description of the staffing by stages (or life-cycle staffing) process is provided in Franko, 1973. Obviously, to the extent that foreign direct investment abroad is a substitute for trade, overseas transfers of employees are indirectly also a substitute for trade; however, the empirical evidence suggests that foreign direct investment is (on net balance) complementary to trade (see Caves, 1996). Hence, the "exporting and importing" of human-capital intensive employees among MNE affiliates is also complementary to trade.
- 13 More realistically, Canada should be relatively human capital-intensive in some activities but not in others. For example, Canada has substantial human capital in transportation and telecommunications-related activities as evidenced by the international success of companies such as Bombardier and Northern Telecom. On the other hand, the United States is arguably absolutely (and relatively) more human capital abundant than Canada in activities such as computer software and pharmaceuticals.

- 14 The potentially complex nature of the relationship between FDI and trade is illustrated in Svensson, 1996.
- 15 There are also some studies focusing on the broader issue of whether increased immigration promotes increased trade, such as the previously cited one by Head and Ries, 1998; however, as noted earlier, this focus does not seem particularly relevant in the context of Canada-U.S. trade liberalisation.
- 16 The EC-6 refers to the six original member countries of the European Community.
- 17 See Globerman and Devoretz, 1998.
- 18 As shall be shown in a later section, most temporary migration in the post-FTA period has been from Canada to the United States. Hence, a focus on the U.S. visa procedures seems appropriate.
- 19 The effective criterion in this regard is that the wage paid to the non-permanent immigrant should be at or above the prevailing wage for the job in the geographical area.
- 20 Details of the B, E and L visas were taken from the web page of the Law Office of Joseph C. Grasmick (www.grasmick.com/prof.htm).
- 21 The interested reader might consult Globerman and Shapiro, 1998.
- 22 By way of illustration, U.S. exports to Canada (in current U.S. dollars) increased by around 80 percent over the period 1990-97, while United States imports from Canada increased by around 83 percent.
- 23 For a discussion of this evidence, see Gould, 1998.
- 24 The TC visa was the temporary visa introduced by the FTA. It was replaced by the TN visa when NAFTA was implemented. For convenience, we will henceforth refer to either the TC or TN visa as a TN visa.
- 25 This loss may or may not be offset by transfers and gifts made by the immigrant to home country relatives and institutions (e.g. the immigrant's alma mater) with wealth accumulated in the host country. The phenomenon of income repatriation by immigrants moving from one developed country to another has not, to my knowledge, been well-studied.
- 26 The winding-down and ultimate cessation of the Viet Nam war is also a factor reducing permanent immigration of Americans in the late 1970s and onwards.
- 27 The source of these estimates is Devoretz, 1998.
- 28 My understanding is that the data for temporary migration of Canadians to the United States under the TC/TN visa arrangement represents total border crossings and not total distinct individuals that crossed. Since the average number of crossings per immigrant is unknown, the data in Table 2 are, at best, indirect approximations of the actual number of individual TC/TN immigrants; however, there is no a priori reason to believe that the average number of crossings per immigrant (or per spouse and family) increased over the time period shown. Hence, the growth in the series shown in Table 2 is arguably a reasonable indicator of the growth in the number of distinct temporary TC/TN immigrants.

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- 29 It was not possible to confirm the precise number of Americans entering Canada under the FTA/NAFTA temporary worker visa arrangements.
 - 30 Details about how companies were chosen and contacted, the design of the questionnaire and the samples of respondents can be obtained from the author upon request.
 - 31 Public sector organizations such as universities are seriously hamstrung by tenure and related institutional restrictions on differentiating reward systems based on performance.

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