# Trade Liberalization and Inequality in Canada in the 1990s

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## INTRODUCTION

The period following World War II saw an increasing trend towards the removal of trade barriers among a growing number of countries. In its initial phase at least, even pre-dating the war, this trend was aimed at reversing the results of the backlash against an initial wave of "globalization" which took place in the late 1800s and early 1900s. This backlash had taken the form of almost three decades of inward-looking immigration and trade policies, contributing to the global economic devastation of the 1930s.

Canadian governments were at the forefront of this post-war gradual opening up of borders. Beginning in the late 1930s, they entered into a large number of multilateral, regional and bilateral agreements that gave effect to rules of ever greater sophistication concerning the rights and obligations of states towards foreign traders, goods, services or investments. It can be said that this trend reached a pinnacle in the late 1980s and the 1990s, when three key agreements involving Canada were implemented, along with numerous smaller ones. The three were the Canada-US Free Trade Agreement (FTA, signed in 1987, implemented in 1989), the North American Free Trade Agreement (NAFTA, 1992 and 1994) and the series of documents resulting in 1994 from the Uruguay Round of multilateral negotiations which created the World Trade Organization (WTO).

The question I have been asked to answer in this article is what contribution these and other recent exercises in trade liberalization have made to social progress. As is clear from the other articles in this volume, the question of what constitutes social progress is a very complex one. The number of possible indicators that can be used to gauge social progress comprise real income levels and trends, the distribution of this income, the occurrence of poverty, population health, literacy, the quality of the environment, social integration and cohesion and gender equity. As Lars Osberg notes in his article in this volume, these and other indicators of social progress can be strongly dependent on each other. The implication is that by affecting even one of these indicators, trade liberalization could affect many others.

We know that there is currently some political unease both about the idea of liberalization and about the version of it which has been embedded in specific trade agreements. Analytically, the notion of free trade and the form it takes in actual trade agreements are very much separable. One can agree with the ideal yet disagree with the form under which "free trade agreements" actually provide for liberalized trade — not least because in many cases they retain barriers that seem to skew the expected idealized results, particularly for countries with relatively modest commercial clout like Canada. These differences can be very important, and also imply that trade agreements must be examined on a case-by-case basis.



Nevertheless, all *freer* trade agreements worthy of the name provide for some increased access to foreign products, at a minimum via tariff reductions on goods. It is the effects of this form of trade liberalization, particularly its plausible impact on the Canadian labour market in the 1990s, which will occupy the bulk of this article. However, I will also point to some other important features of specific trade agreements, as they interact with the effects of lower tariffs.

I will attempt to determine the impact of trade liberalization by, first, quickly surveying the linkages between trade and "factor prices," such as wages. I will then examine some existing facts and studies assessing the Canadian experience with trade liberalization, before conducting my own assessment of Canada's trade-liberalizing policies, mainly by dividing Canadian industries into groups according to their sensitivity and response to these policies. I will draw a comparative picture of workers in these groups according to key characteristics, and follow each group's relative employment and wage performance through the 1990s. In a final substantive section, I will attempt to link differences in characteristics and outcomes among the various groups to the available theory and evidence on trade liberalization, and to what we know about the evolution of the global, North American and Canadian labour markets in the 1990s.

## LINKS BETWEEN TRADE LIBERALIZATION AND SOCIAL PROGRESS

Trade allows each region to specialize in the type of production for which its resources, skills or capital (dubbed "factors of production") are relatively better suited, and to exchange this production against imports. Thus freer trade makes a greater amount of goods and services available for a given amount of resources or effort expended. This allows a better fulfilment of societal needs and wants on average. In addition, increased global competition forces domestic firms to look for additional or new sources of efficiency gains — thereby generally helping to raise standards of living through a less wasteful use of resources (see, for example, Baldwin and Caves 1997).

These effects form the traditional basis of support for trade liberalization. There is a large body of evidence for the normally positive impacts of more open trade on average standards of living, including for those at the bottom of the economic scale (for a recent study, see Dollar and Kraay 2000, who survey countries experiencing a wide range of economic circumstances). In Canada's case, two

respected economists, Peter Dungan and Steven Murphy note (1999, p. ii) that since exports have consistently yielded above-average productivity and returns to labour, the sharp rise in Canadian exports since the 1960s has helped lift Canadian productivity and returns to labour overall and liberalized trade has spurred many Canadian exports beyond the traditional resource-based industries of lore (Schwanen 1993).

Nevertheless, the actual and perceived effects of more open trade on an array of social variables can play an even greater role, in its acceptance or rejection by countries, than the benefits in terms of average incomes. It is well established theoretically and empirically that opening an economy to trade will affect different types of "factors of production" differently, depending on the relative abundance or scarcity of these factors in the economies of the trading partners. Easier trade will tend to equalize the price of these factors across countries, because bringing together hitherto separate markets for products will implicitly combine their markets for factors of production as well. One such factor is of course labour, which will be affected differently from holders of various forms of physical or financial capital. Within labour itself, the impact may differ sharply across various skill levels. Thus, as well as the overall level of economic activity, trade can affect income distribution, a relevant indicator of social progress.

The key point is that trade liberalization will likely affect groups differently, because protection from foreign competition usually benefits some groups in society whereas others would benefit from more open trade. It should be emphasized that the group or groups most vulnerable to liberalization need not be the same across countries or, within a country, across all points in time. Indeed, in traditional models of trade liberalization, the result of factor-price equalization is that if one group — say, unskilled workers — loses in one country, it is because their counterparts in other countries benefit.

Factor-price equalization is not only the result of easier trade across borders: it can occur through the migration of factors themselves, whether people or capital. Indeed, some trade agreements such as the FTA and NAFTA promote factor-price equalization in a more direct way than through trade. They enable certain types of workers in high demand to move more easily across borders, facilitating the movement of factors of production themselves. This can substitute for the cross-border trade that would have been taking place had the factors been immobile.



A historical perspective on these phenomena is instructive. When many European countries became more open to agricultural imports in the late 1800s and early 1900s, hitherto heavily protected landowners suffered, along with agricultural workers. But workers in the emerging urban industrial sectors benefited substantially from a rise in their standard of living due to cheaper food, and there was a consequent overall reduction in inequalities. Subsequently, however, many agricultural workers, and others in countries that had remained closed to agricultural imports, emigrated from Europe to the United States and Canada. This movement served to sharply reduce wages in North America in relation to the returns on capital, a situation that, politically, favoured a gradual retreat from open immigration policies (Williamson 1998). That story involves elements of technological change, trade liberal-

ization and mass migration, all leading to the convergence of factor prices across continents.

The impact of trade goes beyond that of making factor prices converge across countries, however. A large body of literature shows that trade can also move the relative earnings of different factors similarly across countries which liberalize, even when liberalization occurs between countries with the same factor endowments (e.g., proportion of skilled vs. unskilled labour) and access to technology. This last point is of central interest to modern inquiries into the impact of trade, because over 50 percent of world trade occurs between advanced industrial economies. Indeed, in general, differences in factor endowments, which in traditional models would be driving trade, explain only a small part of actual global trade (underestimating it between rich countries, overestimating it between rich and poor countries), a fact which economists refer to as a case of "missing trade" (Helpman 1999).



Other than factor-price equalization, then, the literature points to two key links between trade and factor prices: scale and innovation. In a recent paper, Antweiler and Trefler (2000) show that taking scale economies into account explains a significant part of the "missing trade." This is because differences in the scale of industries across countries mean that there will be differences across countries in factors required per unit of output (or, linking backwards, scale economies will influence the amount of trade, given factor abundance). They also show that for at least a third of the 27 manufacturing industries they examine, larger output is associated with a sharp rise in the demand for high school graduates relative to high school dropouts, a result which is consistent with those of a number of industry-level studies. Thus, more trade leading to bigger scale can lead to an increase in the relative demand for skilled labour. A complementary explanation is that suggested by Dinopoulos and Segerstrom (1999). In their self-described "North-North trade explanation for increasing wage inequality," they show that, by increasing the relative returns to innovation, open trade even between structurally similar countries (in terms of factor availability) will reduce the relative wages of unskilled workers.

Finally, Zhu (2000) shows that, in a context where one economy, "North," is driven by product innovation and another, "South," specializes in less skill-intensive goods, North will constantly specialize in the production of "new" goods. "New" goods use relatively more skills than "old" goods, the production of which is constantly transferred to South. But these ongoing moves decrease the relative demand for unskilled labour in North while increasing demand for skilled labour in South, thus exacerbating inequalities in both countries. Far from simply adding to the factor-price equalization model, in which at least the decline in relative wages for unskilled workers in North would be accompanied by a rise for similar workers in South, this analysis challenges the model's basic relevance.

In this context, it is also instructive to find that trade agreements can seek to directly influence relative factor prices across all the countries to which they apply, by strengthening the position of the owners of one or another type of factors. For example, the three agreements cited above have increased the length of protection for pharmaceutical patents and intellectual property rights gen-

erally. This does not have much to do with trade liberalization per se, but rather concerns what are the fair "terms of trade" — that is, the price and conditions at which transactions between exporters and importers of intellectual capital will take place. This type of development can certainly have positive effects overall by encouraging research and development and creative endeavours in general. But it is obvious from the models presented by Dinopoulos and Segerstrom (1999) and Zhou (2000) that it can also have an impact on the relative benefits that different groups of individuals within countries can expect from particular trade agreements.

I will return to these models below when examining the links between the impact of Canadian trade liberalization and recent labour-market developments. For now, I will turn to a description of Canada's recent trade-liberalizing experience.

## THE CANADIAN EXPERIENCE OF TRADE LIBERALIZATION IN THE 1990s

At the end of the 1980s, effective Canadian tariff rates against US goods, which have traditionally served to shield domestic manufacturers from foreign competition, averaged some 8 percent against goods imported from the United States and 15 percent against goods imported from other countries (Trefler 2000, p. 12). Due to the staged liberalization scheduled under all three key agreements mentioned here, customs tariffs on the vast majority of items were eliminated on trade between Canada and the United States, and are gradually heading to zero on trade with Mexico under the terms of the NAFTA. And under the WTO and predecessor agreements, further tariff reductions have been taking place between Canada and virtually all other countries. These include countries such as China which are not members of the WTO but on which Canada chooses to bestow Most-Favoured-Nation tariff treatment (that is, treatment at least as good as those countries would get if they were WTO members). Even by 1995, when the new WTO deal was only beginning to bite, Canada's effective tariffs against non-US imports had fallen to less than 10 percent.



Some goods-producing sectors, however, remain significantly protected by tariffs and other barriers. This is the case for certain agricultural and cultural products, for many types of public procurement contracts, and, implicitly, for the industries affected by frequent anti-dumping and countervailing duty actions.

Although in fact much effort was expended in negotiating more open trade in services, the extent to which trade agreements have directly affected services industries is less clear-cut. In the FTA, services liberalization was in most cases prospective only, affecting measures that Canada or the United States might take in the future, with most existing barriers being spared. In the NAFTA, many services sectors and large swaths of policy areas involving public services were excluded from trade-liberalizing rules. And in those services sectors where specific trade liberalization rules were agreed to under the WTO, such as telecommunications and financial services, many countries including Canada were in any event undertaking reforms which were compatible with, but separate from, the rules agreed to in trade

agreements as such. As these reforms were taking place while or even before the trade agreements took effect, it is hard to distinguish between the two sources of change.

This particular difficulty of distinguishing the impact of trade liberalization in services from other influences explains why many studies of trade liberalization focus on the manufacturing sector. This is both useful and problematic. It is useful because the manufacturing sector clearly bore the brunt of trade liberalizing policies, in particular the removal of tariffs. It is problematic because the services sector cannot have remained unaffected, even by the liberalization of merchandise trade only.



For example, the result of one prominent modelling exercise, completed before the FTA came into force, suggested that, although no job gain in manufacturing would result from the agreement, the latter would improve productivity (output per worker) in manufacturing (Economic Council of Canada 1988). This, in turn, would lead to rising real incomes and support a greater number of services jobs. Furthermore, the large increase in trade flows during the 1990s must have had an impact on services that are used in the production and trade of manufactures, such as transportation or warehousing services. Finally, trade in services would have been facilitated by various provisions of trade agreements that strengthen the protection of foreign investors and of intellectual property and facilitate the movement of business and technical personnel, particularly between Canada and the United States.

Thus, it is no surprise that, as we will see presently, trade-related restructuring in the 1990s did occur across Canadian services industries as well as in manufacturing.

## Trade and Industrial Restructuring

According to a detailed survey recently conducted in late 1998 by the Bank of Canada, covering some 140 firms representative of Canada's industrial structure (Kwan 2000), 87 percent of Canadian firms were engaged in some form of restructuring in the 1990s. This compares to 36 percent that had engaged in restructuring in the 1980s (the survey defines restructuring as "a fundamental change in the way firms conduct their operations.")

The survey asked firms to give their reasons for restructuring and the type of restructuring in which they had engaged. I have rearranged the responses in order to distinguish between those having some plausible link to trade liberalization and the others (see Table 1). With respect to the reasons for restructuring, I have separated those involving trans-border considerations from the others. With respect to the type of restructuring undertaken, I have separated the responses that had a clear geographical component to them (e.g. "expanded outside Canada") from those that seemed independent of location.

The extent of formal trade liberalization in the 1990s is obviously captured here by the emergence of trade agreements among the reasons given for restructuring. However, in manufacturing, the share of responses pinpointing other cross-border factors (such as greater US competition) actually fell in the 1990s, so that all trans-border considerations together accounted for about half of the reasons for restructuring in both decades. One possible interpretation of this unchanged ratio is the role played by the Canadian dollar in

**TABLE 1**
Reasons for and Type of Restructuring in Canadian Industry

| Share of All Responses Given (%) | Goods | | Services | |
|---|---|---|---|---|
| | 1980s | 1990s | 1980s | 1990s |
| **Reasons for Restructuring** | | | | |
| Trade agreements | 0 | 12 | 0 | 3 |
| Other trans-border considerations (e.g., greater foreign competition) | 48 | 38 | 14 | 25 |
| Other considerations (e.g., new technology, regulation) | 52 | 50 | 86 | 72 |
| **Total** | **100** | **100** | **100** | **100** |
| **Type of Restructuring** | | | | |
| Geographical: Positive (e.g., expand Canadian operations) | 33 | 20 | 28 | 16 |
| Geographical: Negative (e.g., relocate functions o/s Canada) | 17 | 25 | 16 | 17 |
| Non-geographical (e.g., new technology, larger size) | 50 | 55 | 56 | 67 |
| **Total** | **100** | **100** | **100** | **100** |

**Source:** Kwan (2000) and author's calculations.



lessening the relative importance of competition from US manufacturers in the 1990s. Another is that, for at least some manufacturers, free trade agreements put a more identifiable face on US competition that was already felt for other reasons. In contrast, for services firms, there was a noticeable increase (from 14 to 25 percent) in the share of cross-border considerations (both trade agreements and increased US competition and the like) reported as reasons for restructuring.

A final note about the table: In both manufacturing and services, there was practically no increase in the share of responses indicating a move abroad as a response to restructuring. In contrast, there was a noticeable drop in the share of respondents indicating that restructuring took the form of expansion in the Canadian market. Instead of expansion, restructuring increasingly took the form of introducing new technologies or other changes to existing Canadian operations. How this is to be interpreted is unclear, as the survey captures only firms with existing Canadian operations — it does not include firms that went out of business or left Canada at some point during the two decades. Nevertheless, it suggests that there was an increased reluctance to expand in Canada in the 1990s which was general — that is, not specifically related to cross-border competitiveness, and possibly more related to the poor economic growth performance that pervaded much of the period.

This overall picture of industrial restructuring will help put in perspective the following more detailed assessment of the plausible effects of trade liberalization on labour markets.

## Recent Canadian Studies

It can fairly be said that studies of the actual impact of trade liberalization in Canada in the 1990s have been sparse and have tended to focus on the bilateral Canada-US agreement. All of these studies duly note that trade liberalization meant serious adjustments in some industries, implying that a number of Canadians experienced some negative impacts from the agreements.

Two recent studies of particular note are those of Daniel Trefler (2000) and Eugene Beaulieu (2000). Both studies are of interest in a discussion of the possible social impact of trade liberalization in that they estimate its differential impact on two groups: "production" workers (those directly involved in the manufacturing process) and "non-production" workers (management, sales, clerical and research personnel, among others). This is a crude breakdown, to be sure, but still of interest, as individuals in the latter group earn, on average, considerably more than those in the former.



Trefler finds that a quarter of the decline in Canadian manufacturing employment between 1989 and 1996 was due to the effects of the FTA. The benefits, as he puts it, are that Canada increased its efficiency in the sectors which were previously most protected and reallocated resources from inefficient to efficient sectors — that is, productivity (output per resources) also increased as a result of trade liberalization. It should be noted that the period examined by Trefler was one of actual decline in manufacturing employment, which has since reverted back to near its pre-1989 levels. Indeed, Trefler suggests that the employment losses as a result of liberalization are temporary whereas the gains in productivity are permanent. Thus resources are gradually reallocated from less efficient to more efficient sectors. This explanation is consistent with the suggestions of other studies that free trade will lead to a shift, rather than an overall decline, in manufacturing unemployment.

Trefler also finds that the earnings of production workers in the sectors most affected by trade liberalization, and even in manufacturing as a whole, rose as a result of the FTA tariff cuts. In contrast, he discerns no impact on earnings of non-production workers. He concludes that these cuts "minimally mitigated rising earnings equality" (2000, p. iii). His results, not uncharacteristically, are based on a highly disaggregated (213 industries) and carefully constructed database of the manufacturing sector. Nevertheless, any conclusion from this work that inequalities have been reduced as a result of the gains of a (very broad) class of production workers may be premature. In part, this is because Trefler's estimates incorporate the combined effect of Canada-US liberalization, without distinguishing between sectors particularly vulnerable to imports and those having benefited from freer exports.

Indeed, using a 19-industry breakdown of the manufacturing sector, Beaulieu (2000) estimates that the negative employment impact of Canadian tariff reductions in Canada's manufacturing sector was borne almost entirely by production workers, while being felt little by non-production workers. He explains this result by noting that the most protected industries before the tariff cut were indeed intensive in the use of production workers. He further notes that this result is consistent with the fact that less-skilled voters in Canada opposed the FTA, whereas skilled voters tended to support it.

## EMPLOYMENT AND EARNINGS IN CANADA ACCORDING TO TRADE SENSITIVITY

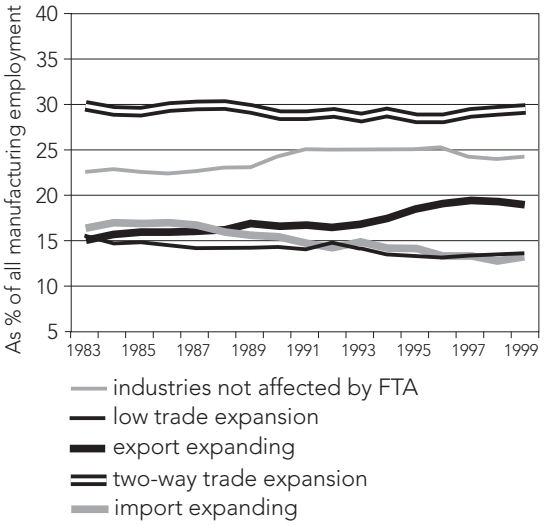
In this section, I extend a procedure which I found useful in an earlier exercise (Schwanen 1997). It consists of dividing manufacturing industries into five groups according to their degree of sensitivity to trade liberalization. This allows for a comparison of certain key characteristics and labour-market outcomes for workers within the different groups. I have similarly divided services-producing industries into three groups according to sensitivity to trade.

Two aspects of this classification should be emphasized. First, these groups are mutually exclusive — each industry is assigned to one group only, so there is no overlap between the groups. Second, the groups add up to the total of all manufacturing and of all services industries (excluding the public service and social services), allowing for a complete picture of developments within these two broad sectors. The emphasis on relative performance within the sectors is justified by the fact that whatever the impact of trade liberalization on overall income levels, its effects must always be traceable through its differential impact on various sectors. Furthermore, an approach that compares different groups of industries allows us to say something about the plausible links between trade and various social variables and trends describing or affecting workers in these industries. And finally, since the period under consideration — 1988 through 1999 — includes a cyclical peak, a recession, a recovery, and an expansion, a look at how industry groups have fared relative to each other allows us to abstract in a basic fashion from these cyclical factors affecting the overall economy.

Sensitivity to trade liberalization was defined differently for manufacturing and for services. For manufacturing industries, the degree of sensitivity to liberalization was determined first by whether or not the Canadian and US import tariffs had been eliminated specifically as result of the FTA. It is assumed here that industries already liberalized before the FTA, along with a handful of industries that remain protected to this day, did not see their competitive conditions radically change as a result of trade liberalization in the 1990s.[1] Here I call this group the "non-affected" industries. Of course, these industries likely experienced some indirect impacts from liberalization — for example, a reduction in the cost of inputs. Nevertheless, many of them were already characterized by free trade across a range of inputs as well, such as automobiles and parts or aircraft and parts. Thus they form a "control group" in relation to all the other industries that directly experienced liberalization during the decade.

The liberalized industries were separated into four groups, according to whether they were characterized by a large expansion in exports, imports or two-way trade, or by slow growth in trade between Canada and the region with which trade was being liberalized (United States, Mexico or non-NAFTA countries). A "large" expansion implies that trade in that industry has accelerated relative to a pre-liberalization period, and that it is growing faster than trade for the same industry with other regions with which Canadian trade was not concurrently being liberalized. The industries thus classified are listed in appendix table A1.

**CHART 1**
Manufacturing Employment by Sensitivity to Liberalization






Here again, one must be careful in interpreting the meaning of the classification I am using. Industries experiencing little growth in trade may nevertheless have experienced significant pressures — through prices, for example — necessitating a major restructuring just to stay competitive. However, price changes are unlikely to take place without significant increases in imports, so it is possible to describe the trade-induced competitive pressures faced by various sectors in terms of more or less rapid increases in trade flows. This approach also inspired the study from which the procedure I use here was originally derived (Bednarzik 1993).

Services industries were simply ranked according to sensitivity of employment in these industries to trade generally (se appendix table A2). "Trade-sensitive" employment in an industry was calculated as the average of the number of jobs in that industry that are directly or indirectly dependent on all Canadian exports, and of the number of jobs the industry would notionally have if all Canadian imports were replaced by domestic production. These numbers were derived from Dungan and Murphy (1999, Tables A.3A and A.5A), who used Canada's 1992 input-output matrix for their calculations. It would be possible to classify services industries according to whether they were themselves liberalized by trade agreements. However, such an exercise does not yield a discernible pattern for the liberalized and non-liberalized groupings that might be suggestive of a direct impact of the agreements on trade in services (Schwanen 1997). It seems more useful to consider what impact the large increase in trade as a whole, which we know took place following liberalization, may have had on services industries in Canada.

After classifying the industries in this way, I then chart the evolution of total employment and earnings for workers in these various groups, relative to the manufacturing and services industry averages, respectively. The data come from the Survey of Employment, Earnings and Hours — which also dictated the list of manufacturing industries considered here. One limitation, therefore, is that the self-employed are not included in the following analysis. Let us now look at the results for employment and earnings trends among the various manufacturing and services groupings.

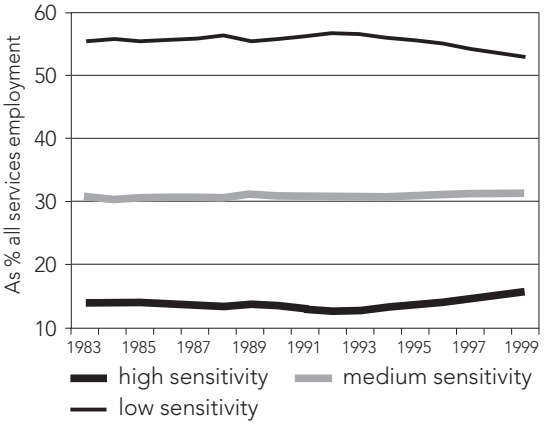
## Employment

It is unlikely that the liberalization begun under the FTA had a negative effect on Canadian employment as a whole (Fortin, 1999). But its differential impact across industries could still hold potentially different consequences between one group of individuals and another.

Chart 1 describes trends in manufacturing employment, divided among the five industry groups described above. It depicts quite contrasting experiences in terms of employment growth. Initially, the relative "winners" in terms of employment performance were those sectors that were not directly subject to new waves of trade liberalization in the 1990s. After 1992, employment in those liberalized sectors characterized by increasing exports also began to outperform employment in the average manufacturing industry. In liberalized sectors that experienced a surge in imports, employment was already, in the mid-1980s, dropping relative to the rest of manufacturing, a trend perhaps influenced by firms in these sectors anticipating the effects of the agreement. But it dropped even more markedly after the FTA came into effect in 1989. Another group which experienced a decline in its share of manufacturing employment was the one composed of sectors for which neither exports nor imports rose markedly. This could mean that these industries attempted to fight imports by cutting labour costs. This interpretation certainly does not mesh with the fact that the relative reduction for this group began well after the entry into force of the FTA, although it is more consistent with the fact that earnings in this group deteriorated quickly in the late 1980s and early 1990s. But in many instances — fish products, shipbuilding, petroleum refineries, cement, asbestos come to mind — these industries were facing crises or pressures to restructure that were not induced by 1990s trade liberalization per se.

Turning to employment in services (Chart 2), the rise in the share of employment in trade-sensitive industries after 1992 is

**CHART 2**
Services Employment According to Trade Sensitivity





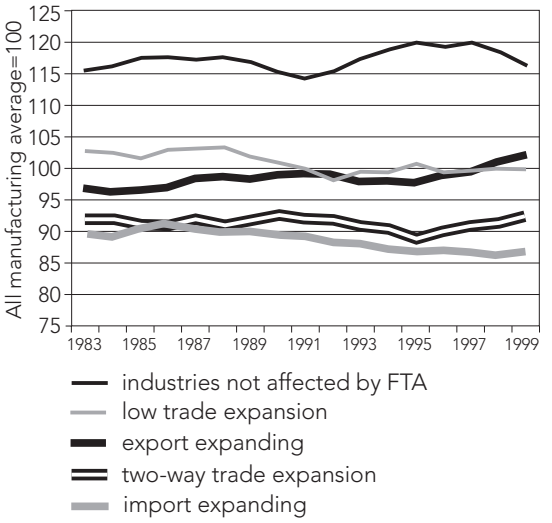

remarkable when compared to its stability in the 1980s and to the stability of the somewhat less trade-sensitive groups. The similarly remarkable decline among the group least sensitive to trade reflects a number of key factors, including cutbacks in publicly funded services such as health care. It is far more likely that these cuts were due to other factors and policies affecting the economy than to forces related to trade liberalization.

## Earnings

A key variable allowing us to evaluate the impact of trade liberalization is the earnings of those affected. Chart 3 depict the evolution of average weekly earnings (including overtime pay) for the five manufacturing-industry groups.[2]

Here again, some patterns are quite stark. The relative earnings of workers in industries not affected in the 1990s (i.e. mostly already free) exhibited some gyrations but no trend over the period. However, earnings of those in export-expanding industries rose significantly and steadily after 1993, roughly the period when employment in

**CHART 3**
Manufacturing Earnings by Sensitivity to Liberalization





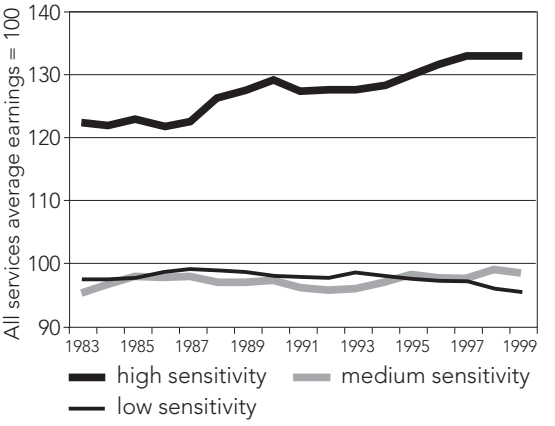

these industries also rose, reaching considerably beyond their pre-FTA average. In contrast, workers in industries characterized by a strong import surge, whose earnings were already below the average for the manufacturing sector, experienced a further, more marked, decline following trade liberalization in the late 1980s to mid-1990s, relative to average manufacturing earnings, and became the lowest-paid group in manufacturing. The chart does suggest that a bottom may have been found for workers in these industries around 1995. Workers in which exports expanded along with imports fared relatively well by comparison.

Earnings in the three services groups also exhibit sharply divergent trends, as they do with respect to employment (see Chart 4). Trade-sensitive services, already the most highly paid services group, exhibit a huge gain of 8 percentage points relative to the earnings of other services workers (and indeed relative to aggregate earnings in all Canadian industries). Earnings of workers in services with medium trade sensitivity also rose somewhat during the period. Earnings in the least trade-sensitive sectors (by far the largest group) were in contrast relatively compressed.

## Summary

Employment and earnings patterns in the 1990s seem to have favoured workers in export-oriented manufacturing industries, while those in industries with rapidly growing imports were hit relatively hard. Workers in industries characterized by two-way trade expansion do not seem to have suffered relatively in aggregate, at least in comparisons of the latest data with pre-FTA data. Earnings patterns appear to be positively correlated with employment patterns in both export-expanding and import-expanding industries, suggesting both that lower wages are not sufficient to make Canada competitive against imports and that high wages are not a deterrent to good economic performance on the export front. It also seems that many industries declined for reasons other than those related to trade, a finding that appears to match the results of the Bank of Canada survey on restructuring.

**CHART 4**
Services Earnings According to Trade Sensitivity



## WHO WAS AFFECTED BY TRADE-INDUCED RESTRUCTURING?

Given the differences in the labour-market outcomes (earnings and employment) among workers in various industry groups according to trade sensitivity, it would be useful to determine whether these groups can also be distinguished by the type of workers they employ. Such a finding could signal that trade liberalization affected workers differently not only according to the industry in which they worked, but also according to the characteristics of the workers themselves. While the former might not indicate a problem as long as those employed in "losing" industries are willing and able to move into "winning" industries, the latter might be problematic from the viewpoint of re-employment or the maintenance of income for those affected by trade liberalization.

For this purpose, I have estimated the composition of workers in the various industry groups according to three variables, educational achievement, gender and age, for 1986, the year of the last Canadian census before the FTA. These data are shown in tables 2, 3 and 4 respectively.

### Educational Achievement

Table 2 presents a summary profile of Canadian workers in the five manufacturing groups and three services groups according to educational achievement.

The data suggest that industries which have fared the worst under trade liberalization in terms of both employment and earnings were those which, a few years before the FTA, most intensively employed workers with a high school education or less. This is consistent with the findings of Dungan and Murphy (1999, p. 68), that import competition in the Canadian market in recent years has increasingly affected lower-skilled workers. Their results also show that export-related employment in Canada has evolved, over the decades, towards industries employing more highly educated workers. Of note is the educational composition of services industries grouped according to sensitivity to trade. Both the most and least trade-sensitive industries employed a remarkably high proportion of university graduates, mirrored by a remarkably low proportion of people with high school only. The explanation for this is straightforward — the trade-sensitive group

**TABLE 2**
Composition of Employees According to Educational Attainment: 1986

| % of All Workers | High School or Less | Post-Secondary | Some University and More |
|---|---|---|---|
| Manufacturing: | | | |
| Not affected by FTA | 65 | 27 | 8 |
| Slow trade expansion | 68 | 24 | 8 |
| Export-expanding | 62 | 29 | 10 |
| Import-expanding | 72 | 21 | 8 |
| Both expanding | 67 | 24 | 9 |
| *Average Manufacturing:* | 67 | 25 | 8 |
| Services: | | | |
| High trade sensitivity | 52 | 26 | 22 |
| Medium trade sensitivity | 66 | 23 | 11 |
| Low trade sensitivity | 51 | 26 | 23 |
| *Average Services:* | 56 | 25 | 19 |

**Note:** Dungan and Murphy's (1999) table based on COPS data uses a 106-industry breakdown, which necessitated allocation of some of these educational achievement data among more than one of the 115 industries (81 manufacturing and 34 services) reported on elsewhere in this study.

**Source:** Canadian Occupational Projection System data reported in Dungan and Murphy (1999) and author's calculations.

**TABLE 3**
Gender Composition of Employees: 1986

| % of All Workers | Male | Female |
|---|---|---|
| Manufacturing: | | |
| Not affected by FTA | 81 | 19 |
| Slow trade expansion | 72 | 28 |
| Export-expanding | 73 | 27 |
| Import-expanding | 55 | 45 |
| Both expanding | 69 | 31 |
| *Average manufacturing:* | 71 | 29 |
| Services: | | |
| High trade sensitivity | 68 | 32 |
| Medium trade sensitivity | 52 | 48 |
| Low trade sensitivity | 41 | 59 |
| *Average services:* | 48 | 52 |

Source: Canadian Occupational Projection System data reported in Dungan and Murphy (1999) and author's calculations.



includes a bevy of highly sophisticated professional services, while the non-sensitive group includes education and health services. Nevertheless, it is a potentially important observation in light of findings in both Canada and the United States that education and experience explain only part of the widening earnings differential. The observation here suggests that the returns to education, at least, can very much depend on whether an employee works in an industry that benefits from increased trade.

### Gender and Age

The data from Table 3 also show a possible link between gender and exposure to the benefits of freer trade. In manufacturing, the industries that were already (mostly) free of barriers had the highest proportion of male employees. In contrast, those industries most exposed to imports had, at the outset, the highest proportion of female employees (owing to their relatively high concentration in clothing and in miscellaneous electronic products manufacturing). In services, the highest male/female ratio is seen in highly trade-sensitive industries and the lowest in the least trade-sensitive ones.

The age composition of all manufacturing groups and of services with a high trade sensitivity is very similar, at least when only three broad age groups are compared, as in Table 4. Within services, however, a noticeable difference exists between highly trade-sensitive industries, in which the age distribution is comparable to that of manufacturing as a whole, and others, which clearly employ a higher proportion of youth.

I will now turn to the question of how these observations, based on the varying sensitivity to trade, link with overall developments in the labour market.

## LINKS TO OVERALL GLOBAL AND CANADIAN LABOUR-MARKET DEVELOPMENTS

Many but not all advanced economies experienced rising inequalities among wage earners, in particular males in their prime earning years, since the 1980s. In turn, market-driven increased earnings inequality among men contributed in an important way to rising income inequality among households, although this was not the only factor.[3] The extent of increased inequality has varied considerably across countries, rising most in the United States and the United Kingdom and least in Scandinavia and Germany. In turn, these variations can in many cases be linked to differences between countries in the supply of skilled workers — i.e. with more supply leading to less inequality between

highly skilled and less-skilled workers. But institutions also matter, and inequality seems to be influenced by the extent of unionization and the existence of centralized wage-setting institutions (Gottschalk and Smeeding 1997).

In the United States, the increased dispersion of earnings can be explained in part by the sharp rise in the "college premium," the difference in earnings between college graduates and high school graduates or high school dropouts. There was also an increase in the returns to "experience" — the difference between average and entry-level earnings. Given that the relative earnings of highly educated and experienced workers has risen in spite of the increasing abundance of these workers in the United States, many observers have concluded that there had been a shift in demand toward skilled workers, and away from those less skilled.[4] The same can be concluded from the situation in Canada, where earnings of highly educated workers have not fallen in spite of the large increase in their supply (Riddell and Sweetman, 2000), particularly women (Beaudry and Green, 2000). Furthermore, an increase in the return to experience has also been observed in Canada (Heisz, Jackson and Picot in this volume). And it actually took a typical worker more education and more experience to get a job in the 1990s than in the 1980s (Picot and Heisz 2000).

This being said, however, much of the rise in inequality in the United States is a result of increases in earnings inequality even for workers *within* given categories of skills and experience ("observationally equivalent workers") (Acemoglu 2000). The same is true for Canada (see, again, Heisz, Jackson and Picot in this volume).

**TABLE 4**
Age Composition of Employees: 1986

| % of All Workers | 15-24 Years | 25-54 Years | 55 Years and Over |
|---|---|---|---|
| Manufacturing: | | | |
| Not affected by FTA | 15 | 73 | 12 |
| Slow trade expansion | 17 | 72 | 11 |
| Export-expanding | 19 | 71 | 10 |
| Import-expanding | 17 | 71 | 12 |
| Both expanding | 19 | 70 | 11 |
| *Average Manufacturing:* | 18 | 71 | 11 |
| Services: | | | |
| High trade sensitivity | 16 | 73 | 11 |
| Medium trade sensitivity | 28 | 63 | 9 |
| Low trade sensitivity | 22 | 67 | 11 |
| *Average Services:* | 23 | 67 | 10 |

Source: Canadian Occupational Projection System data reported in Dungan and Murphy (1999) and author's calculations.

Other major labour market developments in the 1990s in Canada were growth in self-employment, which is not well explained, and a decline in youth workforce participation and employment, which is associated with an increased tendency to stay in school (Picot et al. 2000). While continued growth in the number of employed women relative to men limited the variation in earnings dispersion overall, differentials widened between high and low earners and between older and younger workers, particularly among men (Beaudry and Green 2000). Indeed, by following separate cohorts of individuals up to 1993, Beaudry and Green were able to show that young men with only a high-school education experienced an acute deterioration in terms of access to employment in general and full-year, full-time jobs in particular. Considering a decline in job market outcomes even for older generations of high school-educated men — but not so old that

the decline can be attributed to early retirement — the authors note that prospects for the next generation of men with only a high school education look very bleak. And, they point out (p. 75), this is not even the least-skilled group of labour-market entrants.

In sum, apart from the obvious importance of cyclical factors, the theme of the past decade regarding labour-market outcomes in advanced economies seems to be increased inequalities accompanied by increased premiums for skilled and/or experienced workers. However, the premiums fail to entirely explain the inequalities. While each country's unique experience depends on changes in its supply of skilled workers and its labour-market institutions, some factors that potentially drive inequalities on the demand side — including trade and technological change — can be expected to function similarly across all advanced countries.



Having very quickly summarized the facts, I now turn to the question of whether trade has likely contributed to inequality trends in advanced economies.

## Has Freer Trade Resulted in Inequalities?

Many observers have put the emphasis on "skill-biased technological change" as a major reason for increases in earnings inequality. This explanation tends to downplay the role of trade as a cause of inequalities. After all, skill levels have increased across all industries, regardless of their trade orientation (Lawrence 1996, p.58). There is a rather emphatic conclusion in the literature that freer trade with developing countries accounts for only a fraction, perhaps 10 to 20 percent, of the rise in inequality actually observed in advanced economies (Slaughter and Swagel 1997; Blanchflower 2000). Furthermore, trade with developing countries explains almost nothing of the overall wage stagnation that has afflicted U.S. workers on average for most of the past two decades. Lawrence (1996) points out that if trade with low-wage countries had been the culprit, a shift would have been observed away from worker income and towards corporate income. Such a shift did occur, but it was small in the 1980s and within the bounds of normal cyclical variation. Indeed, from the perspective of business owners, real wages (in terms of what prices the goods and services produced by workers will fetch) actually rose much more than they did from the workers' point of view (using the consumer price index). This discrepancy is due mainly to the fact that the price of capital goods (produced by workers, but mostly not consumed by them) fell, while the price of housing (consumed by workers, but mostly not produced by them in the present) rose.

Nevertheless, as Acemoglu (2000) among others notes, skilled-biased technological change falls short in some important respects of providing an explanation of the facts. It does not explain why there has been an increase in wage dispersion even *within* skills groups. Furthermore, he notes, even though skills-driven technological change would be expected to result in increased inequalities between skills groups, "it is difficult to see how sustained technological change can be associated with an extended period of falling wages of low-skill workers and stagnant average wages" (p. 7).

Acemoglu suggests that the role of trade in fostering inequalities can be under-

estimated, given the impact of trade itself on the choice of technology. And as we saw earlier, more open trade can foster the drive toward skill-biased scale and innovation. Indeed, an emphasis on the links between trade, scale and innovation is needed to make theory consistent with the observed facts, including that much trade is conducted between "rich" countries, rather than with countries characterized by relatively abundant low-wage, unskilled labour.

The observations about stagnant wages overall and increased inequalities within groups of observationally equivalent workers have also led a number of authors to focus on declines in the real minimum wage (in the United States) and in unionization rates (observed in Canada as well) as a cause for the drop in wages among the low-skilled. In turn, these developments may not be independent of trade liberalization. Bronfenbrenner (2000) provides considerable evidence that the ability of firms to move internationally — something that recent trade agreements facilitate — resulted in severely restricted union activity in the 1990s, even though employers rarely, in fact, followed through on threats to move. On the other hand, Lawrence's observation about the fairly stable business shares of income leads him to conclude that the power of unions to influence income distribution toward workers could not have been weakened very significantly during trade liberalization, albeit his results predate the NAFTA.

Amidst the various possible links between trade and wage inequality, it is therefore entirely possible that the role of more open trade as an indirect source of growing wage inequality has been underestimated.

## Industry Trade Sensitivity and Canadian Labour-Market Outcomes

Can the comparison attempted above, of data on employment, earnings and worker characteristics and wages by industry grouped according to sensitivity to trade liberalization, help explain the overall job-market picture just sketched? The data suggest, in a fairly straightforward way, that trade is a plausible explanation for some of the increased inequality. In the manufacturing sector, industries exposed to imports, where workers were already earning less than average, fared worst, while export-oriented industries, where earnings were above average, did best. Earnings also fared badly in import-sensitive industries, although they did not perform any better in industries with no great sensitivity to trade, as measured by changes in trade flows.



Similarly, the data suggest that workers in trade-oriented services industries also gained during the trade-liberalizing 1990s, in terms of both employment and earnings, in contrast to workers in less trade-sensitive industries. Again, the winners seem to have been those in industries that were already enjoying above-average earnings at the beginning of the period.

The evidence suggests that, in manufacturing, the most negative impact of trade liberalization occurred in industries employing workers with lower-than-average levels of education. They also employed relatively more women. The services industries that tended to be most exposed to and to benefit from trade liberalization employed a higher proportion of men and a lower proportion of youth compared to other services industries. Furthermore, they employed a lower proportion of workers with a high school education or less than the economy as a whole.

In general, these observations suggest that some of the increased inequalities observed both between and within observationally equivalent groups may very much depend on differences in economic trends between industries, some of which are related to trade. In the "prime age men's world" of trade-oriented manufacturing and services industries, employees in many industries have experienced a favourable outcome, while others whose trade stagnated have also seen reduced employment and a relative drop in earnings. In the services sector, those least affected by trade liberalization fared relatively worse than others, albeit not for trade-related reasons. These sectors employed a relatively high proportion of youth. They also employed a high proportion of highly-educated individuals, who fared worse than individuals with similar levels of education in trade-oriented industries.



The evidence suggests that increased trade has rewarded the more skilled and experienced workers relative to others. For workers negatively affected by this trend — those with no more than a high-school education — it is fair to conclude from the work of Beaudry and Green (2000) that the outlook is bleak. Therefore, while trade openness has benefited Canadians in general, it may well have done so at the cost of increased inequality, which impacts social progress overall.

## CONCLUSION

The social impacts of trade liberalization not only are complex but, because of a number of key variables, differ across countries and points in time. These key variables include: endowment in resources, technology and human capital; the mix of policies in place at the time trade is being liberalized; and whether the industries affected exhibit economies of scale and compete on the basis of product differentiation and innovation. The social impact of trade liberation will depend as well on the structure of a variety of social institutions, including those underpinning labour relations.

To the extent that expanded trade opportunities favour skill-biased change, trade may plausibly be said to have contributed to the inequality trends in Canada. There is some evidence that the workers hurt by trade liberalization were among the lowest-paid in manufacturing and had relatively low levels of education, and that the "winners" were people who were already doing well before trade liberalization. Open trade may help to explain some of the observed increases not only between age and skills groups, but within group inequalities as well, a major piece of the overall earnings inequality puzzle. This being said, the result on this score is not contrary to what was expected of trade liberalization beforehand. Furthermore, Canada has invested heavily in education and training; by expanding opportunities for "winners" among the educated and highly skilled class of individuals, trade allows Canada to reap the benefits of its intellectual investment. Nevertheless, it appears that expanded trade also creates conditions that warrant a closer look at existing strategies concerning training and inequality.

## NOTES

1 No information was collected on other foreign tariffs for this article.

2 Earnings by industry were weighted by their 1988 employment weight throughout the period.

3 Other, much smaller, contributing factors include changes in taxes and transfers and the increased correlation between the earnings of spouses.

4 Lawrence (1996, p. 35) makes the same point about the relative increase in women's earnings in spite of a rapid increase in female labour force participation.

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**TABLE A1**

Manufacturing Industries by Sensitivity to Trade Liberalization

(With 1988 Number of Employees in Thousands and Share of Total for Each Group)

| | |
|---|---|
| **Mostly Not Affected by the FTA (459.6: 23%)** | |
| Dairy products | Sawmill, planing shingle mills products |
| Pulp and paper | Publishing |
| Combined publishing and printing | Iron foundries |
| Nonferrous metal smelting and refining | Agricultural implements |
| Aircraft and aircraft parts | Motor vehicle |
| Motor vehicle parts and accessories | Agricultural chemical |
| **Liberalized but Slow Trade Expansion (284.7: 14%)** | |
| Meat & poultry products | Fish products |
| Flour, cereal & feed | Tobacco products |
| Leather & allied products | Other metal rolling, casting and extruding |
| Fabricated structural metal products | Wire & wire products |
| Other metal fabricating | Shipbuilding and repair |
| Electrical industrial equipment | Cement |
| Concrete products | Ready-mix concrete |
| Glass and glass products | Non-metallic mineral products n.e.c. |
| Refined petroleum products | Industrial chemicals n.e.c. |
| **Mostly Export-Expanding (324.2: 17%)** | |
| Vegetable oil mills (exc. corn oil) | Sugar and sugar confectionery |
| Rubber products | Plastic products |
| Other furniture & fixtures | Paper boxes and bags |
| Other converted paper products | Platemaking, typesetting & bindery |
| Aluminum rolling, casting, extruding | Heating equipment |
| Machine shops | Commercial refrig. & air conditioning equip. |
| Other machinery & equipment | Boatbuilding & repair |
| Office, store & business machines | Other petroleum & coal products |
| Plastic & synthetic resin | Pharmaceutical and medicine |
| **Import-Expanding (318.7: 16%)** | |
| Beverages | Clothing |
| Asphalt roofing | Commercial printing |
| Primary steel | Steel pipes & tubes |
| Copper and alloy rolling, casting, extruding | Electrical and electronic products n.e.c. |
| **Both Import- and Export-Expanding (595.6: 30%)** | |
| Fruit and vegetable | Flour, cereal & feed |
| Bakery products | Other food products |
| Primary textiles | Textile products |
| Sash, doors & other millwork | Wood n.e.c. |
| Household furniture | Office furniture |
| Power boilers and heat exchangers | Ornamental & architectural metal products |
| Stamped, pressed & coated metal products | Hardware, tools & cutlery |
| Truck & bus bodies & trailers | Railroad rolling stock |
| Major appliances | Communications & other electronic equip. |
| Paint & varnish | Toilet preparations |
| Soap & cleaning compounds | Other chemical products |
| Other manufacturing | |

**TABLE A2**
Service Industries According to Trade Sensitivity
(with 1988 Number of Employees in Thousands and Share of Total for Each Group)

| Industry | Trade-Sensitive Employment as % of Total |
|---|---|
| **High-Sensitivity Group (946.6: 13%)** | |
| Other transport and services to transport | 69.5 |
| Storage and warehousing | 50.4 |
| Water transport and related services | 44.1 |
| Other business services | 42.9 |
| Professional business services | 41.6 |
| Advertising services | 41.1 |
| Taxicab | 39.9 |
| Truck transport | 39.5 |
| Railway transport and related services | 33.9 |
| Pipeline transport | 33.3 |
| Air transport and incidental services | 29.9 |
| **Medium-Sensitivity Group (2188.1: 31%)** | |
| Other utility not elsewhere classified | 27.0 |
| Wholesale trade | 26.2 |
| Accommodation and food services 2 | 4.6 |
| Miscellaneous services | 23.5 |
| Motion picture and video | 23.1 |
| Photographers | 22.6 |
| Electric power systems | 20.1 |
| Insurance | 15.9 |
| Telecommunications carriers and others | 15.2 |
| Broadcasting | 14.6 |
| Banks, credit unions and other depository institutions | 14.4 |
| Gas distribution systems | 14.3 |
| **Low-Sensitivity Group (4038.3: 56%)** | |
| Trust, other finance and real estate | 13.5 |
| Other amusement and recreational services | 12.5 |
| Postal services | 12.1 |
| Interurban and rural transit systems | 11.7 |
| Laundries and cleaners | 8.4 |
| Retail trade | 6.3 |
| Urban transit system | 3.9 |
| Educational services | 0.4 |
| Other personal services | 0.3 |
| Hospitals | 0.3 |
| Other health services | 0.1 |