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# **The Offshoring Strategies of US Multinational Corporations Operating in Canada**

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## *The Offshoring Strategies of U.S. Multinational Corporations Operating in Canada*

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### **ABSTRACT**

USING CONFIDENTIAL DATA on 1300 U.S.-based multinational corporations (MNCs), we examine whether MNCs that moved jobs out of Canada between 1983 and 2003 systematically moved the jobs elsewhere within the MNC. We also look at whether trends in the movement of jobs within MNCs differ for manufacturing and service industries. We find no evidence of systematic offshoring of Canadian jobs by U.S. MNCs: those that increase (shrink) employment in Canada tend to exhibit the same pattern elsewhere within the firm. We do find, however, that the sectors with the fastest job growth by U.S. MNCs in Canada are those with the lowest median real wages. Similarly, we find that the *relative* importance of U.S. MNCs' Canadian operations seems to decline over the 20-year time window. U.S. MNC employment in Canada, relative to employment in other foreign countries, drops from 27.6 percent of total foreign employment in 1983–1985 to 21.6 percent in 2001–2003. This change in relative employment does not appear to be the result of job cuts in Canada but of U.S. MNCs' choosing to grow—including high-paying jobs—in countries other than Canada.

## INTRODUCTION

THE PAST DECADE has witnessed significant growth in offshoring and outsourcing by firms operating in Canada. In 2004, a PricewaterhouseCoopers (PWC) study warned that at least 75 000 Canadian IT jobs would move offshore or be repatriated to the United States by 2010 due to a rising Canadian dollar, higher overall tax rates and the erosion of Canada's technological advantages (Scott, Ticoll and Garner 2004). A particularly interesting feature of Canadian offshore outsourcing is the large share of total output in the Canadian economy, particularly in the manufacturing sector, that is owned by foreign firms. This share has risen during the past two decades from 44 percent in 1987 to 52 percent in 1999 (Baldwin and Gu 2005).<sup>1</sup> Thus, an investigation of offshoring or outsourcing activities in Canada should take account of the significant foreign ownership in the Canadian economy. Foreign ownership implies that offshoring and outsourcing decisions in Canada may often be decisions about movements of activities within multinational firms. Similarly, foreign firms that have self-selected to locate in Canada may have very different decision processes from "domestic" Canadian firms regarding relocating out of Canada.

In this research, we study the offshoring decisions of U.S. MNCs with operations in Canada.<sup>2</sup> We examine the movement of activities within multinational firms ("offshoring") rather than activities that are contracted to outside providers ("offshore outsourcing"). Our research addresses two broad questions. First, is there evidence that activities moved out of Canada by U.S. MNCs are systematically repatriated within the MNC back to the United States? Second, is there evidence that activities moved out of Canada by U.S. MNCs are systematically moved within the MNC to other countries? We examine trends from 1983–2003 in the movement of activities within approximately 1300 U.S. MNCs with operations in Canada, and we investigate whether the trends differ for Canadian operations differ in manufacturing as opposed to service industries. We define an activity as a three-digit industry.

We look at changes in Canadian, U.S. and foreign (within-MNC) employment and wages as indicators of the movement of activities. This approach has several obvious advantages and disadvantages. A key advantage of our approach is the ability to detect movement of activities within firms and the ability, albeit imperfect, to explore what happens to activities that are moved out of Canada. A clear limitation of our approach is that, if we see that an activity has moved out of Canada, we can see only whether it has moved elsewhere within the firm ("offshoring" as opposed to "outsourcing"). We cannot measure the proportion of changes in activities that have been outsourced to other

foreign or domestic providers. Thus, some of the observed movement in activities in Canada and elsewhere within the MNC reflects changes due to decisions other than offshoring, for example, in technology (e.g. substitution of capital for labour) or “outsourcing.”

It is nevertheless particularly interesting, for several reasons, to look at movements of activities within MNCs. First, there are significant informational costs of outsourcing, especially for firms with no experience operating in particular foreign markets such as India. To the extent that an MNC has existing operations in foreign markets, it may be easier to move activities within the firm. And, as mentioned above, due to the very large share of Canadian output owned by foreign firms, much of the movement of activities out of Canada will be undertaken by MNCs and may occur within MNCs.

The data set used in this paper is from the Benchmark and Annual Surveys of U.S. Direct Investment Abroad from the U.S. Bureau of Economic Analysis (BEA). In this research, we use enterprise-level panel data that include detailed information on the population of U.S.-based MNCs and their foreign affiliates from 1983–2003. The detailed microdata enable us to examine the association between changes in employment and wages in U.S. MNCs’ Canadian operations and changes elsewhere within the MNC (in the same three-digit sector), such as operations in the United States and in other foreign (non-Canadian) locations. As we detail in the data section, we remove estimated data from the population. While this tends to improve the reliability of the annual employment data, it also tends to skew the sample toward the large MNC parents and affiliates that report data.

We find no evidence that MNCs that move jobs out of Canada in particular sectors move the jobs elsewhere within the firm. Indeed, MNCs that reduce (increase) Canadian jobs in particular sectors typically reduce (increase) jobs in these sectors in their U.S. and other foreign operations.

This result holds in both manufacturing and service industries and for U.S. and (non-Canadian) foreign operations. This finding would seem to be “good news” for Canada in the sense that MNCs — firms that may be best positioned to relocate activities out of Canada — do not appear to be systematically doing so.

However, we do find some potentially troubling signs for the Canadian economy during the 1983–2003 time period. First, as shown in Figure 1, although job creation in Canada has outpaced job creation by U.S. MNCs in the United States — most notably in service industries — the sectors with the greatest job growth in Canada are those with the lowest median real wages (as shown in Figure 2).

**FIGURE 1**

**CANADIAN TO U.S. EMPLOYMENT AND CANADIAN/U.S. DOLLAR PPP EXCHANGE RATE**

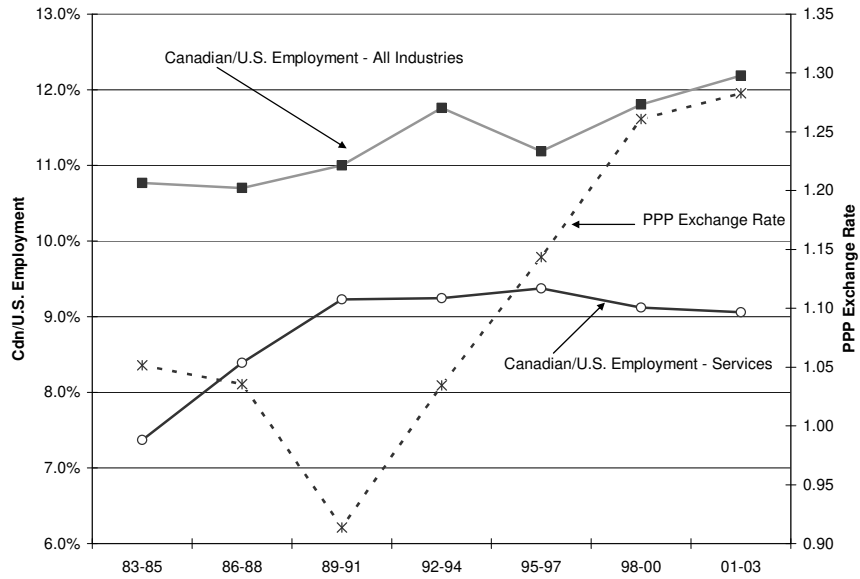


Figure 1 shows growth in Canadian-to-U.S.-parent employment across all industries and in service industries, defined as industries with SIC codes between 590 and 900.

**FIGURE 2**  
**MEDIAN WAGE (EMPLOYEE COMPENSATION/NUMBER OF EMPLOYEES) BY DECILES OF CANADIAN AFFILIATE EMPLOYMENT CHANGE (% ANNUAL)**

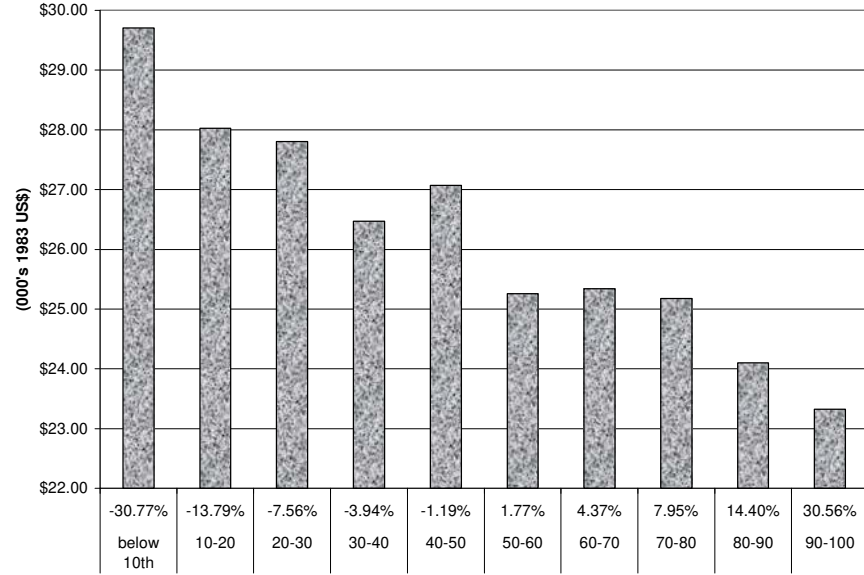


Figure 2 reports median levels of Canadian real wages in 1983 U.S. dollars, grouped by deciles of annual percentage growth in affiliate employment. The numbers above the decile ranges are the medians of affiliate employment growth (% change) in the given decile.

From a policy standpoint, we see two potential areas of concern. First, the real wages and employment growth of Canadian affiliates are extremely sensitive to Canadian/U.S. exchange rate movements over the time window. Relative to the foreign (non-Canadian) subsidiaries of U.S. MNCs, the real wages of Canadian subsidiaries decrease from 146 percent in 1983–1985 to 103 percent in 2001–2003. Second, U.S. MNCs’ employment in Canada is growing much more slowly than in other countries (excluding the United States). Specifically, U.S. MNC employment in Canada relative to employment in other foreign countries drops from 27.6 percent of total foreign employment in 1983–1985 to 21.6 percent in 2001–2003. This change in relative employment does not appear to be the result of job cuts in Canada but of U.S. MNCs’ choosing to grow — including high-paying jobs — in countries other than Canada. From a policy standpoint, this raises concerns whether

the faster foreign job growth indicates a potential strategic reorientation of U.S. MNCs toward regions other than North America.

The remainder of this paper is organized as follows. In the next section, we discuss the BEA data and the sample we constructed in this research. In the following section, we examine the association between changes in Canadian real wages and employment and similar changes in U.S. MNC parents. We then investigate the relationship between changes in employment and wages in U.S. MNCs' Canadian operations relative to their other foreign affiliates in the same industry. The last section discusses planned extensions to the current draft of this research and concludes the paper.

## DATA

AS MENTIONED ABOVE, the data in this study were obtained from the U.S. Department of Commerce's Benchmark and Annual Surveys of U.S. Direct Investment Abroad, administered by the Bureau of Economic Analysis (BEA). These surveys are the most comprehensive micropanel data available on the activities of multinational firms.

For this study, we use the BEA data at several different levels of aggregation. First, we use data on U.S. MNC parents at the enterprise level. Second, we use enterprise-level data on Canadian affiliates, which we aggregate up to the three-digit industry<sup>3</sup> level for each U.S. parent.<sup>4</sup> Third, we use data on other foreign affiliates of the same MNC parent as the focal Canadian affiliate. Since we are interested in changes in same-industry activities, we aggregate data on other (non-Canadian) foreign affiliates by parent-industry-year and keep only the data on composite "foreign" affiliates with the same parent in the same industry as the Canadian affiliates.

In the time period used in this study (1983–2003), there are approximately 3000 U.S. MNC parents with usable Canadian affiliate data.<sup>5</sup> These 3000 parents map onto approximately 40 000 affiliate-year observations. As discussed in detail in our other work (Feinberg and Keane 2001, 2006), the BEA data contain both reported and estimated observations. In general, larger parents and affiliates tend to have a greater proportion of reported-to-total observations. We use only reported data on Canadian affiliates. This screen reduces the number of parents to 1575 and the number of affiliate-year observations to approximately 16 000. Our final screens involved dropping affiliates with fewer than 10 employees (approximately the bottom percentile) and those with missing compensation, industry or parent data.

To examine changes in activity within MNCs, we use reported data on other foreign MNC affiliates (of the same U.S. parent) in the same industry as the Canadian affiliate. Since the BEA's definition of "affiliate" corresponds roughly with the business-unit level, most

affiliates report data in only one industry. For example, 85 percent of all Canadian affiliates sell at least 75 percent of their total sales in one industry. We therefore use the primary industry of affiliates to reflect “activities.”

To obtain comparison data for other foreign affiliates within the same MNC, we aggregate reported employment and wage data for all affiliates of U.S. MNC parents and subtract the Canadian data from this sum. Approximately 20 percent of the (reported) total MNC affiliate employment data is Canadian affiliate data. After eliminating these observations and using only foreign affiliate observations that paired with *reported* Canadian affiliate data, we were left with roughly 8500 affiliate-year observations on 1900 affiliates in the Canadian and “other foreign affiliate” comparison data set.<sup>6</sup>

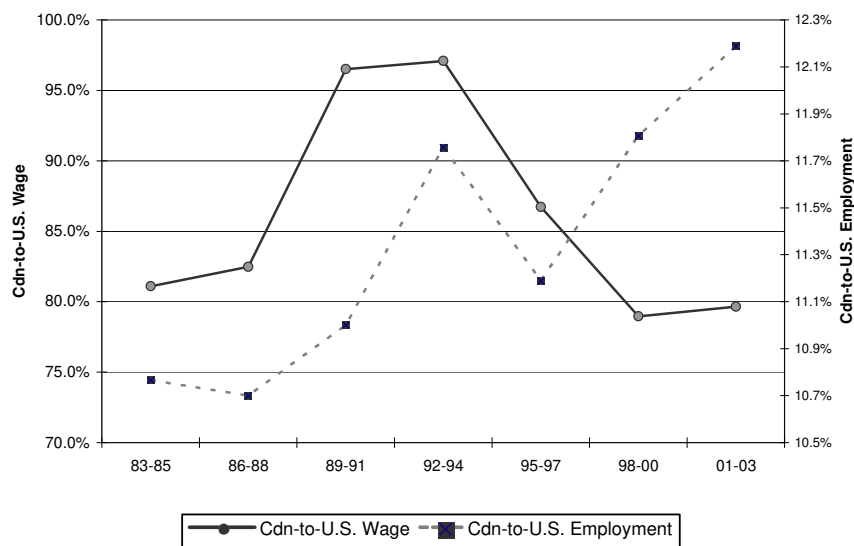
Since affiliates in the BEA data set report data at the business-unit level, it is straightforward to obtain sales, compensation and wage data for single industry entities. This is somewhat more difficult with regard to U.S. parents, since these report consolidated input data. To give some insight into U.S. parents’ diversification, the median parent sells 96 percent of total sales in a single industry. At the 25th percentile of single-industry/total sales, parents sell 73 percent of total sales in a single industry.<sup>7</sup> In the BEA data, parents report annual sales in up to eight industries, but unfortunately other data such as employment and costs are not similarly disaggregated. Early in this project, we examined the feasibility of matching BEA data to Compustat data on U.S. parents at the business-segment level. However, as segment reporting is voluntary and not enough parents reported usable data, using this data source was not deemed worthwhile. We therefore used the BEA data on U.S. parents and used the primary industry of the parent as a measure of “activity.” Although there is clearly some loss of precision, we believed this was the best option. Similar to matching affiliates with each other by industry, we use reported parent employment and compensation data and keep the parents that are in the same primary industry as Canadian affiliates with reported data. The Canadian affiliate–U.S. parent data set has approximately 7500 affiliate-year observations on 1180 U.S. MNC parent–Canadian affiliate pairs.



## OFFSHORING IN NORTH AMERICA: WAGES AND EMPLOYMENT IN CANADIAN AFFILIATES AND U.S. PARENTS

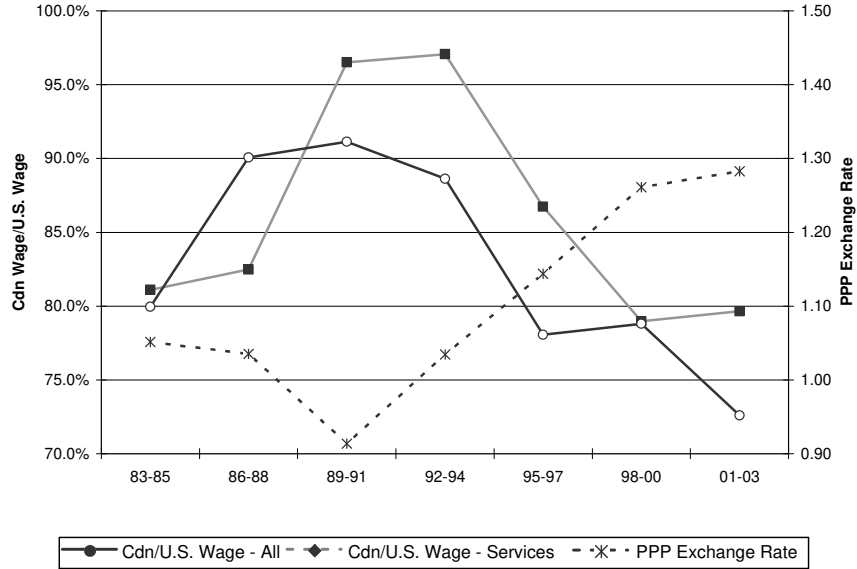
THE PERIOD 1983–2003 saw considerable changes in the distribution of U.S. MNCs’ jobs and wages in the United States and Canada. As shown in Figure 3, Canadian employment as a percent of U.S. parent employment increases from 10.8 percent to 12.2 percent over the sample window, but Canadian real wages (defined as total employee compensation divided by employment) as a percent of U.S. parent real wages drop from a high of close to parity to approximately 80 percent.

**FIGURE 3**  
**CANADIAN-TO-U.S. EMPLOYMENT AND WAGES (EMPLOYEE COMPENSATION/EMPLOYMENT), SAME-INDUSTRY PARENTS AND AFFILIATES**



Not surprisingly, the large drop in relative real Canadian wages is tied closely to real exchange rate movements, since the BEA data is reported in U.S. dollars. However, this dollar decline in relative real wages is most pronounced in service industries, as shown in Figure 4. Although Canadian affiliates' real wages across all industries increase by 30 percent from 1983–2003 (and U.S. parents' real wages increase by 32 percent), the gap between parent and affiliate wages narrows in manufacturing industries and widens in service industries. By the 2001–2003 period, Canadian service wages are only 67 percent of service sector wages for U.S. parents while manufacturing wages of Canadian affiliates are approximately 85 percent of their U.S. parents' wages. (See Figures A-1 and A-2.)

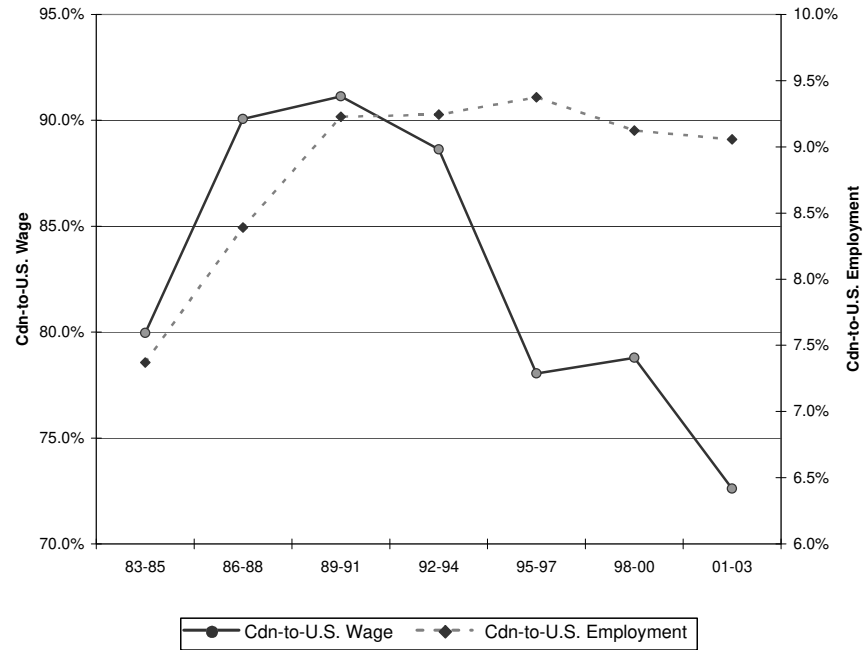
**FIGURE 4**  
**CANADIAN-TO-U.S. WAGES AND PPP EXCHANGE RATES, SAME-INDUSTRY U.S. PARENTS AND CANADIAN AFFILIATES, ALL INDUSTRIES AND SERVICES ONLY**



Although job growth in the Canada service sector outpaced U.S. job growth (Canadian affiliate employment increased from 7.4 percent to 9.1 percent of U.S. parent employment in services), Canadian affiliate wages in services declined sharply relative to those in the United States (see Figure 5). This can also be seen in Figure A-1. Indeed, Canadian affiliate wages in services decreased in real terms at the median from the 1992–1994 to the 2001–2003 period. This may not be surprising given the almost 40 percent drop in the Canadian PPP exchange rate during this period. However, in real terms, Canadian manufacturing wages increased significantly during the same time period, as can be seen in Figure A-2.

**FIGURE 5**

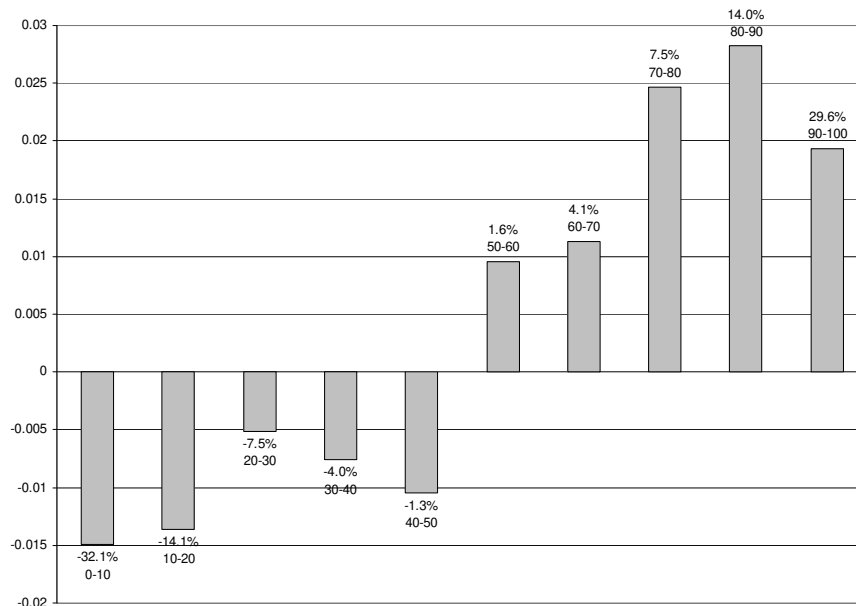
**CANADIAN TO U.S. WAGE AND EMPLOYMENT IN SERVICE INDUSTRIES, SAME-INDUSTRY U.S. PARENTS AND CANADIAN AFFILIATES**



We next look at the question whether there is systematic change in job growth, in the same or opposite direction, in Canadian affiliates and their U.S. parents. In other words, if we find that U.S. parents grow while their same-industry Canadian affiliates shrink, this would suggest that activities were being moved out of Canada and repatriated to the United States. We investigate this question by looking at median parent (affiliate) job growth by the deciles of affiliate (parent) job growth. We measure job growth as the annual percentage change in employment from  $(t-1)$  to  $t$  for parents and affiliates. All measures are calculated at the parent and affiliate levels using the micro data. We removed approximately 10 percent of observations at the 5th and 95th percentiles, and we conditioned the deciles on non-zero year-to-year job growth.<sup>8</sup> Parent (affiliate) job growth measured at the deciles of affiliate (parent) job growth are shown in Figures 6 and 7.

**FIGURE 6**

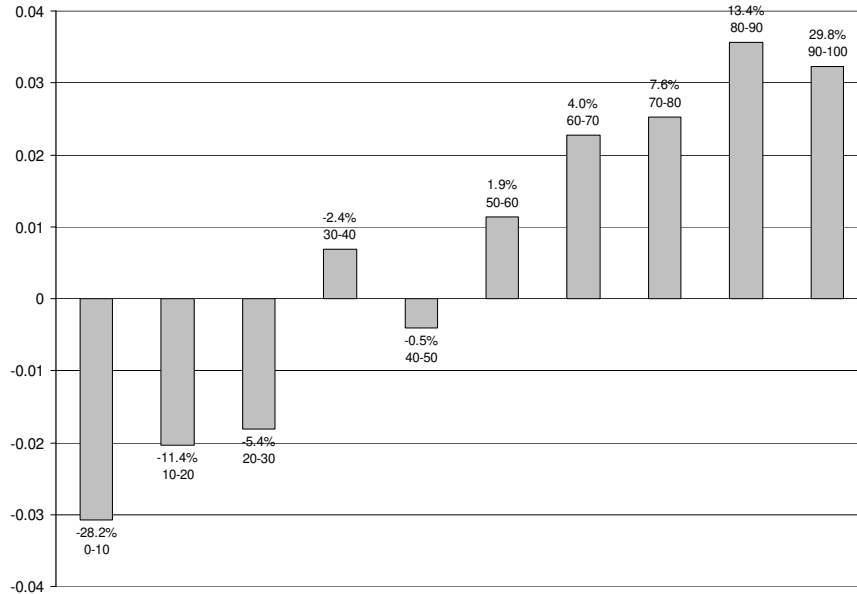
**PERCENTAGE EMPLOYMENT GROWTH IN U.S. MNC PARENTS BY DECILES OF SAME-INDUSTRY CANADIAN AFFILIATE EMPLOYMENT GROWTH, 1983–2003**



In Figure 6, the numbers along the X-axis are the decile medians for affiliate job growth. The vertical bars give the values of U.S. parent job growth for each decile of affiliate job growth. Clearly, when affiliates are losing jobs, their U.S. parents are also losing jobs, and when affiliates are gaining jobs, their same-industry parents are also growing. If jobs were systematically being moved out of Canada into the United States, we would expect to see large positive growth in the employment of U.S. parents whose Canadian affiliates are losing jobs or at least are in smaller deciles of job growth. No such pattern is evident here. A similar pattern for changes in affiliate employment by deciles of U.S. parent job growth is shown in Figure 7.

**FIGURE 7**

**PERCENTAGE EMPLOYMENT GROWTH IN CANADIAN AFFILIATES BY DECILES OF SAME-INDUSTRY U.S. PARENT EMPLOYMENT GROWTH, 1983-2003**



These charts look very much alike. The scale is larger in Figure 7, reflecting the closer relationship between affiliate growth and parent growth but in both cases, growing Canadian affiliates have growing U.S. parents and vice versa.

In the Appendix, we provide further detail on the growth of parents and affiliates in service and manufacturing industries (Figures A-3 to A-5). In general, the growth patterns, broken down into service and manufacturing industries, resemble the patterns shown in Figures 6 and 7. However, affiliate (parent) job growth in services is not consistently the same sign as parent (affiliate) growth in all the deciles. For example, in one decile, U.S. parents' median job growth is - 1.7 percent and the corresponding Canadian affiliates' median job growth is 3.2 percent. The relationships shown in Figures A-3 and A-4 are somewhat more variable because of smaller sample sizes.<sup>9</sup> However, the same general patterns we see in Figures 6 and 7 are evident.

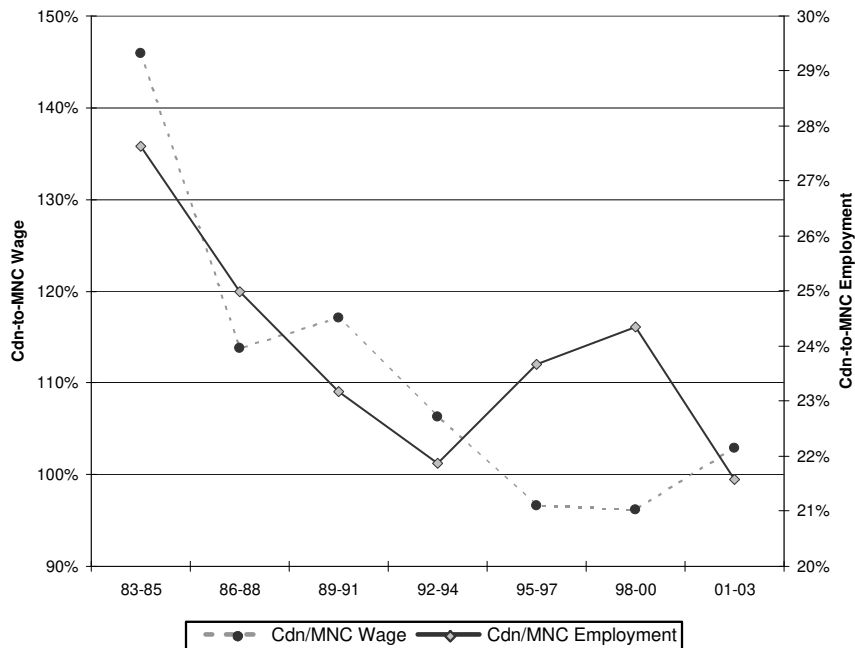
It is worth repeating here that all the charts in this research show changes and levels within MNCs aggregated by time, industry or both in order to describe them graphically. So the growth of parents and affiliates shown in Figures 6 and 7 is growth within the same firms. Since parents and affiliates operate in the same industries, we can interpret these growth comparisons as changes in wages and employment by activity within firms.<sup>10</sup> Similarly, the median wage, grouped by deciles of Canadian affiliate employment growth (see Figure 2), also reflects within-firm values. In the next section, we examine Canadian affiliate employment, wages and job growth relative to other foreign (non-Canadian) same-industry affiliates in the same MNCs.

### **OFFSHORING BEYOND THE UNITED STATES AND CANADA: WAGES AND EMPLOYMENT IN CANADIAN AFFILIATES AND OTHER FOREIGN (NON-CANADIAN) MNC AFFILIATES**

**B**ETWEEN 1983 AND 2003, U.S. MNCs expanded significantly outside North America. From the standpoint of Canadian MNC affiliates, the foreign expansion of U.S. parents meant a decline in the relative importance of Canadian operations to the MNC as a whole. The United Kingdom, France and Germany were the recipients of large inflows of U.S. foreign direct investment (FDI) in the 1980s and early 1990s. In the mid-to-late 1990s, U.S. MNCs expanded operations significantly in both industrialized and developing countries in Asia and in Eastern Europe.<sup>11</sup> Because Canada had enjoyed a dominant position as an outward location of U.S. FDI for many years, relatively less new investment flowed into Canada and the Canadian share of employment in total MNC affiliate employment dropped from 28 percent in 1983–

1985 to 22 percent in 2001–2003 (see Figure 8). Although Canadian-to-MNC wages declined consistently throughout the period, the Canadian employment share recovered slightly from 22 percent to 24.5 percent from 1992–1994 to 1998–2000 and then dropped back to 22 percent in 2001–2003.

**FIGURE 8**  
**CANADIAN AFFILIATE TO NON-CANADIAN AFFILIATE (SAME MNC, SAME INDUSTRY) EMPLOYMENT AND WAGES**

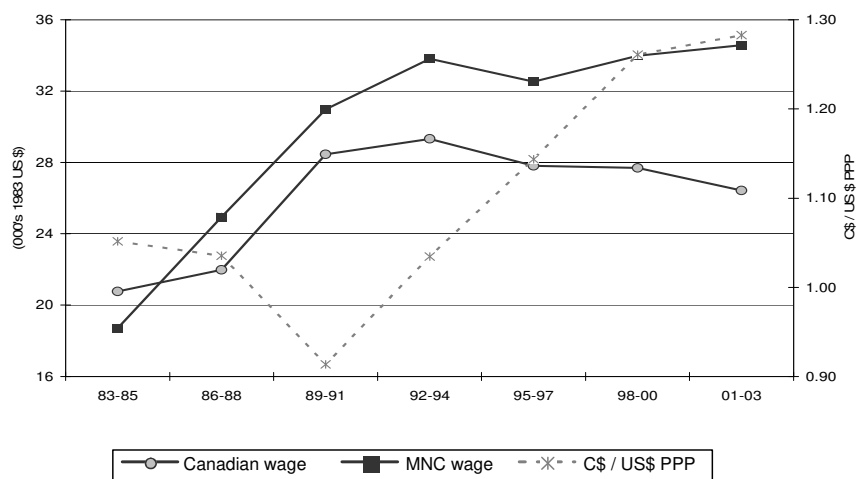


We would have to know a great deal about the operating strategies of MNCs to make any qualitative inferences based on the declining relative employment share of Canadian affiliates. After all, although the Canadian economy is small relative to those of the United Kingdom, France, Germany, Italy and Japan, it nevertheless remains the location of more than one fifth of total foreign jobs of U.S. MNCs. So the fact that these MNCs are expanding more quickly into new markets should not pose a threat to Canada — as long as the Canada continues to host high-quality, high-wage, skill-intensive jobs.

The changes in the real wages of Canadian and non-Canadian (same-industry, same-MNC) affiliates of U.S. MNCs in manufacturing and service industries are shown in Figures 9 and 10. As is evident, the wage gap in services between Canadian and non-Canadian MNC affiliates widened significantly over the sample period, and non-Canadian affiliates' service sector wages were higher than Canadian wages in all but the first three-year period. This is similar to changes in Canadian and U.S. parent service-sector wages shown in Figure A-1. Despite the steep decline in the Canadian/U.S. exchange rate beginning in 1989–1991, Canadian affiliates' real wages in manufacturing remained above real manufacturing wages in other same-industry MNC affiliates outside Canada, although the gap declined.

**FIGURE 9**

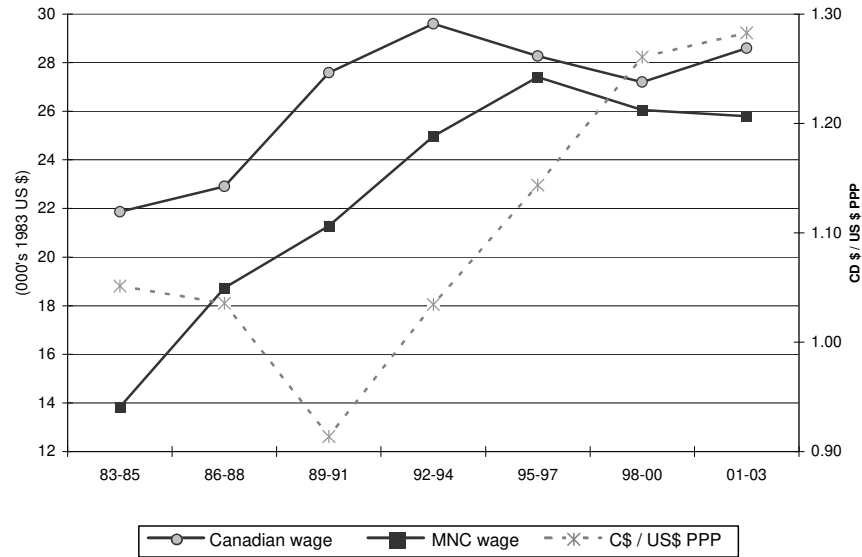
**MEDIAN REAL WAGES OF CANADIAN AND NON-CANADIAN AFFILIATES (SAME MNC, SAME INDUSTRY), SERVICE INDUSTRIES**





**FIGURE 10**

**MEDIAN REAL WAGES OF CANADIAN AND NON-CANADIAN AFFILIATES (SAME MNC, SAME INDUSTRY), MANUFACTURING INDUSTRIES**

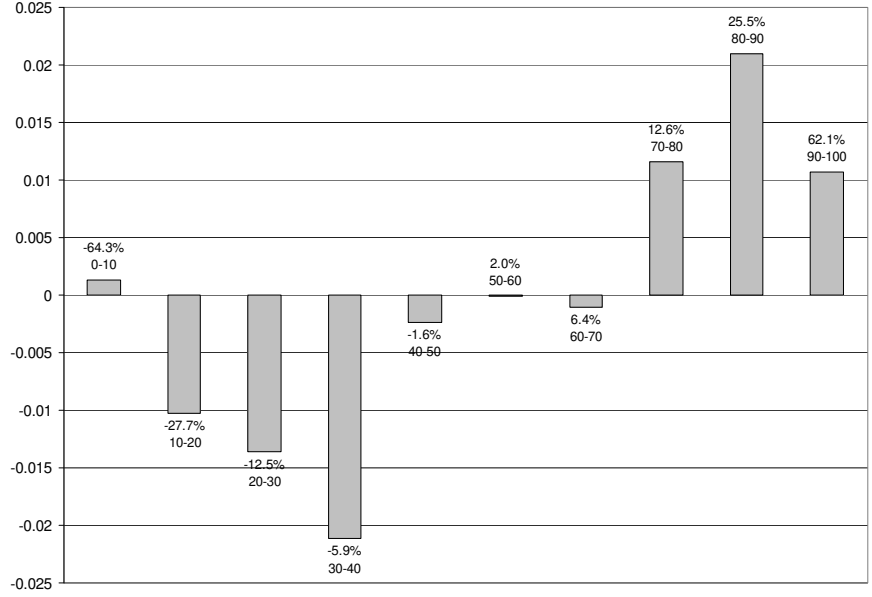


With the next set of charts, we look at the question whether there is systematic evidence of non-Canadian affiliate job growth in MNCs with shrinking Canadian affiliate employment. If we find that non-Canadian affiliates grow while same-industry Canadian affiliates in the same MNC shrink, this would suggest that activities were being moved out of Canada and into other countries. We investigate this question by looking at median non-Canadian (Canadian) job growth by the deciles of Canadian (non-Canadian) affiliate job growth. We measure job growth as the annual percentage change in employment from  $(t-1)$  to  $t$  for Canadian and non-Canadian affiliates. The results are shown in Figures 11 and 12, which are analogous to Figures 6 and 7 (that compared Canadian affiliate and U.S. parent job growth).

We find patterns very similar to those that compared Canadian affiliate and U.S. parent job growth. In general, Canadian (non-Canadian) affiliates grew in sectors in which non-Canadian (Canadian) affiliates grew, and vice versa. The patterns are more striking when we compare the median growth of other same-industry, same-MNC affiliates at  $(t+1)$  to deciles of Canadian affiliate growth from  $(t-1)$  to  $t$ .

**FIGURE 11**

**PERCENTAGE EMPLOYMENT GROWTH IN CANADIAN AFFILIATES BY DECILES OF NON-CANADIAN AFFILIATE (SAME INDUSTRY, SAME MNC) EMPLOYMENT GROWTH, 1983–2003**

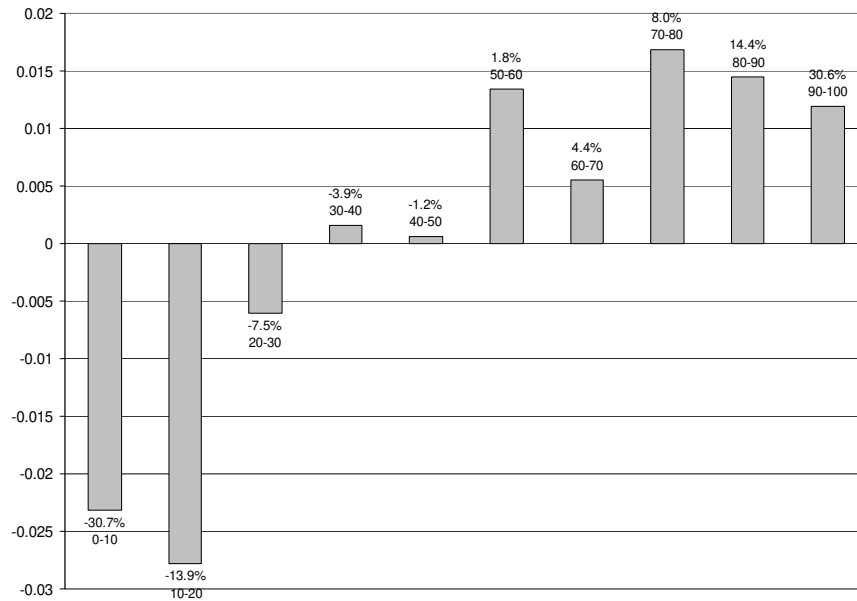


As is illustrated in Figure 11, sectors where non-Canadian (same industry, same MNC) affiliates grew, Canadian affiliates also tend to grow, and where non-Canadian affiliates’ employment declines, Canadian affiliates’ employment tends to decline as well. Again, similar to the comparisons with U.S. parents, MNCs seem to grow or contract similar activities in multiple markets at the same time. If activities were being systematically offshored from Canada to non-Canadian MNC affiliates, we would expect to see declining Canadian affiliate employment corresponding to increased employment in other same-industry affiliates. We see no evidence of such patterns.

The growth in non-Canadian affiliates at  $(t+1)$  grouped by deciles of Canadian affiliate growth is shown in Figure 12. Similar to Figure 11, we see no evidence that jobs are systematically moving out of Canadian affiliates into non-Canadian affiliates within MNCs.

FIGURE 12

PERCENTAGE EMPLOYMENT GROWTH IN NON-CANADIAN AFFILIATES AT  $(T+1)$  BY DECILES OF CANADIAN AFFILIATE (SAME INDUSTRY, SAME MNC) EMPLOYMENT GROWTH, 1983–2003



Finally, we examined employment growth in Canadian and non-Canadian affiliates over time in manufacturing and service industries. We include these figures in the Appendix (Figures A-6 to A-8). Not surprisingly, given the findings in Figures 11 and 12, there is a close correspondence between Canadian and non-Canadian affiliate growth over time. Across all industries, the employment growth of Canadian and non-Canadian affiliates has the same sign in six of the seven three-year periods. Interestingly, there is a closer correspondence between Canadian and non-Canadian affiliate growth in services than in manufacturing. In three of the seven time periods, manufacturing employment growth of Canadian and non-Canadian affiliates has opposite signs. In contrast, growth in services has the same sign in every time period in Canadian and non-Canadian affiliates.

## DISCUSSION, EXTENSIONS AND CONCLUSIONS

**I**N THIS STUDY, we find that in U.S. MNCs with growing (shrinking) Canadian affiliate employment, the same patterns of employment growth (shrinkage) appear in other divisions —both the U.S. parent and other foreign (non-Canadian) affiliates. Thus, we find no evidence of systematic offshoring by U.S. MNCs with Canadian operations.

The evidence shown in this paper needs to be interpreted with some caution. First, since we excluded estimated data, the MNCs left in the samples used here are primarily large firms. So we do not capture the extent to which offshoring is occurring in smaller MNCs or small, new divisions of existing MNCs.

Second, offshoring within MNCs might occur in different industry sectors. For example, General Motors Canada's manufacturing operations (industry code 371) might move many administrative or clerical functions offshore. If these offshore functions were classified under an industry code for business services, we would not capture them in the analyses shown here. However, we believed we would lose even more precision by abandoning the "activity within-firm" approach used here. For example, if we dropped the "activity" and looked simply at changes in employment in Canada and elsewhere within the MNC, we would have no evidence at all that the Canadian activity might have been moved within the firm.

Third, as mentioned in the introduction, this is a simple descriptive analysis. If we find, for example, that employment in a particular activity within an MNC shrinks in both Canada and the United States, many things other than offshoring could be driving the employment change. The MNC could be substituting capital for labour, demand for the MNC's products might be declining, etc. Similarly, our data are not appropriate for examining outsourced activities. If an activity shrinks in Canada because it is moved out of the MNC — either within Canada or offshore — we cannot examine what happens to that activity. Once an activity is moved outside the MNC, it is no longer recorded in our data.

Thus, even with the micro, within-firm-level panel data used here, one can really provide only suggestive evidence on offshoring within MNCs. Clearly, future work on this topic will need to use a variety of different data sources to better understand offshoring and outsourcing. To investigate these activities at a micro, within-firm level, evidence based on case studies by researchers working within firms would be an excellent complement to panel data analyses.

From a policy standpoint, our results point to several potential areas for further investigation. First, the more rapid growth of low-wage service jobs in Canada by U.S. MNCs is a potentially alarming trend. It would be useful to investigate whether the decline in real wages in the service sector shown here is simply an artifact of the lower real

exchange rate, or whether the lower service wages point to a potential Canadian competitiveness problem in service industries. There is some evidence of the latter problem. For example, our results show that, despite the lower real exchange rate, median Canadian manufacturing wages remain higher than those in other foreign affiliates of U.S. MNCs. However, we find the opposite pattern for Canadian and other foreign affiliate wages in services. Indeed, in the 1986–1988 time period (before the real exchange rate began its steepest decline), the median wage in services in non-Canadian foreign affiliates exceeded the Canadian wage for the first time. As the exchange rate fell in subsequent periods, the gap between Canadian and other foreign affiliate wages in services simply got wider. Again, we cannot show whether this is due to the type of jobs created in Canadian and other foreign affiliates or whether this is just driven by exchange rates. But since there is a clear difference in the changes over time in relative manufacturing and service wages in Canada and the rest of the MNC, there is some reason for concern about service sector wages.

On the positive side, service jobs are being created by U.S. MNCs in Canada at a faster pace than they are being created in the United States. The policy challenge is to create an environment in which Canada is the preferred location for U.S. MNCs' high-wage, high-quality service jobs.

Another potential area for concern is the declining importance of Canadian operations (as measured by the share of total MNC employment in Canada) to the MNC as a whole. As we indicated before, one would have to undertake a rigorous study of MNC strategy to understand the implications of this change (for example, the implication for the creation of executive and managerial jobs in Canadian affiliates). Our results suggest that such a study might produce valuable insights into the future role of Canadian operations in U.S. multinational firms.

## ENDNOTES

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- <sup>1</sup> A study by the Public Policy Forum/Information Technology Association of Canada indicates that, in 2004, Canada was a net recipient of American outsourcing. It is thus possible that some of the percentage increase in the foreign-owned share of Canadian industry may be due to “offshoring” from the United States (Public Policy Forum and ITAC Roundtable 2004).
- <sup>2</sup> The statistical analysis of firm-level data on U.S. multinational corporations reported in this study was conducted at the International Investment Division, Bureau of Economic Analysis, U.S. Department of Commerce, under arrangements that maintained legal confidentiality requirements. Views expressed are those of the authors and do not necessarily reflect those of the Department of Commerce.
- <sup>3</sup> Industries are in BEA ISI codes, which are very similar to SIC codes at the same level of aggregation.
- <sup>4</sup> Since some U.S. MNC parents have several Canadian affiliates in the same industry in a given year, and we are examining changes in wages and employment at the activity (industry) level within firms, we do not need to preserve more than one observation at the level of parent-affiliate industry for a given year. Ignoring affiliates with estimated data, this step created a population of 6650 parent-affiliate-industry observations from a potential population of 6859 affiliates. Thus, very few observations were aggregated in this step.
- <sup>5</sup> Usable implies that employment data is not missing.
- <sup>6</sup> Note that the size of the comparison data set depends on the variables being compared. There are more usable employment data than wage data, so the comparison (same industry, same MNC) Canadian and non-Canadian affiliate employment data set contains approximately 11 000 affiliate year observations while the comparison affiliate data set for wages contains 6300 affiliate-year observations.
- <sup>7</sup> Note that large, diversified parents are overrepresented in the affiliate-level data, since these parents tend to have several affiliates (representing different business units) in a given country each year.
- <sup>8</sup> Further detail on the construction of these charts is available from the authors.
- <sup>9</sup> Constructing these charts required at least two consecutive observations per affiliate-parent pair, and 1983 data were used only to construct employment at ( $t-1$ ).
- <sup>10</sup> The three-digit SIC code level admittedly is a very rough measure of “activity” in the sense of looking for offshoring of certain types of jobs, such as clerical jobs. However, we know of no large-sample panel data on multinational firms that contain more disaggregated annual data on job type within the firm. In its Benchmark Surveys, the BEA collects more detailed data on job type, but these surveys are administered only every five years.
- <sup>11</sup> Despite this expansion, the median parent had foreign operations in only two countries in 2003. Again, these small parents are underrepresented in the affiliate-level data.

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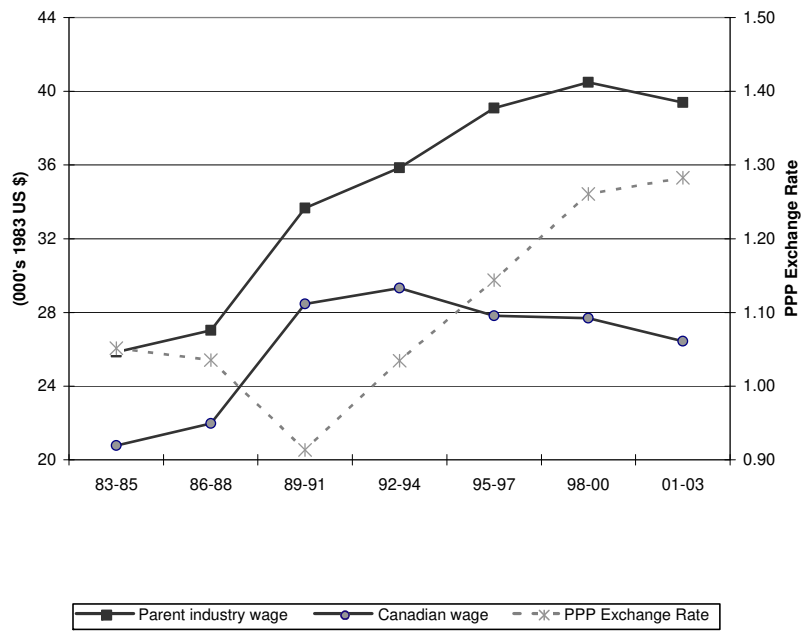
Public Policy Forum and ITAC Roundtable. 2004. "IT Offshore Outsourcing Practices In Canada." Public Policy Forum Working Paper.

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APPENDIX

FIGURE A-1

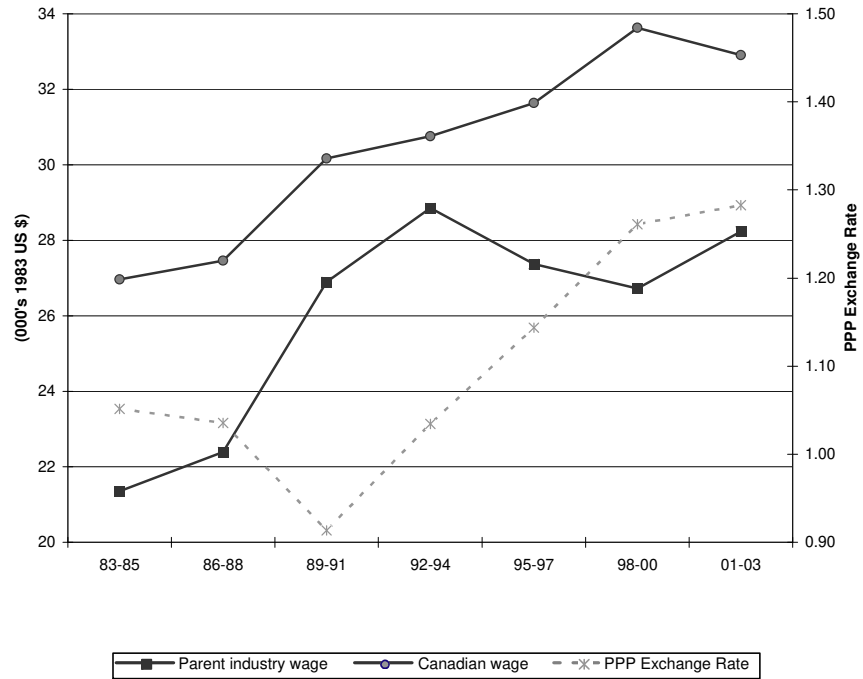
MEDIAN REAL EMPLOYEE COMPENSATION/EMPLOYMENT,  
SAME-INDUSTRY CANADIAN AFFILIATES AND U.S. PARENTS,  
SERVICE INDUSTRIES





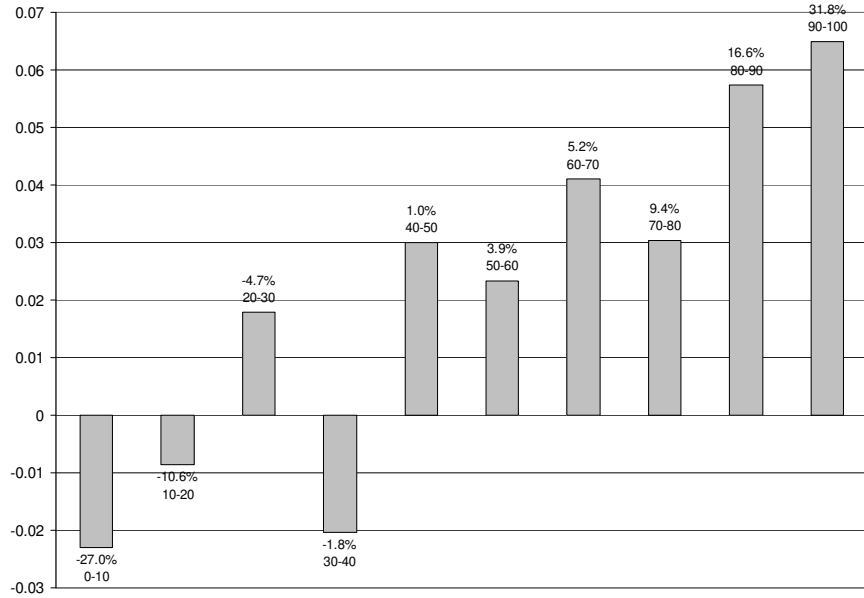
**FIGURE A-2**

**MEDIAN REAL EMPLOYEE COMPENSATION/EMPLOYMENT SAME-INDUSTRY CANADIAN AFFILIATES AND U.S. PARENTS, MANUFACTURING INDUSTRIES**



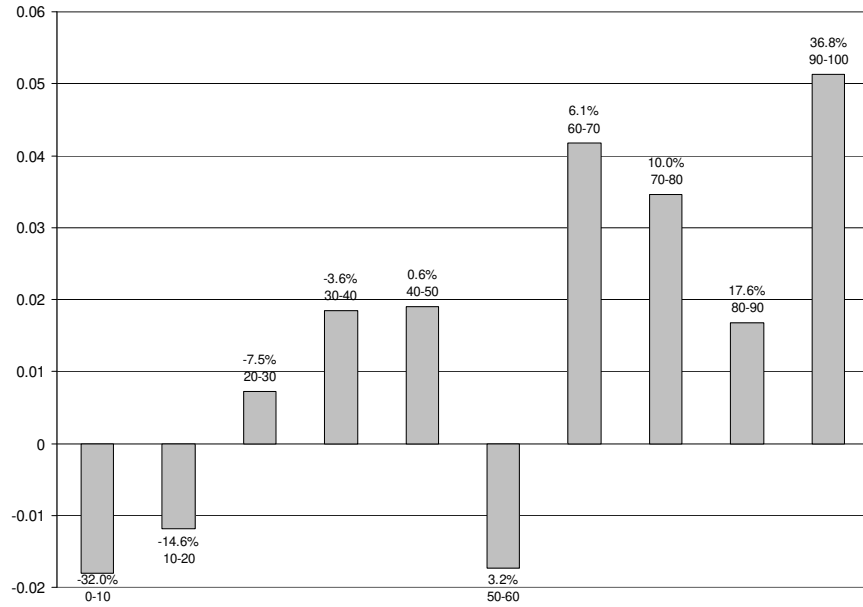
**FIGURE A-3**

**PERCENTAGE EMPLOYMENT GROWTH IN CANADIAN AFFILIATES BY DECILES OF SAME-INDUSTRY U.S. PARENT EMPLOYMENT GROWTH, 1983-2003, SERVICE INDUSTRIES**



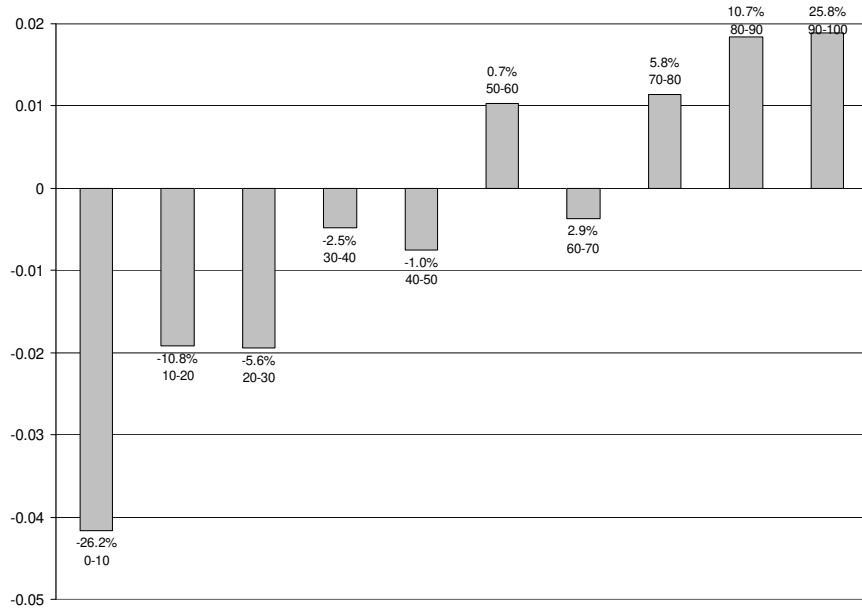
**FIGURE A-4**

**PERCENTAGE EMPLOYMENT GROWTH IN U.S MNC PARENTS BY DECILES OF SAME-INDUSTRY CANADIAN AFFILIATE EMPLOYMENT GROWTH, 1983-2003, SERVICE INDUSTRIES**



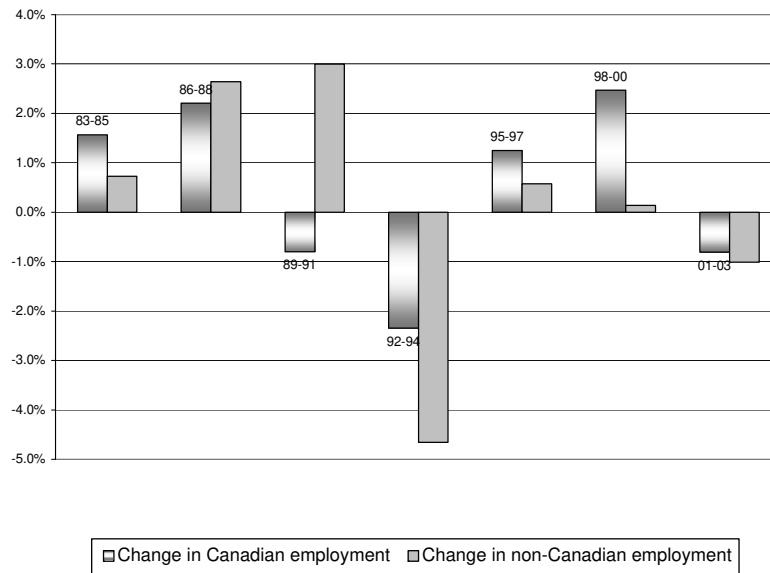
**FIGURE A-5**

**PERCENTAGE EMPLOYMENT GROWTH IN CANADIAN AFFILIATES BY DECILES OF SAME-INDUSTRY U.S. PARENT EMPLOYMENT GROWTH, 1983-2003, MANUFACTURING**



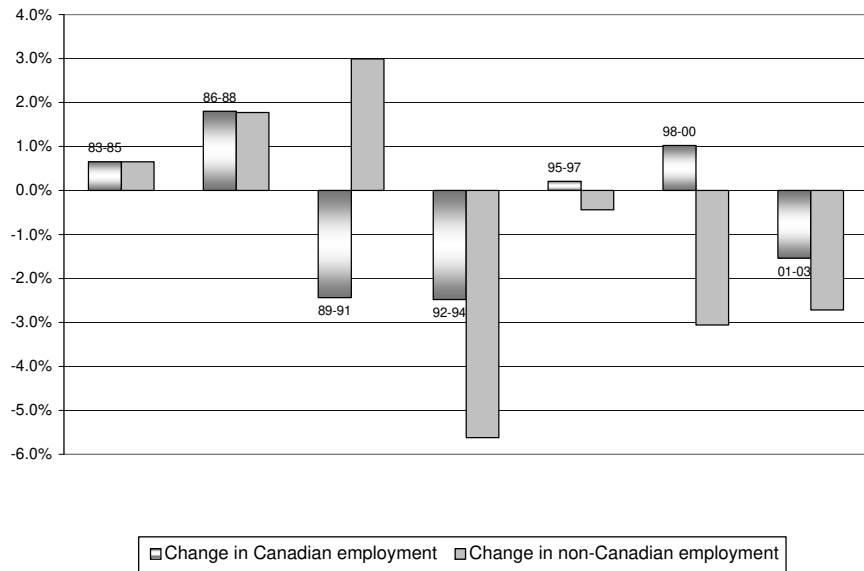
**FIGURE A-6**

**MEDIAN PERCENTAGE ANNUAL CHANGE IN EMPLOYMENT, CANADIAN AND NON-CANADIAN (SAME INDUSTRY, SAME-MNC) AFFILIATES, 1983-2003, ALL INDUSTRIES**



**FIGURE A-7**

**MEDIAN PERCENTAGE ANNUAL CHANGE IN EMPLOYMENT, CANADIAN AND NON-CANADIAN (SAME INDUSTRY, SAME-MNC) AFFILIATES, 1983-2003, MANUFACTURING INDUSTRIES**



**FIGURE A-8**

**MEDIAN PERCENTAGE ANNUAL CHANGE IN EMPLOYMENT, CANADIAN AND NON-CANADIAN (SAME INDUSTRY, SAME-MNC) AFFILIATES, 1983-2003, SERVICE INDUSTRIES**

