

Is the Union Employment Suppression Effect Diminishing? Further Evidence from Canada

Assiste-t-on à un ralentissement de la baisse de l'emploi syndiqué? Nouvelles observations au Canada

¿Asistimos a una disminución de la baja del empleo sindicalizado? Nuevas observaciones en Canadá

Scott Walsworth et Richard J. Long

Volume 67, numéro 4, automne 2012

URI : <https://id.erudit.org/iderudit/1013199ar>

DOI : <https://doi.org/10.7202/1013199ar>

[Aller au sommaire du numéro](#)

Éditeur(s)

Département des relations industrielles de l'Université Laval

ISSN

0034-379X (imprimé)

1703-8138 (numérique)

[Découvrir la revue](#)

Citer cet article

Walsworth, S. & Long, R. J. (2012). Is the Union Employment Suppression Effect Diminishing? Further Evidence from Canada. *Relations industrielles / Industrial Relations*, 67(4), 654–680. <https://doi.org/10.7202/1013199ar>

Résumé de l'article

Que les syndicats aient contribué à supprimer la croissance de l'emploi dans les entreprises où ils étaient présents s'est révélée une observation tellement omniprésente qu'on a surnommé ce phénomène « la constante » dans la recherche en relations industrielles (Addison et Belfield, 2004). Toutefois, tous les résultats empiriques sur lesquels cette conclusion repose découlent de données colligées en 1998 ou avant, tandis que les résultats pour le Canada (Long, 1993) remontent à plus de vingt-cinq ans. Tenant compte de cela, Walsworth (2010a) a utilisé les données de l'enquête de Statistique Canada sur le milieu de travail et les employés (EMTE) couvrant la période 1999-2005 pour étudier la plus récente ampleur de l'effet de suppression d'emplois au Canada. L'auteur a observé, comparativement aux résultats obtenus par Long (1993), que l'effet de la baisse de l'emploi syndiqué avait apparemment ralenti. Nous notons toutefois que l'analyse de Walsworth (2010a) n'est pas comparable à celle menée par Long (1993) à plusieurs égards. Par exemple, Walsworth (2010a) ne ventile pas son analyse selon la taille des établissements, ni selon le secteur industriel. De plus, il n'a pas cherché à expliquer les raisons du ralentissement possible de l'effet de baisse de l'emploi syndiqué, une lacune que nous cherchons à combler en examinant deux facteurs potentiellement associés à un tel ralentissement, soit la croissance des gains d'emploi et l'avantage salarial des travailleurs syndiqués.

Pour ce faire, nous avons analysé les données de l'EMTE couvrant la période 2001-2006 et, comme Long (1993), nous avons observé d'importantes différences lorsque nous avons ventilé nos données pour fins d'analyse selon la taille des établissements, l'effet de la baisse de l'emploi syndiqué apparaissant dans les grands établissements manufacturiers mais pas dans les plus petits. Toutefois, contrairement à Long (2003), nous avons observé d'importantes différences entre le secteur manufacturier et celui des services avec l'absence d'un effet de baisse d'emploi syndiqué parmi les grands établissements de service, et un effet syndical significativement positif sur la croissance de l'emploi dans les établissements de service de plus petite taille – la première observation d'un effet positif de croissance de l'emploi syndiqué dans quelque contexte que ce soit. Notre analyse suggère qu'un déclin de l'avantage salarial des syndiqués peut avoir joué un rôle dans ces résultats.

Is the Union Employment Suppression Effect Diminishing? Further Evidence from Canada

Scott Walsworth and Richard J. Long

This paper examines the impact of unions on employment growth in a longitudinal sample of Canadian workplaces collected during the period 2001-2006. To facilitate comparability with earlier Canadian results, we segment our analysis by industrial sector and establishment size, and find that unions suppress employment growth only in larger manufacturing establishments, and actually seem to promote employment growth among smaller service sector establishments. These results differ substantially from results found twenty-one years previously. We extend previous analysis by examining whether a declining union wage premium may have played a role in these results, and find suggestive evidence for such a contention.

KEYWORDS: unions, employment, employee earnings, union wage premium

Introduction

That unions suppress employment growth of their employers has been such a ubiquitous finding that it has been dubbed “the one constant” in industrial relations research (Addison and Belfield, 2004). Indeed, empirical research conducted in the United States (Leonard, 1992), the United Kingdom (Addison and Belfield, 2004; Blanchflower, Millward, and Oswald, 1991), Australia (Wooden and Hawke, 2000) and Canada (Long, 1993) has all been consistent in pointing to a union employment growth suppression effect of between 2.5% to 4.0% per annum.

However, all of these findings are based on data collected in 1998 or earlier, and the North American findings were based on the period 1974-80 (Leonard, 1992) or 1980-85 (Long, 1993). Noting this, Walsworth (2010a) utilized data from the Statistics Canada Workplace and Employee Survey (WES) covering the period 1999-2005 to investigate the more recent magnitude of this effect in Canada. He estimated that the union growth suppression effect ranged

Scott Walsworth, Associate Professor, Hanlon Scholar in International Business, Department of Human Resources and Organizational Behaviour, Edwards School of Business, University of Saskatchewan, Saskatoon, Saskatchewan, Canada (walsworth@edwards.usask.ca).

Richard J. Long, Professor and Head, Hanlon Scholar in International Business, Department of Human Resources and Organizational Behaviour, Edwards School of Business, University of Saskatchewan, Saskatoon, Saskatchewan, Canada (long@edwards.usask.ca).

from 2.2% per annum to zero in his sample, depending on the measures of unionization and employment growth that he used. However, even taking the high-end estimate, Walsworth's (2010a) results seem to point to a diminution of the union employment growth suppression effect in Canada, given Long's (1993) finding of a union employment growth penalty of 3.7% to 3.9% per annum during 1980-85.

However, Walsworth's (2010a) analysis is not comparable to that conducted by Long (1993) in several ways, so such comparisons must be regarded with caution. Furthermore, Long (1993) found dramatically different results when he segmented his analysis by establishment size. Like Leonard (1992) before him, Long found that the union growth penalty was confined entirely to larger establishments; smaller establishments showed no union growth penalty whatsoever. However, Walsworth's (2010a) analysis did not examine this issue, so we don't know whether this result still holds. Finally, Walsworth (2010a) attempted no analysis of the possible reasons behind a possible diminution in the union employment growth suppression effect.

In this paper, we tackle all of these issues. Using WES data from the 2001 to 2006 period, we replicate Long's 1980-85 study, and segment our analysis by industrial sector (manufacturing vs. service) and establishment size, to determine whether the results reported by Long (1993) may have changed over the two intervening decades. Unlike Long (1993), we find important differences between the manufacturing sector, where no union employment suppression effect is evidenced, and the service sector, where we actually find a significant positive union effect on employment growth. However, like Long (1993), we find important differences when we segment our analysis according to establishment size, as the union employment suppression effect was evidenced in large manufacturing establishments, but not smaller manufacturing establishments, and the positive union employment growth effect was evidenced in smaller service establishments, but not in larger service establishments.

In examining why the union employment growth suppression effect may have diminished or disappeared in Canada, we examine the union wage premium as a possible causal factor. We note that while the precise reasons for the union employment growth suppression effect have never been empirically established, a key contributor is thought to be the union wage premium, which, as will be discussed shortly, can serve to inhibit employment growth in a variety of ways.

In recent years, there is evidence that union wage premiums have declined somewhat in the United States (Blackburn, 2008; Bratsberg and Ragan, 2002) and substantially in Canada (Verma and Fang, 2002). If so, and if the union wage premium is in fact a major contributor to the union employment effect, then we should observe a smaller union employment growth suppression effect

compared to earlier years. As part of our analysis, we will examine whether the size of the union wage premium at the beginning of our study period affects employment growth in subsequent years in unionized workplaces. We also extend Long's (1993) analysis by adding a control for employee earnings growth to our main regression equations. This will allow an estimation of whether, and to what extent, employee earnings growth serves to suppress employment growth, and the extent to which any union employment suppression effect is a function of employee earnings growth.

Theoretical and Empirical Background

In this section, we first discuss how the union wage premium may be a major source of the union employment suppression effect. However, to put this in context, we also note that the union wage premium may not be the only source of the union employment suppression effect and discuss these other possible sources. We then briefly describe counterarguments to the contention that unions necessarily reduce employment growth. Finally, we discuss why factors such as workplace size and industrial sector may play a role in employment growth, and therefore need to be taken into consideration in analyses of the union employment suppression effect.

Union Wage Premium as a Causal Factor

Historically, employees in unionized firms have earned higher wages than those in non-union firms. This "union wage premium" may affect employment growth in several ways. First, theory in labour economics is clear that those employers who pay a higher price for labour will employ less of it, *ceteris paribus*. Firms may do so by substituting capital for labour, or simply by growing more slowly than non-union firms.

Second, if unionized firms pay higher wages, this increases their costs and reduces their ability to be competitive on the price of their product or service, and makes it more difficult to attract new customers. To be price competitive, unionized firms may need to accept a lower profit margin than non-union firms. Lower profitability may reduce the firm's ability to attract the capital necessary for growth, since capital will first flow to more profitable firms. Moreover, if unions are able to appropriate for their members some of the economic rents accruing from implementation of new capital (in the form of a higher union wage premium), this may also impede the ability of the firm to attract capital (Doucouliagos and Laroche, 2009).

If the union wage premium is in fact a major driver of the union employment suppression effect, then changes to the union wage premium over time should affect the strength of the union employment suppression effect. Research in both

Canada and the United States suggests that the union wage premium in North America has in fact been declining.

In Canada, Fang and Verma (2002) examined a variety of Statistics Canada data sources based on household surveys, and concluded that the Canadian private sector union wage premium had declined by about seven percentage points between 1984 and 1998—from about 18% to about 11% in 1998. In further analysis, Fang and Verma (2002) used a new data set that had been first collected by Statistics Canada (the Workplace and Employee Survey) in 1999, which merged employee responses with establishment-level data, and reported a union wage premium of just under 8% in 1999.¹

Two longitudinal studies have used data from the United States' "Current Population Survey" (CPS) (based on the 'Outgoing Rotations Groups') to follow the effects of union membership on employee earnings during the period 1973 to 2001 (Blanchflower and Bryson, 2004; Hirsch and Schumacher, 2004). Both studies found evidence of a long-term decline in the union wage premium that started sometime in the early 1980s. For example, Blanchflower and Bryson (2003) found that the union wage premium declined about seven percentage points (from about 20% to 13%) between 1984 and 2000, while Hirsch and Schumacher (2004) found a decline of five percentage points (from about 23.5% to about 18.5%) during the same period.

In a more recent analysis of the same data set, Blackburn (2008) comes to a similar conclusion about the trend in union wage premiums in the United States private sector, but estimates a much smaller decline. Using a somewhat different specification than the previous studies, Blackburn (2008) estimates that the union wage premium in the United States private sector declined from 21.5% in 1984 to about 19.0% in 2000, then dipped to 18.2% in 2003, before recovering to 19.1% by 2005.

One interesting study, also conducted in the United States, used data covering the period from 1984 to 2001 (DiNardo and Lee, 2004). These researchers examined data from newly-organized firms in order to determine the impact of unionization. They compared firms in which unions had barely won an organizing campaign to those in which unions had barely lost an organizing campaign (by examining the results of certification elections). They found no discernible union wage premium, and also negligible employment effects (using production hours rather than employee headcounts as their measure of employment). This result suggests that during 1984 to 2001, newly-organized firms in the United States did not pay any wage premium nor suffer any deleterious effects on employment. DiNardo and Lee (2004) explain the discrepancy with other studies showing the persistence of some level of union wage premium by hypothesizing that any union wage premium that in fact remains is a product of union gains made in the period

prior to the 1980s, and that these gains will slowly diminish as 'newly-organized' firms that pay no union wage premium are averaged into the mix and as the wages in 'long-established' union firms diminish relative to non-union firms.

Although the extent of the decline in the union wage premium may be subject to debate, it does seem clear that the union wage premium declined in North America during the last part of the twentieth century. If so, and if the union wage premium is the major driver of the union employment suppression effect, it would be reasonable to expect a substantial reduction in the union employment growth penalty in Canada, which is what Walsworth (2010a) has found in his study of the aggregate union growth penalty in Canada.

Other Possible Causal Factors

Besides the union wage premium, if unions are detrimental to employer profitability in other ways, such as by imposing restrictive work practices, or by engaging in work stoppages (which may lose customers who seek a reliable source of supply), these factors may also have a deleterious effect on establishment growth. Historically, research has suggested that unions reduce the profitability of their employers (Bronars and Deere, 1990; Machin and Stewart, 1996), although there is some evidence to the contrary among newly-created firms (Batt and Welbourne, 2002). Overall, a meta-regression analysis by Doucouliagos and Laroche (2009), found that unions have had a significant negative effect on profits in the United States, although not necessarily in other countries. While their data were insufficient to draw conclusions about unions and profitability in Canada, it seems unlikely that Canadian establishments would escape the union profitability penalty that apparently exists in its closest neighbour.

Unions may inhibit employment growth in yet another way. In order to help create employment stability for their members, unions may negotiate a variety of provisions that make it more expensive for firms to make downward adjustments to their labour forces. For example, unions may negotiate more cumbersome dismissal procedures, and/or more expensive severance packages. Given this downward rigidity, union employers may be less likely to add to their employment than non-union firms, thus depressing their employment growth.

Counterarguments to the Union Employment Suppression Effect

However, as Wooden and Hawke (2000) point out, there are at least two counterarguments to the contention that unions necessarily reduce employment growth. First, if unions can improve worker productivity, by helping to create a more stable work force, or by providing a mechanism for employee voice, then this may offset the additional costs imposed by the union wage premium (Freeman and Medoff, 1984). In fact, a large scale meta-analysis by Doucouliagos and Laroche

(2003) found that unions had actually significantly increased establishment productivity in the United States. However, the productivity increase was not sufficient to outweigh the union wage premium, so establishment profitability was actually adversely affected by unionization.

Second, if unions bargain over both wages and employment simultaneously, then it is possible that unions may 'purchase' higher employment levels with other concessions, such as a reduction in the size of the union wage premium (Wooden and Hawke, 2000). However, in examining the two main dimensions of union success—union wage premium and union employment—Pencavel (2009) has found that unions in the United States and Canada have been declining in success on both dimensions.

Possible Role of Workplace Size and Sector

Given the apparent reduction in the union wage premium by the end of the twentieth century, we would expect that the negative relationship between unionization and employment growth that has been a fixture of the latter part of the twentieth century in Western industrialized countries will have diminished in Canadian establishments in the first part of the twenty-first century, and Walsworth's (2010a) findings suggest that this has indeed been the case. However, Walsworth did not segment his analysis by workplace size or industrial sector, so his findings may not tell the whole story.

As to size, both Long (1993) and Leonard (1992) found that smaller North American establishments escaped the union employment suppression effect, although it has never been clear why this should be. It may be that smaller establishments are more fragile, and that a large union wage premium may threaten the existence of these establishments, thus constraining the ability of unions to achieve large wage premiums. In a similar vein, it may be that unions are less able to impose work restrictions on smaller establishments. Finally, it may even be that unions do bring productivity gains to smaller establishments, to a greater extent than to larger establishments, by causing more professionalization of management.

As to sector, Long (1993) did not find differences between the manufacturing and services sector (Leonard's (1992) study covered only the manufacturing sector), which he had expected to find. He cited several reasons to expect such differences. Two arguments revolve around union density. First, the higher the union density in a given industrial sector, the less damaging should be the effects on union employment of a union wage premium, because in a sector with high union density there will be few non-union produced goods to compete with the (more costly) union goods. Second, to avoid the higher 'threat' of unionization in industries with high union density, non-union employers may choose to match more closely the remuneration paid by unionized employers than they would

otherwise, thus reducing the union wage premium in these sectors. Either way, since union density is much higher in the manufacturing sector than the service sector (in the private sector, at least), one could predict that unionization would have a more negative impact on employment growth in the service sector.

Another argument relates to cost structure. Since compensation costs, as a proportion of total costs, are generally much higher in service establishments than in manufacturing establishments, any union wage premium would have a more negative impact on profitability in service sector establishments than in manufacturing establishments. As discussed earlier, reduced profitability may retard employment growth in a variety of ways.

Finally, yet another argument relates to a differential growth rate between the manufacturing and service sectors. In North America, service establishments have generally been growing more rapidly than manufacturing establishments during the past few decades. Given that the capital requirements to fund rapidly-growing establishments are generally much higher than in slower-growing establishments, and that lower profitability impairs the ability of establishments to attract capital investment, it may be that any union effect that reduces profitability will have more impact in rapidly-growing sectors (i.e. services) than in more slowly-growing sectors (i.e. manufacturing).

Besides segmenting by size and sector, we conduct two other analyses beyond those conducted by Walsworth (2010a). One of these is to control for earnings growth in our regression equations. If so doing reduces the negative coefficient for unionization and employment to insignificance, this implies that the main avenue through which unions reduce employment growth is by causing employee earnings to grow faster than at non-union establishments. If adding earnings growth to the regression equations reduces the negative coefficient for unionization and employment, but the negative coefficient remains statistically significant, this suggests that there are other avenues through which unionization reduces employment growth, in addition to earnings growth. If earnings growth does not affect the negative coefficient for unionization and employment, then this suggests that the union employment suppression effect is caused by other than disproportionate earning growth among unionized establishments.

The second additional analysis is to examine the impact of the union wage premium within the unionized segment of our sample. Our purpose here is to not only corroborate the importance of the union wage premium as a factor in the union employment effect, but also to assess the magnitude of the effect across unionized establishments. If the argument that service sector establishments will be affected more strongly than manufacturing establishments by a union wage premium holds sway, we should see a much higher negative coefficient between the union wage premium and employment in the service sector than in the manufacturing sector.

Methodology

Data and Sample

Our data come from merging the Employer Survey of the Statistics Canada Workplace and Employee Survey (WES) data files. We use the most recent year of data (2006) and the data file from five years previous (2001) to replicate the Long (1993) study. The WES has been administered to the same workplaces² every year since 1999, with 2006 being the last year the survey was conducted, and is considered a high quality data base, due to its careful methodology and high response rates (Fang and Heywood, 2010). Its population is all private sector workplaces in the ten provinces of Canada, but does not include the sparsely-populated Yukon, Nunavut, and Northwest Territories, or agricultural, armed forces, fishing, or hunting industries.

To develop our panel of data, we eliminated workplaces that were not in the sample in both 2001 and 2006, those for which all the necessary data were not available in both years, and those that changed union status during the five-year period.³ We also eliminated those workplaces with twenty or fewer employees. Since the great majority of workplaces with fewer than twenty employees were non-union, we eliminated these very small workplaces in order to provide more comparability between the union and non-union segments of our sample. This also increases the average size of the workplaces in our sample, which makes it somewhat more comparable to Long's (1993) data set, which was based on survey data collected by the Economic Council of Canada (ECC) (Betcherman and McMullen, 1986).⁴

Overall, this process yielded a panel of 2,437 workplaces. Some 677 of the workplaces in our sample are in various manufacturing industries and the remaining 1,760 workplaces are in the service sector. Some 598 of the workplaces were unionized at both time periods, and the remaining workplaces were not unionized in either time period.

Compared to the sample used by Long (1993), the WES sample is similar in a number of important ways. Both samples cover a five year period and are representative of Canadian private sector workplaces. The unit of analysis in both samples is not necessarily an entire company/firm, but rather a self-contained establishment, operating as a single unit at a single location. This unit of analysis provides a sharp measure of employment growth for each establishment. Table 1 shows that the weighted distribution within each sector of the WES sample is similar to the sectoral distribution in the Long (1993) study, with only one or two exceptions. For example, the WES sample has a higher concentration of workplaces in the tertiary manufacturing industries, but since we control for industry in our multiple regression analysis, we don't consider this difference problematic.

TABLE 1
Union and Non-Union Workplaces in the WES Sample and the ECC Sample

Sector	WES Sample (2001)				ECC Sample (1980)			
	Union Workplaces		Non-Union Workplaces		Union Workplaces		Non-Union Workplaces	
	N ^a	%	N ^a	%	N	%	N	%
Manufacturing								
Primary Manufacturing	345	28.5	713	19.4	45	29.6	28	29.8
Secondary Manufacturing	273	22.6	1,244	33.9	61	40.1	32	34.0
Tertiary Manufacturing	592	48.9	1,713	46.7	46	30.3	34	36.2
TOTAL	1,210	100	3,670	100	152	100	94	100
Service								
Tertiary Services	1,186	17.9	6,800	33.3	12	10.2	51	34.9
Social Services	1,810	27.3	1,637	8.0	27	22.9	4	2.7
Transportation	1,347	20.3	3,784	18.6	16	13.6	7	4.8
Retail/Consumer	1,039	15.7	6,721	33.0	29	24.6	59	24.6
Other Services ^b	1,245	18.8	1,456	7.1	34	28.8	25	17.1
TOTAL	6,627	100	20,398	100	118	100	146	100

Sources: 1) WES Sample: Canadian Workplace and Employee Survey, 1999. Data results are weighted. 2) ECC Sample: Long (1993).

a The weighted N is reported.

b "Other Services" includes: primary services, real estate, information and cultural industries, and communication and utilities. The construction industry has been omitted.

There are some differences between the two data sets in terms of survey methodology and sample size. While the WES data were collected through telephone interviews, the ECC data were collected by a mail survey. Second, the WES sample is much larger than the ECC sample—we analyze results from over two thousand workplaces, while the ECC sample utilized by Long (1993) included 510 establishments. Third, the ECC survey was a one-time survey conducted in 1985, and used a retrospective measure to capture workplace employment levels five years earlier, while the WES uses two separate surveys to capture the data, one conducted in 2001 and one conducted in 2006. Fourth, the response rate was much higher for the WES than the ECC. For example, the 2001 WES had a response rate of 91% (Statistics Canada, 2006). The very high response rate is no doubt facilitated by the fact that cooperation with Statistics Canada is obligatory by law and the strict confidentiality procedures followed by Statistics Canada. As one would expect, the ECC survey had a considerably lower response rate, in the order of about 20%. Fifth, the WES was designed to be a weighted sample, with weightings reflecting the relative proportions of various types of establishments in the population of Canadian workplaces. We use these weightings in all our analysis.

One other important difference is obviously time period. If different results are found in the two data sets, it is conceivable that the prevailing economic circumstances—if different in the two time periods—may have played a role in this difference. In fact, coincidentally, the two time periods show rather similar economic profiles. The 1980-1985 time period was marked by an economic slowdown in the first part of the period and economic recovery towards the end of the period. The period 2001-2006 was marked by an economic slowdown in the first part of the period (initially caused by the high-tech meltdown of 2000/2001 and reinforced by events of 9/11/2001), and economic recovery towards the end of the period, although the recovery was perhaps not as robust as that experienced during the latter part of the 1980-1985 period. One important time difference is the trend towards globalization, which was strongly affecting manufacturing enterprises during the 1980s, but did not strongly affect service enterprises until the 1990s. Thus, during the ECC survey, manufacturing enterprises were under much more competitive pressure from globalization than were service enterprises, while during the WES survey both sectors were under competitive pressures from globalization.

Compared to the 1980-1985 ECC sample, the average workplace size in the WES 2001-2006 sample is considerably smaller—41 persons in the base year (2001) of the WES sample, compared to 295 persons in the base year (1980) of the ECC sample. This difference is likely a function of the superior representative quality of the WES data which, in contrast to the ECC data, is stratified (by size, region and industry) and weighted to better portray the sample population. In both samples the average unionized workplace is considerably larger than the average non-union workplace: 2.01 times larger in the ECC sample and 1.61 times larger in the WES sample. While there are no independent Canadian workplace level data available, this observation is consistent with empirical findings that Canadian unions target larger workplaces in order to achieve economies of scale as a strategy to reduce the per member organizing cost (for example, see Statistics Canada, Labour Force Survey, 2000).

In considering the difference in the average establishment size between the WES and ECC samples, we note several things. First, if the ECC sample had been more representative, with a smaller average establishment size, perhaps the differences in results between the two studies would have been less pronounced. Indeed, the ECC data set, by dint of its underrepresentation of smaller establishments, may have exaggerated the union employment suppression effect, something that may be true of many previous studies. For example, Leonard (1992) noted that his study (which covered manufacturing establishments only) also underrepresented small plants.

Variables

The key variables used in this study were constructed to be as similar as possible to the variables used in the Long (1993) study. The 'employment growth rate' for the period 2001 to 2006 was calculated for each workplace by subtracting the 2001 full-time equivalent (FTE) employment at each workplace from the 2006 FTE employment levels at that same workplace. As did Long (1993), we calculated the number of FTE employees at each workplace by taking the number of full-time employees and adding the number of part-time employees multiplied by a factor of .33.⁵ For 'Union Status', a workplace was coded as a '1' if any of its employees were covered by a collective agreement, and zero otherwise.⁶

We used industry controls similar to those that Long (1993) used, as well as workplace size and age controls. In the manufacturing sector, we used primary manufacturing, secondary manufacturing, and tertiary manufacturing. In the service sector, we used tertiary services, social services, transportation, retail/consumer services, and 'other services'. 'Workplace Size' is the number of FTE employees at the workplace in our base year, 2001. 'Workplace Age' is the number of years, as of 2001, that the workplace has been in existence at its current location. Unfortunately, this measure is not synonymous with the true age of a workplace that has been re-located during its history, and therefore understates the age of some workplaces, but the WES provides no other measure of workplace age. The effect of this is to add some random variance to this variable, which would serve to attenuate any relationships between this variable and other variables. Our results indicate that 'workplace age' is a statistically significant variable in every regression equation in which it is included; had this variable been measured more accurately, we would expect that the regression coefficients would have been higher still.

Long's (1993) study contained no information on the union wage premium. Here, we calculate the union wage premium by subtracting the average employee earnings in non-union workplaces from the earnings of the unionized workplaces in the same industrial subsector in the base year of our study (2001), and in the final year (2006). This creates a dollar value for the wage premium (which could be positive or negative) for each union workplace. We then divide this difference by the average non-union earnings in the same industrial subsector. Table 2 shows a 2001 union wage premium of \$13,957 (or 15.6%) in 2001, which falls to \$5,969 (or 11.1%) in 2006. As can also be seen, the union wage premium is higher in the service sector in both 2001 (16.1%) and in 2006 (11.1%) than in the manufacturing sector (14.0% and 9.7% respectively). In analysis not shown in Table 2, when we bifurcated the sample by workplace size, we found that union wage premiums did not differ much between large

TABLE 2
Descriptive Statistics by Sector

	All Mean (S.D.)	Manufacturing Mean (S.D.)	Services Mean (S.D.)
Employment Growth	.191 (.201)	.079 (.168)	.204 (.218)
Earnings Growth	.063 (.481)	.119 (.417)	.040 (.484)
2001 Size	40.9 (71.5)	57.4 (91.6)	38.6 (68.8)
2001 Age	19.7 (20.7)	19.25 (19.3)	20.2 (21.4)
Union Wage Premium % (Union Firms Only)			
2001	.156 (.854)	.1395 (.445)	.1607 (.929)
2006	.111 (.509)	.0969 (.563)	.1155 (.455)
Union Wage Premium \$ (Union Firms Only)			
2001	\$ 13,957 (\$ 4,745)	\$ 5,941 (\$ 2,084)	\$ 14,202 (\$ 4,494)
2006	\$ 5,969 (\$ 3,223)	\$ 4,478 (\$ 2,794)	\$ 4,700 (\$ 2,216)

Source: Canadian Workplace and Employee Surveys, 2001 and 2006. Data results are weighted.

and small workplaces, although they were slightly higher in larger workplaces than in smaller workplaces.

In our regressions we also include an employee earnings growth variable in order to control for and examine the possible impact of differential earnings growth in union and non-union establishments. We calculate employee earnings growth by subtracting a workplace's 2001 employee earnings from its 2006 employee earnings and then dividing by 2001 employee earnings. The means and standard deviations for each of our variables are shown in Table 2.

Results

Table 3 shows the results of regression analysis of the WES data for the manufacturing sector. As can be seen, without controls (Specification 1), 'Union Status' is significant and negatively related to employment growth and remains so after including industry controls (Specification 2). However, after adding 'Workplace Size'⁷ and 'Age' to the regression equation (Specification 3), the relationship between union status and employment growth disappears. This result is very different from that found by Long (1993), who found a strong negative relationship between 'Union Status' and employment growth (using the same controls as in Specification 3) in the manufacturing sector during 1980-85. Although the magnitude of the apparent decline in the union employment suppression effect is surprising, the direction of this result is certainly consistent with expectations premised on a declining union wage premium.

TABLE 3
Regression Results Predicting the Employment Growth Rate in the Manufacturing Sector

	Entire Manufacturing Sample				Subsample of Larger Workplaces (split at the non-weighted median)				Subsample of Smaller Workplaces (split at the non-weighted median)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Union Status	-0.066** (.016)	-0.061** (.016)	.000 (.016)	-0.009 (.014)	-0.139** (.020)	-0.114** (.020)	-0.061** (.023)	-0.070** (.023)	.013 (.023)	.052* (.023)	-0.040 (.022)	.001 (.017)
Industry Controls	NO	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES
Workplace Size (# Employees)	-	-	-0.000** (.000)	-0.000** (.000)	-	-	-0.000** (.000)	-0.000** (.000)	-	-	-0.028** (.002)	-0.023** (.001)
Workplace Age	-	-	-0.003** (.000)	-0.002** (.000)	-	-	-0.001** (.000)	-0.002** (.000)	-	-	-0.002** (.001)	.002** (.001)
Earnings Growth	-	-	-	-0.054** (.014)	-	-	-	-0.075** (.025)	-	-	-	-0.038** (.016)
Adjusted R ²	.004	.011	.038	.050	.021	.044	.052	.083	.000	.078	.160	.157
Model Fit (F)	18.2**	19.0**	39.1**	37.3**	49.9**	36.0**	26.1**	32.7**	3.12*	73.3**	99.3**	64.5**
Weighted N	4,879	4,879	4,879	4,155	2,296	2,296	2,296	2,110	2,582	2,582	2,582	2,044

Source: Canadian Workplace and Employee Surveys, 2001 and 2006. Data results are weighted.

Coefficients are unstandardized OLS regression coefficients. Standard errors are reported in parentheses.

The constant term is included in each estimation.

*, ** denote significance at the 0.05 level, and the 0.01 level, respectively.

Since a number of studies have found different results depending on establishment size, we bifurcated our manufacturing sample at the median number of FTE employees, as did Long (1993). The results are included in Table 3. As can be seen, the results are quite different between larger and smaller manufacturing workplaces. In larger manufacturing workplaces a significant negative relationship between union status and employment growth is detected, but no significant relationship is detected among smaller manufacturing workplaces.

Table 4 shows the results of regression analysis of the WES data for the service sector. As can be seen, while Specification 1 shows a small but highly significant negative relationship between union status and employment growth, this relationship disappears in Specification 2, and actually turns significantly positive in Specification 3. This is a dramatic difference from Long's (1993) study, in which he found a significant union growth suppression effect among service workplaces, as he did for manufacturing workplaces.

As we did for our manufacturing sample, we bifurcated our non-manufacturing sample at the median number of FTE employees, and the results are included in Table 4. As can be seen, the results are again very different between larger and smaller workplaces. Among large service sector workplaces, Specification 3 shows no significant relationship between union status and employment growth; while among small service workplaces union status is significantly *positively* related to employment growth. In fact, small unionized services workplaces actually grew in employment about 6.6 percentage points per year faster than small non-union services workplaces.

Both Tables 3 and 4 include a specification (specification 4) not included in Long's (1993) study, in which employee earnings growth during the five year study period is incorporated into the regression equations. As can be seen, this variable is significantly negative in all analyses. That is, establishments in which employee earnings are growing the fastest show the lowest employment growth. This is particularly true in the service sector, where employment growth seems much more sensitive to employee earnings growth than in the manufacturing sector. This makes sense, given that employee wages and salaries generally make up a much higher proportion of total costs in the service sector than in the manufacturing sector.

Not surprisingly, the effect of incorporating the earnings growth variable is much stronger in the service sector, where it substantially affects the relationship between union status and employment growth in all three analyses. For the overall services sample (and for smaller service workplaces) the effect is to substantially reduce the positive impact of the union variable on

TABLE 4
Regression Results Predicting the Employment Growth Rate in the Service Sector

	Entire Manufacturing Sample				Subsample of Larger Workplaces (split at the non-weighted median)				Subsample of Smaller Workplaces (split at the non-weighted median)			
	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)	(1)	(2)	(3)	(4)
Union Status	-.031** (.010)	.004** (.011)	.128** (.020)	.068** (.012)	-.025 (.015)	-.061** (.041)	-.010 (.045)	-.043* (.017)	.153** (.014)	.243** (.015)	.328** (.015)	.193** (.016)
Industry Controls	NO	YES	YES	YES	NO	YES	YES	YES	NO	YES	YES	YES
Workplace Size (# Employees)	–	–	-.002** (.000)	-.001** (.000)	–	–	-.000** (.000)	-.000** (.000)	–	–	-.015** (.001)	-.010** (.001)
Workplace Age	–	–	-.004** (.000)	-.004** (.000)	–	–	-.002** (.000)	-.001** (.000)	–	–	-.005** (.000)	-.003** (.000)
Earnings Growth	–	–	–	-.510** (.010)	–	–	–	-.282** (.014)	–	–	–	-.733** (.016)
Adjusted R ²	.000	.045	.082	.160	.000	.037	.052	.102	.006	.064	.095	.201
Model Fit (F)	9.5**	127.7**	201.9**	309.1	2.7	31.0**	36.4**	64.7	119.0**	133.2**	169.6	266.3**
Weighted N	27,008	27,008	27,008	21,004	7,819	7,819	7,819	7,316	19,188	19,188	19,188	13,687

Source: Canadian Workplace and Employee Surveys, 2001 and 2006. Data results are weighted.

Coefficients are unstandardized OLS regression coefficients. Standard errors are reported in parentheses.

The constant term is included in each estimation.

*, ** denote significance at the 0.05 level, and the 0.01 level, respectively.

employment growth, while for larger service workplaces the effect is to turn the union status coefficient significantly negative. What this suggests is that unions in the services sector are trading wages for employment, since controlling for employee earnings either reduces the positive impact of union status on employment growth (small services workplaces) or turns the union from a neutral factor in employment growth to a negative factor (larger services workplaces). This suggests that unions in both large and small services workplaces are 'purchasing' employment at the cost of employee earnings. Interestingly, among smaller services workplaces, unions exert a significant positive effect on employment growth even after controlling for the effects they achieved by suppressing employee earnings growth, suggesting that unions in smaller services workplaces contribute positively to workplace performance beyond simply serving to contain earnings growth. On the other hand, unions in larger services workplaces appear to exert a negative impact on employment growth, after controlling for their effects achieved by constraining employee earnings.

In contrast to the service sector, including the earnings growth variable does not substantially affect any of the union status coefficients in the manufacturing sector. This may suggest that earnings growth did not vary markedly between union and non-union manufacturing workplaces during the study period. Indeed, when we examined this issue more closely, we found that earnings growth in unionized manufacturing workplaces did lag non-union manufacturing workplaces, but just by 3% over the five-year period. However, as our earlier results imply, we found that unionized services workplaces lagged non-union workplaces in employee earnings growth to a much greater degree—by about 16% over the five-year period. This represents a very substantial earnings sacrifice by service sector unions over the study period, for which they were apparently rewarded with employment growth.

In order to further examine the role that the union wage premium may play in affecting employment growth, we regressed the union wage premium, as it stood in 2001, on employment growth in the ensuing five year period among unionized workplaces, and the results are shown in Table 5. As can be seen, there is a highly significant negative relationship between the union wage premium and employment growth in our overall sample and in both the manufacturing and service sectors. However, the magnitude of the relationship is much higher in the service sample. This finding is in accord with both our theoretical expectations and our earlier empirical results, which imply that employment in service workplaces will be much more sensitive to the level of employee earnings than employment in manufacturing workplaces.

TABLE 5
Regression Results Predicting the Effect of Union Wage Premium on Employment Growth in Unionized Workplaces

	Entire Unionized Sample			Unionized Manufacturing Sample			Unionized Service Sample		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Union Wage Premium %	-.140** (.015)	-.196** (.014)	-.163** (.015)	-.120** (.016)	-.103** (.017)	-.057** (.017)	-.214** (.023)	-.330** (.023)	-.274** (.023)
Industry Controls	NO	YES	YES	NO	YES	YES	NO	YES	YES
Workplace Size (# Emps.)	–	–	-.001** (.000)	–	–	-.000** (.000)	–	–	-.001** (.000)
Workplace Age (years)	–	–	-.001** (.000)	–	–	-.001** (.000)	–	–	-.002** (.000)
Adjusted R ²	.011	.131	.152	.045	.062	.134	.013	.133	.153
Model Fit (F)	89.9**	90.6**	94.1**	5.5**	27.7**	38.2**	87.1**	101.3**	99.8**
Weighted N	8,346	8,346	8,346	1,208	1,208	1,208	6,551	6,551	6,551

Source: Canadian Workplace and Employee Surveys, 2001 and 2006. Data results are weighted.

Coefficients are unstandardized OLS regression coefficients. Standard errors are reported in parentheses.

The constant term is included in each estimation.

*, ** denote significance at the 0.05 level, and the 0.01 level, respectively.

Discussion

Overall, our findings suggest that, in Canada, the negative relationship between union status and employment growth found by Long (1993) in both large manufacturing and large service establishments during 1980-1985 may now be confined to only large manufacturing establishments, and even there at a much smaller magnitude (about 1.2% per annum) than reported in Long's (1993) study (where he found a 5.2% per annum employment growth disadvantage among large manufacturing establishments). Larger service workplaces now apparently experience no union employment penalty, while smaller service workplaces apparently enjoy a substantial positive union employment effect. To our knowledge, this is the first instance in which a positive union employment effect has been detected in any empirical study.

However, while these results represent a dramatic change from those reported by Long (1993) in some respects, there are some commonalities between the two sets of findings. For example, both studies found 'Workplace Age' to be a key control variable. But more importantly, both studies found that the size of the workplace had a major impact on results, and that size tended to work in the same direction in each study; that is, that the union employment growth penalty was less evident (if present at all) in smaller workplaces. Long (1993)

found that—whether in the manufacturing sector or service sector—only the larger workplaces showed a significant employment growth suppression effect during 1980-85, while smaller establishments apparently suffered no union employment growth penalty (a result also found by Leonard (1992) in his study of US manufacturing firms). Twenty-one years later, we find a similar pattern for manufacturing firms. In the services sector, a smaller workplace size now apparently changes a neutral union employment growth effect to a positive union employment growth effect, while in 1980-85, a smaller workplace size apparently changed a negative employment effect to a neutral one.

We did several things to check on the plausibility of our findings. First, we examined trends in private sector union density. If, over time, unions are having less of a negative effect on employment growth, then we should observe a leveling off of the long-term decline in Canadian private sector union density that started in the 1970s, when private sector union density was estimated at 24%. Interestingly, data from Statistics Canada show that the downward trend was arrested in 1993, when private sector union density bottomed out at 18%. By 2004, private sector union density was still at this level (Statistics Canada, Labour Force Survey, 2007). So this certainly fits with our findings.

Second, we checked to see whether changes in the union wage premium are consistent with our findings. Earlier, we speculated that a declining union wage premium should reduce the union employment growth suppression effect. As a check on the plausibility of whether the union wage premium had in fact declined from earlier years, we calculated the union wage premiums in 2001 using the same control variables as in our regressions predicting employment growth.⁸ In the manufacturing sector, the union wage premium was less than 1% in 2001 (and not statistically significant) indicating that the union wage premium had virtually disappeared in manufacturing.

However, the results varied dramatically between larger and smaller workplaces. In larger manufacturing workplaces, the union wage premium was highly significant, at 13.1%, while in smaller manufacturing workplaces the union wage premium was actually significantly *negative*, as employees in smaller unionized manufacturing workplaces earned about 5.5% *less* than employees in comparable non-union workplaces. To check the stability of these results, we also examined the 2006 data, and found that the overall union wage premium in manufacturing was virtually identical (at 1.3%) compared to 2001, but that the union wage premium had declined in larger manufacturing establishments (to 8.4%) and the negative union wage premium in smaller manufacturing establishments (at -1.9%) had become less negative. While these results vary somewhat between 2001 and 2006, they are consistent with the union wage premium explanation of the union employment suppression effect. Where the

union wage premium has disappeared (in smaller manufacturing establishments) no significant union employment growth suppression effect remains; and where a union wage premium continues to exist (in larger manufacturing workplaces), so does a union employment growth penalty.

Conducting the same analysis in the service sector, we found a highly significant union wage premium (amounting to 16%) in 2001. At first glance, this result does not seem to fit a declining union wage premium explanation for the declining union employment suppression effect in the service sector. But when we examined 2006 data, we found that the overall union wage premium in services had diminished by almost 5 percentage points from 2001. A declining union wage premium in the service sector is consistent with the argument that unions in the service sector were trading wages for employment during the study period. Larger unionized services workplaces were able to use relative wage declines to stave off employment declines, relative to non-union workplaces, while smaller unionized services workplaces were apparently able to translate relative wage declines into positive employment growth. Overall, a reduced union wage premium is consistent with competitive pressures caused by globalization, which had extended to both manufacturing and services by the end of the twentieth century.

Interestingly, for the smaller services workplaces, there seems to be more at play in affecting employment growth than a simple reduction in relative wages. Table 4 has shown that, even after controlling for employee earnings growth, unions in small services workplaces still appear to exert a significant positive impact (about 3.9% per annum) on employment growth. This may suggest that, in smaller service establishments, unions do have a positive effect on establishment performance. These results are consistent with a 'voice effect' (Freeman and Medoff, 1984), where unions provide a vehicle for employee voice, which can then reveal problems and issues in need of resolution.

In interpreting our results, we need to consider what role methodological factors may have played. First, there are some important sample differences between our study and Long's (1993) study, the most important of which is workplace size. Our WES data set (which is carefully designed to be representative of the population of Canadian workplaces) includes a much higher proportion of smaller workplaces than the ECC data set, which underrepresented smaller establishments, and this may affect comparability of results. Given that, in both studies, smaller establishments are apparently less affected by the union employment growth penalty, it may well be that the ECC study (and any other study that underrepresents smaller establishments) overstates the magnitude of the union employment penalty. Thus, the differences in results between the two studies may be overstated.

Second, we note that our measure of unionization—though commonly used in the literature—does not provide an indication of the extent of unionization at a given workplace. It may be that the union employment growth suppression effect exists more strongly in highly unionized workplaces—as Walsworth (2010a) found—and possibly remains among highly unionized service sector workplaces. However, supplementary analysis substituting an establishment-level measure of union density did not notably affect our results.

Third, in any longitudinal sample, only the establishments that survive throughout the entire study period are included. Thus, while we may uncover the effect of unionization on employment growth in ongoing establishments, we do not know the extent to which unionization has suppressed employment growth by causing unionized workplaces to go out of business entirely. If, all other things being equal, unionized establishments are more likely to go out of business than non-union establishments, this represents an additional unmeasured union employment suppression effect. To test the argument that union workplaces are more likely to disappear from the sample by 2006, union status in 2001 was examined in the ‘non-surviving’ workplaces to see if they differed significantly from the ‘surviving’ workplaces. They did not, so this concern is not considered to bias the results.

Fourth, in our analyses we utilize industry controls, and controls for certain establishment-level variables (i.e. workplace size and age), but do not control for other establishment-level differences that may be relevant. For instance, we do not control for workplaces within the same industry that are pursuing different business strategies. As an example, one workplace within the light manufacturing sector may pursue a value added growth strategy, which entails higher wages and/or more employment growth compared to a workplace within the same sector that is following a low-cost strategy. In this event, the presence or absence of a union may not explain the entire divergence in wages or employment growth. In order to assess whether omitting business strategy affected our results, we added four available business strategy variables (importance of reducing labour cost; importance of reducing operating cost; importance of improving product/service; importance of developing new production/operating techniques), which are measured on six-point Likert scales, as controls in our regression equations. None of these variables had a significant impact on our results (and are therefore not included in the regression results in our tables). However, this does not eliminate the possibility that we may have omitted establishment-level variables that would be relevant to our results.

Fifth, it should be noted that both the ECC data and the WES data used in this paper are employer data sets, meaning they do not contain measures for individual employees. It is plausible that the union effects on employment growth may have

changed in ways not readily conveyed in workplace level measures. For example, it might be that the union wage premium has decreased disproportionately for younger workers who are subject to a two-tier pay structure at their workplaces, under which new employees are placed on a lower pay structure than existing employees.

Conclusions and Implications

Although we expected to find that the union employment growth suppression effect has declined in Canada—given the declining union wage premium in Canada—our results go considerably beyond our expectations. We find evidence of a union employment growth suppression effect only among larger manufacturing workplaces—with a substantially lower magnitude than in previous studies—and actually find a positive union employment growth effect in smaller services workplaces. These findings represent a substantial change from Long's (1993) findings, particularly in regard to the services sector, and point to the importance of segmenting analysis by workplace size and industry sector. They also represent the first findings that run counter to the union employment suppression effect that has been supported so consistently that it has been dubbed "the one constant" by Addison and Belfield (2004). Of course, one study alone (which in fact does contain some limited support for the union employment suppression effect) cannot be taken as a repudiation of this historically durable effect; much more empirical research would be required to do so.

However, while our results may appear to be very good news for unions, this may in fact turn out be a good news/bad news story. The good news is that diminution or elimination of the union employment growth penalty should reduce or arrest the on-going decline in union density within the Canadian private sector (and evidence suggests it may already have done so) and make employers less resistant to unionization. The bad news is that if unions have eliminated the employment growth suppression effect by reducing or even giving up the union wage premium (as appears to have occurred), this lessens the attractiveness of unions to new members. Ironically, while employers will have less incentive to resist unionization (due to a lower or even non-existent union wage premium), employees will have less incentive to unionize.

These circumstances present a dilemma for unions. Based on evidence available at the time, Long (1993: 701) argued that "the root cause of the relatively poor employment performance of union firms is almost certainly a negative union impact on profitability" and that "unless unions can increase the productivity of their members and the profitability of their employers, they will have to reduce union wage premiums, reduce union employment, or possibly both." Since then, there has been little or no evidence that unions have served to increase the

profitability of their employers, but plenty of evidence of declines in both private sector union employment and wage premium.

Our study suggests that, in recent years, Canadian private sector unions have arrested the decline in union employment by trading wages for employment. In the long run, it is hard to see how this will be a successful strategy for Canadian private sector unions. Unless unions are able to organize all the firms in a particular product or service market, which seems unlikely given prevailing political and economic circumstances, the only way to maintain a significant union wage premium and avoid the union employment growth suppression effect would be for unions to find ways to work with their employers to improve company productivity.

On that note, a recent British study by Salis and Williams (2010) identifies the use of workplace practices that encourage worker interaction as having a positive effect on labour productivity. Similarly this journal recently published a Canadian study where unions were found to have a significant positive impact (albeit small in magnitude) on a firm's likelihood of product innovation (Walsworth, 2010b). This may be an area where unions can leverage their existing strengths in building cohesive and co-operative group dynamics. In our sample, perhaps smaller services workplaces have been working with their employers to do so, since they have apparently been able to 'purchase' more employment growth than might be expected based only on reduction of the union wage premium. If so, this may point to a way out of the dilemma of trading away the union wage premium in order to arrest the erosion of union employment. Further investigation to determine whether and how unions in these small services workplaces are apparently contributing to the growth of their employers might yield some useful insights.

Notes

- 1 We note that results from the two data bases are not directly comparable, since the WES data base used by Fang and Verma (2002) allows for controls for more workplace variables than estimates based on household and labour force surveys.
- 2 The WES defines a 'workplace' as a business unit located at a single geographic location. That single location may be a stand-alone business, or it may be part of a larger business organization. It is analogous to the more commonly-used term 'establishment.' In our paper, we use these terms interchangeably.
- 3 It should be noted that eliminating cases that changed union status between 2001 and 2006 may introduce a bias to the results; however, given the small number of affected cases (71 workplaces) we feel the risk is minimal.
- 4 The original purpose of the ECC survey was to examine the extent to which Canadian business establishments had adopted new information technology, and to identify which types of human resource practices were associated with adoption. Establishments in all industries, with the exception of agriculture, construction, and the public sector were surveyed, based on available lists of Canadian establishments. The ECC sample was unweighted, and tended

to overrepresent medium and large establishments, and manufacturing establishments, and to underrepresent smaller establishments and services establishments.

- 5 To examine the current plausibility of this conversion factor, we examined Statistics Canada data (Usalca, 2008). We found that, in 2001, the average part-time worker in Canada worked approximately .416 the hours of an average full-time employee, which would imply a conversion factor of .416, rather than .33. This reflects a gradual increase in the hours worked by part-time employees over the previous two decades and a slight decrease in the hours worked by full-time employees. In the interests of consistency with Long's (1993) study, we opted to stay with the .33 conversion factor, recognizing that this would understate the FTE somewhat at workplaces that employ part-time employees. For example, a workplace with 35 full-time employees and 15 part-time employees would show up as 40 FTE employees using the .33 conversion and 41.2 using the .416 conversion. We don't believe that staying with .33 will substantially affect our results, since our key dependent variable—employment growth—utilizes within-establishment comparisons.
- 6 Although use of a dichotomous variable to measure union status is common, and corresponds with Long (1993), it is possible that union density at the workplace level might be a more sensitive measure, depending of course on the level of accuracy with which this variable is reported by respondents. We examined whether a workplace-level measure of union density would produce results that differed notably from our results that utilize a dichotomous measure, and did not find this to be the case.
- 7 The coefficient estimates of 'Workplace Size' are very small, often showing a significant coefficient that rounds to 0.000. We considered transforming this variable into a log; however, considering the dependent variable includes a linear measure of workplace size, we decided it was more appropriate to leave in its linear form.
- 8 Full details and tables of this analysis are available upon request.

References

- Addison, John T., and Clive R. Belfield. 2004. "Unions and Employment Growth: The One Constant?" *Industrial Relations*, 43 (2), 305-323.
- Batt, Rosemary, and Theresa M. Welbourne. 2002. "Performance and Growth in Entrepreneurial Firms: Revisiting the Union-Performance Relationship." *Advances in Entrepreneurship, Form, Emergence, and Growth, Volume 5*, edited by Jerome A. Katz and Theresa M. Welbourne, Amsterdam: Elsevier, 147-174.
- Betcherman, Gordon, and Kathryn McMullen. 1986. *Working with Technology: A Survey of Automation in Canada*. Ottawa: Canadian Government Publishing Centre.
- Blackburn, McKinley L. 2008. "Are Union Wage Differentials in the United States Falling?" *Industrial Relations*, 47 (3), 390-418.
- Blanchflower, David G., and Alex Bryson. 2004. "What Effect Do Unions Have on Wages Now and Would Freeman and Medoff Be Surprised?" *Journal of Labor Research*, 25 (3), 383-414.
- Blanchflower, David G., Neil Millward, and Andrew J. Oswald. 1991. "Unionism and Employment Behaviour." *The Economic Journal*, 101 (407), 815-835.
- Bratsberg, Bernt, and James F. Ragan Jr. 2002. "Changes in the Union Wage Premium by Industry." *Industrial & Labor Relations Review*, 56 (1), 65-83.

- Bronars, Stephen G., and Donald R. Deere. 1994. "Unionization and Profitability: Evidence of Spillover Effect." *The Journal of Political Economy*, 102 (6), 1281-1288.
- DiNardo, John, and David S. Lee. 2004. "Economic Impacts of New Unionization on Private Sector Employers: 1984-2001." *The Quarterly Journal of Economics*, 119 (4), 1383-1441.
- Doucouliaagos, Christos, and Patrice Laroche. 2003. "What Do Unions Do to Productivity? A Meta-Analysis." *Industrial Relations*, 42 (4), 650-691.
- Doucouliaagos, Christos, and Patrice Laroche. 2009. "Unions and Profits: A Meta-Regression Analysis." *Industrial Relations*, 48 (1), 146-184.
- Fang, Tony, and Anil Verma. 2002. "Union Wage Premium." *Perspectives on Labour and Income*, 14 (4), 17-23.
- Fang, Tony, and John Heywood. 2006. "Unionization and Plant Closures in Canada." *Canadian Journal of Economics*, 39 (4), 1173-1194.
- Fang, Tony, and John Heywood. 2010. "Immigration, Ethnic Wage Differentials and Output Pay in Canada." *British Journal of Industrial Relations*, 48 (1), 109-130.
- Freeman, Richard B., and James L. Medoff. 1984. *What Do Unions Do?* New York: Basic Books.
- Hirsch, Barry T, and Edward J. Schumacher. 2001. "Private Sector Union Density and the Wage Premium: Past, Present, and Future." *Journal of Labor Research*, 22 (3), 487-518.
- Hirsch, Barry T., and Edward J. Schumacher. 2004. "Match Bias in Wage Gap Estimates Due to Earnings Imputation." *Journal of Labor Economics*, 22 (3), 689-722.
- Leonard, Jonathan S. 1992. "Unions and Employment Growth." *Industrial Relations*, 31 (1), 80-94.
- Long, Richard J. 1993. "The Effect of Unionization on Employment Growth of Canadian Companies." *Industrial & Labor Relations Review*, 46 (4), 691-703.
- Machin, Stephen, and Mark Stewart. 1996. "Trade Unions and Financial Performance." *Oxford Economic Papers*, 48 (2), 213-42.
- Pencavel, John. 2009. "How Successful Have Trade Unions Been? A Utility-Based Indicator of Union Well-Being." *Industrial & Labor Relations Review*, 62 (2), 147-156.
- Salis, Sergio and Allan Williams. 2010. "Knowledge Sharing through Face-to-Face Communication and Labour Productivity: Evidence from British Workplaces." *British Journal of Industrial Relations*, 48 (2), 436-459.
- Statistics Canada, Labour Force Survey. Fact Sheet on Unionization, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007.
- Statistics Canada. 2006. *Guide to the Analysis of the Workplace and Employee Survey*. Ottawa, Canada.
- Usalcas, Jeannine. 2008. "Hours Polarization Revisited." *Perspectives on Labour and Income*, 20 (2), 5-15.
- Walsworth, Scott. 2010a. "Unions and Employment Growth: The Canadian Experience." *Industrial Relations*, 49 (1), 142-156.
- Walsworth, Scott. 2010b. "What do Unions do to Innovation? An Empirical Examination of the Canadian Private Sector." *Relations Industrielles/Industrial Relations*, 65 (4), 543-562.
- Wooden, Mark, and Anne Hawke. 2000. "Unions and Employment Growth: Panel Data Evidence." *Industrial Relations*, 39 (1), 88-107.

SUMMARY

Is the Union Employment Suppression Effect Diminishing? Further Evidence from Canada

That unions suppress employment growth among their employers has been such a ubiquitous finding that it has been dubbed “the one constant” in industrial relations research (Addison and Belfield, 2004). However, all of the empirical findings on which this conclusion is based come from data collected in 1998 or earlier, and the Canadian findings (Long, 1993) date from more than twenty-five years ago. Noting this, Walsworth (2010a) utilized data from the Statistics Canada Workplace and Employee Survey (WES) covering the period 1999-2005 to investigate the more recent magnitude of the employment growth suppression effect in Canada. He found that, compared to Long’s (1993) findings, the union employment suppression effect has apparently diminished in Canada. However, we note that Walsworth’s (2010a) analysis is not comparable to that conducted by Long (1993) in several ways. For example, Walsworth (2010a) did not segment his analysis by establishment size, or by industrial sector.

Moreover, Walsworth (2010a) attempted no analysis of the reasons behind a possible diminution in the union employment growth suppression effect, an omission that we address by examining employee earnings growth and the union wage premium as possible contributing factors. We analyze WES data collected during 2001-2006 and, like Long (1993), find important differences when segmenting our analysis according to establishment size, as the union employment suppression effect was evidenced in large manufacturing establishments, but not in smaller manufacturing establishments. However, unlike Long (1993), we also find important differences between the manufacturing sector and the service sector, where we find no union employment suppression effect among larger service establishments, and a significant positive union effect on employment growth among smaller service establishments—the first finding of a positive union employment growth effect in any context. Our analysis suggests that a declining union wage premium may have played a role in these results.

KEYWORDS: unions, employment, employee earnings, union wage premium

RÉSUMÉ

Assiste-t-on à un ralentissement de la baisse de l’emploi syndiqué? Nouvelles observations au Canada

Que les syndicats aient contribué à supprimer la croissance de l’emploi dans les entreprises où ils étaient présents s’est révélée une observation tellement omniprésente qu’on a surnommé ce phénomène « la constante » dans la recherche en relations industrielles (Addison et Belfield, 2004). Toutefois, tous les résultats empiriques sur lesquels cette conclusion repose découlent de données colligées en 1998

ou avant, tandis que les résultats pour le Canada (Long, 1993) remontent à plus de vingt-cinq ans. Tenant compte de cela, Walsworth (2010a) a utilisé les données de l'enquête de Statistique Canada sur le milieu de travail et les employés (EMTE) couvrant la période 1999-2005 pour étudier la plus récente ampleur de l'effet de suppression d'emplois au Canada. L'auteur a observé, comparativement aux résultats obtenus par Long (1993), que l'effet de la baisse de l'emploi syndiqué avait apparemment ralenti. Nous notons toutefois que l'analyse de Walsworth (2010a) n'est pas comparable à celle menée par Long (1993) à plusieurs égards. Par exemple, Walsworth (2010a) ne ventile pas son analyse selon la taille des établissements, ni selon le secteur industriel. De plus, il n'a pas cherché à expliquer les raisons du ralentissement possible de l'effet de baisse de l'emploi syndiqué, une lacune que nous cherchons à combler en examinant deux facteurs potentiellement associés à un tel ralentissement, soit la croissance des gains d'emploi et l'avantage salarial des travailleurs syndiqués.

Pour ce faire, nous avons analysé les données de l'EMTE couvrant la période 2001-2006 et, comme Long (1993), nous avons observé d'importantes différences lorsque nous avons ventilé nos données pour fins d'analyse selon la taille des établissements, l'effet de la baisse de l'emploi syndiqué apparaissant dans les grands établissements manufacturiers mais pas dans les plus petits. Toutefois, contrairement à Long (2003), nous avons observé d'importantes différences entre le secteur manufacturier et celui des services avec l'absence d'un effet de baisse d'emploi syndiqué parmi les grands établissements de service, et un effet syndical significativement positif sur la croissance de l'emploi dans les établissements de service de plus petite taille – la première observation d'un effet positif de croissance de l'emploi syndiqué dans quelque contexte que ce soit. Notre analyse suggère qu'un déclin de l'avantage salarial des syndiqués peut avoir joué un rôle dans ces résultats.

MOTS-CLÉS : syndicats, emploi, gains de travail, avantage salarial des syndiqués

RESUMEN

¿Asistimos a una disminución de la baja del empleo sindicalizado? Nuevas observaciones en Canadá

Que los sindicatos hayan contribuido a suprimir el crecimiento del empleo en las empresas donde ellos estaban presentes, se ha revelado un observación tan omnipresente que se le ha dado el nombre de "la constante" en la investigación en relaciones industriales (Addison y Belfield, 2004). Sin embargo, todos los resultados empíricos sobre los cuales reposa esta conclusión derivan de datos recogidos en 1998 o antes, mientras que los resultados por Canadá (Long, 1993) remontan a más de veinticinco años. Teniendo esto en cuenta, Walsworth (2010a) ha utilizado los datos de la encuesta de Estadística Canadá sobre el medio de trabajo y los empleados (EMTE) que cubren el periodo 1999-2005 para estudiar los indicadores más recientes de la importancia del efecto de la supresión de empleos

en Canadá. Comparativamente a los resultados obtenidos por Long (1993), el autor ha observado que el efecto de la disminución del empleo sindicalizado había aparentemente decelerado. Notamos sin embargo que el análisis de Walsworth (2010a) no es comparable al análisis realizado por Long (1993) sobre diferentes aspectos. Por ejemplo, Walsworth (2010a) no ventila su análisis según el tamaño de los establecimientos, ni según el sector industrial. Es más, él no ha buscado a explicar las razones de la posible disminución del efecto de baja del empleo sindicalizado, un vacío que nosotros buscamos a colmar examinando dos factores potencialmente asociados a tal disminución, es decir el aumento de los beneficios de empleo y la ventaja salarial de los trabajadores sindicalizados.

Para esto, hemos analizado los datos del EMTE que cubren el periodo 2001-2006 y, como Long (1993), hemos observado importantes diferencias cuando hemos ventilado los datos con el análisis según el tamaño de los establecimientos, lo que permite constatar el efecto de la baja del empleo sindicalizado en los grandes establecimientos manufactureros pero no en los mas pequeños. Sin embargo, al contrario de Long (2003), hemos observado importantes diferencias entre el sector manufacturero y el sector servicios constando así la ausencia de un efecto de baja del empleo sindicalizado en los grandes establecimientos de servicio, y un efecto sindical positivo significativo sobre el aumento del empleo en los establecimientos de servicios mas pequeños – la primera observación de un efecto positivo de crecimiento del empleo sindicalizado en cualquier contexto. Nuestro análisis sugiere que un descenso de la ventaja salarial de los sindicalizados puede jugar un rol en estos resultados.

PALABRAS CLAVES: sindicatos, empleo, ganancias de trabajo, ventaja salarial de sindicalizados