Studies in
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by Milagros Palacios and Jason Clemens

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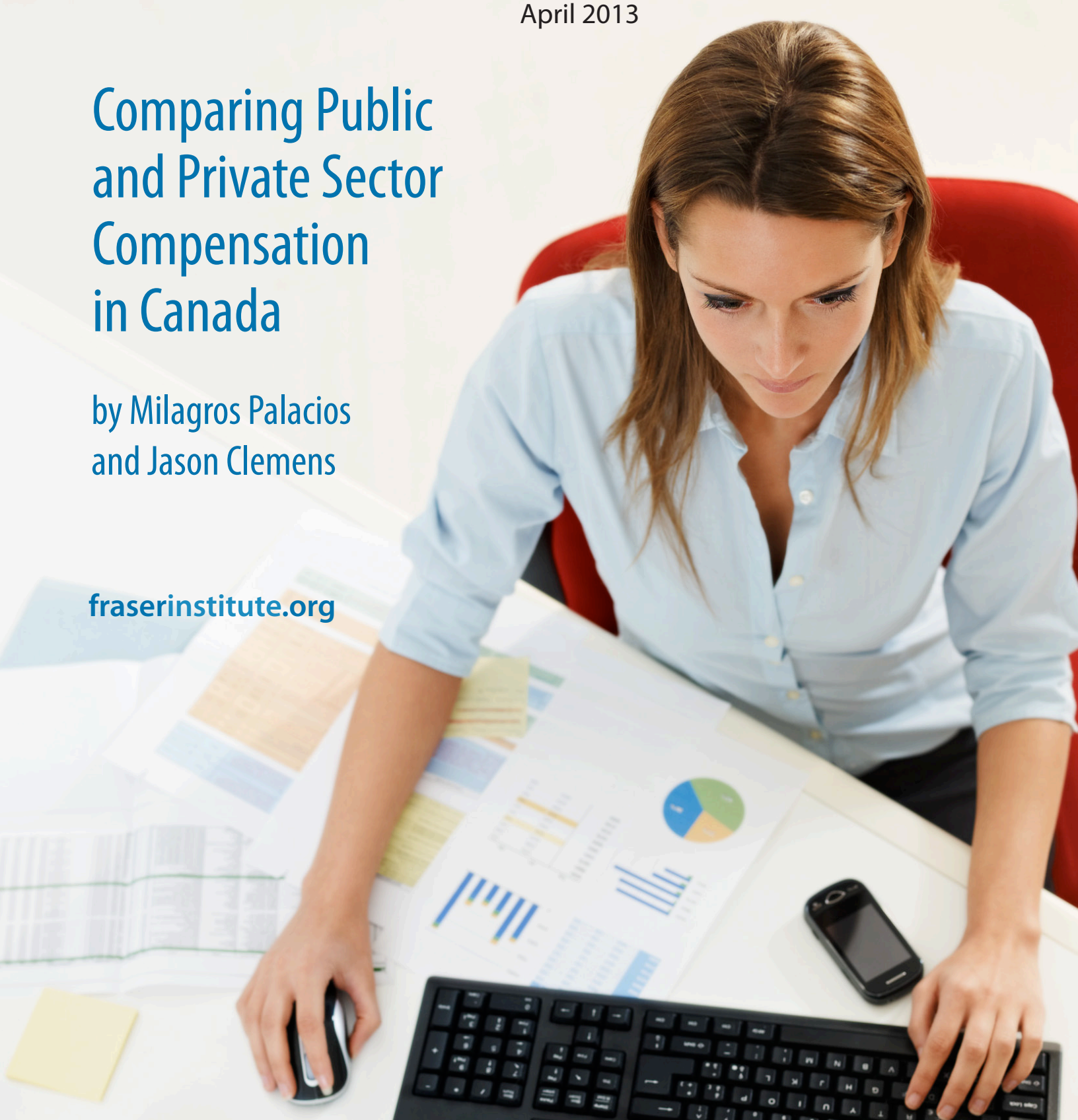

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Contents

Executive summary

As federal and many provincial governments continue to struggle with both deficits and finding ways to constrain spending, there is heightened interest in how wages and non-wage benefits (i.e., total compensation) in the public sector compare with those in the private sector.

While a lack of non-wage benefits data mean that there is insufficient information to make a definitive comparison of total compensation between the private and public sectors, the data that are available indicate that the public sector enjoys a clear wage premium. There are also strong indications that the public sector has more generous non-wage benefits than the private sector.

Wage comparison

After controlling for such factors as gender, age, marital status, education, tenure, size of firm, province, city, type of job, and industry, public sector workers (including federal, provincial, and local) enjoyed a 12.0 percent wage premium, on average, over their private sector counterparts in Canada. When unionization status is factored in the analysis, the wage premium for the public sector declines to 9.5 percent.

Available data for non-wage benefits similarly suggest that public sector workers fare better than those in the private sector. For example, 88.2 percent of public sector workers were covered by a registered pension plan compared to 24.0 percent of private sector workers (see figure A). Of those public sector workers covered by a registered pension plan, 94.0 percent were covered by a defined benefit pension compared to just over half (52.3 percent) of private sector workers.

In addition, public sector workers retire earlier than their private sector counterparts—about 2.5 years, on average (see figure B)—and are less likely to lose their jobs (3.8 percent in the private sector versus 0.6 percent in the public sector) (see figure C).

Figure A: Percentage of employees in Canada covered by a registered pension plan in 2011

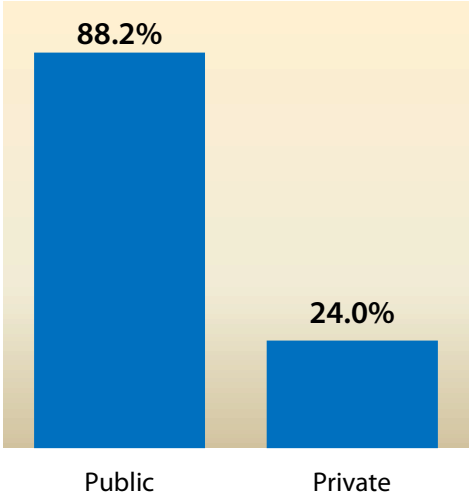


Figure B: Average retirement age in Canada, 2007–2011

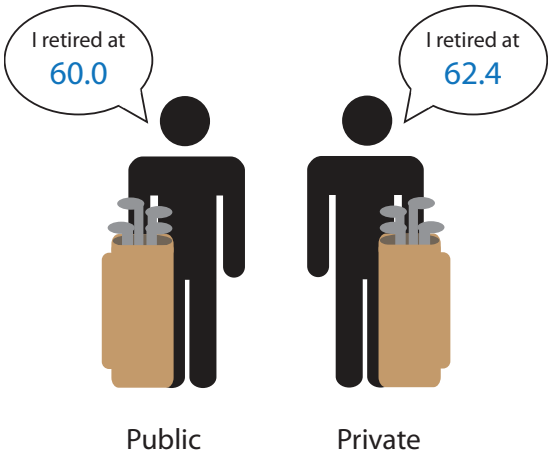
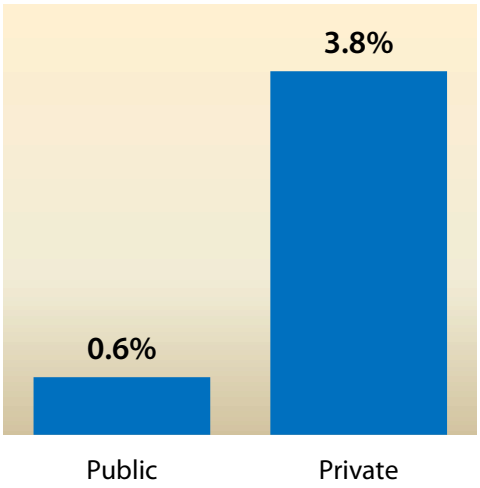


Figure C: Job loss as a percentage of employment in 2011



Overall, public sector workers in Canada enjoy higher wages and probably higher non-wage benefits than comparable workers in the private sector.

To ensure that the overall public sector compensation is fair to both taxpayers and public sector workers, it is clear that a new institutional framework is needed.

(1) Collect better data

The first step to achieving an improved system of wage and benefit setting in the public sector is to get a more accurate assessment of the total public sector compensation premium in Canada. To determine this, Statistics Canada must collect data on wage and non-wage benefits for public and private sector workers more regularly and more systematically than it now does. The data currently available on these benefits are neither detailed nor comprehensive enough to allow for a regular, empirical analysis of total compensation between the two sectors.

(2) Recognize that total compensation is what matters, not wages alone

A second step in the reform process is to ensure that the comparison includes total compensation, not just a narrower comparison of wages or specific benefits such as pensions. The key is that the *overall* compensation levels should be comparable between the public and private sector workers.

(3) Ensure transparency and routine disclosure

In order for this new framework to function properly, information regarding public sector wages and benefits must be transparent, accessible, and disclosed regularly.

(4) Institute a mechanism for setting compensation

A number of mechanisms are available that would better ensure that overall public sector compensation is comparable with the private sector.

a) Formal mechanisms within government

One approach is simply to legislate a specific mechanism within government that regularly calculates and sets the total compensation levels for public sector positions based on private sector equivalents.

b) Wage boards: An arms-length approach

Another mechanism is to create a wage board, an independent governmental body that is responsible for collecting, analyzing, and setting public sector wages and benefits based on private sector equivalents.

c) Lump-sum payments

Another, perhaps more radical reform is to empower public sector unions to become more involved in the determination of the composition of compensation for their members. This means providing unions with a lump-sum amount of money for the total compensation, and allowing each of them to determine the mix of wages and benefits for their members. Given the high unionization rates in the public sector, bringing the unions into the solution would be beneficial to the longer term sustainability of public sector compensation.

Introduction

The federal and almost every provincial government in Canada have faced ongoing struggles to balance their budgets. Further, in recent years, there have been a number of large-scale, high-profile reforms in some US states.[1] For these and a variety of other reasons, there is heightened interest in how wages and non-wage benefits (i.e., total compensation) in the public sector in Canada compare with those in the private sector.

This study replicates a previously used methodology by which to compare wages in the two sectors. It then compares three available non-wage benefits more generally in an attempt to quantify compensation differences between the public and private sectors in Canada.

It is important to emphasize that wages are only one component of overall compensation. Various non-wage benefits such as pensions, health and dental insurance, duration of vacation, life and disability insurance, etc. can increase overall compensation levels significantly. In this study, we are unable to estimate the overall total compensation premium in the public sector due to a lack of data on non-wage benefits. However, we do present the data that are available on non-wage benefits to shed some light on the differences in these benefits between the public and private sectors.

The study is divided into a number of sections. The first provides some basic statistics on public and private sector employment in Canada. The second discusses differences in the wage-setting process in the two sectors. It also includes a summary of previous research quantifying public sector wage premiums. The third section presents the results of calculations used to determine the wage premium in the public sector. (Appendix A discusses the methodology employed in making these calculations.) The paper's fourth section compares available non-wage benefits to ascertain the likelihood that there is a premium for non-wage benefits in the public compared to the private sector. The final section provides some general recommendations.

1 For example, in order to tackle the state deficit, Wisconsin Governor Scott Walker has enacted a broad range of fairly substantial changes in public sector compensation in his state. For example, he has reduced generous public sector pension and health care benefits, and restricted collective bargaining in the public sector (Walker, 2011, March 1).

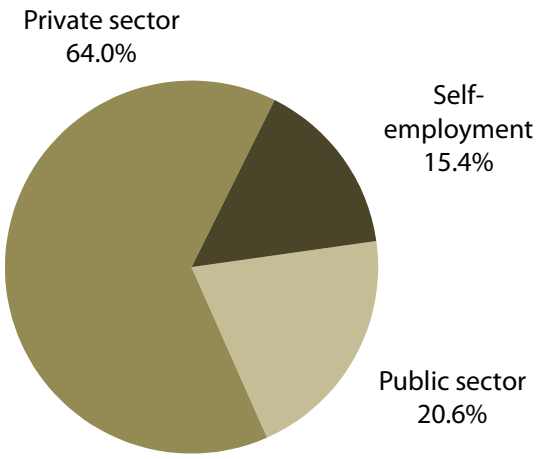
1 Comparing the Size of the Public and Private Sectors

Before analyzing and discussing compensation in the public and private sectors, it is useful to compare the two sectors more generally.

National overview: Composition of total employment

Figure 1 illustrates the composition of total employment in 2011. In that year, some 3.6 million Canadian workers, representing 20.6 percent of total employment, were employed in the public sector, including federal, provincial, and local government, government agencies, crown corporations, and government-funded establishments such as schools (including universities), and hospitals (Statistics Canada, 2012b).[2]

Figure 1: Components of total employment, 2011



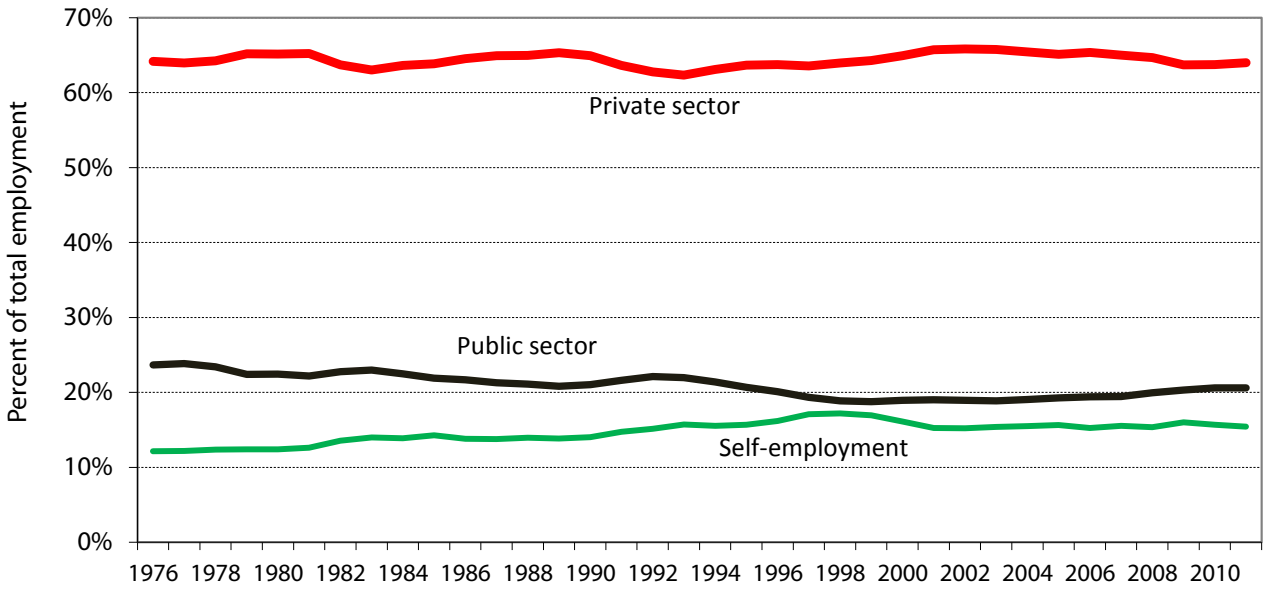
Sources: Statistics Canada (2012b); calculations by the authors.

In contrast, there were 11.1 million workers employed in the private sector in 2011, representing 64.0 percent of total employment (Statistics Canada, 2012b). The remaining 15.4 percent were self-employed (figure 1).

Figure 2 depicts the changes in public sector, private sector, and self-employment as a share of total employment from 1976 to 2011. Public sector employment has increased from 2.3 million workers in 1976 to 3.6 million workers in 2011, an increase of 54.5 percent (Statistics Canada, 2012b). As a share of total employment, public sector

2 Unless otherwise stated, data used in this section come from Statistics Canada's Labour Force Survey (LFS). This is a household survey of a sample of individuals who are representative of the civilian population 15 years of age or older. Excluded from the survey's coverage are persons living on reserves and other Aboriginal settlements in the provinces, full-time members of the Canadian Forces, and the institutionalized population (for example, inmates of penal institutions and patients in hospitals or nursing homes who have resided in the institution for more than six months). These groups together represent an exclusion of approximately 2% of the population aged 15 and over (Statistics Canada, 2012g: 19).

Figure 2: Size of Public Sector as Share of Total Employment, 1976-2011



Sources: Statistics Canada (2012b); calculations by the authors.

employment decreased from 23.7 percent in 1976 to 18.8 percent in 1999 (the low point in this period), only to increase again to 20.6 by 2011 (figure 2).

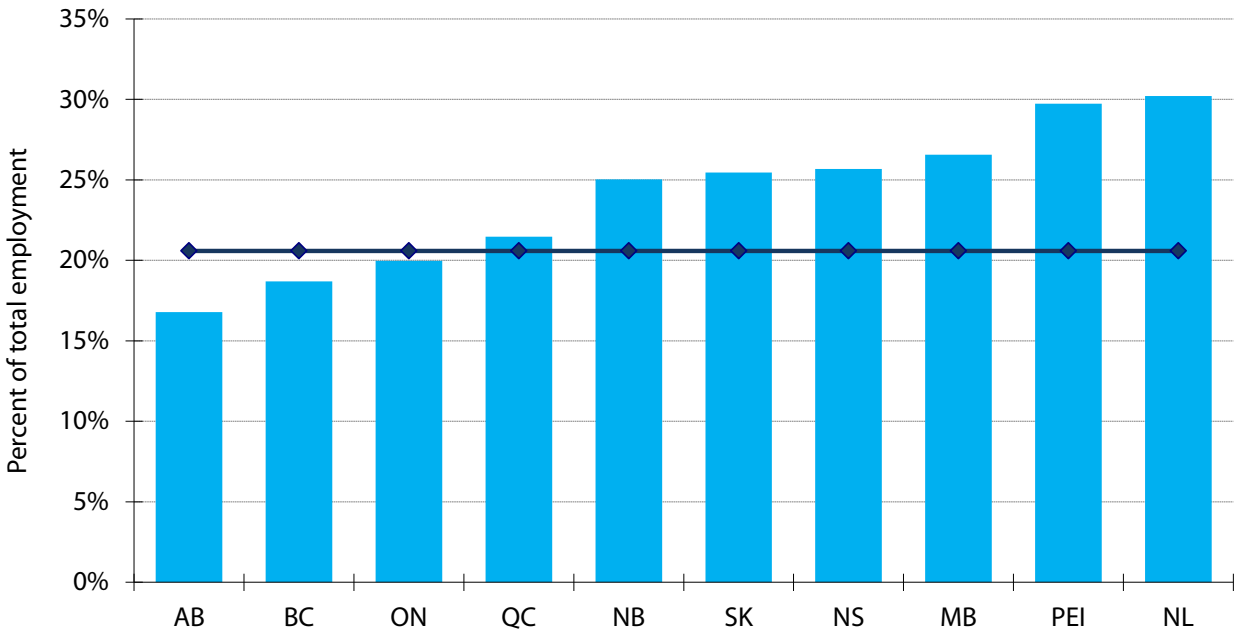
On the other hand, private sector employment as a share of total employment has remained relatively stable: 64.2 percent in 1976 versus 64.0 percent in 2011. The number of Canadians working in the private sector increased by 77.0 percent, from 6.3 million workers in 1976 to 11.1 million workers in 2011.

Over the same period, self-employment more than doubled from 1.2 million people in 1976 to 2.7 million in 2011 (Statistics Canada, 2012b), increasing its share of total employment to 15.4 percent in 2011 from 12.2 in 1976 (figure 2).

Provincial overview: Public sector employment

On average, one out of five Canadian workers (20.6 percent of total employment) is employed by various levels of government in Canada. This proportion varies from province to province. In 2011, the size of the public sector as a share of total provincial employment ranged from a low of 16.8 percent in Alberta to 30.2 percent in Newfoundland & Labrador (figure 3). Even in Alberta, nearly 1 in 5 workers were employed in the public sector, indicating that it is a large and important employer across the country. In six Canadian provinces—New Brunswick, Saskatchewan, Nova Scotia,

Figure 3: Public sector employment as a share of total employment, by province, 2011



Sources: Statistics Canada (2012b); calculations by the authors.

Manitoba, Prince Edward Island, and Newfoundland & Labrador—the public constituted one-quarter or more of their total employment.

Provincial public sector employment by level of government

While it is useful to know the proportion of public sector employment as a percentage of total employment, it does not tell us the percentage of public sector employees working for different levels of government in each jurisdiction. Table 1 provides the composition of public sector employment by the level of government.[3]

Provincial government employees make up the largest portion of the total public sector workforce in Canada, followed by local and federal government employees. The

3 The Labour Force Survey data used so far in the paper breaks down the data by sector (public and private) but unfortunately does not provide public sector data for different levels of government. Table 1 uses data from Statistics Canada's Public Sector Statistics Division (PSSD). There are some differences between the Labour Force Survey and PSSD public sector data, but the differences appear to be relatively small. For details on these differences, see Statistics Canada, 2009.

Table 1: Composition of Public Sector Employment, 2011

	Federal[a]	Provincial	Local
Canada	12.3	49.4	38.3
Newfoundland & Labrador	12.8	66.8	20.4
Prince Edward Island	24.7	53.9	21.4
Nova Scotia	16.3	49.9	33.8
New Brunswick	14.3	76.1	9.6
Quebec	10.0	56.9	33.1
Ontario	14.8	39.3	46.0
Manitoba	15.6	52.6	31.8
Saskatchewan	8.1	58.1	33.8
Alberta	7.0	44.7	48.2
British Columbia	11.0	55.5	33.6

Note: (a) Federal government data excludes reservists and full-time military personnel.
Sources: Statistics Canada (2012a and 2012c); calculations by the authors.

proportion of total public sector employees working for the provincial government in 2011 ranged from 39.3 percent in Ontario to 76.1 in New Brunswick. In only three provinces (Ontario, Alberta, and Nova Scotia,) was the proportion of public sector workers working for the provincial government below 50 percent.

New Brunswick had by far the lowest percentage of public sector workers working for the local government, 9.6 percent. For the remainder of the provinces, the proportion of local government workers ranged from 20.4 percent in Newfoundland & Labrador to 48.2 percent in Alberta.

Federal public sector employment did not exceed one quarter of total employment in any of the provinces. Alberta had the lowest proportion of public sector workers working for the federal government (7.0 percent), followed closely by Saskatchewan at 8.1 percent. Prince Edward Island, at 24.7 percent, had the highest proportion of public sector workers working for the federal government.

Conclusion

The public sector is a vital part of the country's labour force and represents roughly one in five workers across the country, although that proportion varies by province.

II Past Research Comparing Wages in the Public and Private Sectors

A number of studies have empirically quantified wage differences between similar occupations in the private and public sectors.[4] All of the studies summarized in this section, except for one, measure just the wage differences between the public and private sectors; this is due to lack of sufficient data on non-wage benefits.

In a seminal study, University of Toronto Professor Morley Gunderson (1979) examined wage differences between the public and private sectors using the 1971 Canadian Census data. He found that after controlling for the effect of other determinants of pay, the pure wage premium in Canada's public sector was 6.2 percent for males and 8.6 percent for females when compared to the private sector. Lower wage workers received the largest premium.

Shapiro and Stelcner (1989) extended Gunderson's analysis using the 1981 Canadian Census data. They found that after accounting for factors such as education, training, and work experience, the public sector wage premium was 4.2 percent for males and 12.2 percent for females in 1980.

In a comprehensive follow-up study, Gunderson and two of his colleagues expanded his original analysis by using Census data from 1971, 1981, 1991, and 1996, as well as data from the 1997 *Labour Force Survey* (Gunderson et al., 2000).[5] They found a public sector wage premium of 7.6 percent using the survey data and about 9.0 percent using the 1996 Census data. Overall, Gunderson et al. (2000) found that the findings from the two data sources were quite consistent, suggesting that, on average, those in the public sector received a wage premium of roughly 9 percent compared to similar workers in the private sector.[6,7]

4 Note that male-female wage and union/non-union wage differentials are outside of the scope of this study. For a survey of this literature, see Ehrenberg and Schwarz (1986) and Bender (1998).

5 The major advantage of the Labour Force Survey data is that public sector workers are explicitly identified, whereas they are not in the Census data.

6 While the 1996 Census data are not strictly comparable to those from earlier Censuses due to different industry classifications, the wage premium based on the 1996 data is higher than the wage premium from earlier Censuses (4.6 percent in 1971, 5.5 percent in 1981, and 8.5 percent in 1991) suggesting that the premium has potentially increased over the past few decades.

7 The Gunderson et al. (2000) estimate of the public sector wage premium in 1971 is different from that found in Gunderson (1979). This is likely due to slightly different specifications used in the 2000 study to

Prescott and Wandschneider (1999) examined 1981 and 1990 survey data from Canada's *Survey of Consumer Finances* and found a higher public sector wage premium: 14.3 percent for males and 25.0 percent for females for 1990.[8]

Mueller (2000) examined differences in public sector wage premiums by the level of government (federal, provincial, and local) using Canadian data from 1988 to 1990 from the *Labour Market Activity Survey* (LMAS) and found that the premiums were the highest for federal government employees followed by those in local and provincial governments.[9] Overall, the public sector wage premium was 3.3 percent for males and 11.3 percent for females. At the federal level, the wage premium for public sector workers was 7.8 percent for males and 16.0 percent for females compared to the private sector. At the provincial level, the public sector wage premium was negative 3.5 percent for males and positive 10.9 percent for females. Finally, at the local or municipal level, the public sector wage premium was 5.0 percent for males and 6.6 percent for females over the private sector.

The Canadian Federation of Independent Businesses (CFIB) used 2006 Census data and found that it was not only wages that were higher in the public sector, but non-wage benefits, too. The CFIB found "that government and public sector employees are paid roughly 8 to 17 percent more than similarly employed individuals in the private sector" (Mallett and Wong, 2008:1). However, after "taking into account significantly higher paid [non-wage] benefits and shorter workweeks, the public sector total compensation advantage balloons past 30 percent" (Mallett and Wong, 2008: 1).[10]

More recently, Tiagi (2010) examined the public sector wage premium for male and female workers in Canada using data from Statistics Canada's September 2008 *Labour Force Survey*. After controlling for individual differences among workers in the two sectors such as education, marital status, occupation, job tenure, and unionization, the author found that both male and female public sector workers receive a wage premium: 5.4 percent for men and 19.8 percent for women.

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make the wage premium estimates comparable across the three Census years (1971, 1981, and 1991). For example, Gunderson et al. (2000) includes those in the military, since those people could not be excluded from the 1991 Census, whereas people in the military are excluded in Gunderson (1979).

8 The authors found that from 1981 to 1990, the public sector wage premium for males slightly declined while it increased for females.

9 Mueller (1998) obtained similar results. The author found that public sector wage premiums tend to be higher for federal government employees, females, and low-wage individuals.

10 Mallett and Wong (2008) found that the public sector wage premium was the highest at the federal level (17.3 percent) followed by the municipal level (11.2 percent) and provincial level (7.9 percent). Once the non-wage benefits are included, the public sector compensation premium increases to 41.7 percent for federal workers, 35.9 percent for municipal workers, and 24.9 percent for provincial workers.

There are a few studies that have surveyed the research on public sector wage premiums in Canada. For instance, Bender (1998) completed a comprehensive review of past research on public sector wage premiums for this country and a select group of developed and developing nations. He found that the public sector wage premium in Canada was between 5 and 15 percent.

In 2006, James Lahey, an associate secretary at the Treasury Board Secretariat, reviewed the literature on the public sector wage premium in Canada and concluded that the "federal public service wage premium was likely well under 10 percent" (Treasure Board of Canada Secretariat, 2006: 73).

In an update of his study, in 2011 Lahey concluded that the public sector wage premium at the federal level was likely between 8 and 9 percent (Lahey, 2011). He argued that the total compensation premium for federal employees is roughly 15 to 20 percent once the non-wage benefits such as pensions are added.

Similar studies as those completed for Canada have been undertaken in other countries with similar results: the public sector is consistently observed to maintain higher wages and compensation than the private sector.[11] For example, Biggs and Richwine (2011) found that federal workers in the US enjoyed a wage premium of 14 percent. Critically, however, the authors spent considerable time developing estimates for both non-wage benefits and job security. They calculated that the premium enjoyed by the public sector increased to over 60 percent after non-wage benefits and job security were included.

Explaining the public sector premium

There are a number of potential causes for the compensation premium observed in the public sector. Importantly, two of them yield an understanding of how such a premium might be managed and eliminated over time.

The first consideration is the type of constraint facing private sector wages. University of Toronto Professor Morley Gunderson noted in his seminal study, *Earnings Differentials between the Public and Private Sectors* (1979), that the main difference in the process of determining wages between the public and private sectors was the type of constraint imposed on wages. In the private sector, profits are the main constraint on wages. That is, to maximize profits, businesses set wages in line with workers' productivity so they can attract and retain the workers they require to compete.

11 See, for example, Smith (1976 and 1977), Venti (1985), Moore and Raisian (1991), Choudhury (1994), and Ramoni-Perazzi and Bellante (2007). Gregory and Borland (1999) and Ehrenberg and Schwarz (1986) provide prominent reviews of this literature for the US and/or other countries.

In the public sector, on the other hand, Gunderson observed that the "profit constraint [on wages] is replaced by an ultimate political constraint" (1979: 230). That is, wages are determined through political bargaining between governments and employee groups (largely unions). Ultimately, public sector wages "depend on their [i.e., employee groups'] ability to compete with other interest groups over the allocation of the public budget" (1979: 230). In addition, Gunderson explained that the government's ability to tax and borrow enables it to increase wages without having to reduce public services or substitute labour for other inputs such as capital. For these reasons, Gunderson concluded that the political constraint in the public sector on wages may be less binding (effective) than the profit constraint in the private sector.

The second consideration is the environment within which the private and public sectors exist. Most of the public sector operates as a monopoly, which means there is no threat from competition. In other words, individuals cannot choose an alternative provider for government services. This monopoly on service provision means that the unions representing public sector workers can demand a wage premium without fear of competitive pressure or responses from other firms.

In contrast, the private sector is rarely in a monopoly situation; when one does exist, it is normally imposed by the state. Competition and the threat of competition characterize non-monopoly markets. Firms, therefore, have to better balance the need to retain and attract workers with their ability to compete against other firms on price, quality, and cost.

These two environments have distinct effects on unions and the threat of strikes. Since the public sector operates in a monopoly with no competitors, workers can threaten and undertake strikes that disrupt service in the public sector with almost no fear of losing customers or a contract.

In stark contrast, in the private sector, both employers and unions have an incentive to settle their differences quickly, especially under the increased competitive pressures from globalization. Unions know that excessive wage demands will make the firm uncompetitive, which will likely result in reduced future employment. Employers, on the other hand, face trade-offs between wage demands and a loss of market share, profitability, etc., that result from a prolonged dispute. Ultimately, the parties usually come up with a compromise acceptable to both.[12]

12 For an additional discussion about the differences between the public and private sector, see Christensen (1980), Kornai (1992), and Kornai et al. (2003).

Conclusion

The process of determining wages in the public sector is markedly different from that in the private sector. The public sector wage process is largely determined by political factors, while the process in the private sector is largely guided by market forces and profit constraints. These differences are amplified by the monopoly environment in which the public sector operates versus the competitive environment of the private sector.

The Canadian research examining wage differences between the two sectors over the past three decades consistently indicates a premium for public sector workers. The specific wage premiums vary depending on the data source and timing. What is clear, however, is that a premium exists.

III Comparing Wages in Canada's Public and Private Sectors

Methodology and data sources

This study uses data from the *Labour Force Survey* for April 2011 (Statistics Canada, 2011). The sample for Canada consists of 52,849 individuals for whom hourly wage rate, age, gender, education, province, marital status, type of work, and other characteristics were available. The analysis covers paid government and private sector employees only (persons 15 years of age and over with employment income); it excludes self-employment, unemployed persons, and persons not in the labour force. The *Labour Force Survey* data breaks down the data by sector (public and private) but unfortunately does not provide data for different levels of government. Therefore, the public sector wage premium in this section pertains to local, provincial, and federal workers located in Canada.[13] In Canada, federal government employees represent 12.3 percent of the total public sector. Provincial public sector workers represent 49.4 percent of the total public sector with local government employees representing the remaining 38.3 percent (see table 1).[14]

Descriptive statistics

Table 2 indicates how public and private sector employment is distributed across various labour force characteristics such as gender, age, and education. The distinction in the table between public and private indicates whether the employer is a government or a private sector organization.

Approximately 27.3 percent of the Canadian paid workforce is in the public sector, while 72.7 percent is in the private sector. Unlike the statistics presented in Section I, those shown here exclude self-employed people.

13 Specifically, the *Labour Force Survey* considers the public sector as those working for federal general government (i.e., federal public administration), federal government business enterprises, provincial general government, provincial health and social service institutions, universities, colleges, vocational and trade institutions, provincial government business enterprises, local general government, local school boards, and local government business enterprises. Those in the military armed forces are excluded from the survey.

14 Some public sector employees do not reside or work in Canada. These workers account for a very small percentage (statistically insignificant) of public sector workers in the country.

Table 2: Distribution of the Public and Private Sector Workforce Across Various Groups, Labour Force Survey, April 2011*

	Public Sector		Private Sector	
	Number	%	Number	%
TOTAL	14,432	27.3	38,417	72.7
Male	5,225	36.2	20,693	53.9
Female	9,207	63.8	17,724	46.1
Age 15-19	124	0.9	3,016	7.9
Age 20-24	747	5.2	4,225	11.0
Age 25-29	1,215	8.4	4,211	11.0
Age 30-34	1,546	10.7	3,925	10.2
Age 35-39	1,604	11.1	3,962	10.3
Age 40-44	1,870	13.0	4,085	10.6
Age 45-49	2,210	15.3	4,573	11.9
Age 50-54	2,228	15.4	4,421	11.5
Age 55-59	1,743	12.1	3,258	8.5
Age 60-64	881	6.1	1,881	4.9
Age 65-69	208	1.4	611	1.6
Age 70 +	56	0.4	249	0.6
Married	8,170	56.6	17,487	45.5
Living in common-law	2,095	14.5	5,613	14.6
Widowed	181	1.3	414	1.1
Separated	449	3.1	1,066	2.8
Divorced	845	5.9	1,767	4.6
Single, never married	2,692	18.7	12,070	31.4
0 to 8 years education	77	0.5	872	2.3
Some secondary	482	3.3	4,824	12.6
Grade 11 to 13, graduate	1,820	12.6	9,199	23.9
Some post secondary	805	5.6	3,608	9.4
Post secondary certificate of diploma	5,646	39.1	14,038	36.5
University: bachelors degree	3,732	25.9	4,480	11.7
University: graduate degree	1,870	13.0	1,396	3.6

Table 2: Distribution of the Public and Private Sector Workforce Across Various Groups, Labour Force Survey, April 2011*

	Public Sector		Private Sector	
	Number	%	Number	%
Full-time (30+ hours)	11,953	82.8	30,471	79.3
Part-time (1 to 29 hours)	2,479	17.2	7,946	20.7
Tenure 1-5 months	592	4.1	4,174	10.9
Tenure 6-11 months	931	6.5	4,560	11.9
Tenure 1-5 years	3,791	26.3	13,796	35.9
Tenure 6-10 years	2,748	19.0	6,190	16.1
Tenure 11-20 years	6,370	44.1	9,697	25.2
Permanent	12,028	83.3	34,013	88.5
Not permanent, seasonal	154	1.1	1,058	2.8
Not permanent, Temporary, term or contract (incl temp. help agency)	1,536	10.6	1,889	4.9
Not permanent, Casual or other	714	4.9	1,457	3.8
Union member	10,407	72.1	6,525	17.0
Not member, covered by collective agreement	513	3.6	553	1.4
Not member or covered	3,512	24.3	31,339	81.6
Establishment, less than 20 employees	2,673	18.5	15,605	40.6
Establishment, 20-99 employees	4,779	33.1	13,071	34.0
Establishment, 100-500 employees	3,527	24.4	7,090	18.5
Establishment, more than 500	3,453	23.9	2,651	6.9
Newfoundland	598	4.1	1,122	2.9
Prince Edward Island	485	3.4	849	2.2
Nova Scotia	805	5.6	1,776	4.6
New Brunswick	706	4.9	1,738	4.5
Quebec	2,475	17.1	6,561	17.1
Ontario	3,965	27.5	11,293	29.4
Manitoba	1,512	10.5	3,374	8.8
Saskatchewan	1,321	9.2	2,658	6.9
Alberta	1,169	8.1	4,668	12.2
British Columbia	1,396	9.7	4,378	11.4

Table 2: Distribution of the Public and Private Sector Workforce Across Various Groups, Labour Force Survey, April 2011*

	Public Sector		Private Sector	
	Number	%	Number	%
Montreal	503	3.5	1,743	4.5
Toronto	564	3.9	2,241	5.8
Vancouver	484	3.4	1,732	4.5
Other CMA or Non-CMA	12,881	89.3	32,701	85.1
Senior Management Occupations	76	0.5	146	0.4
Other Management Occupations	753	5.2	2,305	6.0
Professional Occupations in Business and Finance	338	2.3	900	2.3
Financial, Secretarial, and Administrative Occupations	912	6.3	1,737	4.5
Clerical Occupations, including Supervisors	1,797	12.5	4,092	10.7
Natural and Applied Sciences and Related Occupations	916	6.3	2,441	6.4
Professional Occupations in Health, Nurse Supervisors, and Registered Nurses	1,285	8.9	312	0.8
Technical, Assisting and Related Occupations in Health	1,206	8.4	1,141	3.0
Occupations in Social Science, Government Service and Religion	1,065	7.4	1,477	3.8
Teachers and Professors	2,536	17.6	163	0.4
Occupations in Art, Culture, Recreation and Sport	348	2.4	712	1.9
Wholesale, Technical, Insurance, Real Estate Sales Specialists, and Retail, Wholesale, and Grain Buyers	11	0.1	1,257	3.3
Retail Salespersons, Sales Clerks, Cashiers, including Retail Trade Supervisors	108	0.7	3,874	10.1
Chefs and Cooks, and Occupations in Food and Beverage Service, including Supervisors	90	0.6	1,960	5.1
Occupation in Protective Services	642	4.4	309	0.8
Childcare and Home Support Workers	522	3.6	308	0.8
Sales and Service Occupations n.e.c., Including Occ. in Travel and Accommodation, Attendants in Recreation and Sport as well as Supervisors	789	5.5	4,202	10.9
Contractors and Supervisors in Trades and Transportation	98	0.7	472	1.2
Construction Trades	54	0.4	1,037	2.7
Other Trades Occupations	314	2.2	2,855	7.4
Transport and Equipment Operators	329	2.3	1,788	4.7

Table 2: Distribution of the Public and Private Sector Workforce Across Various Groups, Labour Force Survey, April 2011*

	Public Sector		Private Sector	
	Number	%	Number	%
Trades Helpers, Construction, and Transportation Labourers and Related Occupations	109	0.8	1,021	2.7
Occupations Unique to Primary Industry	57	0.4	1,188	3.1
Machine Operators and Assemblers in Manufacturing, Including Supervisors	73	0.5	2,187	5.7
Labourer in Processing, Manufacturing, and Utilities	4	0.0	533	1.4
Agriculture	1	0.0	588	1.5
Forestry, Fishing, Mining, Oil and Gas	59	0.4	1,448	3.8
Utilities	507	3.5	94	0.2
Construction	82	0.6	3,032	7.9
Manufacturing—durables	6	0.0	3,224	8.4
Manufacturing non-durables	6	0.0	2,529	6.6
Wholesale Trade	3	0.0	1,769	4.6
Retail Trade	97	0.7	6,754	17.6
Transportation and Warehousing	650	4.5	1,932	5.0
Finance, Insurance, Real Estate, and Leasing	214	1.5	2,457	6.4
Professional, Scientific, and Technical Services	32	0.2	2,323	6.0
Management, Administrative, and Other Support	33	0.2	1,655	4.3
Educational Services	4,366	30.3	339	0.9
Health Care and Social Assistance	4,258	29.5	3,120	8.1
Information, Culture, and Recreation	398	2.8	1,531	4.0
Accommodation and Food Services	10	0.1	3,720	9.7
Other Services	3	0.0	1,902	5.0
Public Administration	3,707	25.7	0	0.0

* = Self-employment is not included.
Sources: Statistics Canada (2011); calculations by the authors.

Table 2 shows that there are many ways the public and private sector workforces in Canada differ. Overall, the workforce in both sectors combined is 49.0 percent male and 51.0 percent female. However, at 63.8 percent, the public sector has disproportionately more female workers than the private sector at 46.1 percent. Public sector employees are also older, as indicated by the smaller proportion of the sector in younger age brackets. Consistent with these age differences, there are proportionately more married workers in the public than in the private sector.

The public sector is also substantially more educated than the private sector; a greater proportion of workers in the public sector have undergraduate or graduate degrees. Both sectors have a fairly similar proportion of part-time workers, albeit slightly lower in the public sector (17.2 percent versus 20.7 percent).

A larger proportion of public sector workers have more than 10 years of tenure, suggesting a higher level of job security in the public sector. The proportion of employees with permanent jobs, however, is slightly lower in the public sector than in the private sector, largely because of the higher proportion of workers on contract work in that sector: 10.6 percent versus 4.9 percent in the private sector. Public sector workers are disproportionately represented in larger organizations. As well, 75.7 percent of public sector workers are union members or covered by a collective agreement, compared to 18.4 percent in the private sector.

The vast majority of public sector jobs in Canada are in three industries: educational services, health care and social assistance, and public administration. Private sector employment, on the other hand, is much more dispersed across industries, with retail trade, accommodation and food services, and manufacturing industry providing the largest percentage of private sector jobs.

To summarize, the public sector workforce is disproportionately female, older, married, unionized, long-tenured, employed in larger establishments, more educated, and concentrated in a few industries.

The public-sector wage premium: Results from empirical analysis

The analysis in this section closely mimics that done by Gunderson et al. (2000). For details on the methodology used to compute the public sector wage premium in this section, please see Appendix A.

Table 3 presents the results of the analysis of the public and private wage sector comparison in Canada. The table's second column (Model 1) provides the public sector wage premium calculation without controlling for any factors. In other words, Model 1 represents a calculation that ignores variables like age, experience, education, etc., which we know influence wages. The Model 1 estimate indicates that wages in the

Table 3: Public sector wage premium in Canada, Labour Force Survey, April 2011 (Dependant variable, log of Hourly wage)

	Model 1 Coefficient (%)	Model 2 Coefficient (%)
(Private)		
Public	**35.8*** **	**12.0*** **
(Female)		
Male		**13.4*** **
(Age 15-19)		
Age 20-24		**1.6***
Age 25-29		**13.8*** **
Age 30-34		**18.6*** **
Age 35-39		**19.6*** **
Age 40-44		**19.2*** **
Age 45-49		**21.2*** **
Age 50-54		**20.2*** **
Age 55-59		**18.0*** **
Age 60-64		**15.1*** **
Age 65-69		**4.6*** **
Age 70 +		**3.8***
(Married)		
Living in common-law		0.2
Widowed		**-4.6*** **
Separated		**-2.7*** **
Divorced		**-1.5****
Single, never married		**-5.4*** **
(Grade 0-8)		
Some secondary		**5.9*** **
11 to 13 years of schooling		**10.7*** **
Some post secondary		**15.1*** **
Post secondary certificate		**21.6*** **
Bachelors degree		**36.6*** **
Masters degree		**45.6*** **
(Tenure 1-5 months)		
Tenure 6-11 months		**1.9*** **
Tenure 1-5 years		**6.4*** **
Tenure 6-10 years		**14.5*** **
Tenure 11-20 years		**23.5*** **
(Permanent Work)		
Seasonal Work		**-9.8*** **
Contract Work		**-5.1*** **
Casual Work		**-6.5*** **
(Full Time)		
Part Time		**-10.5*** **
(Establishment, less than 20 employees)		
Establishment, 20-99 employees		**6.4*** **
Establishment, 100-500 employees		**10.8*** **
Establishment, more than 500		**17.7*** **
(Newfoundland)		
Prince Edward Island		**-3.3*** **
Nova Scotia		**-2.9*** **
New Brunswick		**-5.2*** **
Quebec		**2.2****
Ontario		**9.2*** **
Manitoba		1.5
Saskatchewan		**11.6*** **
Alberta		**18.7*** **
British Columbia		**13.2*** **
(Montreal)		
Toronto		0.4
Vancouver		**-4.7*** **
Other CMA or Non CMA		-0.7
(Agriculture)		
Forestry, Fishing, Mining, Oil and Gas		**42.5*** **
Utilities		**35.0*** **
Construction		**33.8*** **
Manufacturing—durables		**18.6*** **
Manufacturing non-durables		**12.4*** **
Wholesale Trade		**20.5*** **
Retail Trade		-1.6
Transportation and Warehousing		**16.4*** **
Finance, Insurance, Real Estate, and Leasing		**23.5*** **
Professional, Scientific, and Technical Services		**31.8*** **
Management, Administrative, and Other Support		**3.4****
Educational Services		**22.6*** **
Health Care and Social Assistance		**19.7*** **
Information, Culture, and Recreation		**16.8*** **
Accommodation and Food Services		**-5.5*** **
Other Services		**11.7*** **
Public Administration		**26.1*** **
Constant	**2.9*** **	**2.2*** **
N	52,849	52,849
Adjusted R Square	0.11	0.49

Notes: [1]Self-employment is not included.
[2]Bolded estimates are significant at either a 90% (*), 95% (**), or 99% (***) level. All are based on robust standard errors.
Sources: Statistics Canada (2011); calculations by the authors.

public sector, including federal, provincial, and local public sector workers in Canada, are 35.8 percent higher, on average, than in the private sector.

A more appropriate way to determine if there is a wage premium in the public sector, however, is to control for different factors such as gender, age, level of education, experience, etc., among other indicators, that affect individual wage levels. Table 3's third column (Model 2) controls for these personal characteristics. Controlling for these factors reduces the public sector wage premium in Canada to 12.0 percent, on average. It should be noted that Gunderson et al. (2000) also controlled for unionization, and when this variable is included in our model, the premium is reduced to 9.5 percent.

Table 3 also provides some additional details on the differences in wages across various personal and job characteristics. The characteristics shown in boldface in table 3 are "reference groups" to which other indicators in the same category are compared. For example, "female" is the reference category for gender. This means that the estimate for male indicator shows that men on average earn 13.4 percent more than women.

As expected, higher education levels lead to higher wages. Those who graduate from high school earn 10.7 percent more than those with elementary education or less. A university graduate earns 36.6 percent more than those with only elementary schooling, on average, whereas those with a graduate degree earn 45.6 percent more.

Moreover, those with full-time, permanent jobs, and longer tenure, on average earn higher wages than those with temporary, part-time jobs, and shorter tenure. On average, those with seasonal, contract, and casual work earn between 5 and 10 percent less than those with permanent jobs. Those who work full time earn 10.5 percent more than those with part-time jobs.[15]

Conclusion

Public sector workers earn a wage premium of 12.0 percent, on average. When unionization is accounted for, the wage premium declines to 9.5 percent. These findings are in line with previous research investigating wage differences between the two sectors.

However, it is important to emphasize that wages are only a part of the total compensation package. Previous studies indicated that once non-wage benefits are considered, the public sector premium increases substantially.

15 We calculated a public sector wage premium for each occupation and industry. However, the results of that analysis were not included in this paper due to small sample sizes.

IV Comparing Non-Wage Benefits in Canada's Public and Private Sectors

As discussed earlier, wages are only a part of total employee compensation. Even though public sector workers in Canada enjoy a wage premium, this does not tell us whether or not their overall compensation is higher than, comparable to, or lower than that for workers in the private sector.

Unfortunately, *individual* data on non-wage benefits such as pensions, vacation time, and health benefits, is not readily available in Canada, which explains the lack of research on this aspect of employee compensation. As a side note, it is critical that Canada's statistical agency, Statistics Canada, augment its current survey in order to begin collecting and analyzing data on non-wage benefits.

Fortunately there are some *aggregated* non-wage benefit data that can be examined to roughly surmise whether non-wage benefits are lower, comparable, or higher in Canada's public sector than in the nation's private sector. Three specific sources of non-wage benefits data are examined: registered pensions, average age of retirement, and job loss. To some degree, the latter is meant to measure job security.

Registered pensions

The pension benefit is the first non-wage benefit to consider. It has two important dimensions. The first is the percentage of workers in both sectors who have a registered pension. Table 4 summarizes the pensions data for Canada. In terms of pension coverage, there is a dramatic difference between the public and private sectors. In 2011, the latest data available at the time of writing, 24.0 percent of private sector workers in Canada were covered by a pension compared to 88.2 percent of public sector workers.

This means that whereas about one out of four workers in the private sector has a registered pension plan, nearly nine of out 10 of public sector workers do. This gap grows when we consider the second dimension—the type of pension plan in each sector.

A defined benefit plan provides workers with a guaranteed benefit in retirement. A defined contribution plan, on the other hand, provides employees with a benefit that is based on their contributions, their employers' contributions, and earnings on the pension savings over time. A defined benefit plan is increasingly scarce in the private sector because of its high costs and risks for the employer. Specifically, in a defined benefit pension plan, the employer bears all the financial risk since the employee is

Table 4: Registered pension plan (RPP) members, by type of plan and sector, Canada, as of January 1, 2011

	Canada		
	Total (public and private)	**Private sector**	**Public sector**
Total number of members who have:	6,065,751	2,924,786	3,140,965
– Defined benefit plans	4,484,011	1,530,035	2,953,976
– Defined contribution plans	969,207	817,645	151,562
– Other pension plans	612,533	577,106	35,427
Total employment, 2011	15,746,600	12,183,600	3,563,000
% of employees covered by pension plans	38.5	24.0	88.2
	As a % of total number of members		
Defined benefit plans	73.9	52.3	94.0
Defined contribution plans	16.0	28.0	4.8
Other pension plans	10.1	19.7	1.1

Notes:
(a) Total includes workers in the public and private sector as well as self-employed workers in incorporated business (with and without paid help). Self-employed incorporated businesses are included in the private sector because, like their public and private sector counterparts, they are able to have a registered pension plan (RPP).
(b) Numbers may not add up to the total due to rounding.
Sources: Statistics Canada, 2012b, 2012d, 2012e; and calculations by the authors.

guaranteed the benefit. If returns on the pension's investment fund do not match expectations, the employer must increase the contributions to the plan to fully fund the guaranteed benefit. The comparative data presented in table 4 illustrate the increasing scarcity of defined benefit pensions. In 2011, of the workers in Canada who were covered by a pension plan, 94.0 percent of those in the public sector enjoyed a defined benefit pension compared to 52.3 percent of those in the private sector.

While just over half of private sector workers have a pension with guaranteed benefit in retirement, in the public sector, guaranteed benefit is the norm. There, just six percent of public sector workers covered by a registered pension plan do not have guaranteed benefits in retirement. Clearly, public sector workers in Canada are much

more likely to be in a registered pension plan, and are much more likely to receive a defined benefit pension, than their private sector counterparts.

Average and median age of retirement

Table 5a and 5b presents information about the average and median age of retirement for all workers—public and private sector—between 2007 and 2011 both for Canada as a whole and for individual provinces.[16] Regardless of whether the average or median age of retirement is used, public sector workers in Canada retire at an earlier age than their private sector counterparts. Specifically, on average, Canada's public sector workers retire 2.5 years earlier than do the country's private sector workers. The gap increases to 2.9 years if the median rather than the average is used.

On average, the gap was largest in Newfoundland & Labrador and New Brunswick where public sector workers retire 4.1 and 4.0 years earlier, respectively, than their private sector counterparts. At 1.3 years, Ontario has the smallest gap. What is clear from tables 5a and 5b is that in every province, public sector workers tend to retire earlier than private sector workers.

Job loss as a proxy for job security

Table 6 presents data on job losses (excluding those from temporary employment) for 2011 for Canada as a whole and the provinces. Table 6 gives several reasons for job loss. They include firms moving location, firms that went out of business, changing business conditions, and dismissal. In 2011, 3.8 percent of those employed in the private sector experienced job loss in Canada, compared to only 0.6 percent of those employed in the public sector.

The loss of jobs in the public sector was similar across all provinces and ranged from 0.5 percent in Quebec and Saskatchewan to 0.9 percent in Prince Edward Island. Private sector workers, on the other hand, were much more likely to lose their jobs in the Atlantic Provinces than in the rest of the Canada. Job losses ranged from 4.8 percent in Nova Scotia to 7.4 in Newfoundland & Labrador. At 2.5 percent, private sector workers in the three Prairie provinces (Alberta, Saskatchewan, and Manitoba) had the lowest job loss rates.

16 Statistics Canada, which provided the data, noted that it should be used with caution due to small sample sizes, especially for the provinces. Five-year averages were used (2007 to 2011) to try to mitigate the sample size proble.

Table 5a: Average retirement age, from 2007 to 2011 (in years)

	Total[a]	Public sector employees	Private sector employees	Difference[c] (in years)
Canada	61.9	60.0	62.4	2.5
Newfoundland & Labrador	60.0	58.2	62.3	4.1
Prince Edward Island	61.8	60.8	62.4[b]	1.6
Nova Scotia	61.5	60.0	62.0	2.1
New Brunswick	61.3	59.1	63.1	4.0
Quebec	60.4	58.5	61.7	3.2
Ontario	62.1	60.7	62.0	1.3
Manitoba	62.4	60.6	62.6	2.0
Saskatchewan	62.7	60.3	62.7	2.4
Alberta	63.5	61.7	63.8	2.0
British Columbia	63.0	60.7	63.5	2.8

Notes:
(a) Total includes workers in the public and private sector, and self-employed individuals (including unpaid family workers).
(b) The retirement age of private sector workers in Prince Edward Island was not provided by Statistics Canada for the year 2011 since the sample was too small to be reliable. For Prince Edward Island, estimates based on a sample of less than 200 are not reported. Therefore, the retirement age for Prince Edward Island is based on four years of data, 2007 to 2010.
(c) Numbers may not add up to the total due to rounding.
Sources: Statistics Canada, 2012f; and calculations by the authors.

Table 5b: Median retirement age, from 2007 to 2011 (in years)

	Total[a]	Public sector employees	Private sector employees	Difference[c] (in years)
Canada	61.5	59.7	62.6	2.9
Newfoundland & Labrador	59.7	58.2	62.9	4.7
Prince Edward Island	61.3	60.1	63.0[b]	2.8
Nova Scotia	60.3	59.8	61.5	1.7
New Brunswick	60.8	59.1	64.0	4.9
Quebec	59.9	58.3	61.6	3.3
Ontario	62.1	60.6	62.4	1.8
Manitoba	62.3	60.6	62.9	2.4
Saskatchewan	62.0	60.2	62.3	2.1
Alberta	64.3	63.2	64.3	1.1
British Columbia	62.8	60.0	64.2	4.2

Notes and sources: Same as for Table 5a.

Table 6: Job loss, by class of workers for Canada and the provinces, 2011

	Number of those who lost a job (in thousands)			Number of those who lost a job as a % of employment			
	Total	Public sector	Private sector	Total	Public sector	Private sector	Difference (percentage points)
Canada	445.4	22.1	423.4	3.0	0.6	3.8	3.2
Newfoundland & Labrador	10.4	0.5	10.0	5.1	0.7	7.4	6.6
Prince Edward Island	2.5	0.2	2.3	4.1	0.9	5.8	4.8
Nova Scotia	14.2	0.8	13.3	3.6	0.7	4.8	4.1
New Brunswick	13.4	0.8	12.6	4.3	0.9	5.7	4.7
Quebec	106.8	4.3	102.5	3.1	0.5	4.0	3.5
Ontario	178.2	8.8	169.4	3.1	0.7	3.9	3.2
Manitoba	10.4	1.0	9.5	1.9	0.6	2.5	1.9
Saskatchewan	8.0	0.7	7.3	1.9	0.5	2.5	2.0
Alberta	37.4	2.5	34.9	2.1	0.7	2.5	1.8
British Columbia	64.1	2.5	61.6	3.5	0.6	4.3	3.7

Notes:
(a) Total job losses cover public and private sector workers only. Self-employed are excluded.
(b) Reasons for losing a job include: company moved, company went out of business, business conditions, and dismissal by employer. Job losses due to an end of temporary, casual, and seasonal work are not included.
(c) Numbers may not add up to the total due to rounding.
Sources: Statistics Canada, 2012b and 2012f; and calculations by the authors.

Conclusion

While there is insufficient data to calculate or make a definitive statement about non-wage benefits differences between the public and private sectors in Canada, available data suggest that the public sector enjoys more generous non-wage benefits than the private sector. More specifically, public sector workers in Canada have higher rates of pension coverage, higher rates of defined benefit pensions, lower ages of retirement, and lower rates of job loss than private sector workers in the country.

V Solutions to the Disparities in Compensation

Earlier sections have outlined a number of differences between the public and private sector that result in a persistent compensation premium for public sector workers. To be fair, setting public-sector wages and non-wage benefits is not an easy task. To attract and retain skilled and talented employees, governments have to offer competitive compensation packages. However, a system that is overly generous (i.e., pays public sector workers a premium) is unfair to taxpayers. This generosity can also have spillover effects, including inflated wage settlements in the private sector as it attempts to remain competitive with the public sector.[17]

An empirical analysis of the wage data indicate that public sector workers in Canada (including federal, provincial, and local public sector workers), enjoy a 12.0 percent wage premium, on average, compared to their private sector counterparts. This is after adjusting for personal and other characteristics that affect wages, such as gender, age, marital status, education, tenure, size of establishment, type of job, and industry. When unionization status is included in the analysis, the wage premium for the public sector declines to 9.5 percent.

An examination of the available non-wage benefits data similarly indicates that public sector workers fare better than those in the private sector. For example, 24.0 percent of private sector workers were covered by a pension compared to 88.2 percent of public sector workers. Moreover, of those public sector workers covered by a registered pension plan, 94.0 percent were covered by a defined benefit pension. In contrast, just over half (52.3 percent) of private sector workers covered by a registered pension have a defined benefit pension. In addition, public sector workers retire earlier than their private sector counterparts—by about 2.5 years, on average. Finally, public sector workers have more job security. In 2011, 3.8 percent of private sector workers lost their jobs compared to 0.6 percent of public sector workers.

Clearly, public sector workers in Canada enjoy higher wages and more than likely higher non-wage benefits than comparable workers in the private sector. Given the presence of this wage (and likely, non-wage), premium in Canada, the country needs a new institutional framework that is fair both to taxpayers and public sector workers.

17 For instance, Afonso and Gomes (2010) examined the relationship between public and private sector wages using data from 1973 to 2000 for 18 OECD countries, including Canada. They found that a 1.0 percent increase in public sector wages increased the wage in the private sector by 0.3 percent.

Gather better data

The first step in achieving an improved system of wage and benefit setting in the public sector is to gather data better and more regularly. Statistics Canada needs to collect data on wage and non-wage benefits of public and private sector workers more comprehensively and on a regular basis. While some of the aggregate data on non-wage benefits such as retirement age, job losses, and pension coverage are available, it is neither detailed enough nor comprehensive enough to enable the non-wage benefits between the public and private sector workers to be empirically analyzed. The additional data would allow researchers and bureaucrats alike to assess overall public sector compensation and compare it to similar reimbursement in the private sector.

Recognize that total compensation is what matters, not wages alone

A second and challenging step in the reform process is to ensure that the comparison between the public and private sectors should centre on total compensation, not just the narrower comparison of wages or specific benefits such as pensions. The key is that overall compensation should be compared, not just its specific components. It is entirely feasible—and conceptually acceptable—for the public sector to have a different set of preferences for its compensation than does the private sector. However, again, the critical component is that the total amount of compensation is comparable.

Ensure transparency and routine disclosure

In order for the mechanisms that link public sector compensation and private sector equivalents to work, information about public sector wages and benefits must be transparent, accessible, and disclosed regularly.

Institute a mechanism for setting compensation

A new institutional framework for setting the overall compensation levels in the public sector is necessary. This new framework should link the public sector's overall compensation to that in the private sector. This means that the overall compensation of public sector workers should be similar to that for their private sector counterparts with the same or similar job responsibilities, education level, tenure, etc.

There are a variety of options that will enable a more systematized approach to compensation setting using the private sector as a guide for public sector compensation.

Formal mechanisms within government

One approach is to simply legislate a specific mechanism within government (see appendix B for information on compensation in Canada's federal government) that regularly and formally calculates total compensation for public sector positions based on private sector equivalents.

Wage boards: An arms-length approach

Over three decades ago, Professor Sandra Christensen suggested the creation of independent wage boards[18] to eliminate the problem of wage premiums in the public sector.

A wage board is an independent government body responsible for collecting, analyzing, and setting public sector wages and benefits based on private sector equivalents. This information collected and analyzed by these boards would provide the necessary transparency to both taxpayers and governments to set the public sector compensation at the levels prevailing in the private sector.[19]

Lump sum payments

Another more radical reform is to empower public sector unions to become more involved in determining the composition of compensation for their members.[20] Specifically, the recommendation is to provide unions with a lump-sum compensation total by hour, or perhaps per year, for workers covered by collective agreements. The union would then be asked to determine the mix of wages and benefits for its members. Given that nearly three-quarters of the workers in the public sector are unionized, asking the unions to contribute to the solution, rather than maintaining the adversarial relationship, is critical to the longer-term sustainability of public sector compensation.

18 For more information on the wage board concept, please see Christensen, 1980.

19 Over the past several decades, the federal government has attempted to collect wage and non-wage data on public and private sector workers to help set public sector worker compensation levels. For example, in 1957, the federal government created the Pay Research Bureau with the mission "to provide objective information on compensation and working conditions in government, business, and industry, and to assemble and analyze factual evidence of trends in outside employment" (Treasury Board of Canada Secretariat, 2006: 14). However, the bureau was eliminated in 1992. For details on its role and shortcomings, see Gunderson, 1978: 118-121, and Treasury Board of Canada Secretariat, 2006. More recently, in 2003, the federal government asked the Public Service Labour Relations Board "to provide impartial, accurate, and timely information on comparative rates of pay, employee earnings, conditions of employment, and benefits in the public and private sectors" (Public Service Labour Relations Board, 2012).

20 Jason Clemens has made this recommendation in both Canada and the United States (see Clemens, 2010 and 2012).

Appendix A: Empirical Methodology

This study uses data from the Labour Force Survey from April 2011 (Statistics Canada, 2011). The analysis covers paid government and private sector employees only (persons 15 years of age and over with employment income); it excludes self-employment, unemployed persons, and persons not in the labour force.

Data are available for 25 occupations and 18 industries. The classification of occupations is based on Statistics Canada's National Occupational Classification for 2001, or NOC-S2001.

1. Senior Management Occupations
2. Other Management Occupations
3. Professional Occupations in Business and Finance
4. Financial, Secretarial and Administrative Occupations
5. Clerical Occupations, Including Supervisors
6. Natural and Applied Sciences and Related Occupations
7. Professional Occupations in Health, Nurse Supervisors and Registered Nurses
8. Technical, Assisting and Related Occupations in Health
9. Occupations in Social Science, Government Service and Religion
10. Teachers and Professors
11. Occupations in Art, Culture, Recreation and Sport
12. Wholesale, Technical, Insurance, Real Estate Sales Specialists, and Retail, Wholesale and Grain Buyers
13. Retail Salespersons, Sales Clerks, Cashiers, Including Retail Trade Supervisors
14. Chefs and Cooks, and Occupations in Food and Beverage Service, including Supervisors
15. Occupation in Protective Services
16. Childcare and Home Support Workers
17. Sales and Service Occupations n.e.c., including Occ. in Travel and Accommodation, Attendants in Recreation and Sport as well as Supervisors
18. Contractors and Supervisors in Trades and Transportation
19. Construction Trades
20. Other Trades Occupations
21. Transport and Equipment Operators

22. Trades Helpers, Construction, and Transportation Labourers and Related Occupations
23. Occupations Unique to Primary Industry
24. Machine Operators and Assemblers in Manufacturing, including Supervisors
25. Labourer in Processing, Manufacturing and Utilities

The 18 industry groups used in this study are based on the 2007 North American Industrial Classification System (NAICS).

1. Agriculture
2. Forestry, Fishing, Mining, Oil and Gas
3. Utilities
4. Construction
5. Manufacturing—durables
6. Manufacturing non-durables
7. Wholesale Trade
8. Retail Trade
9. Transportation and Warehousing
10. Finance, Insurance, Real Estate and Leasing
11. Professional, Scientific and Technical Services
12. Management, Administrative and Other Support
13. Educational Services
14. Health Care and Social Assistance
15. Information, Culture and Recreation
16. Accommodation and Food Services
17. Other Services
18. Public Administration

The model used for estimating a public sector wage premium in Canada is similar to methodology used in Gunderson et al. (2000):

$w_i \quad P_i \quad x_i \quad _i$

In the equation, w_i denotes the (log) hourly wage of individual i, P is the dummy variable denoting sectoral status ($P = 1$ for the public sector status), x is a vector of control variables such as gender, age, marital status, education, tenure, type of work (permanent or seasonal), size of firm, industry, province, city, and η is an error term which includes factors such as unobserved skill or ability. The α and β are coefficient estimates. In other words, the model controls for age, gender, marital status, education, tenure, type of work, province, city, size of establishment, and industry. Some may argue that age and tenure measure the same thing, i.e., experience. However, tenure in

the *Labour Force Survey* only measures the length of time in the person's current job and thus ignores overall experience. The age indicator is needed to capture the individual's cumulative experience from different jobs over time.

Ordinary least squares (OLS) were used to estimate the wage premium in the public sector. Results are shown in table 3 using different control variables.

Appendix B: Federal Public Sector Compensation

There are shortcomings in the existing federal compensation system. Some of the current issues and potential areas for improvement revolve around the process of setting wage and non-wage benefits.

In 2006 (and its 2011 update), the Treasury Board of Canada Secretariat provided a detailed analysis of how the wage and non-wage benefits are set in the federal public sector (Treasury Board of Canada Secretariat, 2006; Lahey, 2011). These two studies highlight three areas in which the current system could be improved substantially. First, federal compensation should be more comparable to that in the private sector. While some attempts have made in the past to do so, very little progress has been made so far because "[t]he existing system tends to fluctuate between rapid increases and arbitrary constraints, inflating costs in 'good' times and alienating employees in 'bad'" (Lahey, 2011: 84).

The last 20 years are a good example of this instability. For example, federal public sector employment dropped by about 20 percent in the mid-1990s as part of the Program Review (Lahey, 2011), a rather drastic (but necessary) measure to cut federal spending and balance the federal budget. However, after the Program Review, federal employment grew by about 40 percent by 2009/10 (Lahey, 2011). As a result, the salary costs of federal employees more than doubled from mid 1990s to 2009/10 (Lahey, 2011). This suggests that federal sector compensation ebbs and flows with the federal fiscal situation rather than the actual compensation in the private sector, a proxy for wages that would prevail in a competitive market.

A second issue is the lack of transparency. Currently, detailed data on the federal sector total compensation levels and trends (not just wages), is lacking (Lahey, 2011). This information would not only increase public scrutiny but would also allow greater comparability with the private sector (Lahey, 2011). Moreover, once the costs of total compensation are known and readily available, all sides would find it easier to make better informed decisions.

Related to the second point is the balkanization of the current system of salary and non-salary benefits. While the salary levels for federal government workers are set either directly by the Treasure Board for non-unionized public employees, or through collective bargaining for unionized employees, benefits such as health, dental, disability, and pension plans are set separately (Lahey, 2011). The pension plan for federal employees is governed by statute and, thus, is not covered by collective bargaining.

Consequently, this partial system prevents the government from making trade-offs among different parts of total compensation when setting the salaries for public servants or engaging in collective bargaining (Lahey, 2011).

These three factors make the federal public sector compensation a "black box" to all but a few specialists (Lahey, 2011: 84). A more integrated, transparent compensation system in line with the private sector compensation would benefit both workers and taxpayers.

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