The Net Fiscal Incidence of the Employment Insurance Act on Full-versus Part-time Workers

Final Report

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Abstract

Before the introduction of Bill C-12, workers in jobs involving less than 15 hours per week were exempt from paying unemployment insurance (UI) premiums. At the same time, workers experiencing separations from such jobs were not entitled to UI benefits. Bill C-12 changed this by subjecting all paid hours of work to premiums and by allowing all workers to claim Employment Insurance (EI), subject to a qualifying requirement based on annual, rather than weekly, hours of work. In this report, I analyze the effects of Bill C-12's extension of EI premiums and benefits to these "part-time" workers. I focus on two main outcomes, the first of which is the *net fiscal incidence* of the EI system on part- versus full-time workers. In other words I ask whether, under EI, full- and part-time workers collected more or less in EI benefits than they paid into the system. In estimating the amount a worker "pays in" I provide estimates for both employee and employer contributions separately. Second, I ask how the inclusion of part-time workers under the "EI umbrella" affected income distribution across age groups, between students and non-students, men and women, and among the provinces.

The report's main results are as follows. First, in 1997 the net fiscal impact of the EI system on workers as a whole was substantially negative. In particular, including both employee and employer contributions made on the worker's behalf, the average worker paid about \$600 more into the system in premiums than he or she could expect to collect as a result of a separation occurring in that year. This should not be surprising as 1997 was a year of relatively low unemployment by recent standards, giving rise to a growing surplus in the EI account.

Second, despite this overall negative impact, the net fiscal impact of EI on the part-time workers newly covered by Bill C-12 was slightly positive, with an average part-time worker receiving about \$40 more in benefits than he or she paid in premiums.

Third, inclusion in the EI system did not benefit all groups of part-time workers equally. In fact, looking across broad age groups, only prime-age part-time workers experienced a net gain from EI coverage: part-time workers under the age of 25 paid about \$125 more in premiums than they collected in benefits; senior part-timers (those over 64) paid about \$240 more in premiums than they collected in benefits. Similarly, the main part-timers who gained from EI coverage were men, not women. As is the case for the EI system generally, the net fiscal gains resulting from EI coverage of part-time workers were higher in Newfoundland than any other province, and higher in the Atlantic region generally.

Finally, the low-income EI premium refund in the income tax system, which exempts workers with annual incomes of under \$2,000 from the employee portion of EI premiums, has only a modest effect on the net fiscal incidence of EI on part-timers. This is for two reasons. First, the refund does not apply to employer premiums. Second, the great bulk of EI premiums paid by part-time workers is paid by persons to whom the refund does not apply.

1. Motivation

Before the introduction of Bill C-12, individuals who worked less than 15 hours per week for a single employer did not pay unemployment insurance premiums and that week was not counted in assessing eligibility for benefits. Since its introduction, all hours worked are now counted towards determining eligibility and all workers pay premiums into the Employment Insurance (EI) system. Workers still must meet a minimum total hours requirement, now calculated over the 52 weeks of employment preceding the separation, to collect benefits. The net gain of part-time workers from Bill C-12 thus depends on how many separating part-time workers accumulate sufficient hours of work to qualify for benefits. If this number is small, the inclusion of part-time workers under the "EI umbrella" might actually have hurt them financially.¹

The main goal of this report is to ascertain whether the extension of EI coverage to part-time workers resulted in a net transfer of income toward or away from them. This question has direct policy implications. In particular, while a stated goal of the EI Act was to bring part-time workers under the "umbrella" of protection against the income consequences of job loss, this goal may not have been accomplished by the Act. Instead, the primary effect of the Act may be simply to increase the revenues of the EI Fund at the expense of part-time workers, most of whom do not earn high wages, and are more likely than full-time workers to be students, women, teenagers or senior citizens. This could be especially likely in provinces like Alberta and Ontario where low overall unemployment rates raise the number of hours needed to qualify for EI; in the Atlantic Provinces the lower entrance requirements might make it substantially easier for part-time workers to qualify for benefits.

A secondary goal of this report is to consider the implications of extending EI coverage to part-time workers for income distribution between a number of socioeconomic groups that are likely to be affected by this policy change. The particular groups considered are teenagers, older workers, students, women and the provinces.

For the purposes of this study, part-time workers are defined as those whose work hours before the EI reforms were below the threshold for UI coverage, i.e. 15 hours per week.

2. Overall Approach

As in Kuhn and Sweetman (1997), this report adopts a conceptually simple, but computationally intensive, *micro-accounting* approach to the estimation of cross-subsidization under Employment Insurance (EI). For the purposes of the current project, this approach is preferred to other approaches, such as time-series regression analysis, for a number of reasons. First, time-series statistics on the key quantities, such as EI/Unemployment Insurance (UI) premiums paid by part-time workers, simply do not exist. They must somehow be calculated; the main purpose of this project is to do just that. Second, any computed time series would of necessity be short, especially for the period after the introduction of Bill C-12; as a result any attempt to use time series techniques to control for confounding macroeconomic factors is highly questionable. Third, the relationship between worker characteristics (e.g. annual hours of work) and quantities of interest such as EI premia are highly nonlinear. This means that the calculation of these quantities simply cannot be done with any degree of accuracy using aggregate data. The entire distribution of individual characteristics needs to be known.

3. Data

This report relies on two distinct data sets. One, a representative sample of the Canadian population (from which a representative sample of employed Canadians can be drawn), is used to calculate Employment Insurance (EI) premiums paid by full- versus part-time workers. The second, a representative sample of firm-worker separations in Canada with associated information on EI claims, is used to calculate benefits received.

The survey I use to analyze EI premiums paid is the public use sample of the Labour Force Survey. I focus on the calendar year 1997 for the following reasons. First, as mentioned, a full year of data is needed to encompass a potentially wide variety of transitions into and out of part-time work across the seasons. Second, the Labour Force Survey, which is used as the data source to estimate premiums paid, went through a transition period between September and December of 1996. Two different survey questionnaires, with different hours of work questions, were simultaneously in use during this period; further, the public use data files do not identify which question was asked. Third, the EI system was also in transition during the second half of 1996.² To the extent that payment of premiums made part-time workers more aware of their eligibility for EI benefits, the data after 1996 will be more relevant to the true, long-run effects of EI. Fourth, for this particular topic, no "before" Bill C-12 analysis is required, as we know part-time workers neither paid premiums nor collected benefits under the old Unemployment Insurance (UI) system. I exclude all self-employed and unpaid family workers from the analysis, as these workers are not covered by the UI/EI system.

The survey of separating workers I use to calculate EI benefits received is the Canadian Out of Employment Panel Survey (COEP). As is well known, the COEP is based on a sample of Record of Employment (ROE) forms which are issued by employers whenever a separation occurs. Importantly, the COEP contains both administrative data on EI benefits received, plus supplementary survey information on key pieces of information such as the usual number of hours worked in the ROE job, without which it would not be possible to conduct the current analysis. To correspond to the calendar year 1997, I use the four cohorts (7 through 10) of the most recent COEP survey, which correspond to separations that occurred in the four quarters of 1997 respectively.

During this six-month phase-in period, part-time workers were eligible to receive benefits, but were not assessed EI premiums on the hours they worked.

4. Definitions

For the purposes of this analysis, who is a "part-time worker"? Perhaps, surprisingly, the answer to this question involves more than simply defining a critical level of weekly hours below which a worker is classified as "part-time". This is because, during the course of a year, individuals move in and out of jobs with different hours, and sometimes hold more than one job concurrently. The definition chosen here reflects two main considerations: (a) it seems appropriate for policy considerations, and (b) it allows both premiums paid and benefits received to be computed from the available data sources. In other words, it is a definition that, unlike many others, is implementable in both the Canadian Out of Employment Panel (COEP) and Labour Force Survey (LFS) surveys, with their different sampling frames and questionnaire designs.

In this report I thus define a part-time worker as someone who, when interviewed by the Labour Force Survey during the calendar year 1997, held a main job (defined by the number of hours worked per week) where the usual weekly hours were under 15. The 15-hour cut-off is motivated by the fact that this was the group to whom Employment Insurance (EI) extended coverage for the first time. The restriction to main jobs is to focus on individuals for whom part-time work is their main labour market activity and not just an extra source of income; it also reflects the fact that, under the old (Unemployment Insurance (UI)) system, the 15-hour cut-off for premiums was determined on a per-job basis (rather than, for example, total hours or earnings on all jobs). Thus if a worker, under the pre-Bill C-12 system, would not have paid EI premiums on his/her main job (the one with highest hours), he/she would not have paid them on any of his/her other jobs either. Clearly it is these workers, not those whose main job was full-time but also had a parttime job, who were brought under the "EI umbrella" by Bill C-12. Finally, the focus on employment at any of the twelve LFS interview dates in 1997 is to take account of the fact that many part-time jobs could also be part-year or seasonal, and have high turnover rates. Any analysis that focused just on a specific month might well be quite unrepresentative of a year.

5. Descriptive Statistics

To place the analysis of this paper into a broader context, this section provides some simple statistics drawn from the 1997 Labour Force Survey (LFS) (all twelve months merged) that characterize "part-time" workers, as defined by the Unemployment Insurance (UI) system before Bill C-12. Who are these part-time workers who were brought under the Employment Insurance (EI) umbrella by Bill C-12? Tables 1 and 2 address this issue: in both tables, the population of interest is those individuals who worked for pay when interviewed by the Labour Force Survey. Self-employed individuals, unemployed individuals, those not in the labour force, and unpaid family workers are thus excluded from the analysis: they never did, and still do not pay EI or UI premiums. Of this group, Table 1 indicates that about 10.8 million worked 15 or more hours per week on their main job, and 660,000, or 5.8 percent of the total, worked under 15 hours.³ Put another way, Bill C-12 raised the number of workers who pay EI premiums by 660/10783 = 6.1 percent.

Unsurprisingly, Table 1 indicates that part-time jobs pay less, on average, than full-time jobs, at \$10.22 versus \$15.92 per hour. Because of the presence of a substantial number of high-wage part-time jobs (10 percent of part-timers earn more than \$17.46 per hour), these differences in means mask a much larger difference in medians: \$7.64 versus \$14.45.4 Thus, most part-time workers earn very low wages, with half earning under \$7.64 per hour. Indeed — almost certainly because of minimum wage legislation — the distribution of wages among part-time workers is very compressed at the low end, with half earning between \$6.00 and \$7.64 an hour. At the same time the distribution of wages has a substantial high, with 10 percent earning over \$17.46, which is well above the median full-time wage. By no means, then, are all part-time workers low-wage workers.

Part-time workers have lower mean job tenures than full-time workers. At 87.3 months, mean tenure of employed full-time workers exceeds 7 years, with the corresponding number at just under three years for part-time workers. While part-time workers have shorter tenures, it would however be a mistake to think of most of them as participating in a casual labour market: more than half have been with their current employer for over a year.

Table 1 also presents estimates of the total annual earnings of part- versus full-time workers in the main job they held when interviewed by the Labour Force Survey. These numbers, which play a key role in the next section's calculation of annual EI premiums paid, are computed by multiplying reported hourly wages by usual hours worked, and then by the maximum of job tenure or 52 weeks. Clearly, the combination of lower hours,

It may be worth noting that this fraction of part-time workers is much lower than that usually reported by Statistics Canada. This is because the hours cut-off (15) relevant to EI premiums is much lower than the 30-hour limit usually used in published Statistics Canada reports.

Many, or most, of these high-wage part-timers may have been covered under the old UI system. This system provided an alternative way to qualify for coverage, based on earnings of more than \$150 per week.

lower hourly wages and shorter tenures gives rise to dramatic differences in annual earnings. At \$26,494, the median annual main-job earnings of full-time workers is almost *ten times* the median annual earnings of part-time workers of \$2,599, with still large but less dramatic differences in means. Table 1 also shows the fraction of part- and full-time workers whose annual main-job earnings were below \$2,059.73. As discussed in the next section, this is the earnings level below which workers can receive a full or partial refund of their EI premiums via the income tax system. According to Table 1, fully 41 percent of part-time workers, but only 2.6 percent of full-time workers, qualify for this refund.

TABLE 1 Earnings and Employment Characteristics of Full- Versus Part-time Workers							
	Full-time (15 or more hours/week)	Part-time (under 15 hours/week)					
Usual hourly wages (\$)							
Mean	15.92	10.22					
10th percentile	7.12	6					
25th percentile	10	6.85					
Median	14.45	7.64					
75th percentile	20.19	11					
90th percentile	26.34	17.46					
Job Tenure							
Mean (months)	87.3	34.4					
Median (months)	60	13					
Fraction one year or longer	0.794	0.526					
Total Annual Earnings on current job							
Mean	28,708	-3,447					
Median	26,494	-2,599					
Fraction under \$2,059.73*	0.026	0.415					
Total Number of Workers ('000's)	10,783	660					

^{*} Thus eligible for some low-earnings employee EI premium refund. Refund is complete if earnings are below \$2,000.

Note: This, and all subsequent tables, excludes the self-employed, non-workers and unpaid family workers.

In addition to being less remunerative, part-time work is very unevenly distributed across the population, as Table 2 indicates. For example, only 3 percent of prime age (25-64) workers work less than 15 hours per week; thus, the extension of EI to part-time workers could have had only a very minimal effect on prime-age workers. Part-time work, at ten percent, is more common among workers aged 20 to 24, but by far the workers most likely to be affected by Bill C-12 are those over 65 and teenagers. A substantial 36 percent of working teenagers work part-time on their main job. Most of these are likely students, as

34 percent of students (either full- or part-time) work part-time on their main job. At eight percent, women are more likely to work part-time than men (3.6 percent), but gender is clearly a much less accurate predictor of part-time status than age or school enrollment.

TABLE 2 Fraction of Employed Persons who Work Part-time (ur Selected Demographic Characteristics, 1997	
Age	
15-19	0.362
20-24	0.1
25-64	0.03
65+	0.202
School Enrollment	
Student (full- or part-time)	0.344
Non-student Non-student	0.031
Sex	
Men	0.036
Women	0.081
Province	
Newfoundland	0.05
Prince Edward Island	0.06
Nova Scotia	0.058
New Brunswick	0.043
Quebec	0.051
Ontario	0.06
Manitoba	0.064
Saskatchewan	0.062
Alberta	0.052
British Columbia	0.065

6. Methodology: Employment Insurance Premiums

My goal in the next two sections is to estimate the total annual Employment Insurance (EI) premiums paid by part- versus full-time workers, as defined above. This is not quite as simple as it might sound, because annual EI premiums depend on total *annual* income from all jobs, and not all workers — particularly part-time workers — work a full year. Thus, it would not be correct to simply inflate a worker's rate of pay whenever it is observed in the Labour Force Survey (LFS) to an annual basis, then calculate EI premiums on this basis.

In my view the best treatment of this issue with the available data is the following.⁵ First, for each worker employed in a particular month of the 1997 Labour Force Survey (LFS) — say December — I compute his or her total annual earnings (ANNEARN) during the previous twelve months from the main job held in the survey month as follows:

ANNEARN = UHRSMAIN * HRLYEARN * Max {TENURE,12} * 4.333

where the LFS variables are defined as follows:

UHRSMAIN (usual hours per week at main job)
TENURE (job tenure, main job, in months)
HRLYEARN (usual hourly wages, employees only, before premiums)

This gives the total earnings in the calendar year 1997 from the main job the person held in December 1997.

Once an estimate of annual earnings is available, it is straightforward to compute total EI premiums paid, which are a simple, but nonlinear, function of annual earnings. In most of the results presented in this report, I shall include both employee and employer contributions in my estimate of total EI premiums paid, as it is widely accepted among economists that in the long run the employer contribution is passed on to workers in the form of lower wages, and it is the long-term incidence we are interested in. For comparison purposes (and for the benefit of those who are skeptical that EI premiums are passed on from firms to workers), I also present some results based on the employee

This method has the drawback of ignoring premiums paid by workers on jobs other than their main job; thus it will underestimate premiums for multiple-job holders. Premiums paid on secondary jobs cannot be estimated from the LFS because no earnings or tenure information is provided for such jobs. However, the LFS does indicate that only 4.8 percent and 8.2 percent of full- and part-time workers hold more than one job, so the bias does not seem likely to be severe. This is especially so because — due to the shorter hours — earnings will almost always be lower on these "second" and/or higher-order jobs than the main job.

contribution only.⁶ In addition to incorporating the upper end on premiums due to the maximum insurable earnings, the estimates also take account of the low-income EI premium refund incorporated into the 1997 income tax system. This refund works as follows. Any individual with annual earned income under \$2,000 could have all their personal EI contributions refunded if he or she filed income taxes. This refund is reduced dollar-for-dollar for any income earned between \$2,000 and \$2,059.73. Beyond that, no refund is given and the regular EI premium rate applies.

Finally, the exercise described above for December 1997 is repeated for all other months in 1997; annual results are then produced simply by averaging the results from each of the twelve months. The result gives an estimate of the total EI premiums paid in the previous 52 weeks under the post-Bill C-12 rules by a person who is randomly selected from the pool of individuals employed at any time in the calendar year 1997. It does this separately for workers defined as part-time or full-time. Averaging across the twelve months is crucial because of the highly seasonal employment patterns of some workers, especially students, who are overrepresented in the population of part-time workers.

It may also be worth noting that the inclusion or non-inclusion of employer contributions does not affect my estimates of the relative premiums paid by full- versus part-time workers, as it affects both groups equiproportionately.

Of course, for some of these workers the previous twelve months include a period in which the pre-Bill C-12 rules applied. The numbers reported here thus refer to what these individuals would have paid had the Bill C-12 rules applied throughout those twelve months, which is what we want to know here.

7. Results: Employment Insurance Premiums⁸

In this section, I discuss the results for Employment Insurance (EI) premiums in two parts. The first considers just the total EI premiums paid by part- and full-time workers as groups. The second disaggregates by age, student status, sex, and province and considers the effect of extending EI coverage to part-timers on the relative premiums paid by members of these various demographic groups (e.g. old versus young workers, or men versus women).

7.1 Overall Impact on Premiums Paid by Part- versus Full-Time Workers

This report's main results concerning the additional EI premiums imposed by Bill C-12 are presented in Table 3. According to Table 3, the average full-time worker paid \$724 in EI premiums in 1997. The low-income EI premium refund is largely irrelevant to this group because of their relatively high incomes, and only reduces this figure by a single dollar. In addition, employers paid an average of \$1,031 in EI premiums per full-time worker, generating a total of \$1,754 per year.

In 1997 the average part-time worker paid \$99 in EI premiums. But despite the fact that, as Table 1 indicated, 41 percent of part-time workers were eligible for some premium refund via the income tax system, this income tax rebate would reduce their EI premiums by only 11 dollars *if all eligible individuals claimed it*. Since this seems unlikely (such low-income individuals might be less likely to file income taxes, even if they are eligible for refunds), the premium refund has only a very modest impact on EI premiums paid by part-time workers. The main reason for this is that the bulk of EI premiums paid by part-time workers are paid by those part-time workers earning more than \$2,059.73 per year who receive no refund. Table 3 also shows that the average employer paid \$142 in EI premiums on behalf of part-time workers. This employer contribution was not refunded in any way for low-income workers.⁹ Together with the employee portion net of the refund, this yields an average per-part-time-employee premium of \$230 in 1997.

⁸ EI premiums are a form of payroll taxation. Accordingly, I occasionally refer to premiums as "taxes" or "payroll taxes" in sections of this report.

Bill C-12 did provide for a *small-business* premium refund, directed at firms with under 25 employees, which paid under \$30,000 in EI premiums in 1996. The 1997 refund amounted to 50 percent of any premium *increase* above the previous year's level. The 1998 refund amounted to 25 percent of premium increases above the 1996 level. To the extent that part-time workers disproportionately work in such small businesses, this refund may have reduced employer premiums paid on their behalf in 1997. Because it applies (unlike the employee refund) only to premium *increases*, this feature is likely of limited quantitative importance. Further, and more importantly, because it is clearly a transitional measure only, it is not relevant to the long-run implications of taxing part-time workers, which are the subject of this report.

Column 3 of Table 3 gives my estimate of the amount by which including part-time workers "under the EI umbrella" increased the total amount of EI premiums collected from workers. Column 3 thus expresses the extra premiums paid by part-time workers in column 2 as a fraction of the total premiums that would have been paid by all workers (full- and part-time together) in a world in which part-time workers were not taxed. This is generated simply by dividing the premiums paid by part-time workers in 1997 by the premiums paid by full-time workers in 1997. Why is this an estimate of the premium increase attributable to Bill C-12? To see this, note that none of the individuals classified as "part-time" would have paid *any* premiums under the pre-Bill C-12 rules: they worked less than 15 hours per week on their *main* (highest weekly hours) job; thus in none of their jobs would they have been assessed UI premiums. Recall as well that, due to data limitations, this number ignores premiums paid on jobs other than an individual's *main* (highest hours) job, and assumes all individuals eligible for the low-income premium refund actually receive it.

TABLE 3 Estimated Total Annual El Premiums Paid by Full- Versus Part-time Workers, 1997									
	Full-time (15 hours or more per week) (\$) Part-time (under 15 hours due to inclusion part-time worker)								
	1	2	3						
Employee portion (gross)	724	99	0.008						
Income tax rebate (assuming 100% claim rate)	1	11							
Employee portion (net of rebate)	723	88	0.007						
Employer portion	1,031	142	0.008						
Total	1,754	230	0.008						

^{*} Extra premiums in (2), as a fraction of original premiums paid in (1), per worker (including both full- and part-time workers in the denominator). Calculated as $\alpha(2)/[(1-\alpha)(1)]$, where α is the fraction of all workers who work part-time.

Overall, Table 3 thus indicates that extending EI coverage to part-time workers raised total EI premiums collected by about a little under one percent. This number is not very different whether we focus on employee premiums, employer premiums, or the total, or

Conceptually, column (1) gives pre-Bill C-12 EI premiums per full-time worker. Column (2) gives the extra premiums generated by Bill C-12's coverage of part-time workers, per part-time workers. Column (3) gives these extra premiums as a fraction of pre-Bill C-12 premiums per worker (i.e. full- and part-time workers combined). It tells us how much the tax burden on workers as a whole rose as a result of extending premiumsation to part-timers. As noted, this can be calculated from the figures in the table as $(2)/[(1-\alpha)(1)]$, where α is the fraction of all workers who work part-time and the numbers in parentheses indicate column numbers.

whether we account for the EI premium refund for low-income employees. No matter how we look at the numbers, then, inclusion of part-time workers under the EI umbrella increased government revenues by a modest amount of under one percent. This small number should not be surprising given the small number of workers who work under 15 hours per week, and the low levels of earnings exhibited by this group.

Table 4 presents the numbers in Table 3 in a somewhat different way: as premium *rates* (i.e. payroll tax rates) on earned income. Interestingly, even for full-time workers, the average effective employee EI premium rate on earned income, at 2.73 percent, is not far below the statutory rate of 2.9 percent. This is because the vast majority of workers earn less than the maximum insurable earnings of \$39,000 per year, and thus do not benefit from a reduction in effective rates due to the maximum. Because part-time workers' annual earnings are much less than full-time workers', this argument applies even more strongly to them. Without the low-income EI premium refund, part-time workers' average effective EI premium rate is quantitatively indistinguishable from the statutory rate of 2.9 percent. If all eligible workers availed themselves fully of this rebate by filing income taxes, the effective employee rate falls to 1.7 percent for part-time workers. Including both the employer and employee portions, this premium rebate has only a modest effect on total EI premiums paid by part-time workers: part-time workers (who paid no EI premiums before Bill C-12) pay, on average, 5.76 percent of annual earnings as EI premium, less than a percentage point below the rate paid by full-time workers of 6.46 percent.

TABLE 4 Estimated El Premium Rate (as a Fraction of Annual Earnings) Paid by Full- Versus Part-time Workers, 1997							
	Full-time (15 hours or more per week)	Part-time (under 15 hours per week)					
	(1)	(2)					
Employee portion (gross)	0.0273	0.029					
Employee portion (net of rebate)	0.0265	0.017					
Employer portion	0.0382	0.0406					
Total	0.0646	0.0576					

In addition, it takes considerable earnings in excess of the maximum to have an appreciable effect on one's average rate. To halve one's effective average EI tax rate from 2.9 to 1.45 percent, one would need to earn double the maximum insurable earnings, or \$78,000.

¹² The same is of course true of the employer portion of the total premiums paid, which is calculated simply as 1.4 times the employee portion.

7.2 Effects of C-12 on Premiums Paid by Other Demographic Groups: Age, School Enrollment, Sex and Province

Tables 5 through 12 repeat the analysis of Tables 3 and 4, disaggregating the results by four demographic characteristics that might be of social and policy interest which might be disproportionately impacted by the taxation of part-time workers under the new EI system. These four characteristics are, in turn, age (Tables 5 and 6), school enrollment (Tables 7 and 8), sex (Tables 9 and 10) and province (Tables 11 and 12). In each case, the tables allow us to ascertain what effects the integration to the EI System by part-time workers had on the relative EI premiums paid by, say, old versus young workers, or students versus non-students. Given the very different rates of part-time work among some of these groups documented in Table 2, it would not be surprising if taxing part-time work affected some of these groups differentially.

TABLE 5 Estimated Total Annual El Premiums Paid by Full- Versus Part-time Workers, 1997, by Age											
	Full-t	ler k) (\$)									
Age	Employee portion*	Employer portion	Total	Employee portion*	Employer portion	Total	Fraction part- time	Proportional premium increase due to inclusion of PT workers‡			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)			
15-19	176	261	437	42	81	124	0.362	0.161			
20-24	386	554	941	71	117	188	0.101	0.022			
25-64	788	1,123	1,911	130	198	329	0.03	0.005			
65+	625	891	1,517	129	194	324	0.202	0.054			

^{*} Net of income tax rebate, assuming 100 percent claimed.

7.2.1 Age

According to Tables 5 and 6, the average full-time teenage worker paid \$437, or 6.34 percent of earned income, in EI premiums in 1997, counting both the employer and employee share, and adjusting for the low-income EI premium refund. The average part-time teenage worker, who would have paid no EI premiums under the pre-Bill C-12 regime, paid \$124, or 5.32 percent of earned income, in EI premiums. Because part-time work is so much more common among teenagers than other age groups, however, column (7) of Table 5 shows that this amounts to a 16.1 percent increase in the total EI premiums paid by teenage workers as a group. This is of course much larger than the under-one-

[‡] Calculated as $\alpha(6)/[(1-\alpha)(3)]$, where α is the fraction of all workers who work part-time.

percent increase for employed workers as a whole noted in Table 3, and much larger than the half-percentage point increase experienced by workers aged 25 to 64. Older workers experienced a 5.4 percent increase in total EI premiums, and workers aged 20 to 24 a 2.2 percent increase. Thus even though the total additional premiums collected by extending EI coverage to part-time workers were quite modest in size, we see very large premium increases when we focus on specific population subgroups. *Teenage workers, in particular, experienced a very substantial payroll tax increase as a result of Bill C-12*.

Table 6 expresses EI premiums as a fraction of earned income, by age group. As in Table 4, almost all population subgroups pay an effective premium rate not far below the statutory rate (the biggest exception being full-time prime-age workers, whose employee rate is 0.24 percentage points below the statutory rate). Because it does not apply to employer premiums, and because few workers earn under \$2,000 per year, the low-income EI premium rebate is not very successful in reducing these premium rates, even among teenagers who work part-time.

TABLE 6 Estimated El Premium Rate Paid by Full- Versus Part-time Workers, 1997, by Age									
	more	time (15 hour per week) (pro tion of annua	emium	Part-time (under 15 hours per week) (premium as fraction of annual earnings)					
Age	Employee portion*	Employer portion	Total	Employee portion*	Employer portion	Total			
15-19	0.0228	0.0406	0.0634	0.0125	0.0406	0.0532			
20-24	0.0267	0.0405	0.0672	0.0172	0.0406	0.0578			
25-64	0.0266	0.0377	0.0643	0.0202	0.0406	0.0608			
65+	0.0271	0.0386	0.0658	0.0226	0.0406	0.0632			

7.2.2 School enrollment

Tables 7 and 8 present EI premiums of part- and full-time workers separately for persons who are attending school and those who are not. For the purposes of these tables, recall that an individual is classified as a "student" whether he or she is in school on a part- or a full-time basis.

Overall, the results for students are similar to those for teenagers in the previous two tables, but less dramatic. (This is likely because students include many non-teens. Also, among teens, those in school tend actually to command higher wages than those who are not). Bill C-12 imposed only a 0.5 percent payroll tax increase on non-student workers, compared to an 8.2 percent increase for students. Again, actual premium rates on earnings are not that different from statutory ones, with the low-income EI premium rebate reducing premiums among students only very modestly, even under the assumption that it is always claimed.

TABLE 7 Estimated Total Annual El Premiums Paid by Full- Versus Part-time Workers, 1997, by Student Status

		ime (15 hou e per week		Part-time (under 15 hours per week) (\$)					
	Employee portion*	Employer portion	Total	Employee portion*	Employer portion	Total	Fraction part- time	Proportional premium increase due to inclusion of PT workers‡	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	
Non-									
students	739	1,054	1,794	113	175	288	0.031	0.005	
Students (full- and									
part-time)	458	657	1,115	64	110	174	0.345	0.082	

^{*} Net of income tax rebate, assuming 100 percent claimed.

TABLE 8 Estimated El Premium Rate Paid by Full- Versus Part-time Workers, 1997, by Student Status Full-time (15 hours or Part-time (under 15 hours per week) (premium as more per week) (premium as fraction of annual earnings) fraction of annual earnings) **Employee Employee Employer Employer** portion* portion **Total** portion* portion Total Nonstudents 0.0265 0.038 0.0646 0.0187 0.0406 0.0539 Students (full- and 0.0254 0.0394 0.0649 0.0153 0.0406 0.0559 part-time)

[‡] Calculated as $\alpha(6)/[(1-\alpha)(3)]$, where α is the fraction of all workers who work part-time.

^{*} Net of income tax rebate, assuming 100 percent claimed.

7.2.3 Sex

According to Table 9, Bill C-12 raised the EI premiums paid by women as a group by more than those paid by men. This should not be surprising, as women are more likely to work part-time than men. What may be more surprising is the relatively small size of the gender differential in additional premiums compared to those based on age and school enrollment. Women as a group paid 1.4 percent more premiums as a result of Bill C-12's extension of EI coverage to part-timers; the equivalent figure for men is 0.4 percent. While this difference is substantial, it pales in comparison with the huge age and student-status differentials noted above.

TABLE 9 Estimated Total Annual El Premiums Paid by Full- Versus Part-time Workers, 1997, by Sex										
	Full-time (15 hours or Part-time (under more per week) (\$) 15 hours per week) (\$)									
	Employee portion*	Employer portion	Total	Employee portion*	Employer portion	Total	Fraction part-	Proportional premium increase due to inclusion of PT workers‡		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)		
Men	794	1,133	1,928	73	123	197	0.037	0.004		
Women	639	912	1,551	95	151	247	0.081	0.014		

^{*} Net of income tax rebate, assuming 100 percent claimed.

[‡] Calculated as $\alpha(6)/[(1-\alpha)(3)]$, where α is the fraction of all workers who work part-time.

TABLE 10 Estimated El Premium Rate Paid by Full- Versus Part-time Workers, 1997, by Sex										
	more	time (15 hour per week) (pro tion of annua	emium	Part-time (under 15 hours per week) (premium as fraction of annual earnings)						
	Employee Employer portion* portion Total			Employee portion*	Employer portion	Total				
Men	0.0258	0.0371	0.063	0.0154	0.0406	0.056				
Women 0.0272 0.0393 0.0665 0.0178 0.0406 0.0584										
* Net of inco	* Net of income tax rebate, assuming 100 percent claimed.									

7.2.4 Province

As Table 11 indicates, part-time employment rates do not vary much across provinces, ranging from a low of 4.4 percent in New Brunswick to a high of 6.5 percent in Saskatchewan and British Columbia. As a result, taxation of part-time workers under Bill C-12 is likely to have had, at most, very modest effects on the relative tax burdens of Canada's ten provinces. This is borne out in Tables 11 and 12, which indicate premium increases ranging from 0.5 percent in New Brunswick to one percent in British Columbia. For reasons discussed earlier, effective EI premium rates in all provinces, on both full- and part-time income, are very similar to statutory rates.

TABLE 11 Estimated Total Annual El Premiums Paid by Full- Versus Part-time Workers, 1997, by Province								
	Full-time (15 hours or more per week) (\$)			Part-time (under 15 hours per week) (\$)				
	Employee portion*	Employer portion	Total	Employee portion*	Employer portion	Total	Fraction part-time	Proportional premium increase due to inclusion of PT workers‡
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nfld	604	863	1,468	49	89	139	0.051	0.005
PEI	555	793	1,349	60	104	164	0.061	0.008
NS	632	902	1,534	63	110	173	0.058	0.007
NB	630	899	1,530	56	100	157	0.044	0.005
Que	710	1,013	1,723	99	157	256	0.051	0.008
Ont	757	1,080	1,838	87	141	228	0.06	0.008
Man	664	947	1,611	78	129	207	0.063	0.009
Sask	657	938	1,595	68	116	184	0.065	0.008
Alta	676	964	1,640	78	128	206	0.053	0.007
ВС	766	1,093	1,860	101	159	261	0.065	0.01

^{*} Net of income tax rebate, assuming 100 percent claimed.

[‡] Calculated as $\alpha(6)/[(1-\alpha)(3)]$, where α is the fraction of all workers who work part-time.

TABLE 12 Estimated El Premium Rate Paid by Full- Versus Part-time Workers, 1997, by Province

	Full-time (15 hours or more per week) (premium as fraction of annual earnings)			Part-time (under 15 hours per week) (premium as fraction of annual earnings)			
	Employee portion*	Employer portion	Total	Employee portion*	Employer portion	Total	
Nfld	0.0264	0.0392	0.0656	0.0117	0.0406	0.0523	
PEI	0.0266	0.0398	0.0664	0.0134	0.0406	0.054	
NS	0.0268	0.0392	0.0661	0.0137	0.0406	0.0543	
NB	0.0267	0.0392	0.066	0.013	0.0406	0.0536	
Que	0.0269	0.0386	0.0655	0.0174	0.0406	0.058	
Ont	0.0262	0.0376	0.0639	0.0175	0.0406	0.0581	
Man	0.0267	0.0389	0.0657	0.016	0.0406	0.0566	
Sask	0.0266	0.0388	0.0655	0.0149	0.0406	0.0555	
Alta	0.0263	0.0383	0.0646	0.0159	0.0406	0.0565	
ВС	0.0263	0.0376	0.0639	0.0182	0.0406	0.0588	

^{*} Net of income tax rebate, assuming 100 percent claimed.

8. Methodology: Employment Insurance Benefits

Of course, just because Bill C-12 imposed new premiums on part-time workers does not mean it hurt those workers, in either pure financial terms or more fundamentally concerning expected lifetime utility. To determine the net impact of Bill C-12 on these workers we also need to measure the amount of EI benefits they received in return for paying those premiums. Estimating these benefits is the task of this, and the following, section of this report.

The data source used to calculate Employment Insurance (EI) benefits received by part-versus full-time workers is the Canadian Out of Employment Panel Survey (COEP). More precisely, I use waves 7-10 of the COEP, covering separations occurring during the entire calendar year 1997. Separations by workers labelled as part-time are identified using the COEP hours question for the "Record of Employment (ROE) job" whose termination led to the individual being selected into the COEP sample. Separations for all reasons are included in the analysis. As ROEs are not issued when self-employment spells end, or when spells of unpaid family work end, these groups will be automatically excluded from the COEP sample.

For each separation experienced by a part- or full-time worker, I use the COEP data to calculate the total cash amount of EI benefits that was ultimately received by the worker as a result of the separation. These, of course, will depend on: (a) the probability of claiming EI at all using that ROE; (b) the number of weeks claimed, and (c) benefits actually received per week. All these pieces of information are available in the COEP and yield a figure for average total EI benefits received by a separating part-time or full-time worker.¹³ Note that this methodology does not require the use of the employment history data (e.g. ROE weeks and total reported hours) in the COEP or the imputation of weeks of eligibility based on those histories; instead, I simply use the total weeks of benefits actually received given whatever employment history these separating workers had. The estimates therefore will automatically incorporate the fact that, for example, separating part-time workers have different employment histories than non-separating part-time workers, or from full-time workers, and therefore are likely to qualify for different (probably fewer) weeks of Unemployment Insurance (UI) benefits. A particularly important consideration here may also be the difference in distribution of separation reasons: if part-time workers are more likely to quit, or to separate in order to return to school, they will be less likely to qualify for benefits even with the same number of weeks of pre-separation employment. This approach also automatically incorporates the fact that part- and full-time workers will have different hazards into re-employment while on

Actually, total EI benefits paid on each claim are directly reported in the status-vector (SV) file, which is merged with the COEP. This is the main measure of benefits I use, though I report results for total benefit weeks received as well.

claim; for example, part-time workers might even have higher re-employment hazards if they are in a high-turnover casual labour market where there is no point in "waiting" for a "good" job to turn up. Finally, this approach also incorporates the fact that part-time workers earn lower wages, which automatically reduces their EI benefits received via the standard benefit formula.¹⁴

It is important to remember that our benefit measure in this section is the total EI benefits ultimately received (some of which will be received in 1998) *resulting from separations occurring in the calendar year 1997*. In particular, I attach EI claims to separations as follows. If a claim starts in the same quarter as an individual's ROE, I attribute that claim to the ROE.¹⁵ If no claim starts in that quarter but one begins in the next quarter, I attribute the claim starting in the next quarter to the preceding quarter's ROE.¹⁶ All other individuals experiencing separations are presumed not to have claimed EI as a result of that separation.

Yet another useful feature of this method is how it handles individuals who separate more than once in a year. Subject of course to the one-in-ten sampling of separations that underlies the COEP, these individuals will automatically re-appear in the COEP data, and if they are successful in obtaining benefits more than once, will (rightly so) be counted more than once, at least if the separations occur in different quarters.

¹⁵ If more than one claim starts in that quarter, I pick the earliest one that starts after the ROE date.

¹⁶ If more than one claim starts in this (following) quarter, I pick the earliest. Note also that for workers separating in the last quarter of 1997, our analysis will include benefits received from some claims starting in the first quarter of 1998.

9. Results: Employment Insurance Benefits

Tables 13 through 17 present the results on Employment Insurance (EI) benefits received by full- versus part-time workers as a result of separations occurring in the calendar year 1997. In interpreting all these results, it is important to note that because they are drawn from a sample of separations — the Canadian Out of Employment Panel (COEP) —, they are conditional on experiencing a job separation. These are useful statistics — they tell us how much EI a person is likely to get if he or she were to separate from an employer in 1997 — but they are not directly comparable to the premium figures in Tables 1-12, which are for all employed workers. The question of whether benefits exceed or fall short of premiums for various groups is addressed in the following section, which incorporates the differing separation probabilities across groups of workers. That said, however, it is worth noting that the figures in Tables 13-17 do not condition on claiming EI; those individuals who separate but do not start an EI claim in the same or the following quarter are counted as receiving zero benefits. If part-timers are significantly less likely to file for EI benefits, either due to fixed costs or a lack of familiarity with the new system, these lower claim rates will be reflected in the numbers reported here.

To place the analysis of EI benefits received by separating workers in context, Table 13 documents the incidence of part-time work (again defined as under 15 "usual" hours per week) among *separating* workers in Canada, in a manner parallel to Table 2. For the most part these show the same patterns as those among employed workers shown in Table 2. Part-time work is more common among teens and workers over 65 than among prime-age workers, more common among women than men, and more common in British Columbia than other provinces. There are, however, some noteworthy differences. One is the much more muted differences across age and sex groups than in Table 2. For example, while teenage workers were more than ten times more likely to be part-time than prime-age (25-64) workers (36 versus 3 percent in Table 2), among separating workers the ratio is only about three to one (9.9 to 3.3 percent). A similar but less dramatic comparison holds for women versus men. At first glance this is surprising: one thinks of part-time jobs as being less, not more stable, than full-time jobs. This may not be the case, however, for certain population subgroups. For example, many teenagers' full-time jobs end every August, but part-time jobs can be continued throughout the school year. As well, older workers' full-time jobs may be seasonal — such as Christmas sales — while their parttime jobs may be less so. Thus, part-time jobs are actually underrepresented in the population of separations among teens, youth and older workers, a factor which would act to reduce the amount they benefit from receipt of EI benefits.¹⁷

Another possibility is that employers are less likely to issue Records of Employment (ROEs) for part-time workers. If so, these workers will not be eligible for EI benefits. The likely impact of under-reporting of ROEs on our main results is discussed in the following section, on total net incidence.

The only information on student status in the COEP is very imperfect for our purposes: separating workers are asked whether they "quit to return to school." Table 13 indicates that workers who "quit to return to school" were in fact *less* likely to have worked part-time on their previous job than were other workers who experienced a separation. In a sense, this is not surprising, since continued part-time work is more compatible with school attendance than is full-time work. Unfortunately, however, the COEP data cannot identify individuals who separate from a part-time job while attending school (either full- or part-time). Thus, the benefit results for students in this section are not comparable with the premium results in Table 7, and are presented for their own interest only. Net fiscal incidence numbers by student status are not computed in Section 10 for this reason as well.

TABLE 13 Fraction of Separating Workers who Worked Part-time (under 15 Hours per Week) by Selected Demographic Characteristics, 1997					
Age					
15-19	0.099				
20-24	0.048				
25-64	0.033				
65+	0.055				
School Enrollment (quit to return to school)					
Student (full- or part-time)	0.029				
Non-student	0.038				
Sex					
Men	0.021				
Women	0.055				
Province*					
Newfoundland	0.026				
Prince Edward Island	0.02				
Nova Scotia	0.028				
New Brunswick	0.029				
Quebec	0.036				
Ontario	0.033				
Manitoba	0.04				
Saskatchewan	0.046				
Alberta	0.042				
British Columbia	0.055				
Canada	0.038				
* In this and all subsequent tables based on the COEP, Quebec figures include N	WT; BC figures				

in this and all subsequent tables based on the COEP, Quebec figures include NVVI; BC figures include Yukon.

Table 14, parallel to Table 3, presents total EI benefits received by full-versus part-time workers experiencing a job separation in 1997. In this Table and the four following ones. I present two alternative measures of EI benefits received: total weeks of benefit received and total dollars received. According to Table 14, the average *separating* part-time worker received 5.0 weeks in EI benefits, compared to 9.7 weeks for separating full-time workers. Since 1997 was the first year in which part-time workers were eligible for EI, it seems likely that EI take-up rates among part-time workers may not yet have reached their longrun levels. Thus, these benefit weeks, at more than half those received by full-time workers, might even be an underestimate of long-run levels. In dollar terms, the average separating part-time worker received \$933 in EI benefits, compared to \$2,532 for separating full-time workers. The greater differential in dollar benefits than in benefit weeks received surely reflects the lower hourly wages earned by part-time workers. Overall, the inclusion of part-time workers under the "EI umbrella" is thus calculated to have raised total EI benefit weeks paid per separating worker in Canada by 3.2 percent, and to have raised EI outlays per separation by 2.3 percent. These numbers are much higher than the premium increases documented in Table 3, but as noted they are per separation, not per worker, and not all workers experience a job separation in a year; thus they do *not*, without further analysis, imply positive net fiscal incidence of EI.

TABLE 14 Estimated Total El Benefits Received by Full- Versus Part-time Workers Separating in 1997 (per ROE Separation)						
Full-time (15 hours or more per week)	Part-time (under 15 hours per week)	Proportional increase due to inclusion of part-time workers*				
(1)	(2)	(3)				
2,532	933	0.023				
9.7	5	0.032				
	Full-time (15 hours or more per week) (1) 2,532	Full-time (15 hours or more per week) (1) (2) 2,532 Part-time (under 15 hours per week) (2)				

^{*} Extra benefits in (2), as a fraction of original benefits in (1), per separation (including both full- and part-time separations in the denominator). Calculated as $\alpha(2)/[(1-\alpha)(1)]$, where α is the fraction of all separating workers who work part-time.

Note: All means include zero weeks and benefits for separating individuals who do not claim El in the quarter of, or in the guarter immediately after, the separation.

Table 15 breaks down EI benefits paid to part- and full-time workers by the same age categories used in the premium analysis of the previous section. Its structure is essentially parallel to Table 5. Clearly, in all age categories, separating part-time workers received fewer weeks and fewer dollars of EI benefits than separating full-time workers, but some differences across age categories are noteworthy. In particular, the average separating full-time teenage worker received 2.3 weeks, or \$357, in EI benefits. In contrast, *in the entire 1997 COEP survey of approximately 17,000 job separations, there is not a single part-time teenage worker who received EI benefits.* To some extent this reflects the relatively small sample size of the COEP (there are only 31 part-time teenage workers in the entire survey), but the total absence of any claims at all is striking. That said, the use of EI

benefits by part-time *prime-age* workers is quite substantial: on average such a worker claimed 6.5 weeks of EI, more than half the 10.8 weeks claimed by a full-time prime-age worker, and received \$1,234 in benefits, compared to \$2,889 by full-time prime-age separators. Interestingly, *the biggest percentage increase in EI benefits attributable to the extension of benefits to part-timers occurs among workers over age 65: their benefit weeks, conditional on separating, rose by 4.7 percent, and their benefit dollars rose by 2.1 percent,* compared to considerably smaller numbers for the other age groups.

TABLE 15 Estimated Total El Benefits Received by Full- Versus Part-time Workers Separating in 1997, by Age							
	Full-time (15 hours or more per week)		Part-time (under 15 hours per week)		Fraction Part- time	Proportional increase due to inclusion of PT workers*	
Age	Weeks	\$	Weeks	\$		Weeks	\$
15-19	2.3	357	0	0	0.099	0	0
20-24	5.9	1,170	1.2	197	0.048	0.01	0.008
25-64	10.8	2,889	6.5	1,234	0.033	0.021	0.015
65+	6.8	1,627	5.5	574	0.055	0.047	0.021

^{*} Calculated as $\alpha(p)/[(1-\alpha)f]$, where α is the fraction of all workers who work part-time, p and f denote the mean of weeks or hours for part- and full-time workers respectively.

Table 16 breaks down EI benefits by part-time status and student status, where (as noted) student status is now defined by having quit one's job "to return to school". Not surprisingly, persons who quit to return to school are much less likely to receive EI than persons who separate for other reasons. This is particularly the case for part-time workers, who on average receive under a week of EI benefits, or \$54, if they quit to return to school. Extending EI to part-timers clearly helps individuals returning to school hardly at all, as the mere fact of school attendance presumably disqualifies most of them from benefit receipt.

Interestingly, according to Table 17, women who experienced a separation from a full-time job in 1997 claimed more weeks of EI (10.3 versus 9.1) than men. But because they earn less per hour and work fewer hours, they received fewer benefits in dollar terms. In contrast, among part-time job separators, women both claim fewer EI weeks *and* receive fewer EI benefit dollars. Despite this, because separating women are more than twice as likely to have worked part-time than separating men, *extending EI to part-time workers raised women's benefits as a group more than men's: women's benefit weeks and dollars rose by 2.7 and 2.1 percent per separation respectively, compared to 1.3 and 0.9 percent for men.* Interestingly, these dollar increases are quite similar to the 1.4 percent (women) and 0.4 percent (men) increases in EI premiums identified in Table 9, but as the latter numbers refer to all workers, not just separators, it seems likely that both men and women experienced a net fiscal loss due to extension of EI to part-timers. Of course, we shall confront this issue directly in the following section of the report.

TABLE 16 Estimated Total El Benefits Received by Full- Versus Part-time Workers Separating in 1997, by Student Status

	(15 hours	-time s or more veek)	Part-time (under 15 hours per week)		Fraction Part- time	increas inclu	Proportional increase due to inclusion of PT workers*	
	Weeks	\$	Weeks	\$		Weeks	\$	
Non-								
student	10.1	2,632	5.1	967	0.038	0.02	0.015	
Student	2.5	602	0.7	54	0.029	0.008	0.003	

^{*} Calculated as $\alpha(p)/[(1-\alpha)f]$, where α is the fraction of all workers who work part-time, p and f denote the mean of weeks or hours for part- and full-time workers respectively.

TABLE 17
Estimated Total El Benefits Received by Full- Versus Part-time Workers
Separating in 1997, by Sex

	(15 hours	Full-time Part-time 15 hours or more (under 15 hou per week) per week)		15 hours	Fraction Part- time	increas inclu	ortional se due to sion of orkers*
	Weeks	\$	Weeks	\$		Weeks	\$
Men	9.1	2,652	5.4	1,130	0.021	0.013	0.009
Women	10.3	2,399	4.8	850	0.055	0.027	0.021

^{*} Calculated as $\alpha(p)/[(1-\alpha)f]$, where α is the fraction of all workers who work part-time, p and f denote the mean of weeks or hours for part- and full-time workers respectively.

Finally, Table 18 shows EI benefits received by full- and part-time workers across Canada's ten provinces. As expected, there are huge interprovincial differences in EI benefits received per separation, with the average full-time job separator in Newfoundland getting 18.7 weeks, or \$4,499, of benefits compared to 6.2 weeks, or \$1,629, in Alberta. To a large extent these high benefit amounts in the Atlantic provinces reflect longer unemployment durations there. Abstracting from the greater noise in the part-time figures due to the much smaller sample sizes, these interregional patterns are, however, broadly the same for full- and part-time workers. It is therefore hard to make a strong case that extending EI benefits to part-time workers had a markedly different fiscal effect on Canada's ten provinces.

TABLE 18
Estimated Total El Benefits Received by Full- Versus Part-time Workers
Separating in 1997, by Province

	Full-time Part-time Fraction (15 hours or more (under 15 hours Part- per week) per week) time			increas inclu	ortional se due to sion of orkers*		
	Weeks	\$	Weeks	\$		Weeks	\$
Nfld	18.7	4,499	14.2	2,617	0.026	0.02	0.016
PEI	17.7	4,008	10.4	1,912	0.02	0.012	0.01
NS	14	3,257	12.4	1,765	0.028	0.026	0.016
NB	14.9	3,565	5.2	772	0.029	0.01	0.006
Que	11.7	2,972	4.8	726	0.036	0.015	0.009
Ont	7.5	2,078	4.7	988	0.033	0.021	0.016
Man	7.7	1,917	4.1	1,079	0.04	0.022	0.023
Sask	6.8	1,779	2.3	429	0.046	0.016	0.012
Alta	6.2	1,629	2.9	700	0.042	0.021	0.019
ВС	10.1	2,854	5.4	1,110	0.055	0.031	0.023

^{*} Calculated as $\alpha(p)/[(1-\alpha)f]$, where α is the fraction of all workers who work part-time, p and f denote the mean of weeks or hours for part- and full-time workers respectively.

10. Results: Cross-Subsidization

As noted at length already, the Labour Force Survey (LFS)-based estimates of Employment Insurance (EI) premia presented in Section 7 are computed on a per-worker basis, while the Canadian Out of Employment Panel (COEP)-based estimates of EI benefits in Section 9 are on a per-separation basis. To get an overall estimate of the balance between premia and benefits, the two, therefore need to be converted to a common basis and compared. The basis I use is a per-worker one. To convert the COEP-based estimates to this basis I need estimates of both the population of workers by part-versus full-time status in 1997, and the population of separations by each type of worker. Both of these can be computed from the LFS and COEP surveys used in this paper by summing the weights for each population subgroup in question. Details of how these were used to calculate annual separations per worker are provided in the Appendix. In this section, I present results for total net fiscal impact of EI, first on part- versus full-time workers overall, then disaggregated by age, sex and province. Results for student status are not generated as the definitions of student status in the LFS and COEP are not comparable.

Probably the most important table in this report is Table 19, which summarizes the main results for total incidence of EI on full- versus part-time workers in 1997. In that Table, rows 1 and 2 reproduce Section 7's main results (in Table 3) on premiums paid per worker. Row 3 reproduces Section 9's main results (in Table 14) on benefits received per separation. Row 4 presents our estimate of annual separations per worker, calculated in the Appendix. Row 5 then uses these numbers to express EI benefits in per-worker terms, and Rows 6 and 7 provide two alternative estimates of net incidence — the difference between benefits and costs per worker — one that includes employee premiums only, the other which includes both employee and employer premiums.

Noteworthy features of Table 19 include the following. First, perhaps surprisingly, our data actually suggest that at least when separations are measured by counting ROE forms, part- time jobs are more stable than full-time jobs. Overall, in 1997 we count 0.44 separations per full- time worker and only 0.29 per part-time worker. There are a number of possible reasons for this. One is that part-time jobs, unlike full-time jobs, may be less likely to be seasonal or very short term. Because, until 1997, seasonal jobs had to be fulltime (i.e. 15 or more hours) in order to qualify for Unemployment Insurance (UI), it seems likely that many temporary or seasonal jobs will be specifically designed to have enough hours to qualify. Second, there are undoubtedly some separations in Canada that do not result in the issuance of a Record of Employment (ROE), and this undercounting may be more important among part-time workers who may not even be aware of their post-Bill C-12 eligibility for EI. The effect of this undercounting on our total incidence calculations depends on what fraction of undercounted separations paid EI premiums. If they did pay premiums, the accuracy of our calculations is unaffected: workers who do not receive ROEs cannot claim EI and will be correctly assigned zero benefits. These workers will, however, still appear in the LFS and premiums will be correctly imputed to them. If non-ROE separations paid no EI premiums (thus avoiding detection by the EI system altogether) our calculations here will overestimate EI premiums paid, especially by part-time workers.

TABLE 19 Total Net Incidence of El on Full- Versus Part-time Workers, 1997					
	Full-time (15 or more hours/week)	Part-time (under 15 hours/week)			
Premiums/worker: employee portion only*	723	88			
2. Premiums/worker: total	1,754	230			
3. Benefits/separation	2,532	933			
4. ROE Separations/worker	0.443	0.288			
5. Benefits/worker ((3) x (4))	1,122	269			
6. Net Incidence (including employee premiums only) ((5) - (1))	399	181			
7. Net Incidence (total) ((5) - (2)) -632 39					
*Assumes all workers eligible for the low-income EI premium rebate claim it. Note: All figures are in dollars, except for row 4 (separations per worker).					

Second, counting employer premiums paid on workers' behalf, *the net overall fiscal impact of the EI system on workers in 1997 was highly negative*. The average full-time worker (who constitute 94 percent of all workers) paid 632 dollars more in premiums than he or she collected in benefits. Third, and perhaps most surprisingly, despite this overall negative net fiscal impact, *the net fiscal impact of EI on part-time workers appears to be slightly positive*: even including employer premiums paid on the worker's behalf, the average part-time worker paid 39 dollars less in EI premiums than he or she received in EI benefits in 1997. Despite their lower (ROE-documented) separation rate and their lower EI benefit receipt (part-timers received only (269/1122) 24 percent as much in EI benefits as full-time workers), the smaller amount of EI premiums paid by part-timers (part-timers only paid 230/1754 = 13 percent as much EI premiums as full timers) generates a small net fiscal gain for part-timers. Recalling Table 3, it may be worth noting that this \$39 fiscal gain includes \$11 in imputed low-income premium refunds, thus even if no workers claimed that premium refund, part-timers would still experience a small net gain due to EI of 39-11 = \$28 dollars per person.

Table 20 disaggregates the net fiscal impact on EI on part- versus full-time workers by age category. In this and the following tables, I only report results that include employer contributions (because in the long run this is the conceptually correct thing to do), and that assume all eligible workers claim the low-income EI premium refund (because this refund is small and makes little difference to the results). The main message of the Table is clear: The positive overall fiscal impact of EI on part-time workers is confined to those who are "prime age" (25-64). All other part-time workers — both those under 25 and over 64 —

lose by being covered by EI. Thus, while inclusion under the EI umbrella clearly provided a net fiscal gain to prime-age part-time workers of \$250 per year per worker, it hurt part-time teens, youth and seniors, who experienced net losses of \$124, \$127 and \$236 respectively. One potential explanation of this result might be a greater familiarity with the EI system among prime-age part-time workers; workers in the other age groups may not expect to be EI-eligible and might not file for benefits as a result.

TABLE 20 Total Net Incidence of El on Full- Versus Part-time Workers, by Age Category, 1997						
	Premiums/ worker*	Benefits/ separation (2)	Separations/ worker (3)	Benefits/ worker ((2) x (3))	Net Incidence ((4) - (1))	
Full-time	(-)	(-)	(0)	(-/	(0)	
Age 15-19	437	357	0.331	118	-319	
Age 20-24	941	1,170	0.684	800	-141	
Age 25-64	1,911	2,889	0.415	1,199	-712	
Age 65+	1,517	1,627	0.647	1,053	-464	
Part-time						
Age 15-19	124	0	0.064	0	-124	
Age 20-24	188	197	0.309	61	-127	
Age 25-64	329	1,234	0.469	579	250	
Age 65+	324	574	0.153	88	-236	

^{*} Includes employee and employer contributions. Assumes all individuals eligible for low-income EI premium refund claim it.

Note: All figures are in dollars, except for column 3 (separations per worker).

Table 21, which disaggregates our total net incidence calculations by sex, shows that while both male and female part-timers gained from EI coverage, the gain was much greater for men. Echoing the results based on age, men (who tend to have higher wages and stabler jobs) gained an average of \$89 per year from EI coverage if they worked part-time, while part-time women gained only \$11, an amount sufficiently close to zero. The failure to fully claim the low-income EI premium refund could conceivably make it negative.

TABLE 21	
Total Net Incidence of El on Full- Versus Part-time Workers, by Sex, 199	7

	Premiums/ worker*	Benefits/ separation	Separations/ worker	Benefits/ worker ((2) x (3))	Net Incidence ((4) - (1))
	(1)	(2)	(3)	(4)	(5)
Full-time					
Women	1,551	2,399	0.453	1,087	-464
Men	1,928	2,652	0.434	1,151	-777
Part-time					
Women	247	850	0.303	258	11
Men	197	1,130	0.253	286	89

Includes employee and employer contributions. Assumes all individuals eligible for low-income premium refund claim it.

Note: All figures are in dollars, except column 3 (separations per worker).

Finally, Table 22 disaggregates the analysis by province. Its most striking result is not for part-time but for full-time workers: the net fiscal impact of the EI system varies dramatically across provinces. Even in 1997, after substantial reforms targeted at the repeat and seasonal users who are especially prevalent in the Atlantic provinces, these provinces experienced large net fiscal gains (of close to \$2,000 per worker per year in Newfoundland) that were financed by large net losses in the rest of the country. While some of this transfer is driven by differences in EI premiums paid, the main sources are clearly differences in benefits per separation (driven by longer unemployment durations in the Atlantic) and in separation rates themselves. This full-time pattern is echoed, though with somewhat greater noise given the smaller samples, among part-time workers. Such workers experienced large net gains in the Atlantic provinces, especially Newfoundland. Given the overall net gain of part-timers nationwide, there were only two provinces — Ontario and Saskatchewan — in which part-timers as a group experienced a net fiscal loss due to EI coverage. Both of these provinces tend to be relatively low users of EI benefits overall.

TABLE 22
Total Net Incidence of El on Full- Versus Part-time Workers, by Province, 1997

	Premiums/ worker*	Benefits/ separation	Separations/ worker	Benefits/ worker ((2) x (3))	Net Incidence ((4) - (1))
	(1)	(2)	(3)	(4)	(5)
Full-time					
Newfoundland	1,468	4,499	0.755	3,397	1,929
Prince Edward Island	1,349	4,008	0.783	3,138	1,789
Nova Scotia	1,534	3,257	0.515	1,677	143
New Brunswick	1,530	3,565	0.676	2,410	880
Quebec	1,723	2,972	0.511	1,519	-204
Ontario	1,838	2,078	0.362	752	-1,086
Manitoba	1,611	1,917	0.415	796	-815
Saskatchewan	1,595	1,779	0.43	765	-830
Alberta	1,640	1,629	0.465	757	-883
British Columbia	1,860	2,854	0.448	1,279	-581
Part-time					
Newfoundland	139	2,617	0.388	1,015	876
Prince Edward Island	164	1,912	0.233	445	281
Nova Scotia	173	1,765	0.242	427	254
New Brunswick	157	772	0.433	334	177
Quebec	256	726	0.364	264	8
Ontario	228	988	0.195	193	-35
Manitoba	207	1,079	0.267	288	81
Saskatchewan	184	429	0.296	127	-57
Alberta	206	700	0.369	258	52
British Columbia	261	1,110	0.377	418	157

^{*} Includes employee and employer contributions. Assumes all individuals eligible for low-income premium refund claim it.

Note: All figures are in dollars, except column 3 (separations per worker).

11. Conclusions

Bill C-12 extended Canada's unemployment insurance system to persons who worked less than 15 hours per week on their main job, a group that was not covered under previous legislation. In addition to entitling this group to Employment Insurance (EI) benefits, Bill C-12 of course also subjected them to EI premiums for the first time.

The purpose of this report has been to measure the amount of additional premiums imposed and benefits paid due to the extension of EI coverage to these "part-time" workers, and to answer some simple questions concerning the impacts on sub-groups resulting from these changes. Its main results can be summarized in three parts: those concerning premiums, those concerning benefits, and those concerning overall net financial incidence.

Concerning premiums, because those working under 15 hours per week on their main job are a small fraction of the labour force (about 6 percent), and because the earnings of this group tend to be low, the inclusion of these workers in the EI tax base raised government revenues from the EI system only modestly — by a little under one percent. Despite this modest overall impact, however, I identify three population subgroups for whom Bill C-12 constituted a substantial increase in payroll taxation: teenage workers, workers over 65 and students. These three groups (among whom part-time work is much more common than other workers) saw their total payroll taxes rise, respectively, by 16 percent, 5.4 percent and 8.2 percent, despite a low-income EI premium refund made available in the income tax system. In comparison, the effects of Bill C-12 on premiums paid by men versus women, and by different provinces, were much more modest.

Concerning EI benefits, I find somewhat larger effects of Bill C-12 on benefits received per separating worker. This is unsurprising since premiums collected from all workers are used to finance benefits received by separating workers only. Overall, I calculate that the inclusion of part-time workers under the EI umbrella raised total EI benefit weeks paid by 3.2 percent per job separation, and total dollar EI benefits paid by 2.3 percent per job separation. Across age groups, the group of separators experiencing the largest percentage increase in EI benefits due to the inclusion of part-timers is the over-65s: this group experienced an increase in benefit weeks of 4.7 percent and an increase in cash EI benefits of 2.1 percent. Teenage workers and students (defined in the "benefit" analysis as those who "quit to return to school") experience essentially a zero benefit increase as a result of the inclusion of part-timers. In fact, although the sample size of part-time teenagers in the COEP survey is small (there were 31 such workers experiencing a separation in the entire year of 1997), literally *none* of these workers claimed EI in our sample. Per separation, women gained proportionately more EI benefits from the extension of coverage to parttime workers (2.1 percent) than did men (0.9 percent). This is the case even though the average separating part-time male collected more dollars in EI benefits than his female counterpart, for two reasons. First, because they have higher pre-separation earnings, part-time men tend to receive higher weekly benefits than part-time women. Second, women are much more likely to work part-time than men.

Concerning the overall *net fiscal incidence* of including part-time workers under the "EI umbrella," the paper's main finding is perhaps a surprising one: part-time workers, as a group, experienced a small net gain from EI coverage of about 39 dollars per worker per year. Thus, while coverage increased the premiums paid by that group, it increased the benefits they received as well, and did so by a little more than the premium increase. Interestingly, this fiscal gain has relatively little to do with the low-income EI premium refund targeted at workers earning under \$2,000 per year who are much more likely to be part-time workers. At most, I calculate that the refund contributed only \$11 of the \$39 net gain identified above, and probably substantially less since not all eligible workers are likely to file income taxes and claim it.

The small net fiscal gain experienced by part-timers as a group under EI should, however, not be seen as grounds for complacency or total satisfaction with the reforms. Even aside from broader questions concerning work-incentive effects and whether the income smoothing provided by EI is particularly (or at all) valued by part-time workers, there are key subgroups of the part-time population who experienced a net fiscal loss due to EI coverage whose fortunes may be of particular concern to policymakers. These groups are workers under the age of 25 or above the age of 64. For these part-timers the main impact of EI has mostly been a larger tax burden, even when the low-income EI premium refund is taken into account. Similarly, policymakers might be concerned that the net fiscal gains to part-timers are largely confined to men rather than women. Across provinces, the extension of EI to part-time workers produced the largest net fiscal gains for those provinces which were already the biggest net gainers from the EI system: the Atlantic provinces and, especially, Newfoundland. This aspect of Bill C-12 thus worked to accentuate the existing pattern of interprovincial transfers that occur through the EI system.

Bibliography

Kuhn, Peter J., and L. Arthur Sweetman. *The Incidence of Bill C-17 and its Effects on Pre-Separation Job Durations and Unemployment Insurance Eligibility.* Final Report to Human Resources Development Canada, May 1998.

Appendix: Calculation of Separations per Worker

Each table simply lists the sum of weights in the twelve merged Labour Force Survey (LFS) surveys (column 1), divides this by 12 to get an annual worker count (column 2), lists the total sum of weights from cohorts 7-10 of the Canadian Out of Employment Panel (COEP) survey (column 3), then divides column 3 by column 2 to produce an estimate of the annual separation rate.

		TABLE A1 Total		
	Workers counted in LFS (all 12 survey months)	Annualized worker count ((1)/12)	Separations, from COEP	Separations/ worker ((3)/(2))
	(1)	(2)	(3)	(4)
Full-time	129,406	10,784	4,778	0.443
Part-time	7,921	660	190	0.288

		TABLE A2 By Age					
	Workers counted in LFS (all 12 survey months)	Annualized worker count ((1)/12)	Separations, from COEP	Separations/ worker ((3)/(2))			
	(1)	(2)	(3)	(4)			
Full-time							
Age 15-19	4,897	408	135	0.331			
Age 20-24	13,240	1,103	755	0.684			
Age 25-64	110,448	9,204	3,821	0.415			
Age 65+	819	68	44	0.647			
Part-time							
Age 15-19	2,788	232	14.9	0.064			
Age 20-24	1,486	124	38.3	0.309			
Age 25-64	3,437	286	134	0.469			
Age 65+	208	17	2.6	0.153			
Note: All counts (co	Note: All counts (columns (1)-(3)) are in thousands.						

		TABLE A3 By Sex			
	Workers counted in LFS (all 12 survey months)	Annualized worker count ((1)/12)	Separations, from COEP	Separations/ worker ((3)/(2))	
	(1)	(2)	(3)	(4)	
Full-time					
Women	59,733	4,978	2,255	0.453	
Men	69,672	5,806	2,521	0.434	
Part-time					
Women	5,264	439	133	0.303	
Men	2,656	221	56	0.253	
Note: All counts (columns (1)-(3)) are in thousands.					

		TABLE A4 By Province		
	Workers counted in LFS (all 12 survey months)	Annualized worker count ((1)/12)	Separations, from COEP	Separations/ worker ((3)/(2))
	(1)	(2)	(3)	(4)
Full-time				
Newfoundland	1,857	155	117	0.755
Prince Edward Island	546	46	36	0.783
Nova Scotia	3,711	309	159	0.515
New Brunswick	3,074	256	173	0.676
Quebec	31,282	2,607	1,333	0.511
Ontario	50,702	4,225	1,531	0.362
Manitoba	4,924	410	170	0.415
Saskatchewan	3,934	328	141	0.43
Alberta	13,025	1,085	505	0.465
British Columbia	16,347	1,362	610	0.448
Part-time				
Newfoundland	99	8	3.1	0.388
Prince Edward Island	35	3	0.7	0.233
Nova Scotia	229	19	4.6	0.242
New Brunswick	140	12	5.2	0.433
Quebec	1,685	140	51	0.364
Ontario	3,256	271	52.8	0.195
Manitoba	329	27	7.2	0.267
Saskatchewan	273	23	6.8	0.296
Alberta	727	61	22.5	0.369
British Columbia	1,142	95	35.8	0.377
Note: All counts (columns (1)-(3)) are in thousands.				