Should New Brunswick Implement a Payroll Tax?

by

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Abstract

The purpose of this thesis is to investigate the viability of a provincial payroll tax for New Brunswick. Existing federal, provincial, and territorial payroll taxes are examined, and their use in Canada is compared with other Organisation for Economic Co-operation and Development (OECD) countries. Equity and efficiency considerations are examined both theoretically and through a review of the empirical literature. As well, the treatment and structure of such a tax is discussed. The legal implications of payroll taxes are examined by looking at the tax collection agreements between the federal and provincial governments, as well as the recent Supreme Court case concerning Employment Insurance collection. Finally, the myth of payroll taxes as job killers is addressed.

Payroll taxes are found to be some of the least distortionary taxes currently employed in Canada. They are a slightly regressive tax, although less so than indirect commodity taxes. The "job killer" myth is found to be generally false in the long run, although somewhat ambiguous in the short run. While the province is constrained by being unable to alter the income tax base or the sales tax rates due to the Tax Collection Agreements, and the Harmonization Accord, a payroll tax would provide a means of creating a two tiered income tax system which is favourable towards capital, without opting out of the agreements. It is concluded that a provincial payroll tax should be seriously considered in any discussions pertaining to tax reform, especially those surrounding the reduction of taxes on capital.

Chapter 1: Introduction

In the summer of 2008, the government of New Brunswick released a discussion paper on tax reform (Department of Finance, 2008). The purpose of this discussion paper was to generate public input. It outlined four goals which any reform should attempt to meet, specifically: Income growth, enhancing economic competitiveness, making New Brunswick a more attractive option for workers and families, and promoting recruitment and retention of skilled workers. These are consistent with the ultimate goal of the government to achieve self-sufficiency.

The proposed tax reforms consisted of reducing the income tax by moving to a flat rate of 10 percent, reducing the general corporate income tax rate from 13 percent to 10 percent, 7 percent, or 5 percent, introducing a carbon tax, returning the HST rate to 15 percent, and reducing the provincial property tax rate. One question arises: Why was a payroll tax not considered as an option? This thesis will explore the benefits of including a payroll tax as a component of New Brunswick's planned tax reform.

This question of whether or not New Brunswick should implement a payroll tax is a complicated one and depends on a multitude of variables. This thesis will take a systematic approach to analyzing payroll taxation, with a particular focus at the provincial level. Chapter 1 contains the introduction to the topic. Chapter 2 contains a detailed outline of current payroll taxation. In particular, the three existing national payroll taxes are examined in detail, as well as the payroll taxes levied by certain provinces. The revenues generated by the provincial payroll taxes are examined, and the revenue generating potential for New Brunswick is estimated, followed by an outline of payroll

taxation in the United States. Finally, relative payroll taxation levels among OECD countries are examined.

Chapter 3 deals with the treatment of payroll taxation. Here, employee payroll taxes are differentiated from employer payroll taxes. The issue of deductibility is dealt with, as well as earmarking. The recent Supreme Court case regarding the collection of Employment Insurance revenues is discussed, along with the current tax collection agreements.

Chapter 4 is concerned with the efficiency of payroll taxes. The administration and compliance costs are examined, as well the distortionary effects on the economy. The distortionary effects are examined theoretically and through a review of the empirical literature.

Chapter 5 deals with the incidence of payroll taxes. The fiscal incidence of the tax is examined and the "job killer" myth is addressed. The disemployment effects are examined through traditional partial equilibrium models as well as a review of the empirical literature.

Finally, Chapter 6 contains the conclusions. It is found that payroll taxes are some of the most efficient taxes currently employed in Canada. The job killer myth is found to be false in the long run, and the fiscal incidence of the tax is found to be somewhere in between that of income taxes and commodity taxes. A payroll tax seems to be a serious option for the province to consider in any tax reform. Desirable characteristics of a provincial payroll tax are: a flat rate structure, a minimum number of

exemptions, the inclusion of the self-employed, and earmarking. A number of motivations for adopting a payroll tax are found, which include: restructuring the tax system to be more favorable to capital; recouping lost revenue from the federal transfer cuts of the 1990's; finally, filling the tax room opened up by the reduction in the federal General Sales Tax rate.

Chapter 2: Current Payroll Taxes

2.1 Canadian National Payroll Taxes

Canada has three national payroll taxes. Employment Insurance (EI) is collected by the federal government. Canada Pension Plan (CPP) contributions are collected by the federal government in all provinces except Quebec, where they collect the similar Quebec Pension Plan (QPP) provincially. Workman's Compensation is a provincial responsibility, and contributions are collected by individual provincial Workman's Compensation Boards; however, the rates and structures are similar enough for the purposes of this thesis to consider it a national payroll tax.

2.1.1 Employment Insurance

The Great Depression generated many calls for government intervention (*Key economic events*, n.d.). It began with an insurance program which would guarantee partial wages for those temporarily out of work. After a constitutional amendment[1], which allowed the federal government to address an issue which was previously considered a provincial responsibility, the *Unemployment Insurance Act (1941)* was introduced. The program has gone through numerous amendments over the years; the most significant, for the program as it exists today, occurred in 1990 and 1996[2].

[1] A form of employment insurance was introduced in 1935, but was believed to be unconstitutional by newly elected Prime Minister Mackenzie King. The act was referred to the Supreme Court and the Privy Council, who agreed and struck down the act. See *Key economic events (n.d.)* for a detailed discussion.

[2] See Kesselman (1997), and Lin (2000) for a detailed discussion.

Before 1990, the responsibilities for financing the program were shared between employers, employees, and the federal government. In the 1990 amendment, due to large program deficits of the previous decade, the federal government withdrew its financing responsibilities and the Unemployment Insurance program became self-financing. Another important amendment in 1990 was the inclusion of certain self-employed individuals in the program. Prior to this there was no coverage for the self-employed. Section 130(1) of the act stated that the commission may establish an unemployment insurance scheme for the self-employed engaged in fishing or any activity related to or incidental to fishing.

The introduction of the *Employment Insurance Act (1996)* saw the name of the program change from Unemployment Insurance to Employment Insurance; the term "Unemployment Insurance" was seen to hold too many negative connotations (Kesselman,1997). Contribution rates were set high enough to prevent account deficits during economic downturns, while maintaining constant rates. It was at this time also that the program focus shifted from simply compensating the unemployed to fighting unemployment through re-training programs.

Today, EI premiums are levied on employers, employees and self-employed fisherman, with the employers' rate and maximum contribution being 1.4 times that of employees. Prior to the 2008 federal budget, EI contributions went into general revenue. The rate, which cannot change by more than 0.15 percent of the previous year's rate, is set on November 14th of each year. The maximum insurable earnings are indexed with the growth in the average industrial wage. The federal government has agreements with

Newfoundland and Labrador, Prince Edward Island, and the Yukon, where Human Resources and Social Development Canada (HRSDC) delivers employment benefits and support measures but share responsibility for the design management and evaluation of these programs with the provinces and territories. The rest of the provinces and territories have an agreement where they assume full responsibility for the design, delivery and management of their own support programs and are funded by transfer agreements.

The 2008 federal budget announced the creation of the Canadian Employment Insurance Financing Board (CEIFB) to manage the EI account. Two billion dollars will be put into a segregated account to help cushion the program in the case of an economic downturn and prevent the need to drastically change rates from year to year. Table 2.1 shows the employee rate, maximum insurable earnings, and maximum contributions from 1972-2009.

Table 2.1 Employee Contributions to Employment Insurance

Year	Rate %	Maximum Insurable Earnings($)	Maximum Premiums($)
1972	0.9	7,800	70.2
1973	1	8,320	83.2
1974	1.4	8,840	123.76
1975	1.4	9,620	134.68
1976	1.65	10,400	171.6
1977	1.5	11,440	171.6
1978	1.5	12,480	187.2
1979	1.35	13,780	186.03
1980	1.35	15,080	203.58
1981	1.8	16,380	294.84
1982	1.65	18,200	300.3
1983	2.3	20,020	460.46
1984	2.3	22,100	508.3
1985	2.35	23,920	562.12
1986	2.35	25,740	604.89
1987	2.35	27,560	647.66
1988	2.35	29,380	690.43
1989	1.95	31,460	613.47
1990	2.25	33,280	748.8
1991	2.25/2.80	35,360	795.60/990.08
1992	3	36,920	1,107.60
1993	3	38,740	1,162.20
1994	3.07	40,560	1,245.19
1995	3	42,380	1,271.40
1996	2.95	39,000	1,150.50
1997	2.9	39,000	1,131.00
1998	2.7	39,000	1,053.00
1999	2.55	39,000	994.5
2000	2.4	39,000	936.00
2001	2.25	39,000	878.00
2002	2.2	39,000	858.00
2003	2.1	39,000	819.00
2004	1.98	39,000	772.20
2005	1.95	39,000	760.50
2006	1.87	39,000	729.30
2007	1.8	40,000	720.00
2008	1.73	41,100	711.03
2009	1.73	42,300	731.79

Source: Lin (2000) for 1999 and earlier, Human Resources Development Canada for 2000 and beyond.

The rates listed in Table 2.1 are those of employees. Employer rates are 1.4 times those of employees. For example, the employer rate in 2009 is 2.42 percent. The rate is imposed on the employee's pensionable earnings which cannot exceed the maximum. Such rate ceilings are typical of social security taxes.

2.1.2 Canada Pension Plan/Quebec Pension Plan

The Canada Pension Plan (CPP) was introduced in 1966 as a means of providing financial assistance to Canadians when they retire from the workforce. At the time, Quebec opted out of the plan[3] and introduced the Quebec Pension Plan (QPP) which mirrors the CPP. Some slight differences include higher benefits for surviving spouses, and the disabled, and the ability for women to deduct the years they were home in charge of a child under 7 years old from the formula used to calculate pension. However, the focus here will be on the CPP.

The CPP provides retirement pension, disability benefits, benefits for survivors, children's benefits, and a death benefit. Contributions are levied on employers, employees, and the self-employed, and are compulsory for those between the ages of 18 and 69 with a few exceptions such as pensioners, armed forces personnel, certain provincial government employees, casual or migratory workers, and certain other employees. Employers and employees are taxed at the same rate, while the self-employed are taxed at the combined rate. There is a basic exemption and a maximum pensionable earnings (MPEs), indexed with the industrial wage.

The CPP began as a pay-as-you-go program where the contributions of this year's workers would pay for the benefits received by the retirees of the same year. However, as the demographics began to change, and the proportion of retirees began to rise, it became obvious that such a system would require increasingly high contribution rates in

[3] According to section 94A of the *Constitution Act* (1867), "the Parliament of Canada may from time to time make laws in relation to old age pensions in Canada, but no law made by the Parliament of Canada in relation to old age pensions shall affect the operation of any law present or future of a Provincial Legislature in relation to old age pensions". This makes pension legislation an area of shared jurisdiction, with provincial laws being paramount.

the future (Boadway and Kitchen, 1999). The system was overhauled in 1997, and the new changes took effect Jan 1, 1998. The system became a hybrid of a pay-as-you-go system and a full-funding system, also known as a "steady-state" system. Basically, the current contributions are higher than is currently needed to compensate current retirees, and the surplus is put into a fund which will accumulate over time, earning interest. This will enable the program to be funded well into the future despite changing demographics. The current combined rate of 9.9 percent is said to be sufficient to maintain the program indefinitely. Table 2.2 shows employee contributions to the CPP.

Table 2.2 Employee Contributions to Canada Pension Plan

Year	Rate(%)	MPEs($)	Basic Exemption($)	Maximum Contributions($)
1966	1.8	5,000	600	79.2
1967	1.8	5,000	600	79.2
1968	1.8	5,100	600	81
1969	1.8	5,200	600	82.8
1970	1.8	5,300	600	84.6
1971	1.8	5,400	600	86.4
1972	1.8	5,500	600	88.2
1973	1.8	5,600	600	90
1974	1.8	6,600	700	106.2
1975	1.8	7,400	700	120.6
1976	1.8	8,300	800	135
1977	1.8	9,300	900	151.2
1978	1.8	10,400	1,000	169.2
1979	1.8	11,700	1,100	190.8
1980	1.8	13,100	1,300	212.4
1981	1.8	14,700	1,400	239.4
1982	1.8	16,500	1,600	268.2
1983	1.8	18,500	1,800	300.6
1984	1.8	20,800	2,000	338.4
1985	1.8	23,400	2,300	379.8
1986	1.8	25,800	2,500	419.4
1987	1.9	25,900	2,500	444.6
1988	2	26,500	2,600	478
1989	2.1	27,700	2,700	525
1990	2.2	28,900	2,800	574.2
1991	2.3	30,500	3,000	632.5
1992	2.4	32,200	3,200	696
1993	2.5	33,400	3,300	752.5
1994	2.6	34,400	3,400	806
1995	2.7	34,900	3,400	850.5
1996	2.8	35,400	3,500	893.2
1997	3	35,800	3,500	969
1998	3.2	36,900	3,500	1,068.80
1999	3.5	37,400	3,500	1,186.50
2000	3.9	37,600	3,500	1,329.90
2001	4.3	38,300	3,500	1,496.40
2002	4.7	39,100	3,500	1,673.20
2003	4.95	39,900	3,500	1,801.80
2004	4.95	40,500	3,500	1,831.50
2005	4.95	41,100	3,500	1,861.20
2006	4.95	42,100	3,500	1,910.70
2007	4.95	43,700	3,500	1,989.90
2008	4.95	44,900	3,500	2,049.30
2009	4.95	46,300	3,500	2,118.60

Source: Human Resources Skills Development Canada

Table 2.2 lists the employee contribution rates; however, employee contributions are matched by employers, making actual combined contributions twice those listed. To calculate an employee's contributions, their pensionable earnings (up to the maximum), minus the basic exemption, are multiplied by the contribution rate. The maximum contributions listed are the maximum any individual can contribute in one year, and are obtained by multiplying the rate by the difference between the Maximum Pensionable Earnings (MPEs) and the Basic Exemption.

2.1.3 Worker's Compensation

Worker's compensation (WC) was the first social security program introduced in Canada (Canada Department of Labour, 1969). It is meant to provide compensation for workers who suffer from workplace injuries. It was first implemented in the province of Ontario in 1915. Today it remains a provincial responsibility and, as such, the specifics of the program vary from province to province. In all province and territories, except for Prince Edward Island, Nova Scotia, and the Northwest Territories, the tax rates vary by industry and occupation and may be experience-rated at the firm level (Boadway and Kitchen, 1999). Experience-rating results in higher rates in industries which have a history of higher rates of workplace injuries. Worker's Compensation premiums are levied only on employers, and are collected by provincial governments to finance the programs run by the provincial Worker's Compensation Boards. The contributions are calculated as a percentage of total remuneration. Table 2.3 shows the average WC rates for each province/territory levied from 1985-2008.

Table 2.3 Worker's Compensation rates by province/territory

	AB	BC	MB	NB	NL	NT/NU	NS	ON	PE	QC	SK	YT
1985	1.52	2.77	1.38	1.61	1.76	2.9	1.19	2.31	1.37	1.88	1.37	2.21
1986	1.59	2.19	1.67	1.77	1.79	2.59	1.19	2.65	1.32	2.05	1.37	2.6
1987	1.56	1.97	2.04	1.87	1.94	1.97	1.23	2.88	1.29	2.5	1.48	2.02
1988	1.58	1.79	2.41	1.87	2.18	1.88	1.32	3.02	1.38	2.75	1.58	1.87
1989	1.75	1.78	2.25	1.88	2.31	2.35	1.34	3.12	1.57	2.75	1.58	1.55
1990	1.86	1.75	2.27	1.94	2.51	2.47	1.47	3.18	1.74	2.5	1.6	1.62
1991	1.85	1.83	2.25	2.04	2.92	2.43	1.66	3.2	1.95	2.32	1.63	1.48
1992	1.89	1.95	2.15	2.25	2.99	2.29	1.98	3.16	2	2.5	1.66	1.31
1993	2.19	2.11	2.13	2.19	3.25	2.54	2.28	2.95	2.22	2.75	1.59	1.24
1994	2.29	2.16	2.15	2.15	3.2	2.54	2.54	3.01	2.07	2.75	1.71	1.24
1995	1.89	2.29	2.22	1.75	3.12	2.54	2.54	3	1.98	2.6	1.86	1.28
1996	1.5	2.29	2.19	1.63	3.07	2.33	2.51	3	2.03	2.52	1.87	1.3
1997	1.48	2.22	2.07	1.55	2.97	2.36	2.51	2.85	2.05	2.52	1.99	1.69
1998	1.34	2.01	1.86	1.59	2.96	1.93	2.53	2.59	2.12	2.47	1.69	1.56
1999	1.07	1.88	1.46	1.67	2.97	1.2	2.56	2.42	2.11	2.22	1.66	1.26
2000	1.12	1.73	1.49	1.67	3.23	1.04	2.55	2.29	2.08	2.07	1.61	1.29
2001	1.31	1.78	1.52	1.58	3.22	1.18	2.49	2.13	2.29	1.9	1.57	1.3
2002	1.64	1.88	1.49/1.56	1.86	3.5	1.28	2.5	2.13	2.34	1.85	1.65	1.28
2003	1.94	1.94	1.62	2.03	3.36	1.45	2.58	2.19	2.42	1.93	1.81	1.38
2004	1.96	1.99	1.71	2.2	3.41	1.82	2.59	2.19	2.39	2.15	2	1.54
2005	1.83	1.99	1.72	2.16	3.3	1.96	2.63	2.23	2.34	2.29	1.99	1.79
2006	1.63	1.89	1.72	2.09	2.66	2	2.63	2.24	2.24	2.32	1.87	2.28
2007	1.43	1.69	1.68	2.1	2.75	1.71	2.65	2.26	2.22	2.24	1.84	2.64
2008	1.32	1.56	1.6	2.05	2.75	1.71	2.65	2.26	2.15	2.14	1.69	2.94

Source: Association of Workers' Compensation Boards of Canada

Table 2.3 shows the average rates for each province or territory. The actual rates will vary by industry according to experience rating; however, as can be seen, in 2008 the average rates were fairly similar across provinces and territories, falling anywhere between 1.32 percent and 2.94 percent.

2.2 Provincial Payroll Taxes

Four provinces and two territories currently levy employer payroll taxes. There is some suggestion in all four provinces that the tax is meant to fund either healthcare or education; in fact, only the Quebec Health Services Tax is earmarked for its designated

program. The taxes of the other three provinces, despite their names, go into general revenue, and behave as general payroll taxes. The payroll taxes of the two territories also go into general revenue; however, they are appropriately named, they serve the role of withholding taxes, and permanent residents receive a refundable credit against income taxes.

2.2.1 Quebec

Apart from the QPP, which is similar enough to the CPP to avoid discussion, and the provincial Workmen's Compensation contributions, there are five additional payroll levies on employers in Quebec. The Health Services Fund and the Parental Insurance Plans are administered by the province, while the contributions for vocational training, labour standards, and the parental insurance plan are administered by their respective committees.

Health Services Fund

The government of Quebec introduced the Health Services Fund contributions as part of their Medicare program in 1970 (Lin, 2000). It is an employer payroll tax, with the original rate being set at 0.8 percent of total payroll. Throughout the years, the rate rose steadily until it reached 4.26 percent in 1995. The rate has remained unchanged since then; however, in the 1998 budget, a rate reduction was given to small businesses (Lin, 2000). Now, businesses with total payrolls above $5 million pay the full 4.26 percent; businesses with payroll equal to or less than $1 million pay 2.7 percent; and businesses with payrolls between $1 million and $5 million pay a rate that varies between

2.7 percent and 4.26 percent. Table 2.4 shows the rate progression since the introduction of the tax.

Table 2.4 Progression of HSF Rates Over Time

Effective	Rate
01-Nov-70	0.8
01-Jun-76	1.5
01-Apr-81	3
02-May-86	3.22
17-May-89	3.36
27-Apr-90	3.45
01-Sep-91	3.75
10-May-95	4.26

Source: Lin (2000). Table 4.

Additional Payroll Contributions

Quebec employers are required to make three other contributions; however, the rates are not set by the provincial government, but by their respective commissions, and the funds are earmarked for specific programs, so they do not qualify as taxes.

Vocational Training

Since 1996, Quebec employers have been required to spend 1 percent of their payroll on employee training (Investissement Quebec, 2008). Under the *Act to Promote Workforce Skills, Development and Recognition (1995),* if an employer fails to spend 1 percent of its total payroll on employee training, it must remit the difference between 1 percent of its payroll and the amount it spent on training to the Workforce Skills

Development and Recognition Fund. Employers whose payrolls are less than $1 million are exempt.

Labour Standards Commission

Under the *Act Respecting Labour Standards (1979),* employers are required to remit 0.08 percent of total remuneration to the Labour Standards Commission (Commission des norms du travail), which oversees the implementation and application of labour standards (Investissement Quebec, 2008). The act also gives the Labour Standards Commission the ability to set the rate at any level below 1 percent.

Quebec Parental Insurance Plan

Since the introduction of the *Employment Insurance Act (1996),* the provincial government has desired to take responsibility of certain benefits which it believed were a provincial responsibility. Since 2006, employers are required to remit 0.63 percent of an employee's insurable salary. The maximum insurable salary in 2008 was $60,500 (Investissement Quebec, 2008). The plan is administered by the Minister of Employment and Social Solidarity and premiums are collected by Revenue Quebec; however, a commission oversees the administration of the plan, and ensures contributions are earmarked for benefit payments

2.2.2 Manitoba

Health and Post-Secondary Education Tax Levy

Manitoba introduced the Health Post-Secondary Education Tax Levy on July 1, 1982 (Boadway and Kitchen, 1999). It was a response to federal cuts in transfers for

healthcare, post-secondary education, and equalization. The province considered raising revenue through an increased sales tax rate; however, it argued that a payroll tax was a fairer approach (Kesselman, 1997). The tax is levied on employers with a permanent establishment in Manitoba. The exemption was originally $50,000, and has gradually increased to the present $1.25 million. The current rate structure is presented in Table 2.5.

Table 2.5 Health and Post-Secondary Education Tax Levy Rate Structure

Total Yearly Payroll	Tax Rate
$1.25 Million or Less	Exempt
Between $1.25 Million and $2.5 Million	4.3% on the amount in excess of $1.25 Million (notch provision)
Over $2.5 Million	2.15% of the total payroll (The $1.25 Million is not a deduction)

Source: Manitoba Department of Finance

The $1.25 million exemption must be shared between commercial partnerships. Commercial truckers operating outside of Manitoba, or in Manitoba on an inter-jurisdictional trip, are exempt from taxation.

2.2.3 Ontario

Employer Health Tax

The Employer Health Tax (EHT) was introduced on Jan 1, 1990 through the *Employer Health Tax Act (1990)*. It was intended to generate revenue lost with the

elimination of the health insurance premiums in 1989, and to make up some of the revenue lost due to decreased federal transfers for healthcare and education (Lin, 2000). The tax was initially levied at a graduated rate, which can be seen in table 2.6. The rate structure has not changed; however, in 1999 a $400,000 exemption was introduced for all private sector employers, also for organizations that receive financial assistance from any level of government but are not under the control of government, and for Crown corporations that are subject to federal income tax under Part I of the *Income Tax Act (1985).* This effectively, with a few exceptions, makes the EHT a flat rated 1.95 percent employer payroll tax with a $400,000 exemption.

Table 2.6 EHT Rate Structure

Total Annual Ontario Remuneration	Rate
up to $200k	0.98%
over 200k - 230k	1.10%
over 230k - 260k	1.22%
over 260k - 290k	1.34%
over 290k - 320k	1.47%
over 320k - 350k	1.59%
over 350k - 380k	1.71%
over 380k - 400k	1.83%
over 400k	1.95%

Source: Ontario Ministry of Finance

2.2.4 Newfoundland and Labrador

Health and Post-Secondary Education Tax

Newfoundland introduced the Health and Post-Secondary Education Tax on August 1, 1990, through the *Health And Post-Secondary Education Tax Act (1990)*, as a revenue generating measure in response to cutbacks in federal transfers for health and education (Kesselman, 1997). It is an employer payroll tax. The initial rate was 1.5 percent for all employers, except for those in the renewable resources sector, with a $300,000 exemption. In 1992, the rate was raised to 2 percent, and the exemption was lowered to $100,000. Additionally, the exemption for employers in the renewable energy sector was rescinded, and they would now be taxed at a rate of 1 percent. In 1998, the exemption was raised to $120,000. In 1999, it was raised to $200,000. In 2002, it was raised to $500,000. In 2003, employers with a payroll between $500,000 and $600,000 were no longer taxable, and employers between $600,000 and $700,000 received a rate reduction. In 2008, the exemption threshold became $1 million.

2.2.5 Northwest Territories and Nunavut

Payroll Tax

It is interesting that the Northwest Territories (NWT) and Nunavut are the only provinces to name their tax exactly what it is, a payroll tax. The reason for this may be that the purpose of the tax is to withhold wages from employees who work in the territory but pay income taxes in another province (Kesselman, 1997). The Northwest Territories Payroll Tax came into effect through the *Payroll Tax Act (1993)* and, as previously mentioned, was intended to act as a withholding tax. It is therefore levied on all employees who work, perform duties, or provide services in the NWT, regardless of their province or territory of residence. Employers are required to deduct the tax, which is 2

percent (since January 1, 2005) of remuneration, from employees and remit it to the government. Those who earn less than 5,000 dollars within the NWT, but reside outside the province are not required to pay the tax. If the employee earns more than $5,000 in a calendar year in the NWT, tax is payable on the full amount of remuneration earned while in the NWT. If an employee normally works in the NWT (50 percent of the time), then all remuneration is taxable, regardless of where it is earned, with the exception of earnings in Nunavut. A tax credit is given to year round residents which almost fully offsets the cost of the payroll tax for those who pay income tax. In 2008, the Payroll Tax generated $36.74 million in revenue. This figure is not insignificant for a Territory which brings in under $1.3 billion in total revenue, $960 million of which consists of transfers from the federal government. When Nunavut separated from the NWT on April 1, 1999, it maintained a similar but separate payroll tax.

2.3 Provincial Payroll Tax Revenue

There are currently four provinces and two territories that levy general payroll taxes under different names. While none of the rates charged are particularly high, it is important to note that in every single one of these provinces/territories, the payroll taxes have become massive revenue sources. Ontario, for example, has a progressive rate structure with a maximum of 1.95 percent for payrolls of $400,000 or higher and proportionally lower rates for smaller businesses. While this may seem like a fairly insignificant tax, in 2007-2008 it generated slightly more than 4.6 billion dollars for the provinces. That is roughly one sixth of what the entire provincial personal income tax

brings in annually. Quebec Health Service Fund Contributions, ranging from 2.7 percent to 4.26 percent, brought in over $5 billion in 2007-2008. This is nearly a third of the revenue generated by the provincial personal income tax. Looking at a smaller province, which exempts all businesses with payrolls smaller than $1.25 million, and taxes payrolls greater than $2.5 million at only 2.15 percent, Manitoba's Levy for Health and Education brought in $341 million in 2007-2008. This is still greater than one eighth of their total personal income tax revenue. The smallest province with a payroll tax, Newfoundland and Labrador, charges a rate of 2 percent and exempts all payrolls under $1 million. The tax generated over $103 million in 2007-2008, which is more than one sixth of the provincial income tax. The Northwest Territories, despite charging only 2 percent, brought in $37 million in 2007-2008, which is slightly less than half of the revenue generated by the personal income tax. Nunavut, whose payroll tax is nearly identical to the Northwest Territories, generated $8 million in 2006-2007, which is over 70 percent of the total revenue generated from their personal income tax.

2.4 Estimated Revenue

While it is beyond the scope of this thesis to produce a precise estimate of the revenue a general payroll tax would generate in New Brunswick, it is important to have some idea of the numbers for discussion purposes. Consequently, this section will attempt to estimate the revenue a 2 percent payroll tax would generate for the provincial government. The estimated figure will simply represent 2 percent of the aggregate New Brunswick wage income. No attempt has been made to approximate any reduction of employment. Such a tax may reduce aggregate wage income and total tax revenue. The

current payroll tax revenues were estimated for Manitoba, Newfoundland and Labrador, Ontario, and Quebec, and compared with the actual revenues in order to check the validity of the New Brunswick estimate.

The 2006 Census reported the number of individuals with employment income in each province. Employment income refers to wages and salaries, net income from a non-farm unincorporated business and/or professional practice, and/or net farm self-employment income. This was multiplied with the weighted mean employment income for those individuals to obtain total employment income for each province. This was then multiplied by an estimate of the average tax rates in each province to obtain the estimated payroll tax revenue.

There is a possibility of substantial deviation from the estimated average tax rates to the actual. A rate of 2 percent was chosen for Manitoba since firms with payrolls above $2.5 million are taxed at 2.15 percent, below $1.25 million are exempt, and between $1.25 million and $2.5 million are taxed at 4.3 percent on the payroll in excess of $1.25 million. A rate of 2 percent was chosen for Newfoundland and Labrador, as that is the basic rate, although there is a $1 million basic exemption and firms in the renewable resource sector are taxed at a preferential rate. A rate of 1.95 percent was chosen for Ontario. Ontario only has a $400,000 basic exemption, so the reported rate may actually be quite close to the average rate. A rate of 3.48 percent was chosen for Quebec, which is a simple average of the respective top and bottom rates of 4.26 percent and 2.7 percent. Depending on distribution of firm size in Quebec this figure could be much closer to the upper 4.26 percent. The Northwest Territories and Nunavut were not

included as they employ payroll taxes for the purpose of withholding income tax, and although they levy a rate of 2 percent the entirety of this is refunded to individuals who pay income taxes in those territories.

For New Brunswick, a rate of 2 percent was chosen, as this would fall in line with the majority of the other provincial rates. Table 2.7 summarises the statistics used and the estimated and actual payroll tax revenue for each province.

Table 2.7 Estimated and Actual Provincial Payroll Tax Revenues

	MB	NL	ON	PQ	NB
Individuals with employment income (2005)	497,365	168,585	5,303,010	3,224,420	292,855
Average employment income($) (2005)	34,879	33,991	44,660	36,758	32,540
Total employment income($) (2005)	17,347,593,835	5,730,372,735	236,832,426,600	118,523,230,360	9,529,501,700
Estimated Average Rate	2.00%	2.00%	1.95%	3.48%	2.00%
Estimated Revenue ($)	346,951,877	114,607,455	4,618,232,319	4,124,608,417	190,590,034
Actual Payroll Tax Revenue($) (2007-2008)	341,000,000	103,500,000	4,605,168,014	5,052,540,000	

Source: Author's calculations for 2006 Census data and the 2007-2008 Public Accounts of each province.

It can be seen from Table 2.7 that the estimated revenues for the first four provinces do not differ substantially from their actual revenues. As the largest difference was in Quebec, which had the most complicated rate structure, it would suggest that any estimation errors are largely a result from the estimated average tax rate, and not the

figures for total employment income. This suggests that the estimated revenue for New Brunswick is realistic, although to reiterate, a tax on employers would likely reduce employment in the short run, leading to slightly lower revenues. Additionally, any exemptions or preferential rates below 2 percent, as well of the exclusion of the self-employed, would further lower this total. Nonetheless, for discussion purposes it seems plausible that such a tax would generate roughly $190 million for the province

This total is not insignificant in terms of tax revenue for the province. Table 2.8 summarises the revenue each provincial tax generates and its share of total tax revenue. $190 million would rival the entire Gasoline and Motives fuel tax. For another comparison, the 8 percent provincial component of the Harmonized Sales Tax (HST) generated $841 million, which is roughly $210 million for every 2 percent. Since both the HST and a payroll tax are very broad based taxes, one would expect they would generate similar revenues with a similar rate, which appears to be the case.

Table 2.8 New Brunswick Tax Revenue

New Brunswick	Millions ($)	Percent of Total Taxation
Corporate Income Tax	266.60	8.33
Metallic Minerals Tax	119.70	3.74
Personal Income Tax	1256.40	39.27
Provincial Real Property Tax	352.30	11.01
Gasoline and Motive Fuels Tax	198.10	6.19
Harmonized Sales Tax	841.00	26.28
Pari-mutuel Tax	0.10	0.00
Tobacco Tax	79.90	2.50
Financial Corporation Capital Tax	7.30	0.23
Insurance Premium Tax	40.70	1.27
Large Corporation Capital Tax	31.20	0.98
Other	6.30	0.20

Source:New Brunswick Public Accounts, 2008

2.5 United States Payroll Taxes

The United States uses an extensive system of payroll taxation at the federal, state, and municipal level. In fact, Burman and Leiserson (2007) of the Tax Policy Center found that the majority of Americans paid more in payroll taxation than they did in income taxes. This conclusion is based on the assumption that all employer based payroll taxes are passed on to employees in the form of lower wages. The main legislation concerning social security taxes is the Federal Insurance Contributions Act from which the acronym of the FICA tax is derived. The social security portion of the tax is a 6.2 percent employee contribution, and a 6.2 percent employer contribution. The Medicare portion of the tax is a 1.45 percent employee contribution, and a 1.45 percent employer contribution, making the total FICA tax rate, assuming all employer payroll taxes are fully shifted to employees, 15.3 percent.

Social security taxes are also levied at the state level; however, they are deductible up to 5.4 percent from the federal tax, so the total tax remitted by firms is largely unaffected (Kesselman, 1997). Additionally, each state operates its own workers compensation program which is funded by an employer payroll tax that varies by industry according to risk. Prior to 1990, the self-employed were required to pay the entire combined rate, which would be 15.3 percent in 2009. However, in 1990, the *Self-Employment Contributions Act (1954)* was amended so that the self-employed would only have to remit half of the combined rate, which was 7.65 percent in 2009. Table 2.9 shows the employee contributions rates, wages bases, and maximum contributions from 1990-2009.

Table 2.9 U.S. Employee Contributions to Social Security

Year	Social Security Wage Base	Social Security Tax Rate	Maximum Annual Social Security Withholding
1990	51,300	6.20%	3,180.60
1991	53,400	6.20%	3,310.80
1992	55,500	6.20%	3,441.00
1993	57,600	6.20%	3,571.20
1994	60,600	6.20%	3,757.20
1995	61,200	6.20%	3,794.40
1996	62,700	6.20%	3,887.40
1997	65,400	6.20%	4,054.80
1998	68,400	6.20%	4,240.80
1999	72,600	6.20%	4,501.20
2000	76,200	6.20%	4,724.40
2001	80,400	6.20%	4,984.80
2002	84,900	6.20%	5,263.80
2003	87,000	6.20%	5,394.00
2004	87,900	6.20%	5,449.80
2005	90,000	6.20%	5,580.00
2006	94,200	6.20%	5,840.40
2007	97,200	6.20%	6,026.40
2008	102,000	6.20%	6,324.00
2009	106,800	6.20%	6,621.60

It is interesting to note that a large number of municipalities in the United States levy local "income taxes" which are, in many cases, taxes on payroll. Kesselman (1997) outlines three common variants. The most common is a tax applied to the wages of employees based on either where they work or where they reside. Another is a tax on aggregate payroll, and the third is a tax on a broader definition of income which is typically a "piggy-back" on top of individuals' state or federal taxable incomes. Payroll taxes are generally preferred over broader based income taxes by municipal governments because of their administrative simplicity.

2.6 Relative Payroll Taxation Among OECD Countries

There have been a number of criticisms of the Organisation for Economic Co-operation and Development's (OECD) classification of payroll taxes and social security contributions, most notable those of Kesselman (1997). The problem arises when governments collect social security "contributions" which are not contributions in the traditional sense because they go into general revenue and because there is not a strong benefit-link that would typically be found in a social security contribution. So, even though they are a social security contribution in name, in practice they behave as a general payroll tax. For comparative purposes, we will adopt Lin's (2000) approach and simply sum the social security contribution and taxes on payroll reported in the OECD tables 2000 and 3000, to determine each nation's level of total payroll taxation.

In terms of total payroll taxation, Canada depends far less upon this form of taxation than the majority of other OECD countries. Out of 30 countries, Canada ranks 7th last in terms of payroll taxes as a percentage of total taxation, and 8th last in terms of payroll taxation as a percentage of GDP. It is interesting to note that in terms of the OECD figures, Canada is in the top five of both payroll taxation as a percentage of total taxation and payroll taxation as a percentage of GDP. While this may seem to suggest that Canada has one of the highest rates of general payroll taxation, it is more likely that Canada is simply more transparent when labelling payroll taxes. Regardless, one has to wonder if Canada should follow the trend, and change the tax mix to rely more heavily on payroll taxation. With countries, who are generally admired for their high standards of living, relying on payroll taxes for over one quarter of their entire tax revenue, it would

seem the claims of many special interest groups that payroll tax increases would be disastrous for the business community have little support in reality.

Table 2.10 Payroll Taxes as a Percentage of Total Taxation (2006)

Rank	Country	Social Security (2000)	Payroll (3000)	Total Payroll Taxation
1	New Zealand			0
2	Denmark	2.1	0.4	2.5
3	Australia		4.6	4.6
4	Iceland	7.9	0.1	8
5	Ireland	13.5	0.7	14.2
6	Mexico	14.9	1.3	16.2
7	Canada	14.8	2	16.8
8	United Kingdom	18.5		18.5
9	Norway	19.8		19.8
10	Korea	21	0.2	21.2
11	Turkey	22.4		22.4
12	Switzerland	23.3		23.3
13	United States	23.8		23.8
14	Luxembourg	27.7		27.7
15	Finland	27.9		27.9
16	Italy	29.8		29.8
17	Belgium	30.5		30.5
18	Sweden	25.5	5.6	31.1
19	Portugal	31.9		31.9
20	Spain	33.3		33.3
21	Hungary	32.1	1.6	33.7
22	Greece	35.4		35.4
23	Netherlands	36.1		36.1
24	Japan	36.6		36.6
25	Poland	36.3	0.8	37.1
26	Germany	38.4		38.4
27	France	37	2.6	39.6
28	Slovak Republic	39.9		39.9
29	Austria	34.5	6.4	40.9
30	Czech Republic	43.7		43.7

Source: Author's calculations from OECD, *Revenue Statistics, 1965-2006*, Table 7.

Table 2.11 Payroll Taxes as a Percentage of GDP (2006)

Rank	Country	Social Security (2000)	Payroll (3000)	Total Payroll Taxation
1	New Zealand			0
2	Denmark	1	0.2	1.2
3	Australia		1.4	1.4
4	Iceland	3.3	0	3.3
5	Mexico	3.1	0.3	3.4
6	Ireland	4.3	0.2	4.5
7	Turkey	5.5		5.5
8	Canada	4.9	0.7	5.6
9	Korea	5.6	0.1	5.7
10	United States	6.7		6.7
11	Switzerland	6.9		6.9
12	United Kingdom	6.9		6.9
13	Norway	8.7		8.7
14	Luxembourg	9.9		9.9
15	Japan	10.2		10.2
16	Greece	11.1		11.1
17	Portugal	11.4		11.4
18	Slovak Republic	11.9		11.9
19	Finland	12.1		12.1
20	Spain	12.2		12.2
21	Hungary	11.9	0.6	12.5
22	Poland	12.2	0.3	12.5
23	Italy	12.6		12.6
24	Belgium	13.6		13.6
25	Germany	13.7		13.7
26	Netherlands	14.2		14.2
27	Sweden	12.5	2.7	15.2
28	Czech Republic	16.1		16.1
29	Austria	14.4	2.7	17.1
30	France	16.3	1.1	17.4

Source: Author's calculations from OECD, *Revenue Statistics, 1965-2006*, Table 6.

Chapter 3: Treatment

3.1 Earmarking

Earmarking refers to assigning the revenues from a tax to a specific program. There are different levels of earmarking. The first and most obvious is when a payroll tax is sufficient to fund a specific program, and is earmarked for it. This is most commonly used in benefit-linked payroll taxes, as it strengthens the perceived link among employees. An example of this is the CPP, where contributions fund the entire program, and can only be used for this program. EI contributions go into an employment insurance account, however, prior to the 2008 federal budget, this was part of general revenues, and the surpluses were used to pay down the national debt (Boadway and Kitchen, 1999). The recent Supreme Court case (discussed later in the chapter) illustrates the problems when social security contributions, which are more than large enough to fund an entire program, are not earmarked.

Another level of earmarking is where the payroll tax is not anywhere near large enough to fund the entire program. The most relevant examples of these are the provincial payroll taxes, which are levied in the name of health or post secondary education. Quebec is the only province which earmarks its tax, the Health Services Fund contributions, to the intended program. Revenues in Ontario, Manitoba, and Newfoundland and Labradors' go into general revenue. Since none of these taxes bring in enough revenue to fund the entire cost of their programs, earmarking has no tangible effect on government spending (Kesselman, 2007). In this case, earmarking serves no

economic purpose. However, it may serve to make the tax more appealing to voters, thus making it easier to implement.

Kesselman (1997) outlines the standard arguments for and against earmarking. The arguments for generally refer to the strengthening of tax-benefit linkages. The argument against is generally that it leads to rigidity in budgeting decisions and takes away the ability to adapt and allocate funds more efficiently.

3.2 Employer vs. Employee Payroll Taxes

The decision whether to levy employer versus employee payroll taxes is less dominated by economic concerns than one might think. In Canada, and in the rest of the world, employer payroll taxes are far more common. Yet, as is shown in chapter 5, in the long run, the burden of a tax levied on employers ultimately falls on employees. Additionally, in the short run, while the burden is being shifted, there may be some reduction of employment. Levying an employee payroll tax in the first place would avoid these short run reductions in employment altogether (Kesselman, 1997).

The methods of collection for employee and employer payroll taxes are similar. Employers remit their payroll taxes, and withhold and remit employee payroll taxes in the same manner as income taxes. Therefore, the administration and compliance costs of these taxes should be virtually identical.

It would seem that, in general, the decision to levy employer payroll taxes may be politically motivated, as voters may not recognize that the burden of the tax will eventually be shifted to them. There is, however, another motivation which applies specifically to the Canadian provinces. Since employers are able to fully deduct

provincial employer payroll taxes from their corporate income taxes, an employer payroll tax allows them to shift some of the tax burden to the federal government. Perhaps these motivations do not outweigh the short run reductions in employment, but they, at the very least, make the decision between the taxes debatable.

3.3 Rate Structure

Many payroll taxes have fairly complicated rate structures or a number of exemptions. In terms of fiscal incidence, exemptions tend to reduce the natural regressivity of the taxes, as would a progressive rate structure. In terms of economic efficiency, a flat rated tax with no exemptions provides the least distortion. In terms of administration and compliance costs, the more complicated the tax, the higher the costs of calculation and administration. When taxes are benefit-linked, it may be beneficial to strengthen this linkage through exemptions and contribution ceilings, as a strong benefit linkage virtually eliminates distortionary and disemployment effects. In terms of general payroll taxes, such as those employed at the provincial level, a simple structure with no exemptions is the most efficient, however there may be considerable pressure from the small business community to provide exemptions. The exemptions may be justified since compliance costs as a percentage of taxes collected are inversely proportional to the size of the firm (Vaillancourt, 1989). This may explain why most of the provincial payroll taxes have continually raised their exemption levels, more rapidly than would be required to index for inflation, since the introduction of the tax.

3.4 Deductibility

An important consideration in the treatment of provincial payroll taxes is their deductibility from the federal corporate income tax. Kesselman (1997) argues for full deductibility, while Vigneault and Boadway (1996) recommend none. Dahlby, Mintz, and Wilson (2000) argue that the optimal deductibility rate depends on the extent to which the employer payroll tax is shifted to workers in the form of lower wages and on the difference between the federal tax rates on profits and labour income. Conceptually, the argument centers on a current fully deductible cost, which is gross wages. If an employer payroll tax is shifted to employees through lower wages, gross wages decline, as does the amount the firm can deduct from their corporate income tax. The deductibility of provincial payroll taxes seems justified to offset this decreased wage deduction, so that federal tax revenues do not actually increase as a result of a provincial payroll tax.

Currently, all provincial employer payroll taxes are fully deductible from the federal corporate income tax. However, there was a proposal in the 1991 federal budget which, although reiterated in a 1998 Department of Finance report, has yet to be implemented. This proposal was to limit the deductibility of provincial payroll and capital taxes from the federal corporate income tax (Boadway and Kitchen, 1999). The rationale was that the deductions were providing an incentive for provinces to rely on certain forms of taxation. Additionally, the federal government could face substantial losses in revenue should provinces become increasingly more reliant of deductible forms of taxation. However, property and retail sales taxes paid by corporations are also

deductible for corporate income tax purposes, so it begs the question as to why they should not all be treated equally. Kesselman (1997) argues that since: 1) provinces choose sales tax rates with respect to their effect on households rather than businesses; 2) property tax rates somewhat reflect local services; 3) property and sales taxes are poor substitutes for corporate income taxes, the federal government is less concerned about provinces shifting more towards these forms of taxation.

It should be stressed that the tax deductibility of employer payroll taxes was, as noted by Kesselman (1997), a key reason for four of the provinces decisions to adopt a payroll tax. This allowed the impact of an employer's payroll tax on businesses to be cushioned, as well as allow some of the burden to be shifted to the federal government. As the measures proposed to limit deductibility have not yet been implemented, this remains a very compelling reason for provinces to either introduce or increase their reliance on payroll taxation.

3.5 Legal Issues

3.5.1 Confédération des syndicats nationaux v. Canada

Payroll taxes have long been favoured by politicians not on the grounds of equity or efficiency, although a case for either could very well be made, but for their lack of visibility. This has manifested in a number of ways. First of all, while there is a consensus among economists that, in the long run, the burden of the tax falls on employees even if the tax is levied on employers, employer payroll taxes are far more common. Since it has been shown that levying a tax on employees in the first place will

avoid the initial short run loss of employment associated with employer payroll taxes (Kesselman, 1997), it would seem the only reason to levy employer payroll taxes is to minimize visibility.

One may argue that it is simpler for employers to collect the tax, instead of placing this burden on individual employees. However, an employee payroll tax can still be withheld by employers in the same manner as personal income taxes, so the administration costs would be identical. Furthermore, there has been a strong propensity for governments to mislabel payroll taxes as contributions. It is true that with pension plans, where there are contribution ceilings, there is a strong connection between the amount one contributes to the program and the amount one will eventually withdraw. However, with programs that have a much weaker benefit-link, and where the funds are not earmarked for these programs, one has to seriously question the labelling of what is clearly a general payroll tax as a contribution.

It has been argued that the Employment Insurance rates have been set far too high, causing the Employment Insurance Account to accumulate massive surpluses. These surpluses were far too large to be justified as a protection against future Employment Insurance deficits as were seen in the early 1980's. As the contribution to Employment Insurance program, at this time, funnelled directly into general revenue, this became a massive revenue source for the federal government. This was one major part of an appeal brought forward to the Supreme Court against the Federal Government (*Confédération des syndicats nationaux v. Canada, 2008).* To fully understand the implications a history of recent changes to the Employment Insurance program is necessary.

Employment insurance, as it has been called since 1996, dates back to 1940. During the recession of the early 1980's the program began to run a deficit, which the federal government was forced to cover. In 1986, under the recommendation of the Auditor General of Canada, the federal government consolidated the program's account into the Consolidated Revenue Fund which would later become the Employment Insurance Account. On Nov 18, 1990 the Employment Insurance fund became self financing, in that all the funding from the system came from employer and employee contributions. The federal government would no longer make any contributions to the account. In 1996, with the introduction of the *Employment Insurance Act (1996)*, the programs went through its most significant restructuring in recent years. The financing of the account was reviewed, and the contribution rate was now to be set high enough to accumulate a fund large enough to avoid any deficits during economic downturns, while at the same time keeping rates constant. In the years following, the account accumulated massive surpluses which were as high as 40 billion dollars. In 2001 parliament authorized the Governor General in Council to set premium rates for 2002 and 2003. In 2004, Parliament set the rate, but in 2005, the Governor General in Council set the rates again.

The case against the Federal Government claimed, first of all, that the active measures brought in 1996 which were meant to not only compensate the unemployed, but to fight unemployment were unconstitutional as they did not fall within the powers over unemployment insurance granted to parliament under section 92(2A) of the *Constitution Act, 1867*. Additionally, they questioned the validity of the methods used to finance the

Employment Insurance System, which is the accumulation of massive surpluses over and above what was necessary to compensate the unemployed. They also questioned the use of those surpluses by the federal government. The Supreme Court ruled that the active measures adopted in 1996 were well within constitutional rights, as was the accumulation of Employment Insurance surpluses and their uses. However, during 2002, 2003, and 2005, where the Governor General in Council set the premium rates for Employment Insurance Contributions, there was a problem. Since the rates that year were not set by parliament, and since the funds were not simply put into a segregated EI account, but into general revenue, the government was in conflict with section 53 of the *Constitution Act, 1867*. The act states that there should be no taxation without representation. That is, all taxes must be passed by parliament. Thus, in those three years where the rates were set by the Governor General in Council, the federal government was levying an illegal tax.

This case sets an important precedent for the future handling of funds collected in the name of Employment Insurance. Governments must be careful with how funds collected under the name of a "contribution" are handled. In fact, if a particular contribution is levied in the name of a specific program, there seems to be very little reason not to earmark the funds for that program. The only valid reason not to, would be if the contributions are not large enough to cover the cost of a program. However, with the case of Employment Insurance, where the contribution were generating substantial surpluses, the only reason not to earmark these funds is for the explicit purpose of using them as a less visible source of revenue than a general payroll tax. As visibility is commonly considered an important aspect of a fair tax system this is not an ideal way to

raise revenue, even if, from a political standpoint, it is quite attractive.

3.5.2 Tax Collection Agreements

The federal government currently has a tax collection agreement with New Brunswick, through the *New Brunswick Income Tax Act (2000),* where the Canada Revenue Agency administers the personal and corporate income taxes for the province. The province has the ability to set their own rates and introduce specific tax credits, however, provinces must abide by the federal tax bases (Boadway and Kitchen, 1999). Additionally, the province has harmonized its sales tax with the federal government through the *Harmonized Sales Tax Act (1997).* The Canada Revenue Agency collects and administers the tax in exchange for adopting the same rate and a similar base as other harmonized provinces. While both of these agreements are beneficial to the province in terms of decreasing administration costs, the constraints imposed are significant. Should the province wish to tax capital income at a lower rate than wage income, it cannot do so without opting out of the tax collection agreement. Additionally should the province wish to increase their sales tax rate, they need the approval of the other harmonized provinces, or they would have to break the harmonization agreement. Payroll taxes present an interesting solution. By lowering income tax rates across the board, and levying a payroll tax, the province would be able to create effectively a two tiered system in which capital income is given preferential treatment. Additionally, since the lost revenue from these income tax reductions have to come from somewhere, a provincial payroll tax presents itself as an efficient way to recoup the lost revenue. This may prove to be desirable since it is difficult to raise sales tax rates.

Chapter 4: Efficiency

This chapter will discuss efficiency considerations of payroll taxation. There are two categories of tax efficiency. One, which may be evident to the average Canadian, would be the administrative costs of the tax. The other, which is of primary concern to economists, is the distortionary effects on the economy.

4.1 Administrative and Compliance costs

There are really two components of the administrative costs of taxation: the actual costs of administering the tax, and the costs of complying with the tax. Administration costs are the costs incurred to governments to collect taxes and enforce regulations, including the legal costs of settling disputes between taxpayers and the government. Compliance costs are the costs incurred by individuals and businesses to comply with tax regulations. These include the time required to keep records and file tax forms, as well as fees paid to tax professionals (Vaillancourt, Clemens, and Palacios, 2007).

The administration costs of payroll taxes depend greatly on the structure of a tax. A flat rated tax with no exemptions, for instance, will face much lower administration costs than a payroll tax with a complicated rate structure and a multitude of exemptions. This trade-off may be beneficial if the rate/exemption structure strengthens a tax-benefit linkage, however, in terms of general payroll taxes, such as those levied by the provinces, it will only serve to increase costs.

Kesselman (1997) notes that two provinces have reported administrative costs of their payroll taxes as separate from other taxes. In 1993, Ontario and Newfoundland

estimated the administration costs of payroll taxation to be 0.38 and 0.35 percent of total tax revenue. Kesselman (1997) also notes that the estimates of the Australian states for payroll administration costs are between 0.25 and 0.4 percent of tax revenue. These costs are substantially lower than those for most other taxes. In 1994, the federal government (Salvail, 1994) reported the administration costs for the GST to be 3.5 percent of net tax revenue collected, while Vaillancourt (1989) estimated the combined administration costs of income and payroll taxes to be 1 percent of taxes collected.

Another important consideration when discussing administration costs is tax evasion. Hill and Kabir (1996) found that the Canadian underground economy grew with the introduction of the Goods and Services Tax (GST), and that indirect taxes are much more conducive to tax evasion than direct taxes, such as taxes on income or payroll.

There is less literature surrounding the compliance costs of payroll taxes, since the information must be collected through surveys to firms and individuals. Additionally, since firms withhold and submit payroll taxes in the same manner as income taxes, the reported costs are generally combined. According to Vaillancourt (1989), the compliance cost of payroll taxes are inversely related to the size of the firm. In general, he estimated the combined compliance costs of payroll and income taxes to be 3.5 percent of taxes collected. Plamondon and Zussman (1998) estimated the compliance costs for the GST to be between 3.3 percent and 6.6 percent of gross GST revenues. The lower estimates were for provinces with harmonized sales taxes, while the higher ones were for provinces with independent sales taxes. It would seem safe to say that the compliance costs of

payroll taxes and income taxes would also decrease substantially if they were harmonized across provinces.

4.2 Economic Efficiency

The economic efficiency of a tax is concerned with the distortion of economic behaviour. The less distortion a tax creates, the more economically efficient it is. The distortion of economic behaviour is measured as a loss in welfare, also known as the deadweight loss. A higher distortion results in a larger deadweight loss or loss to society. The reason any distortion is considered a loss to society is because, in the absence of taxation, individuals and firms would, presumably, purchase and produce the most efficient collection of goods. The following section will take a systematic approach to examining the distortionary effects of payroll taxes. Generally, payroll taxes are a tax on wage income, and as such directly affect the labour market, and produce minimal distortions in capital markets (Kesselman, 1997). First, we will look at a special case, benefit-linked payroll taxes, which are conceptually the simplest to understand. Second, we will conduct a partial equilibrium analysis to examine the effects of a general payroll tax, one with no benefit-linkage, on the labour market. Once again, this is a very simple model, which provides limited conclusions, but important insight into the factors that affect the deadweight loss due to a tax. Third, we will look at empirical studies, which use general equilibrium analysis, to gain even further insight into the realistic efficiency costs of payroll taxes in the Canadian economy compared to other forms of taxation.

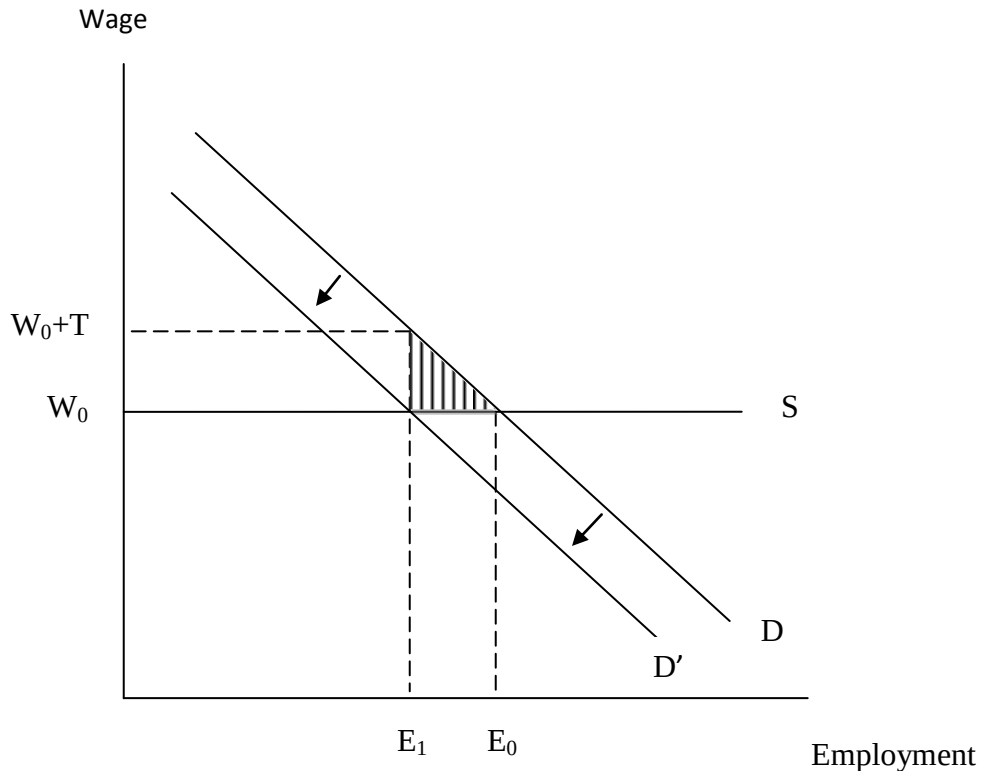
4.2.1 Benefit-Linked Payroll Taxes

In terms of economic efficiency, benefit-linked payroll taxes are ideal. Strong benefit linkages are usually found in social insurance programs, such as EI or CPP, and are almost nonexistent in the general payroll taxes currently levied by the six provinces and territories. What makes a benefit-linked payroll tax unique is that employees recognize the tangible benefits they receive directly as a result of paying the tax. With perfect benefit-linkage, employees voluntarily reduce their wage demands because they are receiving the same benefit from paying the tax as if they spent an equal portion of their income themselves (Boadway and Kitchen, 1999). Such a tax has no disemployment effects, and therefore leads to no deadweight loss in terms of the labour market. Likewise, tax revenue will be maximized as the level of the tax has no effect on the base from which the tax is levied.

4.2.2 Partial Equilibrium Analysis

In this section, payroll taxation is analysed using a partial equilibrium model of the labour market. These models are useful because they clearly illustrate some of the important characteristics which affect the distortionary effects of a tax. There are, however, some major limitations to this type of model. Since they only look at the labour market, we can only analyse the efficiency effect of a tax on wages, and therefore cannot compare the effects of a payroll tax to taxes on other bases or on the economy as a whole.

Figure 4.1 Deadweight Loss



In Figure 4.1, the labour market begins with employment E_0 wage W_0. An employer payroll tax, here we are assuming a tax per unit as opposed to a tax on value for simplification purposes, shifts the labour demand curve down by the exact amount of the tax, from D to D′. The labour market is now at a new equilibrium point with employment E_1, and wage W_0; however, the cost of hiring workers for the firm has increased to W_0 + T. Since the cost of hiring workers has increased by the tax per unit, yet wages have remained unchanged, the cost of labour for firms has increased and they have responded with a reduction in employment of E_1-E_0. As a result, a deadweight loss (DWL) in welfare, represented by the shaded area has occurred.

The triangle representing the DWL can be calculated by DWL = (½)(T)(ΔE). The formula for the elasticity of demand is $\varepsilon_d = (W/E)(\Delta E/\Delta W)$, which can be rearranged as $\Delta E = (\varepsilon_d)(\Delta W)(E)/(W)$. Elasticity of labour demand refers to the percentage change in employment in terms of the percentage change in wages. Since the supply curve is perfectly elastic, ΔW = T, and the DWL and elasticity of demand equations can be combined to form $DWL = (½)(T^2)(\varepsilon_d)(E/W)$. This equation reveals two important relationships concerning the deadweight loss. First of all, the DWL increase proportionally to the tax rate squared. Second, it is positively related to the elasticity of demand. The less elastic the demand curve, the smaller the deadweight loss. Although labour supply was assumed to be perfectly elastic to simplify the equation, this assumption also maximizes the deadweight loss. The less elastic the supply curve, the smaller the deadweight loss.

This reveals two important characteristic of payroll taxes. First, it is desirable to keep rates as low as possible, since higher rates lead to substantially higher losses in welfare. It is for this reason that a broad base is important for the efficiency of a tax. As it pertains to taxes on payroll, exemptions narrow the base. A narrower base requires higher rates to generate the same revenue which will increase the deadweight loss proportionally to the square of the tax rate. Additionally, whether to include the self-employed is an important consideration. Employment Insurance does not include them, while the Canada Pension Plan does. Including those self-employed significantly widens the base and, for reasons stated above, leads to a much more efficient tax per dollar of revenue collected. The second characteristic is that the efficiency of payroll taxes is

influenced greatly by the respective elasticities of demand and supply. It is now clear that to have a complete estimate of the efficiency of payroll taxes we must use realistic elasticity values, for any value for the deadweight loss can be achieved by simply plugging in random elasticity values into the partial equilibrium diagrams. This brings us to the empirical studies concerning the efficiency of payroll taxes.

4.2.3 Empirical Analysis

This section will examine three empirical studies concerning the economic efficiency of payroll taxes. The first is a simple application of realistic elasticity estimates to partial equilibrium models, while the other two are General Equilibrium models of the United States and Canadian economies respectively.

Partial Equilibrium

Dalhby (1994) uses the traditional partial equilibrium models along with realistic elasticity assumptions for the demand and supply of labour. He assumes that the demand for labour is perfectly elastic; the justification being that Canada is a small open economy. Additionally, the elasticity of labour supply is assumed to be between 0 and 0.20, which Dalhby argues are comparable to other studies. He then calculates the Marginal Cost of Public Funds (MCF) which is the marginal cost of raising an additional dollar of tax revenue. When labour demand is perfectly elastic, $MCF = 1/[1-\eta m/(1-m)]$, where η is the elasticity of labour supply, and m is the tax rate. A MCF value of 1 indicates that there has been no change in employment, whereas values of greater than or less than one indicate a reduction or an increase in employment, respectively. Table 4.1

shows Dalhby's calculations for the MCF of four different federal government tax increases.

Table 4.1 MCF for Federal Government Tax Increases in 1993

Increase in	Base Case (η=0.10)	Low (η=0.00)	High (η=0.20)
Basic PIT rate	1.38	1.09	1.88
PIT surtax 1	1.58	1.16	2.11
PIT surtax 2	13.26	1.98	n/a
UI premium	0.97	0.87	1.06

The four tax increases are: In the Basic personal income tax rate, in proportional PIT rate hikes (surtax 1), in high-income rate hikes (surtax 2), and in the Unemployment Insurance premium. The MCFs are shown for three elasticity assumptions, with the base case of 0.10 assumed to be the most realistic for Canada. The obvious conclusion from the personal income tax increases is that the more progressive the tax increase, the higher the MCF. For our purposes, the calculations for increases in the UI premium, which is a payroll tax with a ceiling, are the most interesting. With the base case elasticity estimate resulting in a MCF of 0.97[4], this means that increasing UI premiums would lead to an increase in labour supply, and therefore an increase in employment. Since Dalhby is specifically looking at UI premiums, which have at least somewhat of a benefit-linkage, the MCF's would likely be higher for the general type payroll taxes levied by provinces. Nevertheless, it appears that applying realistic elasticity estimates to partial equilibrium

[4] A MCF value of one would indicate no change in employment, while a value greater than one would indicate a reduction in employment.

models shows payroll taxes to be significantly more efficient than all forms of income tax.

General Equilibrium

Where partial equilibrium analysis is limited to the effects of a tax on one particular market, there are more complicated models which incorporate capital and labour markets. They are coined general equilibrium (GE) in that relative factor prices are determined endogenously. Here we will examine two in depth GE analyses, one using data from the United States, the other, also the most recent, using Canadian data.

Fullerton and Rogers (1993) use a GE model with 1984 data from the United States economy, to determine the incidence of the American tax system; however, in the process, they also calculate the efficiency costs of such a tax in terms of equivalent variation (EV), which measures the efficiency costs due to the loss in consumer surplus. The results are used heavily by Kesselman (1997) to argue the efficiency superiority of general payroll taxes. The EVs are also presented in present value terms. Fullerton and Rogers (1993) calculate the EV's of the major taxes relative to a proportional lump-sum tax on the lifetime labour endowment of individuals. The findings of the study, which relate to efficiency costs of taxation, assembled by Kesselman (1997) are summarised in the Table 4.2.

Table 4.2 Estimated Efficiency Costs for Alternative Taxes, United States, 1984

Type of tax	Steady-state EV as % of revenue	PV of EV as % of PV of revenue
Personal income tax	9.83	3.14
Sales and excise taxes	7.29	2.11
General Payroll tax	5.93	1.29
Property tax	7.27	4.47
Corporate income Tax	204.3	65.01
All Taxes	6.48	2.26

The payroll tax in this study is a general tax which more closely resembled the taxes currently levied by the provincial governments than the UI premium used by Dalhby. The findings seem to be quite supportive of payroll taxes on the grounds of efficiency. The EV and present value EV of 5.93 and 1.29 are significantly lower than the efficiency costs of all of the other taxes in the comparison. While it is reasonable to question whether these values would differ in a Canadian context, in their literature review, St-Hilaire and Whalley (1982) concluded that the efficiency estimates from non-Canadian studies were generally similar to those of Canadian studies.

The most recent GE study, in a Canadian context, is that of Baylor and Beausejour (2004). They created a dynamic general equilibrium model of the Canadian Economy. The model incorporates all of the major taxes and features dynamic adjustments, intertemporal optimization, imperfect substitution between domestic and foreign goods and assets, and industry disaggregation. They attempt to compare the effects of different tax measures on the Canadian economy. The authors use data from Statistics Canada's input output matrices to form a benchmark data set which is based on average figures

over a three year period (1995-1998). They find that taxes on investment and savings impose higher efficiency costs than those on wages and consumption. Table 4.3 shows the welfare and steady state GDP gains that result from certain tax measures.

Table 4.3 Impact of Revenue Equivalent Tax Initiatives on Welfare and Steady State GDP

Tax measure	Welfare gains (in dollars) per dollar of lost present value government revenue	Percentage change in steady state of GDP for an ex ante 1%-of-GDP reduction in government revenue
Increase in capital cost allowances on new capital	1.35	4.39
A cut in personal capital income taxes	1.3	3.36
A cut in sales taxes on capital goods	1.29	3.05
A cut in corporate income taxes	0.37	1.94
A cut in personal income taxes	0.32	1.29
A cut in payroll taxes	0.15	0.66
A cut in consumption taxes	0.13	0.19

With a one dollar cut in payroll taxes leading to a welfare gain of only 15 cents, payroll taxes perform significantly better than all the other forms of taxation, except for the consumption taxes, to which it is a close second. Consumption taxes show increase gains relative to payroll taxes when using the measure of steady state gains, however, even then, payroll taxes are found to be significantly more efficient that the rest.

In practice, it seems that payroll taxes are some of the least distortionary taxes currently employed in Canada. They are only rivalled by a broad based consumption tax and, even then, are not necessarily inferior, depending on the exact structure of the two taxes.

Chapter 5: Incidence

5.1 Economic Incidence

Some of the largest opponents of payroll taxation come from the business community. The most common criticism is that payroll taxes are "job killers." The logic is that taxes on payroll are effectively taxes on jobs, and when it becomes more expensive to hire employees, firms will hire fewer people, reducing employment. The validity of this myth will be addressed in this chapter through a systematic examination of the economic incidence of payroll taxes. First of all, using partial equilibrium analysis, we will look at a special case, benefit-linked payroll taxes. Second, we will show that the incidence of a payroll tax is the same whether it is levied on employers or employees. Third, we will show that the incidence of a payroll tax depends on the elasticity of the supply and demand for labour. Finally, we will look at some empirical studies regarding payroll tax incidence and draw some conclusions.

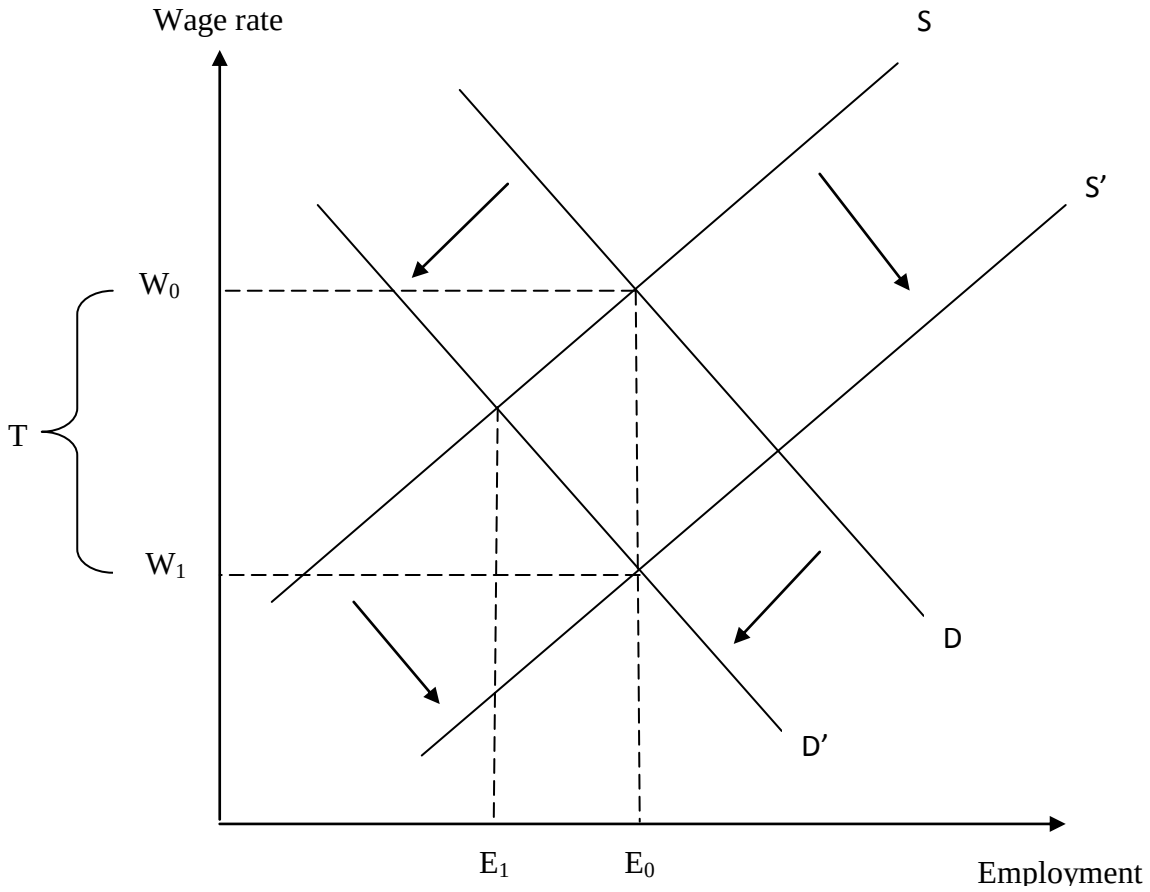
5.2 Partial Equilibrium Analysis

The easiest way to examine the incidence of a tax is through partial equilibrium models which look at the behaviour of a single market, the labour market in this case. We will use these models to examine a number of characteristics of payroll taxes. Similarly to chapter 4, for simplification, we will be assuming a payroll tax to be a per unit tax on labour.

5.2.1 Benefit-Linked Payroll Tax

A special type of payroll tax, where employees are able to see a direct connection between the taxes they pay and the additional benefits they receive is called a benefit-linked payroll tax. This is a particularly attractive characteristic of the tax as it effectively causes workers to voluntarily lower the amount of wages they demand. It is hard to create a tax benefit-linkage, and therefore it is only common in pension plans and other similar social security taxes where employers eventually withdraw the funds they contribute. It should be noted that while many payroll taxes are labelled benefit-linked, the linkage is often very weak or absent altogether, making it a mislabelled general payroll tax (Kesselman, 1997). Figure 5.1 illustrates how a payroll tax with perfect benefit-linkage can avoid a loss of employment, regardless of the elasticity of demand and supply.

Figure 5.1 Benefit-Linked Payroll Tax



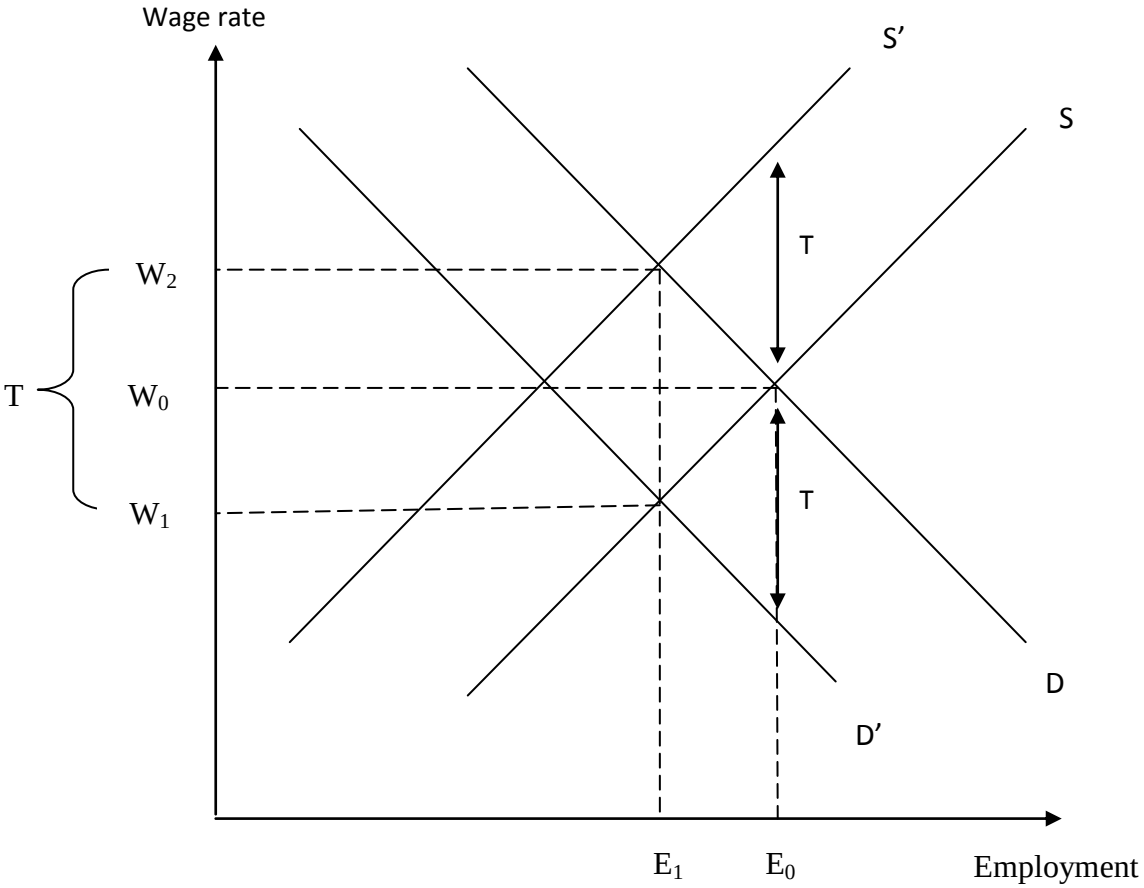
The initial equilibrium in the labour market with the initial aggregate demand (D) and supply (S) curves is $W_{0,}$ the equilibrium wage, and $E_{0,}$ the equilibrium level of employment. With the introduction of a payroll tax on employers, the demand curve will shift down to D′. All things being equal, this would cause wages to fall below W_0 and employment to fall to E_1. However, if employees perceive a direct link between benefits they will receive from the revenue generated by the tax, they will lower they wage demands by the amount of the tax, and the supply curve will shift down to S. Wages will fall further to W_1 and employment will return to E_0. Thus, with a strong tax-benefit

linkage, which is found in many social security taxes, there will be no reduction in employment as a result of an employer payroll tax.

5.2.2 General Payroll Tax

While benefit-linked payroll taxes are ideal, they are not always possible, especially at a provincial level where the taxes are often used for general revenue. These taxes behave somewhat differently. One important characteristic of general payroll taxes is that the incidence of the tax is the same whether the tax is levied on employees or employers. This is illustrated in Figure 5.2.

Figure 5.2 Tax on Employers vs. Tax on employees



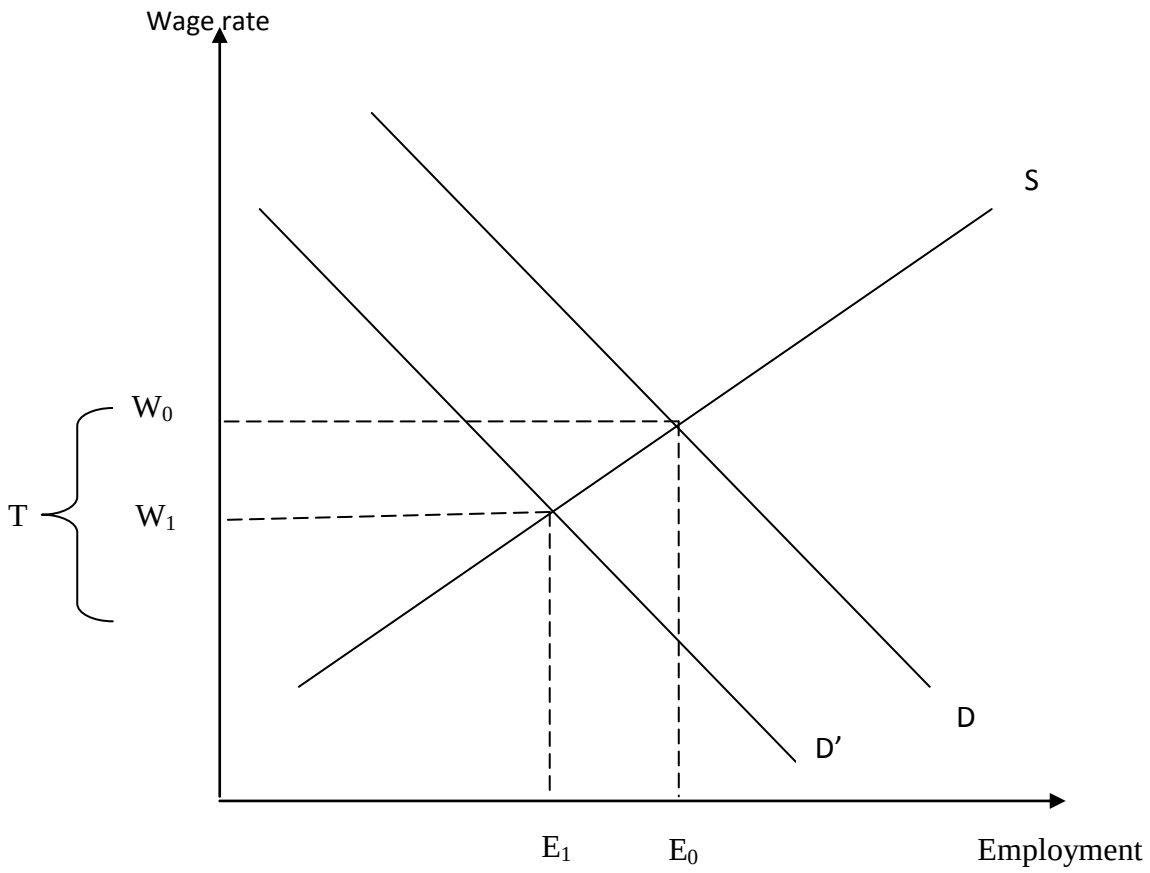
While it may seem reasonable that a tax on employers would be paid by employers, and that a tax on employees would be paid by employees, there is a consensus among economists that the economic incidence of a payroll tax is determined not by who the tax is levied on but by the respective elasticity values of the aggregate demand and supply curves for labour. This can be clearly seen in Figure 5.2. Let us begin with demand curve (D), supply curve (S), equilibrium wage rate (W_0) and equilibrium employment (E_0). All things being equal, a payroll tax on employers will shift the demand curve down by the amount of the tax (T) from (D) to (D'). The total tax on labour has risen by T and the workers share of the tax is shown by (W_0-W_1). Employers pay the remaining share of the tax given by (W_2-W_0). Employment has fallen from (E_0) to (E_1).

Now, let us go back to the original equilibrium. All things being equal, a payroll tax on employees would shift the supply curve up by the amount of the tax (T) from (S) to (S'). The producer's share of the tax is given by (W_2-W_0) and the workers share of the tax is given by (W_0-W_1). Employment has fallen from (E_0) to (E_1). As we can see in both cases, whether the tax was levied on employers or employees, each party's share of the tax was the same, and employment fell by the same amount. Therefore the incidence of payroll taxes in the long run does not depend on whom the tax is imposed. It is important to note that while the diagram shows the long run incidence under the given elasticity values of demand and supply, there would be an adjustment period where the taxes were shifted from one party to another and the short run incidence would appear different (Kesselman, 1997). This adjustment period is the result of rigidities in the

labour market, such collective bargaining agreements negotiated by unions, which make it difficult for firms to lower wages in the short run. Additionally, minimum wages laws prevent the reduction in wages for employees already at that level. An employer payroll tax would, in this case, cause a long run reduction in employment of minimum wage workers.

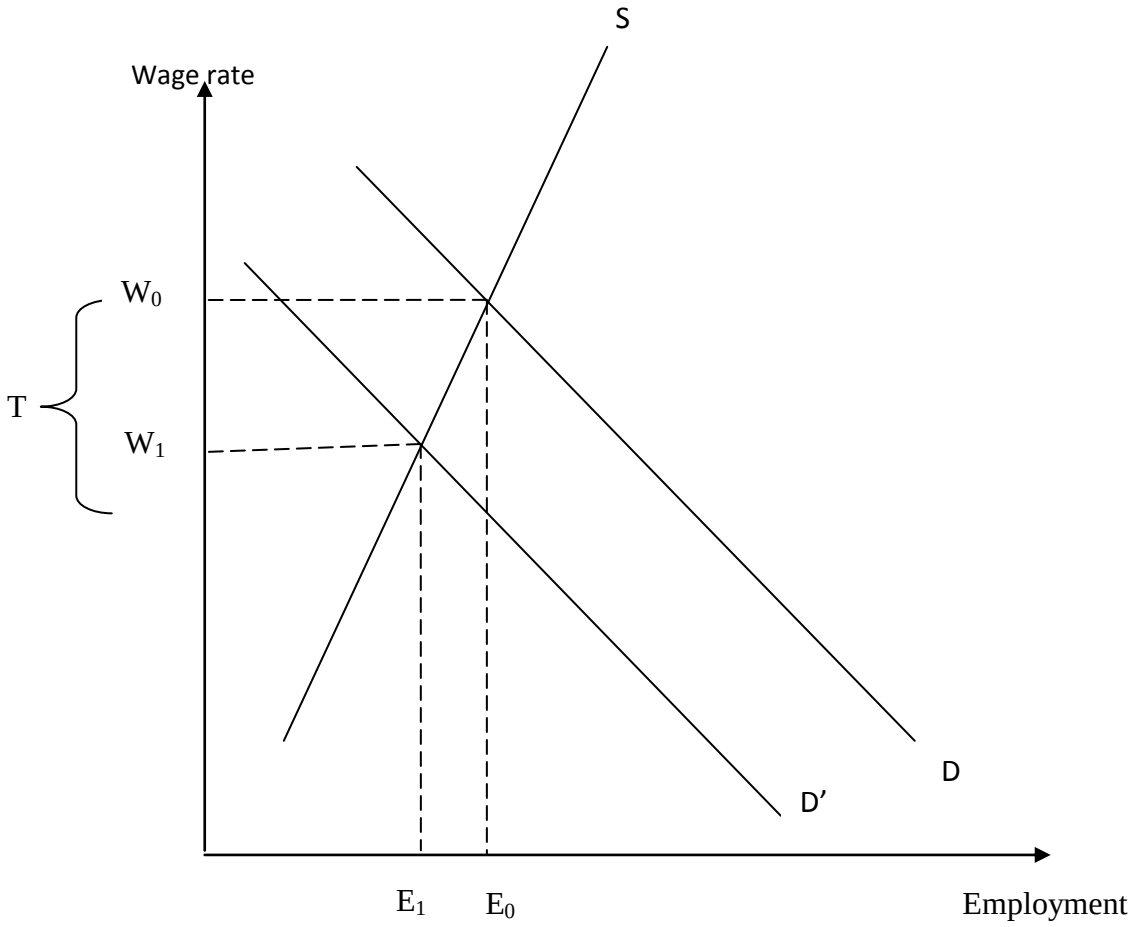
While the incidence of a payroll tax is the same whether imposed on employees or employers, it does depend on the elasticities of demand and supply. The lower the elasticity of demand the greater will be the employers' ability to shift the burden of the tax onto employees. Conversely the higher the elasticity of demand the weaker will be the employers' ability to shift the burden of the tax onto employees. The same logic applies to the elasticity of supply. The lower the elasticity of supply the greater will be the employees' ability to shift the tax onto employers and the greater the elasticity of supply, the weaker will be the employees' ability to shift the burden onto employers. Figures 5.3 and 5.4 illustrate two elasticity cases, one where supply is relatively elastic, and the other where it is relatively inelastic.

Figure 5.3 Relatively Elastic Labour Supply (Tax on employers)



In this Figure 5.3, the supply of labour is relatively elastic. We begin at equilibrium E_0W_0. An employer payroll tax of T shifts the demand for labour down to D'. The tax imposed on the firm is of magnitude T; however, it is able to shift W_0-W_1 of the tax onto employers. In this case the economic incidence of that tax is split relatively evenly between employers and employees. As a consequence, employment falls to E_1

Figure 5.4 Relatively Inelastic Labour Supply (Tax on employers)



In this Figure 5.4, the supply for labour is relatively inelastic. Once again, we begin at equilibrium E_0W_0. An employer payroll tax of magnitude T shifts the demand for labour down to D′. In this scenario, the firm is able to shift the majority of the tax, W_0-W_1, onto employees, and the result is a much smaller reduction in employment than in the previous diagram where labour supply is relatively elastic.

The two diagrams above illustrate an important property of tax incidence. Who bears the burden of a tax is determined by the respective elasticities of demand and supply. The more inelastic the supply for labour is, the greater the firm's ability to shift

the tax onto employees. The more elastic the demand for labour, the greater the firms' ability to shift the tax onto employees. As we have seen the extent to which firms can shift a tax onto employees determines the reduction in unemployment. Virtually any reduction in employment can be achieved through the use of different elasticity values in these partial equilibrium models, so in order to achieve an accurate picture of the effects of payroll taxes on employment, we must look at realistic elasticity values of demand and supply. This brings us to the next section, where we look at a number of empirical studies.

5.3 Empirical Analysis

Brittain (1971) is one of the seminal econometric analyses on payroll tax shifting. His objective is to determine the long-run impact of the employer payroll tax on wages rates. There is no attempt to determine the speed or the process of shifting. Brittain uses nine different models, which are all variations of a constant elasticity of substitution production function (CES). Cross-sectional data from the manufacturing sectors of 64 different countries in 1958 are used to estimate the model. He concludes that there is strong evidence to support that the entire employer tax is shifted to labour.

Vroman (1973) attempts to test the robustness of Brtitain's model, and therefore the validity of his conclusions that employers completely shift the burden of a payroll tax onto employers. He also re-estimates Britain's model with United Nations (UN) and OECD cross-country data for 1958 and 1964. He finds that while Britain's model is useful in determining the relationship between employer payroll taxes and capital's

income share, it falls short in addressing the general equilibrium question of payroll tax incidence. Using UN data, Vroman achieved mixed results. In some cases employers bore the full burden of the tax, while in others they were able to shift the entire tax onto employees. The results were very sensitive to the way employer tax rates were measured, and to the addition of other relevant explanatory variables. Using data from the OECD, which Vroman demonstrates to be superior, strong support was found for Britain's original conclusion that capital's relative income share is unaffected by employer payroll taxes. In conclusion, Vroman, finds the model to have many shortcomings, specifically the inability to distinguish forward shifting from backward shifting. Forward shifting being price increases reducing the value of real wages, and backward shifting being employers lowering wages in response to the tax.

Beach and Balfour (1983) attempt to determine whether social security payroll taxes are completely shifted onto labour. They attempt to estimate a constant-output demand function based on a constant elasticity of substitution production function. They use quarterly time series data for the United Kingdom from 1956 and 1978 to estimate a labour demand curve for total manufacturing industries and the nation as a whole. Since there were two payroll tax schemes at the time with an average rate of 8.0% and 6.65% respectively, and average of the two was used. They use previously estimated labour elasticity values for men, between 0 and 0.3, and women, between 0.8 and 1.2, in the United Kingdom, those of men being more elastic. It is found that that main effect of an increase of a payroll tax on men is a reduction in wages, while the main effect on women is a reduction in employment. In total, about 45-60 percent of the payroll tax is found to

be shifted onto labour for males, while 14-19 percent is shifted back onto labour for females. The calculations assume a cross-price elasticity for demand for men and women to be zero. If in fact they are perfect substitutes, the market elasticity would be a weighted average of the two. However, overall, they find that a payroll tax is not fully shifted onto labour.

Holmlund (1983) studies a unique case in Sweden which may provide some insight into incidence behaviour of payroll taxation. In 1951, 6% of the wage costs for Swedish firms were in the form of payroll taxes. By 1970, they were 14%, and by 1979, they approximately 40%. These sharp increases were made under the assumption that payroll taxes would be shifted completely onto labour in the form of lower wages. The study attempted to verify this by examining the changes in wages and labour costs for firms over a one year period. Holmlund uses data from the mining and manufacturing sector in Sweden from 1951 to 1979 to estimate a reduced-form model based on constant elasticity demand and supply functions for labour. It is found that while there was some shifting of taxes onto labour, this shifting was far from complete. In fact, for every one percent increase in payroll taxes levied on employers, there was a 0.35% decrease in the money wage rate. However, Holmlund notes that this refers only to the short term incidence, and that over the long term firms would shift forward more of the burden onto labour in the form of higher prices. He presumes that in the long run, labour will bear the full burden of a payroll tax increase. An important conclusion of this study is that this adjustment to the long run does not happen instantaneously and in some cases, may take a considerable amount of time.

Marceau and Vaillancourt (1990) attempt to estimate a wage bargaining model to determine the incidence difference between a general and a firm specific payroll tax. They use data from 780 collective bargaining agreements signed by large firms in Quebec between 1975 and 1984, and examined two payroll tax increases. The first is the increase in general payroll taxes which include payroll taxes for Unemployment Insurance, the Quebec Pension Plan, health services, and labour standards. The second is the increase in firm specific payroll taxes which include the worker's compensation contributions. Marceau and Vaillancourt's findings are inconclusive. The incidence of the firm specific payroll tax is found to be positive, which the authors argue represents the combined effects of downward pressure due to the tax increase and upward pressure due to the need to pay higher risk premiums. The incidence of general payroll taxes is found to be -0.0247 which denotes downward pressure on wages. Dahlby (1992) argues that given a one percent increase in an employer payroll tax, this value results in employers bearing between 30.3% and 47.8% of the payroll tax. Therefore taxes are not fully shifted to labour. However, as with Holmlund, this does not take forward shifting into account in the form of higher prices, and it is assumed that in the long run a greater portion of the tax would be shifted to labour.

Gruber (1997) looks at a unique situation in Chile. In the early 1980's the Chilean government decided to privatize its Social Security and Disability Insurance programs as well as shifting the financing of other social insurance programs away from employer payroll taxes. As a result, in May, 1981 employer payroll taxes in Chile fell from 30% to 8.5%. In this case the study found that there were no employment effects due to the drop

in the tax rate. In fact, all savings were passed on to the employees in the form of higher wages. This would seem to suggest that in Chile, the supply of labour is quite inelastic. However, as the author noted, this does not necessarily mean that the labour market would behave similarly in response to an increase in payroll taxes. There are certain wage rigidities that make it more difficult for employers to lower wages than to raise them. In addition, this was a period of relatively high inflation in Chile which could make the same decrease in payroll taxes have a different effect than in a country experiencing low inflation. While the conclusions drawn from this study may be limited, it does provide useful insight into the empirical realities of the incidence of payroll taxes.

The general consensus in the literature seems to be that employer payroll taxes are completely shifted to employees through lower wages (backward shifting) or higher prices (forward shifting) in the long run. However, there may be a reduction of employment in the short run, and it is not completely clear exactly how long these short run effects may persist.

5.4 Fiscal Incidence

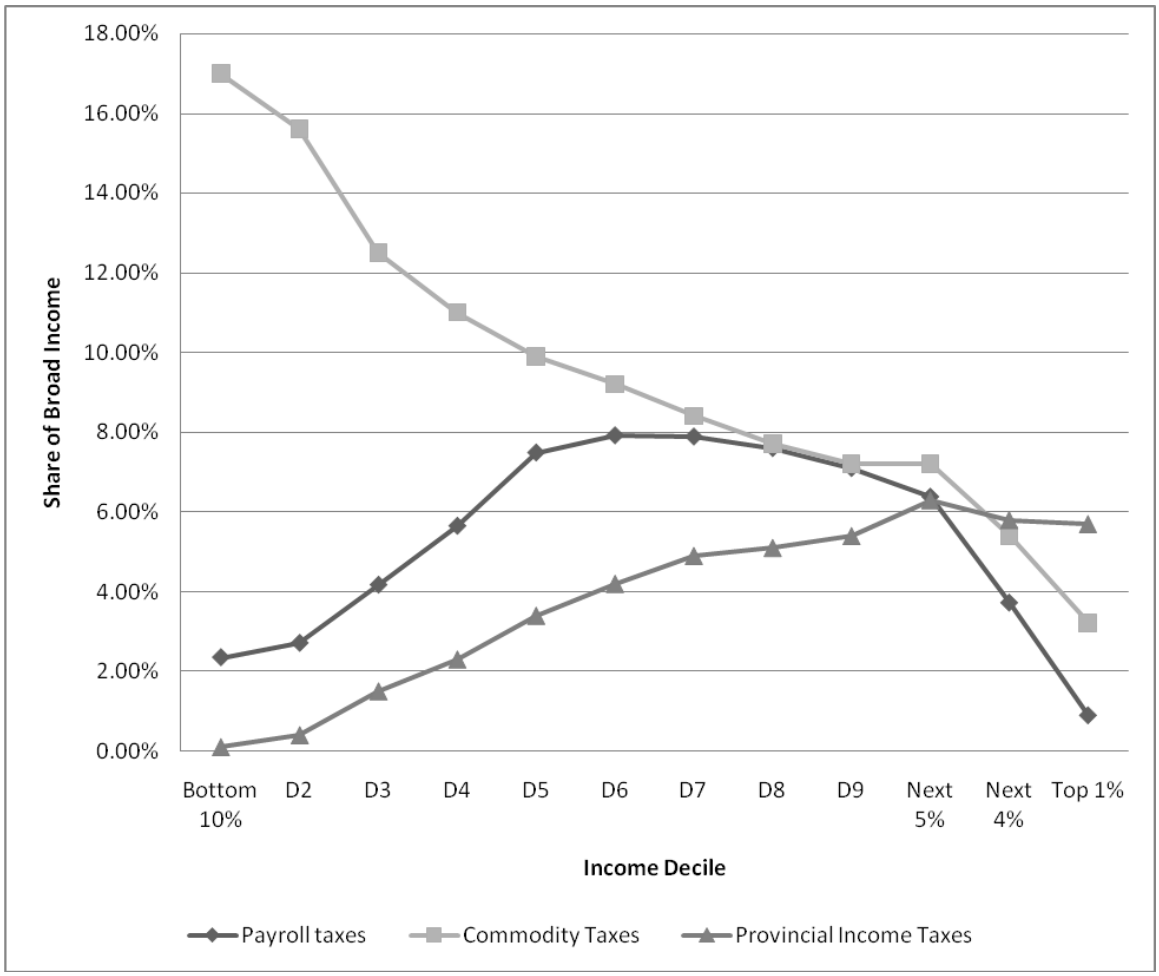
An important consideration with any tax system is how the burden of the tax is devided among income groups. A progressive tax is one which becomes a larger portion of an idividal's income as their income rises, while a regressive tax is one which becomes a smaller portion of an individual's income as their income rises.

The first comprehensive incidence study in Canada was W. Irwin Gillespie's report for the Royal Comission on Taxation, titled *The Incidence of Taxes and Public*

Expenditures in the Canadian Economy(1964). He attempted to estimate the distribution of tax payments and government expenditures, or net fiscal incidence by size classes of income. A more recent study (Lee, 2007), is titled *Eroding Tax Fairness: Tax Incidence in Canada, 1990-2005*. Lee uses all sources of income and all taxes in his incidence study and finds that the provincial and federal tax systems have become much less progressive than they were in 1990. The majority this change has been the result with the reduction of the income tax (which has always been the main source of progressivity in the Canadian tax system) and small increases in more regressive taxes such as those on consumption, payroll and property.

Figure 5.5 summarises Lee's findings for payroll taxes, commodity taxes, and provincial income taxes. Payroll taxes include EI, CPP, WC, and the provincial payroll taxes. Commodity taxes include both federal and provincial sales taxes and excise taxes. The divisions are smaller at the upper end of the scale to help show when regressivity truly begins

Figure 5.5 Tax Rates as a Share of Broad Income (2005)



Commodity taxes are regressive over the entire income scale. This makes sense in theory, as consumption as a percentage of total income declines on average as incomes rise. It should be noted that the author counted the GST credit as part of transfer income instead as netting it out on the tax side, and he notes that this may cause commodity taxes to be slightly less regressive for lower-income individuals than is shown in Figure 5.5. In sharp contrast, provincial income taxes are progressive over 95% of income scale, then only slightly regressive for the last 5%. This, again, is to be expected, as all provinces

except Alberta currently employ progressive rate structures in their income tax system, and even in Alberta, it is a flat rate. Payroll taxes seem to fall in between. They are progressive until nearly the 7th decile, and after that are similarly regressive to commodity taxes. This is to be expected, as the EI and CPP, the two largest paryroll taxes have exemptions and contribution ceilings.

The fiscal incidence of these three taxes, which form the majority of provincial own source revenue, is vital for provincial tax reform. If there are to be significant reductions in the provincial income tax, which is currently being proposed in New Brunswick, the entire provincial tax system will become less progressive. If the revenue is replaced using an increase in commodity tax rates, the reduction in progressivity will be significant. The question is whether a payroll tax will be superior in this regard. The payroll tax figures include EI, CPP, and WC all of which are, at least slightly, benefit-linked, and have significant exemptions and contribution ceilings. These structural characteristics contribute greatly to the low end progressivity and high end regressivity. The same distribution can be achieved with a general payroll tax, which is what provinces currently levy, but, without a tight benefit linkage, excessive exemptions or complicated rate structures also seriously increase the efficiency, administration and compliance costs of such taxes. While there are many complicating factors, there are a few conclusions that can be drawn. Income taxes provide the progressivity in both the provincial and federal tax systems. Additionally, commodity taxes are, in general, significantly more regressive than payroll taxes.

Chapter 6: Conclusions

There are two fundamental questions for policy makers to consider with regard to the possible implementation of a payroll tax in New Brunswick. The first is whether the tax is efficient and equitable. The second is whether there is a need or desire to introduce a new tax.

The efficiency of payroll taxes was addressed in Chapter 4. They are direct taxes on wage income, which have little distortionary effect on capital. While it will vary depending on the structure and treatment of the tax, in general, payroll taxes are one of the least distoritionary taxes currently employed in Canada. They are second only to the current indirect consumption taxes, although they have been shown to rival even them under certain circumstances. Additionally, payroll taxes, being direct taxes, avoid many of the tax evasion problems encountered by indirect taxes. They also face some of the lowest administration costs, possibly one sixth of those for sales taxes as shown in Chapter 4. Compliance costs are also low; however they are higher per dollar of tax revenue for small businesses, which may need to be addressed through an exemption. In fact, all of the provincial payroll taxes have introduced small business exemptions, either initially or over time.

The equity of payroll taxes was addressed in Chapter 5. Lee's (2007) fiscal incidence study showed that income taxes are progressive over 95 percent of the income scale, while commodity taxes are regressive throughout the entire scale. Payroll taxes, in practice, have tended to be progressive for the first 70 percent of the income scale and

regressive like commodity taxes thereafter. While nothing will match a progressively rated income tax in terms of progressivity, payroll taxes seem to be the lesser evil under this criterion and certainly superior to commodity taxes.

The "job killer" myth was also addressed in Chapter 5. It was found to be false in terms of benefit-linked payroll taxes as well as all payroll taxes in the long run. Any portion of the tax not shifted back to employees through lower wages is believed to be shifted forward in the form of higher prices. There may be some significant short run reductions in employment resulting from an employer payroll tax, especially with the existence of labour market rigidities; however, levying the tax directly on employees can avoid these short run implications. While the employment reductions associated with payroll taxes need to be taken into consideration, they are not a reason to rule out the use of payroll taxes completely.

The next question that must be addressed is: Why the province would wish to levy such a tax? This question begins with the stated goals of the New Brunswick tax reform, which relate primarily to attracting businesses to the province and encouraging economic growth. The main way in which the province plans on achieving these goals is through tax reductions on capital. The province has already planned to phase out the capital tax, and has announced significant reductions in the provincial corporate income tax. The question is: Where will the extra revenue be generated once all of these tax cuts are put into effect? Increasing the sales tax rates is one possibility. In Chapter 2 it was shown that, under the conditions of the harmonization agreements, it is necessary for the other harmonized provinces to agree to any rate changes. A carbon tax is one option put

forward; however, if the goal is to encourage business activity in the province, this may be counterproductive. Additionally, the province must abide by the federal income tax base, so any tax relief for capital through income tax reductions will also lead to tax relief for wage income, and will result in a significant loss of revenue for the province.

Payroll taxes present themselves as a solution. The only agreements governing the use of payroll taxes are with the federal government, where firms are able to deduct provincial payroll taxes from their federal income tax returns. This deduction alone is attractive; however, the fact that there are not limitations on payroll tax bases, rates or structure truly make them an attractive tax instrument for the provinces. The ability to tax wage income separate from capital income, unlike the income tax, allows the province to implement a two tiered tax system in which capital is treated favourably. The income tax can be lowered to ease the tax burden on capital, and the accompanying reduction in taxes on wage income can be recouped through a general payroll tax.

It should also be noted that, along with Nova Scotia, New Brunswick was one of the few provinces who simply tried to absorb the cuts in federal transfers of the previous decade. As noted in Chapter 2, Ontario, Manitoba, and Newfoundland cited this as one of the main reasons for implementing their payroll taxes. It has been shown that because payroll taxes have such a broad base, they represent a substantial revenue possibility. It was estimated that a general payroll tax, of only 2 percent, in New Brunswick would yield $190 million in revenue for the province. Perhaps it is time for the province to go ahead and recoup some of this lost revenue.

Another motivation for introducing a new tax is the tax room that was created when the federal government cut the GST rate by two percentage points. The obvious course of action would be to raise the provincial component by two points. An estimate of the revenue yield is $210 million. As mentioned in Chapter 3, the other harmonizing provinces must agree to any rate change which may limit the province's ability to do this. Additionally, when Manitoba was attempting to generate extra revenue, they considered a sales tax increase but concluded a payroll tax to be fairer. As was shown in Chapter 5, a payroll tax is less regressive than a commodity tax, which is an important consideration for provinces.

There is an argument that the introduction of a payroll tax will lead to the exodus of businesses to other provinces; however, this is difficult to imagine. New Brunswick's largest neighbour, Quebec, has the highest rates of payroll taxation in the country. Ontario and Newfoundland and Labrador also have their own taxes on payroll. None of these provinces have been significantly hurt by their taxes, and it seems unlikely that New Brunswick would be any different.

One attractive feature of provincial sales taxes is that some of the burden is born by out-of-province consumption. However, it could also be argued that higher sales tax rates would decrease tourism in the province. Nevertheless, this is a relevant issue, and further study would be required in order for the province to make an informed decision.

Payroll taxes are the only broad based tax that New Brunswick has complete freedom to design and levy. As such, a payroll tax should be seriously considered in any tax reform discussion. Should such a tax be implemented, there are a few conclusions

from this thesis as to how the tax should be structured. Since the tax will be for the purposes of general revenue, it is imperative that the base be as broad as possible in order to maximize the efficiency of the tax. Consequently, the self-employed should be included, similar to the CPP. Additionally, the tax should have a flat rate structure with a minimum number of exemptions. Since the compliance costs of a payroll tax fall disproportionately on small businesses, it would be desirable to include a basic exemption.

In terms of whether to levy the tax on employees or employers, there are a couple of basic arguments. As previously mentioned, levying the tax directly on employees minimizes the short term disemployment effects. However, taxing employers allows the provinces to shift some of the burden to the federal government through corporate income tax deductions. Additionally, it may be more politically viable to introduce a new tax on firms instead of on individuals. The question of earmarking may not be as important as it appears initially. Since this tax would likely not be large enough to entirely fund the programs for which it is intended, earmarking has no effect on how government revenues are spent. The problem encountered with employment insurance contribution surpluses would likely not be an issue. The only advantage, which may be significant, is that voters are more accepting of taxes which they view as necessary for the funding of certain services. Regardless of the exact structure, this thesis concludes that the current policy makers should strongly consider the implementation of a provincial payroll tax in New Brunswick.

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