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Politique stratégique
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A Primer on Payroll Taxes in Canada

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by
Marcel Bédard

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Abstract

The purpose of this document is to present factual information on federal and provincial payroll taxes in Canada and to report the main empirical economic research results on payroll taxation and its impact on employment.

Résumé

Le présent document vise à présenter des données factuelles sur les cotisations sociales fédérales et provinciales au Canada et à faire état des principaux résultats d'études économiques empiriques sur les déductions à la source et leurs effets sur l'emploi.

Acknowledgements

The author wishes to express his appreciation to Louis Grignon and François Weldon for their helpful comments on draft versions of this document.

Preface

For the most part, I am indebted to recent detailed literature reviews on payroll taxation done by Canadian researchers in the last few years. Particularly, the document draws material from papers by Marchildon, Sargent and Rugerri (1995); Zhengxi Lin, Garnett Picot and Charles Beach (1996); Jonathan R. Kesselman (1996); Bev Dahlby (1993); Joni Baran (1996); and Jock Finlayson and Tim McEwan (1996) from the Business Council of British Columbia. For reasons of presentation, I have omitted reference to these papers throughout the document. I have instead chosen to highlight their useful contribution to this document in this foreword note and to include them with other references in the list at the end of the document.

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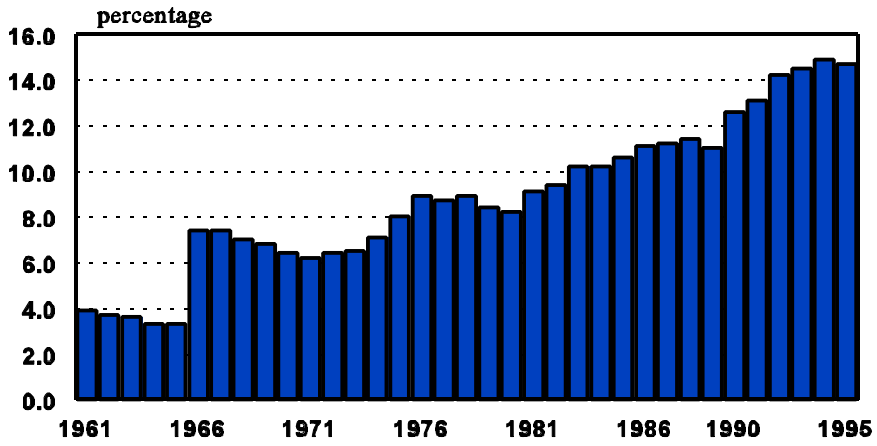
1. Introduction

Figure 1

Total Canadian Payroll Taxes

(as a percentage of Total Government Revenues, 1961-1995)



Sources: Cansim, matrices no. 6676, 6671 and 6672

Table 1

Payroll Taxes in Canada

Type of Tax	Government Authority*	Contributor	Rate (%) 1997
Unemployment Insurance	Federal Government (1940)	58% Employers 42% Employees	6.96
Canada/Quebec Pension Plan	Federal and Quebec (1966)	50% Employers 50% Employees	5.85 6.00
Workers' Compensation	All Provinces (1910s)	100% Employers	2.30 (1996)
Health-Education Payroll Taxes	Quebec (1970) Manitoba (1982) Newfoundland (1990) Ontario (1990)	100% Employers	4.26 2.25 2.00 1.95
Employer Training Tax	Quebec (1995)	100% Employers	1.00

* Effective year in brackets.

Sources: HRDC; provincial budgets

- Payroll taxes are a large and growing source of government revenues in Canada.

- Levied by both federal and provincial governments, they include four major components: i) Unemployment/Employment Insurance (UI/EI) premiums; ii) Canada and Quebec Pension Plan (C/QPP) contributions; iii) Workers' Compensation (WC) premiums; iv) the provincial health/post-secondary education (H/E) tax that currently exists in Quebec, Manitoba, Ontario and Newfoundland.

- Quebec also levies an employer training (ET) tax equal to one per cent of payroll that is paid by those employers who fail to provide adequate approved training.

- While EI and C/QPP contributions are levied on both employers and employees, the WC, H/E and ET are levied on employers only.

- The employer portion of payroll taxes is part of labour costs, and there is considerable debates over whether and how employers react to such taxes. Employers may react by reducing labour demand, substituting other factors of production for labour, or adopting new labour-saving technology. The result would be a loss of jobs in the economy. Alternatively, employers could raise prices on their output which would also result in a job loss as labour demand declines in line with the demand for the final output, or reduce wages which does not reduce labour demand but may reduce the number of jobs through its effect on labour supply or on its effect on aggregate demand. In this case, the actual burden of the taxes could, in the long run, be partially or fully passed onto consumers through higher prices or onto labour through lower wages.

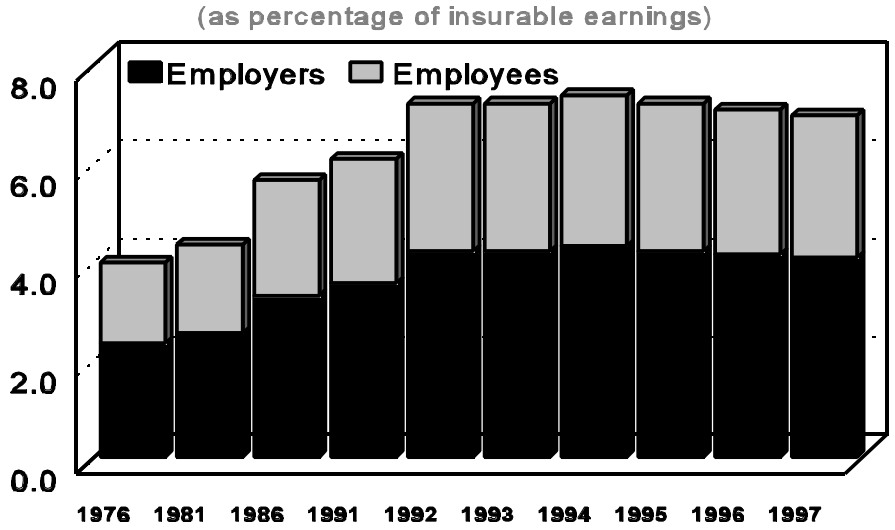
- Levied on employees, payroll taxes reduce take-home earnings, and workers may react by reducing labour supply, or demanding higher pre-tax wages. The result would also imply a lower level of employment in the economy, or higher labour costs to employers and hence lower labour demand.

- The linkage of payroll taxes to benefits (such as EI and C/QPP contributions) can influence both their incidence and employment effects. A payroll tax increase may reduce labour supply. That is because the tax may be perceived to be a pure tax with no offsetting benefits attached to it. If, on the other hand, workers perceive or value the tax as exactly paying for expected benefits or programs and services the tax serves to purchase, the payroll tax should not affect labour supply. And if workers value expected benefits higher than the cost of the tax, labour supply may increase.

2. Components of Payroll Taxes

Figure 2.1

Unemployment/Employment Insurance Premiums



Source: HRDC

Table 2.1

Unemployment/Employment Insurance Premiums
(as percentage of insurable earnings)

Year	Employers	Employees	Combined Rate
1976	2.31	1.65	3.96
1981	2.52	1.80	4.32
1986	3.29	2.35	5.64
1991	3.54	2.53	6.07
1992	4.20	3.00	7.20
1993	4.20	3.00	7.20
1994	4.30	3.07	7.37
1995	4.20	3.00	7.20
1996	4.13	2.95	7.08
1997	4.06	2.90	6.96

Source: HRDC

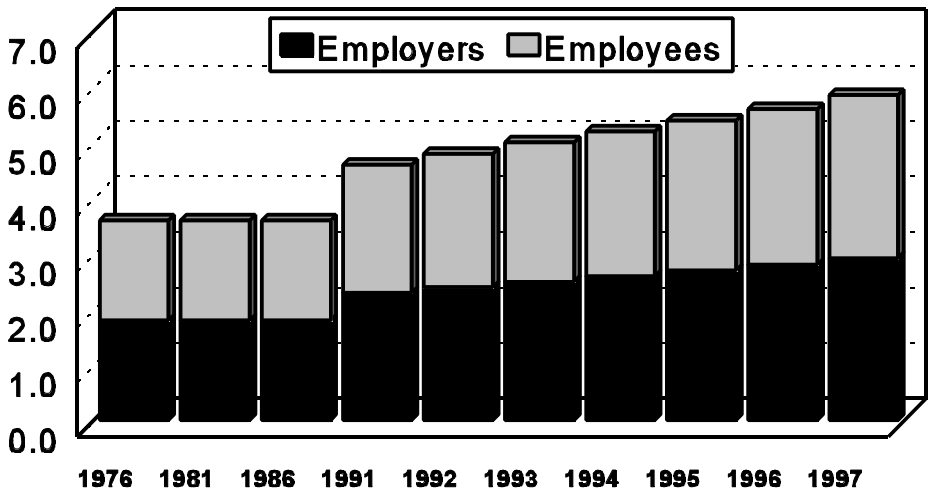
2.1 Unemployment/Employment Insurance Premiums

- UI/EI premiums have been levied by the federal government on both employers and employees to finance the UI/EI program since 1940.
- The EI system is self-financing and the premium rate is set annually using a statutory rate as a benchmark, which is determined based on a three-year average of the program costs.
- Both employer and employee EI premiums are now charged on all of earnings up to an annual maximum insurable earnings per employee. In 1997, the annual maximum insurable earnings is $39,000 per employee.
- Each employee covered by the program pays to the system a premium rate of 2.90% of the insurable earnings up to an maximum annual premium of $1,131.
- Employers pay 1.4 times the employee rate (i.e., 4.06%) of the employee's insurable earnings for a maximum annual premium of $1,743 per employee covered.

Figure 2.2

Canada* Pension Plan Contributions

(as percentage of contributory earnings)



* Quebec Pension Plan in Quebec
Source: HRDC

Table 2.2

Canada* Pension Plan Contributions
(as percentage of contributory earnings)

Year	Employers	Employees	Combined Rate
1976	1.80	1.80	3.60
1981	1.80	1.80	3.60
1986	1.80	1.80	3.60
1991	2.30	2.30	4.60
1992	2.40	2.40	4.80
1993	2.50	2.50	5.00
1994	2.60	2.60	5.20
1995	2.70	2.70	5.40
1996	2.80	2.80	5.60
1997**	2.925	2.925	5.85

* Quebec Pension Plan in Quebec

** For 1997, QPP rates are 3.00 per cent for employers and employees for a combined rate of 6.00 per cent.

Source: HRDC

2.2 Canada/Quebec Pension Plan Contributions

- The federal/Quebec governments have levied a payroll tax on both employers and employees to finance the Canada/Quebec Pension Plan since 1966.

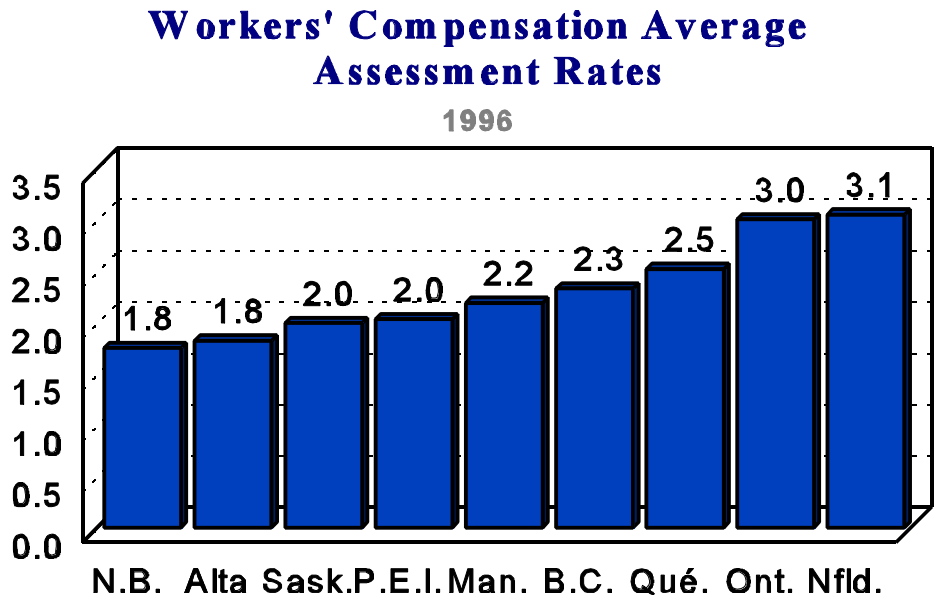
- The contribution rate is set according to the actuarial rate reviewed every five years by the Office of the Superintendent of Financial Institutions.

- In 1997, the maximum pensionable earnings (MPE) per employee were set at the average industrial wage of $35,800, with an exemption level equal to approximately 10% of the MPE ($3500).

- Wage and salary employees and their employers pay equally to the program at a separate contribution of 2.925% (3.00% in Quebec) for a maximum annual contribution of $944.78 ($969 in Quebec).

- Self-employed workers pay both the employee's and employer's contribution at a combined rate of 5.85% (6.00% in Quebec) of pensionable earnings up to the MPE for a maximum of $1,889.56 ($1,938 in Quebec).

Figure 2.3



Source: Finlayson and McEwan (1996)

Table 2.3

Workers' Compensation Average Assessment Rates (%)										
Year	**Nfld.**	**P.E.I.**	**N.S.**	**N.B.**	**Que.**	**Ont.**	**Man.**	**Sask.**	**Alta**	**B.C.**
1966	1.62	n.a.	1.16	1.97	1.39	1.23	0.67	1.53	1.44	1.30
1971	1.62	n.a.	1.15	1.54	1.09	1.19	1.06	0.93	1.32	1.38
1976	1.42	n.a.	1.18	1.48	1.86	1.75	1.10	2.21	1.47	1.83
1981	1.49	2.44	1.26	1.38	2.10	1.66	0.89	1.31	1.60	2.52
1986	1.79	1.32	1.19	1.77	2.04	2.59	1.67	1.37	1.59	2.19
1991	2.92	1.95	1.66	2.04	2.32	3.20	2.25	1.63	1.85	1.83
1992	3.00	2.00	1.98	2.13	2.50	3.16	2.16	1.65	1.98	1.95
1993	3.23	2.22	2.28	2.19	2.75	2.95	2.16	1.60	2.04	2.11
1994	3.18	2.07	2.54	2.15	2.75	3.01	2.12	1.67	2.13	2.16
1995	3.07	1.98	2.54	1.70	2.60	3.00	2.15	1.79	1.97	2.26
1996	3.05	2.03	2.54	1.75	2.52	3.00	2.19	1.99	1.82	2.33

Source: Finlayson and McEwan (1996)

2.3 Workers' Compensation Premiums

- Employers also pay provincial payroll tax in the form of workers compensation premiums to finance the workers compensation programs run by the provincially-administered Workers Compensation Boards (WCBs).

- The Canadian workers compensation system traces its origins back to the beginning of the 20th century. Ontario was the first province to pass WC legislation in 1914. By 1918, six of the nine then existing provinces had such legislation. And the Association of Workers Compensation Boards of Canada (AWCBC) was formed in 1919.

- The workers compensation system is based on industry groupings with different collective liability assessment and varying degrees of firm-level experience rating (i.e., premiums vary according to the hazard or risk of use of workers compensation). This approach is used in all provincial and territorial jurisdictions except Prince Edward Island, Nova Scotia and the North West Territories.

- The number of separate assessment rates across the country ranges from only five in Yukon to 357 in Quebec. Despite many similarities, there are significant differences in the industrial classification systems and practices across the 12 jurisdictions.

Table 2.4

Health and Education (H/E) Payroll Tax Rates (percentage of payroll)				
	1986	1991	1993	1997
Quebec	3.11	3.55	3.75	4.26
Ontario*	-	0.98/1.95	0.98/1.95	0.98/1.95
Manitoba	1.50	2.25	2.25	2.25
Newfoundland	-	1.50	2.00	2.00

* Ontario's Employers' Health Tax (EHT) rate varies by payroll size.

Sources: Finlayson and McEwan (1996); provincial budgets

2.4 Health and Education Payroll Taxes

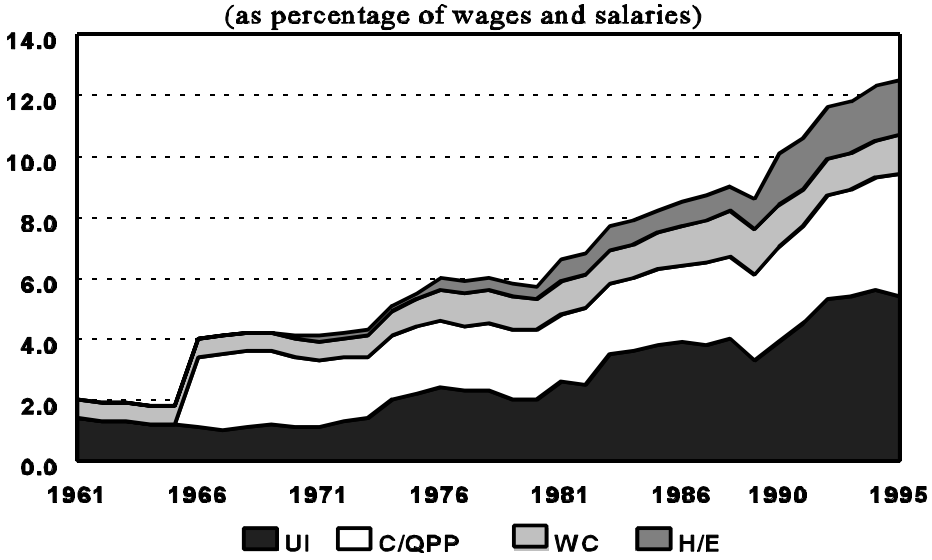
- Quebec, Manitoba, Ontario and Newfoundland levy a payroll tax on employers to partly finance their health care/post-secondary education systems.
- In 1997, legislated basic provincial H/E tax rates ranged from a low of 0.98% to 1.95%, according to payroll size in Ontario, to a high of 4.26% in Quebec.
- The tax coverage is comprehensive for virtually all employers in the private, non-profit, quasi-public and public sectors. Some specific exemptions applied in some provinces.
- These taxes are sometimes called general payroll taxes because the money raised goes to general revenues rather than being dedicated to a specified purpose fund.

3. Level and Growth of Payroll Taxes

Figure 3.1

Effective Payroll Tax Rates by Component, 1961-1995

(as percentage of wages and salaries)

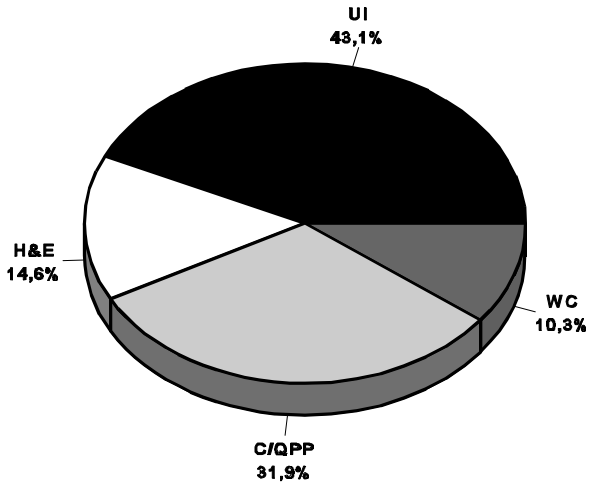


Sources: Cansim, matrices no. 808 and 6676; Kesselman (1994); provincial budgets

Figure 3.2

Payroll Taxes by Component in Canada, 1995

(total payroll taxes in 1995 = $45.2 billion)



Sources: Cansim, matrices no. 808 and 6676; Kesselman (1994); provincial budgets

3.1 Overall Tax Rate

- Overall effective payroll tax rate—i.e., total payroll tax revenues raised expressed as a percentage of total wages and salaries—has risen from 2.0% in 1961 to 12.5% in 1995.

- This increase has been due to both the introduction of C/QPP in 1966 and the health/education tax by the four provinces at different times, and increases in existing rates.

3.2 Unemployment Insurance Premiums

- UI has been the largest component of payroll taxes since the mid-1970s. In 1995, UI premiums amounted to 43.1% of all payroll tax revenues raised in Canada. In the 1990s, UI premiums have remained approximately flat as a percentage of wages and salaries.

3.3 Canada/Quebec Pension Plan Contributions

- From its inception in 1966, C/QPP contributions were the largest component until mid-1970s and the second largest component since that time (amounting to 31.9% of all payroll taxes in Canada in 1995).

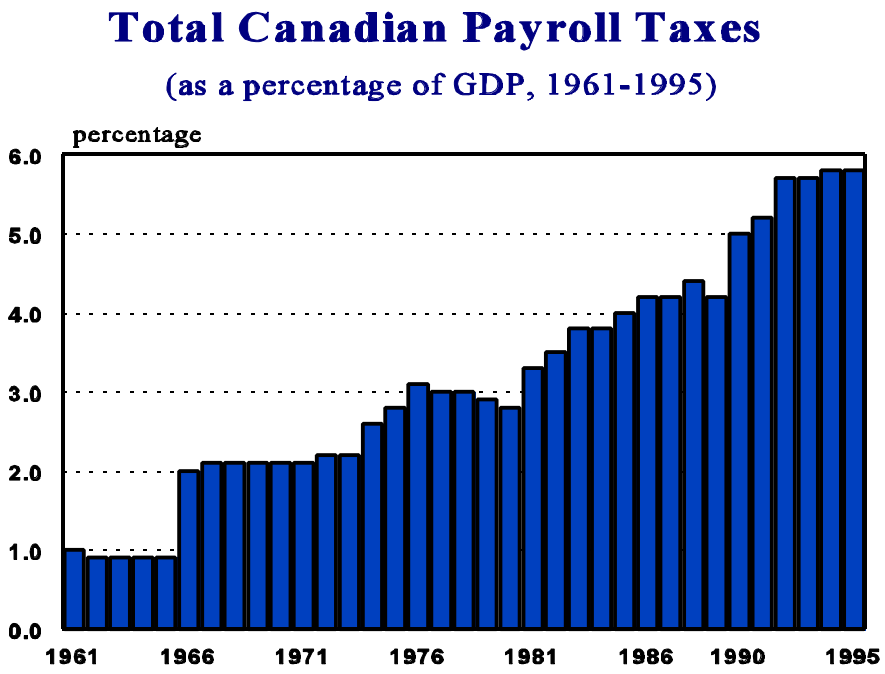
- In terms of growth, the effective C/QPP contribution rate has changed relatively little. It was 2.3% in 1966, marginally declining to 2.0% by 1973, slowly rising back to 2.5% in 1985, and steadily increasing to 4.0% by 1995.

3.4 Workers Compensation Premiums

- Workers compensation premiums were the third largest component until 1989 and have become the smallest among the four components since 1990 (representing 10.3% of payroll tax revenues raised in Canada in 1995).

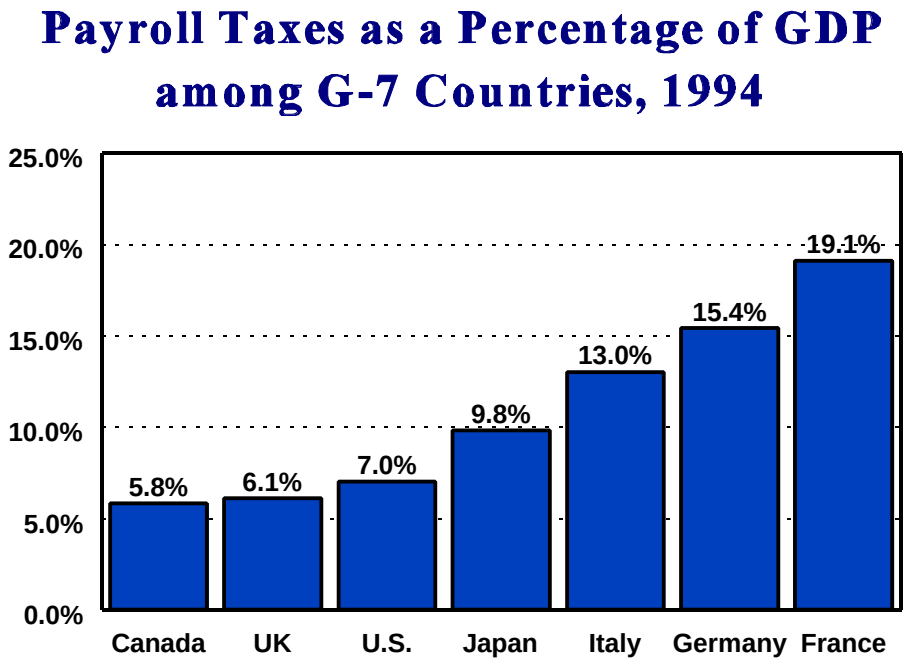
- The effective WC premium rate was stable up to 1975. Since then, it has been on the rise slowly but steadily, from 0.6% in 1961 to 0.9% in 1975 and to 1.3% in 1995.

Figure 3.3



Sources: Cansim, matrices no. 6676 and 2622

Figure 3.4



Sources: OECD (1996)

3.5 Health/Post-secondary Education Payroll Taxes

- The health and post-secondary education payroll taxes have become more significant in recent years. The four provincial H/E taxes have replaced WC to become the third largest component (representing 14.6% of all payroll tax revenues in Canada in 1995) and the effective H/E tax rate has also increased substantially (doubled from 0.8% in 1988 to 1.7% in 1990). The rate has since been stable at around 1.7%.

3.6 International Perspective

- Overall, payroll taxes paid by employers and employees rose from 1.0% of GDP in 1961 to 5.8% in 1995.

- Nevertheless, Canada still has the lowest payroll taxes among the G-7 countries in 1994.

4. Three Views on Payroll Taxes

4.1 Business View on Payroll Taxes

- Employer payroll taxes discourage job creation, primarily for small business.
- Payroll taxes rank second in terms of issues to which government should give top priority in order to promote sustainable business and employment creation.
- Survey data indicates that:
  - according to owners of firms with between 20 and 499 employees, lowering payroll taxes is the most important thing governments could/should do to create jobs; and
  - EI and Workers' Compensation were believed to be the payroll taxes which most discouraged employment creation, across all business sizes.

4.2 Labour View of Payroll Taxes

- Labour organizations do not like the term “payroll taxes”, they prefer to use the term “social security premiums”.
- Labour organizations consider that the programs financed through social security premiums are important and that the contributions provide an entitlement to the workers for benefits of these programs.
- The first priority of labour organizations is to improve the coverage and generosity of social programs not to reduce contributions.
- Social security premiums do not have large impacts on employment when one takes into account of the re-injection that occurs through the benefit side.
- In the short term, because the shifting process takes time, an unexpected increase in employer premiums may have an impact on profits and a modest impact on hiring. However, the modest short-term impact on hiring created by the reduction in employer premiums is reduced or reversed when the reduction is made by cutting the benefits which flow from the program.

4.3 Economists' View of Payroll Taxes

- The effect of payroll taxes on job creation depends on who bears the burden of the tax.
- Much of the literature suggests that employer payroll taxes are in large part passed back to labour in the form of lower wages in the long run. Therefore, they have little if any permanent effects on the level of employment.
- The long-term effect of an increase in payroll taxes will be identical, regardless of whether the tax is initially levied on the employee or the employer.

5. The Economics of Payroll Taxes

5.1 Theoretical Models of Payroll Tax Incidence

In this section we examine the effects of payroll taxes in the context of three different classes of theoretical models. The first is the standard neo-classical model of the labour market, in which there is perfect competition and full information. The second is a neo-classical model taking into account the interaction of the labour market with institutional constraints arising from government programs and policies such as the minimum wage legislation and social assistance. Finally, we examine the efficiency wage model which is becoming a standard alternative to the neo-classical model. The main characteristics of the three models are the following:

5.1.1 The Neo-Classical Model Without Institutional Constraints

- The characteristics of the Neo-Classical model without institutional constraints, or the perfectly competitive labour market model, are a completely mobile work force, standardized labour (i.e., all workers in a particular industry are equally productive) and the inability of either buyers or sellers of labour to influence the wage rate (i.e., no monopolies, no strong union representation). Furthermore, wage rates adjust in response to market conditions to clear the labour market so the supply of labour is always equated with the demand of labour. Employment falls following a negative demand shock but no involuntary unemployment occurs as fewer workers are willing to work at the lower equilibrium wage rate (i.e., labour supply is withdrawn from the market).

5.1.2 The Neo-Classical Model With Institutional Constraints

- The Neo-Classical model with institutional constraints introduce some institutional realities to the perfectly competitive labour market model. Institutional constraints, such as minimum wage, employment insurance and social assistance benefits act as a wage floor under which employers cannot offer lower wages. This is because employers cannot pay less than the minimum wage or because some workers may not be willing to work at wage levels below or close to social programs benefit levels. In this model, the prevailing wage rate is higher than in the competitive labour market

model and involuntary unemployment occurs because labour supply exceeds labour demand at that wage rate.

5.1.3 Efficiency Wage Models

- While there are several variants to this model, efficiency wage models share the notion that a firm's production costs are reduced if it pays a wage in excess of the market-clearing wage, because labour productivity will be higher. Therefore, there is involuntary unemployment in equilibrium. Firms may decide not to cut wages in the face of involuntary unemployment in order to increase the cost of shirking, and, consequently, job loss; to reduce employee turnover; to attract quality applicants; and to bolster employee morale.

- The basic presumption behind efficiency wage models is incomplete information. Businesses are unable to monitor employee productivity effectively and, therefore, will pay higher than market-clearing wages.

Figure 5.1

Impact of Payroll Taxes in The Neoclassical Model Without Institutional Constraints

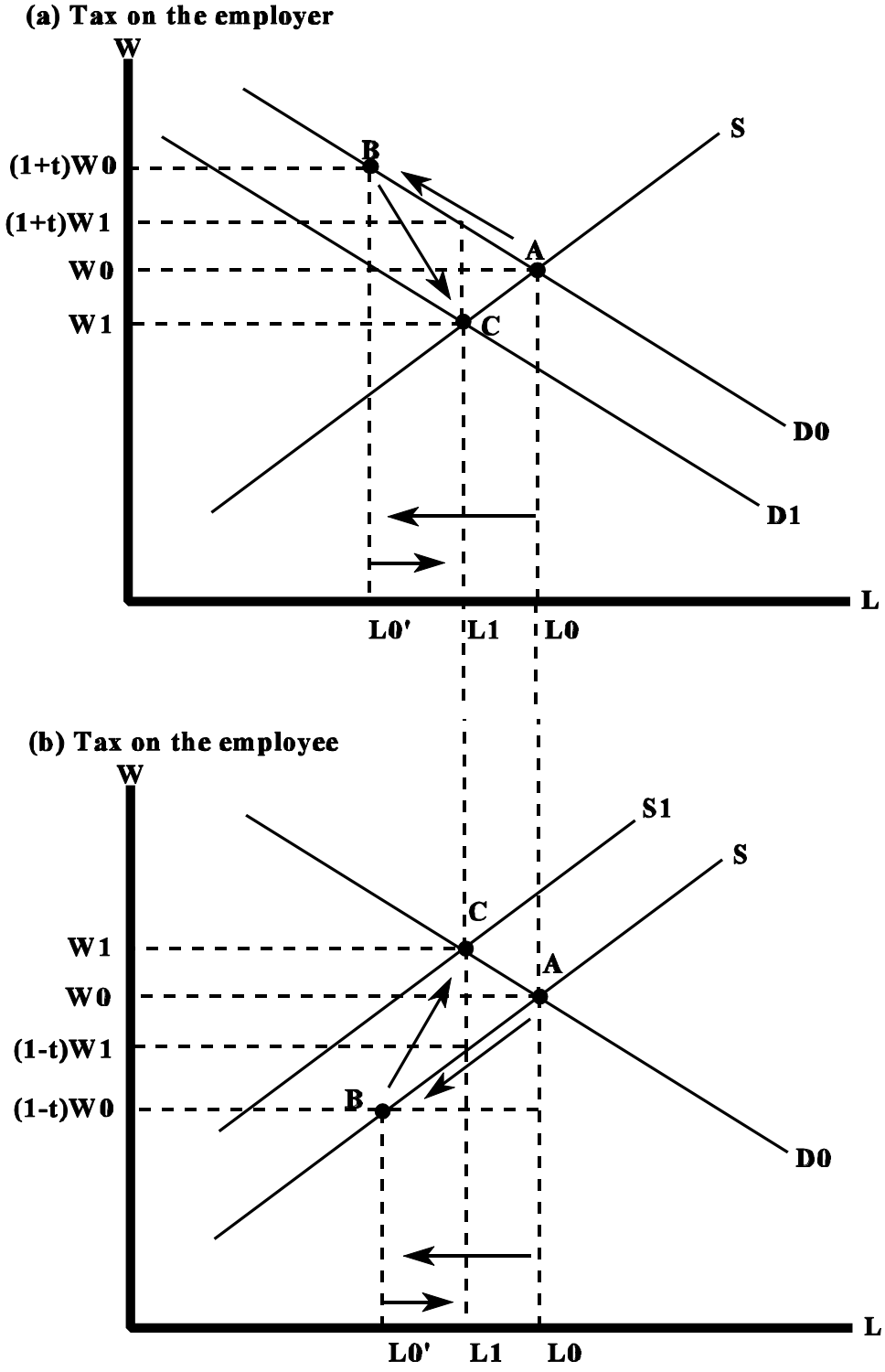


Figure 5.1 (Continued)

(c) Lexis to theoretical graphs of the impact of payroll taxes

Point A: initial employment and wage equilibrium levels.
L0: initial employment equilibrium level.
W0: initial wage equilibrium level.

Point B: short-term equilibrium levels following a payroll tax increase.
(1+t)W0: short-term wage equilibrium level following a payroll tax increase on the employer.
(1-t)W0: short-term employee wage equilibrium level following a payroll tax increase on the employee.
L0': short-term labour demand (in the case of a payroll tax on the employer) and labour supply (in the case of a payroll tax on the employee) following a payroll tax increase.

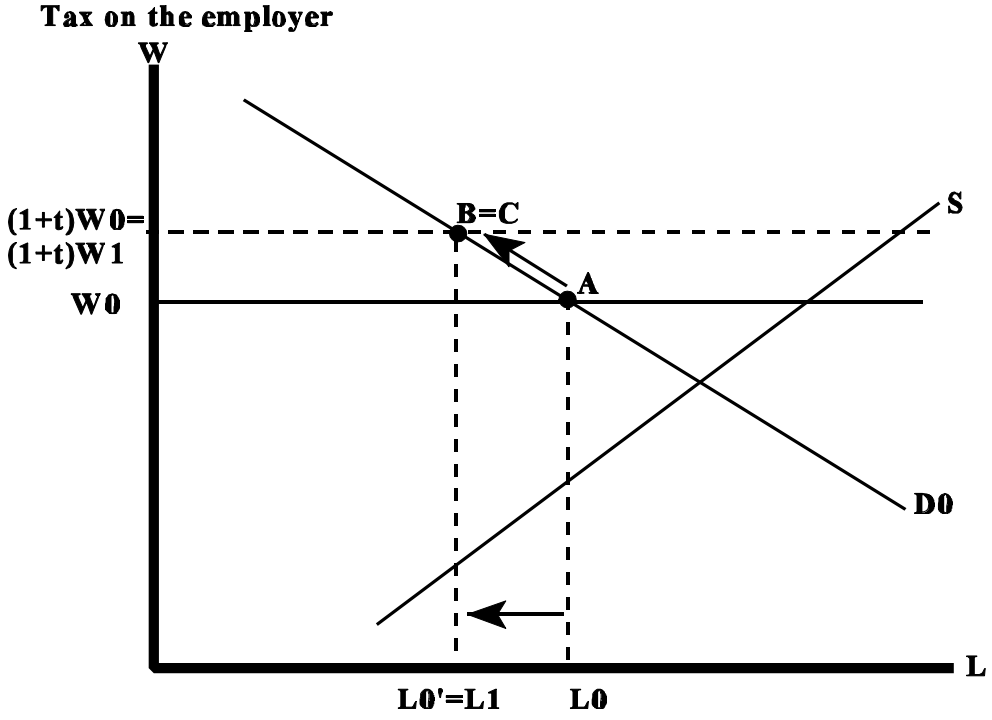
Point C: long-term employment and wage equilibrium levels following a payroll tax increase.
L1: long-term employment equilibrium level following a payroll tax increase.
W1: long-term wage equilibrium level following a payroll tax increase on the employer or the employee.
(1+t)W1: long term labour cost including wage and tax.

5.2 Impact of Payroll Taxes in The Neo-Classical Model Without Institutional Constraints

- In the simple neo-classical model, increases in both employer [graph 5.1 (a)] and employee [graph 5.1 (b)] payroll taxes lead to a permanent reduction in employment (from L0 to L1) but leave unemployment unchanged in the long run (due to exit from the labour market). They differ in their short run effects on unemployment: the former increases it [movement from A to B on the labour demand curve in graph 5.1 (a)] while the latter leaves it unchanged [because the supply of labour decreases from A to B in graph 5.1 (b) reflecting an unwillingness to work at the lower after-tax wage rate].
- If labour supply is perfectly inelastic, then the effects of a rise in payroll taxes are somewhat different. With a vertical labour supply curve all the adjustments take place on the wage side. There is a short run increase in unemployment if the payroll tax on the employer is raised. In the long run, labour bears all the incidence of the taxes: wages fall by exactly the amount of the tax increase, and there is no change in output or employment.

Figure 5.2

Impact of Payroll Taxes in the Neoclassical Model With Institutional Constraints



5.3 Impact of Payroll Taxes in the Neo-Classical Model with Institutional Constraints

5.3.1 Effect of Minimum Wages

- *Employer payroll tax (graph 5.2):* If the wage can not be adjusted downwards because of a minimum wage (represented by W0 in graph 5.2), the short run effects of the employer payroll tax (movement from A to B)—unemployment, lower employment and unchanged real wages—will hold in the long run also [the short run equilibrium (point B) equals the long run equilibrium (point C)], because wages cannot adjust to eliminate the disequilibrium for low skill workers.

- *Employee payroll tax*: Labour will bear the entire incidence because there is an over-supply of workers owing to a wage in excess of the market level.

5.3.2 Effect of Social Assistance and Unemployment Insurance

- To the extent that social assistance creates an effective minimum wage for some individuals by providing a minimum benefit to employables, the effects will be similar to those of the minimum wage.

- The UI program affects the position and slope of the labour supply curve, but does not alter the direction of our long-term conclusions: the short run effects of the employer payroll tax—unemployment, lower employment and unchanged real wages—will hold in the long run also.

5.3.3 Effect of Unions

- The short-term increase in unemployment caused by employer payroll taxes will tend to be more persistent if wage adjustment is slower.

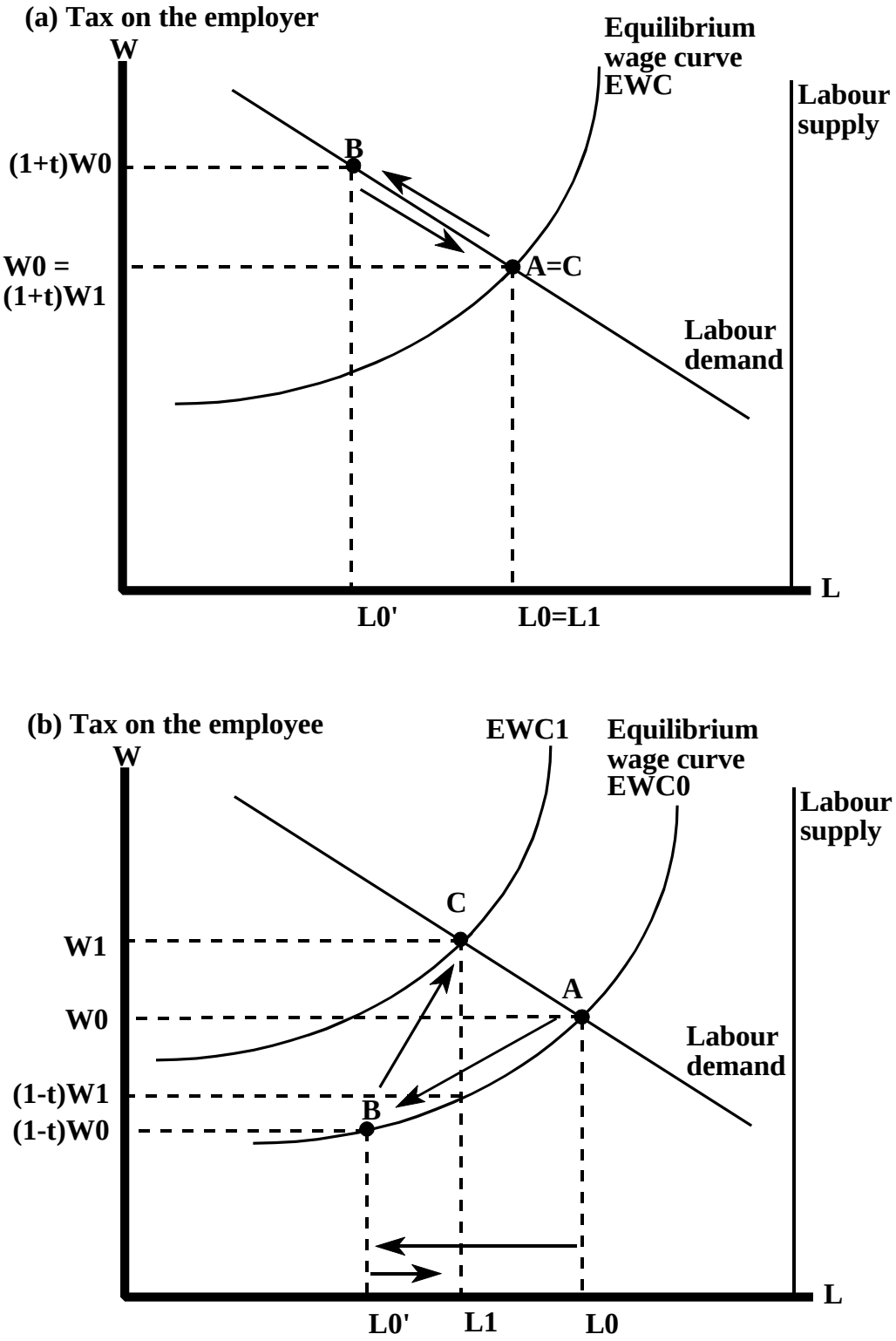
- In the long-term, the effects of both employer and employee taxes will depend upon the elasticity of labour supply, as in the neo-classical model. The greater the elasticity, the greater the fall in employment in response to a payroll tax increase.

5.3.4 In Summary

- The neoclassical model with institutional constraints predicts that the negative short-term impact of an increase in payroll taxes on the labour market may prevail in the long run also. This model may provide an accurate description of the behaviour of some individuals, but not for all individuals since only some individuals are affected by minimum wage legislation and social assistance benefit levels and only about one third of the paid workforce is unionized.

Figure 5.3

Impact of Payroll Taxes in the Efficiency Wage Models



5.4 Impact of Payroll Taxes in the Efficiency Wage Models

- Efficiency wage models postulate that workers vary their work effort (i.e., they work harder or less hard) in line with their relative wage (i.e., relative to wages paid in other firms), and income while unemployed either from government programs or from other sources (such as Unemployment Insurance benefits, savings, investment income, etc.). [This behaviour is represented by the Equilibrium wage curves (EWC) in graphs 5.3 (a) and (b).]

- The reasons why this may be so can be grouped into three categories: recruitment—higher wages mean better applicants; retention—well paid employees are less likely to quit; and motivation—better wages mean harder work and more loyal employees.

- In each case the departure from the neo-classical model comes because the firm cannot perfectly observe some characteristics of workers; be it a job applicants's ability, an employee's effort, or an employee's propensity to quit.

- Consider a model in which work effort is a function of the difference between the wage paid by the firm and the worker’s outside opportunity, which in turn depends upon unemployment benefits and the wages paid at other firms. An increase in the employer payroll tax [graph 5.3 (a)] will reduce employment and increase unemployment in the short run as firm’s labour costs are increased (movement A to B). In the long run, the tax will be fully shifted backwards to labour through reductions in wages (movement from B to C). The lower wages do not affect work effort for two reasons. Relative wages do not change because wages in all firms are similarly affected by the tax. The relative EI benefits remains unchanged because it is calculated as a percentage of the wage net of the employer payroll tax. Therefore, both wages and EI benefits fall in the same proportion (i.e., the EWC does not change).

- Increases in the employee payroll tax [graph 5.3 (b)] reduce the net wage received by workers but do not alter gross wage in the short run, thus leaving EI benefits unchanged. Since EI is more attractive, it reduces work effort in the short term

(movement from A to B), which drives up the efficiency wage (the wage level at which workers are willing to accept a job) and unemployment in the long term (movement from B to C).

- Note that social assistance is excluded from this model and hence does not play any role in the determination of the Equilibrium wage curve position.

6. The Incidence of Payroll Taxes and Empirical Assessment

The extent to which the burden of a payroll tax is shifted onto labour depends on:

- ***workers' valuation of the benefit of the program for which the tax is levied—***The linkage of payroll taxes to benefits (such as EI and C/QPP contributions) can influence both their incidence and employment effects. A payroll tax increase may reduce labour supply, if the tax is perceived as having a cost in excess of the benefits. If workers perceive or value the tax as exactly paying for expected benefits, the payroll tax should not affect labour supply. And if workers value expected benefits higher than the cost of the tax, labour supply may increase. For instance, the introduction of the C/QPP in 1966 may have caused employment and labour market participation to increase since the value of the benefits purchased by the contributor was greater than the contribution for most participants.

- ***the responsiveness of the demand and supply of labour to changes in its price—***In a competitive market, the elasticities of demand and supply of labour determine the extent to which a payroll tax is borne by labour.

- ***the time-frame—***The incidence of a tax in the short term may be different from the incidence in the long term because the demand and supply responses to price changes may be different in the short term and in the long term. The elasticity of demand for labour is larger in the long term than in the short term because in the long term firms can increase its level of capital, or change technology. But the elasticity of supply of labour is believed to be smaller in the long term than in the short term since short-term changes to wages have less effect on permanent income than long-term changes.

- ***the degree of competition in a market—***If prices are determined by a firm with monopoly power, or if wages are negotiated by a strong labour union, then the extent of tax shifting may be significantly different from what would have occurred under competitive conditions.

- ***whether the tax is broad or narrow*—**If the effective tax rate (payroll taxes as a percent of wages and salaries) vary across industries, because, for example, of maximum contributory earnings, the inputs that are used more intensively by the highly taxed industries will tend to bear a greater portion of the burden of the tax.

Empirical Assessment

In the long run, labour bears almost the full burden of the overall employer and employee payroll taxes as the tax gets shifted back onto labour.

- For small changes in payroll tax rate, the labour's share of the payroll tax burden can usefully be approximated in the following way:

  Labour's share of the payroll tax burden = $\frac{-E_d}{E_s - E_d}$

  where E_d is the elasticity of the demand for labour
  and E_s is the elasticity of supply of labour. Labour's share of the payroll tax burden will be greater (a) the lower the elasticity of supply of labour and (b) the greater the absolute value of the elasticity of the demand for labour.

- The appropriate aggregate labour supply elasticity for the estimation of payroll tax incidence in the long run must take into account a variable participation rate (i.e., that allows changes in the proportion of the population supplying labour following a change in labour market conditions). Consequently, the aggregate labour supply elasticity would be in the range of 0 to 0.2 (Dahlby, 1992).

- The proper labour demand elasticity definition for the estimation of payroll tax incidence in the long run is the variable-output definition, i.e., that output and prices are allowed to change with labour market conditions. Dahlby argues that a reasonable range of values for the elasticity of labour demand is -1.35 to -4.50 (Dahlby, 1992, 1993).

- Based on these probable ranges for the labour supply and demand elasticities, labour's share of the payroll tax burden in the long run is in the range of 87 to 100 percent.

In the short run (1 to 5 years), employers may bear between 50 and 100 per cent of the employer payroll tax burden.

- This is because wages take time to adjust and labour demand elasticity is much smaller in the short run than in the long run.

This is why rising payroll taxes are more harmful to employment than stable high levels of payroll taxes.

7. Payroll Taxes and Employment: Overall Employment Impact of an Increase in Payroll Taxes

Table 7

Employment Impact of a One Billion Dollar Increase in Payroll Taxes	
	Impact on Employment
Short-term impact (1 to 5 years)	The payroll tax increase reduces employment. 20 000 to 50 000 jobs are lost.
Long-term impact	Employment decreases but not as much as in the short and medium term. 5 000 to 10 000 jobs are lost.

Source: Grignon (1994); Marchildon, Sargent and Ruggeri (1995); Roy, Henson and Grignon (1995); Parker (1995)

The main conclusions of empirical studies on the employment impact of an increase in payroll taxes are:

- In the short term, the payroll tax is largely borne by employers implying a reduction in labour demand and employment. A one billion dollar increase in payroll taxes would reduce employment in the short-term by about 20,000 to 50,000 jobs.

- In the long run, employees bear almost the full burden of the tax implying a downward adjustment in wages and thus smaller impact on employment. The same one billion dollar increase in payroll taxes in the long-term reduces employment by about 5,000 to 10,000 jobs.

8. Summary

8.1 Level and Growth of Payroll Taxes

- Total federal and provincial payroll taxes have been a growing source of government revenues in Canada and also represent a growing percentage of total wages and salaries.

- Yet, payroll taxes paid by employers and employees in Canada are the lowest among G-7 countries (as a percentage of GDP).

8.2 Business, Labour, and Economists' Views of Payroll Taxes

- While businesses rank lowering payroll taxes as one of the most important instrument in reducing unemployment, labour organizations believe that increasing the level of program coverage and benefits is a much higher priority. The position of labour organizations is that employer payroll taxes have little effects on the level of employment.

8.3 The Economics of Payroll Taxes

- Conventional economic theory predicts that increases in both employer and employee payroll taxes may lead to a permanent reduction in employment but leave unemployment unchanged in the long run.

- In the presence of a minimum wage, social assistance, unemployment insurance, or unions, increases in employer payroll taxes lower employment and raise unemployment in the long run to the extent that wages cannot fully adjust to eliminate labour market disequilibria.

- The efficiency wage theory postulates that workers adjust the work effort to changes in relative wages, and to income while unemployed. The theory predicts that increases in the employer's payroll tax will be borne by workers in the long term and therefore will leave employment and unemployment unchanged. Increases in employee's payroll tax, however, drive up efficiency wages, decrease employment, and increase unemployment in the long term.

8.4 The Incidence of Payroll Taxes

- For a short period after the tax is imposed (1 to 5 years), labour may bear less than 50 percent of the employer payroll tax burden.

- Over the longer term (5 to 10 years), Dahlby (1992) expects that labour will bear at least two-thirds of the overall employer and employee payroll taxes.

- In the very long run, when the supply of capital is variable, labour will bear almost all of the payroll tax burden.

8.5 Payroll Taxes and Employment

- The main conclusions of empirical studies on the employment impact of an increase in payroll taxes are:

  - In the short term (1 to 5 years), a one billion dollar increase in payroll taxes would reduce employment by about 20,000 to 50,000 jobs.

  - In the long run (10 years and over), the same one billion dollar increase in payroll taxes reduces employment by about 5,000 to 10,000 jobs.

  - Changes in payroll taxes have only small permanent effects but larger temporary effects on employment.

- The above estimates do not take into account possible offsetting impacts on employment that can arise from the benefits side.

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