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The Economics of Minimum Wages

by Marc T. Law

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Editor & Designer: *Kristin McCahon*

For media information, please contact Suzanne Walters, Director of Communications, (604) 688-0221, ext. 582, or from Toronto: (416) 363-6575, ext. 582.

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The Economics of Minimum Wage Laws

Executive Summary¹

Most economists would likely agree that high minimum wages reduce employment opportunities for young and unskilled workers. Most would probably also agree that high minimum wages do not necessarily raise the incomes of the poorest members of society. Yet, in spite of this consensus about the economics of minimum wages, the minimum wage continues to be touted by politicians and policy-makers as an effective way to help the poor.² This is puzzling, since the adverse economic impacts of the minimum wage have been extensively documented.³

This *Public Policy Source* provides a review of the economics of minimum wage laws and, in particular, of the empirical literature on some of the economic impacts of minimum wage laws. It also provides an overview of the Canadian data on who earns the minimum wage. By examining the incidence of the minimum wage, it is possible to determine whether the minimum wage is likely to achieve its official objective of raising the incomes of the poor. Some of the highlights of this study are as follows.

1. Increases in the minimum wage are likely to reduce employment opportunities for young and unskilled workers. Most empiri-

cal studies estimate that a 10 percent increase in the minimum wage reduces the rate of employment among youth (ages 15-25) by 1 to 3 percent. A 10 percent increase in the minimum wage appears to reduce employment rates of teenagers by 2 to 4 percent. Hence, it is largely the young who feel the adverse effects of minimum wage, since they are among the least skilled members of the labour force.

2. Increases in the minimum wage have other adverse economic impacts. Empirical studies show that when minimum wages rise, employers offer fewer fringe benefits and reduce on-the-job training. Furthermore, high minimum wage rates are associated with higher school dropout rates, as the increase in the minimum wage induces teenage workers to leave school in search of employment. Because jobs are scarcer when minimum wages rise, the ultimate result of a high minimum wage policy is a larger proportion of idle youth—youths who are neither in school nor employed.

3. Most minimum-wage workers are low-skilled workers. In 1995, over 35 percent of all minimum-wage workers were high-school dropouts. Less than 7 percent of minimum-wage workers had a university

1 This study was written while the author was a research economist with The Fraser Institute. Fazil Mihlar was instrumental in pushing the study through the editing process. The author would like to thank Fazil Mihlar, Jason Clemens, Johanna Francis, and Laura Jones for extensive comments and suggestions. All errors remain the responsibility of the author.

2 Recently, British Columbia and Alberta raised their provincial minimum wages. Both did so under the pretence of helping the working poor. The Government of Manitoba is poised to raise its minimum wage in the near future.

3 Or, is it puzzling? By raising the minimum wage, politicians can appear to act in the interests of the poor without actually spending taxpayers' dollars. The costs of the minimum wage are borne by those who are unable to find work at the higher wage and by firms who must now pay more for labour. The benefits accrue to those workers able to retain employment at the higher wage, and politicians who can claim credit for raising the incomes of the needy. The political calculus of raising the minimum wage may therefore be very attractive.

degree. This is not surprising, since poorly educated workers are generally poorly paid. It is a well-established empirical fact that earnings increase with education and skill level.

4. Most minimum-wage workers are young. Seventy percent of men working at minimum wage are between 16 and 23 years old. Seventy-eight percent of these young minimum-wage workers live at home with their parents. Over 55 percent of women working at minimum wage fall between 16 and 23 years of age. Of these young minimum-wage workers, over 60 percent live at home. Hence, the “typical” minimum-wage worker is a young person living at home with his or her parents.
5. International evidence shows that most low-paid workers are not in low-income

families. Hence, increases in the minimum wage are unlikely to “trickle down” to low-income households. The benefits of higher minimum wages accrue largely to teenagers and young workers living in relatively affluent households. Furthermore, to the extent that higher minimum wages raise the price of goods that poorer families tend to consume, increases in the minimum wage have perverse impacts on the distribution of real incomes across households.

Hence, the consensus among economists about the impacts of the minimum wage and its efficacy in raising the incomes of the poor remain: higher minimum wages are unlikely to raise the incomes of the poor. Rather, they are likely to reduce employment opportunities for the unskilled and raise the incomes of certain low-wage workers who do not necessarily come from low-income families.

Introduction

Broadly speaking, there are two strands of empirical research on the economics of minimum wages. The first strand examines the *economic impacts* of minimum wages. The bulk of this work attempts to isolate the effects of minimum wages on other economic variables (employment, unemployment, school enrollment, earnings, etc.). The second strand examines the *incidence* of minimum-wage workers. It attempts to identify who in fact earns the minimum wage and what characteristics are common among workers earning minimum wage. This strand of research, in conjunction with the first, is useful for policy purposes because it enables us to determine who is likely to be most affected by changes to the minimum wage. Since a great deal of the policy debate concerning minimum wages revolves around the

effects that changes in minimum wages have on the distribution of income, knowledge about who earns the minimum wage and their characteristics is of vital importance.

Among economists, there is a substantial consensus about the impacts of minimum wage legislation.⁴ Most economists would argue that increases in the minimum wage reduce employment and raise unemployment rates of unskilled workers.⁵ Furthermore, economists tend to agree that increases in the minimum wage are likely to do more harm than good. In particular, the bulk of the empirical evidence suggests that minimum wage laws tend to harm the groups these laws are intended to help—the young, the working poor, and the unskilled. Policy makers and politicians,

4 That is, there has been consensus on this issue until quite recently; more about this later.

however, continue to find this evidence unconvincing. In Canada, many provincial governments have raised, or are considering raising, minimum wages in efforts to help the working poor.⁶ In the United States, President Bill Clinton recently raised the federally mandated minimum wage and is apparently considering increasing it again. Hence, it would appear that political, as opposed to economic, considerations dominate when it comes to public discussion of the desirability of minimum wage legislation.⁷

This *Public Policy Source* provides a review of some of the available research on the effects of minimum wages. Specifically, I ask two questions: (1) what are the economic impacts of minimum wages and (2) who are the workers earning minimum wage in Canada and what are their characteristics? In answering the first question, I review the available evidence from the United States and Canada and find that, by and large, most studies conclude that increases in minimum wages reduce employment rates and increase unemployment rates of the most vulnerable mem-

bers of the work force. Increases in the minimum wage are also associated with other economic effects, including higher school-dropout rates, reduced on-the-job training, and fewer fringe benefits. In answering the second question, I identify minimum-wage workers according to age, education, sex, location, industry, and household status (*i.e.* do minimum-wage workers live alone or in families?). The bulk of the data comes from the 1993 *Survey of Labour Income Dynamics* and the 1986 *Labour Market Activity Survey*, and are presented in two recent Canadian studies on this topic (Fortin and Lemieux 1997; Akyeampong 1989). By and large, the data suggest that the incidence of workers earning minimum wage in Canada accords with the consensus among economists that most workers who earn minimum wage are the young and unskilled and that many live at home with their parents. These findings, in conjunction with what is known about the effects of rising minimum wages, suggest that an increase in the minimum wage is probably an ineffective instrument for redistributing income to those in need.

Part 1: Economic Theory of Minimum Wages

Standard economic theory of minimum wages

It is a well-established fact that the quantity of a good or service demanded declines as its price rises relative to the prices of other goods and services. When the relative price of bananas rises,

utility-maximizing consumers will buy fewer bananas and more oranges. Similarly, when the price of labour (*i.e.* the wage rate) rises, profit-maximizing firms will tend to substitute other inputs (*e.g.* machinery) for labour and reduce their demand for workers. This simple observation underscores the standard textbook conclusion that

5 A survey of Canadian economists conducted during the 1980s found that 68.2 percent “generally agreed” with the following statement: “A minimum wage increases unemployment among young and unskilled workers.” See Block and Walker, 1988.

6 For instance, the government of British Columbia has raised the minimum wage from \$5.50 in 1993 to its current level of \$7.15.

7 See Leffler, 1981 for an interesting discussion of the political economy of minimum wage legislation.

increases in minimum wages reduce employment.

In a competitive labour market, the demand for labour falls as real wages rise. Profit maximization on the part of the firm requires that the value of the marginal product of labour equal the real wage. Since, for a given level of capital and other inputs, each additional unit of labour produces less output, labour demand must vary inversely with the real wage. The effect of a minimum-wage law in this context is to reduce firms' demand for labour. When the cost of labour input rises, the marginal product of labour must be higher than before if the firm is to minimize costs. However, because each additional unit of labour produces less output when other factors are fixed, the only way to increase the marginal product of labour is to reduce the number of workers employed. (In other words, labour is subject to diminishing returns.) Hence, the imposition of a minimum wage law will lead to fewer employment opportunities for those workers whose marginal productivity is below the minimum wage (Gunderson and Riddell 1988).

The extent to which an increase in the minimum wage reduces employment depends critically upon (1) the ability of firms to substitute other factors of production for labour in response to the change in relative input prices induced by the minimum wage increase; and (2) the impact the increase in the minimum wage has on total output of the firm and the industry. Suppose, on the one hand, that a firm's production technology is such that production of a unit of output requires exactly one unit of capital and one unit of labour, and that no other combination of inputs can produce this unit of output; in other words, labour and capital are *perfect complements* in production.⁸ Under these circumstances, the firm cannot substitute capital for labour or labour for capital when relative input prices change. For a given

level of output, an increase in the minimum wage will therefore have no disemployment effects. Of course, the increase in costs induced by the higher minimum wage will likely force some firms to reduce production or shut down completely. Less output in this context implies that fewer workers are employed. Job losses in this case result not from factor substitution *per se* but rather from the effects that the minimum wage has on total production. Suppose, on the other hand, that labour and capital are *perfect substitutes* in production. Under these circumstances, an increase in the relative price of labour will result in the firm substituting capital for labour completely and firing all its workers. In this scenario, an increase in the minimum wage will cause significant unemployment. Total output is unlikely to be affected much because capital is available as a perfect substitute for labour. Hence, job losses in this scenario result entirely from factor substitution on the part of the firm.

In reality, most production technologies fall somewhere in between the extremes of perfect substitute and perfect complement. Generally, capital and labour are imperfect substitutes for each other. In other words, there are several mixes of capital and labour that the firm can employ to produce a given amount of output. In these intermediate cases, the disemployment effects of high minimum wages are the product of both factor substitution and lower overall production. Hence, standard economic theory suggests that increases in the minimum wage should result in a fall in total employment.

The effects of minimum wages on employment: the empirical evidence

The bulk of the available empirical evidence on the effects of increases in the minimum wage on employment support the standard theory that in-

⁸ This is an example of a Leontief production function.

creases in the minimum wage tend to reduce aggregate employment rates and increase unemployment rates.⁹ Furthermore, the young, women, the unskilled, and the working poor generally experience the disemployment effects of increases in the minimum wage. This is not surprising since these workers are generally among the least productive members of the work force and, hence, are most susceptible to increases in the minimum wage.

In a comprehensive survey of the empirical literature on minimum wages from the United States, Brown, Gilroy and Cohen (1982) conclude that the empirical evidence is generally in accord with the standard theory. Time-series econometric studies estimate that a 10 percent increase in the minimum wage reduces employment among teenagers (ages 15-19) by 1 percent to 3 percent, holding other factors constant. Empirical studies using cross-sectional data produce a wider range of estimates but most suggest that a 10 percent increase in the minimum wage reduces employment rates among teenagers up to 3 percent. Employment rates among young adults (ages 20-24) also decline with increases in minimum wages but the declines are smaller than those among teenagers.¹⁰ In a recent cross-country study, the Organisation for Economic Cooperation and Development (OECD) (1998) found that a 10 percent increase in the minimum wage rate reduced teenage employment rates by 2 percent to 4 percent. The impacts upon adult workers are more difficult to discern since higher minimum wages may induce firms to substitute adult labour for youth labour when minimum wages rise. Nonetheless, the impact of increases in the minimum wage upon total employment appears to be negative overall.

West and McKee (1980) survey the Canadian evidence and find that increases in the minimum wage reduce Canadian employment rates. Across most empirical studies, it seems that a 10 percent increase in the minimum wage reduces employment among Canadian teenagers by about 1 percent to 3 percent. Increases in the minimum wage also reduce employment rates among adults and young adults but not as dramatically as it reduces employment rates among teenagers (Schaafsma and Walsh 1983). Using more recent data, Law and Mihlar (1998) find that increases in provincial minimum wages reduce employment rates and raise unemployment rates among Canadian youth. Meanwhile, Shannon and Beach (1995) find that increases in Ontario's minimum wage during the early 1990s reduced employment in retail sales and food services, and disproportionately affected young and part-time workers. Thus, the empirical evidence using Canadian data appears to be consistent with the standard economic theory of minimum wages.

Card and Krueger: the new twist to the minimum wage story

Recently, a number of analysts have come to question the standard view about the effects of minimum wages on employment. In particular, an influential study by economists David Card and Alan Krueger of Princeton University stands the consensus on its head. According to Card and Krueger (1994, 1995), the empirical evidence on the effects of increases in the minimum wage upon employment is not as convincing as the traditional analysis would suggest. They present evidence showing that increases in minimum wages in several American states did not result in employment losses and Card and Krueger claim that, in certain cases, increases in the minimum

9 The literature on the employment and unemployment effects of minimum wages is enormous. For instance, see Gramlich, 1976; Rottemburg, 1981; Linneman, 1982; Neumark and Wascher, 1992; Shannon and Beach, 1995. For overviews of the evidence, see Brown, Gilroy, and Kohen, 1982; Gunderson and Riddell, 1988; Ernst and Young, 1995.

10 This is unsurprising since young adult workers are likely more productive than their teenage counterparts.

wage resulted in employment gains. For instance, in their much-cited study of employment in fast food restaurants in New Jersey and Pennsylvania (1994), they show that employment in New Jersey fast-food restaurants actually increased after the New Jersey legislature raised the minimum wage. These findings have sparked considerable controversy among labour economists and have generated much debate in academic and political circles (see, for instance, Ehrenburg 1995).

Card and Krueger justify their empirical results by arguing that in some instances, the labour market is a monopsony, *i.e.* a market with a single buyer. In principle, it is possible for an increase in the minimum wage to raise employment if a firm is a monopsonist (*i.e.* the sole purchaser) in the labour market (Gunderson and Riddell 1988). The classic example of monopsony in the labour market is a single-company town where there is only one major employer. Most analysts agree, however, that this theoretical argument is weak because very few labour markets are characterized by monopsony power, particularly over the long run when labour is mobile (Gunderson and Riddell 1988; Lal 1995). Hence, there does not appear to be a plausible basis for Card and Krueger's findings.

Moreover, many scholars are doubtful about the quality of Card and Krueger's empirical work. Rather than use traditional econometric techniques to estimate the employment effects of minimum wage increases, Card and Krueger use survey data to conduct "natural experiments" that do not control adequately for the various factors that affect the relevant variables. The particular methodology employed by Card and Krueger (1994) in their study of employment in fast-food restaurants in New Jersey and Pennsylvania has been criticized sharply by Daniel Hammermesh (1995), who argues that the timing of Card and Krueger's surveys bias their results. Finis Welch (1995), meanwhile, argues that by restricting their attention to fast-food restaurants, Card and Krue-

ger neglect to consider the overall employment impacts of New Jersey's increase in the minimum wage, which could very well have been negative. Finally, a study using official payroll data shows that employment did, in fact, fall in New Jersey following the increase in the minimum wage (Neumark and Wascher 1995a). Hence, there are a number of reasons to question the validity of Card and Krueger's conclusions.

Other impacts of minimum wage laws

The preoccupation of many researchers with the employment effects of minimum wages obscures another important fact: that the labour market is more than just a spot market where money (*i.e.* wages) is exchanged for work. Mandated changes in the relative price of labour have effects beyond the employment rates. They will also affect the complex (but often unstated) contractual relationships within a firm even if employment is only affected negligibly. Suppose, for instance, that a firm's production technology is characterized by perfect complementarity in capital and labour inputs and that an increase in the minimum wage has no disemployment effects because the firm's output remains constant. Does this mean that everything else remains unchanged? Probably not. While it is true (by assumption) that the firm's production technology prevents it from substituting capital for labour, it is also true that there are other margins of substitution available to the firm in its efforts to maximize profits (Oi 1997). If we view the labour market as more than just a spot market for work, then what matters to the firm is not strictly the real wage but rather the total compensation package that it offers to its workers. This total compensation package includes, in addition to wages, good working conditions, extra paid vacation time, flexible work hours, bonuses, and on-the-job training. An increase in the minimum wage will certainly increase the wage component of the total compensation package. However, because the

firm's concern is the total compensation package it offers to its workers and not strictly the wage component, it has every incentive to curtail other benefits when wages rise in order to contain total labour costs. Hence, even if total employment remains unchanged, an increase in the minimum wage may have other adverse consequences, including smaller bonuses, less on-the-job training, and fewer fringe benefits.

The available empirical evidence appears to support these intuitive arguments. Econometric studies from the early 1980s show that increases in minimum wages in the United States during the 1970s resulted in reduced expenditures on fringe benefits (Wessels, 1980). Empirical work by Hashimoto (1981) demonstrates that on-the-job training is reduced when minimum wages are increased. Since future earnings are known to be

highly correlated with human capital, the dynamic consequences of reduced on-the-job training may be undesirable for young workers (Leighton and Mincer, 1981). Less on-the-job training reduces the formation of human capital and this means that future productivity is lower than it would otherwise be. Neumark and Wascher (1995b, 1996) show that high minimum wages also encourage young teenage workers to leave school in search of full-time employment. Because employment opportunities are scarcer when minimum wages are increased, teenage workers are generally unsuccessful in finding employment; the result is an increase in the number of idle teenagers, those neither in school nor employed. Hence, in addition to reducing employment rates, high minimum wages have a number of other subtle, yet significant, effects that are often ignored in policy debates.

Part 2: The Incidence of Workers Earning Minimum Wage in Canada

Evidence for the incidence of the minimum wage in Canada is drawn from data from two fairly recent Canadian studies (Fortin and Lemieux 1997; Akyeampong 1989).¹¹ Since much policy discussion regarding minimum wages centres on their impact on the distribution of income in society, it is important to identify who, in fact, earns the minimum wage. Knowledge of the incidence of the minimum wage in tandem with an understanding of the likely economic impacts of minimum wage legislation enables us comprehensively to evaluate the desirability of increasing the minimum wage.

Geographic dispersion of workers earning minimum wage

Table 1 displays data on the geographic dispersion of workers earning minimum wage in 1986

and 1993. It is apparent that, for Canada as a whole, workers who earn minimum wage make up a small portion of all paid workers in both years. The data are taken from two studies that examined the incidence of low-wage workers in Canada in 1986 and 1993, and some caution should be exercised because the authors define workers earning minimum wage in slightly different ways. Akyeampong (1989) defines anyone who worked for less than \$4.00 per hour in 1986 as a worker earning minimum wage. In contrast, Fortin and Lemieux (1997) define anyone who worked within 25 cents of their provincial minimum wage in 1993 as a worker earning minimum wage. While these differences in measurement may limit comparability across years, it still seems fair to say that the share of workers earning minimum wage in Canada (however defined) is probably less than 10 percent of the labour force.

11 See Wilson (1998) for evidence on the incidence of the minimum wage in the United States.

Table 1: Geographical Incidence of Workers Earning Minimum Wage

Geographic Region	Incidence Rate (1986)	Incidence Rate (1993)
Canada	9%	6%
Newfoundland	11%	11.5%
Prince Edward Island	14%	7.8%
Nova Scotia	11%	6.3%
New Brunswick	14%	7.3%
Quebec	8%	6.7%
Ontario	8%	5%
Manitoba	7%	8.3%
Saskatchewan	4%	9.5%
Alberta	9%	4.7%
British Columbia	10%	5.7%

Source: Table 3 in Akyeampong (1989) and table 3 in Fortin and Lemieux (1997).

In other words, the vast majority of workers in Canada earns more than the minimum wage and hence cannot be classified as working for minimum wage.

Table 1 also reveals that there is substantial variation across provinces in the incidence of workers earning minimum wage. Incidence in the Atlantic provinces is consistently higher than most other provinces in both sample years and, in both years, the incidence of workers earning minimum wage was fairly low in Ontario and in Quebec. There has been some change in the incidence of workers earning minimum wage in the Western provinces: while the percentage in British Columbia and Alberta was fairly high in 1986, it had fallen

considerably for both provinces by 1993. In Saskatchewan and Manitoba, meanwhile, the incidence of workers earning minimum wage rose between the two sample years. The differences among the provinces likely reflects the considerable regional differences in labour-force participation rates, provincial minimum-wage rates, and regional economic activity.

Age, sex, education, and occupation of workers earning minimum wage

Workers who earn minimum wage are primarily young workers. This is shown in table 2. In this table, taken from Fortin and Lemieux, the incidence rate is calculated as the percentage of hours worked by workers earning minimum wage in 1988 and 1995. The majority of men earning minimum wage tends to be young (24 years or younger) in both sample years while almost one-half of the women earning minimum wage are 24 years or younger. Not surprisingly, the majority both of men and of women earning minimum wage have a high school education or less.¹² In 1995, only 6.7 percent of men, and 4.3 percent of women, who earned minimum wage had a university degree (3.3 percent and 5 percent, respectively, in 1988). The increase in the percentage of men with a university degree who were earning minimum wage over the two sample periods perhaps reflects the relative decline in male earnings, even after controlling for education, that has been found by Beaudry and Green (1997). In contrast, over 36 percent of both men and women earning minimum wage had dropped out of high school. This accords with the results from Statistics Canada's 1991 School Leaver's Survey, which found that those who had dropped out of high school tended to have poorer labour-market outcomes than those who stayed in school (see Gilbert 1993).

12 These results are precisely what one would expect. It is a well-established empirical fact that better educated workers earn higher incomes (using years of schooling as a proxy for education levels).

Category	1988 Male	1988 Female	1995 Male	1995 Female
Age group:				
Young (<24)	72.4%	57.7%	59.0%	46.3%
Old (>24)	27.7%	42.2%	41.0%	53.6%
Education:				
Dropout	56.4%	48.8%	36.3%	36.7%
High school graduate	24.3%	28.3%	24.3%	26.1%
College or trade	4.2%	7.4%	18.5%	19.0%
University graduate	3.3%	5.0%	6.7%	4.3%
Occupation:				
Professionals, managers, technicians	11.8%	12.4%	5.6%	5.0%
Clerical	8.9%	20.4%	8.9%	19.3%
Sales	17.4%	20.6%	16.4%	23.8%
Services	31.3%	36.0%	38.2%	39.8%
Crafts	10.8%	5.1%	13.2%	7.8%
Labourers	12.9%	3.4%	13.7%	3.5%
Primary sector	6.6%	1.0%	4.0%	0.9%
Source: Lemieux and Fortin 1997; table 2.				

Table 2 also shows the incidence of workers who earn minimum wage by occupation. As one might expect, a large portion of men and women earning minimum wage were employed in clerical, sales, and service jobs (service jobs include work in the accommodation, food and beverage, and personal service sectors). This accords well with the popular conception of what constitutes a minimum wage job. In 1995, 63.5 percent of men,

and 82.9 percent of women, earning minimum wage were employed in these occupations. In contrast, fewer than 6 percent of the men and women earning minimum wage were employed as professionals, managers, and technicians.

A more disaggregated approach

Table 3 presents a more disaggregated look at the characteristics of those earning minimum wage. As discovered earlier, men who are classified as minimum-wage earners are disproportionately young. While male youths from 16 to 23 years of age comprised only 15 percent of all male workers, they made up roughly 70 percent of those earning minimum wage. Hence, the direct impacts of changes in the minimum wage on the male labour force are mostly likely to be felt by the young.

Men with low levels of education are also well-represented among the ranks of those earning minimum wage. In 1993, 37 percent of male workers had attained a high-school diploma or less. However, those with a high-school education or less accounted for nearly 50 percent of those earning minimum wage. In contrast, only 15.4 percent of men earning minimum wage had a college, trade-school, or university education, even though men with these qualifications composed well over 40 percent of male workers.

Some interesting family characteristics of men earning minimum wage are also provided in table 3. The data reveal that 78.3 percent of young men earning minimum wage were living at home with their parents. Since young males between the ages of 16 and 23 constituted 70.8 percent of all those earning minimum wage, it follows that 55.4 percent of all men earning minimum wage

Table 3: Distribution of Male Workers Earning Minimum Wage in 1993

	Percentage of all working men	Percentage of men earning minimum wage
Male share	52.3%	37.3%
Age group:		
16-18	4.5%	29.3%
19-23	10.4%	41.5%
24-63	83.7%	29.2%
Education:		
Dropout	22.0%	33.6%
High school	15.0%	15.5%
Some post-secondary	15.5%	35.5%
College or trade	32.1%	10.1%
University graduate	15.4%	5.3%
Family situation		
Youth (16-23):		
Living alone	11.3%	7.8%
Head/husband	6.1%	2.2%
Living with parents	50.2%	60.4%
Living with lone parent	14.6%	17.9%
Unidentified	17.8%	11.7%
Older (24-63):		
Living alone	12.7%	22.3%
Husband without kids	19.8%	13.7%
Husband with kids	49.2%	28.4%
Lone father	1.6%	1.4%
Unidentified	16.6%	34.3%
Source: Fortin and Lemieux 1997; table 4.		

were living at home with their parents. The remaining 44.6 percent were young men living alone, young men whose family status was unidentified, or older men of various family status. It is worth noting that 43.5 percent of the older men earning minimum wage were identified as husbands with or without children or as single fathers. Since older men only constitute 29.2 percent of all workers earning minimum wage, older men with dependents only composed 12.7 percent of all workers earning minimum wage. Hence, the image one takes away of the “average” worker earning minimum wage is that of a young man living at home with his parents.

Table 4 presents disaggregated statistics on the age, education, and family status of women earning minimum wages. Women are disproportionately represented among workers earning minimum wage. Although women account for almost 50 percent of the working population, they take over 60 percent of all minimum-wage jobs. Furthermore, young women are well represented among the ranks of female workers earning minimum wage: 55.5 percent of all women working for low wages were between the ages of 16 and 23 even though the 16-to-23 age group only accounted for 16.7 percent of all female workers. Unsurprisingly, women with university education were least likely to be paid minimum wages: only 4.5 percent of all women earning minimum wage had completed a university degree.

Information on the family status of workers earning minimum wage is also provided in table 4. Nearly 60 percent of young women earning minimum wage were identified as living at home with parents. Since 55.5 percent of all women earning minimum wage were classified as young, 33.3 percent of all women working for minimum wage (independent of age) were living at home. Meanwhile, only 9.2 percent of young women working for minimum

Table 4. Distribution of Female Workers Earning Minimum Wage in 1993

	Percentage of all working women	Percentage of all working women earning minimum wage
Female share	47.7%	63.7%
Age group:		
16-18	4.4%	23.0%
19-23	12.3%	32.5%
24-63	83.3%	44.5%
Education:		
Dropout	16.1%	29.0%
High school	16.6%	18.6%
Some post secondary	15.7%	25.4%
College or trade	37.0%	22.6%
University degree	14.7%	4.5%
Family situation:		
Youth (16-23)	16.7%	55.5%
Living alone	11.6%	9.2%
Head/wife	14.2%	7.4%
Living with parent	45.0%	47.7%
Living with lone parent	11.0%	12.2%
Unidentified	18.2%	23.0%
Older: (24-63)		
Living alone	13.1%	12.1%
Wife without kids	20.1%	21.2%
Wife with kids	46.0%	21.2%
Lone mother	6.6%	10.0%
Unidentified	14.2%	16.0%
Source: Fortin and Lemieux (1997): table 5.		

wage lived alone; hence, only 5.1 percent of all women working for minimum wage were young women living on their own.

Older women are more heavily represented than older men among those of their sex earning minimum wage: 44.5 percent of women working for minimum wage were between 24 and 63 years of age. Furthermore, 42.4 percent of older women earning minimum wage were identified as wives with or without children. These women make up 18.87 percent of all women working for minimum wage. Conversely, only 22.1 percent of older women earning minimum wage were classified as living alone or as single parents. Expressed as a proportion of all women working for minimum wage, this statistic falls to 9.83 percent. In other words, relatively few older women earning minimum wage could be classified as either single women living alone or single parents.

Other characteristics of low-wage employment

Tables 5 and 6 provide additional information about the characteristics of employment at minimum wage from the 1986 *Labour Market Activity Survey*. Table 5 presents information on coverage of jobs by union contracts and minimum-wage employment in 1986. Not surprisingly, while jobs covered by union contracts constituted 34 percent of all paid employment in 1986, only 6 percent of minimum-wage positions were occupied by a worker who had employment covered by a union contract. Furthermore, while 17 percent of all covered employment went to young workers aged 16 to 24, young workers in covered employment occupied only 4 percent of

Table 5: Coverage by Union Contract and Incidence of Employment at Minimum Wage

Age group	All paid employment	Incidence of employment at minimum wage
All ages (16-69)	34%	6%
Youth (16-24)	17%	4%
Older (25-69)	41%	10%
Source: Akyeampong 1989: table 10.		

minimum-wage positions. Hence, the majority of young workers earning minimum wage are “outsiders” and do not fall within the union establishment.

The data displayed in table 6 show that the incidence of employment at minimum wage is larger in smaller firms than in larger firms (the total number of employees measures firm size). Furthermore, the incidence of work at minimum wage is highest among jobs of fairly short duration. This is not surprising considering that a large proportion of employment at minimum wage is directed to students seeking summer work.

Hence, the data seem to support popular *a priori* beliefs about the characteristics of jobs offering

Table 6: Incidence of Employment at Minimum Wage by Firm Size and by Job Duration

Establishment size	Minimum-wage incidence rate
Total	8%
19 persons or less	13%
20-99 persons	7%
100-499 persons	3%
500 or more persons	2%
Job duration	
Total	8%
Under 4 weeks	16%
4-13 weeks	16%
14-26 weeks	12%
27-51 weeks	8%
52-53 weeks	3%
Source: Akyeampong (1989): table 9.	

minimum wage. According to the *1986 Survey of Labour Market Activity*, the incidence of employment at minimum wage was highest in short-term employment and among smaller firms. Furthermore, relatively few positions at minimum wage were covered by a union contract.

Part 3: Policy Implications: The Minimum Wage as a Redistributive Tool

Traditionally, economists have opposed the use of legally sanctioned minimum wages as an instrument for redistributing income on grounds that it is a relatively inefficient way to re-direct resources to those in need. According to the standard argument, workers earning minimum wage are young and unskilled but not necessarily poor. The empirical evidence presented above strongly supports the view that increases in the minimum wage reduce employment opportunities for these groups and transfer very little income to the poor. In the past, most economists have argued that a far better way to transfer income to the needy would be through direct cash subsidies via the tax system rather than by imposing a price floor that may distort the workings of the labour market.

Recently, however, this consensus about the economic effects of minimum wages and about the desirability of an increase in minimum wages has come under attack. As we saw, David Card and Alan Krueger (1995) present evidence purporting to show that increases in the minimum wage in the United States have not resulted in significant employment losses and that increases in the minimum wage have, in some cases, increased employment. In light of this evidence, many analysts have expressed renewed interest in the potential for the minimum wage to become a viable redistributive instrument (see, for instance, Freeman 1995). Indeed, recent increases in the American federal minimum wage were partly justified on the weight of evidence provided by Card and Krueger.

I have already discussed the problems with Card and Kreuger's findings. To advance the discussion, I want to evaluate, on the basis of our evidence about who works at minimum wage, the proposition that increases in the minimum wage

would successfully redistribute income to those most in need. To facilitate this discussion, I assume that increases in the minimum wage will produce no unemployment. This will enable us to discern the likely effects upon income distribution of an increase in the minimum wage under a "best case" scenario.

As noted earlier, the largest portion of low waged workers is made up of young people between the ages of 16 and 24 who live at home with their parents. While the household income of these individuals is not available, it does seem fair to infer that most of these individuals do not rely on income from their own labour as their primary source of support. Given that these individuals live at home, they are most likely dependents and, hence, are not in need. Indeed, the data suggests that relatively few low waged workers are from those groups that fall under the general rubric "needy." A very small percentage of men working for low wages are drawn from those who live alone or who are the single supporter of children. While female workers of varying ages are fairly well represented among low-wage workers, very few live alone or are single supporters of children. The main beneficiaries of a minimum wage increase are therefore not those most in need of a pay increase.

In fact, the international evidence supports the view that "relatively few low-paid workers live in low-income households, and relatively few low-income households have low-paid workers" (*The Economist* 1998: 80). Even if a minimum wage has no disemployment effects, it will be effective in reducing poverty only if a large portion of poor families have poorly paid workers. According to the OECD (1998), most poorly paid workers have well-paid partners or affluent parents. For instance, in America only 33 percent of those who

earn less than two-thirds the median wage live in families with incomes less than half the national median. In the United Kingdom, only 10 percent of those working for low wages are in low-income households. In Ireland, this figure is a mere 3 percent. Hence, OECD researchers conclude that minimum wages have almost no effect when it comes to reducing inequality and poverty among households.¹³

Indeed, an increase in the minimum wage could potentially have a perverse effect on the distribution of income across households. Even under the assumption that an increase in the minimum wage does not increase unemployment, most of the pay increase resulting from such a policy would in fact accrue to younger workers living at home. Given that these individuals have access to resources above and beyond their labour income (since they may be partly supported by their parents), the effect of a minimum wage increase is to transfer resources to those who are relatively well off. Additionally, to the extent that the hike in the minimum wage raises the prices of goods that are consumed by the less wealthy, a minimum wage increase will make the needy even worse off. Table 2 reveals that a large proportion of workers earning minimum wage is employed in the service and sales sectors (e.g., jobs in the retail, food and beverage, accommodation, and personal services industries). Consumption expenditures of lower income individuals are focused on many of these industries. Hence, if an increase in the minimum wage raises the prices of the goods produced by these industries, then the real incomes of the needy may even decline. This point is made most emphatically by economist Donald Deere:

To add insult to injury for low-income families, the minimum wage increases the cost of the goods and services produced with low-wage labor—goods and services that are purchased disproportionately by low-income families. Almost one-half of all low-wage workers are employed in the retail sector, which means, for example, that part of what an increase in the minimum wage does is take money from the pockets of the people in front of the McDonald's counter to put in the pockets of the people behind the McDonald's counter. (Deere 1998: 2-3)

Thus, there are reasons to be skeptical about the claim that a minimum wage increase can be used as an efficient instrument of redistribution to those who are less well off, even under the generous assumption that there are no disemployment effects resulting from the minimum wage hike. The typical minimum wage worker in Canada is young and lives at home. Older workers earning minimum wage are generally not the only income earners in their households. Nor do they tend to have dependents. The minimum wage is therefore a very blunt and ineffective instrument for redistributing income to the needy.¹⁴ Indeed, increases in the minimum wage could leave the poor even worse off if the effect of the minimum wage increase is to raise the real prices of goods that the poor consume. In this scenario, the effect of an increase in the minimum wage on the distribution of income is very regressive.

Fortin and Lemieux (1997) examine the redistributive impacts of minimum wages in Canada. They find that the minimum wage has a significant impact on the shape of the bottom end of the income distribution. As part of their study, Fortin and Lemieux also compare the redistributive impact of

13 The evidence from the United States suggests that low-income families have low incomes not because of low wages but rather because of no wages. According to Deere (1998), 65 percent of Americans in families with less than \$10,000 in annual income do not have a job. Deere attributes this to the fact that people in low-income families tend to have few skills. In America, over 40 percent of adults in low-income families never graduated from high school.

14 Deepak Lal (1995) also argues that the minimum wage is a very inefficient redistributive tool.

the minimum wage relative to other government transfer programs and find that the minimum wage constitutes a relatively small “transfer program”: total earnings at minimum wage are equivalent to only one-third of total social assistance payments and one-fifth of total unemployment insurance payments. Fortin and Lemieux therefore conclude that “the redistributive impact of the minimum wage is modest relative to other transfer programs” (1997: 25). Hence, the overall sense one takes from their study is that the minimum wage affects the distribution of income in a desirable way but only modestly. Fortin and Lemieux conjecture that the relative importance of the minimum wage (as a “transfer program”) may increase in years to come as the size of other government transfer programs decreases.

In my opinion, the conclusions of Fortin and Lemieux are uncertain at best. Their results do not

incorporate the potential effects of the minimum wage upon output prices and so the net effects of an increase in the minimum wage upon the real incomes of those who are less well off are uncertain. Furthermore, even if the minimum wage increase does redistribute income in the desired direction, Fortin and Lemieux have not established that this would be the most efficient way of doing so. Given that an increase in the minimum wage is likely to have some negative employment effects, an increase in the minimum wage may be a very expensive way to achieve a “modest” improvement in the distribution of income, particularly since a large portion of the increase in earnings due to a minimum wage will be directed to young workers who live at home. Hence, the desirability of using the minimum wage as an instrument for redistribution remains questionable at best.

Conclusion

Both economic theory and empirical evidence support the broad conclusion that increases in the minimum wage reduce employment. Most empirical studies from Canada and the United States show that increases in the minimum wage have small but significant disemployment effects for young and unskilled workers. Other empirical and theoretical studies suggest that increases in the minimum wage induce other adverse affects, including reduced on-the-job training, fewer fringe benefits, higher school dropout rates, and reduced rates of human capital formation. Thus, in spite of some recent empirical evidence to the contrary, it appears that increases in the minimum wage have many negative economic effects, most of which are experienced by the young and the unskilled.

A commonly held view among politicians and

the public is that increases in the minimum wage can have desirable effects on the distribution of income. To address this issue, I overview of the incidence of the minimum wage in Canada and the characteristics of workers earning minimum wage. It is found that workers earning minimum wage are disproportionately young, disproportionately female, and generally have fairly low levels of education. Furthermore, workers earning minimum wage are generally employed in sales and services sectors. Jobs at minimum wage tend to be of short duration and are generally supplied by smaller firms. Closer examination of the data provided by Fortin and Lemieux (1997) also reveals that a large proportion of workers earning minimum wage in Canada are young individuals living at home. Relatively few workers earning minimum wage in Canada can be classified as “needy” under conventional norms.

In light of these findings, it seems doubtful that increasing minimum wages in Canada will significantly improve the distribution of income. The poor are not particularly well represented among minimum wage earners. Increasing the minimum wage will likely redistribute resources towards young individuals who live at home. There does not appear to be a need to enhance the wealth of these groups, given that they are partially supported by their parents. Indeed, if raising the minimum wage results in higher prices for goods that are consumed by the genuinely

poor, then they are made worse off by an increase in the minimum wage. Hence, it is possible to mount very good arguments against higher minimum wages, even under the generous but questionable assumption that the minimum wage has no disemployment effects. Relaxing this assumption and incorporating the likely disemployment effects of higher minimum wages into the analysis makes the case against an increase in the minimum wage even stronger.

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About the Author

MARC T. LAW is a Ph.D. candidate in economics at Washington University in St. Louis, Missouri. He holds a B.A. (Honours) in Economics from the University of British Columbia and an M.A. in Economics from Queen's University in Kingston, Ontario. Until July 1998, he was a research economist with The Fraser Institute. He is the co-author of a number of Fraser Institute studies including *Bank Mergers: The Rational Consolidation of Banking in Canada*; *Debunking the Myths: A Review of the FTA and NAFTA*; *Is There A Youth Unemployment Crisis?*; *The Harris Government: A Mid-Term Review*; and *The Federal Liberal Government In Action: A Report Card Issued to the Chrétien Government*.