The Employment Effects of Minimum Wages in Canada and the U.S.

Evan Brander

This paper presents a literature review of the Canadian and American evidence on the effects of the minimum wage on employment levels. According to classical economic theory, when a wage floor is imposed on a market, employment levels should decline. An influential body of literature challenged this view and posited that minimum wages have no negative impact on employment or even a slightly positive impact. While statistical studies in the U.S. have shown that minimum wages have a very small impact on employment, evidence in Canada is mixed. Policy implications of the Canadian findings are assessed.

Introduction
The effect of minimum wages on levels of employment is a subject of great debate. According to classical economic theory, a wage floor should reduce employment levels. A minimum wage should reduce employment amongst those working for low-wages. A competing body of literature has argued that minimum wages cause no decrease in employment levels. Some studies have even suggested that increasing a minimum wage could cause employment levels to rise. This debate has great policy implications in Canada, where many provinces have recently raised minimum wages in an effort to reduce poverty. If classical theory is correct, increases in the minimum wage may have helped low-wage workers who managed to keep their jobs but hurt many more who lost jobs as a result of the policy. If the competing view holds, then recent minimum wage legislation might have had an unambiguously positive impact on Canada’s low-wage workers. This paper begins with an overview of the theoretical literature on employment effects of minimum wages in a number of different national contexts. Next, evidence on the employment effects of minimum wages in the Canadian labour market will be reviewed. Finally, policy implications of the Canadian findings will be discussed.

Evan Brander is a 2014 Master of Public Policy Candidate at the School of Public Policy and Governance. He also holds an Honours Bachelor of Arts in History and Economics from Queen’s University. His research interests include economic policy, unemployment and underemployment, and environmental economics. Prior to entering the School of Public Policy and Governance, Evan worked for the Ontario Ministry of Natural Resources as a park naturalist.
The traditional view of the employment effect of the minimum wage was articulated in George Stigler’s classic 1946 study. According to Stigler, there is a direct relationship between minimum wages and unemployment. The effects of the minimum wage on aggregate employment are substantial and negative (Stigler 1946, 361). According to a basic supply and demand model of the labour market, a competitive market sets equilibrium wage rates where workers earn their own marginal product. A minimum wage acts as an artificial price floor, raising the earnings of low-wage workers. Firms will not be willing to employ as many workers at newly increased wage rates, as this would mean paying workers more than their marginal product. In the face of a minimum wage increase, low-wage workers will either have to raise their productivity so that the value of their marginal product matches the new wage rate, or else they will be laid off (Stigler 1946, 358).

Later quantitative studies upheld the theory put forward by Stigler. H.M. Douty’s survey of the effects of a $0.25 increase in the American minimum wage in 1956 showed a decline in employment after the new minimum wage law went into effect (Douty 1960, 145). He found that firms that had the largest proportion of low-wage workers saw the largest negative employment effects of the wage legislation. Though Douty showed a strong correlation between minimum wage laws and negative employment effects, he acknowledged that it was difficult to “disentangle the wage factor from other factors affecting the level of employment in the industries concerned” (Ibid.). In an era of high economic turbulence, it was difficult to separate the effects of minimum wages from many other factors affecting the labour market. While the traditional view was clear on the effects of minimum wages on aggregate employment, their impact on the unemployment rate was seen to be more ambiguous. While unemployment may rise from employers laying off workers, other outcomes could also emerge. Firms that planned to hire more workers may forgo hiring and maintain their original level of employment. Workplaces may reduce the size of their workforce gradually through attrition as employees retire. Workers may be offered fewer paid hours so that employment numbers remain the same but underemployment rises (Brown et al. 1982, 488).

More sophisticated models of the impact of minimum wages on employment have been developed. In subsequent decades, Harry G. Johnson developed a general equilibrium model to show the effects of a minimum wage on an economy with two industries. He found that under the right conditions, a minimum wage applied to one sector of the economy could yield a result where all workers benefit (Johnson 1969, 602). However, if the minimum wage is applied to all workers in the economy, the effect on employment is unambiguously negative (Johnson 1969, 603). Workers able to retain employment at the newly increased rate would see the benefits of the minimum wage, but many low-wage workers would become unemployed as a result of the legislation.
Minimum wages were generally viewed in a negative light for a variety of different reasons, including exacerbating regional employment disparities. In areas where there were many low-wage workers, the unemployment rate rose considerably as a result of a minimum wage increase, putting them at a disadvantage relative to other regions in the same economy (Douty 1960, 138). Minimum wages may push workers into the informal sector of the economy, where their work would be unregulated and wages potentially very low (Stigler 1946, 359).

Beginning in the 1980s, a group of economists began to take a very different view of minimum wage legislation. David Card and Alan Krueger wrote an influential case study of the New Jersey fast food industry in which they questioned the classical economic assumptions about minimum wage rates in a competitive market. Their study tracked the employment levels of 410 fast food restaurants in New Jersey before and after the implementation of a state minimum wage increase in 1992. The findings from New Jersey were compared to results from Pennsylvania where the state minimum wage held constant over the same period. The study revealed the surprising result that after a minimum wage increase, instead of seeing reduced employment, workers most affected by the change saw an increase in employment levels (Card and Krueger 1993). This result was especially surprising due to the fact that the minimum wage increase came during a period of economic recession.

The authors came up with several explanations to try to explain this result. They hypothesized that there could have been an increase in the proportion of full-time workers at the expense of part-time jobs, since full-time workers tend to be more productive. The regression revealed no significant shift in employment composition, however (Card and Krueger 1993, 22). They tested for levels of fringe benefits received by workers (for example, free or reduced price meals), predicting that wage increases could have been offset by a reduction in fringe benefits. The study actually showed an increase in fringe benefits, though this result was not statistically significant (Card and Krueger 1993, 25). The study did show that prices rose to a higher level in New Jersey restaurants than those in the control group in Pennsylvania. However, there was no evidence that prices rose more in restaurants that were most affected by the wage increase. This suggests that price increases did not come as a result of firms trying to pass costs onto consumers. Card and Krueger’s study also revealed an increase in the number of restaurant openings despite the increase in minimum wages.

Further studies corroborated Card and Krueger’s findings. Katz and Krueger studied the impact of a minimum wage increase on the Texas fast food industry. They found a slight positive correlation between wages and employment. In their study, the proportion of full-time workers increased and the proportion of part-time workers employed by the restaurants fell (Katz and Krueger 1992, 16). Card’s 1992 study of an increase in the state minimum wages.
wage in California showed no decrease in employment in the retail sector and amongst teenage workers following the wage increase (Card 1992). Machin and Manning studied the impact of the wages councils on employment in the UK, which set industry specific minimum wages during the 1980s. The authors created a measure of “toughness” of the wage councils’ mandated minimums. Toughness captured how high the industry minimum wages were and how strictly they were followed (Ibid., 321). They found that toughness was positively correlated with employment in many of the large wage councils in Britain (Machin and Manning 1994, 325). All of these findings suggest that Card and Krueger’s initial results were not anomalous, and not unique to one jurisdiction or industry, as similar results were observed in different industries elsewhere in the US and in the UK.

Though the measured positive impact of minimum wages on employment levels may have been due to a statistical discrepancy, several explanations have been put forward for why minimum wages would have no impact on employment. Authors have suggested that large firms may have monopsony power, which gives them the ability to set wages below the equilibrium level determined by the supply of labour and private demand for workers (Kennan 1995, 1952). Markets with monopsony power have one buyer with many sellers. There is enough competition in the labour market that firms are able to hire the number of workers they need at a lower wage rate than workers should receive based on their productivity. If a minimum wage rate increases the wages such firms have to pay workers, it simply pushes wages up closer to the marginal productivity of workers and it is still profitable for firms to maintain their initial level of employment.

A second argument for explaining the results of these studies is the “shock effect.” According to this theory, firms are willing to retain the same number of workers as long as the marginal product of labour increases to keep up with the new wage rate (Brown et al. 1982, 489). Workers will all have to raise their productivity levels to keep their jobs at the new wage rate. There is evidence to suggest that the shock effect may have occurred in some instances of minimum wage increases. Katz and Krueger found that the proportion of full-time workers increased in the Texas fast food industry with an increase in minimum wages (Katz and Krueger 1992, 16). This change usually takes place due to the higher productivity levels of full-time employees relative to part-time workers. The other mechanism through which the shock effect can work comes from the increased supply of labour at the higher wage rate. Since more workers will be willing to supply labour to firms at higher wage rates, employers can demand greater productivity from workers.

**Minimum wages in Canada**

The first provincial minimum wages in Canada were introduced in British Columbia and Manitoba in 1918. Most other provinces followed, introducing similar legislation throughout the 1920s. Minimum wages initially applied only to women’s work, to protect women from
exploitative working conditions. Laws were changed in most provinces in the 1930s to expand minimum wage coverage to include men. Different wage rates were established for men and women, with men receiving higher wages. Legislation was based on a male breadwinner model, where men earned wages to support a family. Women earned lower wages based on the rationale that working women were likely single with no dependents to support (Goldberg and Green 1999, 3). Minimum wages were set at levels that would guarantee subsistence living.

In the 1960s and 1970s, minimum wages rose to guarantee that a single, full-time minimum wage earner would be above the poverty line. In 1976, BC’s minimum wage rose to 113% of the low-income cut off line (LICO), Statistics Canada’s measure of the poverty line in Canada (Goldberg and Green 1999, 11). During the 1980s, Canadian minimum wages stagnated. In real terms, the after-inflation wage rate fell in all provinces. The BC minimum wage reached a low point in 1987, when it was equal to just 63% of the province’s LICO (Goldberg and Green 1999, 11). In real terms, minimum wages remained well below 1970s levels until the early 2000s.

In recent years, the trend of declining real minimum wages has reversed. During the last decade, Canadian real minimum wages have increased at an average of 14.5% (Battle 2011, 2). Although real minimum wages are still slightly below the peak levels of the mid 1970s, they have risen considerably in all provinces. Since there is no national standard for minimum wages, rates vary between provinces. They are lowest in BC at $8 per hour and highest in Nunavut at $11 per hour. In 2010, full-time minimum wage earnings were equal to 43.8% of national average earnings in Canada (Battle 2011, 2). Though minimum wages have been rising steadily in most provinces for the past decade, they are not indexed, meaning that they do not automatically rise to keep up with inflation. Changes to the minimum wage are made through sporadic acts of government legislation and are not guaranteed to occur at regular intervals. Minimum wages can be frozen for years at a time, as was seen in BC from 2002 to 2011.

Recent increases in minimum wages in many provinces came as a result of plans set in place to reduce poverty. Minimum wage raises were often implemented in conjunction with expansions in job retraining programs or housing assistance programs. Despite the goal of reducing poverty through minimum wages, current wage rates are not high enough to raise a full-time worker above the poverty line. Ontario has the second highest minimum wage rate in Canada, yet a full-time minimum wage worker in Toronto would earn 33% below the poverty line (HRSDC 2012). Full-time minimum wage workers in small towns in Ontario earn 15% below the poverty line (HRSDC 2012). Minimum wage rates would have to be increased further to achieve provincial goals of reducing poverty amongst minimum wage earners.
Before minimum wages are potentially increased in Canada, it is important to understand the impact such a change would have on employment levels. If raising the minimum wage were to cause a decline in low-wage employment, the change could be counterproductive. Instead of raising the earnings of low-income Canadians, the wage increase could cost some of them their jobs. The next section will assess the evidence on the employment effects of minimum wages in Canada in order to address the question of whether a minimum wage increase would help or hurt low-income Canadians and the Canadian economy.

Employment effects of minimum wages in Canada

According to the body of literature reviewed earlier, minimum wages should have almost no effect on employment levels in Canada. However, there are several major differences between Canadian and American labour markets that could lead to different results in Canada than those observed in U.S. studies. The proportion of workers earning minimum wage in Canada and the U.S. is very different. In 2009 in Canada, about 5.8% of the total workforce earned the minimum wage (Statistics Canada 2010). In the U.S., data from 2006 shows that in that year, 2.2% of all wage earners earned minimum wage or less (Bureau of Labor Statistics 2007). This represents about 1.12% of the overall American labour force. Since the proportion of Canadian workers earning minimum wage is much higher, one would expect the employment effects of a minimum wage change to be much more pronounced in Canadian data. Minimum wage rates are very different in Canada and the US. The current federal minimum wage in the U.S. is $7.25 per hour. Even after adjusting for the exchange rate and purchasing power, provincial minimum wages in Canada are higher. The effect of a change in the minimum wage might be greater when the initial wage rate is higher.

Differences in research design between the two countries could yield different results. In designing a study to measure the impact of a change in minimum wage on employment levels, the most common study design used is a natural experiment where low-wage workers affected by the wage change are compared against some other unaffected group. Michele Campolieti et al. argue that many American studies were likely biased by their choice of control groups. They note that in the US, there is little variation in minimum wages between states, since most follow the federal minimum wage rate. Because of this, American researchers often have to compare low-wage workers with high-wage workers as a control group not affected by a change in minimum wage (Campolieti et al. 2005, 82). High-wage workers are likely to be different from low-wage workers in ways that cannot be controlled for in statistical studies, thus biasing results. In Canada, researchers do not face this problem since minimum wage rates vary between provinces. Low-wage workers can be compared between provinces where a minimum wage is set to rise and those where the minimum wage rate is not being changed (Campolieti et al. 2005, 83). Because of this, Canadian data might show a more accurate picture of the impact of minimum wages than American data.
Canadian data shows mixed results for the employment effects of minimum wages. Goldberg and Green sought to measure the employment effects of past minimum wage increases in four provinces: Ontario, BC, Alberta and Quebec. In order to do this, they determined the employment-to-population ratio for all age segments within the working age population. This is a measure of the number of employed people in a given age/gender category divided by the total number of people in that category (Goldberg and Green 1999, 12). The authors measured the employment to population ratio in the periods before and after a large change in the provincial minimum wage. In Ontario, a large minimum wage increase was implemented in 1984. After the wage level was increased, there was an increase in the employment to population ratio for all segments of the workforce (Ibid., 15). After a 1994 increase in the minimum wage in Alberta, the authors observed an increase in the employment ratio for male workers aged 20-54 and for all female workers except those aged 15-19 (Ibid., 14). A 1996 wage increase in Quebec was associated with an increase in employment for male and female workers aged 15-19 and 25-54 (Ibid., 16).

The method employed by Goldberg and Green is flawed in that it simply shows the employment changes that took place at the same time as a minimum wage change. This does not show the change in employment directly caused by the minimum wage. Much of the increase in employment seen after an increase in provincial minimum wages probably came as a result of an upward swing in the business cycle. However, the results do show that a minimum wage increase was not associated with a large drop in employment in any province. Whether employment ratios would have risen further in the absence of a minimum wage change cannot be ascertained using this method.

Many studies on the employment effects of minimum wages in Canada have focused on young workers in their teenage years and twenties. In this age bracket, a large proportion of the workforce earns low-wages that are likely to be impacted by minimum wage policy. The effects of a minimum wage increase should be more dramatic for young workers than for the workforce as a whole. If a rise in the minimum wage rate causes a decrease in employment, this change should be seen most acutely in the youth demographic in the labour force.

Campolieti, Gunderson and Riddel believe that part of the reason for major discrepancies between the results of American studies was a publication and author bias. They suggest that American researchers developed statistical methodologies that would yield results favourable to either their own beliefs or the beliefs of the journals publishing their articles (Campolieti et al. 2006, 195). To arrive at an unbiased estimate of the employment effects of the minimum wage on youth employment, the authors developed a model in advance and ran data through their regression. By comparing a group of low-wage workers affected by a minimum wage change with a similar group of low-wage workers not affected by wage changes, the authors were able to observe employment effects. After controlling for
differences in skills between workers and duration of work, the authors arrived at an overall estimate of minimum wage employment effects on youth. They found that the minimum wage elasticity of all youth workers combined was -0.265 (Campolieti et al. 2006, 205). This means that a 10% increase in the minimum wage rate would cause a 2.65% decrease in youth employment levels. This is a much larger decrease in employment than was predicted in many American studies, suggesting that there are structural differences between the low-wage job market in Canada and the US or significantly different results from methodological differences.

Terence Yuen cautions against treating young workers as one homogenous group in the labour force. He found that minimum wages have different employment effects on different segments of the youth labour market. Yuen studied the impact of the minimum wage increase on “at risk” youth. These are the workers between the age of 16 and 24 who initially had wages between the original minimum wage and the new rate. He divided this group of workers directly affected by the wage increase into two age categories: 16-19 and 20-24. The study found that at risk youth between the ages of 16 and 19 saw a 6% decrease in employment caused by an 8.4% rise in the minimum wage rate (Yuen 2003, 660). Workers between the ages of 20 and 24 saw a larger decrease in employment of 10% caused by an 8.4% increase in the minimum wage rate (Yuen 2003, 660). These are considerable negative effects resulting in a rise in unemployment. However, Yuen found that from a sample of 9,379 youth workers, only 9.5% of teens and 2.4% of young adults were defined as at risk (Yuen 2003, 651). Yuen also found that the employment effect of minimum wages depended not only on age of workers but also on the category of job held by young workers. Teenage workers holding transitory minimum wage jobs experienced almost no employment effect from a wage increase. An increase in the minimum wage caused almost no change in the number of short-term seasonal jobs held by young workers (Yuen 2003, 668). This could be because the productivity of these short-term workers is high enough to justify wages above minimum wage, but wages are depressed because many young workers are limited to a very short duration of work each year. Yuen found that young workers with long-term jobs saw a greater negative employment effect caused by an increase in the minimum wage.

Yuen’s findings suggest that the overall impact of a change in the minimum wage on youth employment rates is very limited but slightly negative. His study shows the importance of considering the impact of minimum wages on many different micro categories of workers. While the effects of a minimum wage change may be limited overall, there are clearly small segments of the youth work force that are disproportionately adversely affected.

Apart from simply reducing employment, some economists have suggested that minimum wages distort the labour market by causing a shift in the ratio of part-time to full-time work.
Full-time workers tend to earn higher wages than part-time workers and they are usually much more productive. An increase in the minimum wage could reduce employment among part-time workers more than full-time workers. McKee and West examined data on part-time and full-time minimum wage work in Canada. They found that an increase in the minimum wage caused a shift away from part-time workers and towards a smaller number of full-time workers (McKee and West 1984, 425). The authors note that a transition away from part-time workers could disproportionately hurt students working part-time jobs to pay for education. They cite American evidence that suggests a decline in part-time work was associated with a decline in post-secondary education participation rates (Ibid., 427). Part of the reason the decline in employment caused by minimum wages is so low could be a transition in the nature of low-wage work. A decrease in the proportion of part-time work relative to full-time work or an increase in underemployment could be caused by the minimum wage and would have a limited impact on overall employment levels.

Research suggests that the minimum wage rate could have an impact on the length of unemployment spells endured by those who lose jobs. Bernard Fortin and Guy Lacroix studied the impact of a number of variables, including minimum wage, on the duration of welfare claims made by Canadians. They found that an increase in the minimum wage increased the duration of welfare spells for young men and women (Fortin and Lacroix 1997, 16). Young men and women were less likely to find employment after a minimum wage increase, suggesting that the length of time young workers spend unemployed is increased by the minimum wage. Though a high minimum wage helps to lift many workers out of poverty, it makes those without jobs worse off.

Canadian evidence is not conclusive in determining an overall measure of the employment effect of minimum wages in Canada. The data shows that minimum wages are associated with a decline in employment levels for some segments of the workforce. The evidence suggests that overall, minimum wages have a slight depressing effect on Canadian employment levels. The results of the Canadian studies examined fall between the two schools of thought on American minimum wages. Minimum wages in Canada have had neither a positive effect on employment nor a large negative impact.

**Policy implications**

The slight negative employment effect of the minimum wage in Canada means that wage rates could be increased with only a limited adverse impact on a fraction of the population the policy is meant to assist. A high minimum wage above the low-income cut off line could help to reduce poverty and may cause only a small decrease in employment amongst low-wage workers. The job losses caused by the policy would likely be concentrated among young workers. Further policies could be implemented to offset the negative impact of the minimum wage on this demographic. Increasing funding opportunities for students who
lose part-time work as a result of the policy could ensure that access to post-secondary education does not decline. Job retraining policies or programs to aid interregional mobility could help to reduce the frictional unemployment caused by an increase in the minimum wage.

If the objective of a minimum wage is simply to raise wages overall and not to reduce poverty, the structure of the minimum wage law could be altered. Different minimum wages could be applied to different demographics within the labour force. This is already done in many provinces, where a “student minimum wage” applies to all workers below the age of 18. A two-tiered minimum wage with a lower rate for the most vulnerable workers could help mitigate the negative employment effects of the policy. The lower minimum wage rate could be extended to include workers between the ages of 20 and 24, who are the most vulnerable to employment losses from the minimum wage. This would not increase earnings amongst young workers, but would ensure that few lose jobs as a result of the policy.

Alternatively, differential industry-specific minimum wages could limit the negative employment effects of a minimum wage. Increasing the minimum wage in industries where firms are likely to have monopsony power would increase workers’ earnings without decreasing employment. According to Johnson’s general equilibrium model, a minimum wage law with industry-specific wage rates is the optimal policy option (Johnson 1969, 604). Such a policy could boost output in certain industries, while leaving others unaffected, thus improving the state of the economy as a whole.

Conclusion

Fierce theoretical debate has surrounded the extent that minimum wages reduce employment when they are imposed in an economy. American evidence has yielded a wide array of estimates, from a large negative impact to a small positive impact on unemployment. The consensus from studies of Canadian data is that minimum wages have a small negative impact on employment in Canada. Various authors describe the fact that minimum wages have a larger negative effect on employment within certain segments of the workforce than others. Young people tend to be disproportionately negatively affected by minimum wage increases. Given the small negative impact of minimum wages on the workforce as a whole, minimum wages could be raised within Canada as a more useful tool for reducing poverty.
References

