

## **A Short Summary of Research on Minimum Wage and Employment Effects**

The issue of the effect that increases in the minimum wage have on employment has been studied by many economists over the years. This is a short summary of some of that research.

A recently published study in the USA by Dube, Lester and Reich, "Minimum Wage Effects Across State Borders: Estimates Using Contiguous Counties", *The Review of Economics and Statistics*, November 2010, 92(4): 945–964 looked at low-wage workers over a 16-year period in all US counties sharing a common border with a county in another state with different minimum wage increases. They found that increases in minimum wages had no negative effects on low-wage employment.

Another relatively recent and large-scale minimum wage study is one in the US by Hristos Doucouliagos and T.D. Stanley, "Publication Selection Bias in Minimum-Wage Research? A Meta-Regression Analysis", *British Journal of Industrial Relations*, 47:2, June 2009, pp. 406-428. It re-analysed 64 US minimum-wage studies including 39 relating to teenagers and found not only bias in selection of published studies towards ones which show an adverse effect for employment, but once such effects were corrected for, positive effects between an increase in the minimum wage and employment.

These are just two examples.

The overall effects of a minimum wage on total employment depends on a number of factors, including the elasticity of labour supply to wages and to demand for labour, the reservation wages of those who do not find work in the sector covered by the minimum wage, and the relative size of this covered sector.<sup>1</sup>

The main empirical difficulty is to isolate the wage effects from other exogenous influences. For example, if the demand curve for labour is itself shifting, this is an additional influence on employment which has to be separated out.

Traditional economic theory would say that an increase in the minimum wage that leads to an increase in wages which does not correspond to an increase in productivity would reduce employment.

The purported negative effects of the minimum wage on employment result from the combination of two elements: a substitution effect and a scale effect.

The substitution effect means that firms could decide to use more capital than labour as the latter becomes more expensive and, secondly, they could substitute skilled-labour for unskilled-labour.

The scale effect is the result of a fall in sales due to cost increases, leading to a reduction in the use of both factors, capital and labour, including low-skilled labour.

A basic market model treats wages like any price and labour like any other commodity. It ignores the social or human dimension of selling and buying labour.

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<sup>1</sup> Youcef Ghellab, "Minimum Wages and Youth Unemployment", ILO, 1998.

Apart from common market problems such as asymmetric information about the “market” and the cost of negative externalities, there are other ways in which the labour market operates not related to wages (prices) e.g. quantity adjustments. The literature on why the labour market is different from other markets include explanations such as quantity-constrained models, Human Capital Theory, Search Theory, Bargaining Theory, insider/outsider models, segmented labour markets, internal labour markets, and efficiency wages.

Efficiency Wage Theory is based on the supposition that higher real wages can, through various mechanisms, result in higher labour productivity. Wages above the average would increase incentives to work and lead to better economic performance, through lower absenteeism and better adaptation of workers. It suggests that, in the absence of any wages regulation, and if unemployment is high and supply of labour abundant, wages can fall dramatically, leading to poverty among workers. It suggests that such a decline in real wages will produce a drop in both labour productivity and the firms’ profits.

Turnover has been one of the most important principles of efficiency wage theory. In general, low-wages are associated with high turnover, and the latter is itself associated with the loss of firm-specific skills and hence a decline in labour productivity. Alternatively, Akerlof has discussed how labour productivity may rise as a result of additional efforts made by workers if they regard their wage as a “fair wage” and also how higher wages with which the firm may attract the most skilled workers.<sup>2</sup>

One study found that the lower the firm’s wage is relative to the average wage in the economy, the higher the quit rate.<sup>3</sup> This is relevant in a New Zealand context where the Linked Employer-Employee Data recently released by Statistics New Zealand showed 17% worker turnover per quarter over the last five years in NZ.

As the ILO has noted the conventional view that the introduction of a minimum wage that raises the wages of a fraction of workers above what they would, otherwise, have received, would automatically reduce the employment prospects of that particular category of workers, is far from being a dominant view.<sup>4</sup>

The standard view was reinforced in the United States in a number of studies conducted in the 1970’s which found that there was a significant negative link between the minimum wage and youth employment, such that a 10 per cent increase in the Federal Minimum Wage would lead to a decline in the employment rate ranging from 1 to 3 per cent.

Brown, Gilroy and Kohen<sup>5</sup> estimated that from 1954 to 1979, a 10% increase in adult minimum wages (using US data) reduced teenage employment by between 1 per

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<sup>2</sup> George A. Akerlof, “Gift Exchange and efficiency – Wage Theory: four views”, *The American Economic Review*, Vol. 74 – No. 2, 1984, p.81.

<sup>3</sup> Luis A. Riveros and Lawrence Bouton, “Common elements of efficiency wage theories: what relevance for developing countries?”, *The Journal of Development Studies*, Vol. 30 – No. 3, April 1994, p696-716

<sup>4</sup> Youcef Ghellab, “Minimum Wages and Youth Unemployment”, ILO, 1998, p. 8.

<sup>5</sup> Charles Brown, Curtis Gilroy and Andrew Kohen, “The Effect of the Minimum Wage on Employment and Unemployment”, *Journal of Economic Literature* V20, 1982, p 487-528.

cent and 3 per cent. But subsequent analysis, which carried the data forward into the 1980s, found that the estimated elasticity weakened and by 1990 the reduction in employment was close to zero.

The evidence for nine countries presented in the OECD's Employment Outlook 1998 suggests that higher minima adversely affect teenage employment: a 10 per cent increase in the minimum wage is associated with a 1.5–3 per cent decline in teenage employment, the effects being essentially the same across countries regardless of whether they have high or low minimum wages.

But when in 1992, New Jersey increased the state minimum wage to \$5.05 an hour (applicable to both the public and private sectors), Card and Krueger used this opportunity to study the comparative effects of that raise on fast-food restaurants and low-wage employment in New Jersey and Pennsylvania, where the minimum wage remained at the federal level of \$4.25 an hour. Their data demonstrated that a modest increase in wages did not appear to cause any significant harm to employment. In some cases, a rise in the minimum wage even resulted in a slight increase in employment.

Card and Krueger found that after a raise in the minimum wage in New Jersey employment actually increased by about 13 per cent relative to stores in nearby eastern Pennsylvania that continued to pay a lower rate. It was suggested that stores paying low wages often were plagued by high turnover and job vacancy rates and that the higher minimum wage may have ameliorated such problems and led to an increase in employment.

The studies conducted by Card and Krueger and Katz and Krueger have not gone unchallenged. Neumark and Wascher (1992) questioned whether the “natural experiment” approach failed to consider lagged effect of minimum wages, and also suggested it did not control for the school enrolment rate, knowing that such a variable may have an endogenous impact on teenage employment.

Other work by David Neumark finds small but significant negative effects of living wages on the employment of low-wage workers, and positive effects on the wages of workers who remain in the labor force.<sup>6</sup> Overall, Neumark found that passing a living wage law does tend to reduce the amount of poverty in a city, but this benefit comes at the cost of some jobs.

Alison Wellington<sup>7</sup> found that the disemployment effects of the minimum wage were rather insignificant, since a 10 per cent increase in the minimum wage was estimated to reduce teenage (16-20 year olds) employment by less than 1 per cent.

In the United Kingdom, the Low Pay Commission in its fourth report stated that between 1999 and 2003 the impact of the national minimum wage on employment

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<sup>6</sup> David Neumark, “Living Wages: Protection For or Protection from Low-Wage Workers?” *Industrial and Labor Relations Review*, October 2004, p 27-51.

<sup>7</sup> Alison J. Wellington, “Effects of the minimum wage on the employment status of youths”, *The Journal of Human Resources*, Vol. XXVI, No. 1, 1991, p27-46.

levels - which overall had continued to increase in the UK - was negligible.<sup>8</sup> Indeed, employment growth had been “stronger than average” among those groups and sectors most affected by the national minimum wage.

Previously consideration had been given to the fact that employment may have risen faster in the absence of a minimum wage, but an econometric analysis for the third report concluded that “even after controlling for this and other factors the impact of the minimum wage was broadly neutral.” The report found that the only exception was amongst young people where employment rates had fallen. After analysing the trends and related research evidence the Commission concluded that these changes in the youth labour market had been “primarily driven by the economic cycle, and that the minimum wage has had at most a minor impact on young people’s employment.”

Dan Finn from University of Portsmouth has noted that the introduction of the national minimum wage also has not had the dire consequences for employment levels predicted by the Conservative Government.<sup>9</sup>

Professor Mark Stewart in a study entitled “The Impact of the Introduction of the UK Minimum Wage on the Employment Probabilities of Low Wage Workers” found that the evidence suggests zero, or if anything small positive employment effects for adult men, young men and young women’.

The latest meta-analysis was published by Doucouliagos and Stanley in 2009<sup>10</sup>. One of its motivations was to test criticisms of Card and Krueger. It re-analysed 64 US minimum-wage studies including 39 relating to teenagers. These studies included 1,474 empirical estimates of the minimum-wage elasticity of employment (a measure of the effect of an increase in the minimum wage on employment). They found not only bias in selection of published studies towards ones which show an adverse effect for employment, but that once such effects were corrected for, a small positive effect between an increase in the minimum wage and employment. Even without correcting for selection effects, adverse effects were so minimal (a doubling of the minimum wage would lead to only a 1 percent decrease in teenage employment) that they had no policy implications.

They specifically rebutted Neumark and Wascher. In explanation of the positive effect, they conjectured that it could be explained by monopsonistic or oligopolistic competition (less than perfect labour market competition such as the effect of employer dominance and unions), efficiency wage theory, or other non-neoclassical theories of labour. They also found evidence that there is a structural effect of firms adapting to real increases in the minimum wage over time.

Youcef Ghellab of the ILO has concluded that there is no consensus among economists, at least in three countries, namely Netherlands, the United States and the United Kingdom as regards the minimum wage effects employment. The studies

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<sup>8</sup> Dan Finn, “The National Minimum Wage in the United Kingdom”, Institut Arbeit und Technik, Gelsenkirchen 2005, p36.

<sup>9</sup> Ibid, p48.

<sup>10</sup> Hristos Doucouliagos and T.D. Stanley, “Publication Selection Bias in Minimum-Wage Research? A Meta-Regression Analysis”, *British Journal of Industrial Relations*, 47:2, June 2009, pp. 406-428.

concluding that the minimum wage has caused job-losses have been challenged by other studies suggesting that: (a) the minimum wage had no negative impact on youth employment (Netherlands); (b) there is no evidence that the activities of the minimum wage councils acted as a restraint on employment in Britain in the 1980s (United Kingdom); (c) the Federal Minimum Wage increase, at least following its 1990 and 1991 uprating, did not lead to employment contraction (United States).

Ghellab states:

*“All in all, it seems fair to conclude that the existing evidence supports both positions in the debate. Whether a minimum wage has a negative or a positive effect depends on many factors such as, its relative level, the structure of the labour market and the country concerned”.*<sup>11</sup>

This is a significant point in relation to New Zealand. We can learn a lot from overseas studies. However, while there will be some factors which will be relatively common to labour markets across many different countries, there will be vital country-specific elements.

It is therefore important to look at New Zealand studies about the impact of the minimum wage.

A study by Tim Maloney of the period 1985 to 1993 showed that a 10 percent increase in the adult minimum wage produced a decline of 3.8 percent in the employment of young adults.<sup>12</sup> This is broadly consistent with evidence from the United States. Maloney found that employers started to reduce the employment of young adults and then started hiring teenagers not then covered by a minimum wage. So it was a substitution.

Simon Chapple found some evidence that was consistent with Maloney's estimates, but his overall assessment was that increases in the real minimum wage showed minimal impact on employment rates. Chapple suggests that “conclusions regarding significant negative employment effects from real minimum wages increases are strikingly non-robust”.<sup>13</sup>

Gail Pacheco and Tim Maloney compared the employment trends of two groups, females with no school or post-school qualifications, and females with school and post-school qualifications.<sup>14</sup> The study tested the hypothesis of disemployment effects associated with changes in the real minimum wage between 1985 and 2000. The only significant finding appeared to be that, on average, a 1 per cent rise in the adult minimum wage causes a 14 per cent fall, two quarters later, in the employment ratio of females with no qualifications. However, most importantly, the long run

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<sup>11</sup> Youcef Ghellab, “Minimum Wages and Youth Unemployment”, ILO, 1998, p.58.

<sup>12</sup> Tim Maloney, “Does the adult minimum wage affect employment and unemployment in New Zealand?” New Zealand Economic Papers, Vol. 29, No. 1, June 1995, p1-19.

<sup>13</sup> Simon Chapple, ‘Do minimum wages have an adverse impact on employment? Evidence from New Zealand’, Labour Market Bulletin, Department of Labour, 1997.

<sup>14</sup> Gail A and Tim Maloney, ‘Does the minimum wage reduce the employment prospects of unqualified New Zealand women?’ Labour Market Bulletin, No, Department of Labour 1999. See also Gail Pacheco (2008) “Changing role of Minimum Wage in New Zealand”, New Zealand Journal of Employment Relations, Vol 32 (3), pp.2-17.

employment impact of the minimum wage on this particular labour market group was found to be effectively zero.

Dean Hyslop and Steve Stillman found that a 69 per cent increase in the minimum wage for 18 and 19-year-olds in 2001 and a 41 per cent increase in the minimum wage for 16 and 17-year-olds over a two year period had no adverse effects on youth employment or hours worked.<sup>15</sup> In fact hours of work increased for 16-17 year olds relative to other age groups. In 2005, Stillman said that the impact of eliminating the youth minimum and/or extending the minimum wage to those aged less than 16 years would “have very little effect on youth employment opportunities”.<sup>16</sup> (He did however qualify that comment by saying this may rely somewhat on weak compliance and also advocated exemptions for family-owned businesses, farms, and child minding).

Given that many of the studies quoted overseas and the often used Maloney study in New Zealand have argued that a 10% increase in the minimum wage would result in up to a 3 per cent increase in unemployment, how can it be that a 41 per cent increase in the minimum wage coincided with a 10-15 per cent increase in hours worked?

As Manning has noted:

*“The impact of the minimum wages on employment should primarily be an empirical study and the results of these empirical studies should be used to inform policy”.*<sup>17</sup>

It is therefore the case that any analysis in a New Zealand context needs to draw on the more recent analysis of the behaviour of the labour market. What this has shown is that it is unlikely that an increase in the minimum wage would have an impact on employment.

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<sup>15</sup> Dean Hyslop and Steven Stillman, “Youth Minimum Wage Reform and the Labour Market”, NZ Treasury Working Paper 04/03, March 2004.

<sup>16</sup> Steve Stillman (2005) “The Impact of Minimum Wages on the New Zealand Labour Market: Lessons from the 2001 Youth Minimum Wage Reform”, Motu Forum Thursday 21st July 2005, Wellington.

<sup>17</sup> Alan Manning, “Monopsony in Motion: Imperfect Competition in Labour Markets”, Princeton University Press, 2003, p19.