

Institution: University of Warwick
Unit of Assessment: 18 – Economics and Econometrics
Title of case study: The Minimum Wage
<p>1. Summary of the impact (indicative maximum 100 words) Professor Mark Stewart analysed the impact of the National Minimum Wage (NMW), providing a research-based answer to the question of whether a minimum wage would protect low skilled workers or leave them worse off by reducing demand for labour. Stewart analysed the NMW after it was introduced in 1999 and through subsequent upratings and consistently found negligible employment effects, modest hours effects, and little evidence of spillover effects. Stewart published reports and journal publications, supplying evidence that directly assisted the Low Pay Commission's (LPC) policy decisions. The minimum wage is now established policy, increasing earnings for millions of the UK's lowest-income workers and reducing income inequality and the gender pay gap.</p>
<p>2. Underpinning research (indicative maximum 500 words) Since 1998, Stewart has addressed the effect of the minimum wage on key labour market outcomes in a series of LPC-sponsored research reports and ESRC-funded academic papers. Stewart showed that introducing, and subsequently increasing, a minimum wage did not have adverse labour market effects.</p> <p>Stewart's research helped resolve a highly contested policy question regarding the employment effect of a minimum wage. Simple labour market theory predicts that introducing a minimum wage leads employers to cut employment. In contrast, models that take into account employers' market power, the use of wages to elicit high employee effort, and/or job search suggest that a minimum wage may not reduce and could even increase employment. There is similar uncertainty in the theory about the effects of a minimum wage on hours worked and spillover effects on wages for workers above the minimum.</p> <p>The UK introduced a national minimum wage in 1999, increasing wages for an estimated 1.3 million employees – 5.5% of the labour force. The LPC was created to evaluate the consequences of the new minimum, as well as subsequent increases (“upratings”) in its level.</p> <p>Stewart (2002, <i>OBES</i>) compared employment growth in regions where the NMW caused wages to increase significantly to regions where wages were less affected, and found no difference in employment growth across regions. In contrast to the textbook model, there didn't seem to be negative employment effects of the minimum wage.</p> <p>Subsequent research confirmed these (negligible) employment effects with more granular data. Stewart (2004, <i>JEEA</i>) used three separate longitudinal datasets to analyse the difference in subsequent employment between those affected and those not affected by the minimum before and after the introduction of the NMW. If the NMW had a negative employment effect, this difference should have increased significantly. Across all three datasets, he found no effect. Stewart (2003, <i>LPC Report</i>) and Stewart (2004, <i>EJ</i>) extended this analysis to subsequent upratings in the minimum wage in 2000 and 2001, finding no significant adverse effect on employment for any demographic groups.</p> <p>In a 2010 BIS survey of minimum wage research, each of the investigations described above was singled out for its methodological innovation and each has served as a foundation for other economists to analyse similar questions (BIS (2010, p49-50)). In discussing Stewart (2002), Chief Economist and Deputy Secretary of the LPC, Tim Butcher, concluded, “[Stewart's] methodology laid the foundations for future work using large datasets to look at individual employment probabilities and spatial analysis taking advantage of geographical variations.” (Butcher (2013a, p1)</p> <p>In joint work with Joanna Swaffield at the University of York (Stewart and Swaffield (2004, <i>LPC Report</i>)), Stewart looked at the impact of the NMW on the working hours of low-wage employees, finding that it reduced their basic hours by between 1 and 2 hours per week. Subsequent research by other authors on upratings has determined this to be a one-off effect of the introduction of the</p>

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new minimum. Further work for the LPC (Stewart (2009, *LPC Report*)) investigated whether increases in the NMW had effects on wages beyond the increases required to bring the lowest wage employees up to the new minimum. For the most plausible scenario, the evidence of spillover effects is weakest, lessening any concerns that there are adverse effects of the NMW.

3. References to the research (indicative maximum of six references)

The research:

1. Stewart, M, 2002, Estimating the Impact of the Minimum Wage Using Geographical Wage Variation, *Oxford Bulletin of Economics and Statistics*, v64, pp 583–605, DOI: <http://dx.doi.org/10.1111/1468-0084.64.s.2>.
2. Stewart, M, 2003, Modelling the Employment Effects of the Minimum Wage, Research Report for the Low Pay Commission, January, University of Warwick, URL: <http://www.lowpay.gov.uk/lowpay/research/pdf/finalreport.pdf>. Later published as (3) below.
3. Stewart, M, 2004a, The Employment Effects of the National Minimum Wage, *The Economic Journal*, 114, pp C110–C116, DOI: <http://dx.doi.org/10.1111/j.0013-0133.2003.00200.x>.
4. Stewart, M, 2004b, The Impact of the Introduction of the UK Minimum Wage on the Employment Probabilities of Low Wage Workers, *Journal of the European Economic Association*, 2(1), pp 67–97, DOI: <http://dx.doi.org/10.1162/154247604323015481>.
5. Stewart, M, and J, Swaffield, 2004, The Other Margin: Do Minimum Wages Cause Working Hours Adjustments for Low-wage Workers?, Research Report for the Low Pay Commission, May, (University of Warwick and University of York), URL: <http://www.lowpay.gov.uk/lowpay/research/pdf/t0IEZEJ9.pdf>. Later published in *Economica*, v75, pp 148-167, DOI: <http://dx.doi.org/10.1111/j.1468-0335.2007.00593.x>.
6. Stewart, M, 2009, Testing for Spill-over Effects of the National Minimum Wage, Research Report for the Low Pay Commission, December, University of Warwick, URL: http://www.lowpay.gov.uk/lowpay/research/pdf/LPC_Research_for_2010_Report_Testing_for_Spill-over_Effects_of_the_National_Minimum_Wage_December%202009.PDF. Parts of this report were later published as “Wage Inequality, Minimum Wage Effects and Spillovers,” *Oxford Economic Papers*, October 2012, v64, pp 616-634, DOI: <http://dx.doi.org/10.1093/oeq/gps003>.

Evidence of research quality: There are three academic papers and three sponsored research reports cited above. The academic research papers are all published in excellent (3* or 4*) journals. The *EJ* is ranked 13th among economics journals in the Association of Business Schools (ABS) rankings, 18th in the Kalaitzidakis et. al. (2003, *JEEA*) rankings, and 15th in the REPEC rankings. The *JEEA* is ranked 17th, n/a, and 25th and *OBES* is ranked 58th, 29th, and 60th in the same rankings. Furthermore, they are all relatively highly cited papers in economics, with 90, 118, and 56 Google Scholar citations, respectively (accessed 3 April, 2012). The three sponsored research reports were all also eventually published in academic journals, including the *Economic Journal* (13th, 18th, 15th), *Economica* (56th, 45th, 79th), and *Oxford Economic Papers* (52nd, 53rd, 66th).

4. Details of the impact (indicative maximum 750 words)

Chief Economist and Deputy Secretary of the LPC, Tim Butcher, stated, “The National Minimum Wage was recently voted the most successful policy in the last thirty years and Professor Stewart’s pioneering work was instrumental in gaining widespread acceptance of the NMW in the UK” (Butcher (2013a), p2).

This impact is evident in the Low Pay Commission’s annual reports which analyse the effects of the NMW and recommend changes (“upratings”) in its level. The LPC’s recommendations are based on an evaluation of current knowledge about the effects of such upratings on employment, hours worked, and a variety of other labour market outcomes. These reports are very influential: the Government has always accepted the LPC’s recommendations on annual changes to the minimum wage.

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“Professor Stewart’s work has been cited in thirteen of the fourteen reports so far produced by the LPC,” including all of the reports since 2009 (Butcher (2013a), p1). “Much of [his] early work... focussed on investigating the impact of the minimum wage on employment [(Stewart (2002), Stewart (2003), Stewart (2004a), Stewart (2004b)]...¹ This research concluded that... the introduction of the minimum wage, and its subsequent initial increases, had not adversely affected employment. These findings were valuable insights that enabled Commissioners to be less cautious in their approach to raising the minimum wage.” (Butcher (2013a), p1-2)

“The next phase of his research... concerned the impact of the minimum wage on hours [Stewart and Swaffield (2004)].² In contrast to the earlier literature, they found some... negative effects on hours over the long run... However, the reduction in hours was less than the increase in the minimum wage, thereby increasing weekly pay. These findings convinced Commissioners that the low paid had not suffered a reduction in weekly earnings.” (Butcher (2013a), p2) Recognising that some of the LPC decisions predate the current impact period, Butcher concluded, “I should note that [Stewart’s] findings on employment and hours were particularly important in determining Commissioners’ recommendations in the period between 2001 and 2008 (and the impacts of those decisions continue to this day) but they have continued to play a role in the decisions made since then.” (Butcher (2013b), p1).

“A further area of research, and most recent, concerned the impact of the minimum wage on the distribution of earnings. In a thorough and comprehensive study... for the 2010 LPC report, Professor Stewart [measured] the effect of the minimum wage on earnings higher up the earnings distribution (spillover effects)... [and] concluded that spillovers were small or limited. This further helped Commissioners to view the effects of the minimum wage so far as relatively benign, and influenced their recommendations appropriately.” (Butcher (2013a), p2).³

The reach and significance of Professor Stewart’s “pioneering work ... in gaining widespread acceptance of the NMW” (Butcher (2013a), p2) is considerable. As described above, the direct beneficiaries were policymakers at the LPC tasked with evaluating and setting recommended minimum wages, but indirect beneficiaries include minimum wage employees, firms who employ low wage employees, and even the public at large, via increased tax revenues and reduced benefit payments.

In its most recent report, the LPC estimates 1.4 million workers (5.8% of the work force) were paid below the then-forthcoming minimum wage of £6.08 per hour (LPC (2012), p36). If features of the distribution of wages in the absence of a NMW were similar to that in 1998, the last year when evidence on below-minimum wages is available, then we estimate the NMW increased wages among low-wage workers by an average of £1.53 per hour (£2,678 per year), or £3.7 billion in 2011.⁴ These income increases are tangible, material benefits that improve welfare for low-wage employees.

The NMW has also advanced other social goals, including reducing income inequality, decreasing the gender wage gap, increasing tax revenues, and lowering aggregate benefit payments. Dickens, Riley, and Wilkenson (2012) estimate that each ten percentage point increase in the proportion of workers affected by the NMW is associated with a 4% lower growth rate in income inequality. LPC (2012, p42) demonstrated that the NMW also reduced the gender pay gap from 15.8% to 8.3% at the median of the pay distribution and from 13.1% to 4.7% in the lowest decile. Finally, LPC (2012, p152) estimated the October 2012 uprating increased government tax revenue in the 2012/13 budget cycle by £112 million and lowered tax credits and benefit payments by £78 million.

¹ Citations added based on descriptive content of text. This work is cited in LPC (2009, p44-45, 254-55, 259), LPC (2011, p62-63), and LPC (2012, p58-9, 166)

² Citation added based on descriptive content of text. This work is cited in LPC (2009, p45, 226, 255), BIS (2010, p29) and BIS (2011, p27), LPC (2011, p63, 139), and LPC (2012, p58).

³ This work is cited in LPC (2010, p37, 186, 220-21, 226), LPC (2011, p39), and LPC (2012, p45-46, 60).

⁴ This calculation assumes a 35-hour work week and 50 working weeks per year. See Sources for details.

Finally, firms that employ such workers also benefit from the NMW as they are protected against unfair competition from rivals who might otherwise cut wages and other working conditions, imposing costs on their employees and society as a whole. Contrary to its position at the time the NMW was introduced, the Confederation of British Industry (CBI), the UK's largest business organisation, now concludes "The CBI supports the NMW ... and the role of the independent LPC in setting it... The NMW was implemented successfully and we accept that it has delivered benefit to the low paid and did not adversely impact on overall levels of employment growth... Moderate rates [for the NMW] ... help to protect workers from excessive low wages" (Carberry (2013)).

5. Sources to corroborate the impact (indicative maximum of 10 references)

Chief Economist and Deputy Secretary, Low Pay Commission, letter to Professor Gregory Crawford, Director of Research Impact, Department of Economics, University of Warwick, received 26 March 2013.

Chief Economist and Deputy Secretary, Low Pay Commission, email to Professor Gregory Crawford, Director of Research Impact, Dept. of Economics, University of Warwick, received 7 June 2013.

Director for Employment and Skills, Confederation of British Industry, email to Professor Abhinay Muthoo, Head of Department, Department of Economics, University of Warwick, received 1 June 2013.

Department for Business, Innovation, and Skills, 2010, *Government evidence to the Low Pay Commission on the economic effects of the National Minimum Wage*, pp 49-50, 59 URL: <http://www.official-documents.gov.uk/document/cm78/7823/7823.pdf>

Department for Business, Innovation, and Skills, 2011, *Government evidence to the Low Pay Commission on the economic effects of the National Minimum Wage*, pp 42-44, 52, URL: <http://www.bis.gov.uk/assets/biscore/employment-matters/docs/g/11-p109-government-evidence-to-low-pay-commission-on-national-minimum-wage.pdf>.

Dickens, Riley, and Wilkinson (2012), "Re-Examining the Impact of the National Minimum Wage on Earnings, Employment and Hours: The Importance of Recession and Firm Size," Report to the Low Pay Commission, p36. URL: http://www.lowpay.gov.uk/lowpay/research/pdf/NIESR_report_LPC11_final_version.pdf

Low Pay Commission, 1998, *National Minimum Wage: First Report of the Low Pay Commission*, pp 178-79. URL: <http://www.dti.gov.uk/files/file37987.pdf>

Low Pay Commission, 2009, *National Minimum Wage: Low Pay Commission Report 2009*, pp 44-45, 226, 254-255, 259, 333-334. URL: <http://webarchive.nationalarchives.gov.uk/20130626202215/http://www.lowpay.gov.uk/lowpay/report/pdf/7997-BERR-Low%20Pay%20Commission-WEB.pdf>

Low Pay Commission, 2010, *National Minimum Wage: Low Pay Commission Report 2010*, pp 37, 186, 220-221, 226, 265. URL: http://www.lowpay.gov.uk/lowpay/report/pdf/LPC_Report_2010.PDF.

Low Pay Commission, 2011, *National Minimum Wage: Low Pay Commission Report 2011*, pp 39, 62-63, 139, 167-68. URL: http://www.lowpay.gov.uk/lowpay/report/pdf/Revised_Report_PDF_with_April_date.PDF.

Low Pay Commission, 2012, *National Minimum Wage: Low Pay Commission Report 2012*, pp 45-46, 58-59, 160, 166, 191. URL: http://www.lowpay.gov.uk/lowpay/report/pdf/2012_Report.pdf.