

**Divided Opinion on The Fair Minimum Wage Act of 2013:
Random or Systematic Differences?¹**

Donal O'Neill

Department of Economics, Maynooth University, Ireland

December 2014

Abstract

This paper analyses economists' support for the Fair Minimum Wage Act of 2013, by examining the characteristics of almost 1000 economists who signed open letters either supporting or opposing the Bill prior to a Senate debate on the legislation. In contrast to previous work, which found that economists' disagreements were surprisingly random, I find systematic differences between those economists supporting the legislation and those opposing it. There is evidence of a saltwater-freshwater divide in attitudes, with support for the Bill stronger for economists located further from Chicago. In addition support for the legislation is higher among females and those who obtained their PhD outside the US. Financial economists are more likely to oppose the Bill, while those specialising in labour economics are more likely to support it. Furthermore the support among labour economists is strongest for academics who have received their PhD in recent years. This may reflect the impact of recent work in labour economics challenging the traditional competitive model of labour markets.

¹ I would like to thank Aedin Doris, Maurizio Pisati, Olive Sweetman and seminar participants at Maynooth University for helpful suggestions relating to earlier drafts of the paper.

1. Introduction

In the past 30 years a number of studies have examined differences in economists' attitudes to core concepts and key policy issues (May et al. 2014, Onder and Tervio 2014, Gordon and Dahl 2013, De Benedictis and Di Maio 2008, Klein and Stern 2006, Fuller and Geide-Stevenson 2003, 2014 Fuchs et al. 1998, Whaples 1996 & 2009, Alston et al. 1992, Kearn et al. 1979). While these surveys reveal consensus on a number of issues, substantial disagreement remains in key areas. Few topics divide opinion among economists more than minimum wages. Klein and Stern (2006) report the results of a random survey of economists conducted in 2003. The survey obtained the views of 264 respondents on a range of policy issues, including minimum wages. The responses to the minimum wage question were unique among the regulation topics in that the distribution of opinions was relatively evenly distributed with 28.4% strongly supporting minimum wage laws, 19% mildly supporting them, 14.4% having mixed feelings, 17.8% mildly opposing them and 20.5% strongly opposing such laws. These findings are consistent with earlier work that found a relatively even split among supporters and opponents of increased minimum wages (Whaples 1996, Fuchs et al. 1998). The mixed response to the minimum wage is in contrast to the responses to other questions. For example only 2.3% strongly supported tariffs compared to 66.7% who strongly opposed, while 56.4% strongly supported air and water regulation with only 4.2% strongly opposed. A more recent survey of economic experts conducted by the University of Chicago Booth School of Business in February 2013 found a similar level of disagreement when asked about the likely effects of increasing the minimum wage.² While 34% of the experts agreed that increasing the federal minimum wage to €9 would make it noticeably harder for low-skilled workers to find employment, 32% disagreed with this proposition.³

Democrats have made the minimum-wage issue central to their midterm election campaign for 2014, with President Obama calling for the federal minimum wage to be increased in his 2013 State of the Union address. Subsequently, the U.S. Senate and House of Representatives introduced the Fair Minimum Wage Act of 2013, companion bills that would raise the federal minimum wage. The proposal, introduced in the House by Rep. George Miller and in the Senate by Sen. Tom Harkin proposed to raise the federal minimum wage in phases over two and a half years from its current level of \$7.25 to \$10.10, with changes

² The results of this survey are available at http://www.igmchicago.org/igm-economic-experts-panel/poll-results?SurveyID=SV_br0IEq5a9E77NMV

³ Even when economists agree with one another it seems that their views even then tend to differ substantially from those of the population at large (Sapienza and Zingales (2014)).

determined by the Secretary of Labor (based on increases in the Consumer Price Index) thereafter.⁴ However, in keeping with findings from earlier surveys, support for the legislation among economists has been mixed. In early 2014 two open signed letters were released prior to hearings on the legislation in the Senate’s Health, Education, Labor and Pensions (HELP) Committee. The first letter, initiated by the Economic Policy Institute, was signed by over 600 economists supporting the three step increase in the minimum wage.⁵ The second letter, initiated by the National Restaurant Association, was signed by more than 500 economists voicing their opposition to the proposed increases.⁶ The appearance of both letters generated significant media attention.⁷ Harvard economist Greg Mankiw posted a link to both letters on his blog, highlighting the division of opinion among economists by noting that “*hundreds [were] in favour of the proposed increases and hundreds opposed.*”^{8,9}

This level of disagreement on such an important policy issue can be confusing for both policy makers and the public. In this note I use details on the signatories of these two letters to re-examine the nature of disagreement over the proposed increase in the minimum wage. The objective of the analysis is to determine to what extent the disagreement is systematic or simply reflects random differences between economists. Previous studies documenting disagreement between economists have made no or only limited use of explanatory variables when characterising respondents. Exceptions include Gordon and Dahl (2013), Benedictics and Maio (2008) and Caplan (2001). However, none of these studies found a significant systematic relationship between the level of disagreement and the economists’ characteristics. Gordon and Dahl (2013) examine a series of questions posed to a distinguished panel of economic experts and found that there was no tendency for those with the same gender, from the same cohort, from the same department or with PhD’s from the same school to have similar views. In a similar vein Caplan (2001) states “that disagreements among economists are surprisingly random.”

⁴ The full text of the bill can be found here <http://democrats.edworkforce.house.gov/sites/democrats.edworkforce.house.gov/files/documents/FairMinimumWageAct-BillText.pdf>

⁵ This letter and list of signatories is available here <http://www.epi.org/minimum-wage-statement/>

⁶ This letter and list of signatories is available here <http://nebula.wsimg.com/faf44fea2172ad008b46a64835ae2492?AccessKeyId=D2418B43C2D698C15401&disposition=0&alloworigin=1>

⁷ See for example New York Times Article (2014) and Bloomberg Businessweek (2014).

⁸ Somewhat ironically, given the extent of disagreement among economists, policy advocates on both sides of the minimum wage debate often claim to have the support of the consensus economic view.

⁹ On April 30th 2014 a vote in Senate failed to invoke cloture on the Bill. 54 Senators voted to end the debate and proceed to a formal vote, failing short of the 60 votes needed to overcome a Republican filibuster. In a news conference following the vote, top Democrats vowed to reintroduce the bill later this year.

In this paper I focus on disagreement in respect of the minimum wage and examine to what extent, if any, there exists a systematic relationship between support for the minimum wage and a range of explanatory variables including age, gender and research area, as well as detailed geographical information both on the respondent's current place of work and the university in which they were awarded their PhD. In contrast to earlier work my results show that differences of opinion on the legislation can be characterised along a number of interesting dimensions. I find evidence of a saltwater-freshwater divide in economists' attitudes to the minimum wage, with support for increases in the minimum wage growing as one locates further from the University of Chicago. In addition support for the minimum wage is higher among those who are female or who have attained their PhD outside the U.S. When looking a field of expertise we find that Finance economists are more likely to oppose the increase, while Labour economists are more likely to support it. Furthermore the support among labour economists is even stronger when we consider those academics who have received their PhD in recent years. This latter finding may reflect greater exposure of graduate students in Labour economics to recent work challenging the traditional competitive model of labour market.

2. The Economics of Minimum Wages.

Almost all undergraduate labour economics textbooks present two views on how the labour market works – perfect competition and monopsony (e.g Borjas 2013). The traditional competitive model of the labour market assumes that firms face a perfectly elastic labour supply curve. In this view of the world, the wages that workers receive equal their marginal revenue product of labour. Any attempt to impose higher wages on firms will cause the marginal cost of the last worker to exceed their marginal benefit, thereby resulting in employment losses.¹⁰ This view of the labour market underpins opposition to increasing the Fair Minimum Wage Act of 2013, as illustrated by the following quote from the letter of opposition: *“One of the serious consequence of raising the minimum wage is that business owners saddled with higher costs of labor will need to cuts costs, or pass the increase to their consumers in order to make ends meet. Many of the businesses that pay their workers minimum wage operate on extremely tight profit margins, with any increase in the cost of labor threatening this delicate balance.”*

¹⁰ A more advanced treatment of perfectly competitive labour markets is given in Hamermesh (1993).

However, an alternative view of the labour market argues that frictions result in firms facing imperfect labour supply elasticities, giving rise to monopsony models of the labour market. In these models the marginal worker is paid less than his or her marginal product. In this case mandated increases in wages need not lead to employment losses, although they will most likely lead to a redistribution of income from firms to workers.¹¹ It is this view that underpins the letter supporting the increase in the minimum wage. This letter closes by noting that *“In recent years there have been important developments in the academic literature on the effects of increases in the minimum wage on employment, with the weight of evidence now showing that increases in the minimum wage have had little or no effect on the employment of minimum wage workers, even during times of weakness in the labor market.”*

Clearly, one’s opinion of the usefulness or otherwise of minimum wage increases may depend in part on one’s view on how the labour market operates. This in turn may be influenced by a number of factors including gender, age, area of research, or place of study. In the remainder of this paper we examine the extent to which characteristics such as these can explain the observed differences of opinion over the proposed Minimum Wage legislation.

3. Data & Sampling Design

The base data for this analysis are taken from two open signed letters that were released to coincide with hearings in the U.S. Senate’s Health, Education, Labor and Pensions (HELP) Committee to debate the Fair Minimum Wage Act of 2013. The first letter was signed by 602 economists supporting a three step increase, with the minimum wage reaching €10.10 by 2016. The second letter was signed by 504 economists and voiced their opposition to the proposed increases. Those signing the letters consisted of economists working in US universities, non-US universities and economists working in non-university posts such as the American Enterprise Institute and the Economic Policy Institute. For the purposes of this analysis we restrict our attention to academics working in US universities. This leaves us with a base working sample of 943 economists located in 392 different universities in the United States.¹² This sample size is considerably larger than in previous surveys of economists’ attitudes. For example sample sizes ranged from 65 in Fuchs et al. (1998), to 211

¹¹ A more advanced discussion of monopsony models is given in Manning (2003).

¹² 182 of these universities had more than one respondent and in 38% of these universities the respondents differed in their support for the legislation.

in Kearn et al (1979), to 298 in Fuller and Geide-Stevenson (2003) and 464 in Alston et al. (1992).

Of our sample of 943 academic economists 56% were in favour of the proposed legislation to increase the minimum wage, while 44% of the sample signed the letter opposing the legislation. In contrast to previous analyses, which were based on responses to random surveys, this analysis is based on a non-random sample of economists who held sufficiently strong views, which moved them to sign one or other of the letters. The objective of the paper is to characterise these strong differences of opinion.¹³

It might also be of interest to consider circumstances in which our results would generalise beyond this sample. To do this we need to think about what it is that moves people to sign one or other of the letters. In the simplest world we might imagine that the world consists of petition signers and petition non-signers – people who sign petitions and people who don't. Furthermore assume that the propensity to sign a petition does depend on how strongly you held a particular view. In this is the case then my estimates will provide consistent estimates of the true population relationship – even though we have a selected sample, the selection mechanism is exogenous to the dependent variable – with respect to minimum wage attitudes. Another, perhaps more likely scenario is that only people with strong feelings on a particular issue are going to be moved to sign the petition. In this case the sampling mechanism will be correlated with the outcome, so clearly not exogenous. However, if the things that are causing us to have strong enough feelings to sign the petition are already included in the final regression then again my results will generalise to the population – that is the sampling is exogenous sampling conditional on X's. However, suppose there is some unobservable characteristic that causes people to have very strong views on the minimum wage and as a result has an impact on whether we sign the letter or not – this is an example of what is called endogenous sampling – in this we can show that our estimates, while valid for our sample will not generalise to the population as a whole. Is there anything to be done in this case to recover the population parameters. The common approach is to weight the data by the inverse of likelihood of being chosen. However, in my case not every stratum need be observed, making construction of weight difficult. Furthermore,

¹³ Since advocates with strong opinions are most likely to make their voices heard in policy circles one could make the case that understanding what drives these differences are of particular importance. Even in studies where survey respondents were offered less extreme options, such as agree with provisos, analysts often include comparisons based only on the extreme responses or allocate those with milder views to one or other of the extremes (e.g. Kearn et al. 1979, Gordon and Dahl 2013).

unnecessary weighting can actually makes things worse (Solon et al. 2014), with the biases likely to be even more pronounced in probit type models used in this paper.

Although this paper does not aim to determine the overall level of support for such a move. Nevertheless it is worth noting that the relatively even split between those in favour and against the rise is consistent with previous approaches based on random surveys (Klein and Stern 2006, Fuchs et al 1998, Whaples 1996).

For each of these 943 academics we can determine their current place of work from the letters. One hypothesis we wish to explore is whether or not there is any substance to the so called saltwater-freshwater divide in economics. The terms 'freshwater' and 'saltwater' were first used in reference to economists by Hall (1976) to contrast competing views in macroeconomic research on the role of government intervention. These two prevalent theories of economics can be attributed to two different groups of universities and institutions across the US. As economic theory developed in the 1970s, a clear divide emerged between coastal schools and those in the Great Lakes area. Coastal schools gravitated towards the idea that the government could and should help to regulate the economy by controlling interest rates and budgets to avoid inflation or recession. Because of location of the schools on the Atlantic and Pacific coasts, this view became known as the "saltwater school of thought". Schools closer to the Great Lakes (hence the name "freshwater economics"), most famously the University of Chicago, espoused laissez-faire ideals and believed that the free market corrects and guides itself more efficiently without government involvement.

Blanchard (2008) suggests that there has been a broad convergence in macroeconomics, and that distinctions between saltwater and freshwater economics have become irrelevant.¹⁴ However recent work argues that the distinction is still relevant. Applying cluster analysis to citation networks, Onder and Tervio (2014) find that economists from coastal universities tend to cite each other more than they cite economists from the interior of the country, while economists from the interior are more likely to cite each other rather than economists from the coastal universities. Tervio (2011) finds similar clustering when he examines hiring and placement among academic departments. These divisions are stable over time but vary both between and within disciplines. Divisions are particularly strong in economics relative to other disciplines, while within economics the divisions are largest in macroeconomics. In this paper I take a different approach to looking at academic division. In particular, I exploit

¹⁴ See also Colander (2005).

geographical variation in levels of support for the Minimum Wage Act to identify whether or not a saltwater-freshwater distinction applies to support for minimum wage increases.

The geographical distribution of support for the Fair Minimum Wage Act among academics in our sample is given in Figures 1 and 2. Figure 1 plots support by current place of work, while Figure 2 plots support by place of study. Each university is represented by a pie-chart, with the red area representing support for the legislation within that university and the green area representing opposition. The area of each pie-chart is proportional to the number of respondents located in that university. For example, a large solid red dot represents a university with both a large number of respondents in our sample and 100% support for the legislation.

The distribution of support illustrated in figures 1 and 2 are suggestive of a geographical divide in attitudes to the minimum wage, with support for the legislation greater in coastal areas and opposition more concentrated in the interior of the country. We can get a flavour of this divide by considering some examples. Of the 34 economists in our sample who received their PhD at the University of Chicago, 31 of them opposed the legislation, while 6 of 8 Minnesota graduates opposed it. In contrast 37 of the 43 Berkeley graduates, and 37 out of the 46 Harvard graduates supported the legislation. We can go further and group the universities where these academics obtained their PhDs on the basis of subsequent academic support for the legislation. We classify the universities into two groups, focusing only on those universities that have more than 10 graduates in our sample. The first group includes those universities where fewer than half of their graduates supported the legislation and consists of {UCLA, University of Pennsylvania, Purdue, Chicago, Northwestern, University of Illinois and University of Virginia). The second group includes those universities where greater than half of the graduates supported the Bill. This group consists of {Stanford, Berkeley, Princeton, Yale, Michigan, MIT, Harvard, Columbia, Cornell, Wisconsin, Utah, The New School for Social Research, American University and U.Mass.Amherst). Tervio (2011) provides an index of the “*salt-content*” of economic departments in the US based on hiring clusters. His index ranges between zero and one, with larger values corresponding to a greater connection with the saltwater tradition. Table 1 reports the value of his *salt index*, along with the level of support for the Minimum Wage Bill, for the universities in of our two clusters. The average of the *salt index* across the group with strongest opposition to the Fair Minimum Wage Act is .498, compared to .77 for the group favouring the legislation. The corresponding level of support for the Minimum Wage Act in the two groups was .24 and .85. The correlation between the salt-index and support for the minimum wage act is .74. In

this way the variation in support for the Minimum Wage Act is consistent with alternative classifications of freshwater and saltwater schools of thought in economics.

To examine this dichotomy more formally I calculate the distance between the current place of work and the University of Chicago for each academic in the sample using Vincenty's (1975) formula. This formula measures the distance between two points on a sphere using their longitudes and latitudes.¹⁵ It is based on the assumption that the figure of the Earth is an oblate spheroid, and hence is more accurate than methods such as great-circle distance which assume a spherical Earth. I also construct a similar measure of distance based on place of PhD study rather than current work.¹⁶ The importance of graduate training in determining attitudes towards policy intervention is evident in the following quote from Nobel Prize winning economist Professor Robert J. Lucas. When asked about why he signed the letter against the minimum wage increases Lucas replied "I was convinced that the minimum wage was not a good idea in Milton Friedman's class in 1960," referring to the Nobel prize winning economist at the University of Chicago, whose classes Lucas took while in graduate school.¹⁷ To the extent that the saltwater-freshwater divide is evident one would expect to see significant increase in support for the Bill as academics are located further from The University of Chicago.

There is some recent evidence (May et al. 2014) suggesting that male and female economists differ in their attitudes towards a number of issues, including minimum wages. Therefore I include a indicator for gender when characterising support for the Bill. It is also of interest to determine whether or not the support for the legislation differs by field of specialization and year of degree. In a full-page advert taken out in the New York Times in early 2014, The Employment Policies Institute questioned the merits of the original letter supporting the increases in the minimum wage, by noting that 45% of those who signed the letter didn't specialise in labor economics. Without additional information on a control group this statistic is of no value in identifying the attitudes of labour economists towards the proposed legislation. To examine this formally I use data on reported area of expertise for

¹⁵ Latitude and Longitude for each university were obtained using *gpsvisualizer* which is a free software programme available at <http://www.gpsvisualizer.com/geocoder/>.

¹⁶ While this geographic measure of division will be useful if will not completely capture the saltwater-freshwater divide in schools of thought. For example 29 of the 34 economists who received their PhD from Berkeley supported the legislation, while none of the 13 who received their PhD from UCLA did so. Although it will not be picked up with our measure, this division in support among Californian universities for the minimum wage is consistent with previous analysis designating UCLA as a freshwater university despite its proximity to the Pacific (Trevio 2011).

¹⁷ Quote taken from New York Times (March 15th 2014) http://www.nytimes.com/2014/03/16/us/industry-tied-to-letter-against-new-wage.html?_r=0

each academic in the sample to determine the extent to which support for the legislation varies across fields of economics.¹⁸ I also use information on the vintage of the PhD to examine the extent to which this support has changed over time. Finally, I examine if academics who received their PhD outside the U.S. are more or less likely to support the increase.

To obtain the information on gender, field of specialization, year and location of PhD I carried out a detailed search of internet sources. Data were obtained in the first instance from the American Economics' Association Directory of Members and failing that from a search of individual and university webpages. This resulted in valid data on gender, year and location of PhD and field of specialisation for over 70% of the original sample.¹⁹ Summary statistics for the full sample and the smaller subset are given in Table 2. Comparing the full and smaller samples on the geographical distance variable and on support for minimum wage shows no discernible differences between the two samples, suggesting that the analysis based on the smaller subsample may be indicative of the results for the full sample.

Looking at the other variables we see that women account for approximately 18% of the sample. This is consistent with national averages. A CSWP (2013) report found that the female share of all tenure track/tenured faculty among all PhD granting Economics departments in the U.S was 18.6%.²⁰ Just over two percent of the sample received their PhD outside the US and perhaps not surprisingly economists specialising in labour economics accounted for the largest share of respondents. Although not reported the results indicate a positive and statistically significant correlation in distance from place of work to Chicago and distance from place of PhD study to Chicago. People who receive their PhD from a university close to the University of Chicago are more likely to end up working closer to the University of Chicago. Finally the average vintage of PhD in our sample was 30 years. In keeping with previous work this is lower for women (23.8) than for men (31.2). In total 68% of the sample received their PhD prior to 1990, with the proportions for men and men equal to 73% and 46% respectively.

¹⁸ Controlling for area of research also allows us to examine whether the gender effects identified in earlier work reflect gender differences in attitudes or simply the fact that women tend to be more concentrated in specific fields, such as labour economics (Dolado et al. 2012).

¹⁹ Since we know place of work and support of minimum wage for all workers we examined whether there was any correlation between these variables and the likelihood of missing data on other variables. The correlations were both very small and statistically insignificant.

²⁰ https://www.aeaweb.org/committees/cswep/annual_reports/2013_CSWEPA_Annual_Report.pdf

4. Results

The results of the analysis are given in Table 1. In all cases the reported estimates refer to marginal effects from a probit model where the dependent variable takes the value 1 if the respondent supported the Minimum Wage Act and zero otherwise. Therefore positive coefficients are associated with increased support for the minimum wage law.²¹ The results in the first column use data for the full sample of 943 respondents to examine the extent to which a saltwater-freshwater divide is evident in support of the minimum wage. The explanatory variable is the distance from the respondent's current place of work to the University of Chicago. The results show a clear significant geographic divide in support for the minimum wage, with support increasing significantly the further one moves from the University of Chicago. The marginal effect implies that academics working a 1000km away from Chicago will have a 6.4 percentage point greater support for the legislation.²² We have also estimated the same model using distance from place of PhD study to the University of Chicago. The results, given in Model 2, are again suggestive of a saltwater-freshwater divide in opinions. However, although positive and larger than the estimated for current place of work, the PhD location effect is less precisely estimated and insignificantly different from zero. This in part reflects the smaller effective sample when using place of study as the explanatory variable (114 distinct place-of-study universities) instead of place of work (393 distinct place-of-work universities).

The results for Model 3 include the extra covariates for the smaller sub-sample. The geography variable continues to be significant even with these extra variables. Furthermore we see that academics trained outside the United States are more likely to support the legislation. We also find that, even controlling for age, geography and field of study, men are less likely to support increases in the minimum wage. Looking at field of study we see that while the attitudes of macroeconomists are not significantly different to those of the omitted fields, academics specialising in Finance are significantly less likely to support the minimum wage increase, while those specialising in Labour Economics are significantly more likely to support the legislation. This finding undermines the argument advanced by the Employment

²¹ In all cases the standard errors are adjusted for one-way clustering, either at the level of the location of work or the location of study, where appropriate. We also estimated robust standard errors to account for two-way clustering at the level of both place of work and place of study following the approach suggested by Cameron et al. (2011). This had very little effect over and above the adjustment for one-way clustering.

²² The objective of this analysis is to characterise attitudes to the Minimum Wage Act, not to identify a causal effect of distance. As estimated, the distance parameter allows us to compare the attitudes of an academic picked at random from a university close to Chicago to one picked at random from a university located further away from Chicago.

Policies Institute in their New York Times advert of February 2014, which relied on the fact that substantial minority of those signing the initial letter of support were non-labour economists. While this is true my analysis shows that that the proportion of labour economists signing the subsequent anti-minimum wage letter is significantly smaller than the proportion who signed the letter of support. Consequently labour economists are more likely to support the legislation than oppose it. Finally there're appears to be no significant effect of degree vintage on attitudes to the minimum wage.

The final model (Model 4) explores this vintage affect in more detail. In the last 20 years a number of articles have been written challenging the traditional view of labour markets and the associated employment effects of minimum wages (e.g. Card and Krueger , , 1994). Neumark and Wascher (2007) date the origins of the new minimum wage research to November 1991, when the ILR-Cornell Institute for Labour Market Policies and Princeton University hosted the “New Minimum Wage Research Conference,” during which a series of new studies on the economics effects of minimum wages were presented. To explore the possible impact of this and subsequent work on attitudes I examine the interaction between degree vintage and field of specialisation. As noted earlier, the techniques and models to which students are exposed while in graduate school can affect how they view economic policy. Since students studying graduate Labour Economics post 1990 will have received the greatest exposure to the new research and the subsequent debate that followed (e.g. Neumark and Wascher, 2000 and Card and Krueger, 2000), we might expect attitudes to the minimum wage to have changed most for this group. To examine this I create a dummy variable equal to 1 if the respondent received their PhD after 1990 and zero otherwise. Just over 30% of my sample received their PhD after 1990. I then included this dummy variable along with interactions with the field of speciality to see if the time pattern varied across fields. The results are given in Model 4.

The inclusion of the interaction terms does little to alter the other coefficients in the model but the marginal coefficient on the interaction between degree vintage and labour economics is significant and positive. As noted by Ai and Norton (2003) the magnitude of the interaction effect in a nonlinear model does not equal the marginal effect of the interaction term. Unlike the linear model the correct interaction effect is conditional on the independent variables. Furthermore, and in contrast to the main effects of the covariates, the sign of the interaction effect cannot be determined the sign of the corresponding coefficient in the probit model and may differ for different values of the covariates. Ai and Norton (2003) derive expressions for the correct interaction effect and its standard error, while Norton et al. (2004)

provide companion software to allow estimation of the effects. Details of the magnitude and significance of the interaction effect for Labour and Degree Vintage in my model are provided in figure 3. The top panel gives the density of the estimated interaction effect in the sample, which shows that the estimated interaction was positive for every individual. The average of the interaction effect across the sample was .184, implying that support for the Fair Minimum Wage Act was stronger among labour economists who received their training after 1990. The bottom panel reports the density of the estimated Z-statistic and has mass centred above 2.0. The average Z-Score was 1.96, corresponding to the cut-off for a 2.5% significance level. Figure 4, provides the same details for the estimated interaction effect between Finance and degree vintage. In contrast to the results for Labour the average interaction effect for Finance and Degree vintage was .077, less than half that of the labour effect. The average Z-score for the finance interaction is only .66, with this interaction not significant for any individual in our sample. These findings do not support a discipline wide changing of attitudes towards minimum wages but rather suggest that changes in attitudes were concentrated among labour economists. Although labour economists trained prior to 1990 were more likely than other specialists to support the minimum wage act, the level of support among labour economists is even stronger for those trained after the work of Card and Krueger. This highlights obvious links between teaching and research within graduate programmes and suggests that the research to which students are exposed to in graduate school may have a significant impact on subsequent attitudes and views on key policy issues, and

5. Conclusion

Democrats have made the minimum-wage issue central to their midterm election campaign for 2014. In his 2013 State of the Union address President Obama called for the federal minimum wage to be increased to €9, while the subsequent Fair Minimum Wage Act of 2014, introduced in the House by Rep. George Miller and in the Senate by Sen. Tom Harkin went further proposing to raise the federal minimum wage in phases over two and a half years from its current level of \$7.25 to \$10.10 by 2016. However, economists have disagreed over the merits of this legislation. In this paper I use information on almost 1000 economists to examine whether this difference of opinion is random or reflects systematic differences across economists

I find clear systematic differences between those economists in favour of increasing the minimum wage and those opposed to such increases. There is some evidence of a saltwater-freshwater divide in economists' attitudes to the minimum wage increase, with support for increases in the minimum wage growing steadily as one moves further from the University of Chicago, both in terms of one's place of work and one's place of study. This is in keeping with the ideological differences between the two schools of thought and suggests that opinions towards regulation once established may prove resistant to change. In addition support for the minimum wage is higher among females and those who have attained their PhD outside the U.S. Economists specialising in the financial markets are more likely to oppose the increase, while those specialising in labour markets are more likely to support increases. These differences across fields reflect may real differences in the markets with which these economists are most familiar. It is possible that financial economists are basing their opinions on regulation on financial markets, often textbook examples of competitive markets, while labour economists are basing their views on labour markets, where there is more evidence of imperfect competition. Furthermore the support among labour economists for intervention is even stronger when we consider those academics who have received their PhD in recent years. The changing time pattern in attitudes is not evident in the other fields and may reflect greater exposure of graduate students in labour economics to recent work in that field challenging the traditional competitive model of the labour market.

Table 1: Distribution of Support for Minimum Wage

| University | Proportion supporting Minimum Wage | Tervio (2011) Salt Index | University | Proportion supporting Minimum Wage | Tervio (2011) Salt Index |
|----------------------------|------------------------------------|--------------------------|--------------------------------------|------------------------------------|--------------------------|
| UCLA | 0 | .514 | Columbia | .57 | .895 |
| University of Chicago | .09 | .603 | Stanford | .67 | .618 |
| Purdue | .14 | .294 | University of Wisconsin | .68 | .517 |
| University of Virginia | .18 | .500 | MIT | .76 | .729 |
| University of Pennsylvania | .40 | .447 | Harvard | .80 | .786 |
| University of Illinois | .42 | .571 | Berkeley | .86 | .855 |
| Northwestern | .43 | .554 | University of Michigan | .89 | .739 |
| | | | Yale | .91 | .636 |
| | | | Cornell | .91 | .643 |
| | | | Princeton | .91 | .743 |
| | | | University of Utah | .93 | .700 |
| | | | New School for Social Research | 1 | 1.00 |
| | | | American University | 1 | 1.00 |
| | | | University of Massachusetts, Amherst | 1 | .938 |
| Average | .24 | .498 | | .85 | .77 |

Table 2: Summary Statistics: Standard Errors in parentheses

| Variable Name | Full Sample | Smaller Sample |
|------------------------------------|-----------------|-----------------|
| MwageProponent | .56 (.016) | .55 (.019) |
| Distance from work to Chicago (km) | 1286 (26.58) | 1292 (31.44) |
| Distance from PhD to Chicago (km) | | 1199* (34.6) |
| Male | | .82 (.014) |
| Labour | | .18 (.015) |
| Finance | | .11 (.012) |
| Macro | | .08 (.01) |
| Foreign Phd | | .02 (.006) |
| Years Since PhD | | 30 (.51) |
| N | 943 | 669 |

- This excludes the academics who received their PhD outside the U.S.

Table 3: Marginal Effects for Probit Model of Minimum Wage Support
 (standard errors adjusted for clustering at current university level reported in parentheses)

| | Model 1 | Model 2 ^a | Model 3 | Model 4 |
|--|------------------|----------------------|--------------------|--------------------|
| Distance from work to Chicago (000kms) | .063** (.032) | | .0589* (.036) | .055 (.036) |
| Distance from PHD to Chicago (000kms) | | .086 (.056) | | |
| Male | | | -.298*** (.060) | -.302*** (.065) |
| Labour | | | .382*** (.061) | .302*** (.061) |
| Labour*PhDPost1990 | | | | .387** (.189) |
| Macro | | | -.023 (.077) | -.0244 (.087) |
| Macro*PhDPost1990 | | | | .013 (.164) |
| Finance | | | -.526*** (.087) | -.566*** (.107) |
| Finance*PhDPost1990 | | | | .138 (.192) |
| Years since Graduation | | | -.003 (.002) | |
| PhDPost1990 | | | | .001 (.056) |
| Foreign PHD | | | .342*** (.14) | .356*** (.138) |
| N | 943 | 802 | 669 | 669 |

^a In this model standard errors are adjusted for clustering at the location of PhD studies.

Figure 1: Geographical Distribution of Academic Support for Fair Minimum Wage Act of 2013 by location of current place of Work

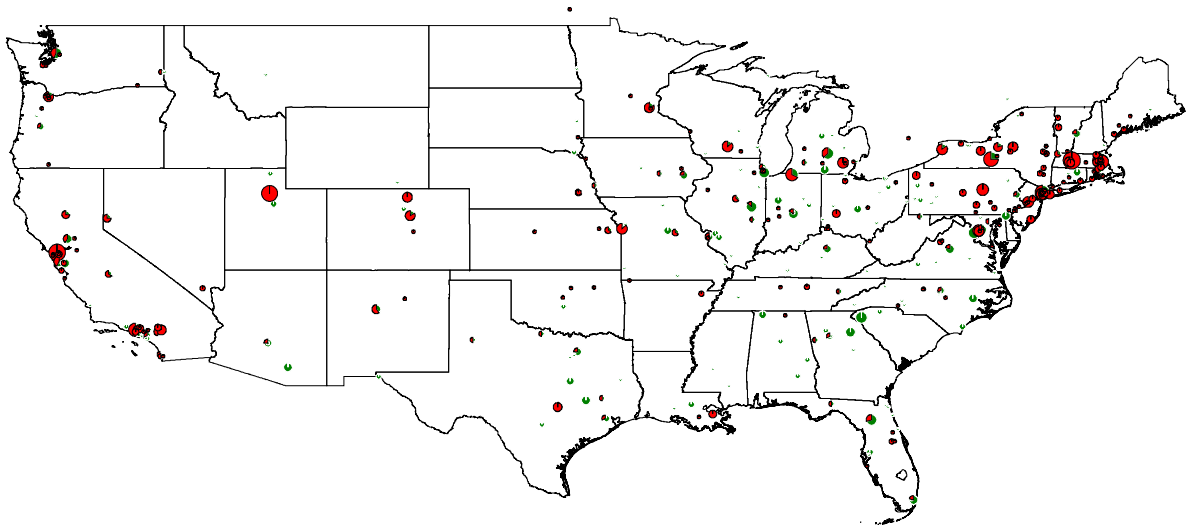
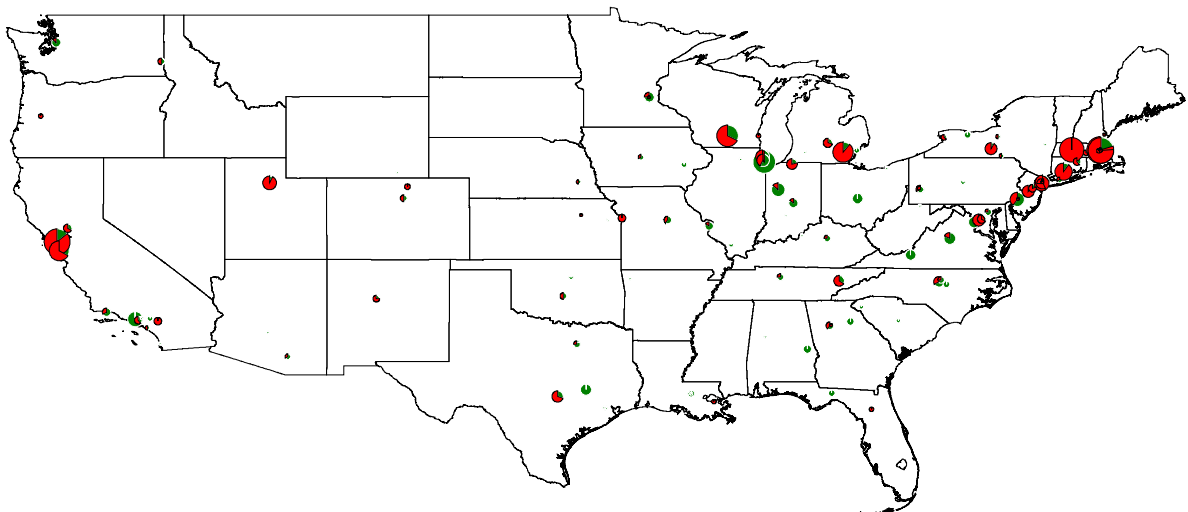


Figure 2: Geographical Distribution of Academic Support for Fair Minimum Wage Act of 2013 by location of PhD



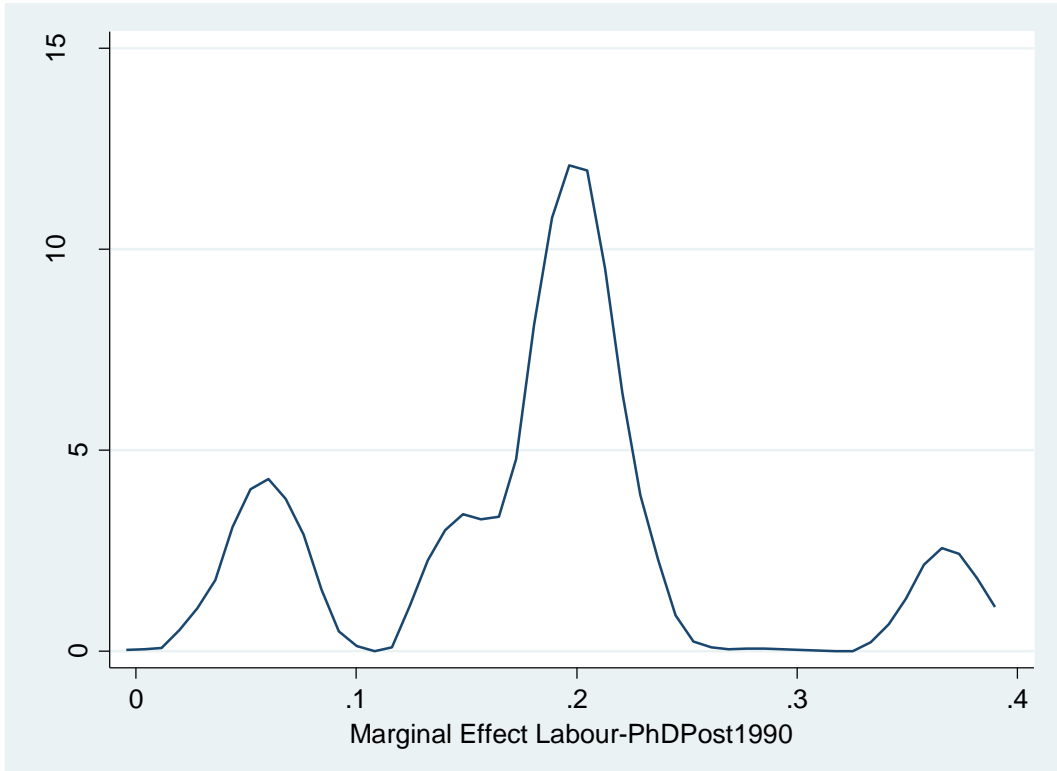


Figure 3a: Density of Estimated Interaction Effect of Labour and Degree Vintage



Figure 3b: Z-score for Interaction Effect of Labour and Degree Vintage

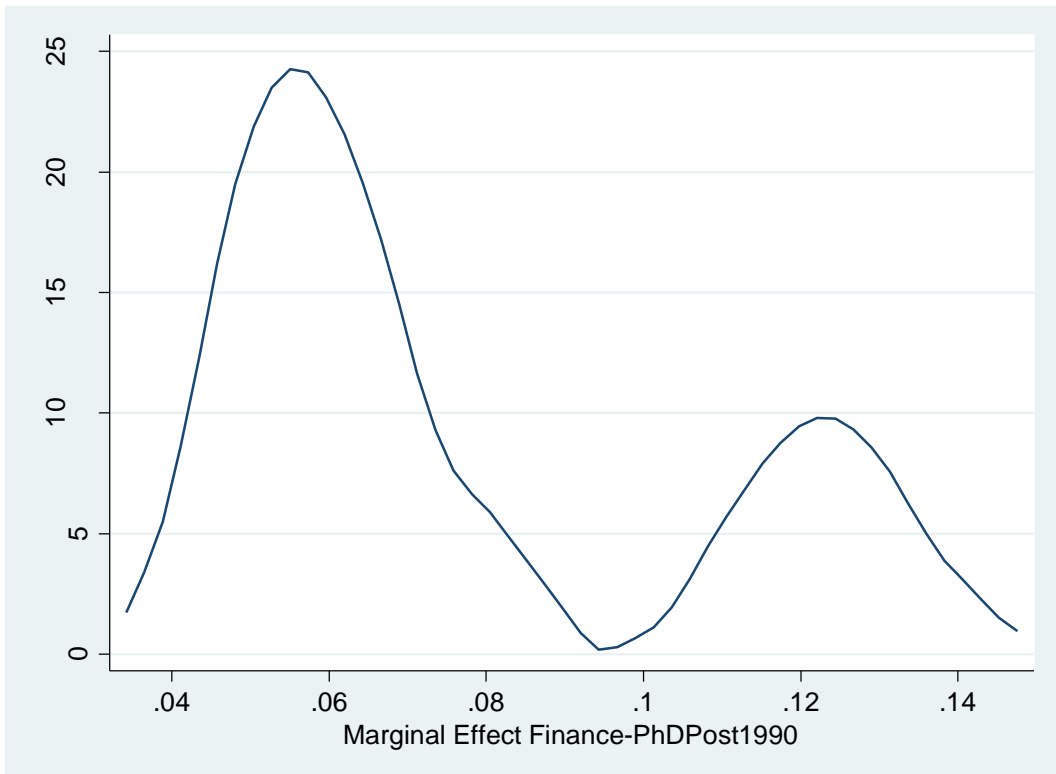


Figure 4a: Interaction Effect of Finance and Degree Vintage

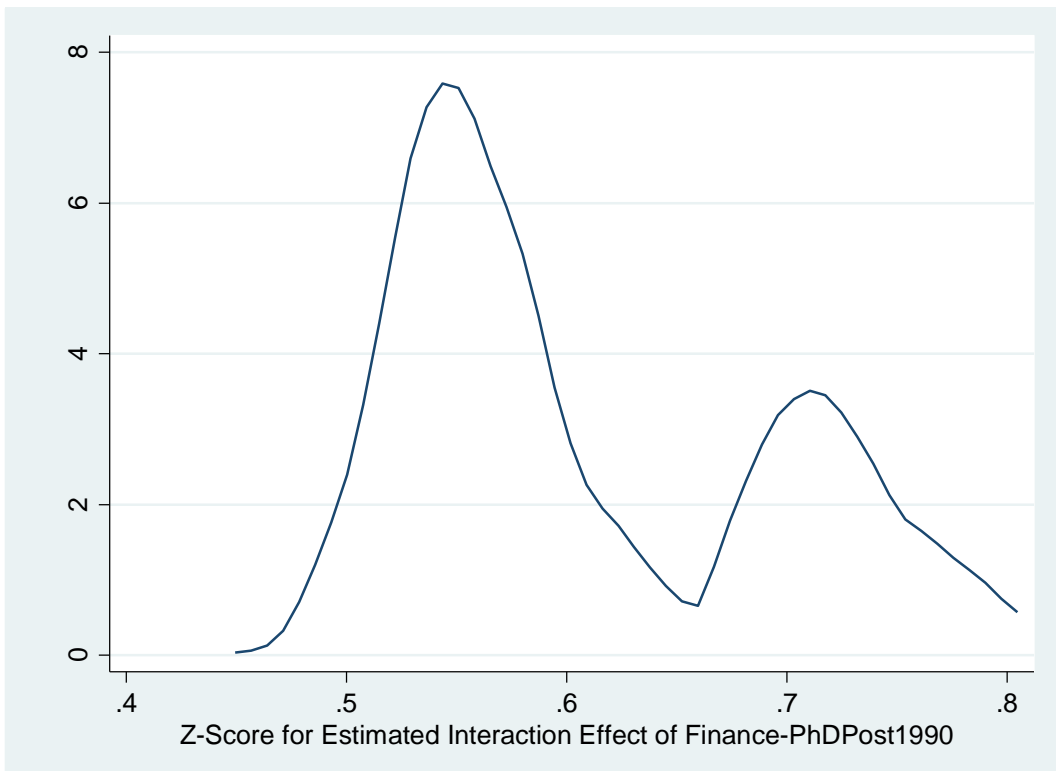


Figure 4a: Z-Score for Interaction Effect of Finance and Degree Vintage

References

- AI, C., and E. C. NORTON (2003): "Interaction Terms in Logit and Probit Models," *Economics Letters*, 80, 123-129.
- ALSTON, R., J. KEARL, and B. VAUGHAN (1992): "Is There a Consensus among Economists in the 1990's?," *American Economic Review*, 82, 203-209.
- BENEDICTIS, L., and M. DI MAIO (2008): "Economists' View About the Economy: Evidence from a Survey of Italian Economists."
- BLANCHARD, O. (2008): "The State of Macro." NBER Working paper no. 14259.
- BLOOMBERG BUSINESSWEEK (2014) "Pssst: Some Economists favouring €10.10 are Marxists," <http://www.businessweek.com/articles/2014-02-27/pssst-dot-some-economists-for-10-dot-10-an-hour-are-marxists>
- BORJAS, G. (2013): *Labor Economics*. New York: McGraw-Hill.
- CAMERON, A. C., J. B. GELBACH, and D. L. MILLER (2011): "Robust Inference with Multiway Clustering," *Journal of Business & Economic Statistics*, 29, 238-249.
- CAPLAN, B. (2001): "What Makes People Think Like Economists? Evidence on Economic Cognition from The "Survey of Americans and Economists on the Economy", "*Journal of Law and Economics*, 44, 395-426.
- CARD, D., and A. KRUEGER (1994): "Minimum Wages and Employment: A Case Study of the Fast Food Industry in New Jersey and Pennsylvania," *American Economic Review*, 84, 772-793.
- (2000): "Minimum Wages and Employment: A Case Study of the Fast Food Industry in New Jersey and Pennsylvania: Reply," *American Economic Review*, 90, 1397-1420.
- COLANDER, D. (2005): "The Making of an Economist Redux," *Journal of Economic Perspectives*, 19, 175-198.
- DOLADO, J., F. FELGUEROSO, and M. ALMUNIA (2012): "Are Men and Women-Economists Evenly Distributed across Research Fields? Some New Empirical Evidence," *SERIEs*, 3, 367-393.
- FUCHS, V., A. KRUEGER, and J. POTERBA (1998): "Economists' Views About Parameters, Values and Policies: Survey Results in Labor and Public Economics," *Journal of Economic Literature*, 36, 1387-1425.
- FULLER, D., and D. GEIDE-STEVENSON (2003): "Consensus among Economists Revisited," *The Journal of Economic Education*, 34, 369-387.
- (2014): "Consensus among Economists—an Update," *The Journal of Economic Education*, 45, 131-146.
- GORDON, R., and G. B. DAHL (2013): "Views among Economists: Professional Consensus or Point-Counterpoint?," *American Economic Review*, 103, 629-35.
- HALL, R. (1976): "Notes on the Current State of Empirical Macroeconomics," prepared for the Workshop on empirical macroeconomics, Stanford, July 1976
- HAMERMESH, D. (1993): *Labor Demand*. Princeton, New Jersey: Princeton University Press.
- KEARL, J. R., C. POPE, G. WHITING, and L. WIMMER (1979): "A Confusion of Economists?," *American Economic Review*, 69, 28-37.
- KLEIN, D., and C. STERN (2005): "Professors and Their Politics: The Policy View of Social Scientists," *Critical Review: A Journal of Politics and Society*, 17, 257-303.
- (2006): "Economists' Policy Views and Voting," *Public Choice*, 126, 331-342.
- MANNING, A. (2003): *Monopsony in Motion*. Princeton, New Jersey: Princeton University Press.
- MAY, A. M., M. MCGARVEY, and R. WHAPLES (2014): "Are Disagreements among Male and

- Female Economists Marginal at Best?: A Survey of AEA Members and Their Views on Economics and Economic Policy," *Contemporary Economic Policy*, 32(1), 111-131.
- NEUMARK, D., and W. WASCHER (2000): "Minimum Wages and Employment: A Case Study of the Fast Food Industry in New Jersey and Pennsylvania: Comment," *American Economic Review*, 90, 1362-1396.
- (2007): "Minimum Wages and Employment," *Foundations and Trends® in Microeconomics*, 3, 1-182.
- NEW YORK TIMES (2013): "Industry Behind Anti-Wage-Hike Letter," http://mobile.nytimes.com/2014/03/16/us/industry-tied-to-letter-against-new-wage.html?_r=0
- NORTON, C., H. WANG, and C. AI (2004): "Computing Interaction Effects and Standard Errors in Logit and Probit Models," *The Stata Journal*, 4, 154-167.
- ONDER, A., and M. TREVIO (2014): "Is Economics a House Divided? Analysis of Citations Networks," University of Bayreuth, Germany.
- TERVIÖ, M. (2010): "Divisions within Academia: Evidence from Faculty Hiring and Placement," *Review of Economics and Statistics*, 93, 1053-1062.
- VINCENTY, T. (1975): "Direct and Inverse Solutions of Geodesics on the Ellipsoid with Application of Nested Equations," *Survey Review*, XXIII, 88-93.
- WHAPLES, R. (1996): "Is There Consensus among American Labor Economists? Survey Results on Forty Propositions." *Journal of Labor Research*, XVII, 725-734.
- (2009): "The Policy Views of American Economic Association Members: The Results of a New Survey," *Economic Journal Watch*, 6, 337-348.