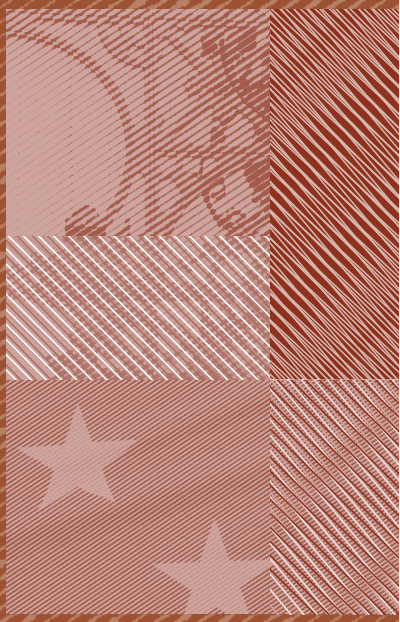
AN ANALYSIS OF THE IMPACT OF THE RISE IN THE NATIONAL MINIMUM WAGE IN 2017 ON THE PROBABILITY OF JOB LOSS

2019



Aitor Lacuesta, Mario Izquierdo
and Sergio Puente

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AN ANALYSIS OF THE IMPACT OF THE RISE IN THE NATIONAL MINIMUM WAGE IN 2017 ON THE PROBABILITY OF JOB LOSS (*)

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BANCO DE ESPAÑA

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Abstract

This article analyses the rise in the national minimum wage (NMW) in 2017 in Spain, drawing on information provided by the Social Security administrative labour records (MCVL). The results suggest this rise may have had an adverse effect on the probability of the group of workers with wages below the new minimum wage keeping their jobs. This effect would be of particular importance for older workers. The rise approved for the NMW in 2019 is far higher than those observed in the past, which considerably increases the number of workers affected and the uncertainty surrounding the adverse effects on the probability of them keeping their jobs. According to the estimates presented in this article, these negative effects could be significant.

Keywords: minimum wage, employment, employment-to-unemployment flows.

JEL classification: J23, J30, J38.

Resumen

En este artículo se analiza la subida del salario mínimo interprofesional (SMI) en 2017 en España, a partir de la información proporcionada por la Muestra Continua de Vidas Laborales. Los resultados indican que dicha subida habría tenido un efecto negativo sobre la probabilidad de mantener el empleo entre el colectivo de trabajadores con salarios por debajo del nuevo salario mínimo, que sería especialmente importante para los trabajadores de más edad. La subida aprobada para el SMI en 2019 es muy superior a las observadas en el pasado, lo que eleva considerablemente el número de trabajadores afectados y la incertidumbre en torno a los efectos negativos sobre la probabilidad de mantener su empleo. De acuerdo con las estimaciones presentadas en este artículo, estos efectos negativos podrían ser significativos.

Palabras clave: salario mínimo, empleo, transiciones empleo-desempleo.

Códigos JEL: J23, J30, J38.

CONTENTS

1 Introduction

The economic crisis considerably reduced the labour income of the lower-paid population. This was due chiefly to a decline in their hours worked, as a result of the heavy job destruction, the shortening of the new temporary contracts and the increase in part-time hiring. That is a key factor for explaining the rise in per capita income inequality in Spain, from 2008 to 2014 [see Anghel et al (2018)]. Lower labour income was accompanied by an increase in the indicators of relative poverty and, therefore, by growing concern about the sufficiency of the income levels of the groups with fewest resources.

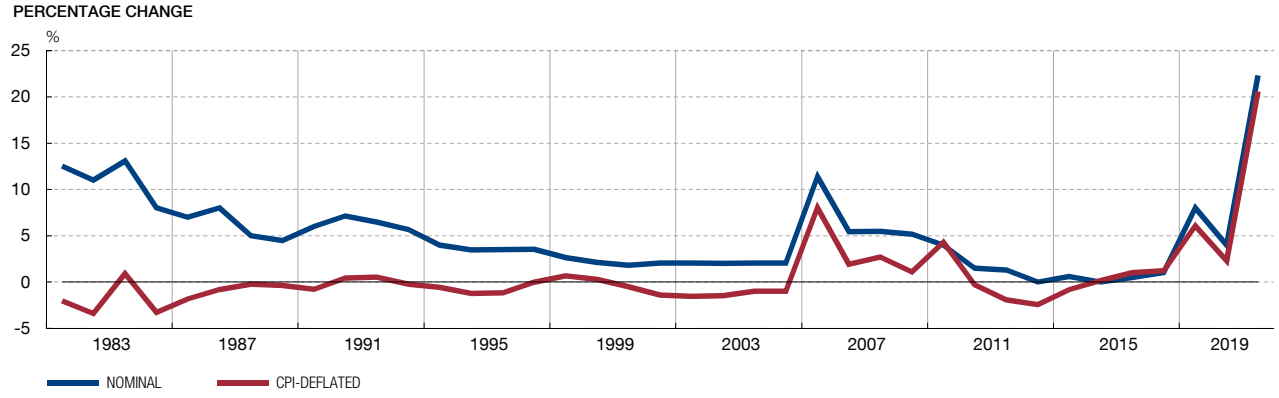
Against this background, in late 2016 the Government approved a rise in the National Minimum Wage (NMW) of 8% for 2017, which was followed by a further increase of 4% in early 2018, placing the NMW at €735.9. As with those in the 2004-2009 period, the main grounds for these rises was to recover the purchasing power lost by the NMW since 1980, which was achieved following the increase implemented in 2018. For 2019, the government has approved an additional rise of 22.3%, to €900 payable in 14 instalments per annum, marking the biggest increase made to the NMW in Spain since 1978 (see Chart 1).[1]

The aim of this paper is, first, to present the empirical evidence and the theoretical arguments available on the impact of increases in the NMW on different dimensions relating to households and firms. Second, it analyses the impact of the rise approved in 2017 on the probability of the group of workers who had wages in 2016 below the new NMW losing their jobs. This part of the analysis pays particular attention to differences by age group. Finally, in light of these results and of the characteristics of the workers whose contract in 2017 was for wages below the NMW approved for 2019, we analyse the possible impact of the 22.3% rise this year on the probability of job loss, acknowledging the difficulty of performing this extrapolation exercise given the uncertainty associated with an NMW increase on an unprecedented scale in Spain.

1 Following the 2017 and 2018 increases, the cumulative rise would be 37.4% between 2016 and 2019, similar to that between 2004 and 2009 (35.5%) in nominal terms; however, stripping out inflation, the recent rise would be far higher than that between 2004 and 2009 (31.9% as opposed to 21.4%).

CHANGES IN THE NATIONAL MINIMUM WAGE **CHART 1**

The NMW rises between 2005 and 2009 and between 2017 and 2018 mean that the NMW has not lost purchasing power in CPI terms between 1980 and 2018. The nominal 22% rise (21% in real terms) proposed for 2019 is unprecedented, especially in real terms.



SOURCES: Ministerio de Trabajo, Migraciones y Seguridad Social, and Banco de España.

2 Evidence on the effects of rises in the NMW

2.1 General aspects

The economic literature has, drawing on various international experiences over time, extensively analysed the effect of changes in the NMW on different groups of workers, taking into consideration different variables, both in the short and in the medium term. One initial question the literature addresses relates to identifying the population group affected by the minimum wage rise. In this respect, there appears to be a consensus that the biggest effects are perceived by low-wage workers. For this reason, most studies have focused on groups of low-income workers with a higher labour turnover, namely the young, women, the low-skilled and those with a lower level of educational attainment or those with a contract in specific areas such as the hotel and catering or care sectors. However, there is evidence that rises in the NMW feed through at least in part to other groups with higher wages.[2]

In any event, one important consideration is that the group of those affected by an NMW rise do not necessarily belong to the group of households below the poverty threshold, since incidence is high in relative terms among the young, who in many cases have not yet decided to leave the family home and do not necessarily belong to households with limited resources.[3] . This is one of the factors occasionally brandished to question the effectiveness of the NMW as a policy for increasing the income of low-income households and its poverty-reducing capacity.[4] In this same vein, some authors argue that the increase in income that an NMW rise entails in some households may be partly offset by the loss of some of the public transfers these households received prior to the rise. For example, West and Reich (2014) and Dube (2018) show a negative impact in terms of transfers received in the United States. Despite this, the same study finds a somewhat more positive impact on the average income of the household concerned in the medium term. Other authors also indicate that not all the households affected will see their income increase, since some of them may lose their jobs and not find new employment as a result of the associated cost increase.[5] The consequences of the rise in the NMW for employment will be discussed in greater detail in the following sub-section.

There is, nevertheless, less literature on the impact of NMW rises on other variables at the household level. Consumption is a case in point although, in this respect, the fact that the households affected by an NMW rise evidence, on average, a greater marginal propensity to consume generally causes the NMW to impact substantially the consumption of those affected who keep their job. The recent literature for the United States shows that this latter effect is due, in part, to a greater recourse to debt by households that have one or more members receiving the NMW in states that increased the NMW compared with other comparable households resident in states where the NMW did not increase.[6] Further, some authors have pointed out

2 See Giupponi and Machin (2018) or Puente and Vozmediano (2019).
3 See Freeman (1996) or Belman and Wolfson (2014).
4 See Burkhauser and Sabia (2007) and MaCurdy (2015).
5 See Neumark (2016).
6 See Aaronson et al (2012), Dettling and Hsu (2017).

that the possible positive impact on consumption may be partly offset by the feed-through of NMW rises to prices, whereby household purchasing power would not increase so much.[7] The reason is that sectors more intensive in workers who receive the NMW are usually more exposed to competition as they do not offer specialised products or services, and they therefore tend to pass through the increase in costs in its virtual entirety to prices.[8] Macurdy (2015) indicates moreover that this pass-through to prices of the NMW mainly harms population groups with fewer resources, since the products affected by the price rise are usually goods traditionally consumed by this group. Access to better data at the household level would enable more analysis to be performed on the direct impact of the NMW on household income and poverty levels, and of its indirect impact on such important variables as household consumption and investment decisions, including human capital considerations such as level of educational attainment or children's health within the household.[9]

Another relevant issue in this literature is the time over which the effects of the NMW rise can be noted. While most papers have analysed the immediate effects of different variables to changes in the NMW, it cannot be ruled out that these effects may appear in the medium term. Hence, Baker, Benjamin and Stangen (1999), with data for Canada from 1975 to 1993, find that NMW rises in certain regions, while not exerting a significant effect on their related youth employment rate immediately, did reduce it over the course of five years.[10] Fernández-Villaverde (2018) justifies this lagged effect, citing three reasons: firstly, the reorganisation of productive factors entailing a certain lapse of time; secondly, the destruction of firms that may take place after a measure of this type, as a result of growing costs over time; and finally, the outcome of an innovation process which, in the medium term, generates new unskilled labour-saving productive processes[11]. In addition, and thinking of the indirect long-term effects of NMW rises, Bárány (2016) and Fernández-Villaverde (2018) suggest that the disincentive to pursue an education, as a consequence of a higher wage independent of training, would offset the positive income effect on the demand for education.

2.2 Effects on the labour market

The most commonly analysed issue in the literature has been the effect of the NMW on the employment rate of the workers potentially affected. In theoretical terms, a standard labour supply and demand model predicts that a rise in the cost of labour derived from an NMW increase tends to reduce firms' demand for labour [Stigler (1946)]. Under certain circumstances, such as when a firm has monopsonistic power when setting wages, a rise in the NMW may boost the participation of certain workers in the labour market, thereby generating a possible positive effect on employment [Card and Krueger (1994), Flinn (2006), Ahn et al (2011)].

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7 Aaronson (2001), Aaronson and French (2005), MacDonald and Aaronson (2006).

8 For the same reason, there seems to be no relevant effect on the profits of the companies most affected [Card and Krueger (1994), Draca et al (2011)].

9 See Hill y Romich (2017) for a discussion on the impact of income on these variables.

10 See also Belman and Wolfson (2010).

11 See Sorkin (2015).

These different theoretical arguments have been used to explain the fact that the evidence available is not conclusive with respect to the impact of NMW rises on employment, since a high variety of results has been found for different countries, groups of workers and moments in time. Recently, for instance, Belman and Wolfson (2014) and Giotis and Chletsos (2015) have compiled the results of an extensive number of studies, most of which for the US labour market, finding negative effects on employment in almost two-thirds of them, and positive effects in the remaining third. In any event, the scale of this impact is relatively limited, with an elasticity of aggregate employment to the minimum wage of around -0.1% on average; that said, the comparison of elasticities among studies that analyse different groups of workers, minimum wage rises of a very different magnitude and in different macroeconomic and labour market situations is very complicated. Thus, this elasticity is usually higher for specific groups of workers, such as the lesser-skilled[12], partly because this is a group more exposed to the elimination of routine jobs that are more readily automatable.[13]

Recent studies, based on individual information on those directly affected, are not fully conclusive either. For example, Clemens and Wither (2016) find negative effects of the rises carried out between 2007 and 2009 in the United States, and Abowd et al (2000) show greater job destruction for those affected by the NMW rises in France from 1982 to 1989. On the other hand, Cengiz et al (2018) and Stewart (2004), analysing an extensive sample of rises between 1979 and 2016 in the United States and the introduction of the NMW in the United Kingdom in 1999, respectively, do not find negative effects.[14] In this respect, it is desirable to increase the number of studies analysing the career details of the workers affected with individual longitudinal data in order to better understand why different empirical strategies offer different results.[15]

With regard to other labour market facets, such as the participation rate or unemployment, there is also evidence on both sides. Despite this, most evidence suggests a slight increase in both variables in reaction to an increase in the NMW.[16] There is an additional aspect to be taken into account; given that the labour market institutional framework differs from country to country and, moreover, that the effects of NMW rises of a different magnitude may not be linear within the same economy, past international evidence cannot be readily extrapolated to rises applied in different labour markets, moments in time or of very different magnitudes.

The relatively moderate effect on aggregate employment that is usually found in the foregoing papers is consistent with the recent evidence on the effect of changes in the NMW on employment inflows and outflows. According to Belman and Wolfson (2014), there is evidence of a general negative impact on both flows. In this respect, the increase in the minimum wage would have an adverse effect on job creation and, under certain circumstances, it might also

12 See Neumark et al (2014).

13 See Lordan y Neumark (2017) and Even and McPherson (2018).

14 Other papers do not focus on employment, but on the number of hours worked [see Belman and Wolfson (2010) for the NMW rise in the United States in 1998, finding a negative though minor effect in the number of hours, and Caliendo et al (2018), who show a decline in the number of hours worked in Germany as a response to the recent NMW rise].

15 See Neumark (2018), who sets out a list of questions on which more detailed analysis is required.

16 See Belman and Wolfson (2014) for a summary of some of the papers relating to this matter.

bring about a decline in job destruction.[17] This latter effect might arise at those firms which, while remaining active following the NMW rise, are obliged to assign more resources to examining new candidates. As a result, they prefer to maintain the employment relationship with their current workers, reducing dismissals. This latter point is, moreover, also in the interest of the worker, who takes it as given that in the new situation it will be more difficult to find a new job.

However, on the flow of job loss, the evidence is not conclusive. Various recent papers that analyse the working trajectory of workers affected by an NMW rise find that this group moves with greater probability towards a non-employment situation relative to other comparable groups not affected.[18] The following section analyses how the NMW rise in Spain in 2017 affected this transition, and on the basis of the results an extrapolation is made to analyse the implications of the proposed rise for 2019.

17 See Brochu and Green (2003) for Canada, Portugal and Cardoso (2006) for Portugal and Dube et al (2016) for the United States.

18 See Clemens and Wither (2014) for the United States, and Galán and Puente (2015) for Spain.

3 Estimation of the effects of the 2017 NMW rise on job loss and implications for the new 2019 rise

The NMW was raised by 8% in 2017, rising from €655.20/month in 2016 to €707.60/month one year later.[19] This rise, which entailed a 6% increase in real terms once inflation was stripped out, came about following a period since 2011 in which the NMW had been practically stable. Applying the methodology of Galán and Puente (2015) to the data provided by the MCVL between 2013 and 2017, it is possible, first, to identify which group is receiving a wage in 2016 below the NMW proposed for 2017; and further, for that group, to estimate the effects of this rise on the probability of being employed after one year, bearing in mind the effect of conditioning factors other than the NMW.[20]

According to the MCVL data, the percentage of workers affected by the NMW rise proposed for 2017 amounted to 2.4% of the sample total.[21] This relatively low level of incidence is partly due to the fact that collective bargaining places low wage levels somewhat above the legal reference. In any event, this aggregate figure differed substantially across different demographic groups. Hence, while for the over-45s such incidence did not reach 1%, for the youngest cohort (16-24-year-olds) it exceeded 20%.

To estimate the isolated impact of the NMW rise on the group of those affected, the MCVL offers full month-by-month information on the working life of each individual. With this information it is possible to observe, for each person employed in a specific month of 2016, their employment status in the same month of the following year, i.e. once the new minimum wage was in force. To consider the person employed in the related month of 2017, it is only necessary that this person should have worked at least one day during that month. Accordingly, possible changes in the hours actually worked arising from a reduction in the working day are not considered, as is neither the effect on the employment-to-unemployment flows there may be within each year analysed for each worker. Finally, it should be borne in mind that the exercise does not directly address the effect of the NMW on the unemployment rate, but focuses exclusively on employment-to-unemployment flows. Other potentially relevant factors, which are not analysed here since the necessary information is lacking, would be the consequences of an increase in the NMW on unemployment-to-employment flows, and the probabilities of re-employment after being dismissed.

It should be clarified that, in order to isolate the effect of the minimum wage on employment-to-unemployment flows, it does not suffice to quantify the number of workers who lost their jobs from one year to the next. That is because job loss, especially in the group of low-wage workers, may be

19 In 14 monthly payments. In terms of 12 instalments, the minimum wage rose from €764.40 in 2016 to €825.60 in 2017.

20 The MCVL provides information on working trajectories and the contribution bases for a sample representing 4% of workers. To identify workers with minimum wages below the NMW proposed for the following year, information on full-time wage-earners who have worked each day of a specific month is used. In this way, monthly income is not conditional upon the type of working day, the information on which is subject to measurement error in the MCVL, or upon the number of days worked in the month.

21 That is to say, they had monthly income of between €764.40 and €825.60 euros, which is the result of prorating fourteen monthly payments into twelve. Wage data from INE's Labour Force Survey (EPA) for 2017 also show low incidence of 1.6%.

related to other factors, such as the high labour churn, the level of educational attainment, the greater incidence on jobs in seasonal sectors, etc. which are not directly associated with the NMW rise. Therefore, a comparison is made between the working situation of the group directly affected by the NMW rise and that of similar workers in terms of characteristics and wages, but who are not directly affected by this rise. This group is called the control group. Specifically, the control group comprises workers who, in 2016, received a slightly higher wage than the new minimum wage in 2017, and workers who, in the three previous years, received similar real wages but were not affected by a rise in the minimum wage, since comparable rises had not come about in those years.[22] The specification of the empirical model allows the NMW effect to change across different age groups, and on the basis of the distance between the wage received and the new legal minimum wage.

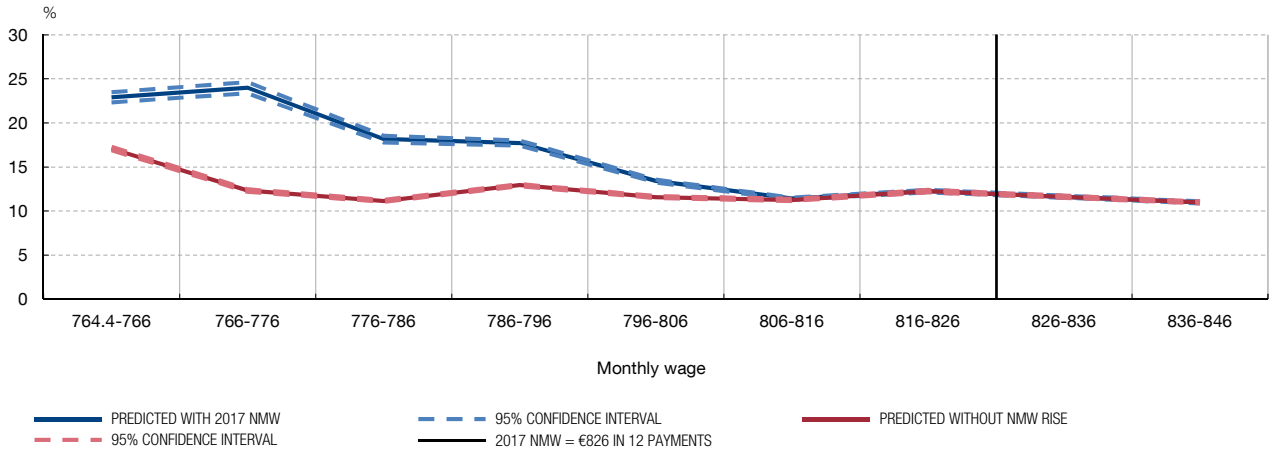
Chart 2 shows the probability of job loss estimated by the model for those affected by the rise in minimum wage in 2017. The results of this estimation show a clear positive and significant relationship between the probability of job loss and the distance between the wage received in 2016 and the new legal minimum wage for 2017. Hence, the probability of not being in employment twelve months later for someone receiving the NMW in 2016 was 22.9%, while this would have been 17.1% had there not been an increase in the NMW in 2017. The magnitude of this

22 As regards the first group, the effect of the minimum wage is estimated on the basis of non-linear changes in the probability of job loss when comparing job destruction for persons slightly above and below the NMW. As to the second group, the effect of the minimum wage is estimated comparing job destruction for workers with the same real wage at different moments in time, depending on whether there have been NMW increases or not. For this latter comparison, it is important to assume that all the remaining macroeconomic factors that may affect the probability of job loss, year by year, affect all workers in equal measure, irrespective of whether they are above or below this level. For greater robustness, the exercise has been performed restricting the sample to workers who receive less than €1,300 per month, with results practically identical to those presented in this paper being found.

PROBABILITY OF JOB LOSS IN 2017 **CHART 2**

Faced with the 2017 NMW increase, the probability of job loss increases for workers who, in 2016, received wages below the new NMW, increasing all the more so the greater the distance from the NMW reference.

PROBABILITY OF JOB LOSS IN 2017 OF WORKERS AFFECTED VERSUS THAT OF THOSE NOT AFFECTED WITH SIMILAR CHARACTERISTICS (a)



SOURCE: Banco de España.

a Probability of a worker (General Social Security Regime working 30 days per month full-time) not working any day 12 months later. Probability calculated with a logit model controlling for other characteristics of the individual such as age group, sex, Spanish nationality, type of contract (permanent/temporary), real wage, multiple employment, household size, and month and year dummy variables to control for cyclical and seasonal effects.

difference varies according to the worker's age. Thus, for example, for the over-45s receiving the NMW in 2016, the probability of job loss would have risen from 14.1%, in the case of no increase in the NMW, to 40.9%, after the rise; meanwhile, for the under-25s receiving the NMW in 2016, the increase in this probability amounts to 1.6 pp. This latter result suggests that, against a background of high productivity gains for the young relative to the elderly, firms in which the former work would be more prepared to bear the increase in labour costs to which the NMW increase gave rise.

Table 1 shows the same results, breaking down the estimated differences by age group and moving these individual probabilities to the total workers and average wages of each group. Specifically, the second column shows the estimated probability of job loss for each age group as a consequence of the rise in the minimum wage in 2017. Within the overall group affected by the rise, it is estimated that 3.1% of them lost their jobs, which would be compatible with an elasticity of job destruction of the workers affected of -0.5 in relation to a 1 pp rise in the NMW.[23] This probability of job loss varies considerably across age groups. Specifically, it is estimated that 10.7% of workers over 45 affected by the rise lost their jobs, a percentage which would fall to 0.8% in the under-25s. In any event, given the greater number of workers affected among the young, this group would, in absolute terms, be that most affected by the rise in the minimum wage in 2017, with a decline in employment of 0.2%.

In terms of the total job loss prompted by the increase in the NMW (column 3), the total effect is estimated at -0.1%; considering approximately 16 million full-time employees, that would be compatible with a total of 12,000 workers who would have lost their job on a total of 384,000 workers affected. This job loss, along with the wage increase in the group that kept their jobs, would mean that aggregate wage income would remain practically unchanged.

23 The NMW rise in real terms, having stripped out inflation, was 6%. This elasticity of job destruction calculated with individual data for the workers affected is not comparable with that of other studies whose aim is to estimate the elasticity in employment using more aggregated data, as in Belman, and Wolfson (2014). The more aggregated elasticities where the persons affected by the NMW are not individually identified are substantially lower. The size of the population affected and the amount of the actual rise in wages following the increase in the minimum wage are fundamental factors for being able to compare this type of elasticity across different studies [see Neumark (2016)].

IMPACT OF THE 2017 MINIMUM WAGE ON EMPLOYMENT AND WAGES DERIVED FROM ESTIMATED JOB DESTRUCTION (a) **TABLE 1**

As a %

	Impact on employment			Impact on wages	
	Workers affected (b)	Job loss on employment of workers affected	Job loss on total employment	Wage bill	Average employee wage
Age					
16-24	20.2	-0.8	-0.2	0.8	1.0
25-32	5.5	-0.7	0.0	0.2	0.2
33-44	0.9	-6.6	-0.1	0.0	0.1
45-64	0.9	-10.7	-0.1	0.0	0.1
16-64	2.4	-3.1	-0.1	0.0	0.1

SOURCES: Ministerio de Trabajo, Migraciones y Seguridad Social, and Banco de España.

a Estimate of the impact of the 2017 minimum wage rise using 2013-2017 MCVL data, following the methodology of Galán and Puente (2015).
b Full-time workers who have worked the entire month, and who in 2016 received less than the 2017 NMW.

The rise in the NMW to €900 in 14 monthly payments in 2019 will notably raise the incidence of workers affected by this measure, compared with past experiences, in which the NMW increase was less. The MCVL information (see Table 2), relating to the 2017 wage structure, shows that 6.2% of people who worked full-time that year did so for a wage below the new 2019 minimum, compared with the figure of 2.4% estimated for the 2017 rise. This number rises to 22.5% when the case of new job entrants is analysed. In some groups, the incidence will be far higher, e.g. among the young, where one in four full-time workers receives income lower than the minimum wage. This incidence will also be higher among women (8.5%, compared

INCIDENCE OF THE PROPOSED 2019 NMW INCREASE (a) **TABLE 2**

The greatest incidence of the proposed 2019 NMW increase is among the young, temporary employees, those with a low level of education, and in small establishments.

As a %	MCVL data	As a %	
Total	6.2	Total	7.6
By sex		By sex	
Male	4.9	Male	6.0
Female	8.5	Female	9.7
By age		By age	
16-24	25.6	16-24	24.5
25-32	10.9	25-32	11.2
33-44	4.7	33-44	6.2
45-64	4.0	45-64	5.3
By type of contract		By type of contract	
Temporary	14.4	Temporary	14.4
Permanent	3.9	Permanent	5.6
By education		By education	
Contribution group 1 or 2	0.6	Higher	4.2
Contribution group 3 o more	7.4	Intermediate	9.9
		Primary	16.8
By size of establishment		By size of establishment	
1-5 workers	13.8	Fewer than 10 workers	14.8
6-10 workers	7.8	11-49 workers	6.0
11-50 workers	5.6	50-249 workers	3.8
51-100 workers	4.4	250 or more workers	2.4
More than 100 workers	3.0	Don't know, but more than 10 workers	7.9
		Don't know	10.6
By sector of activity		By sector of activity	
Agriculture (b)	11.1	Agriculture	28.1
Industry	2.7	Industry	3.4
Construction	2.9	Construction	3.9
Market services	7.7	Market services	10.4
Non-market services	6.9	Non-market services	3.6

SOURCES: INE (EPA) and Ministerio de Trabajo, Migraciones y Seguridad Social (MCVL).

a Percentage of employees working 30 days per month full-time with a contribution base below the NMW proposed for 2019 (€1,050 in 12 monthly payments). Since the Labour Force Survey (EPA) database does not report the numbers of days worked during the month, the paper removed those wages below the corresponding 2017 minimum wage. It is assumed those wages were errors or related to full-time employees who did not work the whole month.
b General Social Security Regime workers. If workers affiliated to the special rural and maritime regimes are taken into account, the incidence rises to 30.3%.

with 4.9% among men). Notable among the sectors with the highest incidence are agriculture (11.1%), a figure that would be even higher if workers under the Rural and Maritime Regime[24] were considered, and market services (7.7%). There are also differences in incidence depending on whether the province is Orense (15.5%), Santa Cruz de Tenerife (13.9%) or Badajoz (12.4%); it is these which evidence the highest incidence.

The foregoing figures are generally consistent with those obtained using the wage information from the 2017 Labour Force Survey (EPA), where a somewhat higher incidence of the approved 2019 NMW rise is observed (7.6%). The EPA information helps identify the fact that the minimum wage rise particularly affects certain groups, such as those with a lower education (16.8%), certain occupations such as those in agriculture (28.1%) and certain services such as those associated with accommodation and food service activities and the distributive trade, cleaning staff, labourers and kitchen staff. As regards specific characteristics that might affect the ultimate incidence of this measure on employment, it should be noted that 50% of full-time workers with a minimum wage of below €900 in 14 monthly payments have a temporary contract, and 40% are engaged in work centres with fewer than five workers.

Table 3 shows the outcome of projecting the results estimated in 2017 onto the distribution of workers affected by the new rise for 2019. Note that an increase of 22.3%, like that approved for this year, is unprecedented in Spain, which is why the projection involves a high degree of uncertainty. The second column of Table 3 shows the job losses associated with the rise in the minimum wage for all workers affected and by age group. It is estimated that, overall, 12.7% of the workers affected would lose their job as a result of the rise in the minimum wage, clearly above the estimates of 3.1% for 2017. That reflects the greater magnitude of the wage rise approved for 2019. These estimates would be compatible with an elasticity of job destruction of -0.6 among the group of workers affected.[25] As was the case in 2017, the impact would be more acute for the oldest affected workers, with destruction of 28% of employment being estimated among the over-45s affected.

The third column of Table 3 shows the aggregate results on job destruction and wages. The greater probability of job loss arising from the NMW rise for 2019, along with the greater incidence in relation to that estimated in 2017, would raise the impact on job loss for full-time dependent workers for 2019 to 0.8%. Considering approximately 16 million full-time employees, the elasticity of -0.6 for the 1 million workers affected would be compatible with job losses of around 125,000 workers.

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24 This figure refers to agricultural workers affiliated to the General Social Security Regime, the group used to estimate the impact of the NMW in this paper. If workers affiliated to the Rural and Maritime Regime are also considered, the incidence would be far higher (30.3%).

25 The real rise in the NMW to calculate elasticity is 21%. Note that if we calculated elasticity for a more aggregated group instead of for those affected, elasticity would be much smaller, e.g. the elasticity of aggregated job loss for a 1 pp rise in the NMW would be -0.04. As discussed in the previous section, therein lies one of the main difficulties of comparing elasticities from different studies, since they usually relate to different groups of workers (those affected, the young, workers from specific sectors, total employment).

IMPACT OF THE 2019 MINIMUM WAGE ON EMPLOYMENT AND WAGES DERIVED FROM ESTIMATED JOB DESTRUCTION (a) TABLE 3

As a %

	Impact on employment			Impact on wages	
	Workers affected (b)	Job loss on employment of workers affected	Job loss on total employment	Wage bill	Average employee wage
Age					
16-24	25.5	-2.2	-0.6	2.4	3.0
25-32	10.8	-1.6	-0.2	0.7	0.9
33-44	4.7	-15.9	-0.7	-0.1	0.6
45-64	3.9	-28.0	-1.1	-0.3	0.8
16-64	6.2	-12.7	-0.8	0.0	0.8

SOURCES: Ministerio de Trabajo, Migraciones y Seguridad Social, and Banco de España.

a Microsimulation based on the re-estimation with 2013-2017 MCVL data, following the methodology of Galán and Puente (2015) and taking the MCVL 2017 wage structure.
b Workers in 2017 receiving less than the proposed 2019 NMW (€900 per month in 14 payments, equivalent to €1,050 per month in 12 payments).

In any event, when interpreting these estimates regard must be had to the high uncertainty associated with extrapolating results from this exercise to total employment. Firstly, the estimation of the impact on job loss is with historical evidence that had never seen an NMW increase on this scale. Secondly, the elasticity used in this estimation has not been calculated for net aggregate employment but solely for the group of workers already employed prior to the NMW rise. Hence, effects on job creation and the re-employment of the unemployed are obviated. Further, in this case it should be borne in mind that, since small numbers are involved, the consequence of modest changes in the estimated elasticity would be substantial changes in the number of workers who lose their jobs. For instance, each tenth of a point above or below the estimated value for elasticity would raise or reduce job loss by around 20,000 workers. Finally, note that the study has been conducted for the group of workers affected that are clearly identifiable using the MCVL, without extrapolating to the group of workers with reduced working hours and to the self-employed, which leaves some three million workers not having been analysed. Hence, if this exercise is used to make an extrapolation to the total population of the employed, some assumption of incidence must be added to these groups.[26]

As to the effect on total income, the higher wages of those who keep their job would be offset, approximately, by the wages that those workers losing their jobs would cease to receive. As a result, the total wage bill would be left relatively unchanged. That would mean some increase in the degree of inequality of the distribution of labour income among different groups of workers, namely an additional 0.2% in terms of the Gini index, once both the wage gains of those affected by the rise who keep their jobs and the wage income losses of those who would lose their jobs are taken into account.

26 If a zero impact on the jobs of the self-employed group and the same for the reduced-hours and full-time groups were assumed, employment destruction relative to total employment would be 0.7%.

4 Conclusions

Different analyses have shown that there was a considerable increase in income inequality in Spain during the crisis. This increase essentially reflected the acute rise in unemployment, the shortening of new temporary contracts and the reduction in hours worked, which were concentrated in the groups of low-wage workers, with no appreciable widening of hourly wage differences during this period having been discernible. Comparisons at the international level actually show that these differences are not particularly high relative to those observed in other countries. Against this background, it would be desirable to base income inequality-alleviating policies on tools that intensified job creation and reduced temporary working arrangements among certain groups, such as the low-skilled and the long-term unemployed, who have been particularly affected since the onset of the crisis.

One strand of the literature has also pointed out that an increase in the NMW may be a useful tool for increasing the income of lower-income households, partly on account of the administrative simplicity involved and because of the limited budgetary impact on public finances.[27] However, other papers have raised doubts about the effectiveness of this instrument for increasing lower-income workers' wages and reducing poverty. As a result, the evidence available in this respect is not conclusive.

The assessment conducted in this paper on the impact of the rise in the minimum wage in 2017 in Spain shows a negative effect on the probability of the group of workers affected keeping their jobs, a development of particular relevance for older workers. The increase in the minimum wage approved for 2019, to €900 in 14 annual payments, would be one of 22.3%, far higher than those observed in the past in the Spanish economy. This increase would raise the number of workers affected to clearly higher figures than those observed in previous rises (between 6% according to the MCVL and almost 8% according to the EPA). The incidence would be particularly high in certain groups, such as women, the young, the lesser-skilled and employees on temporary contracts. A simulation of the potential impact of the rise considered for 2019, using the estimates made drawing on the 2017 experience, suggests – despite being subject to high uncertainty as there are no previous comparable rises – that the impact on the probability of job loss would be clearly higher than that estimated for 2017. In light of these results, it would be advisable to monitor in detail the effects of the NMW rise approved for 2019; in that way, should the risks posed in this paper materialise, effective action could be taken in respect of the workers affected, with the aim of increasing their employability.

27 See Dolado et al (2000).

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