

Laub, Natalie; Kalweit, René

Conference Paper

The minimum wage: An effective means to regain the electorate's confidence?

Beiträge zur Jahrestagung des Vereins für Socialpolitik 2021: Climate Economics

Provided in Cooperation with:

Verein für Socialpolitik / German Economic Association

Suggested Citation: Laub, Natalie; Kalweit, René (2021) : The minimum wage: An effective means to regain the electorate's confidence?, Beiträge zur Jahrestagung des Vereins für Socialpolitik 2021: Climate Economics, ZBW - Leibniz Information Centre for Economics, Kiel, Hamburg

This Version is available at:

<https://hdl.handle.net/10419/242440>

Standard-Nutzungsbedingungen:

Die Dokumente auf EconStor dürfen zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden.

Sie dürfen die Dokumente nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, öffentlich zugänglich machen, vertreiben oder anderweitig nutzen.

Sofern die Verfasser die Dokumente unter Open-Content-Lizenzen (insbesondere CC-Lizenzen) zur Verfügung gestellt haben sollten, gelten abweichend von diesen Nutzungsbedingungen die in der dort genannten Lizenz gewährten Nutzungsrechte.

Terms of use:

Documents in EconStor may be saved and copied for your personal and scholarly purposes.

You are not to copy documents for public or commercial purposes, to exhibit the documents publicly, to make them publicly available on the internet, or to distribute or otherwise use the documents in public.

If the documents have been made available under an Open Content Licence (especially Creative Commons Licences), you may exercise further usage rights as specified in the indicated licence.

The minimum wage: An effective means to regain the electorate's confidence?

René Kalweit* and Natalie Laub**

This version: February 2021

Abstract

This paper analyses whether the introduction of the minimum wage in Germany had an effect on the electorate's support for ruling parties. Estimations base on data from a large household survey and exploit regional differences in the bite of the minimum wage. The results show that in regions where the bite of the minimum wage was higher, the support for ruling parties significantly decreased in the year in which the minimum wage was introduced. Individuals with earnings just above the minimum wage mainly drive this result, which is robust to different model specifications.

JEL classification: D72, J31

* René Kalweit, Institute for Applied Economic Research at Tübingen University, Tübingen, Germany, rene.kalweit@iaw.edu.

**Natalie Laub, Institute for Applied Economic Research at Tübingen University, Tübingen, Germany, natalie.laub@iaw.edu.

Introduction

Policies like the introduction of a legally binding minimum wage do not only affect overall employment, individual (hourly) wages or working hours, but can also have an impact on life satisfaction and participation in society. While there is ample evidence on the former effects (see for example Cengiz et al. 2019, Hirsch et al. 2015, Burauel et al. 2018, Caliendo et al. 2019, Dustmann et al. 2020), the literature on the latter effects is less developed. Additionally, it presents contradictory findings. There is international evidence that the introduction or the increase of a minimum wage has a positive effect on life-satisfaction (see for example Kuroki 2018 for the U.S. or Güral and Ayaita 2019 for Germany). However, a qualitative study for Germany by Koch et al. 2018 shows that individuals who are just not affected by the minimum wage experience a decrease in their life satisfaction. Bellmann et al. 2017 find for Germany that the introduction of the minimum wage led to a reduction in training activities, which can be seen as one aspect of participation in society.

Another aspect of participation in society is turnout and voting behaviour. This paper aims at finding out whether the introduction of the minimum wage can affect these aspects. A related field of study is the analysis of how external economic shocks affect voting behaviour. For instance, Autor et al. (2016) show for the U.S. that an increase in imports from China leads to shifts in the ideology of elected representatives. Furthermore, these shocks lead to a polarized reaction: While right-leaning, majority-white areas move right, left-leaning, majority-minority areas tend to move left. However, the U.S. does not stand alone in this issue. According to Algan et al. (2017), voting for anti-establishment Euro-sceptic parties more often occurred in European regions which were more severely hit by the Great Recession. Colantone and Stanig (2016) find that in British regions which were more exposed to trade with China, vote shares in favour of leaving the EU were higher. In Colantone and Stanig (2018), the authors conclude that in order to secure the sustainability of globalization, appropriate redistribution policies have to be established to compensate those who are hit hardest by the adjustment costs of international trade. Dippel et al. (2015) conduct a mediation analysis for Germany and find that an increase in trade exposure has a significantly positive effect only on the vote shares of extreme-right parties, while effects on other parties' vote shares cannot be detected. The authors show that the most important mediator of the effect of trade-integration on voting is labour market adjustments. Dippel et al. (2017) even find that the effect of import exposure mediated by labour market adjustments exceeds the total effect of import exposure on the vote shares of extreme-right parties.

If labour market adjustments have such severe effects, the question arises, whether interventions on the labour market could also help to bring back the electorate's support for centrist parties. One such policy could be the introduction of minimum wages. So far, evidence on this question is rare. Uri and Mixon (1980) were among the first to analyse voting behaviour of representatives in minimum wage legislation in the U.S. The authors show that it is important to consider both the legislative process and the final vote. Representatives may express opinions on amendments which seem to contradict their vote on the final legislation. However, if it is taken into account that a representative aims at appealing to more than one subgroup of the electorate, this seemingly inconsistent behaviour might be entirely rational. Levin-Waldman (1998) also focuses on the behaviour of U.S. politicians and observes that how Congress members vote on minimum wage increases does not so much depend on their party affiliation but rather on the opinion of the constituents they represent. Markovich and White (2019) analyse the effect of minimum wage increases on voting behaviour in the U.S. They focus on voter turnout and find that an increase in the minimum wage significantly increases turnout. The authors conclude that increasing the minimum wage can thus serve to make the electorate more representative and reduce political inequality. Related to this topic is a study by Baicker and Finkelstein (2019) which finds that Medicaid expansion also increases voter turnout.

The aim of this paper is to analyse whether the electorate's support for the ruling parties changed due to the introduction of the minimum wage. A priori, it is not clear which reaction one would expect. On the one hand, the electorate could be in favour of the introduction of the minimum wage, as it might be considered fair to increase the wage of low-paid individuals. On the other hand, those affected by the minimum wage might be afraid to lose their jobs, while those not affected might be envious that they do not profit from rising wages while others do.

The remainder of this paper is organised as follows: The next section gives an overview of the institutional details of the minimum wage introduction in Germany. Thereafter, the data base and the estimation strategy are described. Descriptive results and the multivariate analysis are presented in the following sections. The paper is completed by several robustness analyses and a concluding section.

The introduction of the minimum wage in Germany

While a national minimum wage was introduced in the United Kingdom in 1998 and a federal minimum wage in the United States in 2009, in Germany, the statutory minimum wage only came into effect on January 1st, 2015.¹ A coalition of social democrats (SPD) and conservatives (CDU and CSU) introduced it, as central election promise of the Social Democrats.² The minimum wage amounted to € 8.50 per hour and was increased in several steps from € 8.84 (2017) to € 9.19 (2019), to € 9.35 (2020) and to € 9.50 (2021). Only few groups of employees are exempted from the statutory minimum wage. These exemptions apply to employees younger than 18, apprentices, certain categories of trainees and interns, non-profit and voluntary work and to former long-term unemployed persons during the first six months following unemployment. The introduction of a nationwide statutory minimum wage was preceded by sector-specific wage floors. For sectors in which the wage floor was below the 2015 statutory minimum wage, a transition period until 2017 was introduced. Sector-specific wage floors were below the statutory minimum wage in 2015 in the following sectors: meat processing, hairdressing, agriculture, temporary agency work, textiles, clothing and industrial laundries and newspaper delivery. On the other hand, in several sectors such as construction, commercial cleaning and caring, a wage floor above the national minimum wage is in place. When the nationwide minimum wage was introduced in Germany in 2015, it amounted to 48 per cent of the median wage.³ In the same year, the UK minimum wage reached about the same level (49 per cent), while the U.S. minimum wage only amounted to 36 per cent of the median wage. Over the following years, the share decreased slightly to 46 (33) per cent in Germany (the U.S.), while it increased to 54 per cent in the United Kingdom.

Data and estimation

To evaluate the voting behaviour, panel data containing voters' response over time is necessary, as well as information about how much the minimum wage affected the person interviewed. The German socioeconomic panel (SOEP) contains both information about socioeconomic characteristics as employment and wages and about voting behaviour. The SOEP is a representative household survey conducted in Germany annually since 1984. Every year, up to 30,000 individuals in about 15,000 households are interviewed. Questions contained in the survey do not only cover topics such as education, employment, wages and assets, but also wellbeing, personal characteristics, attitudes and opinions, leisure activities and civic engagement. Households to be interviewed are chosen by

¹ For a detailed overview see Bruttel et al. 2018.

² Mabbett 2016 gives an overview over the opinion of the two ruling parties regarding the minimum wage and how this opinion developed in the course of the introduction of the minimum wage.

³ The figures are taken from OECD 2019.

stratified random sampling of all private households in Germany. The interviews take place on a voluntary basis. All individuals aged 16 and older living in a chosen household are separately interviewed. The currently used version of the SOEP (v34) contains information up to the year 2017. Variables which change over time are harmonized prior to delivery of the dataset. The weighting process is complex and serves to reflect the population living in Germany. A detailed description of the dataset and the sampling method can be found in Wagner et al. (2007) and Goebel et al. (2019). The sample used in the following analysis is constructed in accordance with the configuration of the minimum wage, i.e. it contains only individuals who are eligible to the minimum wage according to the rules in place. Table 1 gives an overview of the dataset used.

Table 1 - Composition of the sample (in per cent)

	2014	2015	2016	2017
SOEP				
Female	47.9	48.0	48.5	47.9
Male	52.1	52.0	51.5	52.1
Age 24 and younger	5.3	5.1	5.3	5.2
Age 25 to 54	74.1	73.5	72.4	72.5
Age 55 and older	20.6	21.4	22.3	22.3
Residing in eastern Germany	17.1	17.2	17.1	16.9
Residing in western Germany	82.9	82.8	82.9	83.1
German citizenship	90.4	89.9	89.0	89.1
Foreign citizenship	9.6	10.1	11.0	10.9
Married	55.5	54.6	54.8	55.1
With children under age 16	27.2	27.5	27.2	28.0
No vocational education	13.5	13.6	13.7	14.0
Vocational education	61.5	60.8	61.0	59.9
Academic education	25.0	25.6	25.3	26.1
Employed full-time	76.5	77.7	77.4	77.1
Employed part-time	15.4	15.3	15.1	16.1
Marginally employed	8.1	7.0	7.4	6.7
Employed in primary sector	1.1	1.4	1.1	1.1
... in manufacturing	30.0	29.8	29.9	29.3
... in sales, transport, logistics	17.3	17.6	17.7	18.6
... in services	13.2	13.8	13.1	13.5
... in public administration	31.8	30.7	31.6	31.0
<i>N</i>	12,323	11,918	11,091	12,800

Source: SOEP v34, population-weighted results.

The following analysis includes data from 2014 until 2017. In each of these years, several questions regarding politics are asked. The first question on this topic asks whether an individual is “very interested”, “moderately interested”, “not interested” or “disinterested” in politics. Subsequently, it is asked whether the person interviewed leans towards a particular party. If the individual answers in the affirmative, two questions follow, asking which party the person leans toward to (with all important parties as possible answers) and to what extent (with five different possible answers ranging from “very strongly” to “very weakly”). In years following federal elections (i.e. in 2010, 2014 and 2018) it is also asked which party the person interviewed voted for. The set of possible answers contains all important parties as well as the two statements “did not vote” and “was not eligible to vote”.

To analyse whether the electorate's support for the ruling parties changed due to the introduction of the minimum wage, we decided to exploit the regional variation in the bite of the minimum wage. The mechanism behind the idea is straightforward. The higher the minimum wage is in a certain region compared to the median wage, the higher should be the effect on the voters upon its introduction. Since the wage level in a labour market region and the level of the federal minimum wage can easily be assumed to be exogenously given for an individual, this variation can be exploited. However, the results of the analysis are interpreted for the population within a labour market region. This means they are independent from the individual effectiveness of the minimum wage, as they can be fuzzy in this case. Voters may react to the reform even though they are not directly affected. Hence, a classical difference-in-difference (DiD) set-up with separation of treated and untreated individuals along the minimum wage threshold would crucially violate the SUTVA assumption. The following DiD regression equation is applied to estimate the effect of the minimum wage on the support for the ruling parties:

$$Y_{it} = \alpha + \beta \cdot T_t + \gamma \cdot Kaitz_{rt}^{2014} + \delta \cdot (T_t \cdot Kaitz_{rt}^{2014}) + \mu \cdot \mathbf{X}_{it} + \varepsilon_{it}$$

The support for the ruling parties (Y) of individual i in year t is explained by a year dummy (T), the bite of the minimum wage ($Kaitz$) in region r (i.e. where individual i lives) and an interaction term of the two former terms. Additionally, a set of individual control variables for year t (\mathbf{X}) such as age, gender, migration background, having children aged younger than 16, vocational education and job characteristics enter the regression equation. Furthermore, the regional unemployment rate is added as a control variable. Standard errors are clustered on the individual level.

The bite ($Kaitz$) is measured for each of the 258 labour market regions⁴ in 2014, i.e. before the minimum wage came into force. The Kaitz index is widely used in the context of minimum wage evaluation (see United States Bureau of Labor Statistics 1970, Caliendo et al. 2018). It sets the minimum wage in relation to the median wage in a certain region. As the number of observations within one labour market region is occasionally too small in the SOEP, the survey on the earnings structure conducted by the German federal statistical office is used to calculate the regional bite of the minimum wage. Figure 1 shows that there is sufficient regional variation in the bite of the minimum wage.

⁴ The German federal institute for research on building, urban affairs and spatial development defines these labour market regions by analysing shares of commuters between administrative districts. For a methodological explanation of the labour market regions (commuting zones) see Binder and Schwengler 2006.

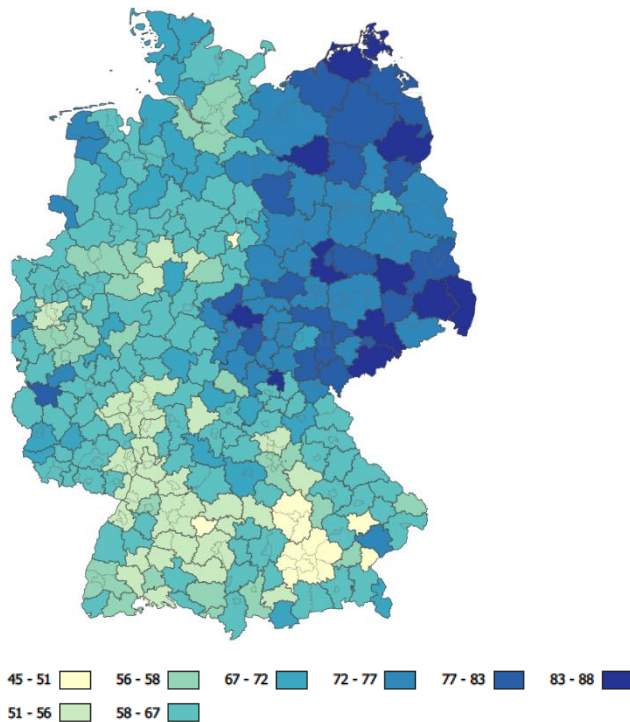


Figure 1 – Kaitz index (minimum wage/median wage) by labour market regions

The figure shows that regions with the highest bite of the minimum wage are located in the (north) eastern part of Germany, while the regions with the lowest bite are found in the southern part. The minimum wage ranges between 45 per cent and 88 per cent of the median wage within a certain labour market region, which is a sufficient variation to consider diverging outcomes of the minimum wage introduction.

Descriptive results

To get a first impression about the support for the ruling parties in Germany, its development over the years 2014 until 2017 is depicted in figure 2. This figure differentiates the sample into two groups, those whose hourly wages lie below the minimum wage and those whose wages lie above the minimum wage. As it can be seen, the support for the ruling parties shows a common trend between these two groups throughout the entire period apart from 2017. In contrast, this is not the case for the support of non-centre parties. For this purpose, the following parties are classified as centre parties: Social Democratic Party (SPD), Christian Democratic Union (CDU), Christian Social Union (CSU),⁵ Free Democratic Party (FDP) and Green Party (die Grünen). All other parties, including e.g. the Left Party and right-wing parties, are counted as non-centre parties. While the support for these non-centre parties increased slightly from 2014 until 2016 and remained constant thereafter among those who earned above the minimum wage, the support first remained constant between 2014 and 2015 among those who earned below the minimum wage and peaked in 2016. These differing pathways can serve as support for the regional estimation strategy applied in the following instead of an individual DiD design with a cut off at the minimum wage.

⁵ These three parties form the government throughout the entire period under consideration.

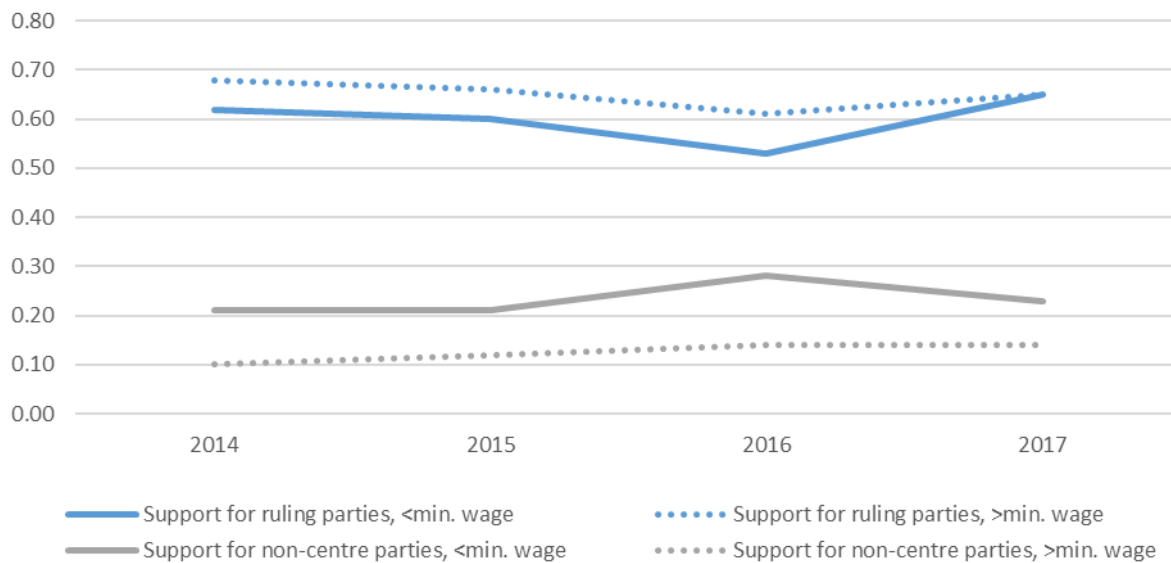


Figure 2 - Support for parties, differentiated by groups earning below/above the minimum wage

One concern about analysing the preferences for parties could be that these stated preferences do not mirror actual voting behaviour. The 2014 SOEP questionnaire however asks both for (current) party preferences and for actual voting behaviour in the 2013 federal elections. The answers to these two questions can thus be compared. It turns out that consistency between stated preferences and stated voting behaviour is rather high at least for the larger parties. Figure 3 shows that consistency is around 90 per cent for the social democrats (SPD), the conservatives (CDU and CSU) and the green party. It is slightly lower for the left-wing party and considerably lower for the liberal party (FDP). Figure 3 also shows the number of observations these results are based on. The number of observations is very low for the two right-wing parties (NPD and AfD), for the Pirates (a party which is mainly concerned with topics related to digitalisation and information society) and for those who voted for a party different from those listed here (labelled “other”). According to these results, the consistency between stated preferences and stated voting behaviour is high enough to use stated preferences as the outcome variable for the analysis conducted in the following. This holds especially if the support for the ruling parties is to be analysed, for which both the consistency and the number of observations are adequately high.

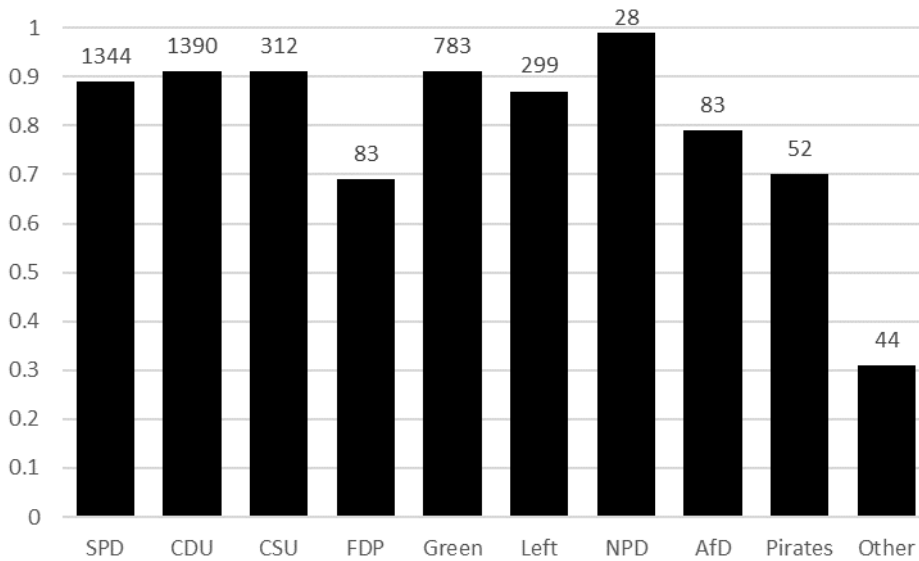


Figure 3 - Share of consistency between stated party preference and voting behaviour (No. of observations shown above the bars)

Multivariate analysis

In this section, the estimation strategy described above is applied to examine whether the support for ruling parties was affected by the introduction of the minimum wage. First of all, the support for ruling parties increased by 12 per cent on average in 2015 at a significance level of 1 per cent (see table 2, column 1). A higher value of the Kaitz index itself does not vary with support for ruling parties in general. The coefficient is insignificant. However, the interaction term of the minimum wage bite with time shows a significant effect in 2015, the year of the introduction of the minimum wage. The introduction of the minimum wage led to a temporary decrease in the support for the ruling parties. It decreased by 1.93 per cent in labour market regions with a bite higher by a one standard deviation (9.2) in 2015. Thus, after the introduction of the minimum wage, ruling parties significantly lost support in regions in which its bite was larger (see table 2).

This result does not depend on whether the regression is conducted without control variables (column 1 of table 2) or with control variables (columns 2-5). As soon as the regional unemployment rate is introduced in the regression (column 4), the decrease in the support for ruling parties is not only temporarily significant in the year of the minimum wage introduction (2015) but in all subsequent years as well. The regional unemployment rate obviously affects the voters' behaviour and the minimum wage bite, which causes an omitted variable bias.

Even though the effect of the introduction of the minimum wage can be detected in all subsequent years, the size of the coefficient loses both in magnitude and in significance compared to 2015.

This analysis relates party preferences to a policy implemented on the federal level. However, the preferences could be influenced to a far larger extent by the way in which the federal states' governments act. In column (5) of table 2 dummy variables are added for whether a specific party is in power in a certain federal state and year as well as a dummy to indicate whether elections took place on the state level in a certain year. Furthermore, a dummy is included, which is one if a federal state belongs to the former German Democratic Republic and zero otherwise. However, the results do not significantly differentiate from those without these dummies.

Figure 4 plots the coefficients of interest for the regression results shown in column 5 of table 2 together with the 95 per cent confidence intervals. The illustration nicely shows that the results are

not significant for the year 2014, which represents the period before the introduction of the minimum wage (baseline year) and thus serves as a placebo test. However, in the year in which the minimum wage was introduced, the results become highly significant. Thereafter, the upper bound of the confidence interval again approaches the null hypothesis border but remains slightly below. As the coefficient for the placebo period (2014) is not significantly different from zero, it is appropriate to assume that the different regions followed a common trend before the minimum wage was introduced.

Table 2 – Basic regression analysis

Support for ruling parties

	1	2	3	4	5
Constant	0.62*** (0.05)	0.71*** (0.05)	0.70*** (0.05)	0.65*** (0.06)	0.37*** (0.07)
Year dummies					
2014	0.04 (0.04)	0.05 (0.04)	0.03 (0.04)	0.02 (0.04)	0.02 (0.04)
2015	0.12*** (0.04)	0.13*** (0.04)	0.13*** (0.04)	0.11*** (0.04)	0.13*** (0.04)
2016	0.03 (0.05)	0.03 (0.05)	0.04 (0.05)	0.06 (0.05)	0.06 (0.05)
2017	0.06 (0.05)	0.06 (0.05)	0.05 (0.05)	0.10* (0.05)	0.09* (0.05)
Kaitz index	0.05 (0.08)	0.02 (0.08)	0.03 (0.08)	0.32*** (0.09)	0.71*** (0.10)
Year dummy x Kaitz index					
2014	-0.07 (0.06)	-0.08 (0.06)	-0.04 (0.06)	-0.03 (0.06)	-0.02 (0.06)
2015	-0.21*** (0.07)	-0.22*** (0.07)	-0.23*** (0.07)	-0.19*** (0.07)	-0.22*** (0.07)
2016	-0.11 (0.07)	-0.11 (0.07)	-0.12 (0.08)	-0.14* (0.08)	-0.16** (0.08)
2017	-0.11 (0.08)	-0.11 (0.08)	-0.10 (0.08)	-0.15* (0.08)	-0.18** (0.08)
Socio-demographics		Yes	Yes	Yes	Yes
Job characteristics			Yes	Yes	Yes
Regional unemployment rate				Yes	Yes
Politics on state level				Yes	Yes
Dummy for eastern states					Yes
Obs.	19,074	18,986	18,237	18,230	18,230
Adj. R ²	0.00	0.04	0.04	0.06	0.06

* p < 0.1, ** p < 0.05, *** p < 0.01. The reference group in col. (2) and (3) is male, without children under age 16, has a medium educational level and is of German citizenship. Col. (3) adds having a permanent contract and working in the manufacturing sector.

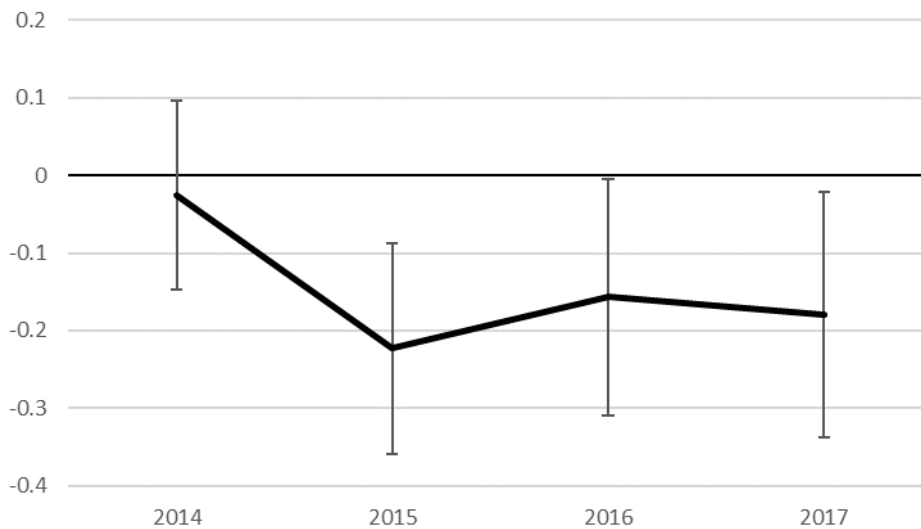


Figure 4 – Treatment coefficients with 95% CI

Even in regions in which the bite of the minimum wage is high, the majority of the population does not itself profit from increasing wages. Thus, the negative effect of the minimum wage introduction on the support for ruling parties might be driven by exactly this group. To test whether this hypothesis holds, the regression including all control variables (column 4 of table 2) is conducted for two groups whose salaries were not affected by the minimum wage. The first group consists of individuals whose hourly wages lie between € 5 and € 8. As the minimum wage is binding and the analysis excludes all individuals for whom exemptions hold, this group should actually not exist. Whether these low hourly wages arise because of non-compliance of the employers or because of misreporting in the survey data is subject to ongoing debate. The SOEP questionnaire for the years included in the analysis only asks for the monthly wage and the hours worked per week. Thus, the hourly wage has to be computed from this information. As the resulting hourly wage may be imprecise, the first group considered here only consists of individuals whose hourly wage is up to € 8, i.e. a corridor to allow for imprecision is introduced. The second group consists of individuals whose hourly wages lie above the minimum wage, i.e. between € 9 and € 11.5. As can be seen from columns 1 and 2 of table 3, there is no effect of the introduction of the minimum wage for the group with low wages. Only in 2016 quite a large effect arises, which is however only slightly significant. As regards the group with high wages, the introduction of the minimum wage causes a significant drop in the support for ruling parties. This effect is larger than the overall effect presented in column 4 of table 2. In 2017, the year in which the minimum wage was increased for the first time, the group with the high wages again displays a significant drop in the support for ruling parties. Another possibility to test which group drives the above results is to run the regressions separately for different hourly wages. Columns 3 to 6 show the results for groups with hourly wages directly below the minimum wage (column 3), in the range of the minimum wage (column 4), directly above the minimum wage (column 5) and well above the minimum wage (column 6). It can be seen that the only group for which the effect is negative and significant throughout the entire period since the introduction of the minimum wage is the one with wages directly above the minimum wage. The group which is affected by the minimum wage does however not show any significant results, which may be due to the small number of observations in this group. Thus, it seems to be the case that the overall effect measured by the basic estimation is driven by those individuals who themselves do not profit from increasing wages. For them, envy might play a role, especially in regions in which the bite of the minimum wage is high, i.e. the minimum wage should also be more visible than in other regions.

Table 3 – Robustness: different population

Robustness: Differentiated by hourly wage

	Excluding those directly affected			Including those directly affected		
	1	2	3	4	5	6
Hourly wage (in €)	5≤w≤8	9≤w≤11.5	5≤w<8.5	8.5≤w<8.84	8.84≤w<10	10≤w<15
Constant	0.54* (0.28)	0.80*** (0.15)	0.49** (0.24)	1.03* (0.55)	0.76*** (0.28)	0.82*** (0.10)
Year dummies						
2014	-0.03 (0.31)	0.00 (0.11)	0.08 (0.27)	0.25 (0.48)	-0.18 (0.29)	-0.03 (0.09)
2015	0.40 (0.36)	0.25* (0.15)	0.19 (0.28)	0.49 (0.55)	0.49 (0.35)	0.02 (0.09)
2016	0.47 (0.36)	-0.04 (0.15)	0.45 (0.31)	0.16 (0.60)	0.37 (0.31)	-0.18* (0.11)
2017	-0.32 (0.50)	0.32** (0.15)	-0.38 (0.40)	0.71 (0.71)	0.77** (0.35)	-0.04 (0.12)
Kaitz index	0.00 (0.41)	-0.31 (0.22)	0.04 (0.35)	-0.29 (0.83)	0.24 (0.41)	-0.15 (0.16)
Year dummy x Kaitz index						
2014	-0.05 (0.47)	-0.03 (0.16)	-0.20 (0.40)	-0.39 (0.74)	0.17 (0.42)	0.01 (0.14)
2015	-0.85 (0.56)	-0.45** (0.22)	-0.46 (0.42)	-0.86 (0.86)	-0.90* (0.51)	-0.10 (0.14)
2016	-0.95* (0.53)	-0.05 (0.21)	-0.90** (0.45)	-0.50 (0.96)	-0.78* (0.44)	0.16 (0.16)
2017	0.36 (0.79)	-0.50** (0.22)	0.42 (0.62)	-1.35 (1.11)	-1.19** (0.50)	-0.05 (0.18)
Socio-demographics	Yes	Yes	Yes	Yes	Yes	Yes
Job characteristics	Yes	Yes	Yes	Yes	Yes	Yes
Regional unemployment rate	Yes	Yes	Yes	Yes	Yes	Yes
Obs.	588	1,476	777	249	659	3751
Adj. R ²	0.10	0.10	0.09	0.08	0.12	0.05

* p < 0.1, ** p < 0.05, *** p < 0.01. The reference group is male, without children under age 16, has a medium educational level, is of German citizenship, has a permanent contract and works in the manufacturing sector.

Using the Kaitz index is only one method to measure the bite of the minimum wage. Another possibility is to consider the share of the population which is affected by the minimum wage (i.e. the share of the population whose wages were below the minimum wage before its introduction). Table 4 shows how the results change if the share of the population affected by the minimum wage enters the regression as treatment measure. All specifications, i.e. with and without control variables, show a negative and significant effect of the introduction of the minimum wage on the support for ruling parties. The size of the effect is slightly higher than in the basic regression (see table 2). As regards the specification with both information on the state's government and the regional unemployment rate included, negative significant effects can be observed for the years 2016 and 2017, which was also the case in

the basic estimation. The negative effect of the minimum wage introduction on the support for ruling parties does thus not depend on the treatment measure used.

Table 4 - Robustness: different treatment measure

Robustness: Share of population affected by minimum wage

	1	2	3	4	5
Constant	0.67*** (0.02)	0.74*** (0.03)	0.74*** (0.03)	0.80*** (0.03)	0.70*** (0.04)
Year dummies					
2014	0.01 (0.01)	0.02 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)
2015	0.02* (0.01)	0.03** (0.01)	0.03* (0.01)	0.03** (0.01)	0.03* (0.01)
2016	-0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.00 (0.02)	-0.01 (0.02)
2017	0.02 (0.02)	0.02 (0.02)	0.01 (0.02)	0.04*** (0.02)	0.03* (0.02)
Share of population affected by minimum wage	-0.15 (0.10)	-0.15 (0.10)	-0.14 (0.10)	0.28** (0.13)	0.95*** (0.18)
Year dummy x share affected					
2014	-0.09 (0.08)	-0.10 (0.08)	-0.06 (0.08)	-0.07 (0.09)	-0.05 (0.09)
2015	-0.24*** (0.09)	-0.25*** (0.09)	-0.26*** (0.09)	-0.25*** (0.09)	-0.26*** (0.09)
2016	-0.16 (0.10)	-0.17* (0.10)	-0.18* (0.10)	-0.23** (0.11)	-0.23** (0.11)
2017	-0.18* (0.11)	-0.19* (0.11)	-0.18* (0.10)	-0.27** (0.11)	-0.26** (0.11)
Socio-demographics		Yes	Yes	Yes	Yes
Job characteristics			Yes	Yes	Yes
Regional unemployment rate				Yes	Yes
Politics on state level				Yes	Yes
Dummy for eastern states					Yes
Obs.	19,074	18,986	18,237	18,230	18,230
Adj. R ²	0.01	0.04	0.04	0.05	0.06

* p < 0.1, ** p < 0.05, *** p < 0.01. The reference group in col. (2) and (3) is male, without children under age 16, has a medium educational level and is of German citizenship. Col. (3) adds having a permanent contract and working in the manufacturing sector.

One important threat to the analysis conducted here is that the results are driven by another policy measure which has been disregarded. However, other reforms which took place in the same year as the introduction of the minimum wage should not have had an effect as regionally differing as the minimum wage had. First of all, both the contribution rate for the statutory health insurance and the public pension insurance were lowered. In contrast, the contribution rate for the statutory long-term care insurance was raised. The percentage share by which the rates were cut (raised) was the same throughout the entire country. By mid-2015, benefits paid by the public pension insurance were increased considerably. In Germany, different formulas for the calculation of pension benefits are still

in place depending on whether entitlements were earned in the eastern or in the western part of the country. However, the increase in the pension benefits applied to both parts of the country. In 2015, the social assistance benefits were increased by about the same size as in the year before (and by more than in the two following years). This increase can have regionally differing effects as the rates are set at an absolute value which is the same for the entire country. This means that the purchasing power of social assistance benefits differs considerably depending on the region a person lives in. However, the uniformly set rates are only one part of social assistance benefits. The other part is benefits for housing and heating. As regards this part, the actual costs of housing and heating are borne by the social assistance as long as they are appropriate. Thus, it can be assumed that the increase of social assistance benefits should not interfere with the policy measure analysed here.

One of the most incisive events that happened in the year 2015 was the arrival of an extraordinarily high number of refugees in Germany. This event of course had regionally very differing effects. For example, regions located in the south western part of the country, close to the Czech border, were much more affected than other regions. However, the inflow of refugees mainly took place during the second half of the year. By that time, most of the interviews for the SOEP had already been conducted. However, to rule out that refugee migration to Germany drives the results presented here, the basic regression is conducted excluding individuals who were interviewed in the second to fourth quarter of 2015. Table 5 shows that the results only change slightly. Especially for the specifications in columns 4 and 5 (regional unemployment rate, state level politics and dummy for eastern states included), the results are very close to those presented in table 2, at least for 2015. As regards 2016, the significance of the effect is lost, which is different from the results in the basic regression. This might be a hint that the opinion on the refugee migration has an important effect on the support for ruling parties, which can only be mirrored in the interviews conducted from 2016 on. However, the effect of the introduction of the minimum wage on the support for the ruling parties remains negative and highly significant even if for 2015 only the interviews conducted in the first three months are taken into account.⁶

Conclusion

According to the results presented in this paper, the introduction of the minimum wage does not seem to be an effective measure to regain the electorate's support. In regions in which the bite of the minimum wage was higher, the support for ruling parties significantly decreased in the year in which the minimum wage was introduced. The robustness analyses showed that this result holds true for several different specifications and even if the extraordinarily high refugee migration which happened in the same year is accounted for. Moreover, results are driven by voters earning slightly more than the minimum wage. Especially in regions in which the bite of the minimum wage is higher, i.e. in which the minimum wage is more visible, it seems plausible to assume that envy plays an important role. However, to better understand the mechanisms at work, a mediation analysis similar to the one conducted in Dippel et al. (2015) is still to be conducted in further analyses.

The SOEP survey also collects data on actual voting behaviour, which might be an additionally valuable source of information. The upcoming version of the SOEP will contain data until 2019 and thus information on voting behaviour in the federal elections of 2017. In a further analysis, voting behaviour prior to the introduction of the minimum wage (i.e. in the 2013 federal elections) and in the 2017 federal elections will be included in the analysis as another outcome of interest. Furthermore, the analysis will be conducted with the support for social democratic and left-wing parties as outcome

⁶ The same argument holds for the radicalisation of the populist right-wing party AfD. The congress which led to a further radicalisation (and caused the founder Bernd Lucke to leave the party) took place in July 2015.

variable as the introduction of a general binding minimum wage had been a core issue of their programmes for years.

Table 5 – Robustness: Influence of refugee migration

Robustness: excluding interviews from 04/2015 until 12/2015

	1	2	3	4	5
Constant	0.63*** (0.05)	0.72*** (0.06)	0.71*** (0.06)	0.66*** (0.06)	0.36*** (0.07)
Year dummies					
2014	0.04 (0.04)	0.04 (0.04)	0.02 (0.04)	0.01 (0.04)	0.00 (0.04)
2015	0.13*** (0.05)	0.14*** (0.05)	0.14*** (0.05)	0.11** (0.05)	0.13*** (0.05)
2016	0.02 (0.05)	0.02 (0.05)	0.02 (0.05)	0.04 (0.05)	0.04 (0.05)
2017	0.05 (0.05)	0.05 (0.05)	0.04 (0.05)	0.08 (0.05)	0.07 (0.05)
Kaitz index	0.04 (0.08)	0.01 (0.08)	0.02 (0.08)	0.32*** (0.09)	0.73*** (0.11)
Year dummy x Kaitz index					
2014	-0.06 (0.06)	-0.07 (0.06)	-0.03 (0.06)	-0.01 (0.06)	-0.01 (0.06)
2015	-0.23*** (0.08)	-0.24*** (0.08)	-0.24*** (0.08)	-0.19** (0.08)	-0.22*** (0.08)
2016	-0.10 (0.07)	-0.10 (0.07)	-0.10 (0.08)	-0.11 (0.08)	-0.13 (0.08)
2017	-0.09 (0.08)	-0.09 (0.08)	-0.08 (0.08)	-0.12 (0.08)	-0.15* (0.08)
Socio-demographics		Yes	Yes	Yes	Yes
Job characteristics			Yes	Yes	Yes
Regional unemployment rate				Yes	Yes
Politics on state level				Yes	Yes
Dummy for eastern states					Yes
Obs.	16,879	16,803	16,067	16,060	16,060
Adj. R ²	0.00	0.04	0.04	0.06	0.06

* p < 0.1, ** p < 0.05, *** p < 0.01. The reference group in col. (2) and (3) is male, without children under age 16, has a medium educational level and is of German citizenship. Col. (3) adds having a permanent contract and working in the manufacturing sector.

Publication bibliography

Algan, Yann; Gurvieq, Sergei; Papaioannou, Elias; Passari, Evgenia (2017): The European Trust Crisis and the Rise of Populism. Washington, DC (Brookings Papers on Economic Activity, 309-382).

Autor, David; Dorn, David; Hanson, Gordon; Majlesi, Kaveh (2016): Importing Political Polarization? The Electoral Consequences of Rising Trade Exposure. Cambridge, MA (NBER Working Paper, 22637).

Baicker, Katherine; Finkelstein, Amy (2019): The Impact of Medicaid Expansion on Voter Participation: Evidence from the Oregon Health Insurance Experiment. In *Quarterly Journal of Political Science* 14 (4), pp. 383–400. DOI: 10.1561/100.00019026.

Bellmann, Lutz; Bossler, Mario; Gerner, Hans-Dieter; Hübler, Olaf (2017): Training and minimum wages: first evidence from the introduction of the minimum wage in Germany. In *IZA Journal of Labor Economics* 6 (1), p. 8. DOI: 10.1186/s40172-017-0058-z.

Binder, Jan; Schwengler, Barbara (2006): Neuer Gebietszuschnitt der Arbeitsmarktregionen im Raum Berlin und Brandenburg: kritische Überprüfung der bisher gültigen Arbeitsmarktregionen und Vorschläge für einen Neuzuschnitt.

Bruttel, Oliver; Baumann, Arne; Dütsch, Matthias (2018): The new German statutory minimum wage in comparative perspective: Employment effects and other adjustment channels. In *European Journal of Industrial Relations* 24 (2), pp. 145–162. DOI: 10.1177/0959680117718661.

Burauel, Patrick; Grabka, Markus; Schröder, Carsten; Caliendo, Marco; Obst, Cosima; Preuss, Malte (2018): Auswirkungen des gesetzlichen Mindestlohns auf die Lohnstruktur. Studie im Auftrag der Mindestlohnkommission. Berlin.

Caliendo, Marco; Fedorets, Alexandra; Preuss, Malte; Schröder, Carsten; Wittbrodt, Linda (2018): The short-run employment effects of the German minimum wage reform. In *Labour Economics* 53, pp. 46–62. DOI: 10.1016/j.labeco.2018.07.002.

Caliendo, Marco; Schröder, Carsten; Wittbrodt, Linda (2019): The Causal Effects of the Minimum Wage Introduction in Germany – An Overview. In *German Econ Rev* 20 (3), pp. 257–292. DOI: 10.1111/geer.12191.

Cengiz, Doruk; Dube, Arindrajit; Lindner, Attila; Zipperer, Ben (2019): The Effect of Minimum Wages on Low-Wage Jobs. In *The Quarterly Journal of Economics* 134 (3), pp. 1405–1454. DOI: 10.1093/qje/qjz014.

Colantone, Italo; Stanig, Piero (2016): Global Competition and Brexit (BAFFI CAREFIN Centre Research Paper, 2016-44).

Colantone, Italo; Stanig, Piero (2018): The Trade Origins of Economic Nationalism: Import Competition and Voting Behavior in Western Europe. In *American Journal of Political Science* 62 (4), pp. 936–953. DOI: 10.1111/ajps.12358.

Dippel, Christian; Gold, Robert; Heblich, Stephan (2015): Globalization and Its (Dis-)Content: Trade Shocks and Voting Behavior. Cambridge, MA (NBER Working Paper, 21812).

Dippel, Christian; Gold, Robert; Heblich, Stephan; Pinto, Rodrigo (2017): Instrumental Variables and Causal Mechanisms: Unpacking The Effect of Trade on Workers and Voters. Cambridge, MA (NBER Working Paper, 23209).

Dustmann, Christian; Lindner, Attila; Schönberg, Uta; Umkehrer, Matthias; vom Berge, Philipp (2020): Reallocation Effects of the Minimum Wage (CReAM Discussion Paper Series, 07/20).

Goebel, Jan; Grabka, Markus M.; Liebig, Stefan; Kroh, Martin; Richter, David; Schröder, Carsten; Schupp, Jürgen (2019): The German Socio-Economic Panel (SOEP). In *Jahrbücher für Nationalökonomie und Statistik* 239 (2), pp. 345–360. DOI: 10.1515/jbnst-2018-0022.

Gülal, Filiz; Ayaita, Adam (2019): The Impact of Minimum Wages on Well-Being: Evidence from a Quasi-experiment in Germany. In *Journal of Happiness Studies* (forthcoming). DOI: 10.1007/s10902-019-00189-5.

Hirsch, Barry T.; Kaufman, Bruce E.; Zelenska, Tetyana (2015): Minimum Wage Channels of Adjustment. In *Industrial Relations* 54 (2), pp. 199–239. DOI: 10.1111/irel.12091.

Koch, Andreas; Kirchmann, Andrea; Reiner, Marcel; Scheu, Tobias; Boockmann, Bernhard; Bonin, Holger (2018): Verhaltensmuster von Betrieben und Beschäftigten im Zuge der Einführung des gesetzlichen Mindestlohns. Studie im Auftrag der Mindestlohnkommission. Tübingen.

Kuroki, Masanori (2018): Subjective well-being and minimum wages: Evidence from U.S. states. In *Health economics* 27 (2), 171-180. DOI: 10.1002/hec.3577.

Levin-Waldman, Oren M. (1998): Exploring the Politics of the Minimum Wage. In *Journal of Economic Issues* 32 (3), pp. 773–802. Available online at www.jstor.org/stable/4227352.

Mabbett, Deborah (2016): The minimum wage in Germany: what brought the state in? In *Journal of European Public Policy* 23 (8), pp. 1240–1258. DOI: 10.1080/13501763.2016.1186210.

Markovich, Zachary; White, Ariel (2019): More Money, More Turnout? Minimum Wage Increases and Voting. Cambridge, MA (Working Paper).

OECD (2019): Minimum Wage Database. Available online at <https://stats.oecd.org/Index.aspx?DataSetCode=RMW#>, checked on 12/30/2019.

United States Bureau of Labor Statistics (1970): Youth Unemployment and Minimum Wages. In *Bulletin of the United States Bureau of Labor Statistics* (1657), pp. 30–54.

Uri, Noel D.; Mixon, J. Wilson (1980): An Economic Analysis of the Determinants of Minimum Wage Voting Behavior. In *The Journal of Law & Economics* 23 (1), pp. 167–177. Available online at www.jstor.org/stable/725290.

Wagner, Gerd G.; Frick, Joachim R.; Schupp, Jürgen (2007): The German Socio-Economic Panel Study (SOEP) - Scope, Evolution and Enhancement. In *Schmollers Jahrbuch* 127 (1), pp. 139–169.