

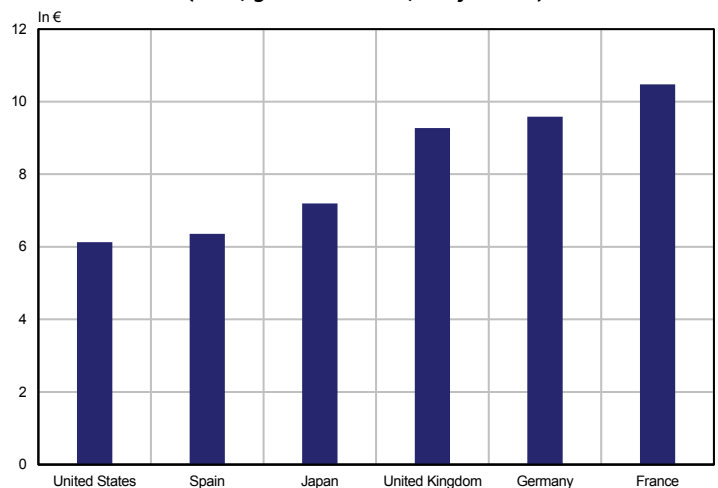
# Trésor-economics

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## An overview of minimum wages in advanced economies

- Most major advanced economies have a minimum wage. In Germany, Spain and the United Kingdom, there is a single national minimum wage, as in France. In Japan and the United States, minimum thresholds are set at local level. In Italy, there is no legal minimum wage. In addition, there are differences in the minimum wage's characteristics and how it is determined. The age at which the minimum wage is mandatory varies from 16 in Spain to 25 in the United Kingdom. Rules for adjusting the minimum wage also differ: a number of countries increase their minimum wage yearly, in Germany increases are decided every two years, while in the United States they are much less frequent because there is no set rule (the last increase in the federal minimum wage took effect in 2009).
- Compared to the major advanced economies, the French minimum hourly wage has remained at a relatively high level since 2000 (see chart). However, various measures targeting low wages (general tax relief, the Competitiveness and Employment Tax Credit, the Responsibility and Solidarity Pact) have reduced the cost to employers.
- International studies show that the macroeconomic effects of the minimum wage on total employment vary from one country to another, but are negative with regard to youth employment. The effects of changes to the minimum wage depend on its initial level: if it is low, an increase is likely to increase employment, but if it is already high, an increase reduces employment.
- The effects of an increase in the minimum wage on productivity depend on the context. By motivating employees or encouraging training, it can drive productivity gains. However, these effects depend very much on the quality and access to vocational training facilities.
- Finally, the minimum wage has contributed to the reduction of wage inequality in advanced economies, but is not the best tool for tackling inequality or poverty. Tax policies and social transfers seem better suited to this objective than raising the minimum wage.

**Minimum hourly wage in purchasing power parity (PPP, gross amount, May 2018\*)**



Source: National labour ministries, World Bank, DG Trésor calculations.

\* Gross minimum hourly wages in domestic currency, from the labour ministries in each country, were converted into PPP dollars. The amounts were then converted into euros using the USD/EUR exchange rate of December 2017 (€1=\$1.18). For the United States, the federal minimum wage was used, and for Japan, a national average of regional minimum wages was used.

# 1. A comparative analysis of minimum wages in the main advanced countries shows a wide diversity of characteristics and trajectories

## 1.1 Minimum wages in advanced economies are subject to more or less restrictive legal frameworks

Several of the major advanced economies tracked in this study have a single minimum wage. Some countries, including the United Kingdom or Germany (see Table 1), enacted their minimum wages relatively recently. Italy is noteworthy for the absence of a legal framework for the

minimum wage, although more than 80% of employees are covered by minimum amounts resulting from collective bargaining.<sup>1</sup> In the United States, a minimum wage floor is set at the federal level, leaving states, counties and cities the option of applying a higher minimum wage in their territory. In Japan, on the other hand, there is no single minimum wage at national level; different wages are set by region and by occupation.

**Table 1: Minimum wage characteristics by country**

Country (year of introduction)	Single minimum wage depending on region or sector	Minimum wage unit	Legal amount* (in €)
France (1950; 1970 in its current form)	Yes	Hour	9.88/hour
Spain (1963; 1976 in its current form)	Yes	Month, day and year (corresponding de facto to a 13th and 14th month of wages) <sup>a</sup>	735.9/month 24,53/day over 14 months (i.e. 4.95/hour for 40 hours)
Germany (2015)	Yes	Hour	8.84/hour
United Kingdom <sup>b</sup> (1999)	Yes	Hour	8.87/hour (£7.83)
United States (1938)	No: <i>federal minimum wage; each state, county and city may set its own minimum level</i>	Hour	6.13/hour (\$7.25)
Japan (1959; 1968 in its current form)	No: <i>minimum wage differs depending on the region and on specific occupations</i>	Hour	6.34/hour (national average of ¥848)
Italy	No minimum wage	–	–

a. Most countries have an hourly minimum wage, with the exception of Spain, which has daily and monthly rates. Also, in Spain, in addition to monthly and daily minimum wages, the law establishes an annual minimum wage (€10,302.60 in 2018), which is equivalent to a thirteenth and fourteenth month of wages for employees who are paid a monthly minimum wage.

b. National Living Wage.

\* Gross minimum wage as of May 2018 (conversion into euros at the December 2017 exchange rate for the United States, the United Kingdom and Japan).

### Box 1: "Ein-Euro-Jobs" in Germany

"Ein-Euro-Jobs" (One-Euro-Jobs) are a special category of jobs that are not subject to the German minimum wage. These jobs, which pay between €1 and €2.50 per hour, were introduced by the Hartz IV law of January 2005. However, they are not based on an employment contract, but rather serve as additional compensation for recipients of minimum social benefits. Ein-Euro-Jobs are defined as public-interest jobs provided to the long-term unemployed (over a year) to facilitate a return to work (refusal is only possible under certain conditions). The Jobcenter, the municipal department dealing with the long-term unemployed, must prove that the job offered is indeed in the public interest and that it does not replace a normal job. Moreover, taking an Ein-Euro-Job must not jeopardise a worker's opportunities to access training or normal employment. This is why these jobs are time-limited, often from 6 to 9 months, with working hours capped at 30 hours per week. According to Germany's Federal Employment Agency,<sup>a</sup> 69,000 people held Ein-Euro-Jobs in April 2018, i.e. a 15% decline from the year-ago period.

In 2016, this system was opened up to migrants whose asylum applications had not yet been processed, with an eye to helping them integrate. These new jobs, officially known as Flüchtlingsintegrationsmaßnahmen (special integration measures for refugees – FIM), are similar to other Ein-Euro-Jobs but the hourly rate is set at 80 cents. These public-interest positions are often offered on a voluntary basis in reception centres (for meal service, maintenance work, etc.). By the end of March 2017, 25,000 FIM jobs had been created, compared with the 100,000 that had been planned, mainly because efforts to accelerate the processing of asylum applications took effect more quickly than expected. Once they have been granted asylum, refugees are eligible for Ein-Euro-Jobs and the full minimum wage.

a. Cf. April 2018 monthly report.

(1) Source: OECD: Collective bargaining coverage

The age at which the minimum wage becomes mandatory varies from country to country: in Japan, young people have access to the minimum wage from the age of 16, while in the United Kingdom, they must be at least 25 years old to benefit from the National Living Wage. In France, the United Kingdom and the United States, there are lower minimum wages for young people and apprentices. There are also

specific exceptions, as is the case in some sectors in the United States. In the restaurant sector, for example, employees can be paid an hourly wage that is below the legal minimum, since in addition to this basic wage of \$2.13, they receive variable supplements directly from their customers in the form of gratuities (see Table 2).

**Table 2: Minimum wage specificities by country**

Country	Mandatory age for minimum wage	Principal exceptions	Adjustment of minimum wage based on age or status (% of minimum wage)	Specific exceptions
France	18	Individuals with disabilities employed in vocational rehabilitation centres, apprentices, interns	80% for those under 17 90% for those between 17 and 18 Between 55% and 80% for those under 26 with vocational training contracts Between 27% and 78% for apprentices under 26 based on the individual's age and state of advancement in the training programme	Commercial representatives ( <i>voyageurs, représentants et placiers</i> ), in-home childcare workers, prison labour
Spain	16			
Germany	18	Apprentice in training, interns, long-term unemployed for the first six months following their return to employment		"Ein-Euro Jobs"
United Kingdom	25 ( <i>National Living Wage</i> )	Interns, members of the armed forces	National Minimum Wage: 54% for those between 16 and 17 75% for those between 18 and 20 94% for those between 21 and 24 47% for apprentices	Prison labour, members of religious communities, share fishermen
United States	20	Workers with disabilities	59% for young people under 20 as part of a professional job lasting no more than 90 days 75% for high school students over 16 as part of an internship or apprenticeship 85% for students working full time (in most sectors)	Tipped employees (minimum wage \$2.13), some jobs (such as newspaper distribution, fishing, etc.)
Japan	16			

Source: OECD, United States Department of Labor, Japanese Ministry of Health, Labour and Welfare.

In many countries, the minimum wage is increased by the government after consultation with labour and management (such as France and Spain) or on the basis of a recommendation directly provided by a dedicated commission (in Germany, Japan<sup>2</sup> and the United Kingdom), while in the United States the government alone decides on the level of the federal minimum wage. In addition, most countries adjust their minimum wage at least once a year, except Germany, which generally increases it every two years, and the United States, which does not have a rule for

increasing the federal minimum wage. Adjustment parameters vary,<sup>3</sup> ranging from previous consumer price trends to the overall economic situation (United Kingdom), to inflation and productivity forecasts (Spain), and wage levels and company margins (Japan). France is the only country of the seven examined here that imposes a minimum automatic adjustment formula.<sup>4</sup> However, at local level, some American states such as California or New York have an inflation-indexing formula.

(2) In Japan, the minimum wage is set at regional level. A national advisory council proposes hourly minimum wage rates to the various regional councils, which then decide on the level. This amount is published by the Japanese Ministry of Health, Labour and Welfare.

(3) M. Brischoux, C. Gouardo, A. Jaubertie, P. Lissot, T. Lellouch and A. Sode (2014), "Mapping out the options for a European minimum wage standard", *Trésor-Economics* no. 133.

(4) An automatic wage adjustment system exists in other advanced countries, such as Belgium, Luxembourg, Slovenia and Malta. However, for these four countries, the adjustment is based on a single criterion, that of inflation (whereas France relies simultaneously on two criteria, inflation and half of the purchasing power of the basic hourly wage of workers and employees). In the Netherlands, the law adjusts the minimum wage according to the average change in negotiated wages, but the government also has the power to not apply this increase (for example, if it considers that an increase would be detrimental to employment).

## Box 2: Several countries are pursuing a policy of significantly increasing the minimum wage

In 2018 in Spain, the monthly minimum wage, which was previously €707.70, was set at €735.90, a 4% increase. On 1 January 2019, the government further increased the minimum wage by 22%, to €900 per month.

In the United Kingdom, the National Living Wage<sup>a</sup> rose by 4.2% in April 2017 and again by 4.4% in April 2018 (reaching £7.83 per hour). It is expected to increase to £8.21 in April 2019 (by 4.9%). The United Kingdom government aims for a minimum wage of £9 by 2020, with an eye to increasing it to 60% of the median wage. The idea is to promote productivity, by motivating employees and encouraging companies to invest in training (see discussion in section 2.2).

Japan raised its regional minimum wages in 2017 and 2018 (by 3%), and the government has committed to continue to increase them in the coming years (3% annually), until it reaches the target of 1,000 yen per hour, compared to the current national average of 874 yen per hour. These increases are aimed at supporting inflation.<sup>b</sup>

In Germany, a two-stage increase in the minimum hourly wage is planned for 2019 and 2020. It was raised on 1 January 2019 to €9.19, then will rise to €9.35 on 1 January 2020, compared with €8.84 in 2018.

In the United States, increasing the federal minimum wage was part of President Trump's programme, but it no longer seems to be a pressing issue. The federal minimum hourly wage in the United States has not increased since 2009, and currently stands at \$7.25. However, local initiatives (by states, cities and local authorities) have been taken: in January 2018, for example, eighteen American states adopted minimum wage increases.

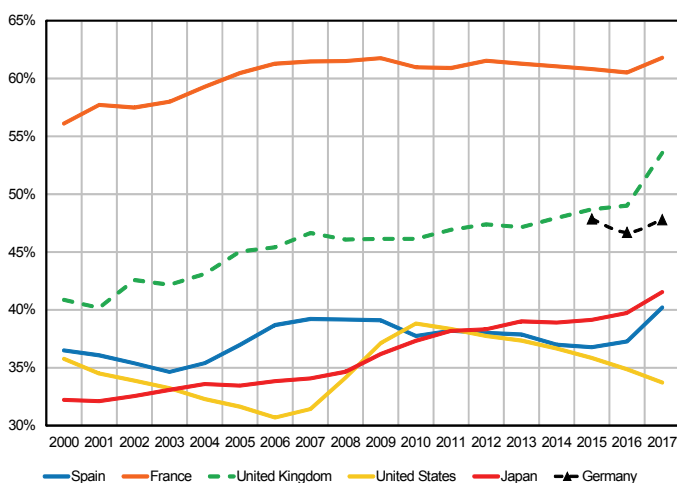
- a. The National Minimum Wage (NMW), which was created in 1999, should be distinguished from the National Living Wage (NLW), which was rolled out in 2016. Since the introduction of the NLW on 1 April 2016, the NMW now covers only a limited spectrum, primarily employees under 25 and apprentices, whereas the NLW covers workers over 25.
- b. M. Ben Yaala (2018), "Is higher wage growth on the horizon in Japan?" *Trésor-Economics* no. 220.

## 1.2 Various levels and growth paths of gross minimum wages

Compared to other major advanced economies, the French minimum wage is high, both in absolute terms and in relation to the median wage (see Chart 1). If we eliminate differences in price levels between countries (purchasing power parity – PPP), the French minimum hourly wage is

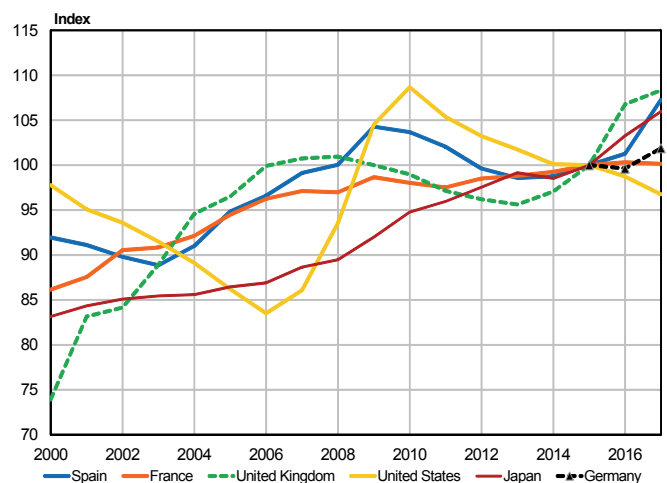
higher than that in Spain, Japan (national average) and the United States (federal level). The French minimum wage is close to – but still higher than – that of Germany and the United Kingdom (see chart on page 1). This situation has remained broadly unchanged since 2000 because the French minimum wage has increased at the same rate as that of other countries (see Chart 2).

**Chart 1: Gross minimum wage growth as a percentage of median salaries**



Source: OECD, DG Trésor calculations.

**Chart 2: Real gross minimum hourly wage growth in national currencies (base 100=2015)\***



Source: OECD, Japanese and British labour ministries, DG Trésor calculations.

\*For France, the transition to the 35-hour week between 1999 and 2005 is taken into account by averaging the various "Guaranteed Monthly Remunerations" (GMR) weighted by the number of employees in the companies. For the United Kingdom, the National Minimum Wage is used between 1999 and 2016, prior to the introduction of the National Living Wage in 2016.

In addition, local minimum wage levels vary widely in the United States. In January 2018, the gross minimum hourly wage was \$13.25 in Washington, DC, \$11 in Massachusetts, while in Texas and at the federal level it was \$7.25. In addition, some cities set a higher minimum wage than the state in which they are located, such as San Francisco, where the minimum wage is \$15, compared to \$11 in California.

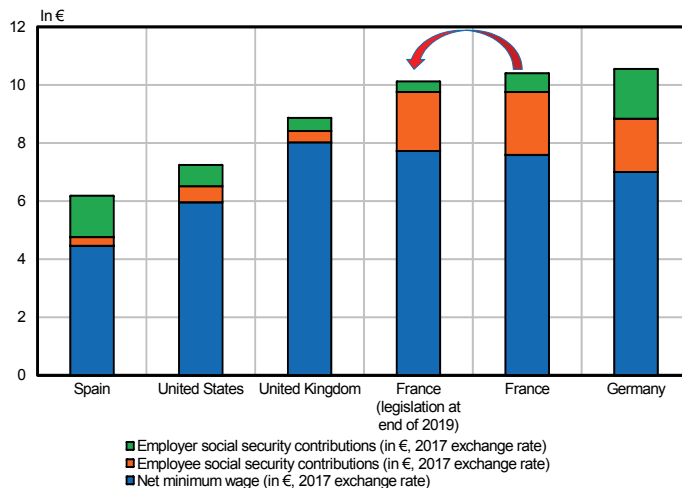
The percentage of workers whose wages are equal to or below the minimum hourly wage also varies widely from one country to the next.<sup>5</sup> It is difficult to compare these figures at international level, however, as the scope varies according to the national statistical institute. In Spain, 3.5% of workers were at minimum wage level in 2018. In Japan, the share of workers strictly below the minimum wage was 3.4% in 2016. In the United States in 2017, 2.3% of workers were paid equal to or lower than the federal minimum wage. In the United Kingdom, the percentage of workers over 25 whose pay was equal to or lower than the National Living Wage was 6.7% in 2017. The relatively high percentage of workers earning less than the minimum wage in the United Kingdom is bolstered by the many exemptions in place (legal minimum age well above that of other major advanced economies, many downward adjustments, see Table 2). For France, according to DARES, the number of employees who benefited from an adjustment of the minimum wage in private sector companies reached 1.98 million on 1 January 2018 (excluding apprentices, interns and temporary workers), which represents 11.5% of the employees of these companies. This figure is high in France due to the relatively high level of the minimum wage compared to the median wage.

### 1.3 In France, reductions in employers' social security contributions limit the effects of the minimum wage on labour costs

The above comparisons relate to the gross values of the various minimum wages. However, it is useful to look at the net amounts that are actually received by households, as well as the overall costs borne by firms once employer contributions are added. France has set itself apart by introducing measures to reduce the cost of the minimum wage for employers. The introduction of the Competitiveness and Employment Tax Credit (CICE) and the Responsibility and Solidarity Pact has made it possible to cut employer contributions and bring labour costs at the minimum wage level closer to the costs prevailing in other

advanced economies (see Charts 3 and 4), despite the relatively higher level of the French gross minimum wage. As part of the conversion of the CICE into social security contribution cuts, this cutting labour costs at the minimum wage level will be stepped up, with the transformation of the system also providing for the strengthening of the scale of general tax relief at the minimum wage level on 1 October 2019.

**Chart 3: Labour costs at the level of the minimum hourly wage (at nominal level, 2017)\***

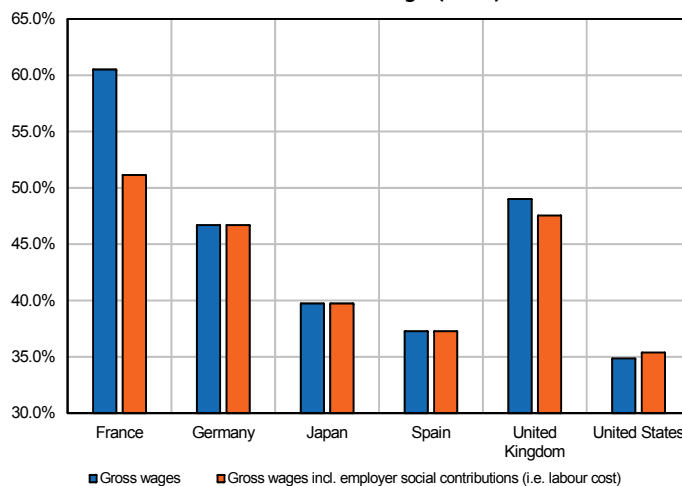


Source: OECD, DG Trésor calculations.

Note: For France, the "employee social security contributions" portion includes the General Social Security Contribution (CSG) and the Social Security Debt Repayment Contribution (CRDS). France (legislation at the end of 2019) represents the minimum wage level for 2017, but contributions are calculated according to the legislation that will come into force on 1 October 2019. On that date, employer contribution relief for low wages will be increased by 4 points at the minimum wage level. In addition, the CSG has increased by 1.7 points since 1 January 2018.

\* In PPP, the gross minimum wage is higher in Germany than in the United Kingdom.

**Chart 4: Ratio between the minimum wage and the median wage (2017)\***



Source: OECD, DG Trésor calculations.

(5) Calculating the percentage of workers receiving a wage less than or equal to the minimum wage is generally done using survey data, which is affected by measurement errors. In France, people who may be paid less than the minimum hourly wage are people with disabilities working in vocational rehabilitation centres, interns, beneficiaries of vocational training and apprenticeship contracts, minors, and certain occupations such as in-home childcare assistants.



## 2. Minimum wage studies have highlighted varying macroeconomic effects on employment, productivity, inequality and poverty

### 2.1 The effects of the minimum wage on total employment are difficult to pin down, but are nevertheless somewhat negative for young people

The relationship between minimum wage and employment is difficult to establish because of the many economic mechanisms at work when the minimum wage increases. According to neo-classical theory, an increase in the minimum wage can exclude low-paid workers from the labour market if it increases their costs beyond their marginal productivity. In addition, a substitution effect of capital for labour can be observed. Over and beyond job destruction, employers facing an increase in the minimum wage may choose to reduce the number of hours worked or make greater use of short employment contracts (OECD, 2015), and encourage the development of new forms of employment, whose status is not covered by minimum wage law, such as self-employment. Conversely, the Keynesian school places greater emphasis on the positive impact of an increase in the minimum wage on aggregate demand, leading to job creation. In addition, if employers have monopsony-like power, an increase in the minimum wage can lead to an increase in employment due to an increase in the formal labour supply (Manning,<sup>7</sup> 2010), when the reserve wage is high (which depends in particular on the socio-tax system and the possibility of finding employment in the informal sector). The effects of an increase in the minimum wage on employment generally depend on its level before the increase, as well as on the extent of the increase. If it is already high, the negative effects could be

more pronounced, and an adjustment could therefore be more detrimental to employment (OECD,<sup>8</sup> 2015). In addition, according to Boeri *et al.*<sup>9</sup> (2015), the position in the cycle affects the employment response to a rise in the minimum wage, which would have stronger negative effects on employment in a recession phase. This suggests that there is no linear relationship between minimum wage and employment, with many factors to be taken into account.

Empirically, the existence and magnitude of employment effects vary across countries and studies (Neumark,<sup>10</sup> 2017). Some evidence shows that the minimum wage has a negative effect on employment (Brown *et al.*,<sup>11</sup> 1982; Neumark and Wascher,<sup>12</sup> 2007), due to higher labour costs. However, other research has questioned this negative effect, finding it to be low or insignificant (World Bank,<sup>13</sup> 2015), particularly in countries where the minimum wage is moderate. At regional level in the United States, Card and Krueger's (1994) pioneering study<sup>14</sup> finds a positive impact of a higher minimum wage on employment in the fast-food sector. In another case study from the Seattle area, Jardim *et al.*<sup>15</sup> (2017) found a reduction of about 9% in hours worked as a result of an increase in the minimum wage from \$11 in 2015 to \$13 in 2016. At the national level, Doucouliagos and Stanley<sup>16</sup> (2008) and Dube *et al.*<sup>17</sup> (2010) suggest that the minimum wage has little effect on employment in the United States. In Germany, the macroeconomic effects on employment following the introduction of the minimum wage in 2015 seem modest at this stage (the IAB<sup>18</sup> estimates that 60,000 additional jobs could have been created in the absence of a minimum

(6) OECD (2015), OECD Employment Outlook, Chapter 1, "Recent labour market developments with a focus on minimum wages".

(7) A. Manning (2010), "Imperfect Competition in the Labor Market", *CEP Working Paper* no. 981.

(8) *Op. cit.*

(9) T. Boeri, P. Cahuc and A. Zylberberg (2015), "The Costs of Flexibility-Enhancing Reforms for Individuals: A Literature Review", *OECD Economics Department Working Paper*.

(10) D. Neumark (2017), "The employment effects of minimum wages: some questions we need to answer", *NBER Working Paper* no. 23584.

(11) C. Brown, C. Gilroy and A. Kohen (1982), "The effect of the minimum wage on employment and unemployment", *Journal of Economic Literature*.

(12) D. Neumark and W. Wascher (2007), "Minimum Wages and Employment: A Review of Evidence from the New Minimum Wage Research", *NBER Working Paper* no. 12663.

(13) A. Kuddo, D. Robalino and M. Weber (2015), "Balancing Regulations to Promote Jobs: From employment contracts to unemployment benefits", World Bank Report.

(14) D. Card and A.B. Krueger (1994), "Minimum Wages and Employment: A Case Study of the Fast-Food Industry in New Jersey and Pennsylvania", *American Economic Review*.

(15) E. Jardim, M.C. Long, R. Plotnick, E. Van Inwegen, J. Vigdor and H. Wething (2017), "Minimum Wage Increases, Wages, and Low-Wage Employment: Evidence from Seattle", *NBER Working Paper* no. 23532.

(16) H. Doucouliagos and T.D. Stanley (2009), "Publication selection bias in minimum wage research? A meta-regression analysis", *British Journal of Industrial Relations*.

(17) A. Dube, T.W. Lester and M. Reich (2010), "Minimum Wage Effects Across State Borders: Estimates Using Contiguous Counties", *Review of Economics and Statistics*.

(18) Cf. M. Bossler and H.D. Gerner (2016), "Employment effects of the new German minimum wage, evidence from establishment-level micro data", *IAB Discussion paper*.

wage). Finally, in France, according to Kramarz and Philippon<sup>19</sup> (2001), a 1% increase in the minimum wage would reduce the probability of remaining in employment by 1.5%.<sup>20</sup> In total, most of the various studies cited range from no effect to a negative effect of a minimum wage increase on overall employment. In addition, these effects depend on the initial minimum wage level (Cahuc and Carcillo,<sup>21</sup> 2014).

The effects of the minimum wage on young people are negative. Therefore, exemptions have often been introduced in the countries examined here to protect youth employment (see Table 2). According to Neumark and Wascher<sup>22</sup> (2004), in a study of 17 OECD countries between 1975 and 2000, an increase in the minimum wage has negative effects on youth employment, particularly in countries with more flexible labour markets. In addition, there is a high employment elasticity to labour costs at the level of the minimum wage (DG Trésor, 2015).<sup>23</sup>

## 2.2 The effects of an increase in the minimum wage on productivity are highly dependent on the national context, in particular on the quality of and access to training systems

A boost to the minimum wage can increase productivity through a structural effect, through a decrease in employment of the low-skilled, who have lower productivity. But there are other factors to consider beyond this structural effect. While conventional theory considers productivity to be an exogenous factor leading to wage-setting, other approaches show that productivity can depend on wages. As a result of increased job search efforts and increased selectivity on the part of companies, a minimum wage set at a certain level can support productivity by improving labour market matching. In addition, a minimum wage could encourage employee

retention and ultimately investment in human capital, covering the knowledge and skills acquired by an individual over time, thus supporting productivity. Finally, an increase in the minimum wage can encourage low-skilled workers to undertake training to avoid being pushed out of the labour market (Cahuc and Michel,<sup>24</sup> 1996).

From an empirical point of view, the results are uncertain. Some research<sup>25</sup> shows a positive effect on productivity, but this remains highly dependent on the quality and access to training facilities. An increase in the minimum wage does not necessarily have a direct positive relationship with the training of low-skilled workers. Despite a relatively high minimum wage in France, workers have one of the lowest participation rates in vocational training programmes in OECD countries.<sup>26</sup> In addition, low-skilled employees tend to receive less<sup>27</sup> training than skilled employees.

## 2.3 In large advanced economies, the minimum wage is not always the best tool to fight poverty

According to several studies, the minimum wage can help reduce wage inequalities. In the United States, for example, a significant number of studies have linked the rise in wage inequality to the decline in the real minimum wage (including DiNardo *et al.*,<sup>28</sup> 1996; Lee,<sup>29</sup> 1999; and Autor *et al.*,<sup>30</sup> 2015).

However, the minimum wage appears to play a more limited role in reducing income inequality and poverty. As it turns out: (i) changes in the minimum wage by definition affect only wage incomes, yet there are many poor families who are unemployed or in employment but not salaried. Moreover, in-work poverty is not only attributable to low wages but also to an insufficient number of hours worked.<sup>31</sup> In addition, all minimum wage earners benefit from a wage

(19) F. Kramarz and T. Philippon (2001), "The impact of differential payroll tax subsidies on minimum wage employment", *Journal of Public Economics*.

(20) France Stratégie seminar (2016), "Salaire minimum: questions anciennes et nouvelles".

(21) P. Cahuc and S. Carcillo (2014), "Alléger le coût du travail pour augmenter l'emploi: les clés de la réussite", Report by the Institut Montaigne.

(22) D. Neumark and W. Wascher (2004), "Minimum Wages, Labor Market Institutions, and Youth Employment: A Cross-National Analysis", *Industrial and Labor Relations Review*.

(23) Cf. S. Bock, P. Lissot and S. Ozil (2015), "Matis: une maquette d'évaluation des effets sur l'emploi de variations du coût du travail", based on the Employment Survey (2012), *DG Trésor Working Document* no. 2015/02.

(24) P. Cahuc and P. Michel (1996), "Minimum wages, unemployment and growth", *European Economic Review*.

(25) A. Bassanini and D. Venn (2007), "Assessing the Impact of Labour Market Policies on Productivity: a Difference-in-Differences Approach", *OECD Working Document*.

(26) OECD (2017), "OECD Skills Outlook 2017, Skills and Global Value Chains", OECD, Paris. Cf. Chart 4.16.

(27) J. Anne-Braun, K. Lemoine, E. Saillard and P. Taillepieu (2016), "Initial and continuing education: the implications for a knowledge-based economy", *Trésor-Economics* no. 165.

(28) J. DiNardo, N.M. Fortin and T. Lemieux (1996), "Labor Market Institutions and the Distribution of Wages. 1973-1992: A Semiparametric Approach", *Econometrica*.

(29) D.S. Lee (1999), "Wage Inequality in the United States during the 1980s: Rising Dispersion or Falling Minimum Wage?" *Quarterly Journal of Economics*.

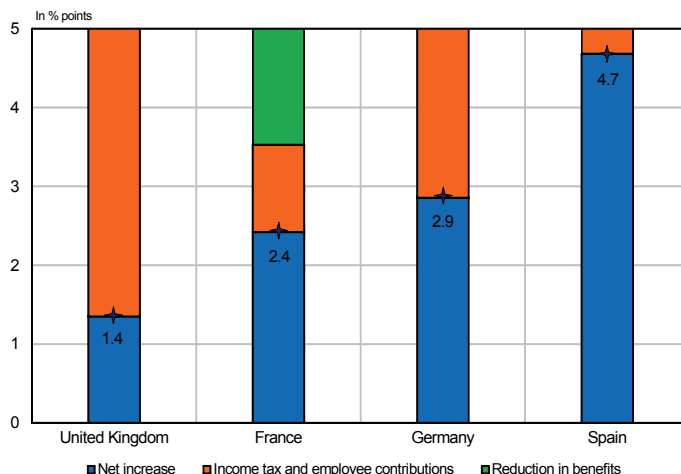
(30) D. Autor, A. Manning and C.L. Smith (2015), "The Contribution of the Minimum Wage to U.S. Wage Inequality over Three Decades: A Reassessment", unpublished, MIT Economics Department, <http://economics.mit.edu/files/3279>.

(31) Report by the French expert group on the minimum wage (2017).

increase, but not all of them are members of poor families; (ii) these changes tend to penalise jobs held by the least qualified; (iii) social and tax systems in advanced economies can mitigate the effects of a minimum wage increase on household disposable income (see Figure 5); (iv) finally, in economies where the minimum hourly wage is the lowest, its effects on the poverty rate are limited.

Therefore, as part of the fight against poverty and inequality, tax policies and social transfers seem more appropriate than the introduction and/or adjustment of a minimum wage (see Card and Krueger,<sup>32</sup> 1995; Burkhauser and Sabia,<sup>33</sup> 2007; Neumark and Wascher,<sup>34</sup> 2008). According to a 2018 report by the French expert group on the minimum wage, upwardly adjusting the in-work benefit would reduce income poverty and inequality more than increasing the minimum wage in France. Subsequently, the in-work benefit was adjusted upward in 2019.

**Chart 5: Effects of a 5% increase in the minimum wage in 2017 for a married minimum-wage-earning couple with two children\***



Source: OECD, DG Trésor calculations.

\* Calculations based on a 5% increase in the minimum wage for a married home-owning couple with two children, both of whom are paid the minimum wage, with unchanged parameters.

**Haroun Ba, Carole Hentzgen, Emma Hooper**

(32) D. Card and A.B. Krueger (1995), "Myth and Measurement: The Economics of the Minimum Wage", *Princeton University Press*.

(33) R.V. Burkhauser and J.J. Sabia (2007), "The effectiveness of minimum-wage increases in reducing poverty: past, present, and future", *Contemporary Economic Policy*.

(34) D. Neumark and W. Wascher (2008), "Minimum Wages", MIT Press, Cambridge, Massachusetts.

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