11. Poland: Minimum wage, employment and labour migration

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11.1 INTRODUCTION

The minimum wage has a long tradition in Poland, going back to the mid-1950s. However, the minimum wage has never played an important role in either economic policy or economic research. It is difficult to explain why this is the case. Too few minimum wage earners, too little progression alongside the average wage and a shadow economy characterized by so-called “envelope wages”, have all hampered the minimum wage’s development as a subject of serious debate.1 Ironically, less attention was paid before the transition, especially during the 1980s, when the minimum wage to average wage ratio decreased dramatically due to the unexpected inflation and reached its lowest point, at 11 per cent (see Figure 11.1).

Before the transition the minimum wage was merely a fictitious instrument. Nobody cared about it and nobody earned it. The transition changed everything, the major novelty being unemployment. Suddenly, workers were being fired and wages began to be connected to productivity. The fictitious instrument became a necessary one. Within four years the minimum wage gained about 30 percentage points on the average wage and the Kaitz index stabilized at 40 per cent from 1992.

At the end of the 1990s, however, the minimum wage started to erode – the Kaitz index fell below 40 per cent – and the share of low-paid workers started to increase. Consequently, the minimum wage began to be considered an appropriate instrument for preventing income polarization. A new target appeared. A minimum wage at 50 per cent of the average wage became the

* I would like to thank Daniel Vaughan-Whitehead for his helpful comments on the earlier drafts of this chapter and for stylistic amendments that, I hope, have made this text more “friendly” to a wider circle of readers.

1. This does not imply a lack of serious research, especially that coordinated by the IPiSS, the Institute of Labour and Social Studies. Compared with other European countries, however, the number of studies devoted to the minimum wage is very small.
official goal (Kaczyński and Śniadek 2007). Significant labour migration flows after Polish accession to the EU also gave rise to arguments for progressively increasing the Polish minimum wage. However, conflicting views continued to prevail among policy-makers. Some Labour ministers were attacked for believing that the minimum wage would be a miraculous remedy for all the problems of the labour market. Some even condemned the minimum wage as an anti-market regulation, fatal to employment (Balcerowicz, 2004).

The academic debate is less controversial, though it diverges from international standards in many respects. The lack of quantitative studies is perhaps the most striking feature. A low minimum wage earned by a small cluster of employees makes its possible effects hard to trace. Hence, the debate is driven more by emotional factors than by hard evidence. Both data collection and tradition determine the problems to be solved. This chapter focuses on the effects of the minimum wage on different aspects of employment, first the macroeconomic and sectoral effects of the minimum wage, notably on aggregate demand and employment – causality tests are carried out between the minimum wage and employment and unemployment – and second on the effects on labour migration. The influence that the minimum wage in Poland

Figure 11.1 Minimum wage to average wage, Poland, 1970–2008

Source: Author’s calculations based on Polish Central Statistical Office data.

may have in limiting migration is examined, as is the role of the minimum wage in the host countries in attracting Polish migration. In particular, the case studies will help in the formulation of an answer to the provocative question: does the Irish minimum wage matter for Polish workers?

The chapter is structured as follows. Section 11.2 describes the minimum wage fixing mechanisms and policy objectives. Section 11.3 presents minimum wage developments in the wider context of wage trends. Section 11.4 reports on the results of empirical research on minimum wage effects on employment, unemployment and low earnings (defined as 50 per cent of the average wage). Section 11.5 is devoted to the relationship between foreign direct investment (FDI) and the minimum wage. Finally, the case studies identify the influence of the Irish minimum wage on Polish emigration, while also examining whether a radical increase of Polish minimum wages, for instance in the health sector, may help to limit migration.

11.2 EVOLVING POLICY OBJECTIVES AND MINIMUM WAGE FIXING MECHANISMS

The policy objectives of the minimum wage in Poland to date have been confined to its macroeconomic significance. The minimum wage is presented as a tool for ensuring an equitable wage structure, but besides its influence on income policy, the ultimate aim of the minimum wage is the regulation of aggregate demand. Socialist political economy and post-Keynesian economics hold that demand will respond positively to a minimum wage increase; in turn, increasing nominal demand will generate a rise in employment (Zbrzyzny, 2004). In recent years, minimum wage increases were also motivated by the increase in low-paid workers and migration issues.

The minimum wage in Poland is negotiated by the Tripartite Commission for Social and Economic Affairs. The Council of Ministers proposes a minimum wage change by 15 June each year. Along with the proposal, the Council delivers information on past and forecast inflation, forecast average wages, household expenditure, standard of living indicators and the overall economic situation with particular regard to the central budget and labour efficiency. Within a month, the Tripartite Commission must agree on the minimum wage change. If it does not, the Council of Ministers is responsible for setting the minimum wage. This section focuses on three crucial factors in minimum wage fixing.

(1) Annual change in the minimum wage and criteria for adjustments. When analysing the legal acts regulating the fixing mechanism, the forecast consumer price index (CPI) is the most important factor in setting
the minimum wage for the following year. At the same time, GDP changes are also taken into account, as well as the ratio of the minimum wage to the average wage. In calculating the future minimum wage, $M_{t+1}$, the current minimum wage $M_t$ is used as the basis.

If the previous year’s inflation was greater than forecast inflation, that is if:

$$[P_{t-1} / E_{t-2} (P_{t-1})] \neq 1$$

where $P =$ consumer price index, and $E_{t-i} =$ expectation operator (forecast performed at time $t-i$), the basis for changes is adjusted to take into account the difference between the previous year’s forecast of inflation and the real inflation rate:

$$(P_{t-1}): M_t [P_{t-1} / E_{t-2} (P_{t-1})] \neq 1$$

where $M =$ minimum wage.

The annual minimum wage increase should also not be smaller than forecast CPI inflation:

$$(M_{t+1})/M_t > / E_t[(P_{t-1})/P_t] \neq 1.$$  

Moreover, if the minimum wage is lower than 50 per cent of the average wage ($M_t < 0.5A_t$, with $A =$ average wage), the rate of change of the minimum wage must, additionally, be corrected by two-thirds of forecast real GDP. This correction was introduced by the 1995 Minimum Wage Act and its importance has grown in recent years.

(2) **Minimum wage differentiation.** Minimum wage earners are differentiated only on the basis of work experience. Under the 1995 Act, during their first year of work, employees must earn not less than 80 per cent of the minimum wage. During 2002–05, a second sub-minimum was established by the Minimum Wage Act 2002 for employees in their second year of work who had to be paid no less than 90 per cent of the minimum wage.

(3) **Number of minimum wage changes during the year.** Under the 2002 Act, the inflation rate will directly affect the frequency of minimum wage adjustment: the minimum wage is set only once a year if the forecast annual inflation does not exceed 5 per cent, and twice a year if it does exceed 5 per cent.

Since 2005, the minimum wage to average wage ratio has been the most important indicator in setting the minimum wage. The Kaitz index offers a simple measure utilized by policy-makers if earnings disparities emerge.
Arguments concerning “social justice” and, surprisingly, the Council of Europe’s recommendations, supplied the rationale for setting the minimum wage at 50 per cent of the average wage. Another reason for choosing the minimum wage to average wage ratio is its statistical properties: seasonal variations aside, the Kaitz index remains relatively stable.

The implementation of sub-minima was forced by demographic changes and the arrival in the labour market of the baby-boom generation of the early 1980s; from the mid-1990s to 2005 the number of people in the age bracket 20–24 increased by more than 400,000. In March 2003, the unemployment rate among young people reached its highest level (46.5 per cent). In 2005, a year when most young people were expected to be integrated in the labour market, sub-minima specifically aimed at that age group – making them cheaper for managers to hire – were introduced to boost their employment. However, these sub-minima did not have a significant influence on employment. Currently, unemployment among persons over 50 years of age is only slightly greater than that among persons below 25.

If any factor should be considered a determinant of minimum wage differentiation it should be regional disparities. The economic disparities between voivodships are enormous. Average GDP per capita in the regions for 2000–05

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**Figure 11.2 Disparities in regional GDP per capita, Poland, 2000–05**

*Source: Polish Central Statistical Office.*
presents the problem clearly (see Figure 11.2). Only four out of 16 voivodships are above the national average, and the region with the capital city – with the highest GDP per capita – is easy to identify. In regions dominated by unskilled labour, where labour demand is far below the national average, the Kaitz index is much higher than in the other voivodships (Grotkowska et al. 2005). However, an analysis of minimum wages differentiated by regions – similar to minimum wage differentiation by age – is impossible to introduce for political reasons.

11.3 MINIMUM WAGE DEVELOPMENTS WITHIN GLOBAL WAGE TRENDS

11.3.1 Minimum wage losing ground in comparison to the average wage

The evolution of real average and minimum wages is presented in Figure 11.3. During the period under examination the average annual change in the real average wage was 3.1 per cent, while that in the real minimum wage was only 1.8 per cent. As a result, the simplified Kaitz index fell from 40.6 to 34.8.

The Kaitz index has increased since 2008, however, following a minimum wage hike of 20.3 per cent. Nevertheless, the hike led to a mere 7.9 per cent

![Figure 11.3 Real average wage and real minimum wage, Poland, 1995–2008](image)

Source: Author’s calculations based on Polish Central Statistical Office data.

3. Since unskilled employees dominate the labour supply, the average wage in those regions is much lower than the national average.
increase in the Kaitz index, confirming the rather stationary nature of this index even within individual sectors. The cause is twofold: an underestimated forecast of the average wage and a natural tendency that keeps the index at a low level. The latter is generated by economic growth, which slowly but surely pushes the equilibrium wage higher. The former must be accepted if the minimum wage change occurs only once a year. Thus, if the minimum wage to average wage ratio was still the leading indicator for setting the minimum wage, more frequent changes might be required in order to attain the targeted 50 per cent Kaitz index.

11.3.2 Is the recent improvement in the wage share due to labour migration?

The evolution of the wage share (Figure 11.4) is characterized by almost constant decline during the reported period, although an initial sharp decline became more moderate after 2001. Nevertheless, between 1996 and 2005 the wage share fell by around 33 per cent. It should be noted, however, that since EU accession the wage share has increased slightly. A similar tendency is displayed by the Salverda wage share (SWS). The dashed line presents the SWS estimated as the ratio of total industry labour compensation to numbers of hours worked per employee in the economy as a whole. The dynamics as well

![Figure 11.4 Wage share, Poland, 1995–2007](image)

*Source*: Author’s calculations based on Polish Central Statistical Office data.

4. The KPSS unit root test was carried out by the author for the linearized and seasonally adjusted series. The null of stationarity was, in the main, not rejected.
as the percentage decline of the SWS are much the same. The increasing wage share might be traced back to the decreasing labour supply. This reduction, mainly caused by emigration, led to large wage claims and eventually to wage increases. The figure also presents the minimum wage to GDP ratio. Despite the legal regulations (that is, indexation of the minimum wage by two-thirds of forecast GDP), the ratio has fallen progressively every time GDP has increased. The decrease halted in 2000–02, when GDP growth slowed down. Although the minimum wage to GDP ratio has declined more slowly than the wage share and the SWS, EU accession has also not led to similar increases in its dynamics as has been the case for the wage share.

11.3.3 Minimum wage, employment and productivity

A comparison of unemployment, productivity, real average wage and real minimum wage provides another interesting insight into the Polish labour market (see Figure 11.5). Between 1998 and 2004, productivity outstripped real wages. Wages gain on productivity when the unemployment rate decreases. A surprising factor is the very high correlation between real wages and productivity (0.98 and 0.89 for average and minimum wages, respectively) and the relatively low correlation between real wages and unemployment (0.36 and 0.14, respectively).

![Figure 11.5 Productivity, unemployment and real average and minimum wages, Poland, 1995–2007](image-url)

*Source*: Author’s calculations based on Polish Central Statistical Office data.
11.3.4 The exchange rate and its impact on migration

The picture would not be complete if we omitted the influence of the exchange rate. The appreciation of the Polish zloty (PLN) has been remarkable, coinciding with EU accession. In May 2004 one pound sterling was worth PLN 7.03; three years later it was worth only PLN 4.11. The exchange rate is important for wage trends, because more than 1.8 million Poles are being paid in pounds and euros. While the gap between the minimum wage in Poland and that in Ireland and the United Kingdom remains huge, the Polish average wage is approaching the minimum wage level in the United Kingdom (see Figure 11.6). This tendency will probably change the emigration structure. For minimum wage earners, temporary emigration will remain a profitable option but, for qualified professionals, this will probably change. Being better paid than minimum wage earners in the United Kingdom and considering the higher cost of living there, professionals would have less incentive to emigrate, let alone risk a degradation of professional status that would reduce their incentive to return to Poland. Another consequence of “minimum wage emigration”

5. To obtain hourly wages for Poland monthly wages were divided by 160, that is, a 40-hour week × 4 weeks.
will be an increasing local demand for low-paid workers. The nationwide fervour in anticipation of the European Championships in 2012 may soon influence the Polish labour market, especially in the construction sector.

11.4 THE EFFECTS OF THE MINIMUM WAGE

11.4.1 Employment and unemployment

Existing studies: contradictory findings
The very limited number of quantitative studies on the minimum wage’s effects on employment stands in striking contrast to the intensity of discussion. The estimations carried out by Suchecki (2002) for the period 1990–98 are the point of departure for any analysis. Suchecki obtained a significant, positive, large impact (0.52) of the minimum wage on the average wage and a significant, small (–0.07), negative impact of the Kaitz index on employment. Estimating the unemployment equation, he obtained a long-term minimum wage elasticity of the unemployment rate greater than 1, which suggests that an increase in the minimum wage produces a more than proportional increase in the unemployment rate. He then performed the estimations for the age brackets 15–19 and 20–24. In both cases, an increase in the minimum wage led to decreasing employment. For the latter bracket, the employment model was re-estimated with the Kaitz index added to the explanatory variables. Both short-run and long-run coefficients were positive, so an increase of the Kaitz index would lead to an increase in employment, regardless of the time perspective. A radical view of the minimum wage was presented by Kabaj (2005) according to whom a rigid and high minimum wage did not increase unemployment. Moreover, comparison of the annual Kaitz index and labour market variables for 1997–2003 led him to the conclusion that a decrease in the Kaitz index caused a negative response on the part of employment and an increase in unemployment with elasticities equal to 0.9 and 5.4, respectively.

Empirical analysis points to only small and insignificant effects
In the face of such contradictory studies, a new empirical analysis was warranted, starting from 1999, the year after the sample employed by Suchecki stopped (1990–98). The data for the present analysis are monthly, from January 1999 to May 2008. Since the wage equation reflects a causality running from employment/unemployment to wages, the analysis began with the causality test to see whether it makes any sense to examine the influence of the minimum wage on the labour market. The Sargent (1976) procedure was used and the lag length selected by minimizing the Schwarz criterion. The results are summarized in Table 11.1.
Causality tests indicated that changes in the Kaitz index and the real minimum wage should be considered in forecasting unemployment and employment. What the tests did not indicate was how the variables influenced the labour market; a factor which was tested in a second stage. The preliminary estimations confirmed the results obtained by Suchocki with slight minimum wage effects on employment, although the results were not robust to changes in estimation technique. Even more complicated was the interpretation of the impact of the real minimum wage. Regardless of the method, the obtained coefficients were insignificant. The uncertainty concerning the estimation results prevents an unequivocal interpretation and illustrates the complex situation regarding the minimum wage itself and its influence in Poland; but the Lucas critique would not jeopardize the validity of simulations.

<table>
<thead>
<tr>
<th>Variable</th>
<th>Test value</th>
<th>p-value</th>
<th>Conclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Real minimum wage and employment</td>
<td>17.842</td>
<td>0.013</td>
<td>null rejected</td>
</tr>
<tr>
<td>Kaitz index and employment</td>
<td>10.199</td>
<td>0.178</td>
<td>null not rejected</td>
</tr>
<tr>
<td>Real minimum wage and unemployment rate</td>
<td>13.038</td>
<td>0.042</td>
<td>null rejected</td>
</tr>
<tr>
<td>Kaitz index and unemployment rate</td>
<td>5.261</td>
<td>0.511</td>
<td>null not rejected</td>
</tr>
<tr>
<td>Real minimum wage and unemployment</td>
<td>6.939</td>
<td>0.435</td>
<td>null not rejected</td>
</tr>
<tr>
<td>Kaitz index and unemployment</td>
<td>16.844</td>
<td>0.018</td>
<td>null rejected</td>
</tr>
<tr>
<td>Kaitz index and FDI</td>
<td>0.102</td>
<td>0.750</td>
<td>null not rejected</td>
</tr>
<tr>
<td>Nominal wages in € and FDI</td>
<td>1.028</td>
<td>0.311</td>
<td>null not rejected</td>
</tr>
</tbody>
</table>

Source: Author’s calculations.

6. For readers without a background in time series econometrics it might be helpful to explain the term *Granger-causality*. The test indicated that changes in the Kaitz index “Granger-cause” changes in employment. This means that a forecast of employment is more accurate when the Kaitz index is included in the set of explanatory variables.

7. The GMM estimates were highly dependent on HAC options, kernel and bandwidth selection method. For instance, using the prewhitening option, quadratic kernel and Andrews bandwidth selection, the coefficient was small, negative and significant. Application of SVAR also resulted in a negative and significant parameter, though its value was much smaller (–0.2). For other GMM options and 2SLS the coefficients were insignificant.

8. The famous Lucas critique states that the value of structural coefficients may change due to the agents’ expectations. Suppose that for some period the coefficient that measures the impact of the minimum wage on employment is 0.5. Then, if a minimum wage hike is considered for the coming period and a simulation is performed, it is not possible to be sure whether the expectations of firms would be adjusted and a hike would not change the value (or even the sign) of the coefficient.
11.4.2 Low pay and poverty

As Fields and Kanbur (2007) state, shifting the perspective from unemployment to poverty led to a considerable enrichment of the theory of the minimum wage. While this is certainly the case, the fragmentary Polish time series allows us only to partly test this dimension, with the series presented by the Central Statistical Office that are not continuous.

Minimum wage low compared to family needs

However, it was possible to compare the purchasing power of the minimum wage with the subsistence and social minima. Assuming one minimum wage earner in the household, the subsistence minimum was obtained for a maximum of two people in a household. The same calculation was made for two minimum wage earners. It shows that the minimum wage has difficulty ensuring decent living standards for a household composed of only one minimum wage earner, plus one adult and one child (see Table 11.2). The situation is better for a family with two minimum wage earners whose disposable income only just ensures the subsistence minimum needed for a family of five people. However, social minima are not secured even for a family with two minimum wage earners (see Table 11.3). During the entire period under examination, the potential social role of the minimum wage was never achieved.

Number of low-paid workers doubled

The other problem, perhaps of much greater importance, is the influence of the minimum wage on poverty and low-paid workers (defined here as those earning below 50 per cent of the average wage). Table 11.4 (overleaf) presents a number of easily observable trends of low pay by sector. In the mid-1990s, the percentage of low-paid workers was moderate, slightly exceeding 10 per cent. By the time of writing, the percentage has almost doubled. The increase was particularly marked in industry, from 8 to 21 per cent over the period, especially in manufacturing, as well as in trade and repairs (from 20 to 37 per cent), hotels and restaurants (from 26 to 47 per cent), real estate (from 12 to 32 per cent) and, to a lesser extent, in construction (from 15 to 25 per cent) and social work (from 11 to 18 per cent). It means that in many sectors, one-third of employees are low-paid workers.

Declining minimum wage has led to an increase in the number of low paid

Table 11.5 helps to demonstrate the role of the minimum wage in low-pay sectors, since it represents more than 60 per cent of the average wage in some sectors, as in apparel, furriers, leather and textiles.

Comparing this high Kaitz index in some low-pay sectors with the increase in the number of low-paid workers, as well as the progressive fall in the Kaitz
Table 11.2 Minimum wage as a % of the subsistence minimum, Poland, 2000–06

<table>
<thead>
<tr>
<th>No. persons/household</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
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<tr>
<td>No. Structure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>One minimum wage recipient per household</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 M/F</td>
<td>163.1</td>
<td>166.6</td>
<td>160.0</td>
<td>165.8</td>
<td>162.4</td>
<td>160.3</td>
<td>173.8</td>
</tr>
<tr>
<td>2 M+F</td>
<td>95.7</td>
<td>99.9</td>
<td>96.7</td>
<td>100.8</td>
<td>98.6</td>
<td>97.0</td>
<td>102.2</td>
</tr>
<tr>
<td>3 M+F+ChY</td>
<td>67.5</td>
<td>70.8</td>
<td>68.6</td>
<td>71.4</td>
<td>69.8</td>
<td>68.7</td>
<td>71.1</td>
</tr>
<tr>
<td>4 M+F+ChO</td>
<td>61.0</td>
<td>64.0</td>
<td>62.2</td>
<td>64.9</td>
<td>63.4</td>
<td>62.2</td>
<td>64.7</td>
</tr>
<tr>
<td>4 M+F+ChY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 M+F+2ChY +ChO</td>
<td>48.0</td>
<td>50.5</td>
<td>49.0</td>
<td>51.0</td>
<td>49.8</td>
<td>49.0</td>
<td>50.6</td>
</tr>
<tr>
<td>5.2 M+F+2ChY +2ChO</td>
<td>37.4</td>
<td>39.4</td>
<td>38.2</td>
<td>39.9</td>
<td>38.9</td>
<td>38.2</td>
<td>39.3</td>
</tr>
<tr>
<td>Two minimum wage recipients per household</td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>2 M+F</td>
<td>326.2</td>
<td>333.1</td>
<td>320.0</td>
<td>331.7</td>
<td>324.8</td>
<td>320.6</td>
<td>347.7</td>
</tr>
<tr>
<td>3 M+F+ChY</td>
<td>191.4</td>
<td>199.7</td>
<td>193.4</td>
<td>201.6</td>
<td>197.1</td>
<td>194.1</td>
<td>204.5</td>
</tr>
<tr>
<td>3 M+F+ChO</td>
<td>135.0</td>
<td>141.7</td>
<td>137.2</td>
<td>142.7</td>
<td>139.5</td>
<td>137.5</td>
<td>142.1</td>
</tr>
<tr>
<td>4 M+F+ChY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 M+F+2ChY +ChO</td>
<td>122.0</td>
<td>128.1</td>
<td>124.3</td>
<td>129.9</td>
<td>126.7</td>
<td>124.4</td>
<td>129.5</td>
</tr>
<tr>
<td>5.2 M+F+2ChY +2ChO</td>
<td>95.9</td>
<td>101.0</td>
<td>97.9</td>
<td>102.1</td>
<td>99.6</td>
<td>97.9</td>
<td>101.1</td>
</tr>
</tbody>
</table>

Note: M – male, F – female, ChY – younger child, ChO – older child.

Table 11.3 Minimum wage as a % of the social minimum, Poland, 2000–06

<table>
<thead>
<tr>
<th>No. persons/household</th>
<th>2004</th>
<th>2005a</th>
<th>2006b</th>
</tr>
</thead>
<tbody>
<tr>
<td>No. Structure</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>One minimum wage recipient per household</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 M/F</td>
<td>73.6</td>
<td>73.2</td>
<td>80.8</td>
</tr>
<tr>
<td>2 M+F</td>
<td>45.0</td>
<td>44.7</td>
<td>49.1</td>
</tr>
<tr>
<td>3 M+F+ChY</td>
<td>32.1</td>
<td>31.8</td>
<td>33.1</td>
</tr>
<tr>
<td>3 M+F+ChO</td>
<td>31.1</td>
<td>30.7</td>
<td>32.0</td>
</tr>
<tr>
<td>4 M+F+ChY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 M+F+2ChY +ChO</td>
<td>24.9</td>
<td>24.7</td>
<td>25.9</td>
</tr>
<tr>
<td>5.2 M+F+2ChY +2ChO</td>
<td>20.3</td>
<td>20.0</td>
<td>21.2</td>
</tr>
<tr>
<td>Two minimum wage recipients per household</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 M+F</td>
<td>90.0</td>
<td>89.4</td>
<td>98.3</td>
</tr>
<tr>
<td>3 M+F+ChY</td>
<td>64.2</td>
<td>63.6</td>
<td>66.2</td>
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<td>3 M+F+ChO</td>
<td>62.1</td>
<td>61.5</td>
<td>63.9</td>
</tr>
<tr>
<td>4 M+F+ChY</td>
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<td></td>
</tr>
<tr>
<td>5.1 M+F+2ChY +ChO</td>
<td>49.9</td>
<td>49.3</td>
<td>51.7</td>
</tr>
<tr>
<td>5.2 M+F+2ChY +2ChO</td>
<td>40.5</td>
<td>40.0</td>
<td>42.4</td>
</tr>
</tbody>
</table>

Note: a quarterly average, b modified social minimum, M – male, F – female, ChY – younger child, ChO – older child.

Source (for Tables 11.2 and 11.3): Author’s calculations based on Institute of Labour and Social Studies data.
index, one could easily jump to the conclusion that the minimum wage decline has certainly contributed to increasing the percentage of low-paid workers. To verify the existence of such a link between the minimum wage and poverty a simple experiment was conducted, in a number of different steps. In a first step, the Kaitz index was used as the explanatory variable to explain the variations in the percentage of employees earning 50 per cent or less of the average wage in eight major sectors.\(^9\) The value of the coefficient was found to be

\[^9\] The sectors were: construction, electricity, gas and water supply, hotels and restaurants, manufacturing, mining and quarrying, trade and repair, transport, storage and communication, real estate, renting and business activities.
positive and large (0.61), the parameter significant at a reasonable level (White HAC standard error 0.04), and the fit, considering panel estimations, large enough (0.17), but the two series were found to have drifted in opposite directions, possibly driven by other factors. Thus, the series was de-trended using a simple linear trend\textsuperscript{10} and the experiment repeated. In this second step, what the experiment detected was merely a spurious correlation, with the pooled LS estimation indicating no significant effect of the Kaitz index on the percentage of working poor: the coefficient value was large and negative (–0.8) – but with a value of the standard error that was even larger, and which prompted the integration of other explanatory factors.\textsuperscript{11}

In a third step, employment was added as an explanatory variable, which led to radically different and more conclusive results. The Kaitz index clearly was found to have had an adverse and significant effect over time on the proportion of low-paid workers. In other words, the percentage of low-paid workers increased alongside a decline in the minimum wage – a scenario highly plausible over the analysed period – while the percentage of low-paid workers tends to be reduced when the minimum wage increases; a scenario that recently motivated the Government to boost the minimum wage. Table 11.6 presents the results of the panel estimations, with different assumptions

\begin{table}[h]
\centering
\caption{Kaitz index in low-pay and high-pay sectors, Poland, 1999–2008}
\begin{tabular}{lcccccccccc}
\hline
Year & S1 & S2 & S3 & S4 & S5 & S6 & S7 & S8 & S9 & S10 \\
\hline
May 1999 & 65.2 & 58.3 & 50.4 & 47.6 & 51.3 & 26.5 & 32.5 & 21.1 & 18.8 & – \\
May 2000 & 65.5 & 55.5 & 49.4 & 48.5 & 49.2 & 26.5 & 26.8 & 21.1 & 17.3 & – \\
May 2001 & 67.3 & 57.9 & 51.6 & 50.7 & 51.3 & 25.9 & 20.8 & 22.0 & 15.1 & 15.4 \\
May 2002 & 66.0 & 55.8 & 49.8 & 48.1 & 49.5 & 25.1 & 15.3 & 20.2 & 14.4 & 15.4 \\
May 2003 & 67.6 & 60.7 & 51.4 & 51.3 & 49.3 & 25.9 & 21.0 & 19.3 & 14.5 & 16.1 \\
May 2004 & 66.9 & 60.0 & 51.6 & 48.7 & 48.7 & 25.9 & 19.7 & 19.3 & 20.5 & 16.2 \\
May 2005 & 67.3 & 60.1 & 51.9 & 50.4 & 50.0 & 24.8 & 19.6 & 19.3 & 13.5 & 15.9 \\
May 2006 & 67.4 & 59.6 & 52.1 & 51.4 & 49.1 & 23.7 & 19.8 & 20.7 & 13.3 & 15.6 \\
May 2007 & 65.0 & 56.6 & 50.4 & 46.6 & 47.3 & 23.7 & 17.8 & 20.8 & 13.4 & 15.6 \\
May 2008 & 70.0 & 64.1 & 54.8 & 51.6 & 51.0 & 25.9 & 17.4 & 25.1 & 13.9 & 17.5 \\
Average & 64.2 & 57.6 & 50.0 & 48.3 & 48.2 & 21.7 & 21.5 & 19.7 & 19.6 & 15.3 \\
\hline
\end{tabular}
\end{table}

\textit{Note:} Low Pay – S1: Apparel and furriers; S2: Leather and leather products; S3: Textiles; S4: Wood, straw and wicker products; S5: Furniture; High Pay – S6: Mining and quarrying; S7: Post and telecommunications; S8: Tobacco products; S9: Coke and refined petroleum products; S10: Computer and related.

\textit{Source:} Author’s calculations based on Polish Central Statistical Office data.

\textsuperscript{10} The trend was removed by estimating equations with a constant and linear trend as the right-hand variables. The OLS-residuals were then used as the trend-adjusted series.

\textsuperscript{11} In absolute value terms.
imposed on the intercept, weights and covariance matrix. The parameters’ signs are negative. Employing the cross-section weighting, both coefficients are significant at acceptable levels. Another result is that, while the minimum wage clearly had quite a large effect on the percentage of working poor, it was found to have had no effect on employment. The effect of the minimum wage on low-paid workers is thus so far the only – albeit important – impact found of the minimum wage on the Polish labour market.

11.5 FDI, LABOUR MOBILITY AND THE MINIMUM WAGE

The latest Ernst & Young (2008) ranking indicates that Poland is the best European location for new investment or expansion projects. Poland was also ranked second in Europe for job creation in 2007. Wages in Poland have always been acknowledged as a huge advantage in attracting FDI. While labour costs are still evaluated as the most favourable in Europe, recently Poland has been winning less labour-intensive investment (Ernst & Young, 2008). Job creation is less dependent on the wage structure, therefore, and the direct link between a low minimum wage and FDI has disappeared. In fact, the link is hard to detect. A low minimum wage should be an additional asset in attracting FDI. However, empirical tests rejected any causal relationship between the minimum wage and FDI.

Table 11.6 Pooled Least Squares (LS) estimation results, Poland

<table>
<thead>
<tr>
<th>Coefficient values</th>
<th>p-value</th>
<th>Unweighted statistics</th>
<th>Weighted statistics</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>White HAC</td>
<td>adj R²</td>
</tr>
<tr>
<td>No intercept, no weighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KAITZ</td>
<td>-0.654</td>
<td>0.412</td>
<td>0.469</td>
</tr>
<tr>
<td>EMPL</td>
<td>-0.829</td>
<td>0.075</td>
<td>0.202</td>
</tr>
<tr>
<td>No intercept, cross-section weighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KAITZ</td>
<td>-0.725</td>
<td>0.174</td>
<td>0.041</td>
</tr>
<tr>
<td>EMPL</td>
<td>-1.441</td>
<td>0.000</td>
<td>0.000</td>
</tr>
<tr>
<td>Fixed effects, no weighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KAITZ</td>
<td>-0.654</td>
<td>0.444</td>
<td>0.469</td>
</tr>
<tr>
<td>EMPL</td>
<td>-0.829</td>
<td>0.096</td>
<td>0.202</td>
</tr>
<tr>
<td>Fixed effects, cross-section weighting</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>KAITZ</td>
<td>-0.781</td>
<td>0.197</td>
<td>0.063</td>
</tr>
<tr>
<td>EMPL</td>
<td>-1.345</td>
<td>0.000</td>
<td>0.000</td>
</tr>
</tbody>
</table>

Source: Author’s calculations based on Polish Central Statistical Office data.
To test the impact of the minimum wage on FDI, the Granger-causality test was traced out for selected manufacturing sectors.\textsuperscript{12} The explanatory variable on FDI was the simplified Kaitz index. The method employed was again the Sargent procedure.\textsuperscript{13} To test the null hypothesis that “changes in the Kaitz index do not Granger-cause changes in the FDI position” the standard likelihood ratio test was used. The results are summarized in Table 11.1.

The findings rejected the null hypothesis, which is not surprising. It does not necessarily mean, however, that wages, and the minimum wage in particular, affect foreign investors’ decisions. Although the low wages in Poland are certainly a comparative advantage, labour costs in the Far East are much lower, and it is impossible to compete with, for example, China in attracting labour-intensive investment. The minimum wage and the average wage are neither the sole nor even crucial factors in attracting FDI.

The minimum wage is a much more important issue for labour mobility, as shown in the case studies below. Ironically, it is the host country’s minimum wage that affects a person’s decision to seek employment abroad, as highlighted in Case study 1, dedicated to the Irish minimum wage. Migration has led to labour shortages, which the Polish minimum wage could help to reduce, as documented in Case study 2. It must be emphasized that the latest estimates of the Polish Central Statistical Office show that, at the end of 2007, temporary emigration had reached 2.27 million: 690,000 persons to the United Kingdom, 490,000 to Germany and 200,000 to Ireland. This outflow has driven the fall in the unemployment rate. Between January 2004 and May 2008, the number of unemployed fell by 1,767,600, while employment rose by 728,000. Figure 11.7 compares the monthly numbers. However, the decrease in unemployment has been accompanied by labour shortages in many sectors.

The case studies show how the minimum wage, both of the sending country (Poland) and of the host country (here Ireland), can have a definite impact on Polish labour migration.

\textsuperscript{12} The selection was necessary since the FDI data are subject to slightly different clustering than the nominal wage data. Therefore, the series used were those for refined petroleum and other treatments, chemical products, rubber and plastic products, metal products, mechanical products, office machinery and computers, radio, TV and communication equipment and motor vehicles, other transport equipment. The sample was annual from 1996 to 2006. All series were recalculated for 1996 = 100, log-linearized and HP-detrended. Data on FDI are provided by the National Bank of Poland at www.nbp.pl in the balance of payments statistics section.

\textsuperscript{13} Optimal lag length and the estimation method were selected due to minimization of the BIC; the model with one lag was estimated using the model with common constant and cross-section weights.
CASE STUDIES: MINIMUM WAGES AND MIGRATION

Case study 1: Does the Irish minimum wage matter for Polish emigrants?

Long before EU accession, Ireland was considered to be a place where dreams might come true in a pleasant environment. History, food, culture and religion combined to encourage even Polish rock stars to sing that they “love women like they love Ireland”. Then, after May 2004 Polish workers were able to learn more about the Emerald Isle, migrating in significant numbers to Ireland. The question of whether or not the Irish minimum wage played a role in this decision was an aspect investigated through a specific questionnaire.

The survey was conducted in the county of Galway and helped to provide an interesting insight into the role played by the Irish minimum wage. It asked the following questions:

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14. I would like to thank Artur Baron, who conducted the survey. The sample consisted of 23 permanent job respondents.
Figure 11.8 Survey answers to questions 1, 3 and 4

Note: For the three questions see below.

Source: Author’s calculations.

Figure 11.9 Survey answers to question 2

Note: For question 2 see below.

Source: Author’s calculations.

(1) Before arriving, did you find out what the Irish minimum wage was?
(2) What significance did the minimum wage in Ireland have in your decision to go to Ireland?
(3) Did you compare the minimum wage in Ireland with the minimum wage in other countries before deciding to go to Ireland?
(4) Does your wage in Ireland exceed the minimum wage?
The results clearly indicate that Ireland was not a blind choice. Most emigrants found out about the minimum wage in Ireland (73 per cent), and a significant proportion of them had even compared the Irish minimum wage with the minimum wage in other countries (41 per cent). For 48 per cent of those questioned, the minimum wage was an important factor influencing their decision to go to Ireland. In fact, more than 70 per cent of them earn more than the Irish minimum wage. Figures 11.8 and 11.9 summarize the results.

Probit models were run to describe the characteristics of an emigrant who investigated the minimum wage before going to County Galway. The variables were constructed by weighting the answers.\textsuperscript{15} The coefficients and Huber-White standard errors (in parentheses) are given in the following equation:

\[
MW_{\text{checked}} = -1.606 \cdot EDU + 1.756 \cdot PLACE_{PL} + 0.935 \cdot UNEM + 1.131 \cdot GENDER
\]

\[
(0.862) \quad (1.09) \quad (0.593) \quad (0.702)
\]

The probability of having checked the Irish minimum wage was tested according to a number of explanatory variables such as education, place of origin and gender of the respondents, as well as unemployment rates.

Place of residence in Poland (\textit{PLACE}_{PL}) was found to be the most important factor in the probability of investigating the Irish minimum wage before going abroad. Not surprisingly, better educated emigrants (\textit{EDU}) care less about the minimum wage, and women (\textit{GENDER}) are more interested in the minimum wage of the host country. The profession of those questioned also possibly influenced the results. It might be expected that a larger share of white-collar workers would reduce the importance of the Irish minimum wage. Table 11.7 compares occupations in Poland and Ireland to check whether the Polish migrants found in Ireland a job similar to the job they had in Poland or if they had to accept employment at a lower professional level. Interestingly, no particular change was observed, showing that migrants managed to find a job in their original sector of activity and which reflected their professional experience and skills.

To summarize, the wage gap between old and new EU members was never as great as in 2004, the year of accession. For host countries such as Ireland or the United Kingdom, the minimum wage became much more than a national floor. It helps them to attract a cheap but well-trained and well-informed labour force from Central and Eastern European countries. The interviews confirmed that the Irish minimum wage played a role in motivating such labour flows. Viewed more globally, it shows how a minimum wage in one

\textsuperscript{15} MW\textsubscript{checked}: 1 for yes, 0 for no; education \textit{EDU}: 0 for vocational, 0.5 for secondary, 1 for higher; place of residence \textit{PLACE}_{PL} village = 1/6, city of more than 500,000 inhabitants = 6/6; \textit{GENDER}: 1 for female and 0 for male. The optimization algorithm was BHHH.
country can influence labour movements from another country. This might legitimize the need for some sort of coordination on minimum wage policy between EU Member States and eventual common principles or guidelines at EU level.

Case study 2: Higher minimum wage to limit outward migration in the health-care sector?16

The minimum wage problem in this sector first came under wider public discussion in autumn 2005, when the Convention of Doctors addressed an appeal to the Ministry of Health demanding higher minimum wages (Apel, 2006).

A sector with a high propensity for emigration
When Poland entered the European Union increasing earnings in the state-owned health-care sector became a crucial factor in stopping a possible “brain-drain” of young doctors and nurses. This is a serious problem: according to the Polish Chamber of Physicians and Dentists, by 30 June 2008 the Chamber had issued 6,997 certificates for doctors interested in leaving Poland.

Needless to say, earning a decent wage is also an issue which concerns graduates who do not want to go abroad.

16. I would like to thank Artur Proniewicz for his help in collecting the data. Sława Maćkowiak provided me with very useful information about the financial situation of the health care sector. Without her help my progress through the legal jungle might have damaged my health. Both Proniewicz and Maćkowiak helped me in constructing the survey.
Minimum wage proposal at two to three times the average wage
The reasons why health-care employees adopted the minimum wage idea were twofold. First, the reform of 1999 provided financial autonomy to hospitals. This often led to a new ownership structure that sometimes made it impossible to sign a collective agreement. Second, at the same time, certain other groups obtained a type of minimum wage agreement that led to some wage increases. Inequality thus began to spread in some sectors of activity. A minimum wage at a much higher level than the average wage was proposed to counter this trend. In particular, in autumn 2005, the Doctors’ Trade Union, at its 8th National Convention, proposed the following standardized minimum wage for doctors: $1.75 \times$ national average wage during internship, $2 \times$ average wage during specialization, and $3 \times$ average wage after specialization (DTU, 2006).

This proposal was of particular importance for graduating medical students. The unanswered question remains, “Did this help to reduce their propensity to leave Poland?”

Effects of the minimum wage proposal – survey results
This case study focuses on the propensity to leave Poland and wage expectations concerning the proposed minimum wage.

The survey was conducted among fifth-year students at Poznań University of Medical Sciences in July 2008. The sample consisted of 147 observations. Two versions of the survey were available – one for students who wanted to emigrate, and one for those who wanted to stay in Poland. In order to estimate the proposed minimum wage, the latest level of the nominal gross average wage was used: PLN 3,137.74, according to the Polish Central Statistical Office.

Half of students in penultimate year of study already opting for migration
The interviews confirmed that the propensity to leave is huge, even if linguistic competence lags far behind. However, a propensity does not necessarily transform into action, especially if it is driven by the euphoria characteristic of the penultimate year of study. Also, such a propensity might be transformed into broken dreams and so into wage claims.

A total of 72 out of 147 students chose the emigration option: 35.4 per cent of them wanted to go abroad for life, 17.1 per cent wanted to spend up to one year abroad, 26.8 per cent wanted to leave during specialization, while 20.6 per cent were interested in commuting. The largest share (57.6 per cent) wanted to leave after internship, 24.3 per cent after finishing specialization and 18.1 per cent immediately after graduation.
Higher minimum wage inducing students to stay…
Given that the proposed minimum wage was an upper limit for the possible wage, the survey asked whether such a minimum would lower their propensity to leave; 81.9 per cent agreed, while 6.9 per cent would have accepted an even lower wage to stay (around 80 per cent of the proposed minimum wage). Slightly more than 11 per cent refused to give an answer or wanted to be paid more.

…and motivating those who had opted to stay anyway
The second subsample consisted of students who did not want to leave Poland. Again, more than 80 per cent of students would have been satisfied with the proposed minimum wage. The group of students was asked explicitly how much they wanted to earn after (i) internship, (ii) the second year of specialization and (iii) the fifth year of specialization. Figure 11.10 depicts the kernel densities obtained for the answers. Interestingly, the mean value of wage claims for internship and the second year of specialization are smaller than the proposed minimum wage. The wage claims of students are likely to be driven by the minimum wage proposal.

Figure 11.10 Wage expectations, kernel densities, Poland
Source: Author’s calculations.

Whatever the proposal, it should be accompanied by better information
Strangely enough, the percentage of students who had not heard about the minimum wage proposal was similar in both subsamples (61.1 per cent among those wishing to go abroad and 56.8 per cent among those who did not). In
order to obtain any positive effect from the minimum wage in the health-care sector, its potential recipients should be better informed.

**The minimum wage’s role in the future of the Polish health-care sector**

Almost every third student in the sample wanted to leave Poland for at least five years. The high propensity on the part of students to leave for such an extended period might produce an unbridgeable gap between generations in the health-care sector, quite apart from deepening the existing crisis. The survey confirmed that a high minimum wage for health-care employees may help to limit this process. Those already planning to leave said that they would be prepared to reconsider their decision: this is a vital lesson for policy-makers. Those who had not opted for migration reported that they would also be motivated by a higher minimum wage. In fact, one of most striking results was the similar percentage of students in both subsamples who would accept the proposed minimum wage. And, regardless of whether or not the students had heard about the proposal, their wage expectations were likely to be influenced by it. A minimum wage corresponding to twice the average wage would satisfy both groups, helping to avoid a possible brain-drain in the health-care sector. Whether the public finances are capable of accommodating another rise in the minimum wage remains an open question.

### 11.7 CONCLUSIONS

The minimum wage “story” in Poland has shown, first, a period in which the minimum wage was neglected. As a result, the minimum wage lost ground compared to the average wage and the proportion of minimum wage earners decreased alongside the increasing number of low-paid workers. The minimum wage was found not to be sufficient for workers and their families, especially when they relied on only one minimum wage earner. More recently, a more active minimum wage policy has been implemented, aiming at a Kaitz index of 50 per cent, notably to address the low pay and working poverty problem. This brings with it new challenges for minimum wage fixing mechanisms. Minimum wage fixing should be adjusted to the new minimum wage fixing policy goal. Changes only once a year are not effective in ensuring implementation. It would also be reasonable to apply differentiation by region and profession. However, many doubts have been raised concerning this proposal. Even the arguments raised by the Doctors’ Trade Union were unconvincing and discussion of the minimum wage in the health-care sector has ceased completely over the last year. At the same time, the minimum wage has received more attention as a potential tool in limiting migration and emigration, and so became a crucial issue in the minimum wage
debate. This is in a context in which EU accession has brought many changes, such as lower unemployment, increasing migration flows, decreasing labour supply and labour shortages and increasing wage claims. The above case studies have shown that the minimum wage of both the host and the sending country may influence migration flows. The Irish minimum wage was found to have been taken into account by Polish workers in their decision to move to Ireland. At the same time, the example of the health-care students who answered the questionnaire has shown that a higher Polish minimum wage, eventually by sectors, may positively limit such migration, and thus respond to labour shortages in Poland. If the Polish government is keen to discourage Polish citizens from moving abroad, it should first reform the Polish labour market. It is clear, in fact, that competition is already taking place between countries to attract workers through the use of the minimum wage, a development that may further justify bringing forward the minimum wage as an issue to be discussed between EU countries. It also means that the sending country should give more consideration to the structural differences between itself and the host country.

Finally, the new objective of minimum wage policy requires a new research direction. To answer the complex questions concerning the minimum wage in an economy undergoing major structural changes there must be a focus on its non-macroeconomic aspects. There is an urgent need for microeconomic studies such as Newell and Socha (2007) or Myck et al. (2007). Without such a new direction in minimum wage research we cannot expect policy-makers to drive minimum wage policy in a new direction.

BIBLIOGRAPHY


