Chapter 2: Statistical Overview

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This chapter gives an overview of the position of the middle-income class in the nine European countries shown on the map on the right: Bulgaria, Finland, France, Germany, Ireland, Italy, the Netherlands, Poland and Spain. I present the size of the middle class, statistics on income growth, trends in employment, the role of government redistribution and inequality.

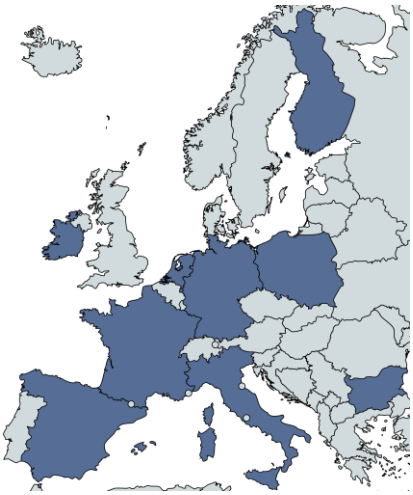


Figure 1: The countries (Source: mapchart.net)

The Nine Countries

Table 1 lists basic statistics of the nine countries used in this study: population, GDP, GDP per capita and unemployment. For reference, the year of EU membership is included in the last column. Our sample of countries covers 67% of the population in the EU-28 and 69% of total GDP. The countries are in the Eurozone, except for Bulgaria and Poland. Six countries have a higher GDP per capita than the EU-28 average, and six have higher unemployment than the EU-28 average. In all, our sample displays a large degree of variation in terms of how each country fares economically within the European Union.

The large variation in GDP per capita[1] creates a substantial incentive for labour migration, especially from less-productive to more-productive countries. However, this is not borne out in the data for the emigration rates of nationals, as shown in the last column of Table 1. Migration rates vary widely per country, but are not particularly higher for countries with the lowest GDP per capita. Apparently, other reasons than differences in productivity drive intra-EU migration flows. This is also described in the European Commission's annual report on intra-EU migration; see European Commission (2017).

[1] The high GDP per capita for Ireland gives a somewhat distorted picture of the real size of the Irish economy, by the fact that multinational companies locate a very high fraction of the enterprise's global profits in Ireland; see Honohan and Walsh (2002).

Table 1: Population and the economy

Source: Eurostat. Population and GDP figures are for end-2016. GDP is at current market prices, in Euro. Unemployment for April 2017, as a percentage of the active population, seasonally corrected. The emigration rate of nationals is for the year 2014, obtained from the European Commission (2017). *A missing value for France, imputed by taking half the total migration rate.

Country	Pop. (mln)	GDP (bln €)	GDP per capita (1000 €)	Unempl. (%)	EU member since	Emigration rate nationals
Bulgaria	7.1	47	6.6	6.4	2007	0.4%
Finland	5.5	214	39.0	8.9	1995	0.2%
France	66.8	2,229	33.3	9.5	1957	0.2%*
Germany	82.8	3,134	38.0	3.9	1957	0.2%
Ireland	4.7	266	56.8	6.4	1973	0.9%
Italy	60.6	1,672	27.6	11.1	1957	0.2%
Netherlands	17.1	703	41.3	5.1	1957	0.4%
Poland	38.4	424	11.0	4.8	2004	0.6%
Spain	46.5	1,114	24.0	17.8	1986	0.2%
Total	340.8	10,225				
EU-28	512.1	14,825	29.0	8.7		0.3%
Total as % of EU-28	67%	69%				

Middle-Class Size

Defining the middle class is not trivial. As described by Atkinson and Brandolini (2013), the middle class can be defined as the status in a social hierarchy, the employment position, or a position in the income distribution. Each perspective has its own problems. The social stratification is complex, the middle class cannot be associated with a single type of employment across all countries, and there are no predefined parts of the income distribution that are by definition middle class.

For the purposes of this chapter (and book), we take the income perspective, for several reasons. The approach is not only the one used by most experts, but also its results are widely available for each country of our study and it provides a consistent way of comparing middle-class size and income growth per country. Also, to the extent that even a flawed economic definition of middle class is correlated with the sociological status of a household, the changes in the size and income of middle-class households are informative. We use the terms 'middle-income class' and 'middle class' interchangeably.

The income approach defines a household as middle class when its income is within a range of the median income. Defining this range is somewhat subjective, and several definitions are used in the literature. OECD (2016a) and Derndorfer and Kratzinger

(2017) provide the most recent cross-country comparison of the size of the middle class, each using an income-related definition of middle class, but with different ranges. They have no data for Bulgaria, for which we use the estimate of Panchev and Nikolova (2013) based on EU-SILC data of 2011 and a definition of 90-210% of the median income. The results are in Figure 2.

Based on the OECD 75–200% definition, the average size of the middle class in 2013 is 64% of the population. It is the smallest in Spain (56%) and the largest in the Netherlands (69%). Moreover, between 2008 and 2013 there were significant changes in the size of the middle-income class; see panel B. Ireland and Poland saw a significant increase in the size of the middle class, each of around 5 percentage points. Bulgaria and Germany saw a relative decline in the size of the middle class of 3 and 3.8 percentage points, respectively. For the other six countries, the size of the middle class has been relatively stable.

The income boundaries for defining the middle class are not set in stone, and a discussion of appropriate intervals appears in Atkinson and Brandolini (2013). However, the patterns of changes in size of the middle class are similar in panels B and C of Figure 2, suggesting that the patterns are not overly dependent on the exact boundaries.

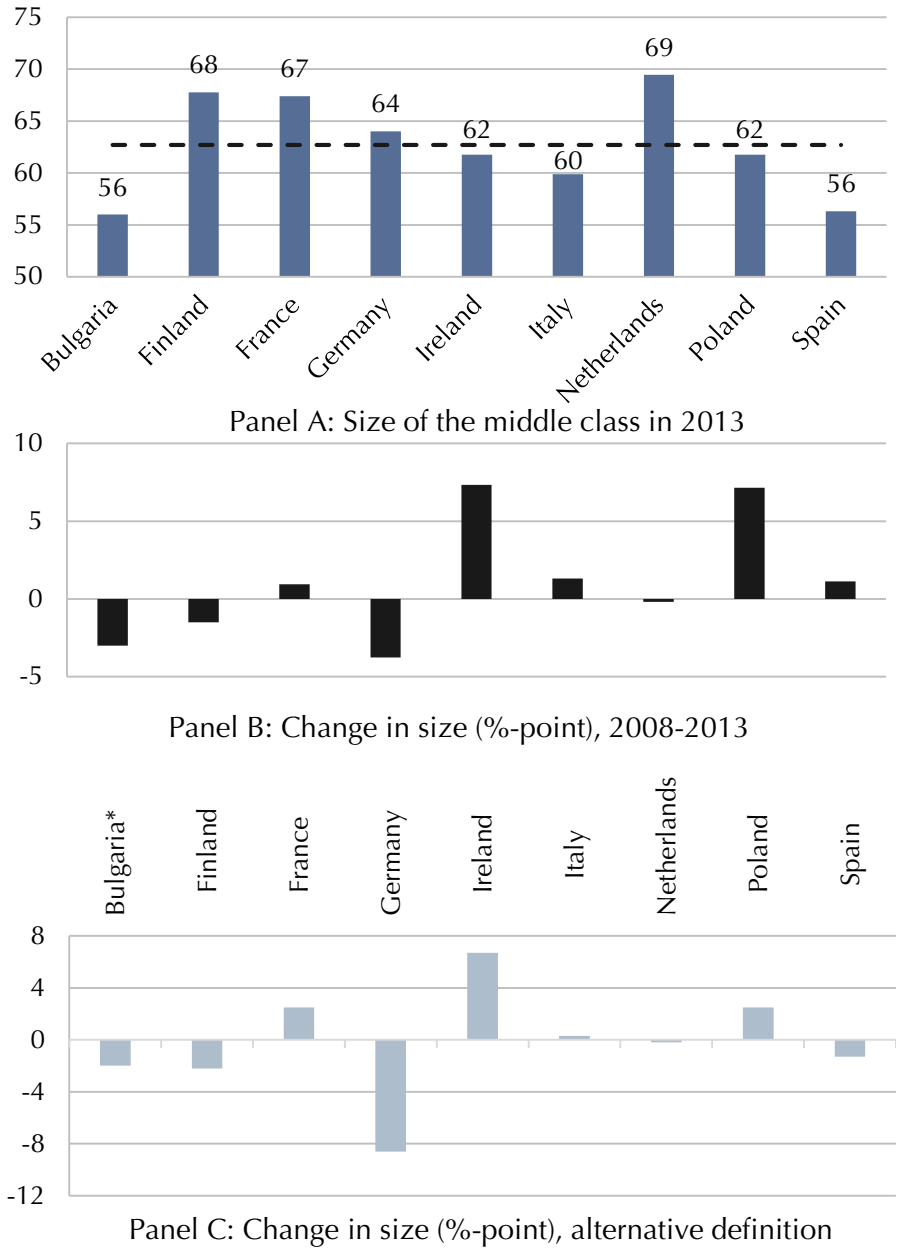


Figure 2: Size and growth of the middle class

Panel A shows the size of the middle class 2013, adapted from OECD (2016a). It used the definition of the share of the population that is between 75% and 200% of the median income. The dashed line gives the average at 63%. Panel B shows the change in middle-class size between 2008 and 2013. Panel C is adapted from Derndorfer and Kratzinger (2017) and shows middle-class growth 2004-2013. It is based on EU-SILC data and a definition of middle class of 75-125% of median income. Bulgaria is missing in their paper and is taken from Chapter 3 (Bulgaria) of this book, for the period 2006-2014.

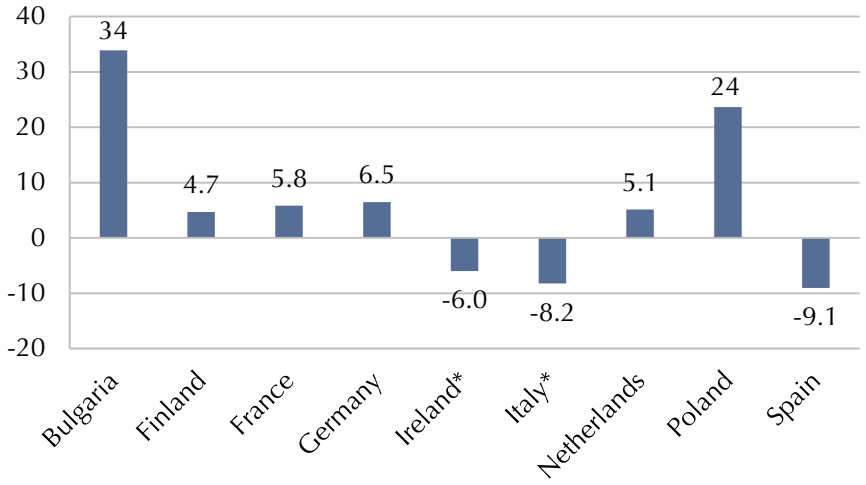
Median Income Growth

The income growth of the median household is a proxy for the income growth of the middle-income class. OECD (2016b) provides an overview of the growth in real household disposable income between 2007 and 2013 for the median-, top- and bottom income groups. Eurostat provides data on an alternative measure: the net *equivalised* household income. The equivalisation corrects for the composition of a household by adding up all of the incomes in the household, and dividing by a weighted average of household members. Eurostat applies an equivalisation factor calculated according to the OECD-modified scale— which assigns a weight of 1.0 to the first person aged 14 or older, a weight of 0.5 to other persons aged 14 or older and a weight of 0.3 to children aged 0-13— thereby taking account of the natural economies of scale that occur within a household. Figure 3 has the results for the two measures.

Panel A of Figure 3 shows the cumulative income growth for the 2008-2016 period. Two countries stand out as having a higher income growth: Bulgaria and Poland. They are also the countries with the lowest GDP per capita (Table 1) and, as a consequence, more potential for growth. Ireland, Italy and Spain have the lowest income growth, consistent with their economic performance in the aftermath of the global financial crisis.

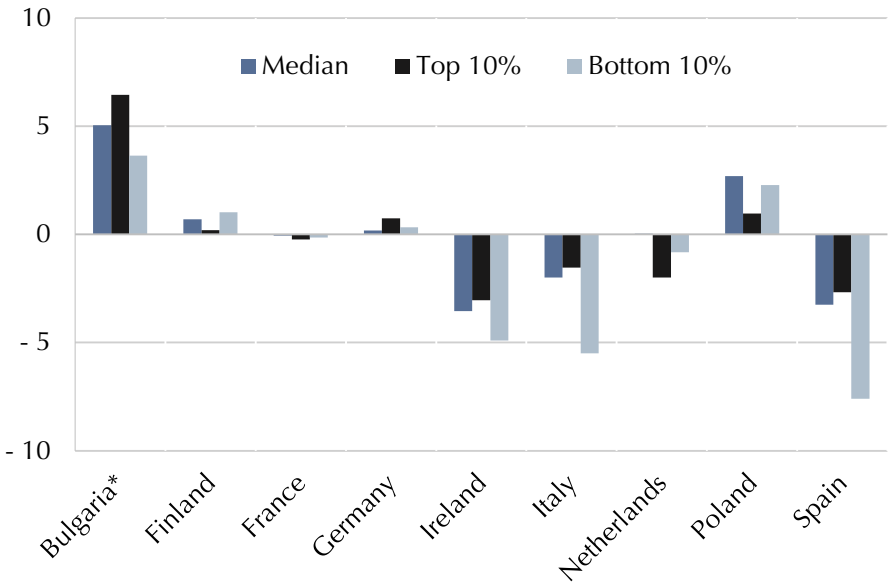
Panel B uses the annualized percentage growth over the 2007-2013 period. The comparison with panel A reveals a similar pattern: the most notable 'up' and 'down' countries are the same in each panel[2]. Real income growth for the median household was the highest for Bulgaria and Poland, and the lowest for Ireland and Italy.

Panel B of Figure 3 provides additional information on the income changes of the top and bottom 10% of incomes. They are similar to changes in the median income, but the bottom 10% are particularly worse-off in Ireland, Italy and Spain.



Panel A: Cumulative growth of median equivalised income, 2008-2016 (Eurostat)

[2] Eurostat figures for the 2007-2015 period are very similar in terms of median incomes (just slightly lower for all countries); for lack of median disposable income data from the OECD for 2014 and 2015, however, we keep the 2007-2013 period for Figure 3.



Panel B: Annual percentage change, 2007-2013 (OECD)

Figure 3: Household income changes

Panel A has the cumulative of growth 2008-2016 of household income in real terms and using the OECD-modified scale for equivalence weights. *latest available for Ireland and Italy is 2015. Panel B has net disposable household income changes 2007-2013 from OECD (2016a). *Bulgaria 2008-2013 from the National Statistical Office of Bulgaria. Sources: OECD/EU-SILC / Eurostat / NSI Infostat.

The bubble chart in Figure 4 summarizes the size changes and income growth of the middle class for the 2008-2013 period. With Poland as outlier, there seems to be an inverted relationship between size changes and income changes.

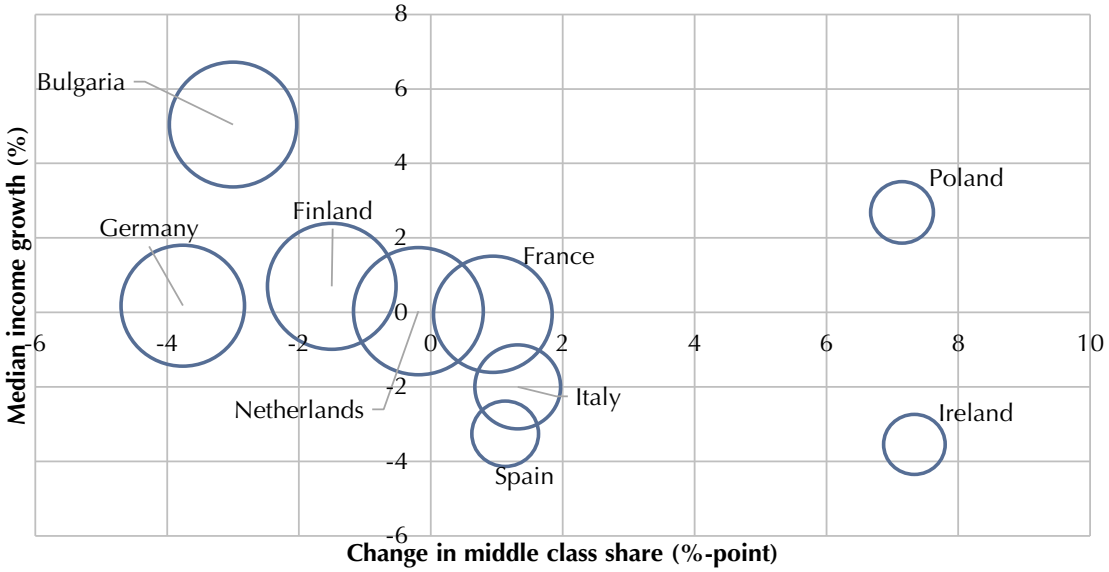


Figure 4: Change in middle-class size and income growth 2007-2013

Changes in the size (x-axis) and median income (y-axis) for the nine countries for the 2007-2013 period. Income changes are in annual percentage changes, as in Panel B of Figure 3. The size of the bubble is relative to the size of the middle class in 2013.

Unemployment and Jobs

Having a job is one of the most important factors in the size and position of the middle class; see Salverda (2015). Figure 5 below shows the trajectory of unemployment in each country as the starting level in Q4-2007, at the peak, and in the first quarter of 2017.

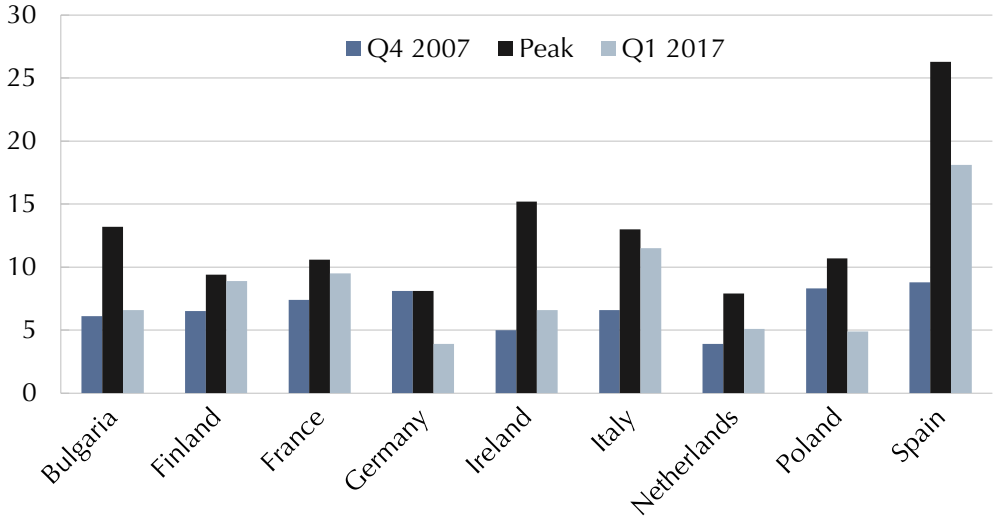


Figure 5: Unemployment

The figure shows initial, peak and final levels of unemployment for the period 2007-2017, as a fraction of the active population. Seasonally adjusted data. Source: Eurostat.

For all countries but one, unemployment rose rapidly after 2007 and then declined again. Only Germany is different: unemployment only went down after 2007. Spain had the highest peak unemployment at 26% in February 2013, and Bulgaria, France, Ireland, Italy and Poland had unemployment of more than 10% of the active population in the 2013-2015 period.

The recovery of the labour market shows a similar pattern across countries, except for Finland, France and Italy. There, unemployment levels in the first quarter of 2017 were only between 0.5% and 1.5% lower than at the peak of the recession.

Not all employment is equal. Figure 6 shows the use of temporary contracts and changes between 2003 and 2016. It shows Poland and Spain as the champions of temporary employment, with more than 20% of contracts, and Bulgaria and Ireland as having the lowest percentage, around 5%. However, for almost all countries, the use of temporary contracts for the younger generation (25-49) has been rising. For the 50+ generation, changes in the use of temporary contracts are minute.

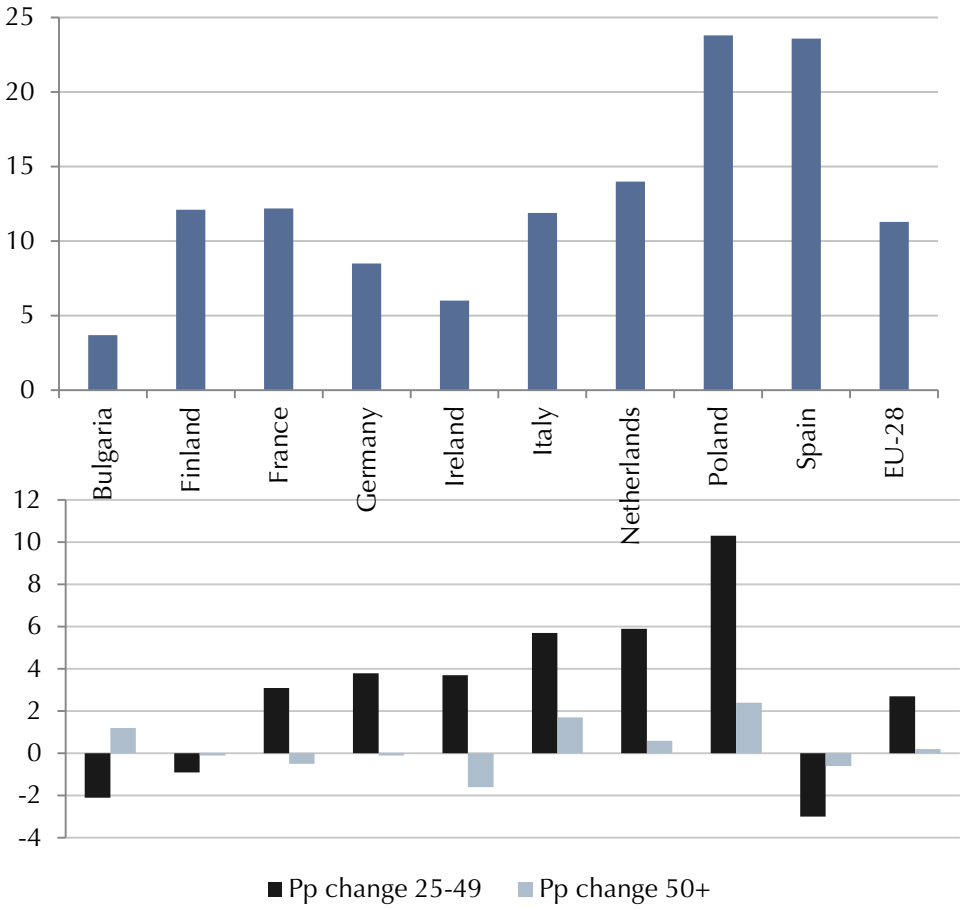


Figure 6: Use of short-term employment contracts 2016

The top panel shows the total use of short-term employment contracts as a percentage of employment, in 2016. The bottom panel has the percentage-point change in temporary contracts between 2003 and 2016, separately for the age group 25-49 and 50+. Source: OECD (2017).

The type of work is changing as well. Figure 7, showing the growth in jobs by level of educational attainment, reveals for all countries a pattern that has become known as 'job polarization', featuring a decline in medium-skilled employment and an increase in low- and high-skilled employment. The reasons for the trends are complex and not yet fully understood by economists. The labour market is a complex interaction of the skills of workers and entrepreneurs, education, technology, trade, and the decisions taken by individuals striving to secure an income for themselves and their household. A seminal paper by Autor et al. (2003) considers the evidence for the skill biased technological change hypothesis (SBTC). SBTC states that a burst in technological developments (starting in the 1980s) is responsible for a more-than-average increase in the wages of highly skilled workers in the US, which could be a root cause of increased inequality. For European countries, Marin (2014) shows how the wage premium for high-skilled workers is increasing for some countries and declining for others. To shed light on what a changing job market means for middle-class households, this book presents a per-country analysis.

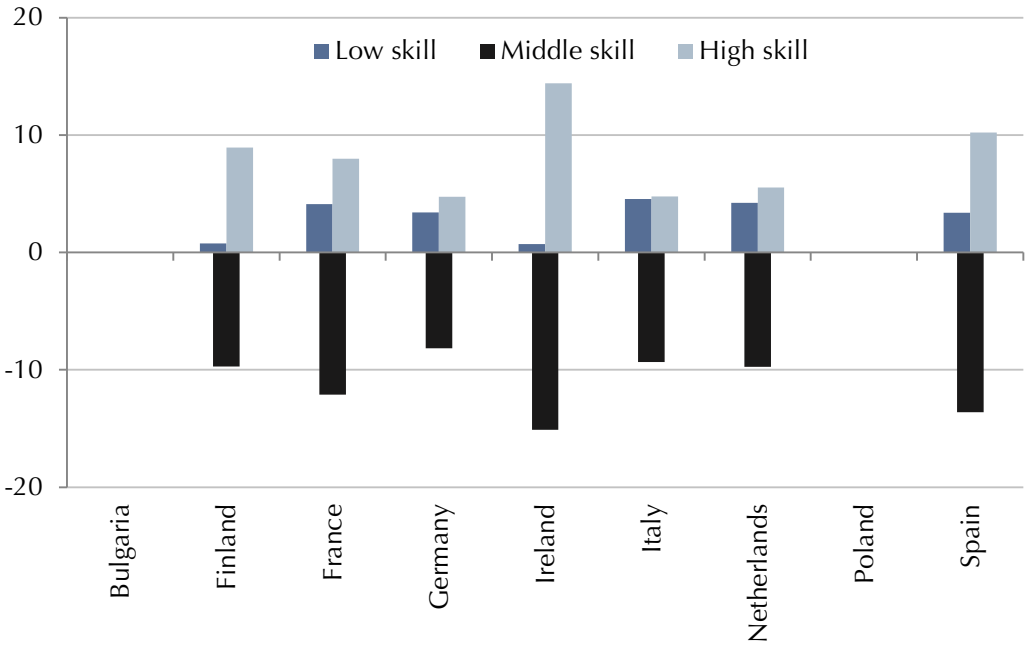


Figure 7: Job growth per level of skill 2005-2015.
Percentage-point change in share of total employment for low-skilled, middle-skilled and high-skilled jobs for the period 2005-2015. Source: OECD 2017. No data available for Bulgaria and Poland.

A final aspect that affects the economic position of middle-class households is that of government policies, and through the tax system, pensions and social transfers. These policies have an effect on the redistribution over households, but can also mitigate the effects of the financial crisis over time, as 'automatic stabilizers'. Figure 8 shows the contribution of taxes, social benefits and pensions on the net income position of households for the period.

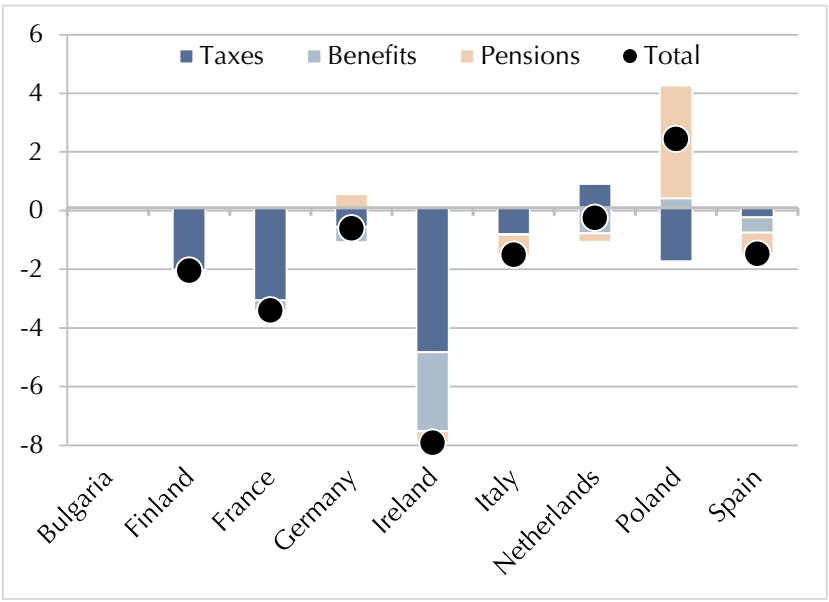


Figure 8: Contribution of taxes and benefits to income changes 2010-2015
Percentage changes in household disposable income of middle-income households (75-200% median) due exclusively to tax-benefit changes in the period 2010-2015. Source: OECD (2016a).

A large, negative effect of government policies can be seen for France and Ireland, where higher taxes and lower benefits have caused incomes to drop by more than 3%. There is a significant positive effect for Poland, mostly through the role of pensions, which have more than compensated for an increased tax burden. A more detailed analysis of the role of government policies as automatic stabilizers in the 2007-2013 period appears in Dolls, Fuest and Peichl (2010).

Government policies also have an effect on inequality. Figure 9 shows the changes in the Gini coefficient, a standard measure of inequality, both before and after social transfers (excluding pensions). It shows how initial changes in the Gini coefficient are mitigated by social transfers, but pronounced increases in inequality remain for Bulgaria and Spain. For Bulgaria, this coincides with a large decline in the size of the middle class as well; see Figure 2.

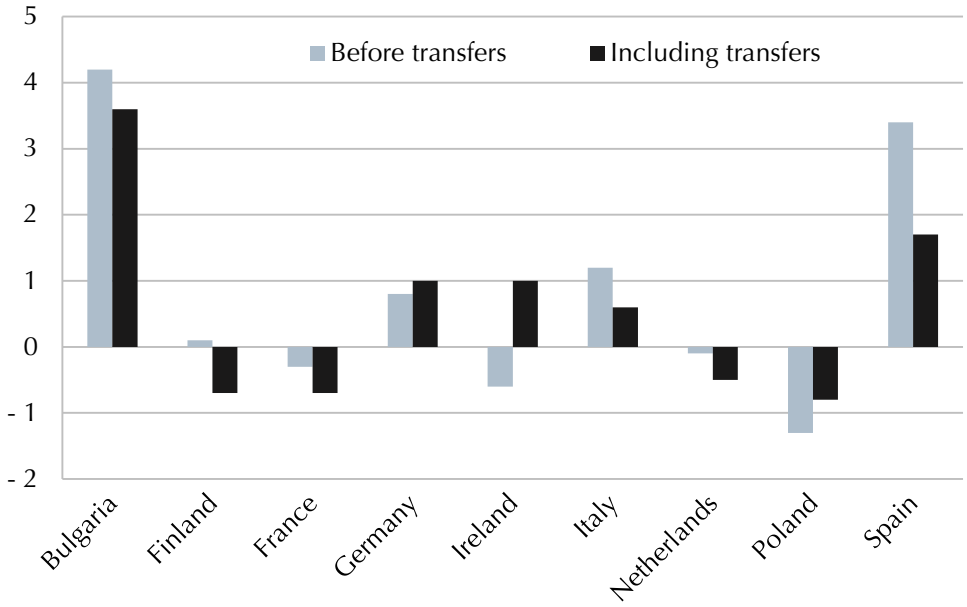


Figure 9: Percentage change in the Gini coefficient 2009-2015

This figure shows the percentage change in the Gini coefficient in terms of equivalised disposable income between 2009 and 2015. Pensions are excluded as social transfers. Source: Eurostat.

Conclusion

The size of the middle class has been remarkably stable for five out of nine countries, with an average size of 64% of the population. It has shrunk in Bulgaria and Germany, and grown in Ireland and Poland. In the past eight years, median household incomes have increased the most in Bulgaria (34%) and Poland (24%), and have shrunk in Ireland (-6%), Italy (-8%) and Spain (-9%). There is a weak relation between changes in the middle-class share and income growth.

The use of temporary contracts in 2016 is high for Poland and Spain (both 24%), but it has increased for six of the nine countries, mostly for the younger generation (aged

25-49). Bulgaria, Finland and Spain have seen a decrease in the use of temporary contracts.

Another clear trend across all nine countries is that of job polarization. Job growth has been taking place in high-skill jobs and, to a lesser extent, low-skilled jobs. Middle-skilled jobs have been in decline, by around 10% per year, in every country for which data is available.

In the aftermath of the financial crisis, government policies have had to balance government budget constraints with social welfare. For most countries, the contribution of taxes and benefits to middle incomes has been negative. The dampening effect of social transfers on inequality suggests that lower incomes have been shielded from the worst consequences.

Concluding, we can say that the size and incomes of the middle class have been reasonably stable, with country-specific trade-offs between stability and growth. However, it is also clear that this stability has been achieved at the cost of higher flexibility in employment contracts and job polarization. Moreover, most middle-income classes have experienced tax increases that were necessary to balance the government budget while retaining social welfare.

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