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Middle Class Fortunes in Western Europe

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LIS

Working Paper Series

No. 702

Middle Class Fortunes in Western Europe

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Middle Class Fortunes in Western Europe

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Abstract

This paper examines the state of the middle classes in the U.S. and 11 countries in Western Europe and how it has changed since 1991. Among Western Europe's six largest economies, the shares of adults living in middle-income households increased in France, the Netherlands and the United Kingdom from 1991 to 2010, but shrank in Germany, Italy and Spain. France, the Netherlands and the UK also experienced notable growth in disposable household income, but incomes were either stagnant or falling in Germany, Italy and Spain. Ireland stands out as experiencing the most rapid growth in income from 1991 to 2010 and the biggest expansion of the middle class. Overall, the middle-class share fell in seven of the 11 Western European countries examined, mirroring the long-term shrinking of the middle class in the U.S. The decrease in the middle-class share is typically accompanied by a move up into the upper-income tier and a move down into the lower-income tier.

Keywords: Income distribution, real income, inequality

FOR RELEASE April 24, 2017

Updated May 25, 2017: This version of the report includes a note in methodology clarifying that the 1991 estimates for Germany are based on a sample of West German households only.

Middle Class Fortunes in Western Europe

From 1991 to 2010, the middle class expands in France, the Netherlands and the United Kingdom, but, as in the United States, shrinks in Germany, Italy and Spain

BY Rakesh Kochhar

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Terminology

“Middle-income” households are defined as those with an income that is two-thirds to double that of their country’s median disposable household income, after incomes have been adjusted for household size. Lower-income households have incomes lower than two-thirds of the median, and upper-income households have incomes that are more than double the median. The income boundaries vary across countries, depending on each country’s own median household income.

The terms “middle income” and “middle class” are used interchangeably in the report.

Disposable income is the sum of earnings from work, capital income such as interest and dividends, rental income, and transfer income such as government assistance and family transfers, less income taxes and social security contributions.

Income estimates are adjusted for household size, scaled to reflect a household size of three, and reported in 2011 prices and purchasing power parities. Purchasing power parities are exchange rates adjusted for differences in the prices of goods and services across countries.

For some of the countries examined, the 1991 estimates are derived from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1991 estimates for Germany are based on a sample of (former) West German households only. Estimates for Finland, Italy, Luxembourg, Norway, the United Kingdom and the United States are based on 1991 survey data. The year “1991” is used to refer to the estimates for all countries for the sake of convenience.

For most countries in most years, adults are placed into income tiers based on their household income in the calendar year previous to the year the survey was conducted. Thus, while the income data in the report refer to 1991, 2000, 2010 and 2013, the distributions of adults by income tier are often derived from population counts in 1992, 2001, 2011 and 2014.

The analysis does not follow the same households over time, and some households that were middle income in 1991 may have moved to a different tier in 2010 or 2013. The demographic composition of each income tier may also have changed over the period.

Differences between numbers or percentages are computed before the underlying estimates are rounded.

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Middle Class Fortunes in Western Europe

From 1991 to 2010, the middle class expands in France, the Netherlands and the United Kingdom, but, as in the United States, shrinks in Germany, Italy and Spain

The fortunes of the middle classes in Western Europe's largest economies are moving in opposite directions. From 1991 to 2010, the shares of adults living in middle-income households increased in France, the Netherlands and the United Kingdom, but shrank in Germany, Italy and Spain.¹

The divergent trajectories are linked to differences in how the incomes of households overall in these countries have evolved. France, the Netherlands and the UK experienced notable growth in disposable (after-tax) household income from 1991 to 2010. Meanwhile, incomes were either stagnant or falling in Germany, Italy and Spain.

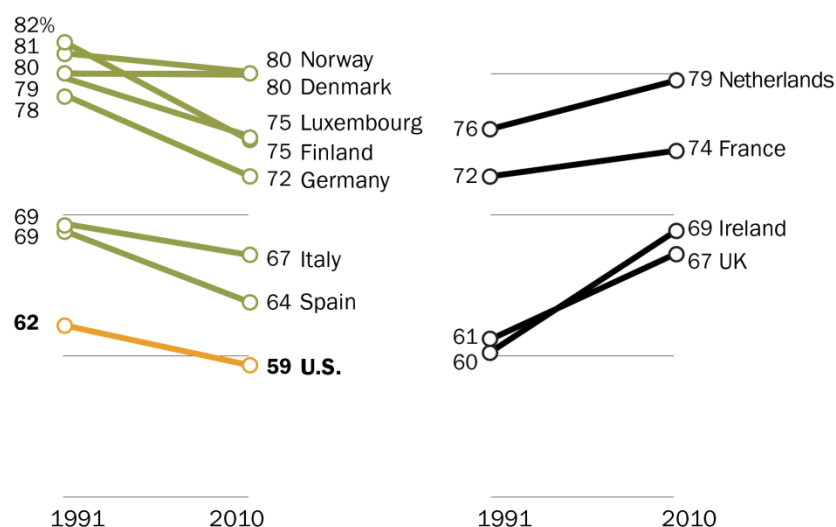
Among the 11 Western

European countries examined

in this report, Ireland experienced the most rapid growth in income from 1991 to 2010 *and* the biggest expansion of the middle class. Several other countries in Western Europe also experienced

The shares of adults living in middle-income households fell in many countries in Western Europe

% of adults living in middle-income households in 1991 and 2010



Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. For some countries the 1991 estimates are from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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¹ These were the six largest economies in Western Europe in 2016 based on their gross domestic product, valued in purchasing power parities, according to International Monetary Fund [data](#). The 1991 estimates for Germany are based on a sample of (former) West German households only (see [Methodology](#) for details).

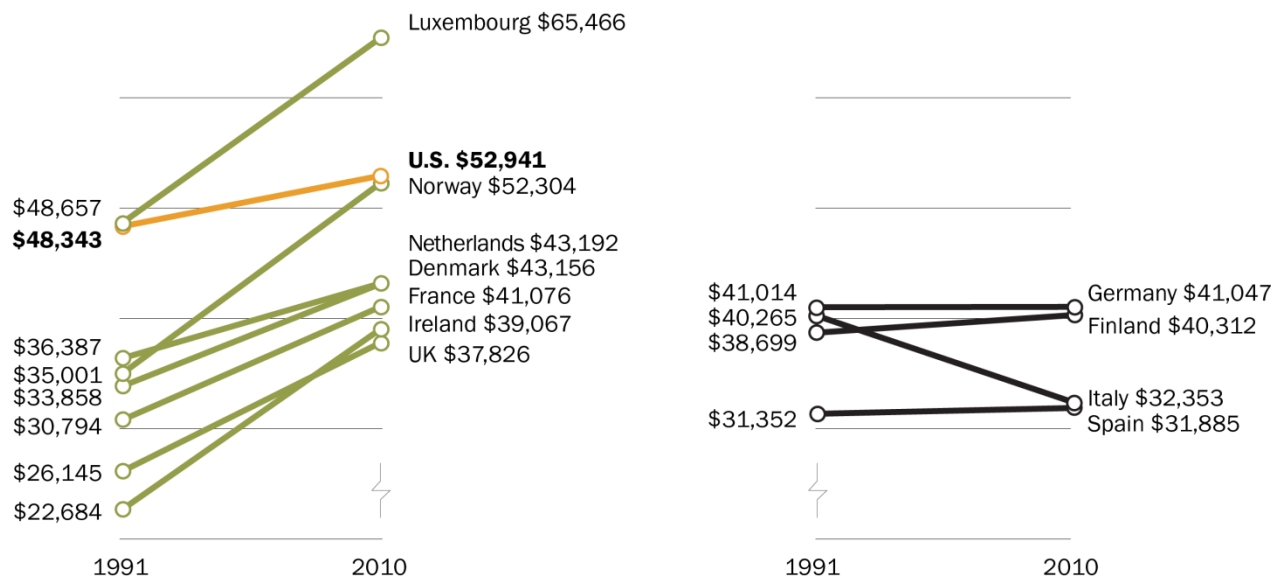
large gains in household income. However, rising incomes did not translate into expanding middle classes in these countries. This group of countries includes Denmark, Luxembourg and Norway.

Overall, the middle-class share of the adult population fell in seven of the 11 Western European countries examined, mirroring the long-term [shrinking of the middle class](#) in the United States. In part, the shift out of the middle class is a sign of economic progress, irrespective of changes in household incomes overall. This is because the outward shift is accompanied by a move up the income ladder, into the upper-income tier, in all countries with a shrinking middle class.

At the same time, there is movement down the income ladder in most countries with a shrinking middle class. Overall, there is a greater movement up the income ladder than downward in most countries from 1991 to 2010, resulting in a general improvement in economic status. But there is

Household incomes in most countries in Western Europe rose faster than in the U.S. from 1991 to 2010

National median disposable household income scaled to reflect a three-person household, in 2011 prices and purchasing power parity dollars



Note: The survey dates for some countries differ slightly from the dates shown as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, and Spain - 1990. Incomes for these countries are projected to 1991. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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also a sharpening of economic divisions across households in many Western European countries and in the U.S. as relatively more adults are in the lower- and upper-income tiers and relatively fewer are in the middle.

These are among the key findings from a new comparative, cross-national analysis by Pew Research Center, using data from the [Cross-National Data Center in Luxembourg](#) (LIS), a research center that harmonizes and provides access to data from government surveys and other sources. The study covers the period 1991-2010 for the following countries: Denmark, Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Norway, Spain, the UK and the U.S.² Estimates for 2013 for eight of these countries are presented in Appendix A.³

In this report, “middle-class” adults live in households with disposable incomes ranging from two-thirds to double the national median disposable household income.⁴ Disposable income includes earnings from work, interest and

Who is middle income?

In this report, “middle-income” adults have annual disposable household incomes from two-thirds to double the national median disposable household income, after incomes have been adjusted for household size (see Methodology). Disposable income – earnings from all sources, including government transfers, less income taxes and social security contributions – is the only comparable metric across countries in the LIS data for all years of interest. The income boundaries vary across countries, depending on a country’s own median disposable household income. Thus, the living standards of the middle class and of households in other income tiers also vary across countries. The income needed to be middle class also changes over time with changes in the national median household income.

The use of disposable household income as the metric for defining income tiers sets this report apart from [previous analyses](#) by Pew Research Center that use gross (pretax) household income as the metric. On the basis of gross income in 2010, 51% of American adults were [estimated](#) to live in middle-income households. But on the basis of disposable household income in 2010, 59% of Americans were middle income. The share of adults who are middle income is estimated to be higher if disposable income is used because the progressive design of income taxes reduces the disparity in incomes across households. Appendix C presents estimates based on both disposable and gross incomes for a selected number of countries.

² For some of the countries examined, the 1991 estimates are derived from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The year “1991” is used to refer to the estimates for all countries for the sake of convenience. The 1991 estimates for Germany are based on a sample of (former) West German households only (see [Methodology](#) for details).

³ The selection of countries from Western Europe is based on the availability of comparable data for 1991, 2000, 2010 and 2013 or for years close to those dates. The year 2010 is the latest date for which LIS data are available for all 12 countries, while data for 2013 are available for eight of these countries. Data for years later than 2013 is not yet available from LIS. The LIS data may be accessed at <http://www.lisdatacenter.org/>. See Methodology for more on the source data and the specific survey dates for all countries. Other studies of a similar nature, albeit varying in methodology, countries included and time period covered, include those by [DIW Berlin](#), [France Stratégie](#), [Bigot, et al](#), and the [International Labour Organization](#) (ILO).

⁴ Median income divides a population into two equal groups, half with incomes higher than the median and half with income less than the median.

dividend income, rental income, and transfer income such as government assistance and family transfers, but subtracts income taxes and social security contributions. It is the only measure of income comparable across all countries in the source data.⁵

Estimates of income in this report are adjusted for household size and expressed in 2011 prices and purchasing power parities.⁶ This allows for comparisons across households of different sizes while adjusting for cost-of-living differences over time and across countries. Also, incomes are scaled to reflect a household size of three for reporting purposes.⁷ The average size of a household [in the U.S.](#) is 2.5 and is between two and three in the [countries in Western Europe](#). (See the text box “Who is middle income?” and Methodology for details.)

By world standards, the countries featured in this report are all high income. The demarcation of their lower-, middle- and upper-income tiers is based on the relative well-being of households *within* these countries. Middle-income households in Western Europe and in the U.S. are in the highest income tiers globally, and most lower-income households in these countries would be in the [global middle class](#).

Some of the report’s findings may reflect the impact of the Great Recession of 2007-2009 that was felt across the U.S. and Western Europe, perhaps most deeply in [Ireland](#), [Italy](#) and [Spain](#). More specifically, it is likely that income levels in 2010 were below what they might have been absent the recession in most countries.

Middle income or middle class?

The terms “middle income” and “middle class” are often used interchangeably. This is especially true among economists, who typically define the middle class in terms of income or consumption. But being middle class can connote more than income, be it a college education, white-collar work, economic security, homeownership, or having certain social and political values. Class could also be a state of mind, that is, it could be a matter of self-identification (Pew Research Center, [2008](#), [2012](#)). The interplay among these many factors is examined in studies by Hout ([2007](#)) and Savage et al. ([2013](#)), among others.

This report uses household income to group people. For that reason, the term “middle income” is used more often than not. However, “middle class” is also used at times for the sake of exposition. [Gornick and Jäntti](#) includes several studies that use an income-based approach to study a variety of issues related to the middle classes in a number of countries.

⁵ [Previous Pew Research Center analyses](#) for the U.S. were based on a household’s gross (pretax) income. Thus, the estimates in this report for the U.S. will not match the estimates shown in previous reports. See Appendix C for more on this issue.

⁶ Purchasing power parities (PPPs) are exchange rates adjusted for differences in the prices of goods and services across countries. In principle, one PPP dollar represents the same standard of living across countries. The U.S. serves as the base country for price comparisons and for currency conversions. Thus, for the U.S., one U.S. dollar equals one PPP dollar.

⁷ Whether incomes are scaled to a household size of three or some other number does not affect the reported trends.

Estimates of the shares of people who were middle class in 2010 could also be affected by the Great Recession. But the impact is muted by the fact that the income needed to be included in the middle class changes over time, rising as national income increases and falling as it decreases (see the text box “Who is middle income?”). As the income boundaries adjust to changes in the overall economic environment, the movement of people in or out of the middle is dampened.

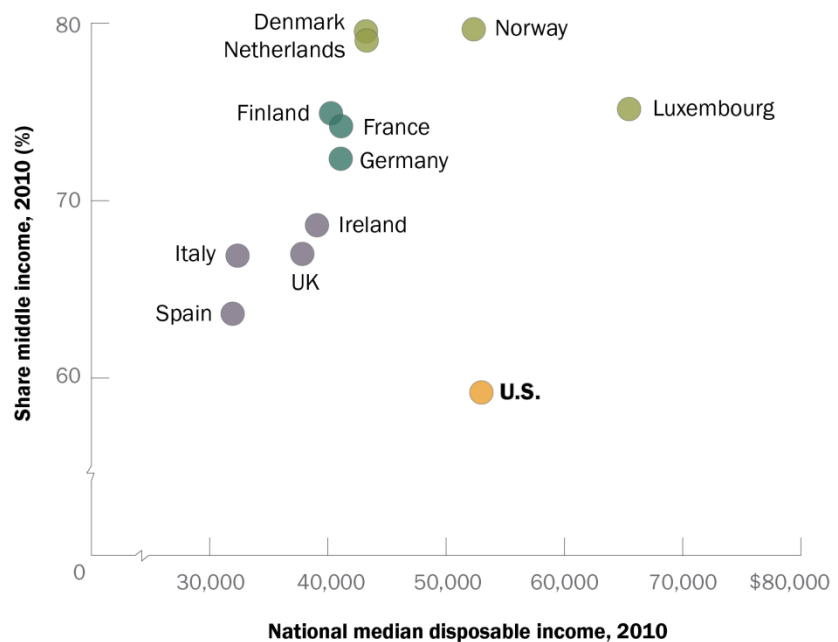
Despite increased integration and widespread growth, Western Europe’s economic trajectory is far from unified

The post-1990 period in Europe is marked by several significant economic and political events. The German reunification in 1990 was followed by the Maastricht Treaty on European Union in 1993.⁸ The Schengen

Agreement took effect in 1995, allowing for passport-free travel across much of Europe, and the euro entered circulation in 2002, tightening economic bonds across Europe.

But Western European economies did not fare similarly with the emergence of a single European market. Economies to the south, such as those of Italy and Spain, did not prosper like northern ones such as Norway and the Netherlands. Ireland, for example, was dubbed the Celtic Tiger due to the rapid expansion of its economy since 1990. The British economy also expanded due to reforms instituted in the 1980s, according to analysts.

Share of middle-income adults rises with national household income; U.S. appears an exception



Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Disposable incomes are expressed in 2011 prices and purchasing power parity dollars. Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). “Middle Class Fortunes in Western Europe”

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⁸ At the time, all countries from Western Europe included in this report were members of the EU, except for Finland which joined in 1995.

Germany, the largest economy in Western Europe and a global powerhouse, struggled from 1991 to 2010. The growth in Germany's per capita gross domestic product in the 1990s was the lowest among the countries examined in this report.⁹ Analysts point to the [role of German reunification](#) as a factor behind the lackluster economic performance in the 1990s. Although Germany fared better than several other Western economies from 2000 to 2010, it too felt the impact of the Great Recession and overall growth remained slow.

Lingering differences across European Union countries remain in income and productivity levels, labor market outcomes and the overall [competitiveness](#) of some economies.¹⁰ Among the countries included in this study, Italy and Spain lag behind the others on most of these counts.

The selected countries in Western Europe also fall into three broad groups based on their overall income and the shares of adults who are middle class. One group is comprised of Spain, Italy, the UK and Ireland. The national median disposable income in these four countries ranged from \$30,000 to \$39,000 in 2010 and the middle-class shares ranged from 64% to 69%, the lowest incomes and the smallest middle classes among the Western European countries examined.

The second group of countries includes Germany, France and Finland, with national median disposable incomes of about \$40,000 to \$41,000 and middle-class shares ranging from 72% to 75%. The third group consists of Luxembourg, the Netherlands, Denmark and Norway. The median income in these countries ranged from \$43,000 to \$65,000 and the middle-class shares extended from 75% to 80% in 2010.

The U.S. represents a significant exception to this general relationship between national income and the middle-income share. The median income in the U.S. – \$53,000 – exceeded the median income in all countries but Luxembourg in 2010. As noted, however, the share middle class in the U.S. (59%) is less than in any of the selected countries from Western Europe.

The American experience reflects a marked difference in how income is distributed in the U.S. compared with many countries in Western Europe. More specifically, the U.S. has a relatively large upper-income tier, placed well apart from an also relatively large lower-income tier. This manifests not only as a smaller middle-income share but also as a [higher level of income](#)

⁹ According to International Monetary Fund data, gross domestic product (GDP) per capita in constant prices in Germany increased 13% from 1991 to 2000. In the other 11 countries examined in this report, GDP per capita in constant prices increased by as much as 82% in Ireland from 1991 to 2000 and as little as 15% in Italy. From 2000 to 2010, the change in GDP per capita in constant prices ranged from -1% in Italy to 14% in Finland. Germany experienced an increase of 13% from 2000 to 2010.

¹⁰ There were also unique economic circumstances, such as the [depression from 1990 to 1993](#) in Finland. Italy has experienced a sustained period of [economic slowdown](#), with analysts pointing to [political, regulatory](#) and [entrepreneurial structures](#) as the reasons.

inequality. The gap between the earnings of households near the top of the income distribution and the earnings of those near the bottom is the widest in the U.S.

Compared with Western Europe, the U.S. middle class is smaller, but its income is greater

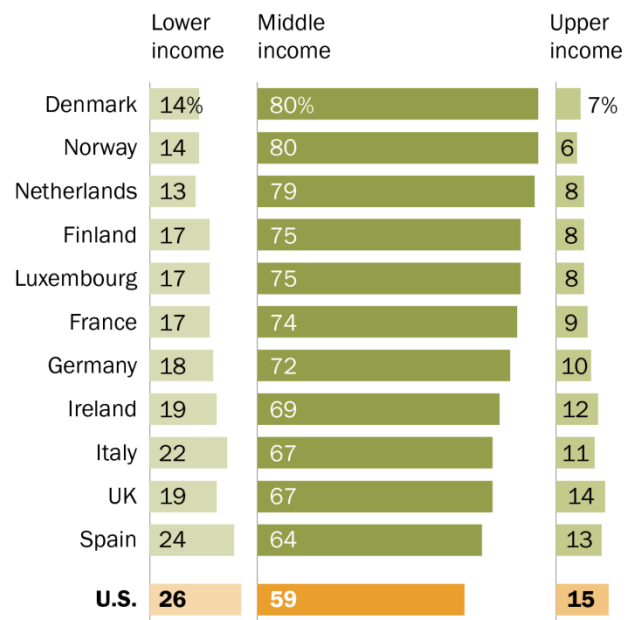
In 2010, households in the U.S. were more economically divided than households in the Western European countries examined in this report. The U.S. is the only country in which fewer than six-in-ten adults were in the middle class. Meanwhile, compared with those in many Western European countries, greater shares of Americans were either lower income (26%) or upper income (15%).

The middle class is a significant presence in the Western European countries analyzed, even as it is shrinking in many countries. Middle-class shares ranged from 64% in Spain to 80% in Denmark and Norway in 2010. The share of adults who were lower income was lowest in the Netherlands (13%) and highest in Spain (24%), and upper-income shares ranged from 6% in Norway to 14% in the UK.

Financially, the American middle class is ahead of the middle classes in the Western European nations in terms of disposable household income, with the exception of Luxembourg.¹¹ Middle-income households in Luxembourg lived on \$71,799 annually in 2010, at the median, followed by \$60,884 in the U.S. The middle class in Italy lived on a median income of \$35,608, the most modest means among the 12 countries.

The middle class in the U.S. is smaller than in Western Europe

% of adult population in lower-, middle- and upper-income households, 2010



Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median. The income boundaries are based on each country's own median disposable household income.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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¹¹ On the basis of gross (pretax) income, middle-income households in Norway also edged out middle-income households in the U.S. in 2010.

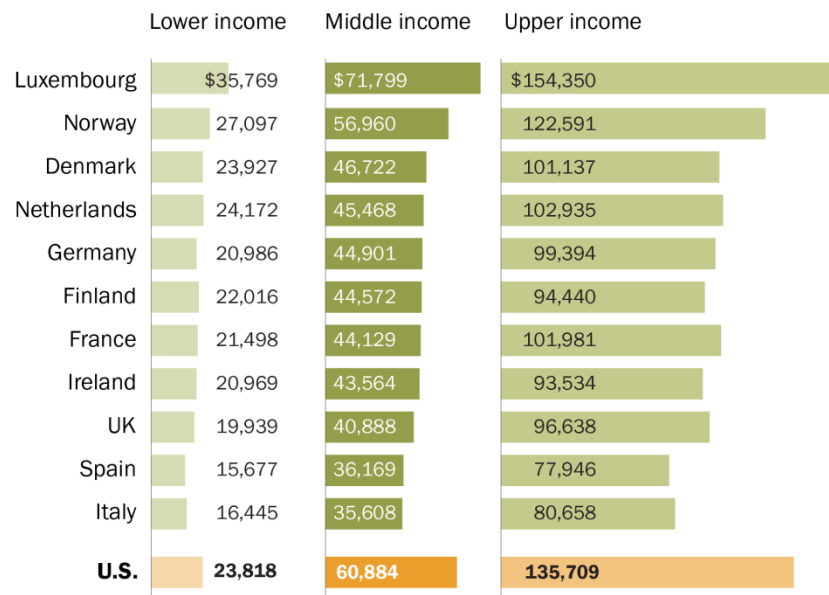
Likewise, the earnings of upper-income Americans (\$135,709 in 2010) trailed only their counterparts in Luxembourg (\$154,350). Upper-income households in Spain had a median income of \$77,946, the lowest in this group. By contrast, lower-income Americans are middle of the pack in terms of earnings, lagging behind or barely matching lower-income adults in Luxembourg, Norway, the Netherlands and Denmark.

What it takes to be middle class varies across countries

The income it takes to be middle income varies across countries because the boundaries are based on each country's median disposable income.¹² In 2010, the median disposable income was as low as \$31,885 in Spain, but as high as \$65,466 in Luxembourg (with incomes expressed in 2011 prices and purchasing power parities and standardized to a household size of three). This meant that a household in Spain was middle income in 2010 if its disposable income was in the range of \$21,257 to \$63,771, while middle-income households in Luxembourg lived on \$43,644 to \$130,932.

Luxembourg households in all income tiers earn more than households in the U.S. and other Western European countries

Median disposable household income in 2010, by income tier



Note: Disposable household incomes are adjusted for household size and expressed in 2011 prices and purchasing power parity dollars.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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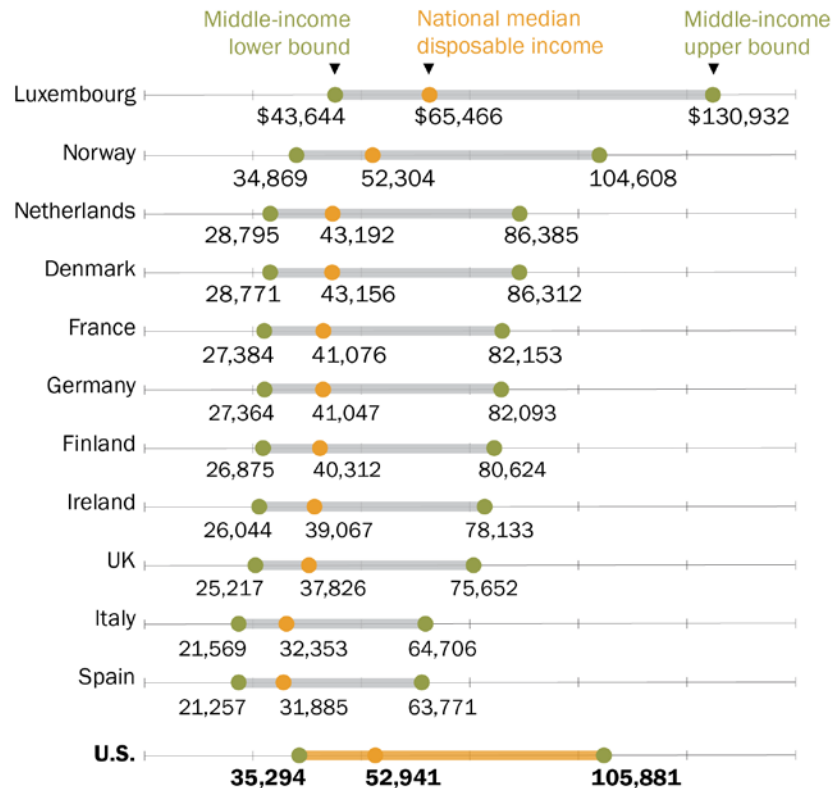
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¹² As noted, "middle-income" adults have annual disposable household incomes from two-thirds to double the national median disposable household income, after incomes have been adjusted for household size (see the text box "Who is middle income?" and Methodology). Coincidentally, Eurostat defines [low-wage earners](#) as workers earning two-thirds or less of the national median gross hourly earnings. An alternative to using each country's own median income is to use a common standard across countries. Appendix D presents estimates that emerge when income tiers in all countries are defined using the U.S. national median disposable income as the common standard.

In the U.S., with a national median disposable household income of \$52,941 in 2010, the middle-income range was \$35,294 to \$105,881 for a household of three.¹³ This standard of living was about matched by middle-income households in Norway. But middle-income households in the Netherlands, Denmark, France, Germany, Finland, Ireland and the UK lagged behind, as did the middle-income tier in Italy, which mirrors that in Spain.¹⁴

What it takes to be middle income varies by country

Middle-income range in 2010 for a three-person household in 2011 prices and purchasing power parity dollars



Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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¹³ The middle-income range for the U.S. will not match the range used in previous Pew Research Center reports. A key difference is the use of disposable household income in this report and gross household income in the previous reports.

¹⁴ In all countries, the middle-income range varies by household size and changes over time with changes in the national median income. See Appendix B for details.

The role of the middle class in developed economies

The size and the well-being of the middle class are intertwined with some of the key economic challenges facing the developed world this century – [income inequality](#) is rising in many countries, [economic growth](#) is anemic, and [economic mobility](#) is lesser than in the past.

A smaller middle class or a relatively less well-off middle class often [reflects](#) a more unequal income distribution. In turn, increases in income inequality present an [adverse climate](#) for economic growth. A relative decline in the incomes of lower- and middle-income families may create a drag on overall [consumption](#) in the economy, lead to [excessive borrowing](#) by these families, or provide disincentives to invest in [education](#).

A more vibrant middle class may also improve the economic outlook for future generations. In the U.S., for example, communities with larger middle classes offer a greater likelihood that children will experience [upward mobility](#) relative to their parents' status in the income distribution. A similar relationship has also been found to exist [across countries](#), whereby intergenerational mobility is greater in countries with less income inequality.

The economic concerns of the middle class, or more generally of those not in the upper-income tier, may also contribute to changes in the social and political trajectories of a country. For example, the increase in income inequality in America may be linked to a rise in [political polarization](#). More recently, the votes the Republican Party gained in America's [middle-class communities](#) and among [working-class voters](#) were key factors in the election of Donald Trump in 2016. This has renewed interest in how the ongoing economic slowdown, [automation](#) and [globalization](#) have impacted the middle classes.

Road map to the report

This report examines the state of the middle classes in the U.S. and 11 countries in Western Europe and how their economic well-being has changed since 1991. In drawing comparisons over time, households that were in the lower-, middle- or upper-income tier in, say, 2010 are compared with households in those tiers in 1991 or other years. The analysis does not follow the same households over time, and some households that were middle income in 1991 may have moved to a different tier in 2010 or 2013. The demographic composition of each income tier may also have changed over the period.

The report is organized as follows: Chapter 1 presents estimates of the sizes of lower-, middle- and upper-income tiers in the U.S. and selected countries from Western Europe. It also shows how the income tiers changed since 1991. Chapter 2 focuses on the incomes of each tier and how they have

changed over time, and Chapter 3 covers the distribution of aggregate household incomes across income tiers in each country.

The Methodology section discusses the source data in more detail and describes how incomes are adjusted for household size and projected over time.¹⁵ A series of appendices present supplementary data through 2013; a closer look at how the middle-income boundaries vary by household size in each country and may change over time; the share of the adult population in lower-, middle- and upper-income tiers in each country using gross household income as the metric to define middle-income boundaries; the population shares of each income tier using the median household disposable income in the U.S. as the standard for all countries; a more detailed look at the income distributions in all countries; and charts showing changes over time in the relative sizes of each income tier and the median income of each tier in all countries.

¹⁵ Income estimates for some countries are projected to 1991 or 2000 from the survey dates to render them more comparable to other countries. For example, Spain fielded a survey in 1990 and the income estimates in this report reflect a projection to 1991.

1. The middle class is large in many Western European countries, but it is losing ground in places

A large majority of adults in the selected Western European countries live in middle-income households. In 2010, the shares of adults who are middle income ranged from 64% in Spain to about 80% in Denmark, the Netherlands and Norway. These shares were considerably higher than in the U.S., where fewer than six-in-ten adults were middle income in 2010.

Across the countries examined, a smaller middle-income tier signals a more economically divided population. Among these countries, the U.S. has not only the smallest share of adults living in middle-income households, but also the largest shares of adults in lower- and upper-income households. By comparison, the lower- and upper-income tiers in Denmark, the Netherlands and Norway are of modest size. The size of the middle class in a country also signals the degree of income inequality there: Countries with smaller middle classes have higher levels of income inequality.

Most of the countries examined in this report experienced a widening of economic divisions since 1991. There was a shared tendency in the majority of countries for the middle class to shrink and the lower- and upper-income tiers to expand from 1991 to 2010.¹⁶ These shifts were most pronounced in Finland and Germany. However, France, Ireland, the Netherlands and the United Kingdom represent significant exceptions to this trend as the shares of adults who are middle income in these countries increased, mostly by lifting people out of the lower-income tier.

The decrease in the share of middle-income populations in most countries was not all bad news. With the exception of Luxembourg and Spain, there was relatively more movement of people into the upper-income tier than into the lower-income tier in all countries. The net result was a general improvement in the economic status of people in the selected Western European countries and the U.S.

Many countries in Western Europe have significantly larger middle classes than the U.S.

The share of the adult population that lives in middle-income households varies considerably across Western Europe and the U.S. In 2010, the latest year for which data are available for all countries, the middle-income share was near 80% in Denmark, the Netherlands and Norway, the

¹⁶ For some countries the 1991 estimates are from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1991 estimates for Germany are based on a sample of (former) West German households only (see [Methodology](#) for details). The year 1991 is used as the common reference point for the sake of convenience.

highest three among the countries examined, and as low as 59% in the U.S. Among the eight countries with data for 2013, the middle-income share ranged from 58% in the U.S. to 79% in Norway.

The size of the middle class across the selected Western European nations is related to the countries' overall standards of living. The countries fall into three groups based on their national median disposable incomes in 2010. National incomes and the middle-income shares were the lowest in Ireland, Italy, Spain and the UK (64% to 69%); higher in Finland, France and Germany (72% to 75%); and higher still in Denmark, the Netherlands, Luxembourg and Norway (75% to 80%).

Generally, the ranking of countries by the shares of their middle-income populations has not changed much since 1991. Denmark and Norway – among the countries with the largest middle-income tiers in 2010 – also had among the larger middle-income tiers in 1991. At the other end,

In Western European countries studied, up to eight-in-ten adults live in middle-income households; U.S. has among the highest lower- and upper-income shares

% of adults in each income tier

	Lower income		Middle income		Upper income	
	1991	2010	1991	2010	1991	2010
Denmark	15%	14	80%	80	5%	7
Finland	14	17	82	75	4	8
France	19	17	72	74	9	9
Germany	15	18	78	72	7	10
Ireland	27	19	60	69	13	12
Italy	21	22	69	67	10	11
Luxembourg	15	17	79	75	6	8
Netherlands	19	13	76	79	6	8
Norway	14	14	81	80	5	6
Spain	20	24	69	64	12	13
UK	24	19	61	67	15	14
U.S.	25	26	62	59	13	15

Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median. The survey dates for some countries differ slightly from the dates shown as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Spain, the UK and the U.S. had some of the smallest middle-income tiers in both 1991 and 2010.

However, Finland, where 82% of adults lived in a middle-income household in 1991, saw the middle-class share fall to 75% in 2010. Conversely, Ireland moved up the ladder, with the middle-income share rising from 60% in 1991, the lowest at the time, to 69% in 2010.

The U.S. has larger lower- and upper-income tiers than the selected countries from Western Europe

Americans are more economically divided than many Western Europeans, with larger shares of adults living in households at opposite ends of the income distribution. The relatively small middle class in the U.S. translated into the largest share of people in lower-income households, at 26% in 2010. Meanwhile, 15% of Americans were in the upper-income tier, the highest share among the countries examined.

The shares of people in lower- and upper-income tiers in Spain were similar to that in the U.S. In 2010, 24% of Spanish adults were lower income and 13% were upper income. Although alike in this respect, a key difference between the two countries is that the median disposable household income in the U.S. (\$52,941 in 2010) is much higher than in Spain (\$31,885).

Generally, the larger the middle-income share, the smaller the shares of the lower- and upper-income tiers in a country. In the Western European countries examined, the middle-income share was highest in Denmark, the Netherlands and Norway in 2010, and these countries also had the smallest lower-income tiers in 2010, around 13% to 14% of the population in each. They also had among the smallest upper-income tiers in 2010, from 6% to 8%.

Income inequality is related to the size of the middle class in a country

The shares of adults who are in the lower-, middle- or upper-income tiers in a country is related to the degree of income inequality in the country, or the gap between the earnings of households near the top of the income distribution and those near the bottom. Countries where incomes are more equal have larger shares of middle-income adults, and vice versa.

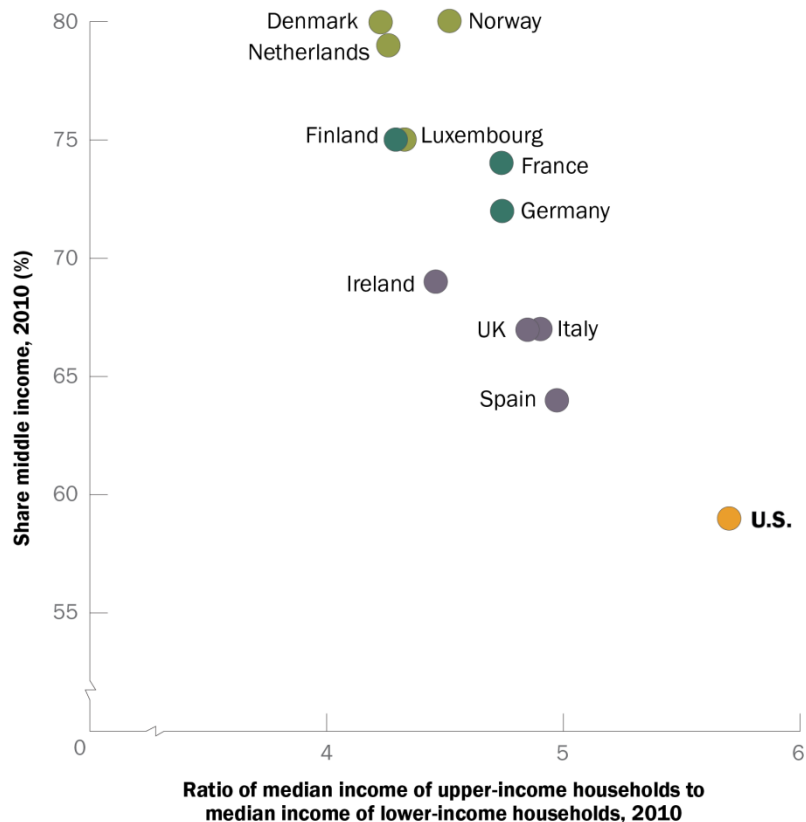
Using the ratio of the median income of upper-income households to the median income of lower-income households as a measure of inequality, the lesser the degree of inequality, the greater the

share of the middle-income tier.¹⁷ (A lower level of inequality is also associated with smaller lower- and upper-income tiers.)

For example, in 2010, Denmark, the Netherlands and Norway, which had the largest middle-income tiers, also had lower to moderate levels of income inequality. In these three countries, the ratio of the median income of upper-income households to that of lower-income households was 4.23, 4.26 and 4.52, respectively.

The U.S. and Spain stood at the other end, with the smallest middle-income tiers and among the highest levels of income inequality. In 2010, the ratio of the median income of upper-income households to that of lower-income households was 5.70 in the U.S. and 4.97 in Spain.

Countries with higher income inequality have smaller shares of adults who are middle income



Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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The relationship between income inequality and the middle-class share reflects the income distribution in a country. When the incomes of households near the bottom of the distribution are closer to the incomes of households near the top, more households may be found located within the band of income that defines the middle class – two-thirds to double the national median income. But, if the distance between the top and bottom of the income distribution is wide,

¹⁷ A more general measure of inequality is the Gini coefficient, which is based on the shares of aggregate income held by percentiles of households. Estimates of the Gini coefficient are also closely related to the shares of the population that are middle income across the countries examined. A previous report from Pew Research Center found a strong relationship between the degree of income inequality and the size of the middle class across metropolitan areas in the U.S.

households are spread more thinly across the income distribution and fewer fall within the middle-income band.¹⁸

The middle class is shrinking in the majority of countries examined, but there are notable exceptions

The share of adults in middle-income households is on the decline in the majority of countries examined. From 1991 to 2010, the share of the middle-income tier decreased 5 percentage points or more in Finland, Germany and Spain. In Finland and Germany this represented more of a move up the ladder as the increase in the share of the upper-income tier exceeded the increase in the share that was lower income. In Spain, however, the 5-percentage-point decrease in the middle-income share was accompanied by a 4.2-point increase in the lower-income share.

Ireland and the UK posted the most significant expansions of the middle-income tier from 1991 to 2010. In Ireland, the middle-income share increased 8.5 percentage points, from 60% to 69%. Meanwhile, the share of Irish adults who are lower income fell 7.3 percentage points. In the UK, an increase of 6 points in the middle-income share was accompanied by a decrease of 4.8 points in the lower-income share.

The Netherlands is another country that experienced a sizable decrease in the share of its lower-income tier. From 1991 to 2010, the lower-income share in the Netherlands fell by 5.8 percentage points and this resulted in increases in the shares of both the middle-income tier (plus 3.4 percentage points) and the upper-income tier (plus 2.4 points).

In most countries, shrinking middle-income shares led to rising shares in lower- and upper-income tiers

% point change in shares of adults in lower-, middle- and upper-income tiers, 1991 to 2010



Note: For some countries the 1991 estimates are from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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¹⁸ Appendix E shows the detailed income distribution for the 12 countries covered in this report.

More recent data for 2013 are available for eight of the 12 countries covered in this report. The period from 2010 to 2013, which encompasses the beginning of the recovery from the Great Recession, reveals little change in the trend through 2010. In the UK, the middle-income share edged up from 67% in 2010 to 68% in 2013. The middle-income share slipped slightly in the Netherlands – from 79% in 2010 to 78% in 2013 – but it remained higher than its share in 1991. (See Appendix A for the estimates for 2013.)

Most countries that experienced drops in middle-class shares from 1991 to 2010 remained on that path through 2013. The economic divisions strengthened within Luxembourg, the Netherlands, Norway, Spain and the U.S., with further reductions in the middle-income shares and increases in the lower- and upper-income shares, albeit modestly in most cases.

Adults in the Netherlands and Ireland experienced the greatest progress up the economic ladder

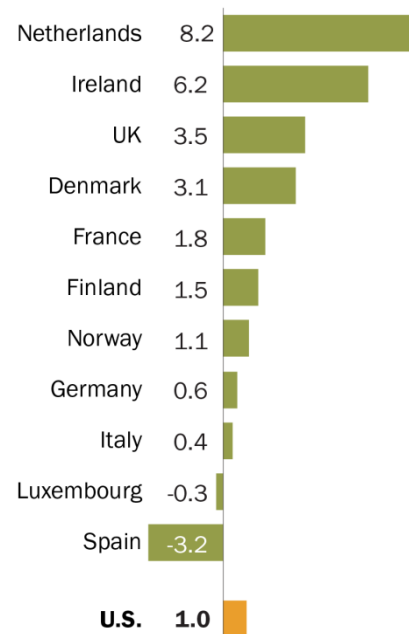
The movement of people into both lower- and upper-income tiers, or out of both tiers, suggests that the overall change in the economic status of a country is perhaps best measured by the difference in the magnitudes of these moves. Generally, movements up the income ladder were more pronounced than movements down the ladder, and the economic status of adults improved in the post-1990 era in most countries examined.

In the U.S., the share of adults in the upper-income tier increased 1.9 percentage points from 1991 to 2010. Meanwhile, the lower-income share also increased, by 0.9 points. The difference – 1 percentage point – is the *net gain* in the economic status of American adults.

Among the Western European countries examined, the biggest gainers in economic status from 1991 to 2010 were the Dutch. In the Netherlands, the share of adults in the lower-income tier decreased 5.8 percentage points in this period and the upper-income share increased 2.4 points. Both these movements

Income status of adults improved the most in the Netherlands and Ireland

Change in the share of adults in upper-income households minus the change in the share in lower-income households (percentage point change), 1991 to 2010



Note: For some countries the 1991 estimates are from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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represent an economic gain, and their combined effect was an 8.2-point gain in the overall economic status of adults in the Netherlands.

The net gain in Ireland was 6.2 percentage points from 1991 to 2010. This is the result of two countervailing movements – a decrease of 7.3 points in the lower-income share but also a decrease of 1.1 points in the upper-income share. People in the UK (up 3.5 points) and Denmark (3.1 points) were also among the bigger gainers in this period. Gains in the other countries from Western Europe ranged from 0.4 points in Italy to 1.8 points in France.

But adults in Luxembourg and Spain were more likely to have moved into the lower-income tier than into the upper-income tiers. In Spain, the increase in the lower-income share exceeded the increase in the upper-income share by 3.2 percentage points from 1991 to 2010. The loss in Luxembourg was a modest 0.3 points.

Little changes when expanding to the longer time period from 1991 to 2013. The gain in the Netherlands over this period – 7.9 percentage points – is well ahead of the gains in the other seven countries for which data are available through 2013. Luxembourg and Spain extend their losses, to 2.6 points and 3.5 points, respectively (see Appendix A).

Changes in a country's labor market conditions are correlated with changes in the income status of adults. The unemployment rate in Spain, which is much higher than in the other countries, increased from 16.3% in 1991 to 19.9% in 2010. It then spiked to 26.1% in 2013. The unemployment rate in Luxembourg is not nearly as high, but it increased from only 1.4% in 1991 to 5.9% in 2010, and then further to 6.9% by 2013.¹⁹

At the other end of the spectrum, the unemployment rate in Ireland fell from 19% in 1991 to 13.9% in 2010. The unemployment rate also trended down in Denmark and the UK during this period. More generally, countries that experienced a decrease in the unemployment rate from 1991 to 2010, or less of an increase, experienced more of an improvement in the income status of adults.

Growth in the national median household income in a country is also related with the movement of adults up the income tiers. As shown in the next section, Denmark, France, Ireland and the UK recorded among the highest rates of growth in national median household income from 1991 to 2010, and adults in these countries experienced more of an improvement in economic status. On the other hand, Germany, Italy, Spain and the U.S. were among the countries experiencing the

¹⁹ Unemployment rate data is from the International Monetary Fund's World Economic Outlook [database](#). A recent [report](#) from the International Labour Organization highlights the relationship between labor market institutions and the size of the middle class.

lowest rate of growth in national median household income, and adults in these countries experienced minimal gains in economic status, or a loss in the case of Spain.²⁰

²⁰ The Netherlands, which stood in the middle of the pack with respect to income growth, and Luxembourg, with fairly high growth in income, are notable exceptions.

2. The financial well-being of income tiers varies across countries, and is evolving differently

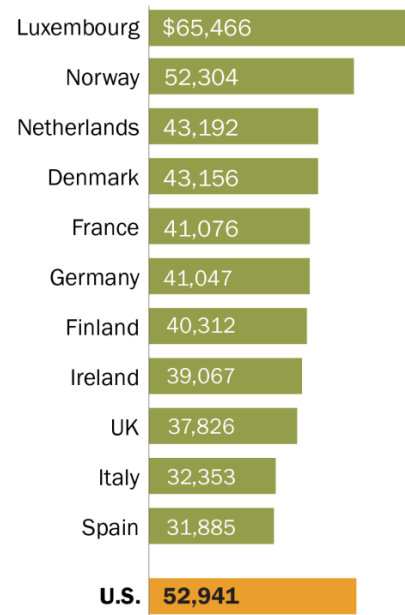
The financial well-being of lower-, middle- and upper-income tiers varies significantly across the selected Western European countries and the U.S. There are also notable differences in how the disposable incomes of the three economic tiers have changed over time. Households in some countries, such as Ireland, experienced sizable gains in their standard of living, but households in Italy saw their standard of living erode since 1991.²¹

Overall, Luxembourg, the Netherlands, Denmark and Norway had the highest median disposable household incomes among the selected Western European countries in 2010, followed by Germany, France and Finland in the middle and Spain, Italy, the UK and Ireland trailing behind. Middle-income and upper-income households in the U.S. fared better than their counterparts in the Western European countries examined, except for Luxembourg. However, the incomes of lower-income households in the U.S. lagged behind those of several Western European countries from among those examined.²²

From 1991 to 2010, Ireland, Norway and the UK led other countries in raising the incomes of households overall and of households within each income tier.²³ Meanwhile, the incomes of households in Italy fell significantly and were virtually unchanged in Germany and Spain. Income growth in the U.S. was slower than in the majority of countries selected from Western Europe.

Luxembourg households have highest incomes, followed by those of U.S.

National median disposable household income in 2010 for a three-person household, in 2011 prices and purchasing power parity dollars



Note: See Methodology for details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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²¹ The rankings of countries by the change in median household income corresponds well with a ranking by change in gross domestic product (GDP) per capita [as reported](#) by the International Monetary Fund. Ireland, Luxembourg and Norway were among the leaders in growth in GDP per capita, in constant prices, and Germany and Italy trailed behind the other countries. As a rule of thumb, rates of growth in GDP [exceed](#) rates of growth in median household incomes.

²² See Appendix E for detailed distributions of adults by household income in each country.

²³ An exception to this statement is that the median income of middle-class households in Luxembourg increased slightly more than the median income of middle-class households in the UK from 1991 to 2010.

Wide gaps in household income among the selected countries

Luxembourg had the distinction of having the highest national median household income among the countries covered in this report. From 1991 to 2013, in all years examined, the median income in Luxembourg was about twice as high as the median income of lower-earning countries from among the selected Western European countries. Thus, even within this group of advanced economies, there is a wide gap in earnings across countries.

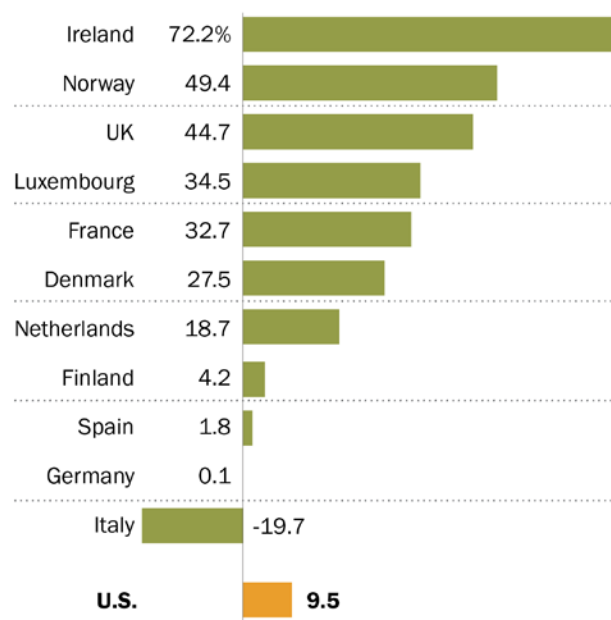
In 1991, the median household income in Luxembourg was \$48,657, about the same as in the U.S. (\$48,343). Only two other selected countries – Germany and Italy – had median incomes higher than \$40,000 in 1991. Ireland's median income of \$22,684 was less than half that of Luxembourg. The UK, with a median of \$26,145, also trailed Luxembourg by a wide margin.

By 2010, Luxembourg still held the topmost spot, while the lowest rungs of the income ladder were occupied by Italy and Spain. The median income in Spain in 2010 – \$31,885 – was nearly the same as in 1991, but the median income in Italy slipped from \$40,265 in 1991 to \$32,353 in 2010, a loss of 20%.²⁴ Meanwhile, strong income growth in Ireland – from a median of \$22,684 to \$39,067, an increase of 72% – and in the UK – from \$26,145 to \$37,826, up 45% – pushed households in those countries up in the ranking based on median income.

Norway (49%), France (33%) and Denmark (27%) also registered strong growth in real

Ireland, Norway leads other countries in growth in household income

% change in national median disposable household income, 1991-2010



Note: Incomes are adjusted for household size and expressed in 2011 prices and purchasing power parities prior to computing the percentage change. Incomes for some countries are projected to 1991 from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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²⁴ Currency fluctuations have an effect on the measured changes. For example, the Italian lira and the Spanish peseta dropped more than 20% in value vis-à-vis the euro from 1991 to 2000, and the Finnish markka dropped 16%. Measured in lire, the national median household income in Italy fell about 4% from 1991 to 2000 in inflation adjusted terms.

incomes from 1991 to 2010. The median income in the U.S. increased only 10%, from \$48,343 in 1991 to \$52,941 in 2010. As a result, the U.S., which was tied with Luxembourg (\$48,657) with the highest median income in 1991, was matched by Norway (\$52,304) in 2010 and fell well short of Luxembourg (\$65,466).

Most countries continued to feel the lingering effects of the Great Recession through 2013. Incomes were unchanged in Finland, Germany, Luxembourg, Spain, the UK and the U.S. from 2010 to 2013, but households in the Netherlands saw their median income fall from \$43,192 in 2010 to \$41,083 in 2013. (See Appendix A for estimates for 2013.)

Norway experienced a [milder recession](#) compared with the other countries examined and its economy [recovered more quickly](#).²⁵ Thus, Norway stands out as an exception in the post-recession period, lifting the median income of its households from \$52,304 in 2010 to \$57,031 in 2013. By 2013, the typical household in Norway lived on about \$5,000 more annually than the typical U.S. household.

Middle-class incomes are among the highest in the U.S., but lower-income Americans trail many Western European nations

In 2010, the median disposable income of the American middle class was higher than the median of the middle classes in many of the Western European nations examined, trailing only Luxembourg. In that year, middle-class households in the U.S. lived on a median disposable income of \$60,884, compared with \$71,799 in Luxembourg. However, by 2013, the middle class in Norway had also pulled ahead of the American middle class, earning a median of \$62,014 compared with \$59,940 in the U.S.

The middle classes in Italy and Spain earned less than the others in most of the years examined. In Spain, middle-class incomes were virtually stagnant, standing at \$34,250 in 1991 and at \$35,879 in 2013. In Italy, the median income of middle-class household fell sharply, from \$44,508 in 1991 to \$35,608 in 2010, the latest year available. Middle-class households in Finland and Germany also experienced modest growth in their incomes from 1991 to 2013. (See Appendix A for estimates for 2013.)

The earnings of upper-income households varied similarly across countries. The upper-income tier in Luxembourg stood at the top, with a median income of \$154,350 in 2010, followed by \$135,709 in the U.S. Upper-income households in Spain (\$77,946 at the median) and Italy (\$80,658)

²⁵ According to International Monetary Fund [data](#), the unemployment rate in Norway increased from 2.5% in 2007 to 3.2% in 2009, and stood at 3.5% in 2013. In the U.S., the unemployment rate doubled from 4.6% in 2007 to 9.3% in 2009 and was at 7.4% in 2013.

earned half as much as upper-income households in Luxembourg in 2010. These standings are mostly unchanged since 1991.

Lower-income households in several countries in Western Europe earn more than lower-income households in the U.S. In 2010, the median income of lower-income households in Denmark (\$23,927), the Netherlands (\$24,172), Norway (\$27,097) and Luxembourg (\$35,769) matched or exceeded the median in the U.S. (\$23,818). At the same time, the median income of lower-income households in Finland, France, Germany, Ireland and the UK – about \$20,000 or higher – did not trail the U.S. by much.

The earnings of households in Luxembourg, Norway and the U.S. lead the earnings of households in other countries in all income tiers

Median disposable income scaled to reflect three-person households, in 2011 prices and purchasing power parities

	Lower income		Middle income		Upper income	
	1991	2010	1991	2010	1991	2010
Denmark	\$18,658	23,927	\$37,350	46,722	\$77,627	101,137
Finland	20,784	22,016	41,886	44,572	88,844	94,440
France	16,180	21,498	33,879	44,129	75,057	101,981
Germany	22,118	20,986	44,222	44,901	98,968	99,394
Ireland	12,149	20,969	25,434	43,564	56,725	93,534
Italy	21,266	16,445	44,508	35,608	97,540	80,658
Luxembourg	27,356	35,769	52,361	71,799	116,553	154,350
Netherlands	20,266	24,172	40,923	45,468	84,515	102,935
Norway	18,549	27,097	38,504	56,960	84,482	122,591
Spain	16,481	15,677	34,250	36,169	77,609	77,946
UK	13,144	19,939	30,336	40,888	64,259	96,638
U.S.	21,433	23,818	55,729	60,884	119,736	135,709

Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median. The survey dates for some countries differ slightly from the dates shown as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. Incomes for these countries are projected to 1991. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Middle-class incomes are rising, but gains for upper-income households are greater in several countries

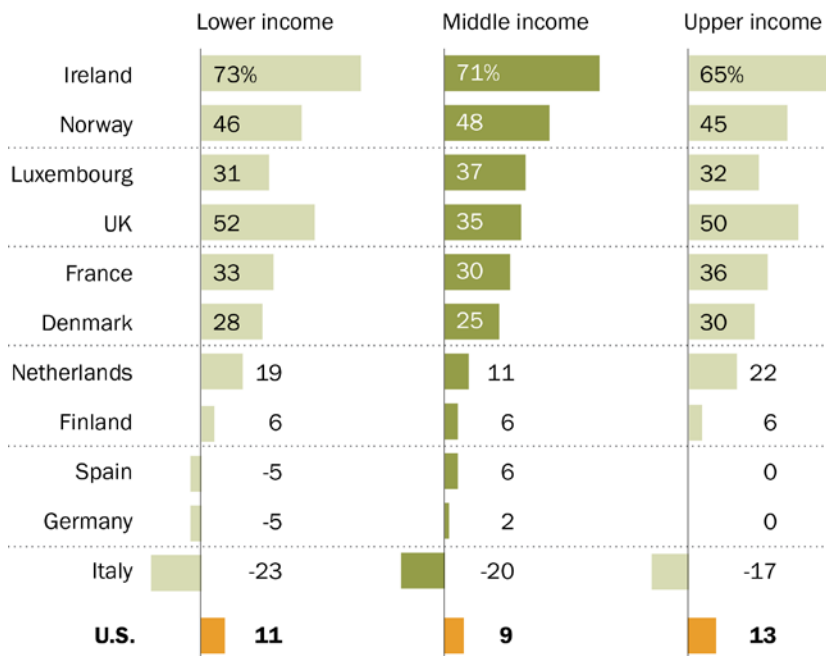
Ireland outpaced other countries in terms of income growth from 1991 to 2010, whether for the lower-, middle- or upper-income tier. In sharp contrast, all income tiers in Italy experienced a steep drop in median income, and lower-income households in Spain and Germany experienced modest losses. Meanwhile, the financial status of middle-income households slipped relative to the status of upper-income households in many countries during this period.

Middle-class households in Ireland experienced a gain of 71% in their median income from 1991 to 2010. This was well ahead of the increase of 48% for the middle class in Norway, or the increase of 37% in Luxembourg and 35% in the UK. However, in Italy, the middle class experienced a loss of 20% in their median income from 1991 to 2010.

The growth in middle-class incomes often exceeded the growth for upper-income households from 1991 to 2010. This was the case in Ireland, where the median income increased 71% for the middle class and 65% for the

Compared with the U.S., households at all income tiers in many Western European countries experienced a greater increase in income

% change in median disposable household income, 1991 to 2010, by income tier



Note: Incomes are first adjusted for household size and expressed in 2011 prices and purchasing power parities. For some countries the 1991 estimates are from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. Incomes for these countries are projected to 1991. See Methodology for details. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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upper-income tier. Middle-class households also narrowed the financial gap compared with upper-income households in Germany, Luxembourg, Norway and Spain.

However, middle-income households lost financial ground to upper-income households in several countries from 1991 to 2010. This was most notable in the UK, where the increase in the median income for upper-income households (50%) was much greater than the gain for middle-income households (35%). Also, the gain for upper-income households in the Netherlands (22%) was much greater than the gain for middle-income households (11%).

Gains or losses for the lower-income tier are generally similar to the gains or losses for the other income tiers. Ireland and the UK ranked at the top, with the median incomes of the lower-income tiers rising 73% and 52% from 1991 to 2010, respectively. Lower-income tiers also experienced significant growth in incomes in Denmark, France, Luxembourg and Norway. But the median income of lower-income tiers in Germany and Spain fell by 5%. Even so, that was significantly less than the 23% loss in income experienced by the lower-income tier in Italy.

Monetary gains for all income tiers in the U.S. were relatively modest compared with most Western European countries examined. Lower-, middle- and upper-income tiers in Denmark, France, Ireland, Luxembourg, the Netherlands, Norway and the UK all experienced greater income growth from 1991 to 2010 than their counterparts in the U.S. But all income tiers in the U.S. realized more income growth than the corresponding tiers in Finland, Germany, Italy and Spain.

3. Share of aggregate household income held by the middle class is falling in many Western European nations and the U.S.

The share of aggregate household income held by middle-income households fell in the majority of countries examined from 1991 to 2010.²⁶ This is because, in many of the countries studied, the share of the adult population that is middle income decreased and the upper-income tier experienced a higher rate of growth in income during that time period. The result was an increase in the share of aggregate household income held by the upper-income tier, with the share held by the lower-income tier largely unchanged.

The most substantial shift in the share of aggregate household income from the middle class to the upper-income tier occurred in Finland. The share of that country's aggregate income held by the middle-income tier fell from 85% in 1991 to 74% in 2010, or by 11 percentage points. This was almost entirely the result of a 7-percentage-point decrease in the middle-income population share in Finland, from 82% in 1991 to 75% in 2010.

Other countries with a notable shift in the share of aggregate income from the middle to the top included Germany and the U.S. In Germany, the share of the middle-income tier in aggregate household income decreased from 77% in 1991 to 70% in 2010 and the share held by the upper-income tier rose from 15% to 22%. In the U.S., the middle-class share of aggregate household income slipped from 62% to 56%, while the upper-income share increased from 28% to 34% from 1991 to 2010.²⁷

Ireland and the UK are the only countries in which the shares of aggregate household income held by the middle class increased from 1991 to 2010. With the share of the middle-income population rising substantially in Ireland, the middle-class share in income also increased, from 60% in 1991 to 66% in 2010. Similarly, a bigger middle class in the UK pushed its share of aggregate household income from 58% in 1991 to 61% in 2010.

²⁶ "Aggregate household income" is the total disposable income of all households in a country. Households are first assigned to an income tier based on their size-adjusted income. Their unadjusted incomes are then totaled to compute the share of an income tier in their country's aggregate household income. The share of income held by upper-income households may be understated in the event that incomes are subject to top-coding, such as in the Current Population Survey for the U.S.

²⁷ A [previous Pew Research Center analysis](#) found that the share of aggregate gross household income held by middle-income households in the U.S. decreased from 62% in 1970 to 43% in 2014.

Upper-income households hold a disproportionately high and rising share of aggregate income in most countries

% of aggregate disposable household income held by lower-, middle- and upper-income households

	Lower income		Middle income		Upper income	
	1991	2010	1991	2010	1991	2010
Denmark	7 %	6	82 %	79	11 %	15
Finland	7	8	85	74	8	18
France	8	8	72	72	20	21
Germany	8	8	77	70	15	22
Ireland	9	9	60	66	31	25
Italy	10	9	69	66	21	25
Luxembourg	9	9	79	74	12	17
Netherlands	8	6	80	77	12	17
Norway	8	7	82	80	10	13
Spain	9	9	66	64	25	27
UK	11	8	58	61	31	31
U.S.	10	10	62	56	28	34

Note: "Aggregate household income" is the total disposable income of all households in a country. Households are first assigned to an income tier based on their size-adjusted income. Their unadjusted incomes are then totaled to compute the share of an income tier in their country's aggregate household income. The share of income held by upper-income households may be understated in the event that incomes are subject to top-coding. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median. The survey dates for some countries differ slightly from the dates shown as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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The reduction in the share of aggregate household income held by middle-income households continued through 2013 in most of the countries for which data are available. In the Netherlands, the share fell from 77% in 2010 to 75% in 2013, and in the U.S. the share fell from 56% to 54%. But the share inched up by about 1 percentage point each in Finland and the UK (see Appendix A).

The size of the middle class in a country and the share of aggregate income held by the middle class are closely correlated. Countries with smaller shares of adults in middle-income households, such as Ireland, Italy, Spain, the UK and the U.S., are also the countries in which the middle-class shares of aggregate income are smaller than in other countries. At the other end, countries with relatively large middle-classes, such as Denmark, Finland, the Netherlands and Norway, also have higher shares of aggregate household income in the hands of middle-class households.

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Methodology

Data source

The data for this analysis are obtained from the [Cross-National Data Center in Luxembourg](#) (LIS), a research center that harmonizes and provides access to data from government surveys and other sources for a large number of countries. Of the 12 countries included in this study, the latest available data for eight countries – Finland, Germany, Luxembourg, the Netherlands, Norway, Spain, the UK and the U.S. – are for 2013, and the latest data available for Denmark, France, Ireland and Italy are for 2010.

The survey years in the LIS data archive refer to the reference year for which income data were collected. For instance, if a survey conducted in March 2011 asked about a household's income in calendar year 2010, the LIS archive would reference that survey of a country as a 2010 survey, not a 2011 survey.

In a more specific example, for the U.S., LIS provides access to data from the [Current Population Survey](#) (CPS) conducted by the U.S. Census Bureau. The specific CPS archived by LIS is the Annual Social and Economic Supplement (ASEC) conducted in March each year. Each ASEC survey gathers data on household income in the calendar year prior to the survey date. This means that LIS files for the U.S. for 1991, 2000, 2010 and 2013 actually come from surveys conducted in March of 1992, 2001, 2011 and 2014. The implication is that distribution of adults across income tiers in the U.S. reflects the U.S. population in 1992, 2001, 2011 and 2014 even as the income tiers are defined on the basis of earnings in 1991, 2000, 2010 and 2013. A similar pattern applies to the estimates for most other countries in this study. For the sake of convenience, this report uses the LIS survey date to refer to both the income estimates and the demographic estimates.

In the LIS data, the household income measure that is available for all countries for all years is disposable income, i.e., cash income (wages, interest, rents, pensions, etc.) and near-cash income (government assistance) less income taxes and social security contributions. This is because respondents in some countries' surveys are asked to report only net incomes (referred to as “net” datasets in LIS parlance). Also, until the mid-1990s, LIS datasets often coded missing amounts on income with the value zero. Thus, in keeping with [LIS practices](#), households with disposable income equal to zero are excluded from the analysis in this report.

A note on the 1991 estimates for Germany

In this report, the 1991 estimates for Germany are derived from the [German Socio-Economic Panel](#) (SOEP) conducted by the [German Institute for Economic Research](#) (DIW Berlin) in 1990. This survey collected data on the incomes of households in calendar year 1989, which are projected to 1991 in this analysis for comparison with other countries (see Methodology for details). The version of SOEP used in this report is from the [Cross-National Data Center in Luxembourg](#) (LIS). A key advantage of using the LIS database is that the data from different countries are harmonized for ease of comparison.

In the LIS database, the 1990 German Socio-Economic Panel is closest to the starting date of this report's analysis. Although SOEP is conducted annually, the other SOEP surveys that date somewhat near to 1991 and are available through LIS were fielded in 1985 and 1995. A disadvantage of using the 1990 survey is that the sample includes households from (former) West Germany only. By contrast, the samples for 2000, 2010 and 2013 available through LIS represent post-reunification Germany. However, this difference in samples is estimated to have minimal impact on the principal findings of the analysis.

A recent [report](#) by DIW Berlin examined the change in the status of lower-, middle- and upper-income tiers in Germany from 1991 to 2013. In that study, the 1991 estimates are derived from the 1992 SOEP survey, which sampled the unified German population (as noted, this survey is not available in the LIS database). DIW Berlin finds that median household income in post-reunification Germany was little changed from 1991 to 2013, increasing 3.4% over more than two decades, compared with the estimate of 0.4% in this report. DIW Berlin also finds that the share of adults in middle-income households in Germany decreased 5 percentage points from 1991 to 2013, compared with a decrease of 6 percentage points noted in this report. (The method DIW Berlin used to identify middle-income households was also used in this report.) Changes in the shares of adults in lower- and upper-income tiers are also similar between the two reports.

A difference between the DIW Berlin study and this analysis is that DIW Berlin uses gross household income to define the middle-income tier and to measure changes in its well-being. This is because SOEP only collects data on gross household income. However, this report uses disposable household income, which is included in the LIS version of the SOEP data (estimates of disposable household income are derived from tax simulation models). This LIS addition makes it possible to draw comparisons across a larger number of countries.

Extrapolation of income

The estimates of income in 1991 and 2000 for some countries are based on projections from surveys conducted in years close to those dates. These survey years are as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993 and 1999, Spain - 1990, and the UK - 1999.

The projections assume that from the survey year until either 1991 or 2000, income changed at an annual rate equal to 70% of the annual rate of change in real household final consumption expenditures. Household final consumption expenditures are from national income accounts and are expressed in local currency units and per capita terms (the World Bank is the [source](#) for these data). The reason for using 70% of the rate of change rather than 100% is that national income accounts tend to overstate the level and change in consumption or income as measured by household surveys ([Deaton, 2003](#) and [Nolan, Roser and Thewissen, 2016](#)). The extent of the overstatement will vary from country to country. This study follows the practice adopted by Birdsall, Lustig and Meyer ([2013](#)) of projecting household survey data at 70% of the rate of change in national income account measures.

Although survey data on income are projected to 1991 and 2000 for some countries, the underlying distributions of adults across lower-, middle- and upper-income tiers are frozen at the date of the surveys. This is because the incomes of all households are projected at the same rate and the position of any single household relative to the (projected) median does not change. In France, for example, the estimates of income for 1991 are based on survey data from 1989. But the distribution of adults across income tiers still reflects the ground reality in 1989. This means that the reported change in the distribution of adults across income tiers from 1991 to 2010 actually reflects more than a 19-year change.

Conversion to 2011 prices

Income estimates in this study are presented in 2011 prices. It is desirable to convert income or consumption data to 2011 prices because the purchasing power parities (PPPs) for all countries are derived from the round of international price comparisons conducted in that year (additional detail on PPPs and their use in this study are provided below). The conversion is a matter of inflating the survey data by the change in a country's consumer price index (CPI) from the relevant year to 2011. This calls for the averaging of CPI data over two to three years for some countries for some survey dates. For example, the 2000 survey for France was conducted from May 9, 2000, to May 6, 2001, and respondents were asked to report income in the 12 months preceding the interview. Thus, in principle, the income data in the 2000 survey span the period from May 1999 to April 2001. The CPI applied in this case, as the base for inflating to 2011 prices, is the average of

the CPI levels for 1999, 2000 and 2001. The CPI data are obtained from the World Bank or the International Monetary Fund (in the case of Germany).²⁸

Conversion to 2011 purchasing power parities

Purchasing power parities are exchange rates corrected for differences in the prices of goods and services across countries. Thus, estimates of household income in this report are expressed in purchasing power parities to allow for a more accurate comparison of the standard of living across countries. The latest available estimates of PPPs are from a round of international price comparisons conducted in 2011 by the [International Comparisons Program](#) at the World Bank. The specific PPPs used in this report are the ones that pertain to individual consumption expenditures by households.

In principle, one PPP dollar represents the same standard of living across countries. The U.S. serves as the base country for price comparisons and for currency conversions. Thus, for the U.S., one U.S. dollar equals one PPP dollar. But for Denmark, for example, the Danish krone to U.S. dollar conversion rate – 5.36 in 2011 – is different from the krone to PPP dollar rate – 8.524 for individual consumption expenditures by households. This means that due to the higher cost of living in Denmark, 8.524 Danish kroner, not 5.36, are needed to obtain what \$1 buys in the U.S.

In LIS, survey data are expressed in local currency units prevailing at the time. For several countries examined in this report, the survey data for 2010 and 2013 are expressed in euros, but the data from years near 1991 and 2000 are in currencies that existed before the adoption of the euro. These countries are Finland, France, Germany, Ireland, Italy, Luxembourg, the Netherlands and Spain. It was necessary in these cases to convert data from the earlier years to euros because the 2011 PPPs for them are euro-denominated. The rates used for these countries to convert local currency units to the euro are the ones [reported by Eurostat](#).

Adjusting income for household size

Household income data reported in this study are adjusted for the number of people in a household. That is done because a four-person household with an income of, say, \$50,000 faces a tighter budget constraint than a two-person household with the same income. In addition to comparisons across households at a given point in time, this adjustment is useful for measuring changes in the income of households over time, especially over the long run. In the U.S., for example, the average household size [decreased](#) from 3.1 persons in 1970 to 2.5 persons in 2015, a

²⁸ The CPI data reported by the World Bank contain a discontinuity in the series for Germany in 1990.

drop of 19%. Ignoring this demographic change would mean ignoring a commensurate loosening of the household budget constraint.

At its simplest, adjusting for household size could mean converting household income into per capita income. Thus, a two-person household with an income of \$50,000 would have a per capita income of \$25,000, double the per capita income of a four-person household with the same total income.

A more sophisticated framework for household size adjustment recognizes that there are economies of scale in consumer expenditures. For example, a two-bedroom apartment may not cost twice as much to rent as a one-bedroom apartment. Two household members could carpool to work for the same cost as a single household member, and so on. For that reason, most researchers make adjustments for household size using the method of “equivalence scales.”²⁹

A common equivalence-scale adjustment is defined as follows:

$$\text{Adjusted household income} = \text{Household income} / (\text{Household size})^N$$

By this method, household income is divided by household size exponentiated by “N,” where N is a number between 0 and 1.

Note that if $N = 0$, the denominator equals 1. In that case, no adjustment is made for household size. If $N = 1$, the denominator equals household size, and that is the same as converting household income into per capita income. The usual approach is to let N be some number between 0 and 1. Following other researchers, this study uses $N = 0.5$.³⁰ In practical terms, this means that household income is divided by the square root of household size – 1.41 for a two-person household, 1.73 for a three-person household, 2.00 for a four-person household and so on.³¹

²⁹ See [Garner, Ruiz-Castillo and Sastre \(2003\)](#) and [Short, Garner, Johnson and Doyle \(1999\)](#).

³⁰ For example, see [Johnson, Smeeding and Torrey \(2005\)](#).

³¹ One issue with adjusting for household size is that while demographic data on household composition pertain to the survey date, income data often pertain to the preceding year. Because household composition can change over time, for example, through marriage, divorce or death, the household size that is measured at the survey date may not be the same as that at the time the income was earned and spent ([Debels and Vandecasteele, 2008](#)).

Once household incomes have been converted to a “uniform” household size, they can be scaled to reflect any household size. The average size of a household [in the U.S.](#) is 2.5 and is between two and three in the [countries in Western Europe](#). Thus, the income data reported in this study are computed for three-person households. That is done as follows:

$$\text{Three-person household income} = \text{Adjusted household income} * [(3)^{0.5}]$$

It is important to note that once the household-size adjustment has been made, it is immaterial whether one scales incomes to one-, two-, three- or four-person households. Regardless of the choice of household size, the same results would emerge with respect to the trends in the well-being of lower-, middle- and upper-income groups.

Appendix A: Data tables

The charts in this appendix present estimates through 2013 for the distribution of adults across lower-, middle- and upper-income tiers and estimates of the incomes of households in each tier. Data for 2013 are available for the following eight countries: Finland, Germany, Luxembourg, Netherlands, Norway, Spain, the United Kingdom and the United States.

Up to eight-in-ten adults live in middle-income households in selected countries in Western Europe; the U.S. has the greatest shares in lower- and upper-income households

% of adults in each income tier

Middle income

	1991	2010	2013
Denmark	80%	80	-
Finland	82	75	76
France	72	74	-
Germany	78	72	72
Ireland	60	69	-
Italy	69	67	-
Luxembourg	79	75	73
Netherlands	76	79	78
Norway	81	80	79
Spain	69	64	63
UK	61	67	68
U.S.	62	59	58

Lower income

	1991	2010	2013
Denmark	15 %	14	-
Finland	14	17	16
France	19	17	-
Germany	15	18	18
Ireland	27	19	-
Italy	21	22	-
Luxembourg	15	17	20
Netherlands	19	13	14
Norway	14	14	15
Spain	20	24	25
UK	24	19	19
U.S.	25	26	26

Upper income

	1991	2010	2013
Denmark	5%	7	-
Finland	4	8	8
France	9	9	-
Germany	7	10	10
Ireland	13	12	-
Italy	10	11	-
Luxembourg	6	8	8
Netherlands	6	8	9
Norway	5	6	7
Spain	12	13	13
UK	15	14	14
U.S.	13	15	16

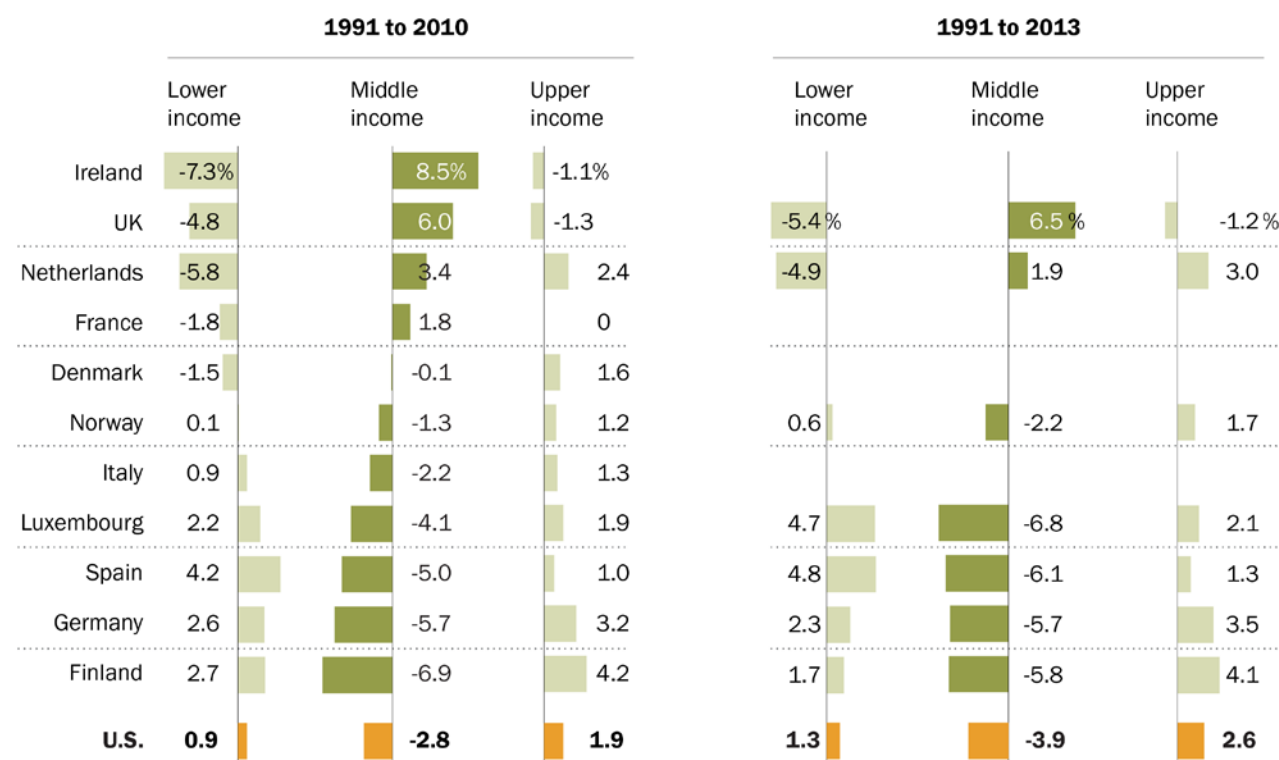
Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median. The survey dates for some countries differ slightly from the dates shown as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details. Data for 2013 are not available for Denmark, France, Ireland and Italy.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Decrease in shares middle-income led to rising shares in lower- and upper-income tiers in most countries

% point change in shares of adults in lower-, middle- and upper-income tiers



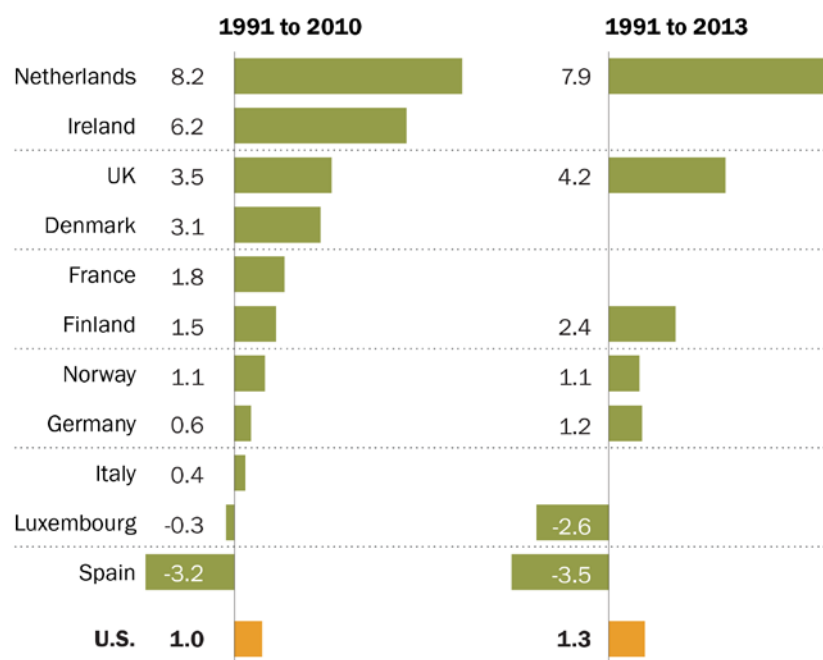
Note: For some countries the 1991 estimates are from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details. Data for 2013 are not available for Denmark, France, Ireland and Italy.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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The income status of adults improved the most in the Netherlands and Ireland

Change in the share of adults in upper-income households minus the change in the share of adults in lower-income households (percentage point change)



Note: For some countries the 1991 estimates are from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. Data for 2013 are not available for Denmark, France, Ireland and Italy. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Households in Luxembourg have the highest income overall, Italy and Spain lag behind

National median disposable household income scaled to reflect a three-person household, in 2011 prices and purchasing power parity dollars

	1991	2000	2010	2013
Denmark	\$33,858	\$39,405	\$43,156	
Finland	38,699	31,948	40,312	\$40,147
France	30,794	35,237	41,076	
Germany	41,014	42,916	41,047	41,190
Ireland	22,684	36,003	39,067	
Italy	40,265	30,754	32,353	
Luxembourg	48,657	58,516	65,466	65,293
Netherlands	36,387	43,060	43,192	41,083
Norway	35,001	40,673	52,304	57,031
Spain	31,352	31,144	31,885	31,742
UK	26,145	31,355	37,826	37,811
U.S.	48,343	53,677	52,941	52,195

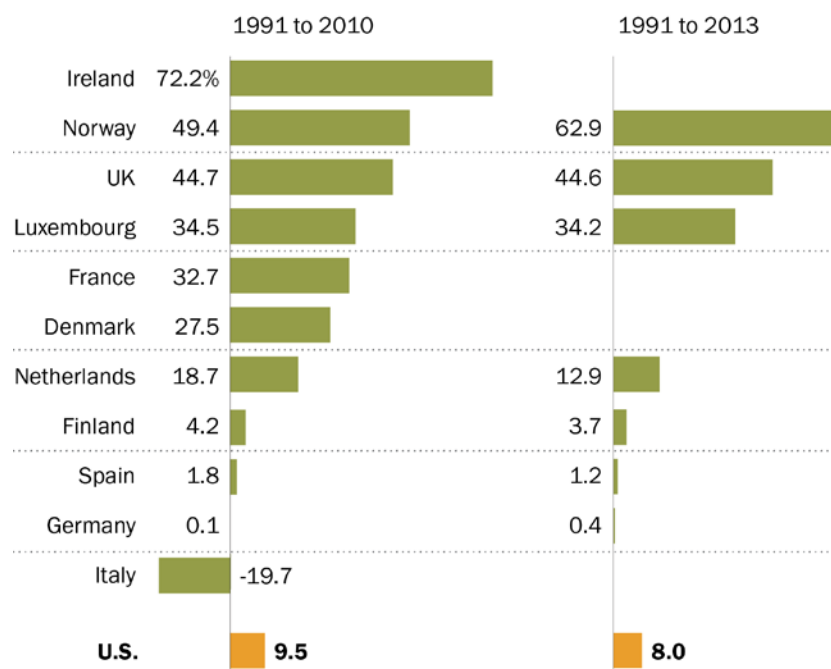
Note: The survey dates for some countries differ slightly from the dates shown as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993 and 1999, Spain - 1990, UK - 1999. The 1989 sample for Germany covers (former) West Germany only. Incomes for these countries are projected to 1991 or 2000. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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Ireland and Norway lead other countries in growth in household income

% change in national median disposable household income, 1991-2010 and 1991-2013



Note: Incomes are adjusted for household size and expressed in 2011 prices and purchasing power parities prior to computing the percentage change. Incomes for some countries are projected to 1991 from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details. Data for 2013 are not available for Denmark, France, Ireland and Italy.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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The earnings of households in Luxembourg, Norway and the U.S. lead the earnings of households in other countries in all income tiers

Median disposable income scaled to reflect three-person households, in 2011 prices and purchasing power parities

Middle income

	1991	2010	2013
Denmark	\$37,350	46,722	-
Finland	41,886	44,572	44,195
France	33,879	44,129	-
Germany	44,222	44,901	44,707
Ireland	25,434	43,564	-
Italy	44,508	35,608	-
Luxembourg	52,361	71,799	71,292
Netherlands	40,923	45,468	43,697
Norway	38,504	56,960	62,014
Spain	34,250	36,169	35,879
UK	30,336	40,888	40,724
U.S.	55,729	60,884	59,940

Lower income

	1991	2010	2013
Denmark	\$18,658	23,927	-
Finland	20,784	22,016	22,063
France	16,180	21,498	-
Germany	22,118	20,986	20,821
Ireland	12,149	20,969	-
Italy	21,266	16,445	-
Luxembourg	27,356	35,769	33,960
Netherlands	20,266	24,172	22,105
Norway	18,549	27,097	30,067
Spain	16,481	15,677	15,340
UK	13,144	19,939	19,805
U.S.	21,433	23,818	23,412

Upper income

	1991	2010	2013
Denmark	\$77,627	101,137	-
Finland	88,844	94,440	95,309
France	75,057	101,981	-
Germany	98,968	99,394	101,857
Ireland	56,725	93,534	-
Italy	97,540	80,658	-
Luxembourg	116,553	154,350	152,927
Netherlands	84,515	102,935	96,852
Norway	84,482	122,591	134,214
Spain	77,609	77,946	78,928
UK	64,259	96,638	95,655
U.S.	119,736	135,709	135,031

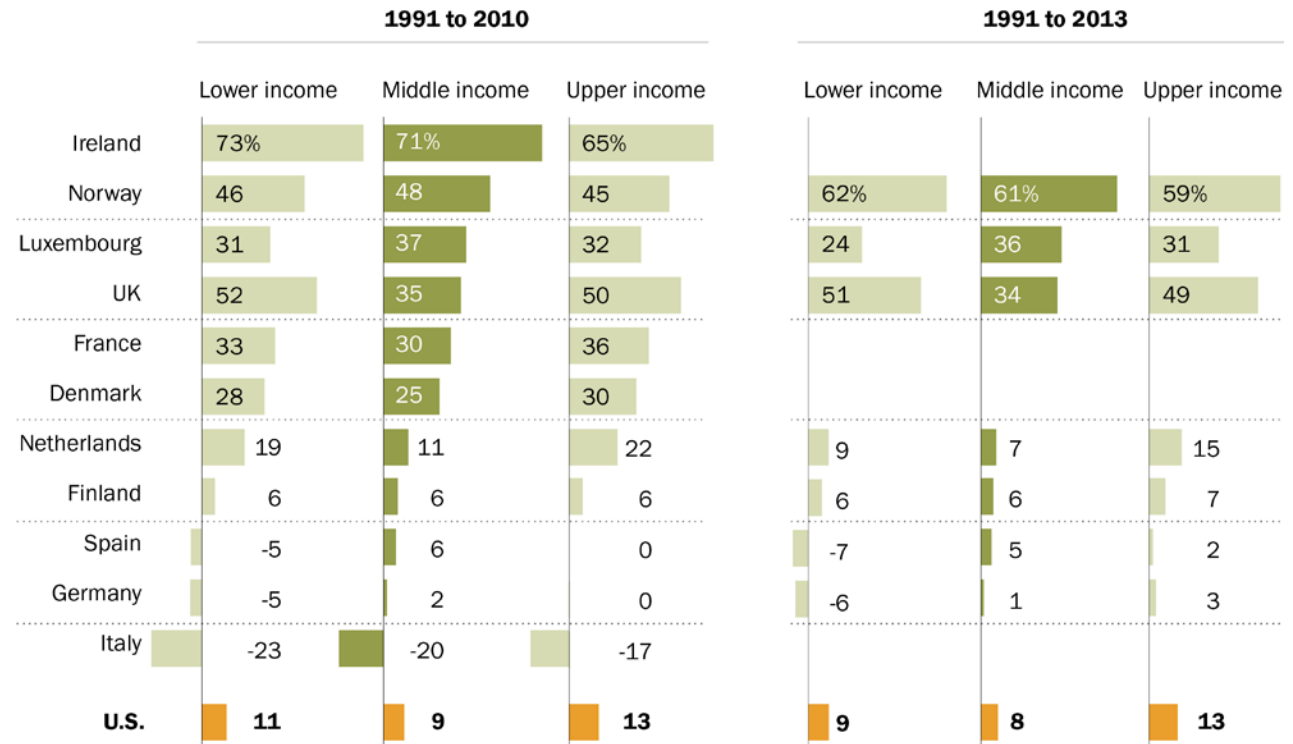
Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median. The survey dates for some countries differ slightly from the dates shown as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. Incomes for these countries are projected to 1991. See Methodology for details. Data for 2013 are not available for Denmark, France, Ireland and Italy.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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In many Western European countries, households in all income tiers experienced a greater increase in income than in the U.S.

% change in median disposable household income, by income tier



Note: Incomes are first adjusted for household size and expressed in 2011 prices and purchasing power parities. For some countries the 1991 estimates are from the following survey years: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. Incomes for these countries are projected to 1991. See Methodology for details. Data for 2013 are not available for Denmark, France, Ireland and Italy.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Upper-income households hold a disproportionately high and rising share of aggregate income in most countries

% of aggregate disposable household income

Middle income

	1991	2010	2013
Denmark	82%	79	-
Finland	85	74	75
France	72	72	-
Germany	77	70	69
Ireland	60	66	-
Italy	69	66	-
Luxembourg	79	74	73
Netherlands	80	77	75
Norway	82	80	79
Spain	66	64	62
UK	58	61	62
U.S.	62	56	54

Lower income

	1991	2010	2013
Denmark	7%	6	-
Finland	7	8	8
France	8	8	-
Germany	8	8	8
Ireland	9	9	-
Italy	10	9	-
Luxembourg	9	9	9
Netherlands	8	6	6
Norway	8	7	7
Spain	9	9	10
UK	11	8	8
U.S.	10	10	10

Upper income

	1991	2010	2013
Denmark	11%	15	-
Finland	8	18	17
France	20	21	-
Germany	15	22	23
Ireland	31	25	-
Italy	21	25	-
Luxembourg	12	17	17
Netherlands	12	17	18
Norway	10	13	14
Spain	25	27	28
UK	31	31	30
U.S.	28	34	36

Note: Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median. The survey dates for some countries differ slightly from the dates shown as follows: Denmark - 1992, France - 1989, Germany - 1989, Ireland - 1987, Netherlands - 1993, Spain - 1990. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details. Data for 2013 are not available for Denmark, France, Ireland and Italy.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Appendix B: Middle-income boundaries depend on household size and vary over time

The income it takes to be middle class depends on the number of people in a household, and it also changes over time. The income varies by household size because smaller households require less income than larger households to support the same lifestyle. It changes over time because middle-income households are defined as those with an income that is two-thirds to double that of a country's median household income in any given year. Since the national median income fluctuates with economic expansions and contractions, the boundaries that define the middle-income tier also shift over time.

The minimum income a five-person household needs to be in the middle-income tier is more than double the income needed by a one-person household.³² In Denmark, for example, a one-person household needed at least \$16,611 to be considered middle income in 2010. In contrast, a five-person household required \$37,143 to be middle income. Similarly, the threshold for entry into the middle-income tier in Spain ranged from \$12,273 for a one-person household to \$27,443 for a five-person household. (Incomes are expressed in 2011 prices and purchasing power parities.)

The threshold for entry into the upper-income tiers also varies in accordance with household size. In Denmark, one-person households living on \$49,833 or more were in the upper-income tier, but five-person households were required to have incomes of \$111,430 or greater. This pattern repeats across all countries.

Because median national incomes have risen since 1991 in most countries, the threshold for attaining middle-income status has also shifted up since 1991. In Norway, for example, the national median disposable household income increased from \$35,001 in 1991 to \$57,031 in 2013, scaled to a households size of three and expressed in 2011 prices and purchasing power parities. As a result, the minimum income needed to be middle income – two-thirds of the national median – increased from \$23,334 in 1991 to \$38,021 in 2013, for three-person households.

But there may be interruptions to the upward progression in incomes. In the U.S., for example, the Great Recession of 2007-2009 caused the national median income to fall from 2000 to 2013. More specifically, the median household income in the U.S. increased from \$48,343 in 1991 to \$53,677 in 2000, but fell to \$52,195 in 2013.

³² See Methodology for the method used to adjust incomes for household size.

Who is 'middle income' and 'upper income' in Western Europe and the U.S. in 2010?

Minimum 2010 disposable household income needed to qualify for middle- and upper-income tiers, by household size

		HOUSEHOLD SIZE				
		1	2	3	4	5
						
Denmark	Upper income	\$49,833	70,475	86,313	99,666	111,430
	Middle income	16,611	23,491	28,771	33,222	37,143
Finland	Upper income	46,549	65,830	80,625	93,097	104,086
	Middle income	15,516	21,943	26,875	31,032	34,695
France	Upper income	47,432	67,079	82,154	94,863	106,060
	Middle income	15,810	22,359	27,384	31,621	35,353
Germany	Upper income	47,398	67,030	82,094	94,794	105,983
	Middle income	15,799	22,343	27,364	31,598	35,327
Ireland	Upper income	45,111	63,797	78,134	90,222	100,871
	Middle income	15,037	21,265	26,044	30,074	33,623
Italy	Upper income	37,359	52,833	64,707	74,717	83,536
	Middle income	12,453	17,611	21,569	24,905	27,845
Luxembourg	Upper income	75,594	106,906	130,933	151,188	169,033
	Middle income	25,198	35,635	43,644	50,396	56,344
Netherlands	Upper income	49,875	70,534	86,386	99,749	111,523
	Middle income	16,625	23,511	28,795	33,249	37,174
Norway	Upper income	60,397	85,413	104,609	120,792	135,050
	Middle income	20,132	28,471	34,869	40,264	45,016
Spain	Upper income	36,819	52,070	63,772	73,637	82,329
	Middle income	12,273	17,356	21,257	24,545	27,443
UK	Upper income	43,679	61,770	75,653	87,356	97,667
	Middle income	14,559	20,590	25,217	29,118	32,555
U.S.	Upper income	61,132	86,453	105,882	122,262	136,693
	Middle income	20,377	28,817	35,294	40,754	45,564

Note: Incomes are expressed in 2011 prices and purchasing power parities. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

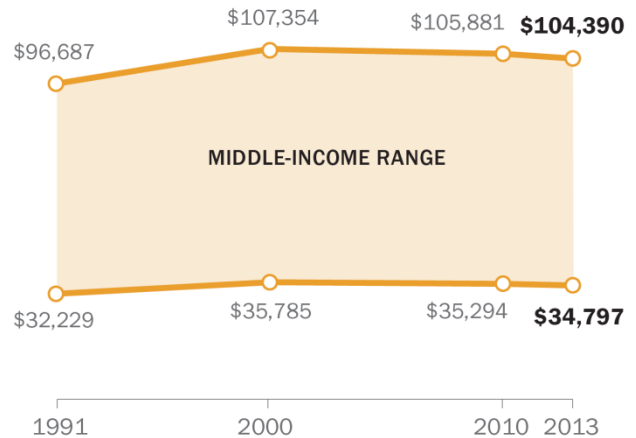
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With the rise in disposable incomes in the 1990s, the threshold for attaining middle-income status in the U.S. increased from \$32,229 in 1991 to \$35,785 in 2000, for three-person households expressed in 2011 prices and purchasing power parities. But with the economic reversals since 2000, the entry threshold fell to \$35,294 in 2010 and dropped further to \$34,797 by 2013. Likewise, the top end of the middle-income range also rose and fell in the U.S., starting at \$96,687 in 1991, rising to \$107,354 in 2000, and falling to \$104,390 in 2013.

What it takes to be middle income changes over time

Middle-income range in the U.S. for a three-person household



Note: Incomes are disposable household incomes expressed in 2011 prices.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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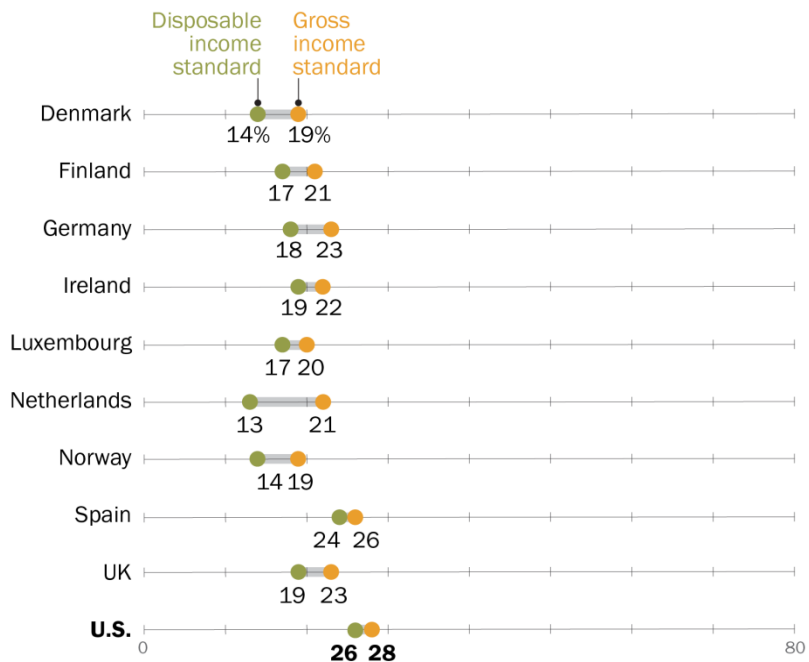
Appendix C: Shares of adults who are lower, middle or upper income based on their gross household income

This appendix shows the shares of adults in a country who are in the lower-, middle- and upper-income tiers using either disposable (after-tax) or gross (pretax) household income to define the boundaries of the income tiers. Middle-income households have incomes that are two-thirds to double the national median income, after incomes have been adjusted for household size. Lower-income households have incomes of less than two-thirds of the median, and upper-income households have incomes that are more than double the median. The estimates are for 2010 and encompass the 10 countries for which data on both gross and disposable household incomes is available.

Because gross incomes do not reflect the redistributive effects of income taxes, differences in gross incomes across households are more acute than differences in disposable incomes. Thus, when gross income is used to define income tiers, the result is that higher shares of adults are estimated to be lower income or upper income, and smaller shares of adults are estimated to be middle income. In Denmark, for example, the lower-income share in 2010 is 14% under the disposable income standard and 19% under the gross income standard. The middle-income share is reduced from 80% to 72% when gross income is used instead of disposable income, and the upper-income share is increased from 7% to 10%.

Smaller shares of adults are in the lower-income tier based on their disposable (after-tax) income than their gross (pretax) income

% of adult population in lower-income households, 2010



Note: Lower-income households have incomes that are less than two-thirds the national median income, after incomes have been adjusted for household size. France and Italy are not shown because of the lack of data on gross income.

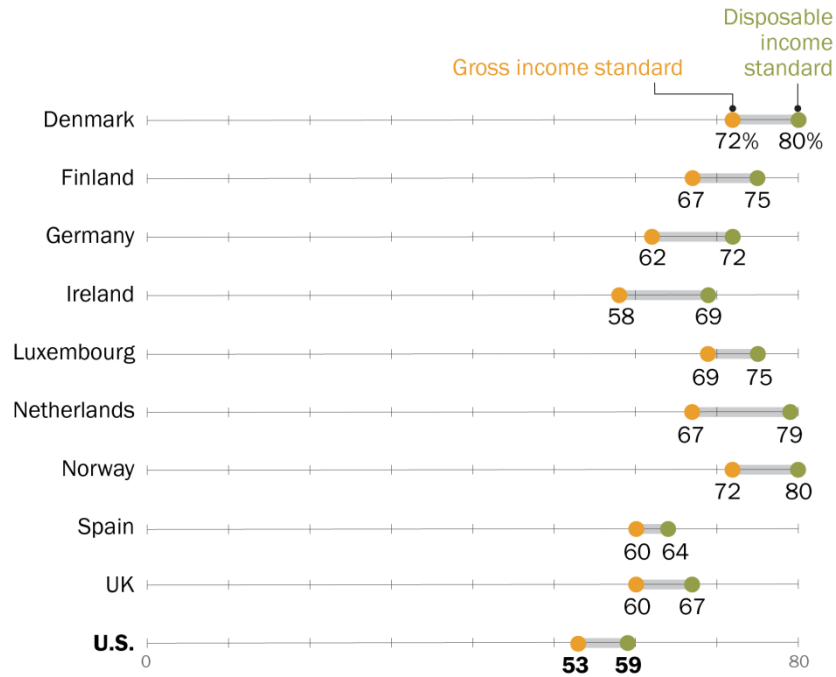
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Larger shares of adults are in the middle-income tier based on their disposable (after-tax) income than their gross (pretax) income

% of adult population in middle-income households, 2010



Note: Middle-income households have incomes that are two-thirds to double the national median income, after incomes have been adjusted for household size. France and Italy are not shown because of the lack of data on gross income.

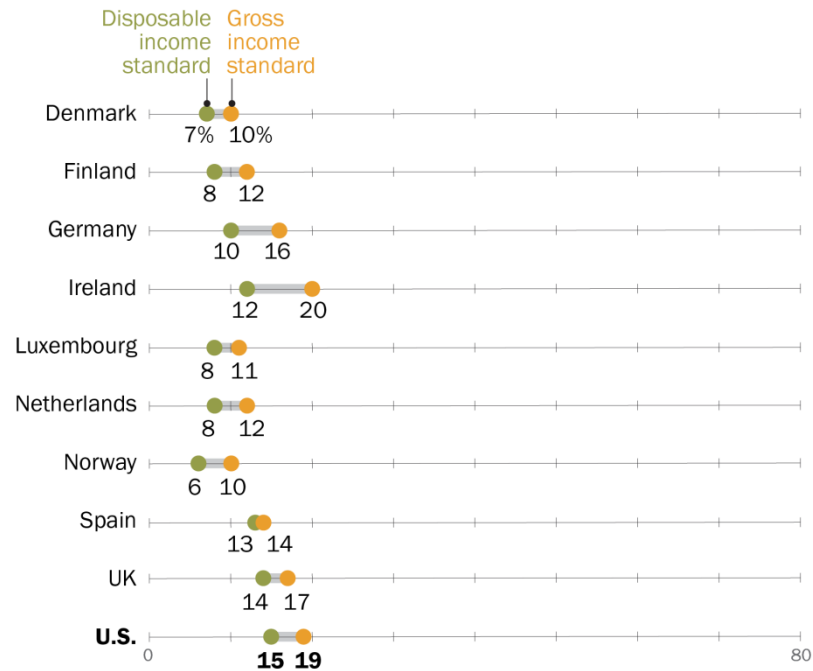
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Smaller shares of adults are in the upper-income tier based on their disposable (after-tax) income than their gross (pretax) income

% of adult population in upper-income households, 2010



Note: Upper-income households have incomes that are more than double the national median income, after incomes have been adjusted for household size. France and Italy are not shown because of the lack of data on gross income.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Appendix D: Income tiers defined using the U.S. median disposable household income

As an alternative to using a country's own median household income to define the boundaries of income tiers, it is possible to apply a common income standard in all countries. This appendix shows the shares of adults who are in the lower-, middle- and upper-income tiers in all countries using the U.S. median disposable household income to define the boundaries of each tier. Incomes in each country are first expressed in 2011 purchasing power parity dollars to adjust for cost of living differences across countries. As usual, incomes are also adjusted for household size.

In 2010, the median disposable household income in the U.S. was considerably higher than the median in the selected countries from Western Europe, except for Luxembourg and Norway. Thus, the shares of adults who are lower income in many countries in Western Europe is much greater when the U.S. median is used as the standard instead of the nation's own median income, and the middle-income and upper-income shares decrease. In Germany, for example, using the U.S. median income as the standard instead of the German median income raises the lower-income share from 18% to 33%, decreases the middle-income share from 72% to 63%, and reduces the upper-income share from 10% to 4%.

In most Western European countries, lower-income tiers are larger, and middle- and upper-income tiers are smaller, when the U.S. median income is used to define middle-income boundaries

% of adult population in lower-, middle- and upper-income households, 2010

	National income standard			U.S. income standard		
	Lower income	Middle income	Upper income	Lower income	Middle income	Upper income
Denmark	14%	80%	7%	28%	70%	3%
Finland	17	75	8	33	65	3
France	17	74	9	33	63	4
Germany	18	72	10	33	63	4
Ireland	19	69	12	37	59	4
Italy	22	67	11	53	44	2
Luxembourg	17	75	8	8	75	18
Netherlands	13	79	8	26	70	4
Norway	14	80	6	15	80	6
Spain	24	64	13	53	45	2
UK	19	67	14	40	55	5
U.S.	26	59	15	26	59	15

Note: Middle-income households have disposable incomes that are two-thirds to double the overall median disposable income, after incomes have been adjusted for household size. Lower-income households have incomes less than two-thirds of the median and upper-income households have incomes that are more than double the median. The "national income standard" uses each country's own median disposable household income. The "U.S. income standard" uses the median disposable household income in the U.S. In the latter case, incomes boundaries in all countries are expressed in 2011 prices and purchasing power parities.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Appendix E: Income distributions

The chart below shows the distribution of adults in the U.S. and selected countries from Western Europe by their household income. Adults in each country are divided into 51 groups with household incomes ranging from \$0-4,999, \$5,000-9,999, \$10,000-14,999, and so on up to the highest income category of \$250,000 or greater. Incomes in all countries are adjusted for household size, scaled to a household of three, and expressed in 2011 prices and purchasing power parities (see Methodology for more details).

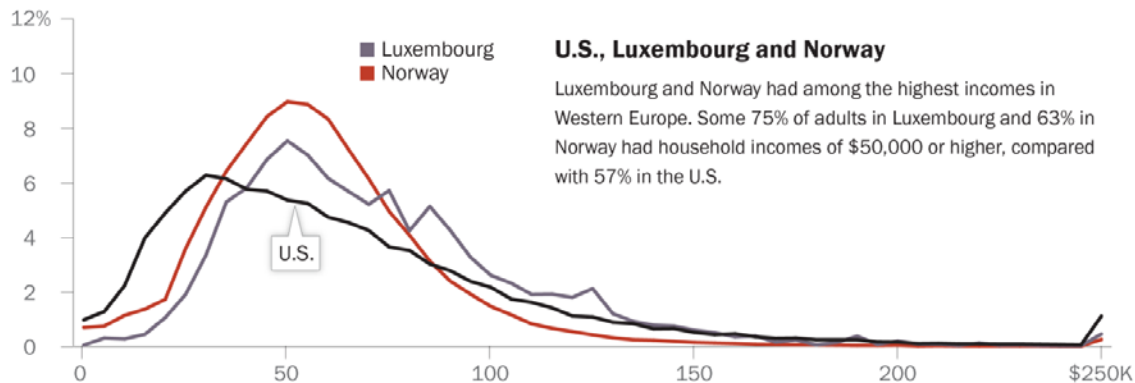
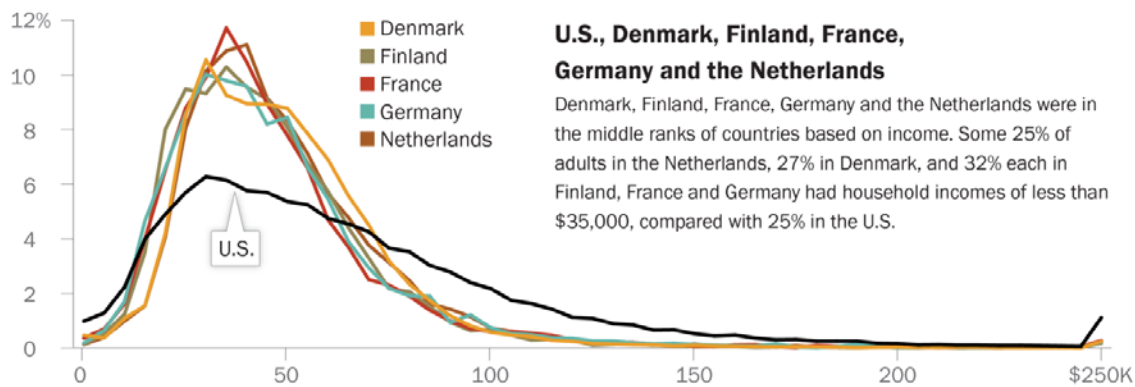
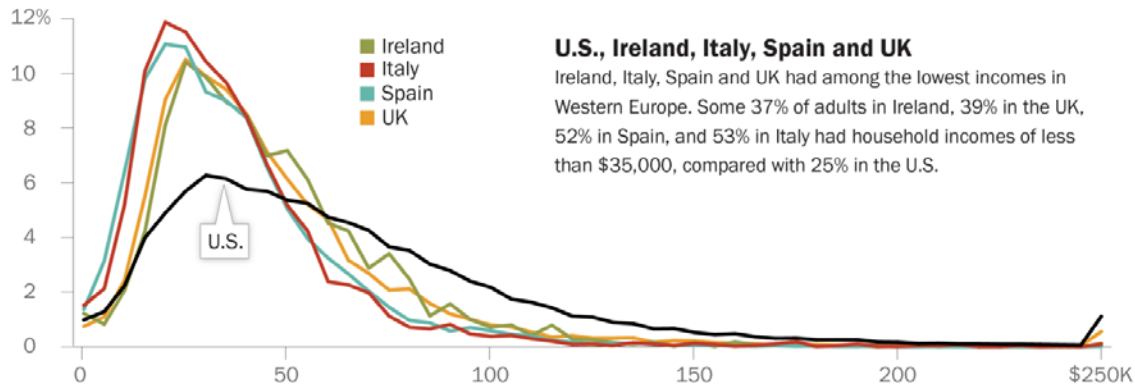
The selected countries from Western Europe fall into three groups based on their income distributions. The first group consists of Ireland, Italy, Spain and the UK. These countries had among the lowest median household incomes, within the range from \$30,000 to \$40,000 in 2010, compared with \$53,000 in the U.S. As shown in the chart, Ireland, Italy, Spain and the UK have notably higher concentrations of people than the U.S. in the lower tails of the income distributions.

The second group selected from Western Europe consists of Denmark, Finland, France, Germany and the Netherlands. The median disposable household income in these countries was inside the range of \$40,000 to \$45,000 in 2010. Compared with the U.S., these countries have similar concentrations of adults in the lower tails of the income distributions, but more pronounced peaks in the middle and relatively fewer adults in the upper reaches of the income distributions.

The final group selected from Western Europe is composed of Luxembourg, with a median disposable income of \$65,000 in 2010, and Norway, with a median income of \$52,000. Compared with the U.S., Luxembourg and Norway have relatively few adults in the lower ends of the income distributions and more in the middle. Luxembourg and Norway also have significant shares of adults in the upper reaches of the income distribution. Luxembourg, in fact, has a greater share of adults than the U.S. at many points of the income distribution to the right of \$50,000.

What share lives on how much

% of adults with a given level of disposable household income in 2010



Note: Incomes are adjusted for household size, scaled to reflect a household of three, and expressed in 2011 prices and purchasing power parities. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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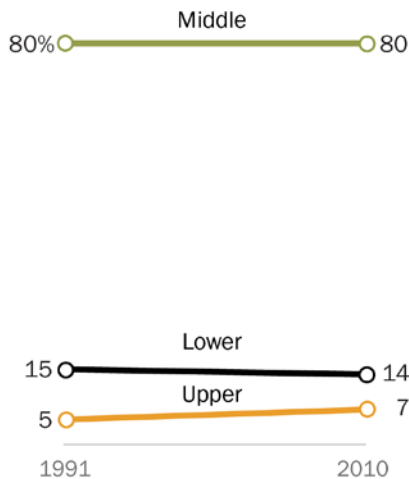
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Appendix F: Changes in the shares of adults in lower-, middle- and upper-income tiers

The charts in this appendix show the shares of adults in the lower-, middle- and upper-income tiers in a country in 1991 and in the latest year for which data are available. The latest estimates for Denmark, France, Ireland and Italy are for 2010. The latest estimates for Finland, Germany, Luxembourg, the Netherlands, Norway, Spain, the UK and the U.S. are for 2013.

Denmark

Share of adults in middle-, lower- and upper-income households, 1991 and 2010

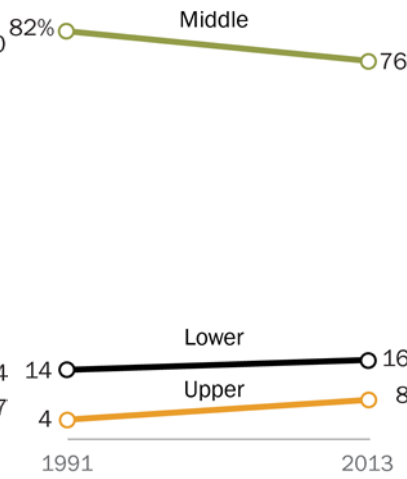


Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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Finland

Share of adults in middle-, lower- and upper-income households, 1991 and 2013

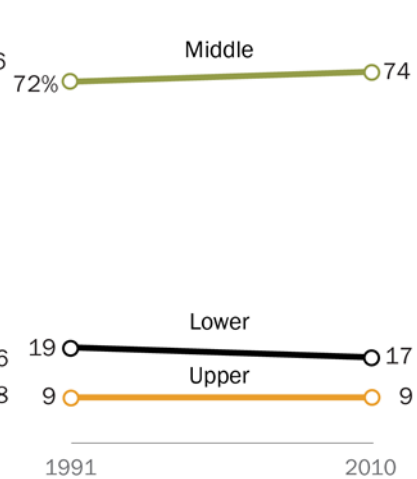


Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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France

Share of adults in middle-, lower- and upper-income households, 1991 and 2010

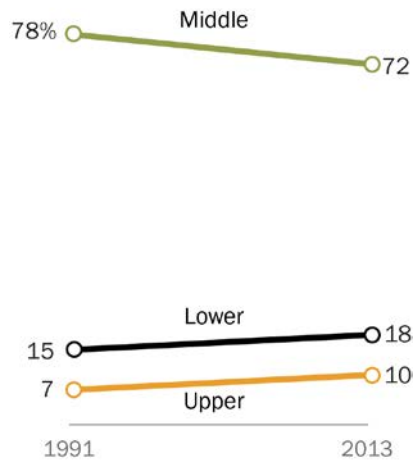


Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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Germany

Share of adults in middle-, lower- and upper-income households, 1991 and 2013



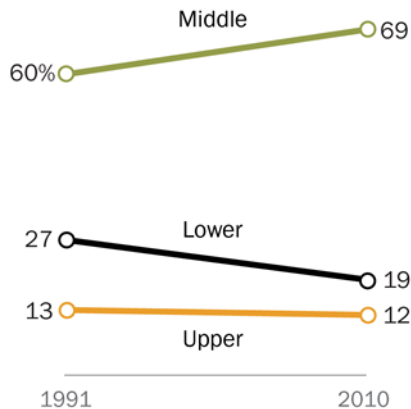
Note: The 1991 estimate is based on a sample of (former) West German households only. See Methodology for more on survey dates and other details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Ireland

Share of adults in middle-, lower- and upper-income households, 1991 and 2010

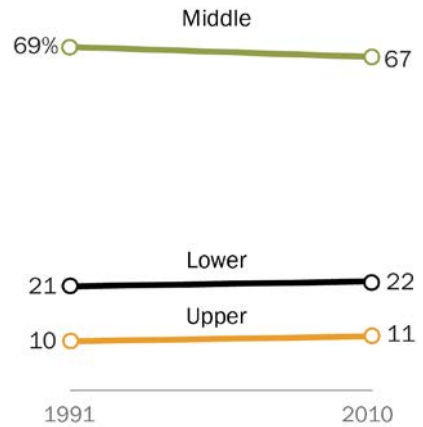


Note: See Methodology for more on survey dates and other details. Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Italy

Share of adults in middle-, lower- and upper-income households, 1991 and 2010

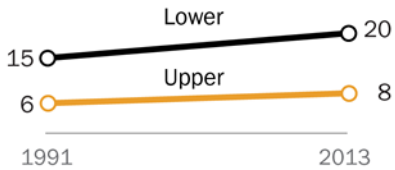


Note: See Methodology for more on survey dates and other details. Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Luxembourg

Share of adults in middle-, lower- and upper-income households, 1991 and 2013

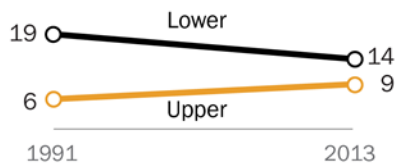


Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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Netherlands

Share of adults in middle-, lower- and upper-income households, 1991 and 2013

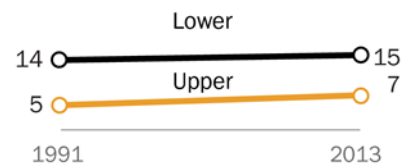


Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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Norway

Share of adults in middle-, lower- and upper-income households, 1991 and 2013

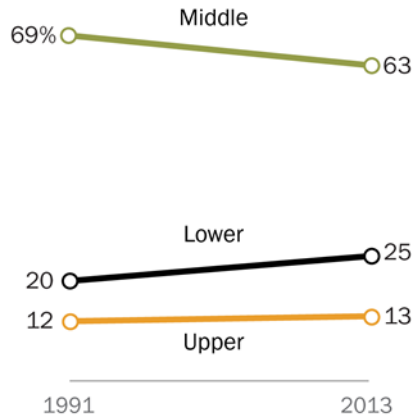


Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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Spain

Share of adults in middle-, lower- and upper-income households, 1991 and 2013

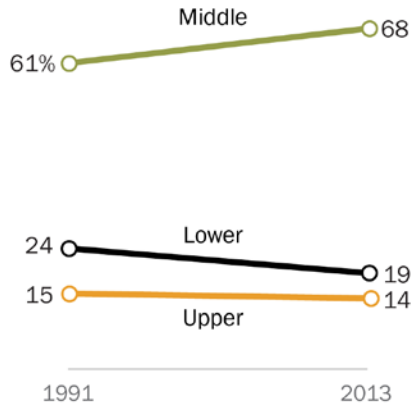


Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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United Kingdom

Share of adults in middle-, lower- and upper-income households, 1991 and 2013

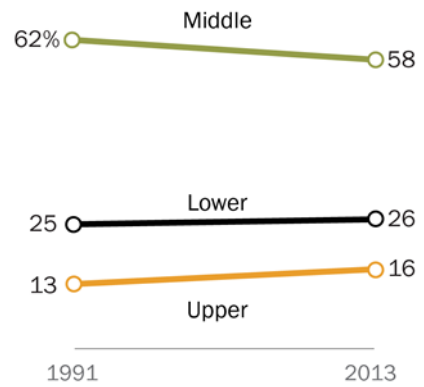


Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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U.S.

Share of adults in middle-, lower- and upper-income households, 1991 and 2013



Note: See Methodology for more on survey dates and other details.
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).
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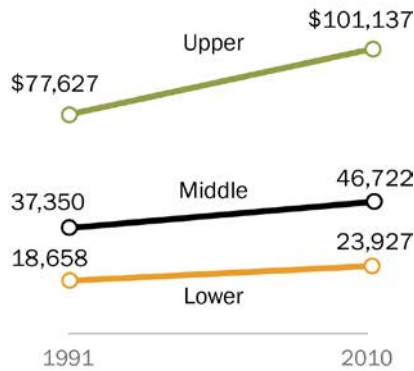
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Appendix G: Changes in disposable household incomes, by income tier

The charts in this appendix show the median disposable household incomes of households in the lower-, middle- and upper-income tiers in a country in 1991 and in the latest year for which data are available. The latest estimates for Denmark, France, Ireland and Italy are for 2010, and the latest estimates for Finland, Germany, Luxembourg, the Netherlands, Norway, Spain, the UK and the U.S. are for 2013. As noted in the charts, the 1991 estimates for some countries are projected from surveys conducted at slightly different dates. The Methodology section describes the projection method.

Denmark

Median disposable household income, by income tier



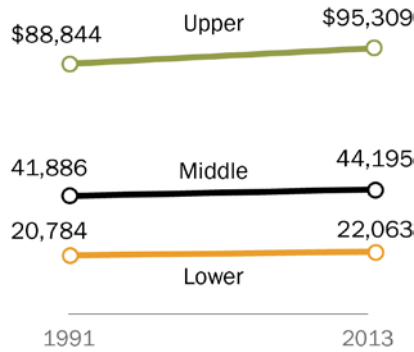
Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. The 1991 estimate is based on a projection from 1992 survey data. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Finland

Median disposable household income, by income tier



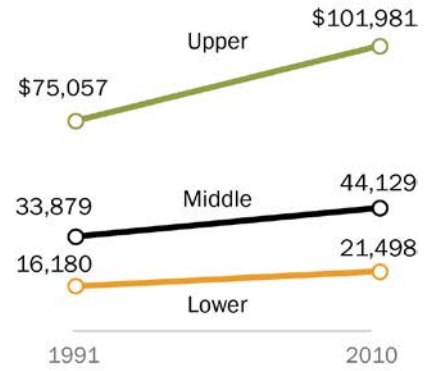
Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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France

Median disposable household income, by income tier



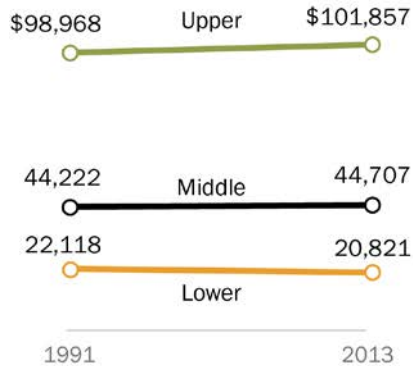
Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. The 1991 estimate is based on a projection from 1989 survey data. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Germany

Median disposable household income, by income tier



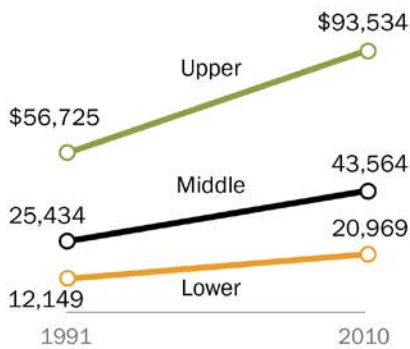
Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. The 1991 estimate is based on a projection from 1989 survey data. The 1989 sample for Germany covers (former) West Germany only. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Ireland

Median disposable household income, by income tier



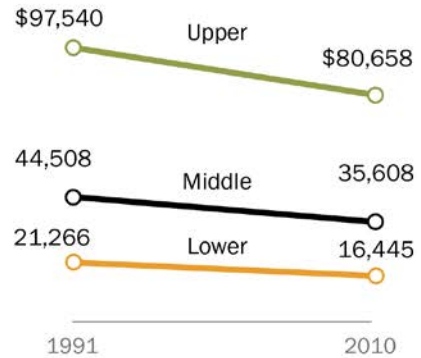
Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. The 1991 estimate is based on a projection from 1987 survey data. See Methodology for details.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Italy

Median disposable household income, by income tier



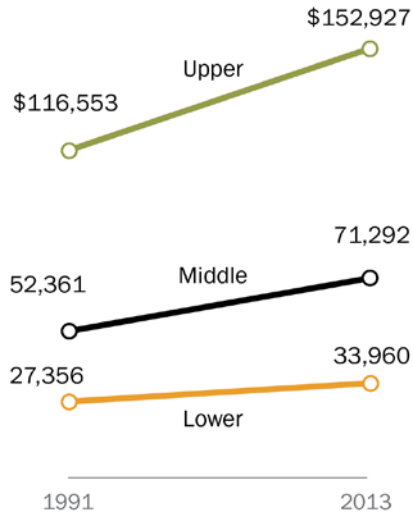
Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS). "Middle Class Fortunes in Western Europe"

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Luxembourg

Median disposable household income, by income tier



Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size.

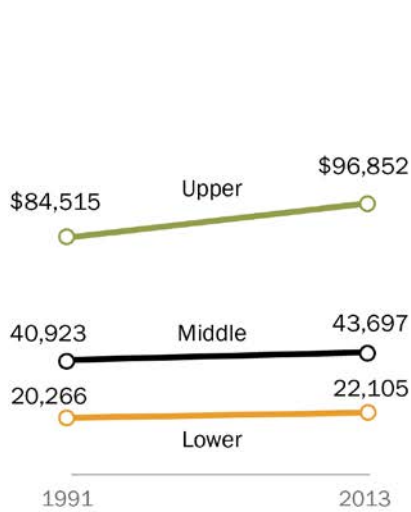
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Netherlands

Median disposable household income, by income tier



Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. The 1991 estimate is based on a projection from 1993 survey data. See Methodology for details.

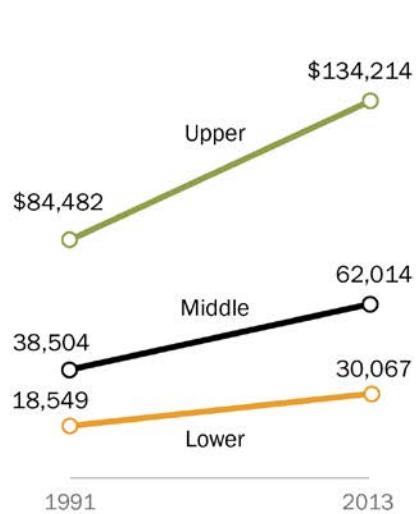
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Norway

Median disposable household income, by income tier



Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size.

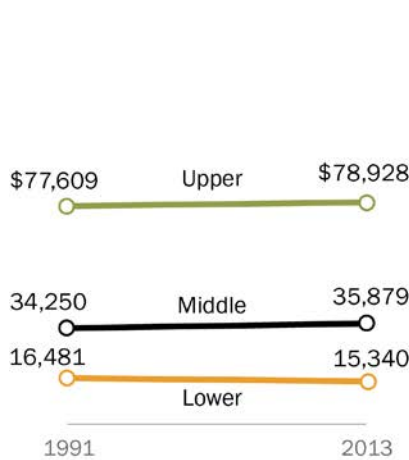
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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Spain

Median disposable household income, by income tier



Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size. The 1991 estimate is based on a projection from 1990 survey data. See Methodology for details.

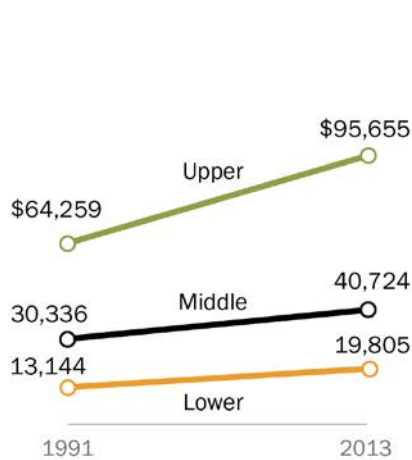
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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UK

Median disposable household income, by income tier



Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size.

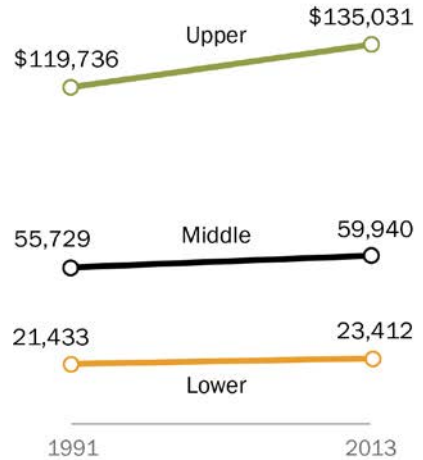
Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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U.S.

Median disposable household income, by income tier



Note: Incomes are scaled to a three-person household and expressed in 2011 prices and purchasing power parity dollars. Middle-income households have disposable incomes that are two-thirds to double the national median disposable income, after incomes have been adjusted for household size.

Source: Pew Research Center analysis of data from the Cross-National Data Center in Luxembourg (LIS).

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