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Aiming for "Full Employment": Why it Matters and How to Get There

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This Focus analyses employment and hours worked over a 55-year period in France, Germany, the United Kingdom, and the United States with the aim of identifying employment margins or untapped labour reserves that public policy could target. The goal of full employment is far from self-evident if labour market participation and working hours are viewed solely as a matter of individual preferences. However, if there are obstacles to preventing French citizens from participating more fully in the labour market, then there are strong reasons to intervene in order to promote employment and increase the total volume of hours worked in France. Beyond the individual benefits of improved access to employment, the positive externalities of a higher employment rate – particularly for public finances – make full employment a legitimate public policy objective, provided the bottlenecks are correctly identified.

This comparative study highlights several factual observations that warrant clarification. First, France has an annual deficit of 100 hours worked per capita compared with its European neighbours, and 300 fewer hours compared to the United States. This historical divergence dates back to the late 1970s and peaked in the mid-1990s. Second, the gap with Germany and the United Kingdom is entirely explained by a lower employment rate in France – not by fewer hours worked among those who are employed. Third, France's lower employment rate is entirely concentrated among young and older individuals: labour market entry for young people is significantly slower, and labour market exit occurs earlier. Fourth, while women's contribution to employment growth has historically been strong, it is now running out of steam. Finally, employment among the low-skilled is collapsing, revealing the severe difficulties faced by individuals who leave the education system without qualifications or training in integrating into the labour market.

These findings help clearly identify the types of public policies that could support the goal of full employment. These include: encouraging a better match between training provisions and the needs of the labour market, which would facilitate faster integration into employment ; enabling a higher employment rate among seniors who are able to continue working, through pension system reforms that account for the diversity of individual situations; further promoting women's participation in the labour market; and dedicating targeted resources to address the disproportionally high share of young people leaving the education system without qualifications or employment.

Introduction

The objective of achieving "full employment" is generally framed as a policy aimed at reducing the unemployment rate – that is, lowering the share of people actively looking for a job. However, this approach can be very overly narrow, as certain public policies may increase labour market participation without necessarily reducing unemployment. Conversely, it is sometimes possible to reduce the unemployment rate without meaningfully increasing employment — for instance, by discouraging people from seeking work — or without increasing the total volume of worked performed in the economy — such as by expanding the use of contracts with very few hours (e.g. mini-jobs, zero-hour contracts). To take a more comprehensive view of the full employment objective, it is necessary to consider the total number of hours worked in a country.

Nonetheless, aiming to increase the overall amount of work is by no means straightforward. Work is a personal choice and everyone should be free to determine how much they work. People approach this choice differently, based on highly diverse capabilities, preferences, and needs. Cultural shifts – across countries or over time — can also influence how individuals value work versus leisure, and it is not the role of economists to judge the legitimacy of these choices. The long-term decline in the number of hours worked over the past 150 years, observed in most developed countries, suggests that leisure is a normal good and that productivity gains are used to increase leisure time.

Why, then, should we question the total amount of work being done in France? There are two main reasons for this. First, labour supply choices can generate externalities, — effects on others, that are not internalised by individuals when making their choices. These externalities can take many forms, but fiscal externalities are among the most significant, given the central role of labour-related takes in funding government expenditures and social protection. Through their labour supply choices, individuals indirectly affect all the public revenues that finance social transfers and public services.

The second reason lies in the existence of numerous frictions, barriers or other inefficiencies in the labour market that prevent certain individuals or groups — such as women or low-skilled youth — – from working, or from working as much as they would like. In such cases, the overall level of work does not reflect individuals' true preferences, which justifies examining how these barriers can be removed.

The main message of this Focus is that there is indeed room for maneuver when it comes to the total amount of work performed in France – an issue that carries weight in the context of current budgetary debates. France stands out for having a lower average number of hours worked per capita compared to its peers. Moreover, the country is still far from achieving "full employment": many groups — most notably young people and low-skilled individuals, — remain poorly integrated into the labour market. In this context, the goal of full employment is both meaningful and relevant for France.

Achieving full employment requires identifying which public policies should be prioritized. These will vary depending on the specific characteristics of the populations most likely to contribute to increased labour force participation — whether by age, gender, or qualification. This Focus aims to provide a detailed measurement of the potential for increased labour market participation, whether through the employment rate (extensive margin) or through the number of hours worked per worker (intensive margin). This approach adopts a historical perspective to trace long-term trends in the total number of hours worked in France and places these developments in an international comparative framework, drawing on the examples of Germany, the United Kingdom and the United States.

The objective of this Focus goes beyond the statistical measurement of hours worked or cross-country comparability. More fundamentally, it aims to identify policy levers that could boost growth in France through an increase the quantity of work. In the medium term, promoting participation the labour market for all – under conditions that provide sufficient income for a decent standard of living —is the more reliable way to support both public finances and the funding capacity of public policies desired by citizens. Beyond the quantity of work, the productivity of those hours worked is the key factor in sustaining improvements in living standards. This Focus also contributes to diagnosing productivity trends in international context, revisiting conventional statistics through a rigorous effort to ensure comparability of productivity measurements.

Finally, this Focus updates earlier work[1] that ended in 2008, just before the financial crisis. By incorporating 16 additional years of data, it offers a look back at 55 years of labour market evolution, including major shifts over the last decade

[1] Blundell R., Bozio A., Laroque G. (2011): «Labor Supply and the Extensive Margin», *American Economic Review*, 101(3) , pp. 482—86, and, with more methodological details, Blundell R., Bozio A., Laroque G. (2013): «Extensive and Intensive Margins of Labour Supply: Work and Working Hours in the US, the UK and France», *Fiscal Studies*, 34(1), pp. 1-29.

related to the financial crises and the COVID pandemic, and increase in the retirement age. An additional contribution of this study is to examine the case of Germany – a country in many ways similar to France but one where the employment rate has risen significantly over the past two decades.

After presenting the methodology in Section 2, we describe the long-term evolution of work in France and break it down into its extensive and intensive margins in Section 3. We then focus on the two groups with the lowest labour market participation rates in international comparison – young people and seniors –, in an attempt to identify the possible causes of their low participation (Section 4). Next, we present a decomposition of labour market dynamics in France over the past two decades (Section 5) before concluding with a discussion of the long-term trends in productivity (Section 6).

Methodology

Available Data Sources

There are three main sources to measure employment and hours worked, each with its own strengths and limitations, which have been widely analyzed.[2]

The first source consists of administrative data, typically collected through social security systems for the purpose of calculating public pensions. In France, this corresponds to the Base tous salariés (BTS) produced by INSEE, based on employers' declarations submitted through the Déclaration sociale nominative (DSN) system. This source provides detailed information on each employment contract, including the contracted work time. However, it does not accurately capture actual working hours when they deviate from contractual hours. In addition, paid leave, sick leave, and other types of leave are often poorly accounted for.

The second source is establishment surveys, in which employers are asked about employment and the number of hours worked by their employees. These surveys are generally considered reliable, since employers are supposed to know precisely the hours worked by their employees. However, they do not cover the entire workforce – notably excluding self-employed, public sector employees, and temporary workers. Moreover, they measure hours per job and not per individual. Example of this type of survey include the UK's Annual Survey of Hours and Earnings (ASHE), France's Activité et conditions d'emploi de la main-d'œuvre (ACEMO), and the US Current Employment Survey (CES).

Finally, the third source comes from the labour force surveys, which we rely on in this study. For France, the United Kingdom and Germany, we use national labour force surveys that follow European methodological standards and feed into the European Union's labour force data. Specifically, we use INSEE's Enquête Emploi for France, For the United Kingdom; we use the Labour Force Survey (LFS) for the UK, and data from the Labour Force Survey for Germany provided by Eurostat. For the United States, we use the Current Population Survey (CPS), which is very similar to the European labour force surveys. In total, we have drawn on individual-level data statistical surveys across the four countries. These surveys offer the advantage of being based on large, nationally representative samples, which allows for accurate identification of employment status and hours worked per person. The survey questionnaires are the product of intense international collaboration among statisticians, under the guidance of the International Labour Organisation (ILO), which sets the global standards for measuring employment, unemployment and various types of working hours (actual hours worked, usual hours, etc.). However, these surveys also come with important limitations. They have not always been conducted on a continuous basis throughout the year, despite the fact that employment and hours worked are subject to significant seasonal variation, which differs by country and over time (due to seasonal work or the timing of paid leave, for example). This presents two main measurement challenges:

- Annual surveys tend to overestimate hours worked, as they often use a reference month with little to no leave (e.g. March in France, rather than August);
- The shift from annual to continuous surveys has resulted in significant breaks in time series, which must be accounted for in long-term trend analysis;

Additionally, self-reported working hours are generally considered to be an overestimate of actual hours worked.

[2] See for example Fleck S. (2009): «International Comparisons of Hours Worked: An Assessment of the Statistics», *Monthly Labor Review*, vol. 32, no. 5, pp. 3-31.

Despite these challenges, labour force surveys offer a major advantage: they provide comprehensive information on household demographic, education and qualification levels, and other individual characteristics. This makes it possible to conduct disaggregated analyses by population sub-groups.

National Accounts Data

National accounts represent the second most commonly used source by economists and are typically the foundation for cross-country series published by international institutions. National accounts provide aggregate estimates of total hours worked, but these are based on different data sources depending on the country. The guiding principle is not strict comparability across countries, but rather the use of the most reliable source within each national context. As such, national accounts may draw from any of the three primary data sources mentioned earlier, depending on which is deemed most reliable for estimating hours worked. In the United Kingdom, for instance, due to the lack of reliable administrative data on hours worked, it is essentially the labour force survey that is used. In contrast, France relies more heavily on administrative data from the DSN system. The measurement of hours worked in national accounts typically blends several sources : in many countries, labour force surveys play a secondary role, while administrative and firm-level data are used to capture both contractual working hours and adjustments due to overtime, leave, sick days, and other factors that increase or reduce actual working time.

When comparing hours worked across different data sources, the gaps tend to remain consistent across countries and over time. However, estimates based on national accounts are generally lower than those from labour force surveys. While it is often assumed that self-reported hours in surveys are overstated, it is equally inaccurate to consider contractual hours recorded in administrative data as the absolute truth regarding the actual quantity of work performed.

Methodological Choices

This Focus largely follows the approach developed by Blundell et al (2011, 2013) for processing of labour force survey data. The key aspects of this methodology are summarized below.

To measure the extensive margin (whether a person is employed or not), we use a binary variable that is positive if, during the reference week, the person held a paid job or reported being self-employed. When surveys are conducted continuously throughout the year, this definition provides a highly accurate measure of annual employment across the population.

For the intensive margin (the number of hours worked for those who are employed), we use the reported number of actual hours worked during the reference week. For example, someone who is employed but on leave during the reference week reports zero actual hour worked.[3]

This approach is particularly effective when continuous surveys are available. However, it presents challenges for annual surveys when estimating employment and hours worked. The method used here involves applying a conversion factor, by detailed demographic group (age, gender, household type, education level), based on the difference between annualized actual hours from continuous surveys and actual hours from the reference month in annual surveys, during the transition period from annual to continuous data collection. This allows for the backcasting of historical data and and corrects the break in series observed in 2003 in France and in 2005 in Germany (see Appendix A). The main limitation of this method is that it assumes that the adjustment factor remained stable during the period in which annual surveys were used.

The case of Germany warrants a separate discussion. The discrepancy between national accounts and labour force survey estimates is particularly large, raising sensitivity in comparisons depending on the data source used. This divergence has led statisticians to question whether the labour force survey accurately captures the number of hours worked. For instance, if national accounts are used, total hours worked in France and Germany appears to be very similar. In contrast, labour force surveys depict a substantially higher volume of hours worked in Germany, likely due to underreporting of leave in the German survey (see Appendix A).

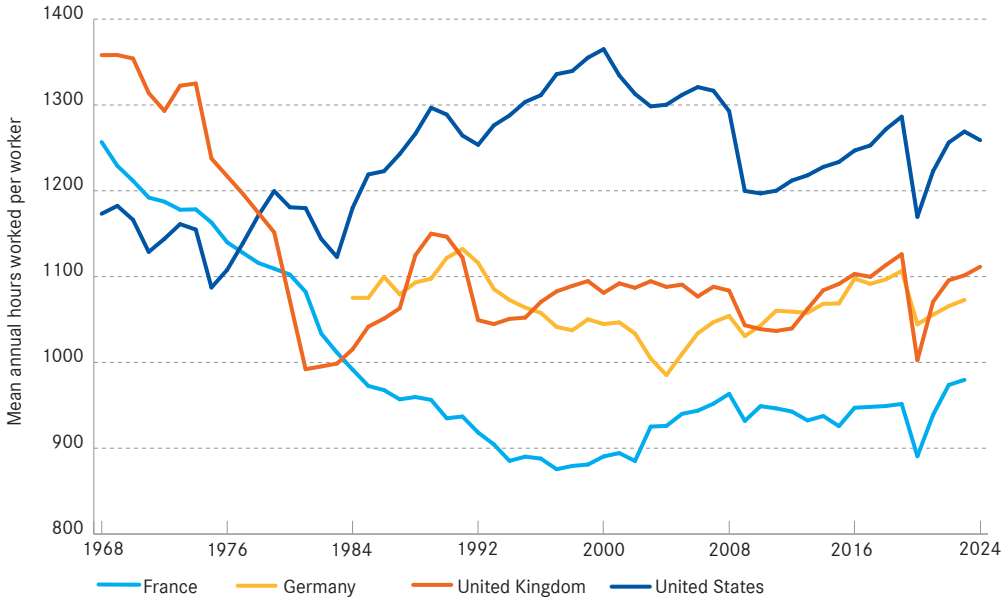
[3] The other classic methodological approach is to use usual hours and then deduct from them a measure of paid leave, sick leave, leave for other reasons and public holidays for each year.

Evolution of Work Over More Than Fifty Years

Number of Hours Worked

Our first key observation concerns the evolution of the number of hours worked per capita, calculated for the population aged 16 to74. Figure 1 presents this aggregated measure for the four countries studied since 1968. At the end of the 1960s, France and the UK recorded significantly more hours than the US, but this situation reversed beginning in the late 1970s. This pronounced historical divergence led to a sharp decline in hours worked in France, reaching a low point in 1994, with around 900 hours per person per year. At that same point, the United States recorded 1,300 hours, compared to 1,050 in the UK and Germany. This substantial divergence unfolded over just15 years. Since that low point, France has seen a gradual recovery, reaching 990 hours per person in 2023. Meanwhile, hours worked have slightly declined in the United States (down to 1,270 hours) and remained relatively stable in Germany (1,070 hours) and the United Kingdom (1,100 hours). The gap between France and the United States now stands at approximately 300 hours per year, and around 100 hours compared to the two other European countries.

Figure 1. Mean Annual Hours Worked per Capita (1968-2024)



Note: Average number of hours per year, estimated for the population aged 16-74.

Reading: In France in 2023, an individual aged 16 to 74 worked an average of 980 hours per year. This is approximately 100 fewer hours than in Germany (where the average is 1,070 hours) and the UK (1,100 hours). The United States is well ahead, with an average of 1,270 hours worked per capita.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

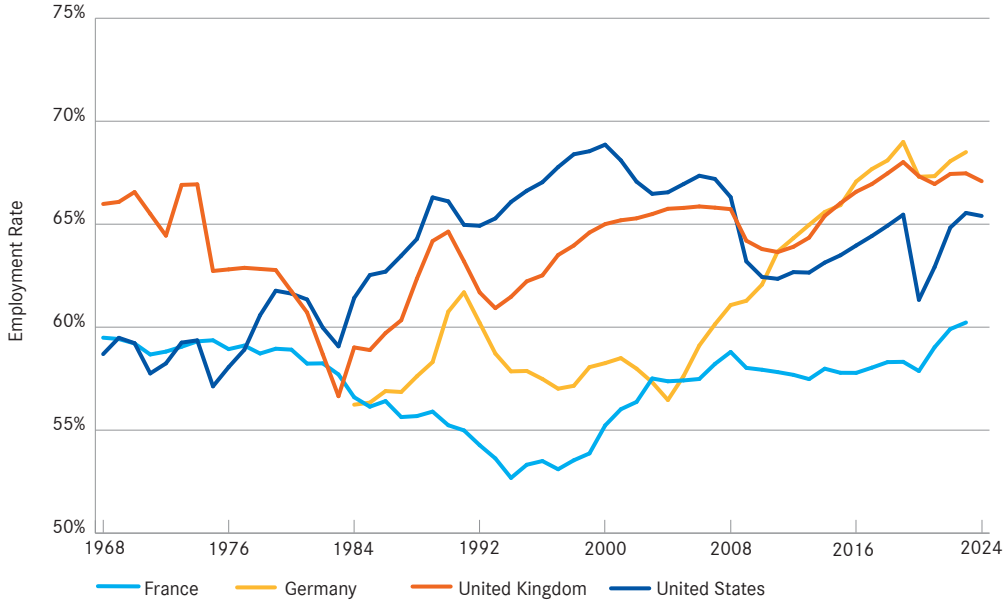
Finding 1. France has substantial room to increase the number of hours worked per capita, with 100 fewer hours than Germany or the UK, and nearly 300 fewer hours than the United States.

To fully understand this historical divergence in the total hours worked, it is essential distinguish between the extensive margin (labour market participation) and the intensive margin (number of hours worked by those in employment). Figure 2a shows the employment rate in the four countries since 1968. This is one of the most reliable indicators for international comparison, thanks to the high degree of harmonization in labour force survey questions. The data reveals that France consistently has a lower employment rate than the other three countries. After a significant decline, the employment rate hit a low of 53% in 1993, and then gradually recovered to 60% by 2023, which is roughly the same level as in the late 1960s –despite a strong and steady increase in women's participation in the labour market over the period. In contrast, the UK and Germany have seen substantial gains in employment, surpassing even the United States by the end of the period, with rates of 67% and 68%, respectively.

Figure 2b focuses on the intensive margin , tracking the evolution of hours worked per person in employment. Across European countries, there has been a long-term. France experienced this decline earlier than its peers, but by the end of the period, Germany, the UK and France all converge around 1,650 hours per employed person per year. The major difference remains between Europe and the United States, where unlike Europe, there has been no significant decline in hours worked since the late 1960s. In the U.S., annual hours per employed person have remained relatively stable, between 1,900 and 2,000, roughly 300 hours more than in Europe.

Figure 2. Employment Rate and Annual Hours Worked per Employed Person

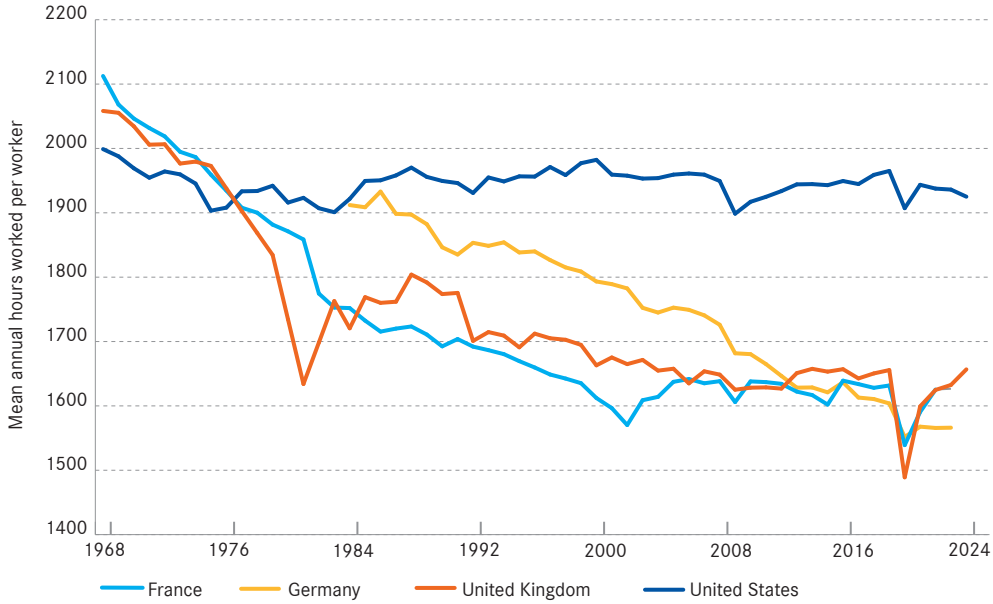
a. Employment Rate (Extensive Margin)



Note: The employment rate refers to the share of the population aged 16-74 that is employed.

Reading: In France in 2023, the employment rate for the 16-74 age group is 60%, lower than in the United States, the United Kingdom or Germany, where it ranges between 66% and 68%.

b. Mean Annual Hours Worked per Worker (Intensive Margin)



Note: Average number of hours worked annually, estimated for all individuals aged 16-74 who are employed.

Reading: Among employed individuals, Germans, Britons and French work roughly the same number of hours per year, around 1,600. The United States stands apart, with over 1,900 hours worked per employed person.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

Gaps Between Countries in 2023

To summarize France's position in 2023, Figure 3a shows the gap in hours worked per capita between France and the other three countries. Figure 3b breaks down this gap into two components: differences in the employment rate (extensive margin) and differences in the hours worked per employed person (intensive margin). The gap with Germany and the United Kingdom – about fewer hours worked per capita per year in France – is entirely explained entirely by Franc's lower employment rate. Contrary to a common misconception, it is not the number of hours worked by employed person that accounts for France's the lower total, but rather the lower employment rate.

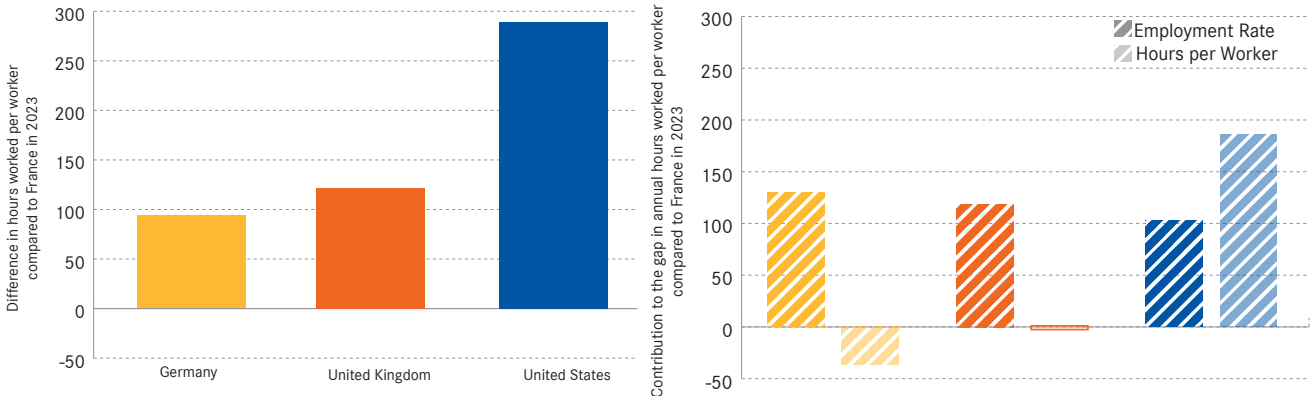
The comparison with the United States is of a different nature. It highlights a much larger gap in hours worked per employed person, with a 200 to 300 hour difference. This is primarily due to longer working weeks and, above all, fewer vacation days in the U.S.

Finding 2: The difference in hours worked per capita between France and its European neighbours is fully explained by France's lower employment rate – not by shorter average hours worked among those who are employed.

Figure 3: Gap in Annual Hours Worked per Capita Relative to France (2023)

a. Difference in Hours Worked per Capita

b. Contribution of Extensive and Intensive Margins to the Gap

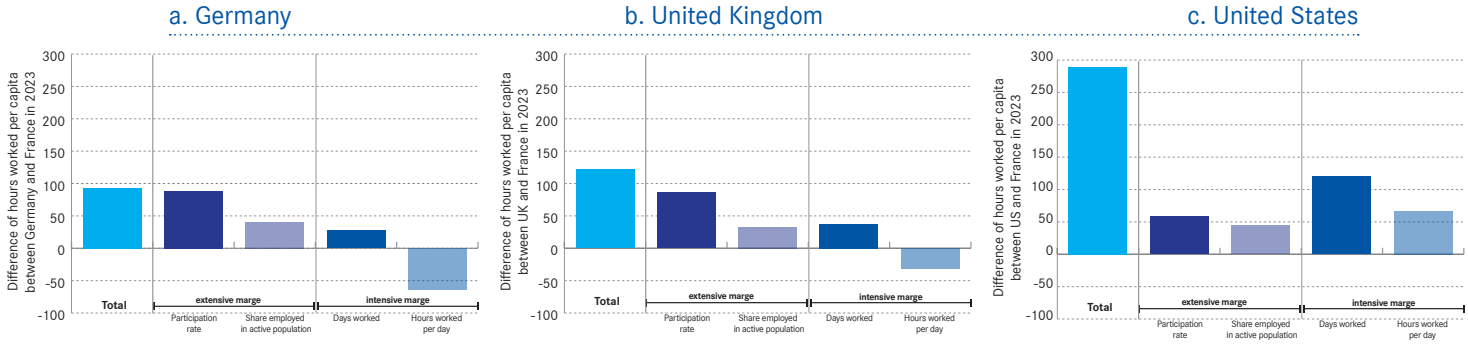


Note: Panel a shows the difference in annual hours worked per capita between a given country (Germany, UK, or USA) and France in 2023. Panel b decomposes this difference into the share attributable to a lower employment rate (dark shading) and to fewer hours worked per employed person (light shading).

Reading: In 2023, an American aged 16 to 74 worked on average 300 more hours more a French counterpart (Panel a, Column 3). Of that difference, 200 hours are due to longer working hours among the employed and 100 hours to a higher employment rate.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

Figure 4: Contribution of Extensive and Intensive Margins to the Gap in Hours Worked per Capita in 2023, Compared to France



Note: The first column of each panel shows the total difference in annual hours worked per capita (ages 16-74) between France and the comparison country. Columns 2 and 3 reflect the contribution of the participation and the share of active population in employment (extensive margins). Columns 4 and 5 reflect the contribution of the intensive margin:). Column 4 measures the contribution of non-holiday work weeks among the employed, while Column 5 captures the difference in weekly hours worked, excluding periods of leave.

Reading: In 2023, the gap in hours worked per capita between France and the UK is 122 hours (Panel b, Column 1). The difference in labour force participation (column 2) accounts for 86 of those hours.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

Figure 4 decomposes the difference hours worked into the detailed components of both the extensive and intensive margins. In the cases of Germany and the United Kingdom, the main driver of the difference is labour force participation rate, rather than unemployment. In other words, fewer people in France are active in the labour market, which explains most of the gap in hours worked compared to its neighbours.

Young People and Seniors in the Labour Market

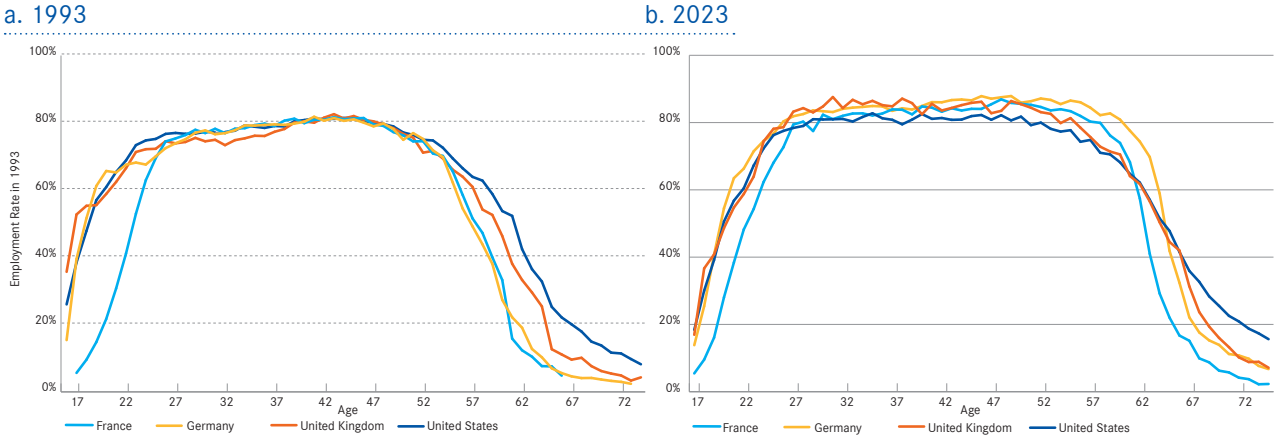
Two Longstanding Challengers: Young People and Older Workers

Since the employment rate is the main factor explaining the gap between France and other European countries, it is crucial to identify which population groups are driving this relative underemployment. France's two structural employment challenges lie in the low employment rates of young people and seniors compared with its peers. These issues are longstanding, dating back to the late 1970s, and even the 1960s.

Figure 5 illustrates employment rates by age in 1993 (Panel a) and 2023 (Panel b). It is immediately clear that France has no underemployment issue among individuals aged 30-54, whose employment rates are similar to – or even slightly higher than – those In the United States. In contrast, employment rates among young people and seniors are significantly lower than in the other three countries. This leads to a refined version of the previous section: France's low total hours worked are primarily due to the low employment rate of young people and older people.

Finding 3. France's low employment rate is confined to the low employment rate of young people and older people. Among 30-54 year-olds, employment rates are comparable to those in the US, Germany, and the UK.

Figure 5: Employment Rates by Age in 1993 and 2023



Note: For each country and age, the employment rate is defined as the share of the population in employment. Panel a shows 1993 data; panel b shows 2023.

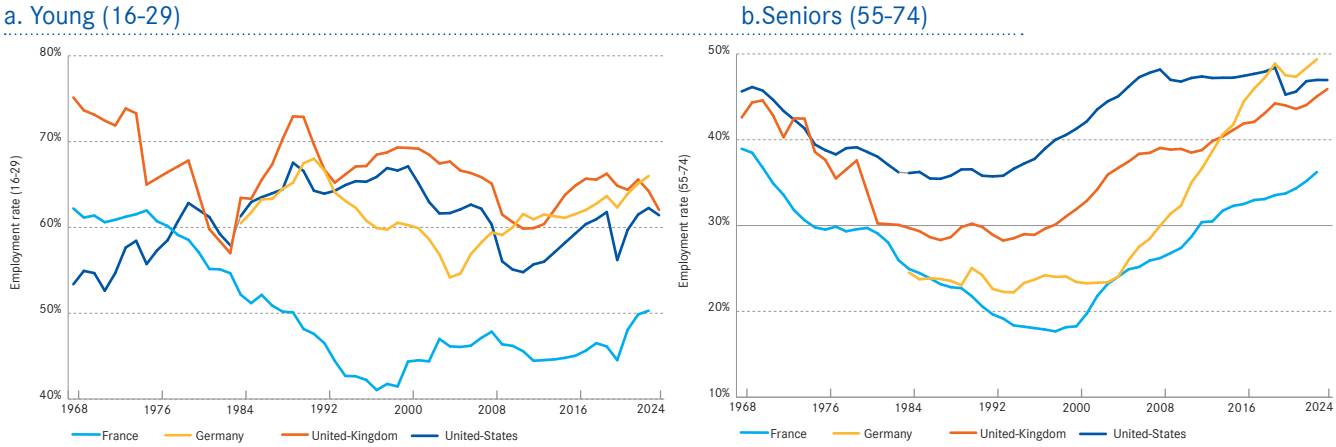
Reading: In 1993, France stood out for its particularly low employment rate among 16-24 year olds (Panel a). For example, only 20% of the 20-year-olds in France were employed, compared to around 60% in other countries.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

Figure 6 tracks the long-term evolution of employment rate of young people and seniors since 1968. It shows that the currently low employment rates in these groups have not always been so –but that we must go back several decades to see French rates approaching those of other countries. Among seniors (ages 55-74, Panel b), France's employment rate fell from 40% in 1968 to 21% in 1993, before gradually rising again to match late-1960s levels by 2023 However, in that time, other countries also saw gains – especially Germany, which eventually surpassed even the US in senior employment rates .

Among young people (Panel a), employment rates declined sharply in the 1980s and have never fully recovered. While employment rates improved slightly since the lows of the 1990s, they remain 10 to 12 percentage points below those in other countries.

Figure 6: Employment Rates of Young and Senior People (1968-2024)



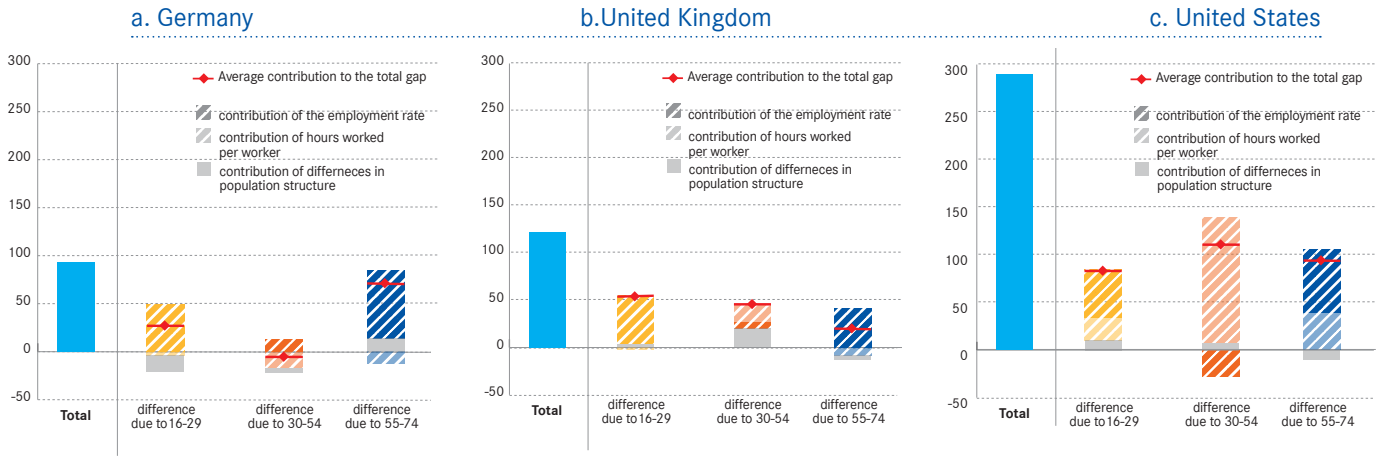
Note: The employment rate is defined as the share of the populations in employment. Panel a shows data for ages 16 to 29; Panel b for ages 55 to 74.

Reading: Since the early 1980s, France's youth employment rate (ages 16-29) has remained consistently lower than in other countries. In 2023, the gap between France and its European neighbours (Germany and the UK) was 12 to 15 percentage points.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Surveys (United States).

Figure 7 offers a breakdown of the total difference in annual hours worked per capita in 2023 between France and each of the other three countries, by age group. The role of the employment rate is central to explaining the gap across all countries. In the case of the United States, the higher number of hours worked per employed person also plays a significant role.

Figure 7: Contribution of Each Age Group to the Gap in Annual Hours Worked per Capita (2023), Relative to France



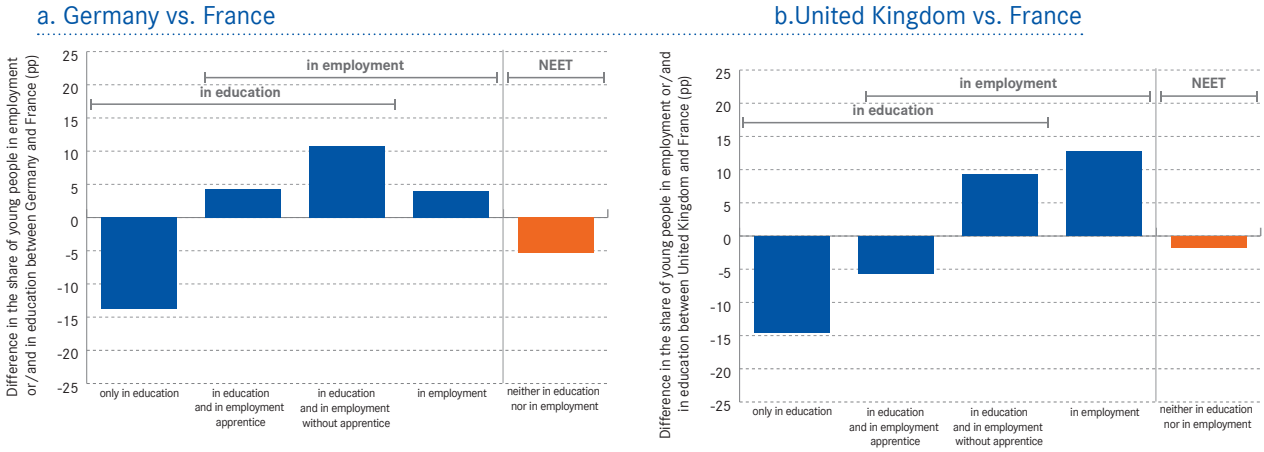
Note: The light blue bar on the left shows the total difference in annual hours worked per capita (ages 16-74) between each country and France. This difference is then broken down by age group (16-29, 30-54, 55-74). The red horizontal line represents the average contribution per age group to the total gap. For each age group, dark hatching reflects the contribution of employment rates and light hatching the contribution of hours worked among the employed. A grey bar indicates the contribution of demographic structure differences.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

Young people

The underemployment of young people in France raises important questions: what are its root causes? Early work by Blundell et al. (2011 and 2013) revealed that the main factor explaining employment gaps in this group is the way students engage with the labour market. Figure 8 compares, for 2023, the distribution of youth across study and employment statuses in France and the UK and Germany. A clear pattern emerges: France has a much higher share of young people only enrolled in education, while both Germany and the UK have more youth who are either employed only or combining work and study. Germany also has a larger share of young people on apprenticeships, and thus counted as employed — a well-known feature of the German system. However, this alone does not fully explain the higher employment rate among young people. Even excluding apprenticeships, the employment rate among students in Germany and the UK is 10 percentage points higher than in French. France also has a higher share of youth not in employment, education or training (NEETs) The NEET rate in France is 5 points higher than in Germany, and comparable to the United Kingdom, which also has a relatively high NEET share.

Figure 8: Difference in Youth Distribution by Study and Employment Status (2023)



Note: Youth are classified into five subgroups based on whether they are in education and/or employment. Each chart shows the difference in the share of each subgroup (in p.p.) (in %) between the comparison country and France.

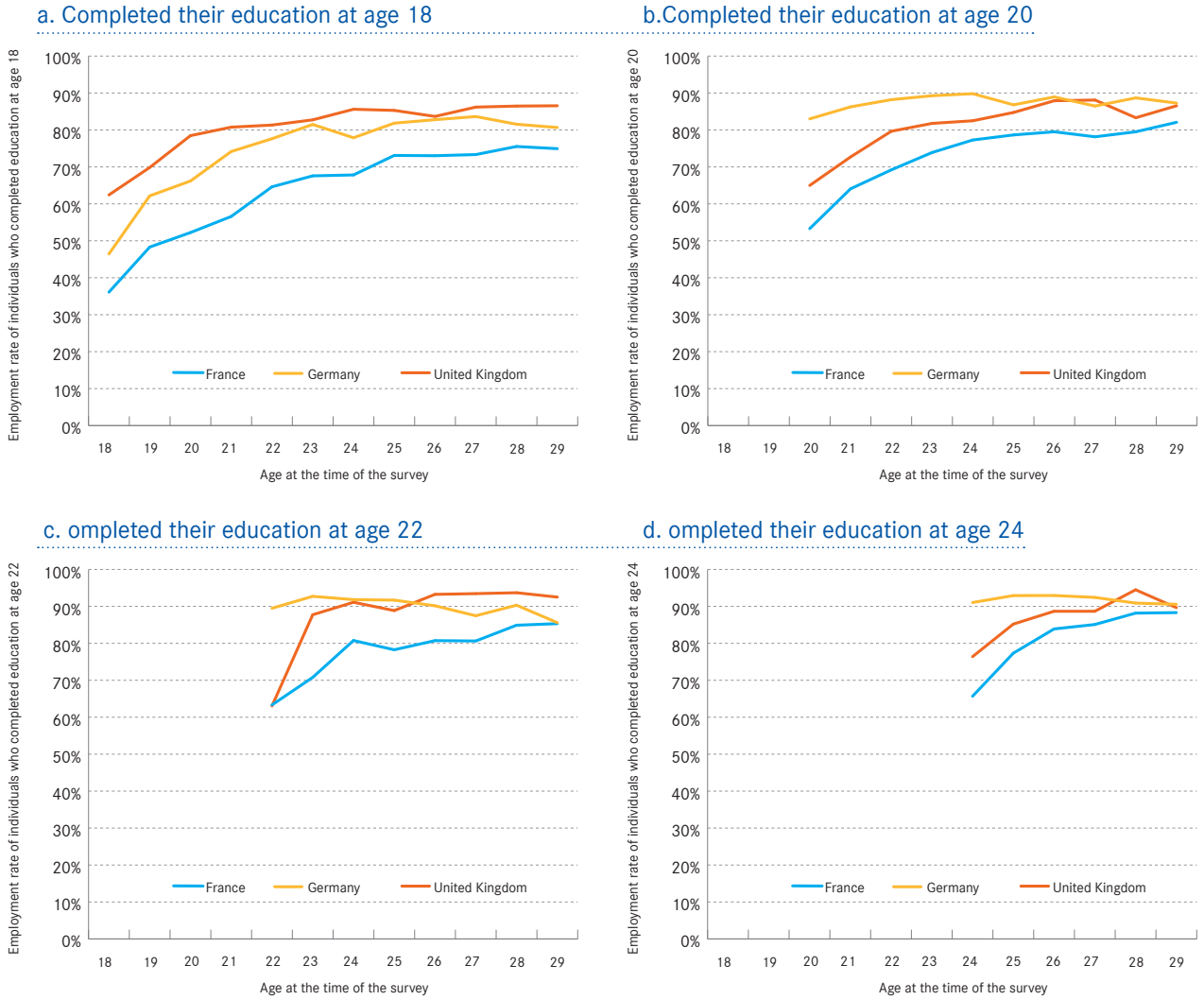
Reading: In Germany, the share of youth who are neither in education nor employment is approximatively 5 percentage points lower than in France.

Sources: Labour Force Surveys (France, United Kingdom, Germany).

To better understand youth underemployment in France, it is helpful to look at how young people transition into the labour market after leaving the education system. Figure 9 shows the employment rate by age after leaving school, depending on whether individuals exited the education system at age 18, 20, 22, or 24.The striking fact is that young people in France take much longer to integrate into the labour market after completing their studies than their counterparts in Germany and the UK. This delay is particularly pronounced among those who leave school early (at 18), but it also affects those completing higher education. Two years after leaving school, French youth who finished at 18 have an employment rate 15 percentage points lower than in Germany and nearly 30 points lower than in the UK. Even among those who leave the education system later with higher qualifications, it takes one to two years longer to reach comparable employment levels. The key issue for youth employment in France is therefore the delay in labour market integration.

Finding 4. The labour market integration of young people – especially the less qualified – is a significant challenge in France. Two years after completing their studies at age 18, French youth have employment rates that are 15 points lower than in Germany and 30 points lower than in the UK.

Figure 9: Youth Labour market Integration by Age of School-Leaving



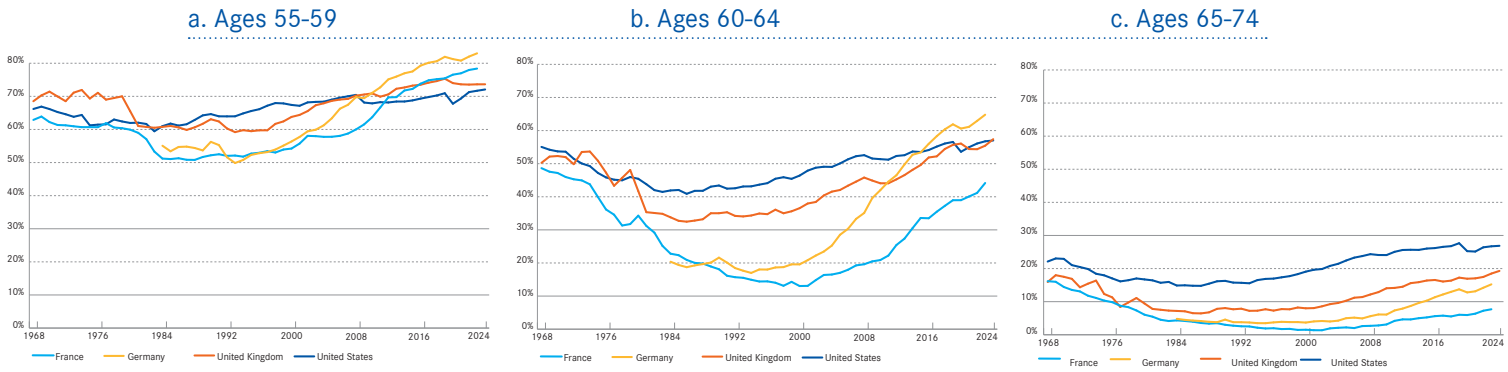
Note: Employment rate by age at the time of the survey and age of school-leaving, based on data from 2018 to 2023.
Interpretation: In France (Panel a), the employment rate for 19-year-olds who completed their studies at 18 is 48%.
Sources: Labour Force Surveys (France, United Kingdom, Germany).

Older Workers

To better understand changes in senior employment, it is useful to look at employment trends by age-group among those over 55. Figure 10 breaks down employment rates for the 55-59, 60-64, and 65-74 age groups. Among younger seniors (55-59, Panel a), employment follows a U-shaped trend: it fell sharply in the early 1980s with the expansion of early retirement schemes, but, but this reversed in the 2000s as these programs were phased out. Today, France's employment rate for 55-59-year-olds exceeds that of the US and the UK. Contrary to common belief – or rather a belief that was true 20 years ago – this age group no longer exhibits particularly low employment rates in France. Given the upward trend, employment among 55-59-year-olds may soon approach that of the prime working-age population.

The situation is very different for those aged 60-64 (Panel b). Employment in this group began declining earlier – starting in the early 1970s – with the widespread adoption of early retirement at 60 and generous pension entitlements. The 1983 pension reform reinforced this trend. The employment rate reached a low point in the early 2000s, with a gat of more than 30 percentage points with the US and 20 points with the UK. Since then, the employment rate for 60-64-year-olds in France has gradually increased, again under the impact of pension reforms that raised the statutory retirement age and altered benefit eligibility.[4] Germany, once in a similar situation to France, has seen an even more dramatic reversal, with employment rates for this group now exceeding 60% and surpassing both the US and the UK. It is important to note that some recent French pension reforms have not yet fully taken effect, particularly those that extend social contribution periods. As these reforms phase in, employment rates among 60- 64-year-olds is expected to continue rising. Projections from the Conseil d'Orientation des Retraites anticipate that the average retirement age will increase from 62 to 64 by 2035.

Figure 10. Employment Rates for Seniors by Age Group (1968-2024)



Note: Employment rate is defined as the share of the population in employment. Panel a shows individuals aged 55-59, Panel shows 60-64, and Panel c shows 65-74.

Reading: Since the 2000s, senior employment rate in France has risen. In 2023, the employment rate of 55-59-year-olds (Panel a) is78%, higher than in the UK (74%) and the US (72%), but still below Germany (83%).

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

Dynamics of Work in France Over the Past Twenty Years

The underemployment of young people and seniors is the main reason behind France's lower total hours worked compared to neighboring countries. However, this observation masks important variations across other demographic subgroups, such as by gender or education level.

Understanding these dynamics allows us to: 1) analyse changes in the labour market integration of specific sub-groups and 2) identify potential "reserves" of working hours that could be mobilized within these sub-groups.

[4] See for example Bozio A., Rabaté S., Tô M. and Tréguier J. (2025): «Financial Incentives and Labor Force Participation of Older Workers: Evidence from France», in Börsch-Supan and Coile (eds.) Social Security Programs and Retirement around the World: The Effects of Reforms on Retirement Behavior, *NBER International Social Security*, Chicago University Press.

Dynamic Decompositions: Methodology

We examine trends over the past twenty years (2003-2023) and compare trends across countries. The population is disaggregated by age, gender and education level. To understand changes in the total hours worked, we isolate the structural effects from behavioral changes within each subgroup. We focus on two major structural trends that affect labour markets in all advanced economies: population ageing and rising educational attainment.

Box 1 details the methodology used to carry out our decompositions. Figures 11 and 12 show the main results of these breakdowns. The first graph focuses on changes by age and gender groups, while the second breaks down changes by age and education groups.

Box 1. Decomposition methodology

The change in the number of annual working hours H between t - i and t can be broken down into:

$$H_t - H_{t-i} = S_t + \Delta_t$$

St: a structural effect capturing demographic changes (e.g. growing share of older individuals);

Δ_t: a behavioural effect, capturing changes in labour supply behavior (e.g., rising hours worked among women since 2003).

Let j be a group (e.g., women aged 30-54), and qjt its share of the population in t. Then:

$$H_t = \sum_{j=1}^{j} q_{jt} H_{jt}$$

The behavioral effect is computed by holding the population structure fixed at year t - i :

$$\Delta_{jt} = q_{jt-i} (H_{jt} - H_{jt-i})$$

The total change is the sum of the behavioral and structural components:

$$\Delta_t = \sum_{j=1}^{j} \Delta_{jt}$$

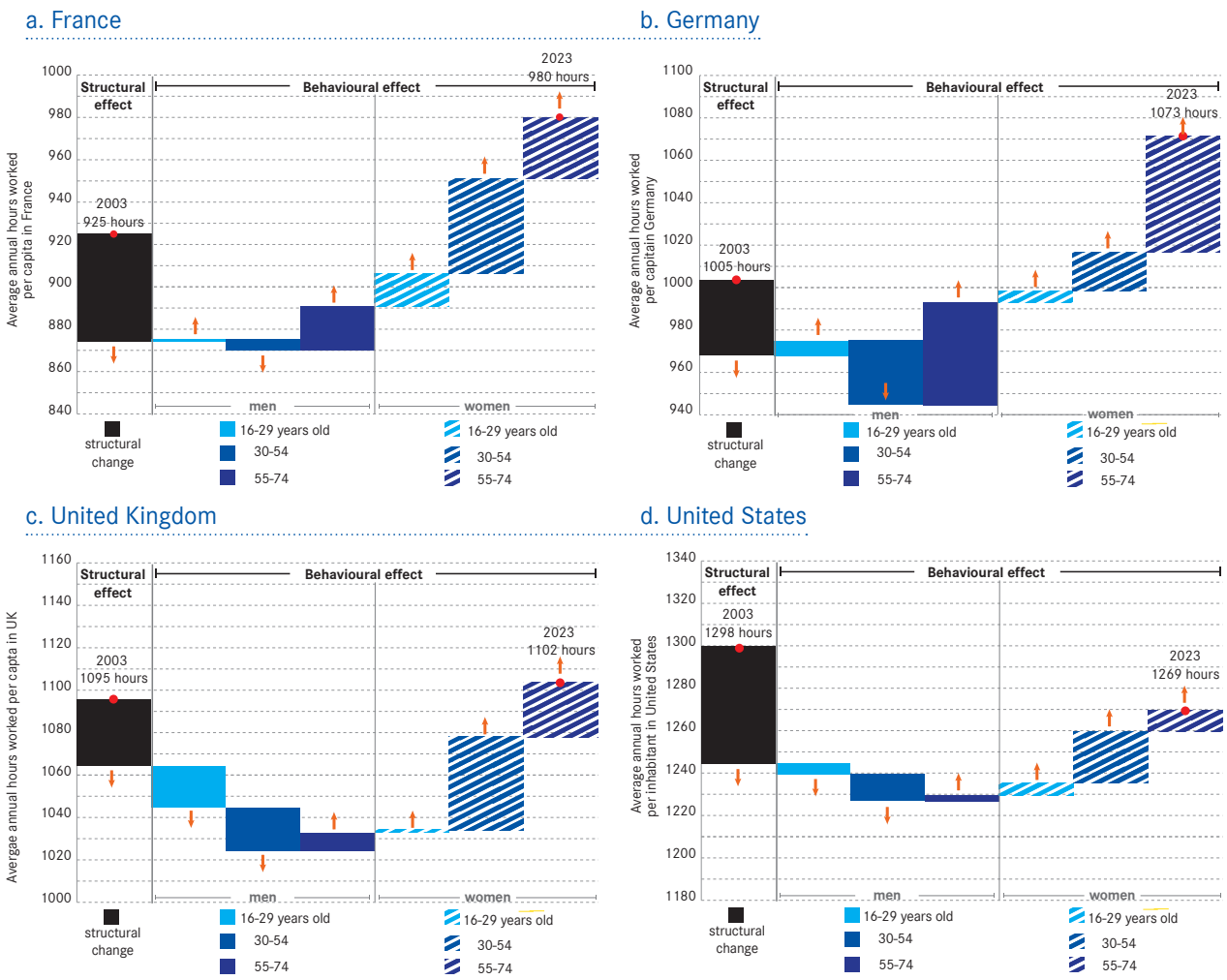
Structural Trends: the Role of Education and Aging

Figures 11 and 12 begin with total hours worked per capita in 2003 and decompose the contribution of each group and structural factor to changes observed by 2023 using waterfall charts. Downward bars represent negative contributions; upward bars indicate positive ones. We examine total hours worked per capita without distinguishing whether changes come from employment rates or average hours worked per worker.

Overall, in France, the average number of hours worked increased from 925 hours to 980 hours per capita between 2003 and 2023. Similar increases occurred in Germany (from 1,005 to 1,070) while the UK remained stable (around 1,100 hours), and the US saw a decline, though still at high levels (around 1,270 hours).

Figure 11 shows that population ageing, assuming unchanged behaviours, has had a strong negative structural impact on the number of hours worked per capita in all countries. This is represented by the first black bar on the graph. This effect is due to the fact that the share of people aged 55-74 in the total population has increased significantly in all countries. Since people in this age group work fewer total hours than those aged 16-55, this trend structurally reduces the total number of hours worked across the population. In France, ageing along, assuming constant behaviour, is responsible for a structural decline of around 5% in the number of hours worked over the past 20 years. This structural effect is stronger in France than in Germany or the UK because in France, the number of hours worked by those over-55 is significantly lower than in the rest of the population.

Figure 11. Contribution of Structural Change and Behavioral Effects to the Evolution of Total Hours Worked, by Age and Gender



Note: The population is divided into 6 sub-populations based on age and gender. Age is shown in shades of blue, and women are represented with hatched blue bars. The graphs begin with the average number of hours worked per capita in 2003 (first red dot, on the left). From this average, we subtract the structural demographic change (black bar), which caused a reduction in hours worked in all countries between 2003 and 2023. Next, we add or subtract the contributions of different population subgroups, depending on whether they lead to a decrease (represented by a downward arrow) or an increase (upward arrow) in average hours worked between 2003 and 2023 – starting with men and ending with women. This continues until reaching the average number of hours worked in 2023 (second red dot, on the right).

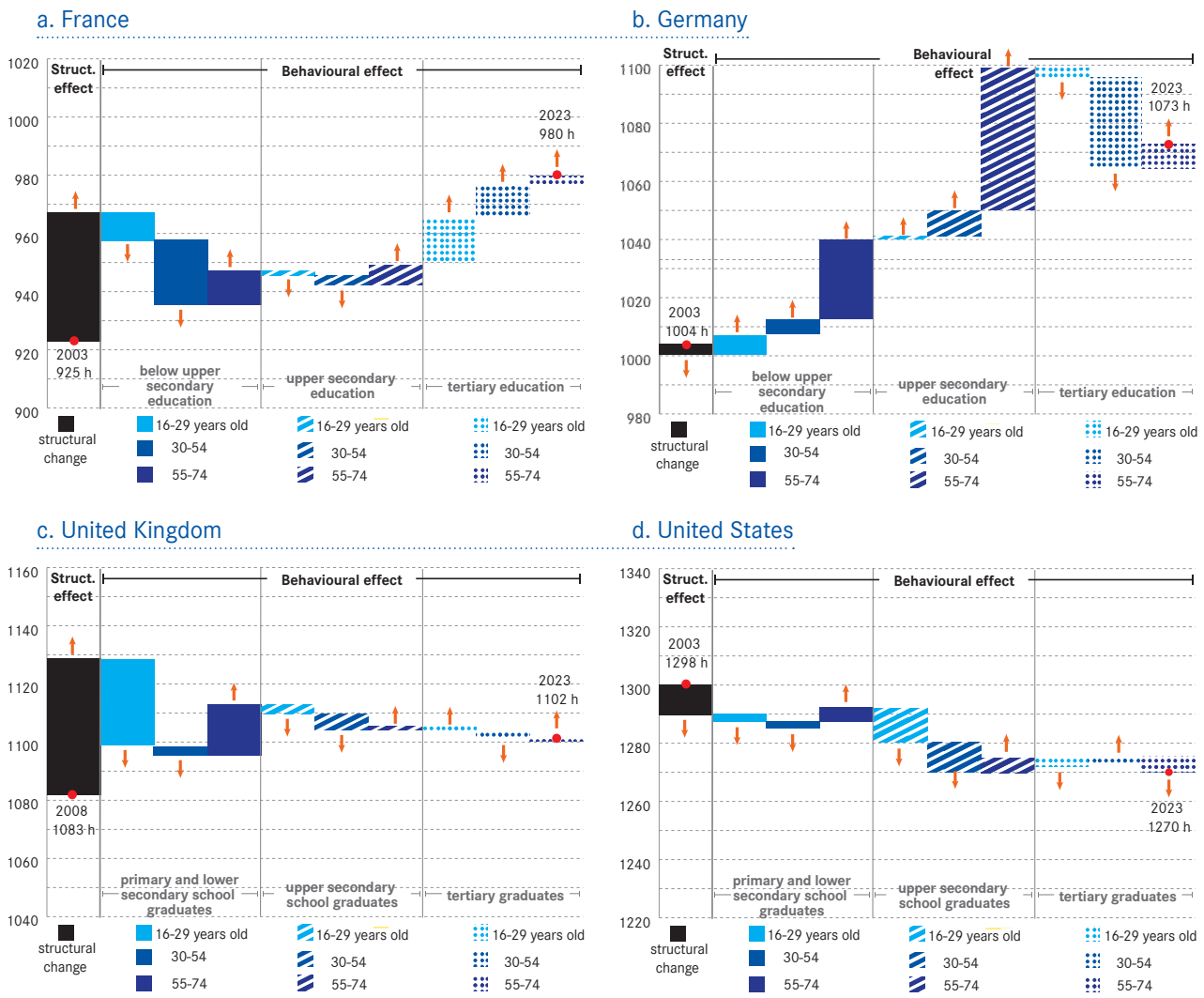
Reading: In Germany, women aged 16-29 contributed to an increase of 5.6 hours per capita between 2003 and 2023.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

However, in contrast to this negative structural effect of ageing, the increase in education levels, assuming constant behaviour, had a very strong positive impact on the number of hours worked per capita (Figure 12). This effect is particularly pronounced in France, where the average level of education of the population aged 16-74 increased rapidly and – crucially – where individuals with low qualifications work significantly fewer hours than the rest of the population. As shown by the first black bar in Figure 12, the structural effect of rising education levels is so strong in France that it completely cancels out the negative effect of ageing, and even reverses it. A similar phenomenon is observed in Germany, but not in the United States or the United Kingdom, where the structural effects of ageing and education are approximately equal and tend to offset each other.

Changes in population structure by age and education level have thus had divergent but overall positive effects on the number of hours worked. These structural effects are linked to the changing weights of various socio-demographic subgroups in the total population, each with different average hours worked. Alongside these structural factors, changes in the labour supply behavior within each subgroup have also had a significant impact on the overall volume of labour used in France.

Figure 12. Contribution of Structural Change and Behavioural Effects to the Evolution of Hours Worked, by Age and Education Level



Note: The population is divided into 9 subgroups by education level and age. Age is shown in shades of blue, and each level of education is represented by a different fill pattern. The graphs begin with the average number of hours worked per capita in 2003 (or 2008 for the UK, first red dot on the left). From this baseline, we subtract or add the structural demographic change (black bar). Next, we subtract or add the contribution of each subgroup, depending on whether they lead to a reduction (downward arrow) or an increase (upward arrow) in average hours worked between 2003 and 2023. We start with primary and lower-secondary graduates, then continue with upper-secondary graduates, and end with higher education graduates, until we reach the average hours worked in 2023 (second red dot on the right).

Reading: In France, 30-54 year-olds with higher education were responsible for an increase of 10.7 hours per capita per year between 2003 and 2023, whereas primary-educated individuals of the same age reduced the average by 22.3 hours.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

Three key trends to highlight in France:

- The significant increase in hours worked by seniors
- The significant increase in hours worked by women
- The significant decrease in hours worked by low-skilled workers

The strong growth in hours worked by senior is undeniably the main driver of the increase in total labour input in France over the past twenty years. It has contributed to increasing the average number of hours worked by nearly 50 hours per capita, roughly 5%. This growth is manifest across genders (Figure 11) and all education levels (Figure 12), and is particularly pronounced among less-educated seniors. The increase in hours worked by seniors is also visible in Germany, the United Kingdom, and the United States. Notably, in Germany, the rise has been particularly strong, fueled by the spectacular increase in senior employment rates, contributing to a gain of over 100 hours per capita – nearly 10% of total labour supply. In France, the negative structural effect of ageing and the positive behavioral effect of increased

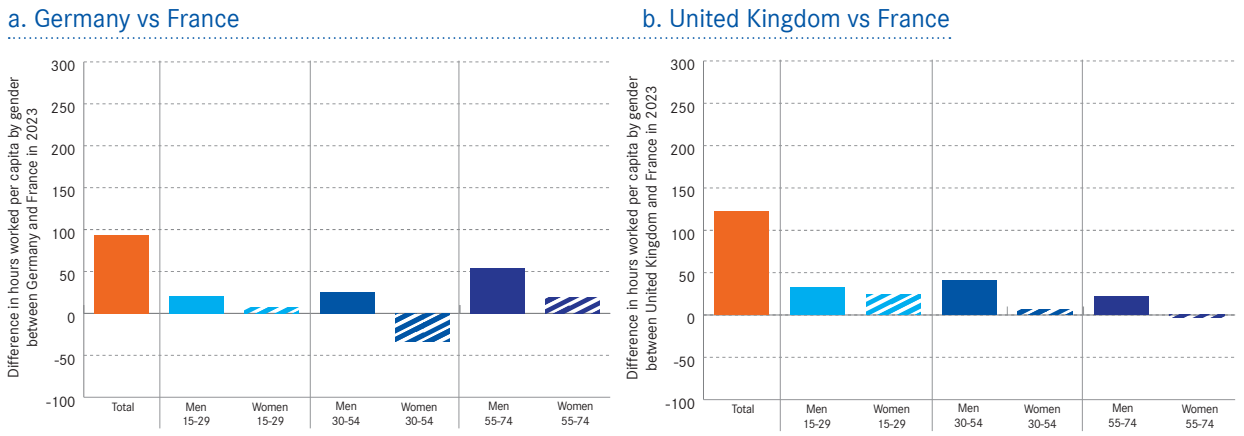
senior work have nearly canceled each other over the past twenty years. As a result, the net contribution of seniors to the evolution of average hours worked is only slightly negative: there are many more seniors than twenty years ago, but they work more than they did back then.

The share of the 55-74 age group will continue to increase, but at a much slower pace over the next ten years. Therefore, if the trend in rising hours worked among seniors continues, their overall contribution should become positive in the years ahead. By comparison, the increase in senior labour supply in the United States has been more modest, and has not offset the negative structural effect of ageing. In Germany, however, the increase in senior employment has been so strong that its positive contribution was more than double the negative structural contribution from ageing.

Women: a Contribution That is Losing Momentum

The group that has contributed the most to the rise in hours worked per capita is, without doubt, women. Their total contribution is equivalent to more than a 10% in average hours per capita, which is considerable. And although similar trends can be observed in other countries, the increase in female labour supply in France is especially notable and more pronounced than elsewhere.

Figure 13. Contribution of Each Age and Gender Group to the Gap in Hours Worked Compared to France (2023)



Note: The chart above decomposes the difference in hours worked per capita among those aged 16-74 between Germany (panel a), or the UK (panel b), and France, based on the relative contributions of different population subgroups. Subgroups are defined by gender and age category (16-29, 30-54, 55-74).

Reading: In 2023, the gap in average hours worked per capita between the UK and France is mainly due to the contribution of seniors (navy), and more particularly men. In the case of Germany, the gap is mostly driven by men (solid bars), especially in the older age groups.

Sources: Labour Force Surveys (France, United Kingdom, Germany).

Looking more closely at differences in hours worked in 2023 (Figure 13), French women are much closer to their British counterparts than French men are to British men. While women aged 16-29 and 55+ still work fewer hours than their German counterparts (mainly due to their lower employment rates), French women aged 30-54 work more hours the German women in the same age group. This difference is mainly due to the intensive margin: French women work more hours once employed, especially in the 30-54 age group.

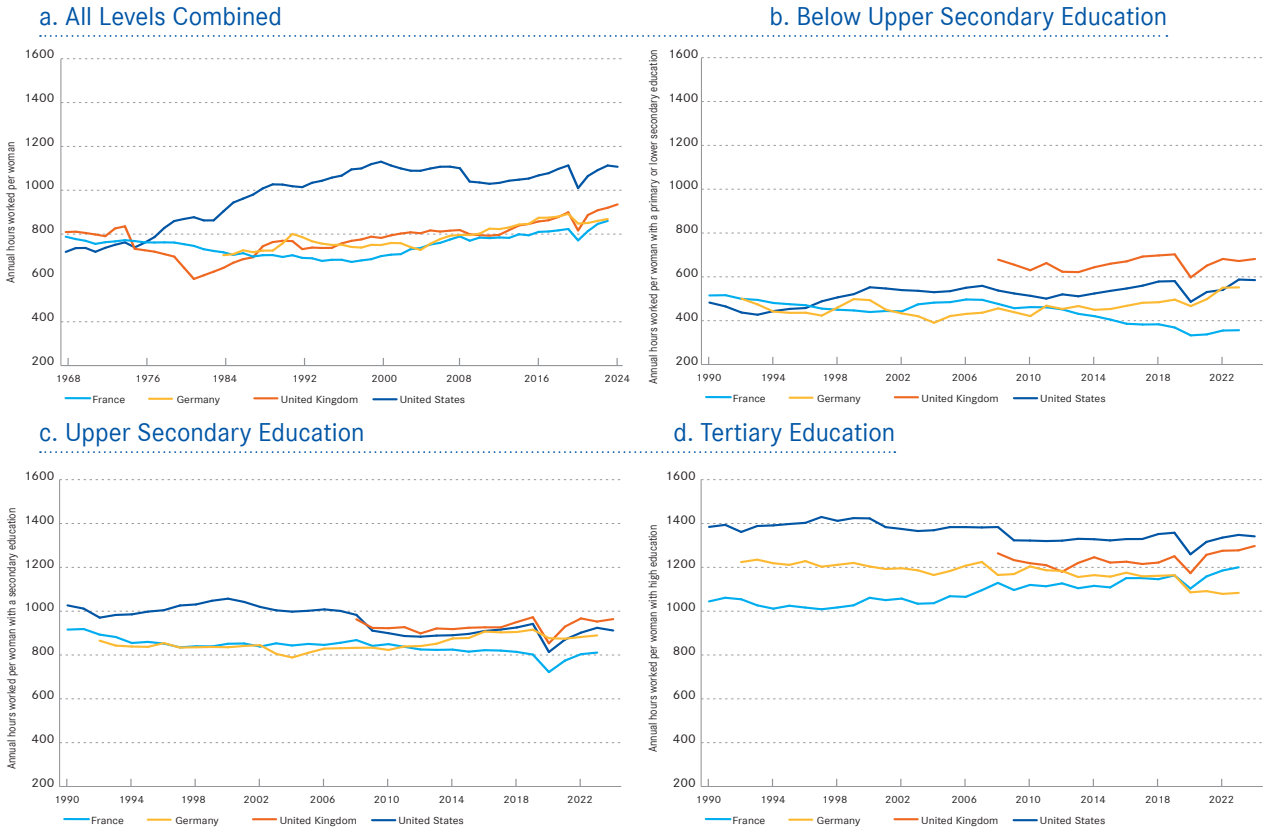
Over the past twenty years, the rise in hours worked by women is largely explained by the rapid increase in their level of education compared to men. Figure 14 shows that labour supply behaviour by education level. However, the difference in hours worked by education level is very large: women with less than secondary education fewer than 400 hours per year, on average, while women with higher education work over 1,200 hours – three times more. In other words, the rise in women's labour supply has been driven mainly by a structural shift, as the share of highly educated women has grown, and these women tend to work significantly more hours. Regardless of education level, labour supply behavior among women has remained relatively stable.

One final point is worth highlighting. Although women have been the main driver of the increase in total hours worked in recent years, this engine is running out of steam. After rising sharply between 1990 and 2010, the number of hours worked by women has plateaued over past fifteen years. It remains over 20% lower than that of men today. As noted in

a report by the French Council of Economic Analysis (CAE)[5], this gap is explained by lower female participation in the labour market, more frequent career interruptions, and greater recourse to part-time work. Nearly 80% of the gender gap is in hours worked stems from the drastic changes in mothers' labour supply behaviour among mothers following the birth of children.

Finding 5. Over the past twenty years, the rise in women's labour supply has increased the average hours worked per capita by more than 10%, driven primarily by gains in education attainment. But this engine of growth is losing momentum and is now stagnating.

Figure 14. Number of Hours Worked by Women, by Level of Education



Note: Average annual hours worked, estimated for all women aged 16-74, at a given level of education.

Reading: Since the late 1990s, the average number of annual hours worked by all women – across all education levels –has increased in France, Germany and the UK, but remains well below that of American women (Panel a). In 2023, a French woman aged 16-74 with primary or lower secondary education works 356 hours, compared to 552 in Germany, 588 in the United States and 672 in the UK (Panel b).

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

The Decline of Work among the Low-Skilled:

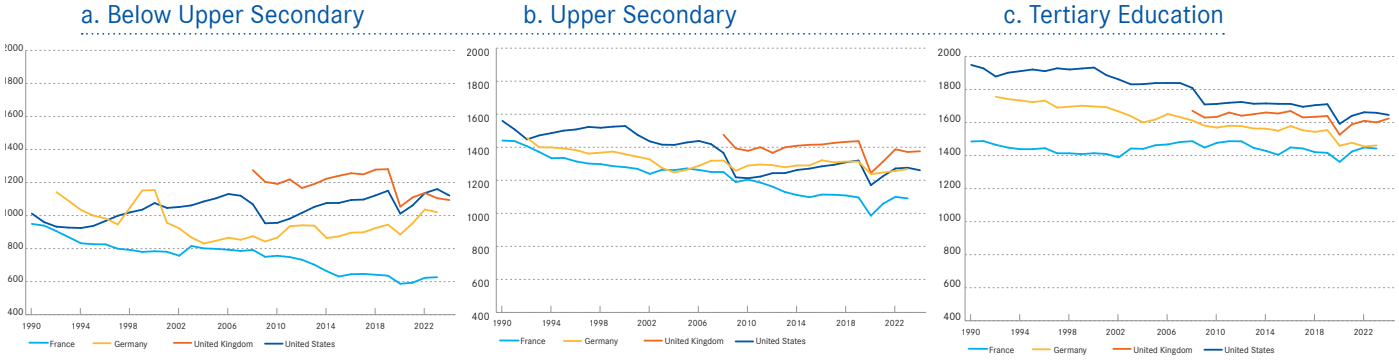
One final trend deserves attention in terms of labour market developments. Figure 11 highlights the negative contribution of men under 55 (especially those aged 30-54) across all countries. In France, this trend is less pronounced than elsewhere, but it masks significant heterogeneity by skill levels. The growth in total hours worked in France has been driven primarily by the most educated. In contrast, there is a markedly negative contribution from low-skilled men under-55, both in France and in the UK (Figure 12). This trend is particularly pronounced among men

Figure 15 shows that the total number of hours worked by low-skilled individuals has plummeted. Among low-skilled men, the number of hours worked has declined by 40% over the past 30 years! Today, men aged 16 to 74 with only primary o

[5] Auriol E., Landais C., Roussille N. (2024): «Égalité hommes-femmes: une question d'équité, un impératif économique», *Les Notes du CAE* n° 83, November.

lower secondary education now work on average fewer than 600 hours per year, compared to more than 1,400 hours for men with higher education – more than twice as many. This trend is especially striking because it is very specific to France.

Figure 15. Number of Hours Worked by Men, by Level of Education



Note: Average annual hours worked, estimated for all men aged 16-74, at a given level of education.

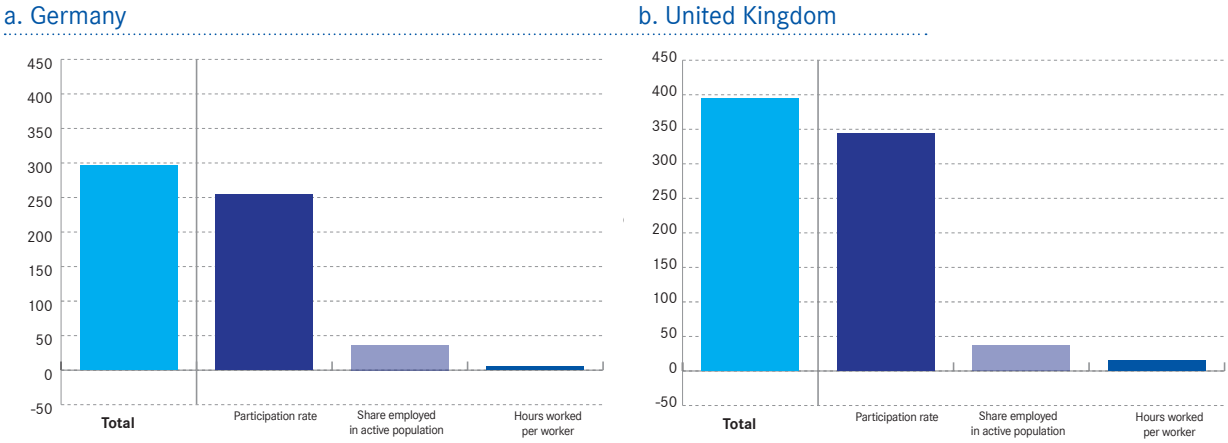
Reading: In France, regardless of education level, men work fewer hours on average than in other countries. In 2023, a French man aged 16 to 74 with primary primary or lower secondary education worked on average 627 hours, compared to 1,020 hours in Germany, 1,105 in the UK and 1,160 in the US.

Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

It is important to clarify that the sharp decline in hours worked among the low-skilled is not an artefact of age composition effects. While the average age of the low-skilled population has increased over time – as the average level of education in the population has improved – the decline in hours worked among the low-skilled persists even controlling for age effects. Figure 16 breaks down the differences in hours worked among individuals with only primary and lower secondary education. It shows that the gap is almost entirely due to differences in activity rates. Low-skilled individuals are therefore significantly more detached from the labour market in France, and this is true for both men and women.

Finding 6. The total number of hours worked by low-skilled individuals has declined by 40% over the past 30 years. This trend is specific to France and is not driven by age composition effects. It stems from a sharp collapse in labour force participation among the low-skilled – both men and women – indicating their increasing detachment from the labour market.

Figure 16. Decomposition of the Gap in Hours Worked by Among Individuals with Primary or Lower Secondary Education Compared to France (2023)



Note: The first column in each panel shows the difference in average annual hours worked by individuals aged 16 to 74 with primary or lower secondary education between Germany (panel a) or the UK (panel b) and France in 2023. This gap is then broken down into its components: columns 2 and 3 represent the contribution of the activity rate and the share of employed among active, respectively (extensive margin). Column 4 represents the contribution of the number of hours worked among the employed (intensive margin).

Reading: In 2023, low-skilled individuals worked on average 400 hours more in the UK and 300 hours more in Germany than in France. In both countries, the gap is explained primarily by large differences in activity rate (Column 2). Differences in the proportion of people in employment (column 3) and the number of hours worked by people in employment (column 4) are minimal.

Sources: Labour Force Surveys (France, United Kingdom, Germany).

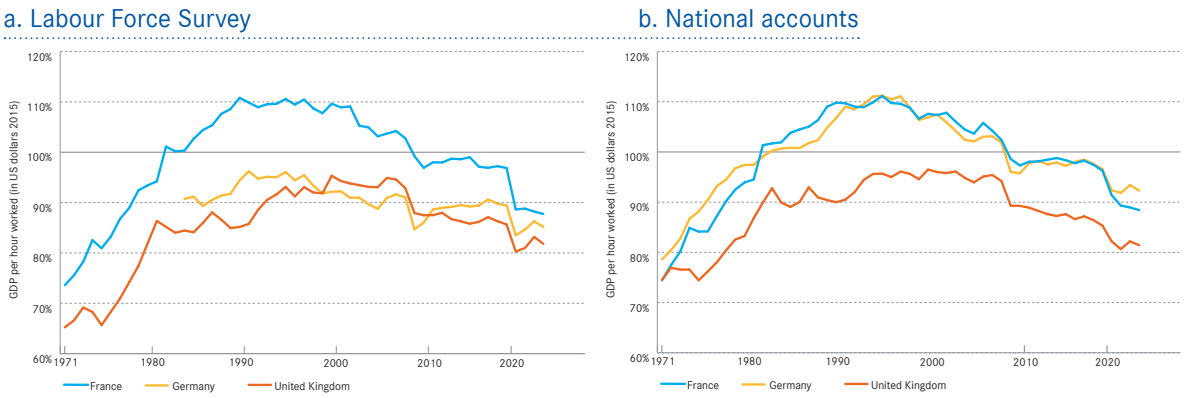
Box 2. Impact of Changes in Hours Worked per Capita on GDP and Hourly Productivity

The goal of full employment, which consists in reducing the gap in hours worked between France and its neighbours, is often presented as a contribution to economic growth. This view, however, is partly problematic. Of course, eliminating frictions or inefficiencies that prevent the efficient allocation of talent is beneficial for potential growth. But, ultimately, work has a cost. Simply adding more labour into the economy to raise GDP is not particularly useful from a welfare perspective. What really matters is GDP per hour worked — that is hourly productivity. With this in mind, several key points are worth recalling. Firstly, hourly productivity remains high in France, regardless of whether one uses hours worked from national accounts or from labour force surveys. French productivity is about 10% lower than that of the United States, but similar to German's and higher than the UK's.

However, there has been a clear slowdown in relative productivity in France, the UK, and Germany since the 2000s. This is partly explained by the narrowing of the gap in hours worked between the United States and Europe. This gap peaked in the early 2000s, when Americans worked nearly 450 more hours than the French. It has since shrunk considerably — now down to 300 hours. Because the elasticity of GDP to hours worked is clearly below 1, an increase in hours worked tends to reduce hourly productivity. Based on our data, we estimate this elasticity at around 0.5, which is particularly lowa. Such a low elasticity suggests that marginal hours are significantly less productive than average. This may be due to the fact that groups on the margins of employment – such as seniors and the less qualified —have lower productivity than the general population. This is an important point to bear in mind: the goal of increasing hours worked will inevitably tend to lower France's relative hourly productivity.

Finally, the decline in European productivity relative to the United States since 2000 cannot be explained solely or entirely by the mechanical effect of increased hours worked. This productivity divergence has other causes, as analysed in a Note by the French Council of Economic Analysis (CAE) band in a Joint Statement by the Franco-German Council of Economic Experts c. They point to the need for targeted public policy responses, particularly focusing on human capital development.

GDP per Hour Worked Relative to the United States



Note: Panels a and b present the evolution of the ratio between GDP per hour worked in European countries and that of the United States. GDP is measured in constant dollars at purchasing power parity. Panel a uses hours worked from the labour force surveys. Panel b uses hours from national accounts.

Interpretation: In 2023, using the labour force surveys data (Panel a), the hourly productivity of France, Germany and the United Kingdom is below that of the United States, at 88%, 85% and 82% respectively. Using national accounts data (Panel b), relative productivity in France and the UK remains at 88% and 82%, respectively, but that of Germany rose to 92%.

Sources: Hours worked in Panel a: Labour Force Surveys (France, Germany, and United Kingdom), Current Population Survey (United States). Hours worked in Panel b: National accounts. GDP: OECD.

[a] **Note:** this estimate is primarily correlational and should be interpreted with caution.

[b] Guadalupe M. Jaravel X., Philippon T., Sraer D. (2022): "Cap sur le capital humain pour renouer avec la croissance de la productivité", Les Notes du CAE n° 75, septembre.

[c] Franco-German Council of Economic Experts (2024): "Strengthening the European Union's capital markets", Joint Statement no. 2, July.

Implications for Public Policy

Our disaggregated approach to the evolution of hours worked enables us to identify potential sources of increased labour supply. The six findings outlined above help to clarify priorities in terms of public policy.

Employment vs. Hours Worked

The issue in France lies in the employment rate (extensive margin), not in the number of hours worked per employed person (intensive margin). The current focus of the policy on intensive-margin measures – such as reducing paid leave, deregulating working hours or exempting overtime from taxation – therefore seems irrelevant. Similarly, even within the extensive margin, differences in employment rates are explained mostly by differences in labour market participation and much less by differences in unemployment rates. Priority should therefore be given to policies that encourage participation rather than policies that focus exclusively on further reducing unemployment.

Employment Rates: Youth and Seniors

The differences in employment rates between France and its neighbours are entirely attributable to two groups: young people and seniors. Notably, the contribution of young people to the overall gap in hours worked per capita is now as large as that of seniors and is likely to surpass it in the coming years. As such, youth employment rates must become a top priority for public policy. This implies rethinking the organisation of educational pathways, making NEETs (young people Not in Education, Employment, or Training) an absolute priority and reviewing all policies for integrating young people into the labour market.

As for seniors, France has caught up with other countries in terms of employment rates among 55-59-year-olds, who now have a higher employment rate than their peers in the United States or the United Kingdom. For the 60-64 age group, however, a substantial gap remains, although it is gradually closing due to the delayed effects of past pensions reforms (increasing the early retirement age, the "Touraine" reform, etc.). But employment among this group remains well below that of France's neighbours. Employment among those aged 65 and over, which has increased in most other countries – driven by the rise in skilled senior employment – remains limited in France. However, increasing employment in this age group is not equivalent to increasing employment among 55-64years-olds, as health deteriorates much more rapidly after 65. The cost of keeping older individuals in employment rises significantly and varies widely across individuals.. This calls for targeted reforms that effectively focus on those most likely to continue working and least vulnerable.[6]

Women

While the gap in hours worked between men and women has narrowed, it remains significant, and progress has stalled over the past fifteen years. As a recent Note from CAE[7] emphasizes, the potential for employment growth is considerable, and the economic and social gains from a better allocation of talent within the economy are substantial. The core issue remains the strong negative impact of the arrival of children on women's career trajectories. Only a comprehensive mix of public policies, as outlined in the CAE Note, may address this. Given the importance of this untapped labour reserve, this issue should be a top public policy priority.

The Low-Skilled

Another troubling observation is the collapse of employment among low-skilled individuals, which affects not only total employment, but also social integration and cohesion. We believe this issue should be placed high on the list of public policy priorities. First and foremost, it is essential to encourage more research to develop a deeper understanding of the causes of this collapse – an area where insight is still lacking. Nonetheless, our analyses do highlight a few points that warrant policy attention. First, the timing of this collapse suggests that the fundamental problem is not due to labour costs or the level of the minimum wage. The decline has essentially occurred over the past 15 years, a period in which differences in the cost of low-skilled labour have narrowed considerably relative to Germany or the UK (due to continued reductions in employer contributions in France and increases in relative minimum wages in Germany and the UK). The issue likely does not stem from the generosity of unemployment benefit either. As we have shown, the differences are

[6] Giupponi G. Seibold A. (2024): «Rethinking pension reform», *CEPR press.*

[7] Auriol E. et al (2024): *op. cit.*

almost entirely explained by low labour force participation among the low-skilled – not by unemployment rate differentials. The root causes are more likely to lie in: the high proportion of NEETs, their poor labour market integration and the discrimination that keeps them away from the labour market. It is also necessary to look more closely at sectoral policies and the underlying drivers of demand for low-skilled labour.

Conclusion: Methodological Foundations for a Necessary Review of Employment Policies

The descriptive work we have carried out – disaggregating total labour supply to understand its structure and dynamics – seems to us essential to the development of a full employment strategy. Such an approach makes it possible to identify the labour reserves – that is, groups with the potential to increase their labour supply or who face particularly strong barriers to employment.

It is now imperative to review the policies that may affect labour supply among these groups. But this review must be carried out methodically, to effectively inform public decision-making. France spends significantly more than its neighbours on employment, training; and labour market policies, yet achieves only modest results. It is therefore crucial to establish a clear evaluation framework to determine which public policy lever to prioritize. From this perspective, two elements are essential, and they are often missing from the way labour market policies are currently implemented in France.

First, we need to know precisely the total fiscal impact of each policy. The total fiscal impact of a policy does not depend solely on its mechanical cost. It also hinges on all the behavioural responses it generates – responses that affect total labour supply and, in turn, produce greater or lesser fiscal externalities. Measuring the elasticity of labour supply (and labour demand) to each policy is thus essential. Doing so requires the implementation of scientifically rigorous evaluations capable of identifying the causal effects of these policies on individual behaviours and labour market outcomes.

Second, we need to be able to measure the social cost or benefit of these policies for targeted individuals. Policy choice should not be guided solely by the aim of maximising fiscal externalities. The social value of a policy depends on the value of the policy for the recipients. This value may be positive and high if the intended recipients have a strong desire to work but face significant barriers to labour market entry. Conversely, the value may be negative if it is very costly for individuals to increase their labour supply, or if the policy reduces transfers that are highly valued by their recipients.

In the coming months, the Conseil d'analyse économique will produce additional analyses to this Focus. The goal of this future work will be to quantify the fiscal externalities and social benefits of various employment, training and labour market support policies.

Bibliographie

Auriol E., Landais C., Roussille N. (2024) : « Égalité hommes-femmes : une question d'équité, un impératif économique », *Les Notes du CAE* n° 83, novembre.

Blundell R., Bozio A., Laroque G. (2011) : « Labor Supply and the Extensive Margin », *American Economic Review*, 101(3), p. 482-86.

Blundell R., Bozio A., Laroque G. (2013) : « Extensive and Intensive Margins of Labour Supply : Work and Working Hours in the US, the UK and France », *Fiscal Studies*, 34(1), p. 1-29.

Bozio A., Rabaté S., Tô M. et Tréguier J. (2025) : « Financial Incentives and Labor Force Participation of Older Workers : Evidence from France », in Börsch-Supan et Coile (eds.) *Social Security Programs and Retirement around the World : The Effects of Reforms on Retirement Behavior*, NBER International Social Security, Chicago University Press.

Conseil franco-allemand des experts économiques (2024) : « Renforcer les marchés de capitaux de l'Union européenne », Joint Statement n° 2, juin.

Eurostat (2018) : « Quality issues regarding the measurement of working time with the Labour Force Survey (LFS) », *Statistical Report*.

Fleck S. (2009) : « International Comparisons of Hours Worked : An Assessment of the Statistics », *Monthly Labor Review*, 132(5), p. 3-31.

Giupponi G. et Seibold A. (2024) : « Rethinking pension reform », *CEPR press*, novembre.

Guadalupe M. Jaravel X., Philippon T., Sraer D. (2022) : « Cap sur le capital humain pour renouer avec la croissance de la productivité », *Les Notes du CAE* n° 75, septembre.

Insee (2016) : « La fragile comparabilité des durées de travail en France et en Allemagne », *Analyse* n° 26.

Körner T., Wolff L. (2016) : « Do the Germans Really Work Six Weeks More than the French ? Measuring Working Time with the Labour Force Survey in France and Germany », *Journal of Official Statistics*, Vol 32(2), p. 405-431.

OCDE (2018) : « International productivity gaps : are labor input measures comparable ? », *Statistics Working Paper*.

Rexecode (2024) : « La durée effective du travail en France et en Europe en 2023, et la quantité de travail dans l'économie », décembre.

Appendices

A. Measuring the number of hours worked in employment surveys

Seasonal adjustments to annual surveys

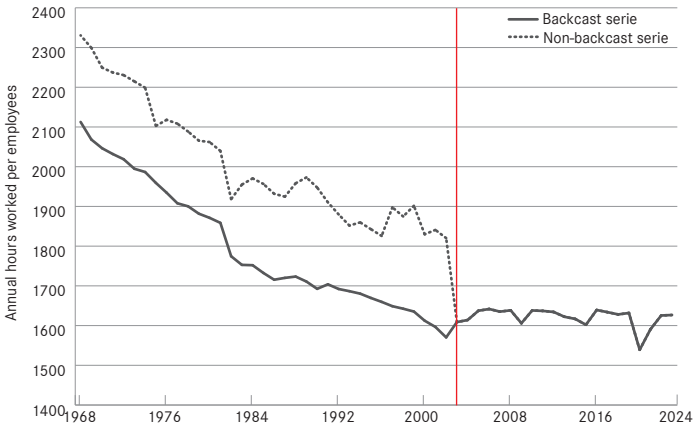
For France, we use a correction estimated in Blundell et al. 2013. The authors had a preliminary (pilot) sample of the continuous employment survey for 2002 as well as data from the annual survey for the same year. Thus, for 2002, they were able to estimate the average number of hours worked by population subgroups in both the continuous and annual surveys. The groups are defined by status (employed or self-employed), age, sex, marital status and number of children. The authors then define an adjustment factor at group level defined by the ratio of the number of hours as recovered in the continuous survey and in the annual survey. This factor is applied to the annual survey data. In addition to this treatment, the data are also corrected by an annual correction factor.

For Germany, we do not have an average number of hours worked by population sub-groups in both the continuous survey and the annual survey. For each sub-group, we therefore calculate a correction factor corresponding to the average number of hours worked in 2005 (continuous survey) divided by the average number of hours worked in 2004 (annual survey). We then apply this correction factor to the hours worked in the sub-group for all the years prior to 2005 (changeover to the continuous survey). The subgroups are defined by age, gender and status (employee or self-employed). It is not possible to group the population more finely, by including household composition for example, as these variables are not available for all data prior to 2004.

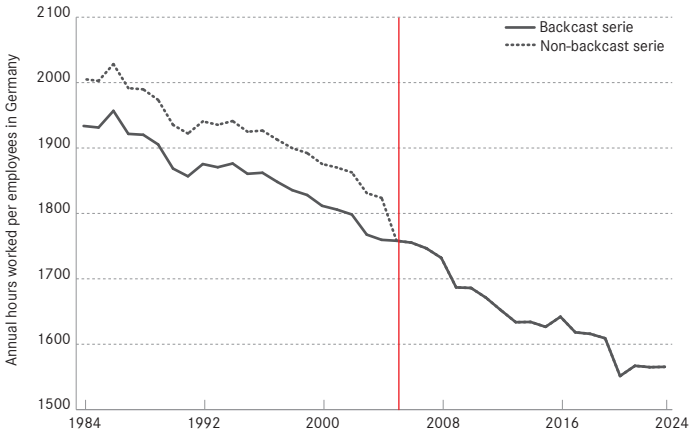
In the case of the United States and the United Kingdom, the switch to a continuous survey has caused few problems of seasonality, so we are not correcting their respective series.

Graph A. Raw series / backcast series

1. France



2. Germany



Note: Raw series (dotted lines) correspond to raw series. The backcast series (solid lines) correspond to the series transformed to take account of seasonal variations in the annual surveys prior to 2003 for France and 2005 for Germany, using the method described above. The backcas series are those used in all the analyses.

Sources: Labour Force Surveys (France, Germany)..

The specific case of German data

An in-depth examination conducted by Insee and Destatis comparing French and German data in 2014, focusing on full-time employees, highlighted a significant under-reporting of absences in Germany due to ordinary leave and public holidays: the leave reported in Germany is in fact much lower than that provided for by national legislation and collective agreements, which is hardly plausible even if there may be a phenomenon of non-use at the margin.

This initial work led to the formation of a Europe-wide working group to seek solutions for greater harmonisation in the collection of data on working time. This has led in particular to an overhaul of the survey questionnaire, which has be

implemented from 2021. The problem is not confined to Germany alone, as the work of European statisticians[8] has shown: the dispersion of differences between normal working hours and actual working hours during the reference week for full-time employees is so great from one country to another that it cannot be explained by differences in national legislation on leave and public holidays alone, and is indicative of a data quality problem.

A large part of the problem may stem from the under-reporting of absences over the whole of the reference week: this is why Eurostat has so far chosen to publish data on actual working hours only for people working at least one hour during the reference week (people declared absent over the whole of the reference week are excluded). This is a point to bear in mind when we break down the France/Germany and France/United Kingdom differences in hours worked per capita: the proportion of the year not in work (which corresponds to all weeks in which at least one hour was worked) is certainly overestimated for Germany and the United Kingdom compared with France. Despite the redesign of the questionnaire in 2021, it seems that under-reporting of holidays persists in Germany.

B. Comparison with OECD data

The OECD also publishes data on the annual number of hours worked per person (in employment). These are used to calculate labour productivity, which corresponds to the ratio of GDP to the number of hours worked. Most often, these are data from national accounts, which draw on several sources in which the employment survey may play a secondary role: the aim is not only to comply with the scope of economic activity covered by national accounts (cross-border workers, inclusion of non-ordinary households, etc.), but also to understand actual working hours using several sources such as company data and administrative data to measure contractual working hours and the various factors that increase (overtime) or decrease (leave, sick leave, etc.) working hours. France and Germany use this method to compile the data in their national accounts, which are used as they are by the OECD, even though the sources used are not of the same nature.

In the case of the United Kingdom, the OECD makes its own estimate because, in the British national accounts, the number of hours worked is essentially measured on the basis of the employment survey, without adjustments. To correct for reporting bias, the OECD uses the usual working hours measured by the employment survey and makes adjustments to take account of overtime and absences (statutory leave, sick leave, etc.).[9]

Because of the different methods of calculating actual working hours in each country and the disparity in the sources used, the OECD considers that the international comparability of data on annual working hours is not guaranteed and that they should be used primarily for analyses of evolutions.

Despite these problems of comparability, it is interesting to study for each country the evolution of the number of hours worked measured in the two series, the employment survey and the OECD data. The following conclusions can be drawn for the four countries: the OECD series is systematically lower than that of the employment survey, and the gap between the two series is relatively stable over time.

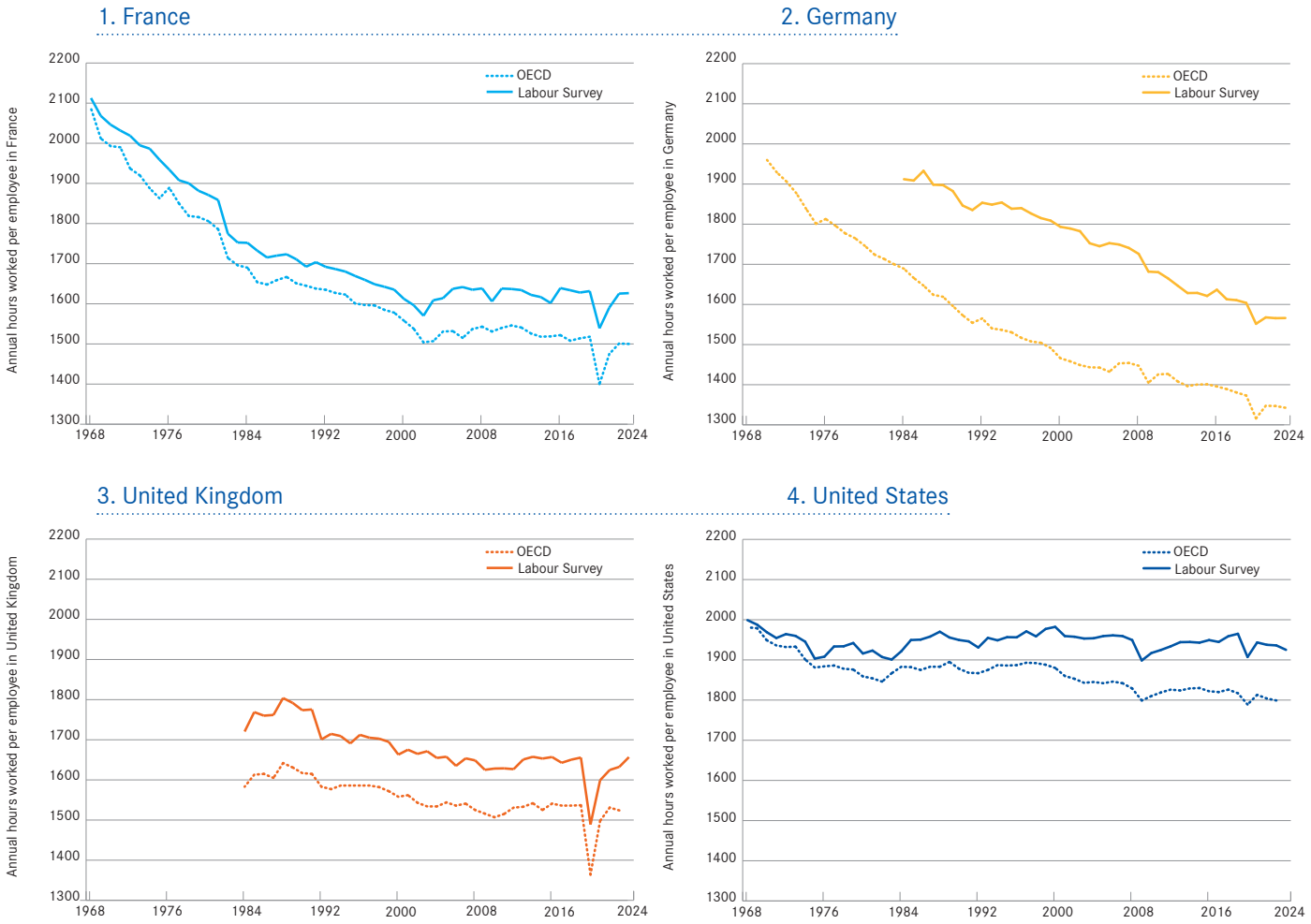
The gap between the OECD series and the employment survey is particularly large for Germany, which highlights the more acute problem of under-reporting of leave. The fact that the gap between the Labour Force Survey and the OECD will barely narrow from 2021, when the new Labour Force Survey questionnaire is adopted, which in the German case is supposed to contribute to better measurement of absences, suggests that the problems identified have not yet been resolved[10]. This problem also seems to exist in the case of the United Kingdom, but to a much lesser extent.

[8] See the 2018 Eurostat report.

[9] See the OECD's 2018 report on international productivity gaps.

[10] See the latest publication from the Rexecode institute, which details, based on EU-LFS data, the transition from normal working hours to actual working hours for full-time employees for the year 2023: the number of absences for leave and public holidays is still much lower than would be expected under current legislation.

Graph B. Comparison of hours worked per employed person between OECD and labour force surveys sources



Note: Average hours worked estimated for all individuals aged 16-74.
Sources: Labour Force Surveys (France, UK, Germany), OECD.

C. Decomposition method

Breakdown by margins of contribution to the labour market

Let H(i) be the average number of hours worked per capita in country i. The total difference in the number of hours worked per capita between this country and France is written: $H_i - H_{FR}$.

If p(e) (i)and h(e) (i)are respectively the employment rate of country i and the average number of hours worked per employed person, then the average number of hours worked per capita can be rewritten as :

$$H_i = p^e_i \times h^e_i$$

In fact, only those in employment make a positive contribution to the average number of hours worked per capita.

So we can rewrite the initial difference and show the two margins of contribution to the labour market: the extensive margin – the employment rate – and the intensive margin – the number of hours worked by people in employment.

$$H_i - H_{FR} = p^e_i \times h^e_i - p^e_{FR} \times h^e_{FR}$$

$$= (p^e_i - p^e_{FR}) \times h^e_i + (h^e_i - h^e_{FR}) \times p^e_{FR}$$

Where the first term corresponds to the contribution of the employment rate gap to the total gap, and where the second term corresponds to the contribution of the gap in the number of hours worked per person in employment to the total gap.

This breakdown can be refined by rewriting the number of hours worked per inhabitant to show the activity rate, as in graph 16, or even the time excluding holidays and the hours worked over the weeks excluding holidays, as in graph 4.

Breakdown by contribution of population sub-groups

Another way of breaking down the average gap in hours worked per capita between a given country and France, $H_i - H_{FR}$, is to consider the contribution of population sub-groups to this gap.

If we break down the total population into N population sub-groups, for example into age categories, then we can rewrite the average number of hours worked per inhabitant as a weighted average recovered from these N sub-groups:

$$H_i = \sum p_{i,n} \times H_{i,n}$$

Where pi,n corresponds to the weight of sub-group n in the total population of country i, for example the share of 16-29 year olds in the total population of country i, and $H_{i,n}$ the average number of hours worked per inhabitant of sub-group n, for example the number of hours worked by 16-29 year olds in country i.

The aggregate difference can be rewritten as the sum of differences by subgroup:

$$H_i - H_{FR} = \sum (p_{i,n} \times H_{i,n} - p_{FR,n} \times H_{FR,n})$$

The term in brackets corresponds to the contribution of sub-group n to the total variance. Note that for each population sub-group, this contribution can be broken down into two elements:

- a difference linked to the structure of the population (the greater or lesser proportion of each sub-group in the population), for a given work behaviour;
- a gap linked to the different working behaviours of the population sub-group n between countries, at a given size. To visualise this, here is the associated formula:

$$p_{i,n} \times H_{i,n} - p_{FR,n} \times H_{FR,n} = (p_{i,n} - p_{FR,n}) \times H_{i,n} + (H_{i,n} - H_{FR,n}) \times p_{FR,n}$$

Where the first term corresponds to the contribution of the difference in population structure and the second to the contribution of work behaviour.

This is shown in chart 7, where the grey bars show the gap driven by a different age structure between the UK, Germany and the US relative to France. Working behaviour is then broken down according to the intensive and extensive margins of the sub-section above.

D. International comparisons of education levels

The analysis of international qualification levels is based on the ISCED classification, which establishes a correspondence between national qualifications in order to ensure homogeneity between different education systems. In this study, three categories of qualifications are distinguished for the purposes of international comparison:

Primary or secondary level (fist cycle)

It covers levels of education up to the end of lower secondary education. In France, it goes up to the brevet des collèges. The equivalent of the brevet des collèges in the UK is the GCSE (General Certificate of Secondary Education). In Germany and the United States, this category stops at levels 10 and 9 respectively.

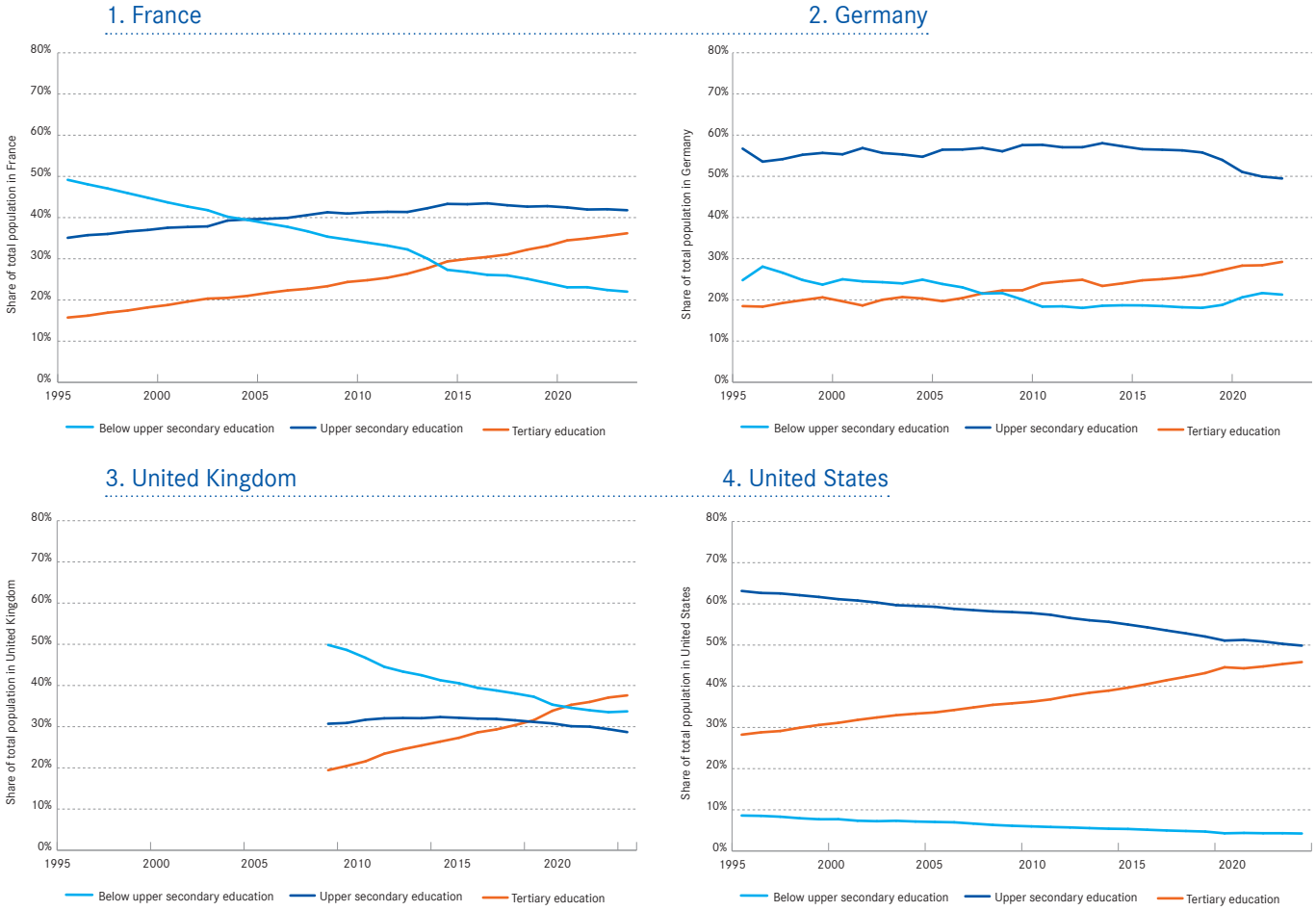
Secondary level (second cycle)

It encompasses levels of education relating to upper secondary education. In France, it therefore includes general, technological and vocational baccalaureates, as well as CAPs and BEPs. In the United Kingdom, it includes the 'A/AS Levels' for 'Advanced Level' and 'Advanced Subsidiary Level', which are diplomas equivalent to the baccalauréat. In the United States, it includes the GED (General Educational Development) and the High School Diploma, which are equivalent qualifications to the baccalauréat. In Germany, this level corresponds to grades 10 to 13.

The top level

It refers to all higher education courses. In France, it includes the DUT, the BTS, the licence, the master's degree and the doctorate (and equivalent courses). In the United Kingdom and the United States, it includes the Bachelor's degree, the Master's degree and the PhD (Doctor of Philosophy). In the United Kingdom and the United States, the HND (Higher National Diploma) and the Associate degree are the equivalent of the French BAC+2 DUT. In the United States, there is also the Professional School Degree, which is a doctoral-level qualification geared towards vocational training, unlike the PhD, which is more geared towards academic research. In Germany, the higher level also includes university studies, with the equivalents of bachelor's degrees, master's degrees and so on.

Figure D. Share of the population with each level of education



Note: Share of each level of education in the total population, over time.
Sources: Labour Force Surveys (France, United Kingdom, Germany), Current Population Survey (United States).

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