



# Labour market polarisation: are there more low-skilled jobs in France?

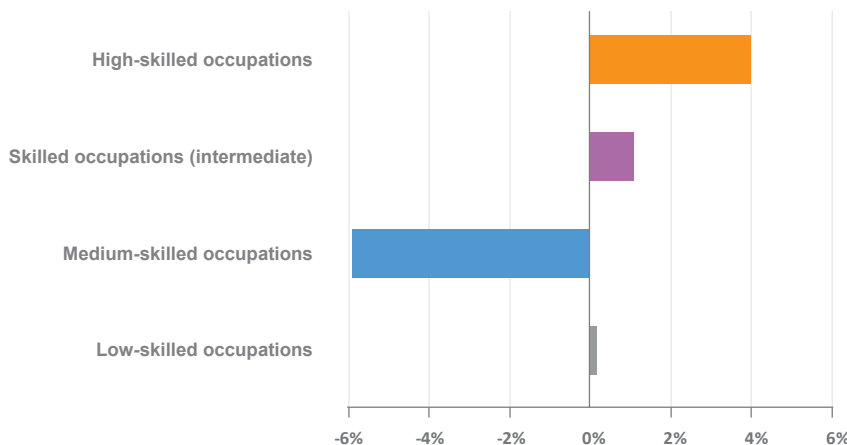
According to international comparisons, France has one of the most polarised labour markets in Europe. This polarisation reflects a decline of medium-skilled jobs, which would typically concern qualified employees and workers, along with a symmetrical rise of the most and least skilled at both extremities of the qualifications spectrum.

Observed in most developed countries, this “U-curve” polarisation raises fears of atrophy of the middle class, a rise in inequality and a brake on social mobility. The causes of such a phenomenon remain a matter of debate: the overall increase in the level of qualifications favouring the most qualified, automation, outsourcing, offshoring, and enhanced flexibility would reduce the need for lower-skilled workers and employees. Furthermore, the increased rate of participation of women and immigrants in the labour market would further expand the personal services industry. But before we look at the causes and effects of polarisation, we must first have to ask ourselves if this diagnosis is an accurate assessment of the French labour market.

To achieve a more precise vision of the matter, we will need to dive deep into the world of statistics. Whether we approach the question either through socio-professional categories, individual wages or the average wage level of occupations, we would always come up with the same outcome: while there is indeed an erosion of median qualifications in favour of executive occupations, we do not observe in the case of France any increase in the share of low-skilled jobs. In contrast to the already abundant academic literature on the matter, the INSEE and DARES statistical institutes’ detailed analyses confirm this more nuanced diagnosis for France.

Conflicting diagnoses are mainly due to methodological challenges: the selected scope of the active population, the availability of data over a long period, inconsistent classifications of occupations - sometimes involving cultural differences in defining skilled and unskilled occupations, all these variables influence the conclusions. Thus, the challenge is a technical one, and the issue is particularly crucial, as public policies must be based on an accurate appreciation of the labour market evolution given the Covid-19 crisis, which could certainly structurally disturb the market.

## Change in the share of qualifications in employment between 1996 and 2017, in percentage points



Note: Qualification is estimated here by occupation based on the salary level or activity income for self-employed people. Occupations and socio-professional categories are considered as low-skilled if their average full-time equivalent salary or income was found in the first two deciles in 2005 (i.e. the 20% lowest paid), medium-skilled if they were between the 3<sup>rd</sup> and 5<sup>th</sup> decile included, skilled (intermediate) if they were between the 6<sup>th</sup> and 8<sup>th</sup> decile included, and high-skilled if they were found in the last two deciles (i.e. the 20% highest paid).

Scope: Mainland France, employed persons with a strictly positive salary or earned income, living in a household with a positive or zero level of income declared to tax authorities and whose reference person is not a student.

Source: Insee-DGI, Retropolated Tax and Social Income Survey from 1996 to 2017.

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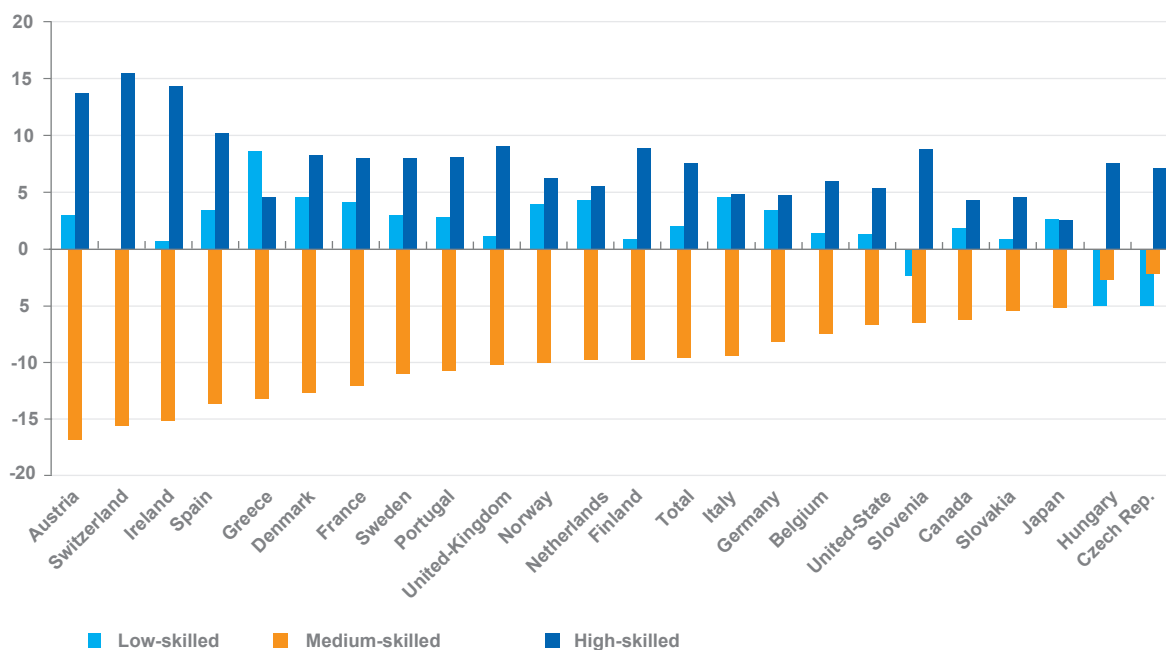
## INTRODUCTION

Employment polarisation refers to the historical decline of the share of jobs found in the middle of the skills distribution (typically skilled employees and workers) in favour of both the most skilled (managers and intermediate occupations) and the least skilled (low-skilled workers and employees). The causes of polarisation are multiple: technical progress and higher education levels among the working population have favoured the more high-skilled. Automation, outsourcing, offshoring of production and the increasing employment flexibility have hindered skilled workers and employees, whose bargaining power has also diminished in the process. Finally, the growing share of active women and immigrants has contributed to the development of low-skilled and low-paid jobs in personal services that are difficult to automate and where a growing structural need is observed.

The causes and the effects of this polarisation have been an important matter of debate, particularly in the United States, which initiated the first analytical work on the topic<sup>1</sup>. However, this note focuses on the question of the polarisation diagnosis itself for the case of France as international comparisons, particularly those conducted by the OECD, identify France as one of the most "polarised" countries<sup>2</sup> (see graph 1).

While academic literature based on French data confirms a diagnosis of a pronounced polarisation<sup>3</sup>, the detailed analysis conducted by the French statistical institutes provide a more nuanced account, displaying an erosion of median qualifications in favour of management and technical occupations, but without any increase in the share of the least qualified. This is partly due to data and variables used to assess this polarisation (wages, social categories,

**Figure 1 – Change in the share of qualifications in total employment, in percentage points, 1995-2015**



Note: High-skill occupations include jobs classified under the ISCO major groups 1, 2, and 3. That is, legislators, senior officials, and managers (Group 1), professionals (Group 2), and technicians and associate professionals (Group 3). Medium-skilled occupations include jobs classified under the ISCO major groups 4, 7 and 8. That is, clerks (Group 4), craft and related trades workers (Group 7), plant and machine operators and assemblers (Group 8). The low-skilled occupations include jobs classified under the ISCO major group 5 and 9. That is, service workers and shop and market sales workers (Group 5), elementary occupations (Group 9).

Source: OECD (2017), *OECD Employment Outlook 2017*, based on European, U.S., Canadian, Japanese, and Swiss Employment Surveys.

1. In the US in particular, where the first studies were conducted. See Jolly C. (2015), "La polarisation des emplois : une réalité américaine plus qu'europpéenne?" *working Paper*, France Stratégie, August.
2. See OECD (2019), *OECD Employment Outlook 2019*, Chapter 2 on the Future of Work. See also Verdugo G. and Allègre G. (2017), *Les nouvelles inégalités du travail : pourquoi l'emploi se polarise*, Presses de Sciences Po, updated in 2020, and "La polarisation des marchés du travail" on the ENS-Lyon website.
3. See in particular Davis D. R., Mengus E. and Michalski T. (2020), "Labor market polarization and the great divergence: Theory and evidence", *CEPR Discussion Paper*, DP14623, April; Reshef A. and Toubal F. (2020). (2019), *La polarisation de l'emploi en France*, Cepremap, March; Peugny C. (2018), "L'évolution de la structure sociale dans quinze pays européens (1993-2013) : quelle polarisation de l'emploi ?" *Sociologie*, n° 4, vol. 9.



occupations). As we shall see, statistical institutes often use more detailed data, which is also readable over a longer timeframe. Academic studies, for their part, generally rely on more aggregated data, which is not always exhaustive, as well as internationally comparable measurement methods, which can hinder the accuracy of the diagnosis.

First, we will attempt to refine France's diagnosis by estimating the job-market polarisation by socio-professional classification of occupations and then through the distribution of wages. Since no evidence of a rise in low-skilled jobs is observed, we will then look at the methodological pitfalls that can lead international comparisons to categorise France among the most polarised countries.

### Box 1 – Measuring polarisation

*Polarisation is not easily measured.*

#### **The measurement of qualification levels is multi-faceted.**

*Le niveau de qualification peut schématiquement être appréhendé par le diplôme, la rémunération ou d'après les classifications sociales du travail.*

*Qualification levels can be roughly grasped according to the diploma level, wages or to the corresponding socio-professional classifications of occupations.*

- Diplomas are rarely used for two main reasons: on the one hand, the link between the diploma and the "qualification" of employment varies considerably across different occupations and has become less pronounced with the growing share of low-skilled jobs occupied by graduates, who are therefore over-qualified. On the other hand, in the labour market, the initial diploma level represents an indication that does not have the same importance depending on the country: it is stronger in Germany and France than in the United Kingdom for instance.*
- Wages are often used in international comparisons as a proxy for qualifications. Jobs are ranked according to their average or median wage over a single year. The evolution of the different groups of wages within this wage breakdown are then observed. Both the working conditions and the quality of employment are nonetheless difficult to "summarise" within a single wage group. On the one hand, the actual workload of the active population is subject to important variations - lack of working hours, precarious contracts and recurrent unemployment episodes, which all implies attributing a "lower" qualification to those who work less. The recomposition of the workload*

## WHAT DIAGNOSIS FOR THE CASE OF FRANCE?

The concentration of employment at both ends of the skills spectrum is hard to measure. First of all, a criterion must be selected to evaluate individual level of qualification, which can be either based on the diploma, wage or the corresponding socio-professional category, each of them triggering methodological pitfalls or conflicting nomenclatures. Secondly, results vary according to the chosen scope of observation - public, private and non-salaried workers, and to the chosen observation timeframe (see Box 1). Polarisation is here considered as being only measurable by identifying long-term changes in employment through the observation of socio-professional categories.

*into full-time equivalents is not enough to overcome this pitfall: in some occupations, the average number of working hours will always be lower given the importance of part-time work (personal services) or the seasonality of employment in specific sectors (hotel and restaurant industry). On the other hand, working conditions (arduousness, atypical working hours) may lead to higher hourly wages without corresponding to an actual increase in the "qualification" of the concerned jobs.*

- Finally, occupations and socio-professional categories are often used to consider qualifications. They can be as such, a proxy for qualification or, as is often the case in academic studies, associated with the median wage of occupations: the qualification of an occupation is then a function of its position in the distribution of wages by occupation. The referential classifications are either social classifications of work that attribute a qualification level to occupations or occupation nomenclatures.*

*In the first case, the European socio-economic classifications (ESeG, European Socioeconomic Groups) and the French socio-professional classifications (PCS, Professions and Socio-professional Categories) are based on the identification of qualifications according to occupation characteristics in terms of activity (sectors), status (with a distinction between self-employed and salaried workers in particular), working conditions (autonomy, supervision), diploma (average qualification of individuals exercising the profession), or even collective agreements (in the case of French PCS). These two social classifications take into account the multiplicity of factors affecting the qualification of a specific occupation. They nevertheless do not completely overlap<sup>4</sup>, due to a difficult international comparison of the notion of qualification, which happens to be also a social construction (see below). Moreover, both classifications have difficulty in distinguishing the least qualified<sup>5</sup>.*

4. Amar M., Gleizes F. and Meron M. (2014), "Les Européens au travail en sept catégories socio-économiques", in *La France dans l'Union européenne - Édition 2014*, Insee.

5. PCS does not differentiate skilled, and low-skilled employees; European socio-economic classifications aggregate unskilled blue-collar and white-collar workers, and the self-employed are excluded from the low-skilled category.

*In the second case, the International Standard Classification of Occupations (ISCO) and the French Professional Families (FAP, composed of broader groupings of occupations) can be indirectly linked to qualification, either through wages or via the dominant social classification of the occupation.*

***The diversity of these social and professional nomenclatures implies differences in appreciation of polarisation.***

*Measuring the level of qualification is sensitive to the selected parameters.*

*The results are also sensitive to the chosen observation period and depend on the degree of data aggregation, which alternates the scope of observation (private and public employees, self-employed).*

*The considered timeframe of observation can substantially change the diagnosis of polarisation. Low-skilled occupations have declined very sharply in the 1980s and 1990s, and their share in employment fell from 14% in 1982 to only 9% in 2002<sup>6</sup> (socio-professional category observed in the Labour Force Survey). On the other hand, the number of skilled workers remained relatively stable*

***Polarisation as estimated by social classification of occupations***

When the French PCS nomenclature is used to estimate the level of qualification, it appears clear that there has been since the 1980s a significant growth of the share of the most highly qualified - i.e. managers and associate professionals, and a later decline of median-qualified occupations, i.e. skilled blue-collar and white-collar workers (see graph 2 on the next page). However, the share of the least qualified has stalled. In this sense, the diagnosis of polarisation for France is different from the one prevailing in the United States, for instance, where the share of the least qualified appears to be clearly increasing.

In a national economy that has specialised in skilled services to companies, we can understand that the growing share of higher education graduates among the working population and technological progress has prompted the recruitment of more qualified persons. At the same time, the share of medium-skilled occupations is declining. In the specific case of skilled workers, this decline is primarily caused by the deindustrialisation of the economy<sup>7</sup>. For the

*at 16% of employment, before the 2008 crisis eroded this share quite significantly. Therefore, longer-term observations made by the Dares and INSEE tend to put into perspective the increase in the share of the least qualified and the erosion of skilled workers and employees. Conversely, if the beginning of the selected observation period coincides with the strongest increase in low-skilled employees - whose share has already largely exceeded the share of low-skilled workers when the opposite was true in the early 1980s - the diagnosis will accentuate the rise of the share of the least qualified.*

*Occupations nomenclatures and social classifications - national or international, can provide fine details, but survey data - whether from the French Labour Force Survey or the European Labour Force Surveys, are often insufficient to fully exploit them. Administrative data allows for this precision but has limitations in scope or retrospective availability for several occupations that limit their overall scope. Most studies, even when treating administrative data, use a relatively aggregated level of professions. As a result, the qualification of occupations is often imprecise and mixes jobs within a broad category composed of occupations with different qualifications.*

case of skilled employees, automation and the reorganisation of public administrations are notable causes of their decline: in addition to the professionalisation of the army, there has been a decline in the number of administrative employees in the public service, with categories C public agents and associated population being partly "outsourced" to the private sector. However, in France, there has been no "spillover" of employment on low-skilled jobs in the services sector, unlike in highly polarised countries, where low-skilled jobs in the hotel and restaurant industry, cleaning, maintenance, security or care services, have grown the most.

Following the growth experienced in France during the 1990s, the share of low-skilled employees has remained stable at 13% of employment, as shown in Figure 2. Most of the low-skilled service professions have not undergone a lasting upturn. The only exception to the rule was the number of home care providers and childcare assistants, which rose sharply throughout the 1990s and 2000s before the crisis and stabilised tax incentives depressed the employment of individual employers<sup>8</sup>.

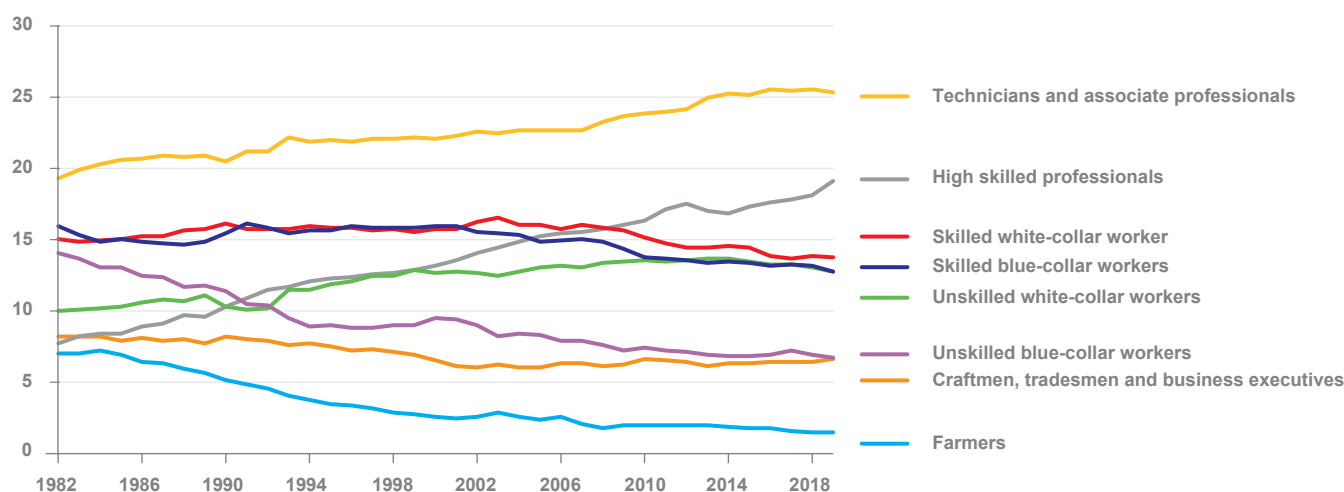
6. Before the break in the *Labour Force Survey* series

7. France Stratégie (2020), *Les politiques industrielles en France - Évolutions et comparaisons internationales*, report to the National Assembly, November.

8. Goux D. and Maurin É. (2019), "Quarante ans d'évolution de l'offre et de la demande de travail par qualification - Progrès technique, coût du travail et transformation", *Économie et statistique*, No. 510-511-512, Insee, December, pp. 135-152.



**Figure 2 – Share of professional skills in employment, 1982-2019**



Scope: France excluding Mayotte, household population, persons aged 15 and over.

Note: For white-collar jobs, the INSEE nomenclature of occupations and socio-professional categories (PCS) does not distinguish between skilled and low-skilled workers. Olivier Chardon's method is used to differentiate them: if access to a profession as an early-career employee requires specific training, the profession is considered as qualified 9.

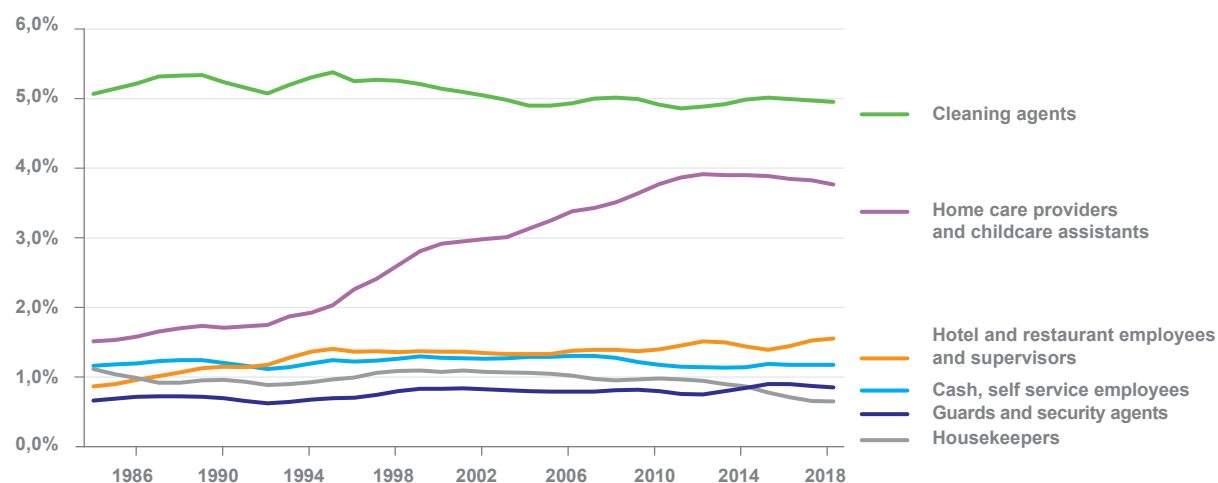
Source: INSEE, Employment surveys adjusted for breaks in series (INSEE calculations)

The growing share of low-skilled employees in employment is entirely attributed to these two occupations, as shown in Figure 3.

Thus, this more detailed diagnosis, which contradicts the idea of an "American-style" polarisation, is shared by both the INSEE<sup>10</sup>

and the DARES<sup>11</sup>. But what happens if we estimate the polarisation of employment, not through socio-professional classifications but through wages as a proxy for qualifications? If it poorly reflects the content of jobs, wage criteria facilitates international comparisons and bring the analysis of jobs closer to the evaluation of actual living standards.

**Figure 3 – Share of low-skilled occupations in employment, 1984-2018**



Field: Mainland France, ordinary households.

Note: The portrayed occupations here are predominantly low-skilled (dominant category within the occupation family), but they do not represent all low-skilled employees. Some low-skilled employees may be present in occupations belonging to other socio-professional categories: this is the case of hosts (low-skilled) who belong to higher-skilled occupations of the corporate administrative officers' category.

Source: Labour Force Survey, INSEE, retroplated data, three-year moving average.

9. Skilled employees work in occupations in which early-career professionals enjoy a job-specific training specialisation rate (i.e., a match between the training specialisation and the occupation) greater than 35 per cent. When the number of early-career professionals is too low, the level of qualification is used as a proxy for the 39% threshold.

10. Shepherd E. and Pora P. (2017), "Y a-t-il eu polarisation de l'emploi salarié en France entre 1988 et 2014 ? Une analyse selon les catégories socioprofessionnelles et le contenu de l'emploi en tâches", in *France Portrait social, 2017 edition*, Insee references.

11. Ast D. (2015), "En 30 ans, forte progression de l'emploi dans les métiers qualifiés et dans certains métiers peu qualifiés de services", Dares Analyses, n° 028, April.

### Job polarisation as estimated by wage distribution

#### Individual wages as a proxy for qualification

Qualifications can be identified according to the wage level of individuals rather than to the associated socio-professional category. Thus, it is assumed that remuneration compensates for the skills required. Qualification levels are defined based on the distribution of wages for the earliest period - in this case, 1996, which is therefore, "frozen in time". For example, the working population can be distributed into wage deciles, i.e. into ten equal parts: by analogy with income analysis, an individual is assumed to occupy a low-skilled position if his or her wage belongs to the first decile of the annual wage distribution, thus corresponding to the lowest-paid 10 per cent of the working population. The occupation will be considered medium-skilled if the wage is situated between the 2<sup>nd</sup> and the 5<sup>th</sup> decile included (i.e. the median decile) and high-skilled if it is found beyond the 5<sup>th</sup> decile. We can then observe where individuals stand each year compared to 1996 wage deciles, adjusted for inflation between 1996 and the year under consideration: the variations are shown in Figure 4.

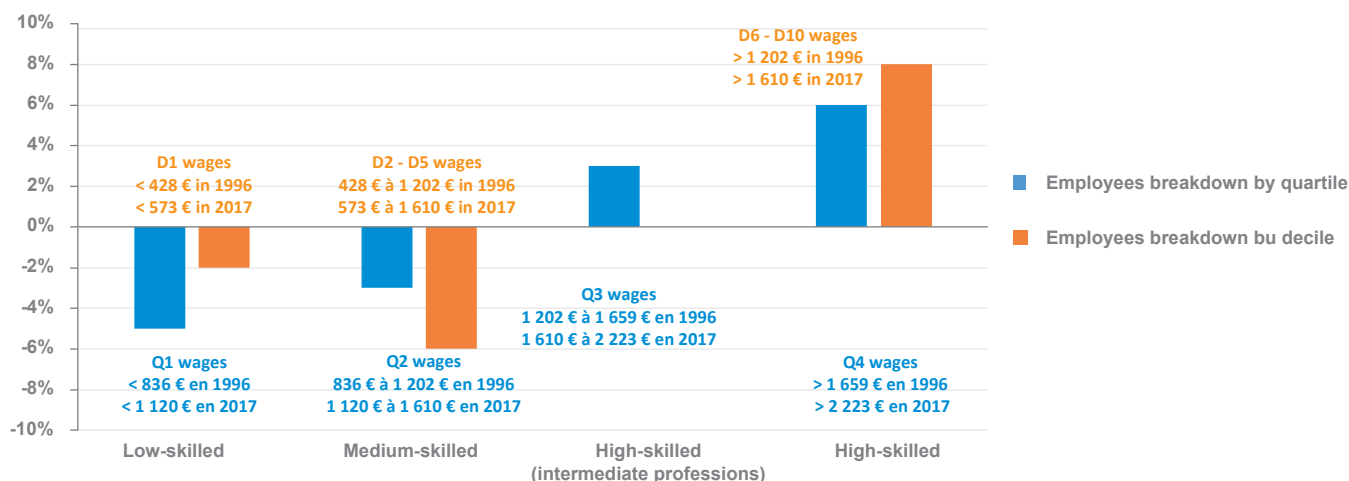
The chosen wage level at which a job is considered low-skilled, medium-skilled, or high-skilled is, of course, a rather sensitive choice that can affect the outcomes. Furthermore, defining the least skilled working population by the first

wage decile is excessively restrictive and makes the evolution of the workforce particularly dependent on the increase of the minimum wage, which in France concerns a little over 10% of the working population. To overcome this sensitivity, we prefer to divide the working population into four equal groups,<sup>12</sup> or quartiles<sup>13</sup>, each representing 25% of the employment at the beginning of the observed period. This division into four groups attempts not only to distinguish between low and median qualifications but also to isolate within the skilled population, the so-called intermediate occupations, which include technicians, social workers and education professionals, nurses, supervisors or technical salespersons, whose skill requirements are lower than managers.

Regardless of the chosen distribution mode, there is evidence that the share of employment in both the lowest and median wages has been declining since the mid-1990s. The share of high or very high wages has increased, reflecting a rise in qualifications. The observed decline of low-skilled occupations remains the same, whether one freezes the wage boundaries over time or sets the fractile thresholds according to the change in median wages between 1996 and 2017.

Thus, the thesis of a French U-shaped polarisation would find itself under scrutiny once again. However, this rough measurement of qualifications by wages is imperfect.

**Figure 4 – Variation in the share of jobs according to the distribution of individual wages between 1996 and 2017, in percentage points**



Scope: Mainland France, salaried employees, receiving a strictly positive salary, living in a household with a positive or zero level of income declared to the tax authorities and whose reference person is not a student.

Note: In 1996, 10% of the lowest-paid employees (decile D1) had a salary of less than 836 euros; by 2017, the percentage of employees with a salary of less than 836 euros, increased by inflation, i.e. 1,120 euros, had fallen by 2 points; for employees found in the first quartile (Q1), their share fell by 5 percentage points over the same period. Wages are rising over time due to the increase induced by economic growth, which could mechanically lead jobs to move to higher-paid categories. If we modify the wage boundaries for 2017, not according to thresholds identified in 1996 increased by inflation but increased by the rise of the median wage, the share of low-wage categories has been on a downward trend for twenty years (-0.8 percentage points for the first decile and -1.7 percentage points for the first quartile).

Source: Insee-DGI, Tax and Social Income Survey, calculations by France Stratégie.

12. On the model of Eurofund. See European Foundation for the Improvement of Living and Working Conditions (2017), *Occupational Change and Wage Inequality: European Jobs Monitor 2017*, Research Report.  
13. Eurofound divides them into five groups.



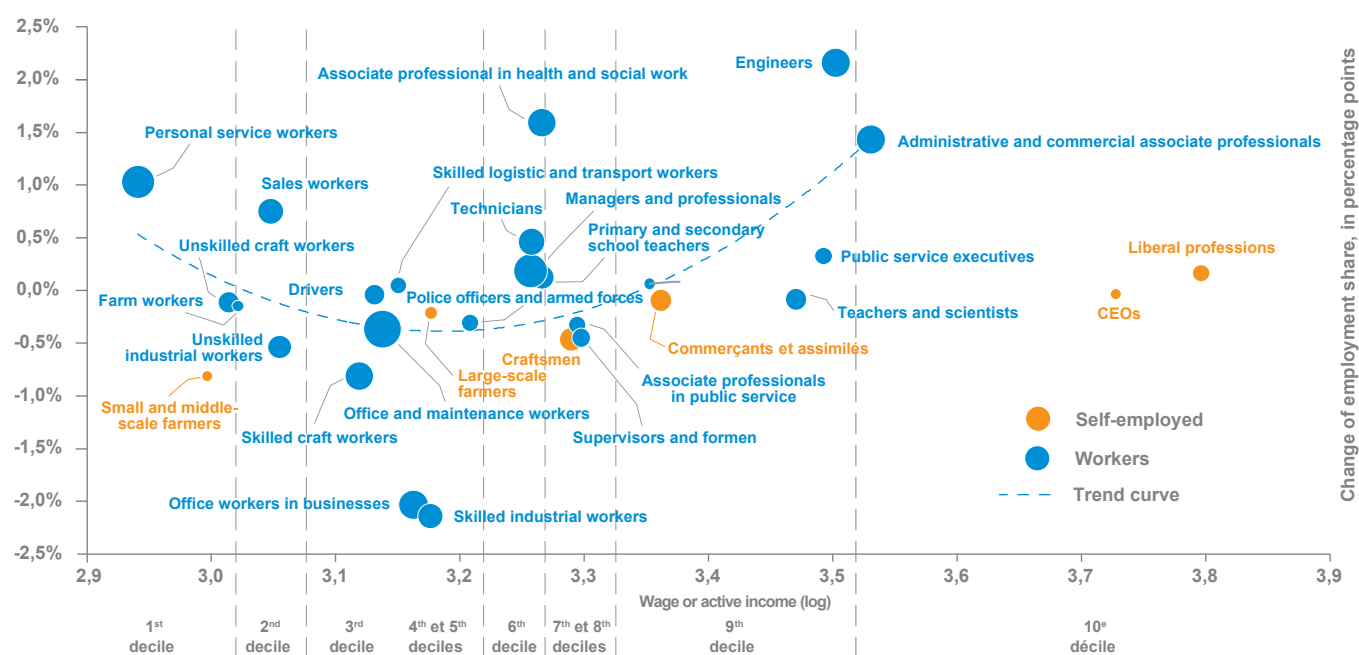
It does not take into account wage heterogeneity inside companies nor the experience of the working population. Within the same occupation, an early-career professional will be considered less skilled than his or her older better-paid colleagues; a large firm employee will be regarded as more qualified than his or her counterparts evolving in SMEs, where wages are structurally lower. The significant share of part-time work in certain sectors such as sales, hotel and restaurant industry or personal services, and repeated unemployment episodes for precarious employees, also lead to lower annual wages that do not reflect the hourly pay. Finally, the focus on salaried employees leaves aside self-employed professionals, whose share in employment has been increasing since 2005<sup>14</sup>.

### Wage by occupation as a proxy for qualification

To overcome these assessment difficulties, the most widespread method, designed by Maarten Goos and Alan

Manning<sup>15</sup> and then developed by David Autor<sup>16</sup>, consists of determining an average income per occupation which will smooth out differences in wages or active income - individual or inter- and intra-sectoral<sup>17</sup>. Classification of occupations according to the level of remuneration (here, wages or profits declared for income tax purposes) is then operated. To limit possible variations in remuneration over time, the reference wage or active income from which the occupations are arranged is the one from 2005, i.e. the observation period mid-point<sup>18</sup>. To take into account working time, a full-time equivalent salary is reconstituted<sup>19</sup>. Finally, the self-employed, representing 13% of the working population, are taken into account via their declared earned income. To avoid threshold effects, changes in the share of occupations in employment according to their earned income level are represented occupation by occupation (level 2 of the PCS), indicating to which wage decile these occupations belong (see graph 5).

**Figure 5 – Change in employment by occupation according to wages or earned income between 1996 and 2017, in percentage points**



Scope: Mainland France, employed persons with a strictly positive salary or earned income, living in a household with a positive or zero level of income declared to the tax authorities and whose reference person is not a student.

Reading: Bubble sizes represent the relative share of occupations in 2017 among the working population. The employment share of skilled industrial workers has declined by more than two percentage points in twenty years, from 6% in 1996-97 to 4% in 2016-17. Their remuneration level (1,500 euros in 2005 converted into log, i.e. 3.18) places them in the middle of the wage distribution (between the 4<sup>th</sup> and 5<sup>th</sup> decile). Represented by blue dashed lines, the trend curve estimates the relation between wage level and employment change ( $y = 0.15x^2 - 0.98x + 1.55$ ).

Source: Insee-DGI, Retropolated Tax and Social Income Survey from 1996 to 2017, calculated by France Stratégie.

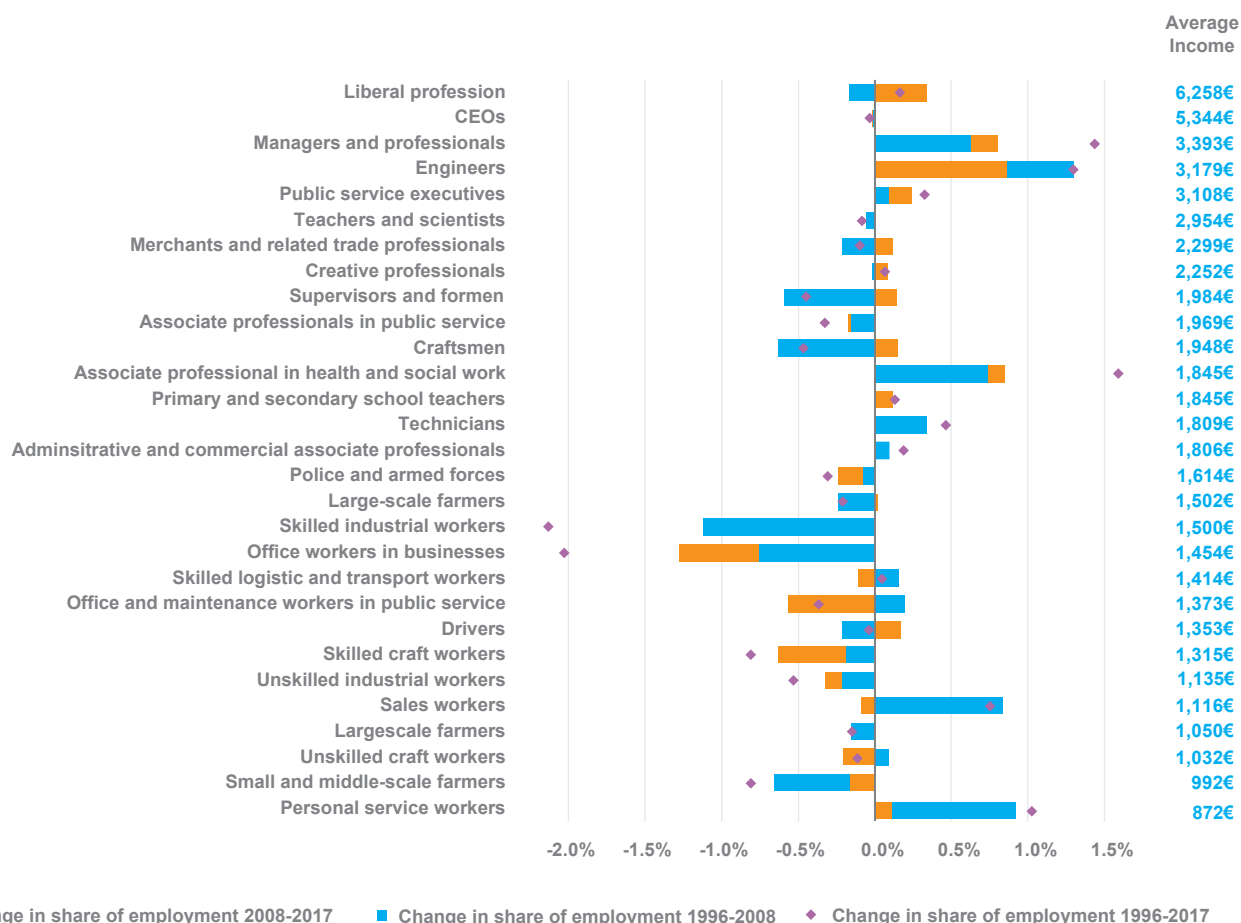
14. Jolly C. and Flamand J. (2017), "Salaré ou indépendant, une question de métiers ?" *La Note d'analyse*, No. 60, France Stratégie, September.  
 15. Goos M. and Manning A. (2003), "Lousy and lovely jobs: The rising polarisation of work in Britain", *Center for Economic Performance Discussion Papers*, D.P. n° 604, December.  
 16. Autor D. H. and Dorn D. (2013), "The growth of low-skill service jobs and the polarization of the US labor market", *American Economic Review*, vol. 103, n° 5, August.  
 17. However, this method does not eliminate discrepancies: an occupation with a higher average age can be considered more skilled.  
 18. In fact, we observe little change in the classification of occupations by wage or active income level. On the other hand, the wages of the least qualified occupations, adjusted for inflation, have increased the most between 1996 and 2017, i.e. an increase of +18% in the first two deciles corresponding to the increase of the minimum wage (SMIC), while the wages of median and intermediate qualifications (deciles 3 to 8) have increased by 5.6% and the most qualified (last two deciles) increased by only 2%.  
 19. Depending on the amount of work.

Among the lowest-paid occupations – the first two deciles, the decline of low-skilled blue-collar workers and small and medium farm workers is symmetrical to the increase of personal services and sales workers. Here again, the lowest-paid occupations – +0.2 percentage points over the period, considered as low-skilled, are virtually stable.

Unsurprisingly, the occupations undergoing the sharpest decline are skilled industrial workers and office employees of companies in the middle of the wage distribution. The share of all medium-paid occupations, i.e. between the 3<sup>rd</sup> and 5<sup>th</sup> decile included, has declined by nearly 6 percentage points over the past 20 years. Occupations experiencing very significant progress are salaried managers of the private sector, including engineers, managers and professionals of companies. The share of best-paid professions,

i.e. the 9<sup>th</sup> and 10<sup>th</sup> deciles, has risen by nearly 4 percentage points in twenty years, attesting to a rise in job qualifications. Regarding intermediate occupations – whose income is above the median but does not belong to the best-paid categories, i.e. between the 6<sup>th</sup> and 8<sup>th</sup> deciles, the sharpest increase observed in employment is found among the health and social work professions: nurses, educators, animators, pharmacy technicians, etc. This dynamism is driven by the ageing of the population and the socialisation of health and social protection expenditure. The situation is more contrasted and less marked for other intermediate professions. The share of intermediate occupations of the private sector is increasing slightly, but the employment of supervisors and foremen, who are more often employed in industry, is declining. The share of associate professio-

**Figure 6 – Changes in the share of occupations in employment by period, 1996-2017**  
in percentage points



Scope: Mainland France, employed persons with a strictly positive salary or income from work, living in a household with a positive or zero level of income declared to the tax authorities and whose reference person is not a student.

Note: Average income for occupations are for the year 2005.

Source: Insee-DGI, Retropolated Tax and Social Income Survey from 1996 to 2017, calculated by France Stratégie.

20. Autor D. (2014), « Polanyi's paradox and the shape of employment growth », *NBER Working Paper*, n° 20485, septembre.



nals in public service is eroding fairly sharply due to the increasingly qualified recruitment, except for school-teachers/instructors.

The distribution of employment by skill level estimated by occupation wages distribution, however, is not a uniform process over time 20 and across skills (see Figure 6). We observe a rise of low-skilled occupations before 2008, with an increase of nearly 1 percentage point, but it has stopped since then, with a decline of 0.7 percentage points between 2008 and 2017. The share of personal services staff has stopped growing, as it was heavily driven by home care providers (see *above*). Sales workers are declining, victims of the advent of e-commerce and cash register automation, while the share of low-skilled workers has fallen even more sharply. On the other hand, the share of medium-skilled workers is steadily declining, particularly after 2008 (-3.7 percentage points). The 2008 crisis, which affected industrial and construction workers to a great extent, has thus accentuated the erosion of median qualifications, which were already weakened by deindustrialisation. For intermediate professions, in contrast to the low-skilled, the post-2008 period marked a significant increase, with +1.5 percentage points. The private sector intermediate professions are recovering from a pre-crisis decline, reflecting a form of "displacement" of qualifications in industry, construction or logistics: recruitment is at a higher level than that of skilled workers<sup>21</sup>. Finally, despite a general upward trend in high-skilled occupations over the last twenty years, this trend has been less marked since 2008 for engineers and company managers, whose activity in qualified business services or industry is more sensitive to the economic downturn. The opposite is true for liberal professions, whose share initially declined before recovering after 2008, while self-employment is bouncing back.

While we found similar outcomes, the distribution of qualifications by socio-professional category or by association to wages does not entirely overlap each other. In 2017, low-skilled employees accounted for 13% of the working population according to socio-professional category and 11% according to wage levels of broad occupation categories. In particular, skilled white-collar workers are grouped according to the diploma level or training specialisation in the PCS nomenclature (see *above*). This reflects a trend towards recruiting more highly qualified professionals (higher level of education of the working population compared to the offered qualified positions<sup>22</sup>) and a shift of "boundaries" of

qualifications<sup>23</sup>, which is less well reflected in wages. Thus, sales workers include salespersons who are now recruited with a higher average level of education than cashiers or self-service employees. Generally speaking, the observed occupations here are relatively aggregated – we are not at the finest level of PCS for reasons of data availability and robustness, which can mask some wage level differences.

Therefore, if the American analysis<sup>24</sup> establishes a polarisation for the United States forming a U-shaped curve – the two vertical lines representing the rise of the low – and high-skilled occupations and the gap symbolising the erosion of the middle of the distribution, France, on the other hand, would rather be polarised on one single side, displaying a rise of the high-skilled only.

## WHY DOES FRANCE APPEAR VERY POLARISED IN INTERNATIONAL COMPARISONS?

If the diagnosis of a "skill-biased change that favour manager" without a spillover of employment on low-paying service jobs seems accurate, why is France considered highly polarised in international comparisons? The answer may well be a methodological one.

### *From methodological difficulties to conflicting outcomes*

#### **International nomenclatures**

Outcomes provided by international comparisons are mainly portraying a statistical artefact. The *International Standard Classification of Occupations (ISCO)* used in this type of exercise is not suitable for identifying socio-professional categories or the "qualification" of occupations. By qualification of occupations, we mean the level required by the job, often attributed by a collective agreement corresponding to a level of remuneration. International comparisons use the ISCO nomenclature to approach this qualification. However, occupations are not equivalent to qualifications, and the still imperfect correspondence between the two can vary from one country to another.

The first methodological difficulty with this international nomenclature is that it includes within the low-skilled category, occupations that are identified as medium-skilled in the French socio-professional categories that create jobs: this is the case of salespersons or transport agents<sup>25</sup>.

21. Forment V. and Vidalenc J. (2020), "Des professions intermédiaires de plus en plus nombreuses et féminisées", *Insee Focus*, n° 185, February; Delanoë A., Cadet J.-P. and Guillon C. (2020), "Professions intermédiaires des entreprises : les raisons d'une envolée des diplômes", *Céreq Bref*, n° 397, November.

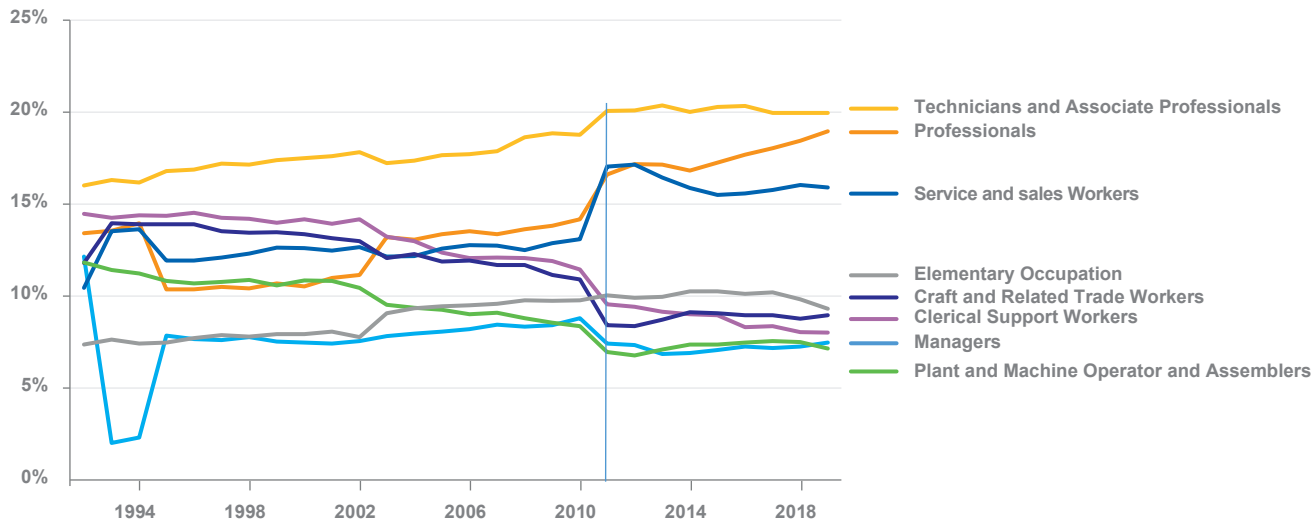
22. Flamand J. (2020), "Quelle influence du niveau de diplôme sur la participation au marché du travail?" *La Note d'analyse*, No. 85, France Stratégie, February.

23. Méda D. and Vennat F. (dir.) (2005), *Le Travail non qualifié*, Paris, La Découverte.

24. Autor D. H. and Dorn D. (2013), *op. cit.*

25. At level 5, "Service workers and shop and market sales workers" of the ISCO nomenclature.

**Figure 7 – Share of employment by occupation according to the International Standard Classification of Occupations (ISCO), in individuals, 1992-2014**



Field: Mainland France, ordinary households.

Note: The revision of the ISCO nomenclature in 2010-2011 produces an increase of about 4 percentage points in the share of employment of "Craft and related trades workers".

Source: Labor Force Survey, Eurostat

A second methodological challenge is that the ISCO nomenclature has suffered from several series breaks, particularly between 2010 and 2011, on top of national series breaks (see graph 7). As these breaks have not been retroplated by Eurostat, data before and after 2011 cannot be compared. In France's case, revisions in 2002 and 2009 led to an increase in the number of jobs in personal services, which are precisely the only low-skilled occupations experiencing a long-term increase. Thus, the revision contributes to overestimating the evolution of low-skilled jobs. When there is a break in the series, the usual smoothing methods may not be sufficient at an aggregate level of occupations to entirely correct the present gaps.

The new European classification ESeG (European Socio-economic Groups), which is similar to the French socio-professional categories, was not available before 2011. Consequently, it does not allow for any identification of historical distortion of qualifications, but it provides a representation of the respective share of the different qualifications. However, if we compare it with the qualification classification carried out on the basis of the International Standard Classification of Occupations (ISCO), we can see that low-skilled jobs have been overestimated and medium-skilled jobs underestimated in the case of France (see graph 8 on the next page).

### French data

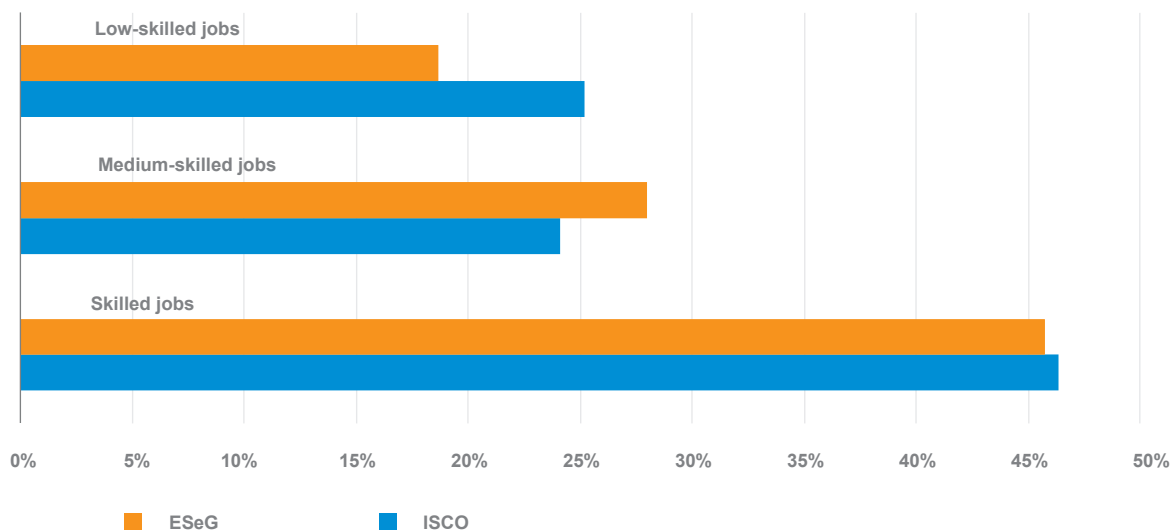
The French data also raises some difficult issues. Many academic analyses on France<sup>26</sup> rely on administrative data - the annual social data declarations (DADS), to match wages and occupations (at the same level of PCS aggregation as used previously). However, this source of information has several limitations.

First of all, retrospective data prior to 2009 excludes some public servants<sup>27</sup> who nevertheless represented 19% of the working population in 2017. This proportion can be more important by occupation especially for those that are not necessarily identified as belonging to the public service: for instance, medical professions are semi-public and semi-private, and among low-skilled workers in the construction sector, nearly 30% of them are public employees. Similarly, "personal services workers", among whom the bulk of home care providers and childcare assistants are recruited and have experienced the sharpest increase among low-skilled employees, have only been recorded in the DADS since 2009. As a result, the data used in retrospect is based only on employees of private intermediate structures (associations, companies), which contributes little to human services employment. Conversely, the last observation period records all employers, which leads to overestimating employment growth in this sector. Finally,

26. See Davis D. R., Mengus E. and Michalski T. (2020), *op. cit.*; and Reshef A. and Toubal F. (2019), *op. cit.*, footnote 3.

27. Before 2009, only the data on state civil servants are available to estimate a full-time equivalent salary. By contrast, no information is available on working hours in territorial public service or public hospitals, where are found many care assistants, nurses, low-skilled workers or maintenance workers (garbage collectors recruited by local authorities or hospital cleaning workers).

**Figure 8 – Share of qualifications in total employment in France, according to the International Standard Classification of Occupations (ISCO) and the European Classification of Occupations (ESeG), in 2019**



Field: Mainland France, ordinary households.

Source: Labor Force Survey, Eurostat, calculation by France Stratégie

the DADS only covers data for employees and excludes the self-employed, which represents the main form of employment of farmers, shopkeepers (store managers or owners) or among liberal professions (13% of total employment). Limited to salaried employees of the private sector, the studied data deprives us from the analysis of job displacement (between low-skilled agricultural employment and employment in personal services, for example, or by the outsourcing to the public sector). It also limits the observation of changes among the self-employed categories (whose activity are increasingly similar to those of salaried employees in some cases) and prevents the analysis of the public-private mix, which is a characteristic of the French economy that socialises a significant portion of social spending.

The second difficulty is that INSEE Professions and Professional Categories (PCS) nomenclature has undergone a thorough overhaul back in 2002. This break in series is particularly strong and often leads to considerable jumps in numbers, particularly at the level of aggregation of the PCS under consideration. As previously mentioned, the usual methods for smoothing series before and after the break are not sufficient to correct jumps, since the levels are not comparable: one can thus have a doubling of the workforce while the profession is structurally in decline. The chosen method here was to correct employment shares of occupations at the earliest date (1996-1997), taking into account the impacts two years before and after the series break.

### *A social construction that is difficult to grasp with a unambiguous measurement*

Regardless of the data quality, two fundamental problems remain: the first is the inherent difficulty of comparing qualifications internationally. Professional qualifications depend on the level of diploma, collective agreements and "social status", which may be reflected in salary levels, but not always: some professions are well paid but less well-considered in the social hierarchy, while others are poorly paid but highly recognised socially, such as in the health sector in France. In other words, professional qualifications are culturally and socially rooted in specific national contexts and vary from one country to another. In many European Union member states, particularly in the East, drivers are considered as low-skilled occupations; this is not the case in France due to some of the most favourable labour laws and collective bargaining agreements in Europe. Another example is caregivers which are among the low-skilled personal care workers in the U.S., whereas they belong to medium-skilled professions in France as the profession is a regulated one, accessible only through a competitive examination, which requires medical skills. This contrasts much their situation in the U.S., where they are considered closer to personal services and home care providers which do not require any particular qualifications of a medical kind.

The second fundamental problem is that "qualifications" are in perpetual transformation following the evolution of the working population, productive organisation, technical progress, and collective bargaining or labour law. In France, secretaries are no longer recruited before high school graduation, and the most qualified workers can be recruited at graduate level due to the complexity of tasks and the available well-trained workforce, but also because of a persistently high unemployment rate, which leads to a broader phenomenon of "devaluation" of diplomas. Moreover, tasks evolve within professions, and the individualisation

of skills and remuneration blurs the boundaries of qualifications and socio-professional categories, including the best endowed, such as managers<sup>28</sup>. Yet INSEE PCS have remained identical since 1982. To tackle the evolution of qualifications, the working group on the reform of the French PCS, which delivered its conclusions in 2020, suggests a complementary aggregate, "job class" which makes it possible to identify four levels of qualifications (higher, intermediate, skilled, low-skilled) according to the job status, the level of qualification and the remuneration<sup>29</sup>.

## CONCLUSION

The labour market polarisation observed in France is marked by a shift in employment towards the highest qualifications, going hand in hand with an erosion of jobs located in the middle of the distribution of qualifications which the 2008 crisis has amplified. On the other hand, there is no evidence of polarisation or employment concentration at both extremities of the skills distribution, unlike in the United States. The lowest-paid occupations in personal services (childcare assistants, home care providers) or retail services (hairdressers, hotel and restaurant workers, cashiers) have only increased significantly in the 1990s. In this sense, the trend observed in recent years is a decline in sales workers and personal services employees, which could forecast a shrinking of their share within the working population, while the current health and economic crisis is particularly affecting these occupations.

Beyond this diagnosis, qualifications are constantly being rearranged according to recruited profiles, technological progress, location of activities, and work fragmentation that impacts employment and working conditions. These changes are now affecting all qualifications and call for a more "complex" and dynamic classification of occupations, enabling international comparisons, which would combine several indicators and their evolution over time. This would allow for a more accurate identification of occupations according to the vulnerability of their working and employment conditions<sup>30</sup> and to the socio-economic characteristics of the persons who occupy these jobs (degree, gender, age, experience, etc.).

Keywords: labour market, skilled jobs, polarisation, wages

28. Prouet E. and Naboulet A. (2020), "Les cadres aujourd'hui : quelles spécificités?" (2020), *Note de synthèse*, France Stratégie, July.

29. Amossed T. (2020), *Rénovation de la PCS 2018-2019*, CNIS working group.

30. Flamand J., Jolly C. and Rey M. (2020), "Les métiers au temps du corona", *La Note d'analyse*, No. 88, France Stratégie, April.



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