

French Council of Economic Analysis

Gender equality: a matter of equity and economic growth

Les notes du conseil d'analyse économique, no. 83, December 2024

espite real progress over the last 30 years, the earnings gap between men and women in France is still significant, around 30% in 2020. This earnings gap can be explained by women's lower participation in the labour market, more frequent career breaks and recourse to part-time work, and persistent pay gaps even with level of responsibility and working hours being equal. What is cause for concern is that the pace of reduction of this gap has slowed considerably over the last decade. In this Note we quantify the importance of three main factors that explain the persistence of these labour market inequalities: education, motherhood, and career progression.

First, we document that these inequalities begin at school. Although girls perform better on average, they are still largely under-represented in scientific and technical disciplines, whereas earnings are yet higher in these fields. These career choices are influenced by gender stereotypes that become apparent at a very early age and limit girls' ambitions in these disciplines. This pronounced separation of fields contributes to the persistence of the pay gap throughout the career.

Second, we show that the impact of motherhood is the main driver of persisting gender inequalities. Following the birth of their first child, women earn on average 38% less over the next ten years in comparison with women with no children, a gap they never make up for over the rest of their careers. This child penalty is the result of women's lower participation in the labour market, shorter working hours and switching to lower paid jobs in favour of greater

flexibility. This is not the case for fathers, whose careers are not affected by the birth of their children.

Finally, even when women follow the same educational paths as men and work full-time, there are still gaps in pay and promotion, linked to careers development and strong asymmetries of information in the labour market, which penalise women.

Given the multiplicity of factors that contribute to inequalities throughout the life cycle and their strong interdependence, only an ambitious and coordinated strategy that acts on all these levers will effectively and sustainably reduce the labour market inequalities that are holding back French growth.

In addition to the development of early-years childcare, we recommend an ambitious reform of paternity leave, extending it to 10 weeks, 6 of which to be compulsory. This should contribute to a better sharing of parental responsibilities from the early months of a child's life and reduce the impact of motherhood on women's careers. In regards to education, in order to strengthen the teaching of mathematics and science to girls, we recommend the creation of teams of specialized teachers dedicated to mathematics instruction in primary schools, aimed at combating the harmful effects of gender stereotypes. Finally, to encourage greater fairness in salary negotiations and reduce the pay gap, we advocate the mandatory publication of salary ranges in job advertisements and the application of penalties in the event of non-compliance.

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A slower decrease in the gender earnings gap since 2010

When Napoleon created the baccalauréat by decree in 1808, he had no idea that a woman would one day take it. But today, more girls than boys take the baccalauréat and they account for 55% of university enrolments. Given their level of qualification, we can only be surprised at the under-representation of women in management positions, not to mention the significant and persistent pay and promotion gaps that characterise their careers. Figure 1 captures the scale of the problem: although the gender earning gap has been narrowing for 30 years, most of the progress was made between 1990 and 2010 (-15 percentage points) and has slowed considerably since then. The gap narrowed by only 5 percentage points between 2010 and 2020, and is now just over 30%.



Figure 1. Average earnings gap between men and women, by qualification level

Source: Authors' calculations based on data from the 1990-2020 Employment Survey (INSEE). Scope: Men and women aged 20 to 55 who are not retired, on long-term sick leave nor in full-time education.

This earnings gap of 30% in 2020 is higher than that found by INSEE, which regularly publishes studies on the subject and gives a figure of 24.4% for 2020, mainly because our measure covers a wider population and includes people who are not in work¹.

This earnings gap is the result of a combination of three main factors, which play roughly equal parts in the case of France. First, women participate less in paid employment. In 2020, the gap in activity rates between men and women remains significant, and is of10%.² Secondly, even when in work, women work fewer hours than men: part-time work is much more common among women, especially among the less qualified, and they are more likely to take leaves from work during the year. In 2020, 27.4% of women work part-time in their main job, compared with 8.4% of men. Finally, according to INSEE,³ in 2022 women's average earnings in the private sector remains14.9% lower than men's for the same number of hours worked.

Finding 1. Although the earnings gap between men and women has narrowed over the last three decades, it remains at 30% in 2020. These inequalities stem from women's lower participation in the labour market, shorter working hours and persistent pay gaps even controlling for hours worked.

Two factors explain this evolution over the last 30 years. Firstly, there has been a sharp increase in women's participation in the labour market. In the 1970s, only 60% of women aged 25-49 were in employment, compared with almost 100% of men. Their participation rate increased significantly between the 1970s and the mid-1990s (+20 points between 1975 and 1995), but this increase has halted in the last twenty years, stabilising at 84.2% in 2022.

The sharp rise in women's educational attainment has also played a key role in reducing gender inequality. As Figure 1 shows, the income gap between men and women decreases with the level of education. Women with a "brevet des collèges" or equivalent have incomes 50% lower than men with the same education level. The gap is around 25% for women with a higher education degree, largely because they participate more in the labour market and more often on a full-time basis. While the increase in women's educational attainment has had the mechanical effect of reducing earnings inequality overall, over the last 15 years the gap within each education level almost remained the same.

Finding 2: Over the last 15 years, women's participation in the labour force has stagnated and, at any given level of education, earnings inequalities have hardly changed.

The persistence of large earnings disparities between men and women has major economic consequences. As these

The authors would like to thank the permanent team at the CAE for monitoring this report, in particular Jean Beuve, scientific advisor, Alice Lapeyre, economist and Max Molaro, researcher.

¹ See Godet F. (2024): "Écart de salaires entre femmes et hommes en 2022", Insee Focus no. 320, March. There are three reasons for the difference between these two figures (30% / 24.4%). Firstly, unlike Insee, we include people who are not in employment. Secondly, we extend the scope of employees beyond the private sector, to which INSEE is restricted. Finally, the data source is not the same, as INSEE relies on the most robust data from employers' administrative declarations, whereas we use its Employment survey, where declarations of income and working hours may be more imprecise. To check whether the source used by the CAE was not problematic, we recalculated the income gap using the Employment survey and the same field as that used by INSEE: our results are very similar.

² Insee (2022): "Femmes et hommes, l'égalité en question", Insee Références.

³ Insee Focus no. 320, op. cit.

earnings account for more than two thirds of GDP, an earning gap of almost 30% between men and women amounts to an economic cost of around ten points of GDP. Overall productivity is mostly at stake. Women's lower participation and shorter working hours are major obstacles to the proper allocation of talent. Highly educated women often found themselves assigned domestic tasks whereas a better use of their skills would be in the labour market. This loss of skills not only hinders their professional fulfilment, but also France's overall economic development potential. Using American data, researchers⁴ have shown that these allocation effects are massive: over the last 50 years, they find that almost 40% of the growth in GDP per capita can be explained by the better allocation of talent generated by the increased participation of women and ethnic minorities in the labour market.

In addition to these long-term effects on overall productivity, increasing the labour supply of women, especially the high skilled ones, can have short-term benefits by reducing labour market tightness. Let us consider the specific but striking example of the doctors: because of the long-standing numerus clausus, France is facing a shortage of doctors, particularly in rural areas. In 2019, almost one in four female doctor is working part-time, compared with only 6% of their male counterparts.

This significant difference has led to a shortage of full-time equivalent (FTE) doctors in France. This lack of FTEs exacerbates the general shortage of doctors and contributes to growing tensions in the health system, where access to care is becoming increasingly difficult, particularly in certain regions and specialities. This situation underlines the crucial importance of better integrating women into the full-time workforce as a response to labour market tightness. of the earnings distribution. The top 10% of women with the highest earnings still earn 25% less than the top 10% of men with the highest earnings. In other words, the top 10% of women still do not have access to the same opportunities as the top 10% of men. And this holds true as well at the bottom of the income distribution. So the whole distribution of opportunities is worse for women.

Finding 4. Economic opportunities throughout the life cycle are significantly lower for women at all levels of the income distribution. This poses a major problem of equity in the distribution of social status between men and women.

In this Note, we try to better understand the sources of these systematic and persistent inequalities. To do so, we focus on three crucial episodes in the life cycle: education, childbearing, and career development. Our aim is to quantify precisely the role of each of these episodes in the observed labour market inequalities and to document the mechanisms by which they affect men's and women's careers differently over time. We observe strong interdependencies through which the inequalities created at each of these stages reinforce each other.

Education and career choice

In France, the majority of high school diploma holders are women: in 2022, 85% of girls obtained the baccalaureate, compared with only 75% of boys. This gap of ten percentage

Finding 3. The economic cost of gender inequality in the labour market is in the order of ten percent of the GDP. This is mainly due to the poor allocation of talents, which hampers the long-term productivity of the economy.

But more than a question of economic efficiency, the persistence of high gender inequalities in the labour market poses a fundamental problem of equity. As Figure 2 shows, the income gap between men and women is large at all levels



Note: Monthly earnings, in euro 2015. Average earnings for each quantile are normalised by the average earnings of men in the quantile 90in 1990. For a given quantile (i.e. a given relative position in the wage distribution for one's own gender), women's average earnings are systematically lower than men's. **Source**: Authors' calculations based on data from the 1990-2020 Employment Survey (INSEE). **Scope**: Men and women aged 20-55 in employment and not retired, on long-term sick leave or in full-time education.

⁴ Hsieh C.-T., Hurst E., Jones C.I. and Klenow P.J. (2019): 'The Allocation of Talent and U.S. Economic Growth', Econometrica 87, pp. 1439-1474. Jaravel. X. (2023): Marie Curie habite dans le Morbihan. Démocratiser l'innovation, Éd. du Seuil.

points is stable over time. Women also outnumber men in higher education, both in France and in other OECD countries.

Girls' participation in higher education: progress and "nuances"

At school, girls on average perform better than boys, whatever the indicators observed (school delay, repetition of a year, continuous assessment scores, pass and distinction rates in examinations).⁵ At the end of secondary school, girls are more likely to opt for general education and boys for vocational education. Not surprisingly, more girls go on to university and the gender imbalance has only increased over time. Today, more than 60% of higher education graduates, especially master's graduates, are women. However, this feminisation of general and higher education masks major differences in career choices and qualifications, which remain highly gendered (Figure 3).



Figure 3. Proportion of women in upper secondary and tertiary education (2020)

Source: Authors' calculations based on Insee (2022):"Femmes et hommes, l'égalité en question", Insee Références.

As soon as they are in a position to do so, i.e. from secondary school onwards, girls select into literary subjects and life and earth sciences, while boys are more inclined to pick scientific and technological subjects; these gender biases are even more pronounced in short and vocational courses. This was further exacerbated by the reform of the high school system (known as the Blanquer reform), which increased the already large gap in the proportion of boys and girls enrolled in science subjects for the baccalauréat from 19 percentage points (62.4% compared to 49.7%) to 25 percentage points (43.6% compared to 24.4%).⁶ These differences automatically translate into the tertiary education system, where women represent 70% of students in arts faculties, 63% in medicine and 62% in law. On the other hand, they are under-represented in the preparatory classes of the grandes écoles and in highly selective engineering schools, where they account for 40% and 30% of students respectively.⁷

This gender distribution of qualifications is not specific to France,⁸ but the gaps are wider than in other European countries. For example, according to Eurostat, there is a 10 percentage points gap between Sweden and France in the proportion of girls enrolled in scientific courses — science, technology, engineering and mathematics, known as STEM. Increasing the number of womenin these fields would not only increase the total number of STEM graduates, which is currently lower in France (23%) than in Sweden (26%) or Germany (33%), but also improve the average level of graduates.

Girls drop out of science starting in first grade!

Mathematical skills and knowledge are essential to develop STEM competences. However, in France, the Elfe⁹ longitudinal survey, which tracks thousands of children born in 2011 over 10 years, reveals that girls are as good as (or even slightly better than) boys in mathematics in preschool, but that a gap appears upon entering in first grade and worsens thereafter. Based on national testing at the start, middle and end of first grade, a study¹⁰ confirms that while girls start first grade with a similar level in mathematics than boys, this is no longer the case by the end of the year.11 This drop mainly affects the best-performing girls (those in the top 1% at the start of first grade). The trend in the maths gap can be observed across all social categories and family configurations, and across the country. And it has long lasting consequences. The Timss 2019 survey reveals that in fourth grade, not only do French pupils perform poorly in mathematics, but girls more so than boys.

⁵ Ministry of Education (2023): "Filles et garçons sur le chemin de l'égalité, de l'école à l'enseignement supérieur".

⁶ Given the failure of this reform, mathematics has been reintroduced into the core curriculum in 2023.

⁷ Insee (2022), op. cit.

⁸ Globally, women account for only 35% of STEM graduates and hold only a quarter of jobs in science, engineering and ICT, with significant disparities between countries. See Unesco (2024): Global education monitoring report 2024, gender report: technology on her terms.

⁹ Fischer J.-P. and Thierry X. (2022): "Boy's math performance, compared to girls', jumps at age 6 (in the ELFE's data at least)", British Journal of Developmental Psychology, 40(4), pp. 504-519.

^{10.} Breda J., Parraud J. S., Touitou L. (2024): "Le décrochage des filles en mathématiques dès le CP: une dynamique diffuse dans la société", Note IPP n° 101, January.

¹¹ Whereas at the start of CP, girls have a better command of French than boys and a similar command of maths, at the start of CE1 they still have a better command of French than boys, but their command of maths is lower. Ministère de l'Éducation nationale (2023): op. cit.

The role of stereotypes in education

The differences in mathematical attainment observed from the end of first grade can largely be attributed to variations in social norms and modes of socialisation. Focusing on the differences in mathematical performance between girls in the former German Democratic Republic and in the Federal Republic of Germany, researchers¹² have shown that girls who grew up in East Germany, under a socialist regime that valued gender equality, have greater confidence in their scientific skills. They also show that girls have a more competitive spirit than their counterparts that grew up in West Germany, where gender stereotypes were more deeply rooted. These differences show the impact of educational policies and social messages on girls' self-confidence and academic performance.

In France, boys are more confident than girls in their ability to succeed in mathematics. And this lack of confidence among girls, which cuts across all level of the society, increases with social level It is also reflected in a higher level of anxiety about mathematics among girls.¹³ This has an impact on their career choices, as shown by a study¹⁴ which shows a positive relationship between students' intentions to pursue studies or careers with maths content and their performance in mathematics, which is stronger for boys than for girls. While the gender gap is close to zero for the lowest-performing students, it is large and significant for the highest-performing students. As a result, the gender gap in mathematics performance is wider among students intending to study mathematics than in the general population. This is a very costly situation as it deprives society of many of its best scientists.

Is school the cradle of inequality?

It is a matter of concern that gender inequalities in science appear at the start of primary school and are that they are more pronounced in France than in some of its neighbours.¹⁵ This suggests that the teaching of mathematics is problematic in our country, and not only because French pupils perform poorly in the TIMSS. Research carried out in Israel¹⁶ and Italy,¹⁷ based on the random assignment of pupils in different classes (and therefore with different teachers), has highlighted the negative impact of gender stereotypes conveyed by teachers, both male and female, on girls' performance in mathematics and on their enrolment in advanced mathematics courses in high school.

Teachers' behaviour in the early stages of education has a significant and lasting impact on girls' and boys' performance in the short term and on their aspirations in the long term. It is key to raise awareness on the presence – and effects – of gender stereotypes in the teaching of mathematics and to develop pedagogical strategies aimed at deconstructing them in order to enable every child, regardless of gender, to develop their full potential.

Finding 6. Differences of performance in mathematics between girls and boys start during the first year of primary school, notably because gender stereotypes of teachers. In the long run, it limits the orientation of girls towards scientific careers, although their initial performance is similar to that of boys.

The impact of female role models

Several studies have shown the effectiveness of relatively simple interventions to encourage girls to pursue careers in technical and scientific fields. These interventions are low cost and effective at all stages of the school curriculum. Some studies¹⁸ show that external female role models with whom young girls can identify influence their educational choices. This is also the case in the evaluation of the "For Girls in Science" programme launched by L'Oréal in 2014.¹⁹ The one-hour classroom intervention by young female scientists, L'Oréal scholarship holders or scientists working in the company's R&D department, led to a significant increase in the proportion of girls enrolling in selected STEM subjects, particularly among those with the best mathematical skills. They also find that it was the scientists working at L'Oréal, rather than the female researchers, who had the greatest impact on students. The most effective female role models for stimulating the aspirations of female pupils were those

¹² Lippmann Q. and Senik C. (2018): 'Math, Girls, and Socialism', Journal of Comparative Economics, 46(3), pp. 874-888.

¹³ France is one of the countries with the highest gender gap in mathematics anxiety in 2022, as measured by the ANXMAT index in PISA. The gaps are also large in Denmark, Germany and Norway.

¹⁴ Breda T., Jouini E., Napp C. and Thebault G. (2020): "Gender stereotypes can explain the gender-equality paradox", Proceedings of the National Academy of Sciences, 117(49), pp. 31063-31069.

¹⁵ For example, in the Timss 2019 survey, in CM1, there is no difference between the mathematics scores of girls and boys in Finland.

¹⁶ Lavy, V. and Sand E. (2018): 'On the origins of gender gaps in human capital: Short-and long-term consequences of teachers' biases', Journal of Public Economics, 167, pp. 263-279.

¹⁸ Porter C. & Serra D. (2020): "Gender differences in the choice of major: The importance of female role models", American Economic Journal: Applied Economics, 12(3), p. 226-254; Del Carpio L. and Guadalupe M. (2022): "More women in tech? Evidence from a field experiment addressing social identity", Management Science, 68(5), p. 3196-3218.

¹⁹ Breda T., Grenet J., Monnet M. and Van Effenterre C. (2023): "How effective are female role models in steering girls towards STEM? Evidence from French high schools", The Economic Journal, 133(653), p. 1773-1809.

¹⁷ Carlana M. (2019): 'Implicit stereotypes: Evidence from teachers' gender bias', The Quarterly Journal of Economics, 134(3), pp. 1163-1224. This article measures teachers' stereotypes using the Gender-Science implicit association test, while Lavy and Sand (2018) measure it using gender differences in marks in school exams marked by teachers and national exams marked blind by external examiners.

who succeeded in conveying a positive image of scientific careers.

This is consistent with another study in the UK²⁰ which suggests that although girls enjoy maths and science at GCSE level and recognise that STEM subjects offer better career prospects than others, they are reluctant to pursue this path at higher levels, at least in part because they perceive the education and working environment in these fields to be male-dominated. As a result, they are less inclined than boys to pursue their studies in these fields.

Finding 7. Exposure to positive female role models in scientific fields significantly increases girls' interest in these subjects.

Salaries and careers

Women under-representation in scientific studies has a significant impact on their careers. Indeed, salaries are higher in scientific and technical fields than in humanities, as Figure 4 shows. There is a negative correlation between the proportion of women in a given field and its median net salary: women are over-represented in the fields leading to the lowest salaries. This relationship is observed both at the masters and at the professional bachelor levels. This is the first building block of the gender pay gap.

Despite the fact that girls on average have a higher level of education than boys, the high level of differentiation in the choice of disciplines remains a major obstacle to equal career opportunities, with significant consequences for the allocation of talents, innovation, and growth.²¹ An ambitious effort is therefore needed to remedy this situation. It must start in the first grade and involve all stakeholders, especially teachers.

Recommendation 1: Implement an ambitious plan with quantified targets to increase the representation of girls in science subjects. Start in the first year of primary school, using teams of teachers specialised in mathematics and trained to improve its teaching, especially for girls. Promote scientific careers throughout the school years by regularly presenting positive female role models.





Source: MESRI-SIES, 2022-2023 survey "Professional integration of university graduates" (152,288 respondents). Scope: French master and professionalbachelor graduates in 2020 who have not continued or resumed their studies in the two years following their graduation. **Note**: Salaries are median net monthly salaries (including bonuses) for full-time jobs.

A still strong child penalty

Income inequalities, which are present from the outset, increase over the life cycle with the arrival of children. The arrival of children is a major turning point in women's labour market trajectories. The child penalty they suffer compared to men is both very high and persistent. Figure 5 shows changes in earnings by gender in the five years before and ten years after the birth of a first child. It can be seen that men's average earnings are virtually unaffected by parenthood. On the other hand, mothers' average earnings fall sharply after the birth of their first child and then stabilise at a much lower level. In the ten years following the birth of their first child, women's earned income falls by almost 38% compared with a counterfactual situation in which they would not have had children.22 In this respect, France is in line with the OECD average, with a much higher child penalty than in the Scandinavian countries (between 15% and 20%), but

²⁰ Cassidy R., Cattan S., Crawford C. and Dytham S. (2018): 'How can we increase girls' uptake of maths and physics A-level?", Institute for Fiscal Studies.
²¹ This has already been highlighted in a previous CAE report. See Guadalupe M., Jaravel X., Philippon T. and Sraer D. (2022): "Cap sur le capital humain pour renouer avec la croissance de la productivité", Les Notes du Conseil d'analyse économique, No. 75, September.

²² The effect of the arrival of the first child on labour income is estimated using an event-study which isolates the effect specific to birth from other life-cycle effects and long-term income growth by generation. Kleven H., Landais C. and Søgaard J. E. (2019): "Children and gender inequality: Evidence from Denmark", American Economic Journal: Applied Economics, 11(4). On the same subject, see also Meurs D. and Pora P. (2019): "Égalité professionnelle entre les femmes et les hommes en France : une lente convergence freinée par les maternités", Économie et Statistique, no. 510-511-512, pp. 109-130.

Figure 5. Impact of the birth of the first child on earnings



(INSEE).

less severe than in the German-speaking countries, where it is close to 60%, as in Germany.

This disadvantage is the result of permanent adjustments made by mothers at all margins of their labour supply. The arrival of children often translates into a decline in women's participation in the labour market. It also leads to a reduction in the number of hours worked by those who remain in the labour market. Finally, women experience a decrease in their hourly earnings. The latter factor is explained by the fact that, after having children, women make a series of choices about which sector to work in, in which occupation, and in which firm etc., which penalise their careers. The same forces that lead mothers to reduce their labour supply also lead them to accept the most flexible jobs in terms of working hours or those withless demanding professional commitment.23 Mothers are much more likely to choose jobs closer to home in order to minimise their commuting time.²⁴ These mechanisms have an immediate and lasting impact on women's wages, as they select into jobs and occupations that may not fully value their skills and offer limited opportunities for career progression.

In the case of France, the overall impact on earnings is distributed more or less equally across the decrease in participation rate, in hours worked, and in hourly earnings. The traditional model is therefore no longer that of the housewife: departures from the labour market are now much less common. Career breaks are longer and/or more frequent for the women with lower qualifications though, who make greater use of parental leave (Prépare). As a whole, the impact of motherhood on women's careers remains very significant. **Finding 8**. The arrival of children has a significant and lasting impact on women's careers: women face a reduction of 38% of their income in the ten years following childbirth due to lower participation in the labour market, fewer hours worked and lower hourly wages.

This child penalty also accounts for a growing proportion of overall pay inequality. In the early 1990s, the child penaltyaccounted for more than half of the average gap in earnings between men and women. In 2020, it accounts for almost 90% of this gap (Figure 6). This can be explained by the fact that the average earnings gap has fallen sharply, from 50% in 1990 to 30% in 2020, while the child penalty has remained broadly stable.

How can we explain the persistence of such strong specialisation within couples after the arrival of children? It seems that economic incentives play a limited role in this behaviour. One might think that couples would give priority to the paid work of the parent with the highest income. In reality, comparative advantages do not explain the degree of specialisation observed within couples. Women who earn more than their spouses, or with better career prospects, face the same child penalty as women who earned less than their spouses before the birth of their first child.²⁵



Figure 6. Earnings gaps between men and women

Source: Authors' calculations based on data from the 1990-2020 Employment Survey (INSEE).

²⁴ Coudin E., Maillard S. and Tô M. (2019): "Entreprises, enfants : quels rôles dans les inégalités salariales entre femmes et hommes", Insee Analyses no. 44. See also Le Barbanchon T., Rathelot R. & Roulet A. (2021): "Gender differences in job search: Trading off commute against wage", The Quarterly Journal of Economics, 136(1).

²³ Gulek A. (2024): "Occupational Heterogeneity of Child Penalty in the United States", working paper, July.

²⁵ Kleven H., Landais C. and Søgaard J. E. (2019): "Children and gender inequality: Evidence from Denmark", op. cit.

While economic incentives are unlikely to work, gender stereotypes and social norms regarding the organisation of the family play a major role in imposing a penalty on mothers in the labour market, both in international comparisons and at the individual level. In most OECD countries, a significant proportion of the population agrees with the statement: "when mothers work, children suffer". However, there is considerable heterogeneity across countries in terms of agreeing with this norm, with 70% of Japanese agreeing with it but only 5% of Danes. France is somewhere in between, with almost 30% of men and 25% of women agreeing with this norm. Unsurprisingly, the countries with the highest levels of adherence to this norm are also those with the highest levels of child penalty in terms of career and earnings.²⁶

Maintaining high levels of child penalty for women negatively affects fertility. There is a clear link between expected child penalty and the desire to have children. The ability to reconcile family and work remains an important determinant of fertility decisions. Contrary to many pro-natalist policies, stabilising fertility rates therefore requires women into the labour market and a better allocation of domestic tasks and time spent with children within couples.

Finding 9. The child penalty accounts for almost 90% of the gender earning gap and is explained by social norms rather than economic factors. These dynamics also affect fertility choices by limiting the desire to have children.

How can public policy change this highly unequal division of roles within couples, reduce the child penalty and promote equal opportunities both for fathers and mothers? Unfortunately, there is no obvious answer. However, we can draw inspiration from countries where the child penalty is smaller than in France, such as the Scandinavian countries, and from recent research. A broad range of measures should be encouraged, combining universal access to inexpensive childcare from the earliest age (the creation of a full-fledged public service for early childhood requires at least 200,000 new childcare places, according to estimates by the Haut Conseil pour la famille)²⁷ and a reform of the parental leave, which would allow a better division of roles from the outset. At the same time, we must ensure that these policies do not create (explicit or implicit) disincentives for women to work (e.g. through taxation or the pension system).²⁸ Finally, there is a need for information campaigns on the costs of this unequal division of roles and a strong commitment to a norm of equal parental responsibility within couples.²⁹

We suggest an ambitious reform of paternity leave. It would be extended to 10 weeks (compared to 4 weeks today), the same length as post-natal leave for mothers. On the model of maternity leave, 6 weeks would be made compulsory.³⁰ While the possibility of splitting paternity leave would be maintained, it would be compulsory for 6 of the 10 weeks to be taken outside the mother's leave. This reform should be accompanied by a massive information campaign to combat ignorance of the rights (especially among the unemployed) and by encouraging social partners to negotiate on sectoral or company agreements to supplement maternity and paternity leave compensation up to 100% of salary.³¹ Compensation for the self-employed ,currently a flat rate, should also be redesigned to ensure greater proportionality.

We estimate the cost of such a reform of the paternity leave at €1.3 billion (upper bound).³² To finance this reform and additional childcare places for a universal public childcare service, we recommend reallocating a day of vacation for all employees. We have already this experience with the "day of solidarity for autonomy" of the eldest, that generates the equivalent of 2.5 billion euros by 2024.³³ These resources could be returned to the National Fund for Family Allowances (CNAF) -: €1.3 billion would be used to reform the paternity leave and the rest to finance the creation of 90,000 childcare places over 6 years, almost half the target set by the Haut Conseil pour la famille.³⁴ This reform should not be seen as the abolition of a day of leave, but rather as the redirection of the use of leave towards more childcare by fathers. Particular attention must be paid to the geographical coverage of childcare facilities, which must be increased in areas where the labour force is less qualified, in order to facilitate access for women, who make most use of parental leave in the absence of alternative childcare solution.

²⁶ Kleven H., Landais C.Posch J., Steinhauer A. and Zweimüller J. (2019): 'Child penalties across countries: Evidence and explanations', AEA Papers and Proceedings, vol. 109, pp. 122-126, May.

²⁸ See, for example, Bonnet C. et al (2013) "Réforme des retraites: vers une refonte des droits familiaux?", IPP Note no. 8, October.

²⁷ Haut Conseil de la famille, de l'enfance et de l'âge (HCFEA, 2023): Accueil des enfants de moins de 3 ans: relancer la dynamique, Report.

²⁹ Costa-Ramon et al (2024): "(Not) Thinking about the Future: Inattention and Maternal Labor Supply", CESifo Working Paper no. 11359. The authors confirm that most mothers greatly underestimate the child penalty. In a large controlled experiment, they corrected mothers' perceptions and found a significant increase in their labour supply.

³⁰ A mother must stop working for 8 weeks (out of the 16 granted), including at least 6 weeks after giving birth.

³¹ Maternity leave and paternity leave (beyond the "3 days of birth") are compensated at 100% of the previous salary, up to the social security ceiling (approximately 2.2 SMIC).

³² Given that the current total cost of paternity leave is €663 million in 2023 (source: Cnaf, all schemes) and that the average duration of compensation is 23 days (source: Social Security Department, for the general scheme), we estimate the cost of one day of paternity leave at €29 million. Two scenarios are explored: one in which the take-up rate remains the same (at 71%) and another, representing an upper limit, in which the take-up rate for paternity leave is increased to 80%.

³³ The elimination of a public holiday (or a day off) is estimated to result in a gain for companies equivalent to 0.3% of the wage bill.

³⁴ In the report op. cit. (p. 294 et seq.), the HCFEA puts a figure on the cost of places depending on the model chosen by parents (day-cares and childminders). In the first year, the cost of creating the place (investment and running costs) must be taken into account; in subsequent years, running costs only. Spread out over time, up to 90,000 places can be created in 6 years with a budget of €1.2 billion.

Recommendation 2. Increase paternity leave to 10 weeks, of which 6 weeks should be compulsory. Couple this reform with the introduction of a full-fledged public childcare service and information campaigns on the rights and long-term costs of the child penalty. Fund these efforts by abolishing a public holiday or day off.

Promotions and careers

Even when women follow the same curriculum as men and work full time, there is still a significant gender pay and career gap.

The promotion gap between men and women

Salary progression over the life cycle is largely driven by promotions, which are associated with large pay increases. A study based on Swedish data, which breaks down wage growth according to three factors - increases linked to a change of employer, internal promotion or other factors within the company - illustrates this perfectly. They find that the pay gap between men and women is mainly driven by differences in access to promotion, which accounts for 74.6% of the total pay growth gap.³⁵

Even when promoted, women are often assigned to less rewarding roles. Researchers in France³⁶ have documented the asymmetric distribution of tasks by gender. In equivalent positions, women perform fewer intellectual tasks and are less likely to be involved in monitoring projects and coordinating teams. Moreover, the degree of autonomy and the distribution of responsibilities favour men, regardless of the degree of feminisation of the profession or of individual characteristics. In order to understand these differences, it is necessary to assess the mechanisms of discrimination over the course of a career.

Finding 10. The gender pay gap mainly stems from differences in access to promotion. Even when women are promoted, they are often assigned to missions with less value of content, with less autonomy and responsibility than their male counterparts.

Subtle discrimination, but just as damaging

A study by the Institute for Public Policy³⁷ shows that the role of discrimination in recruitment in France is, on average, limited. The study uses a random control trial method: the same fictitious resume, one with a female name and one with a male name, is sent to thousands of job vacancies in France. The researchers then measure the difference in recall rates during the first stage of recruitment: any difference between men and women would then reflect discrimination, since the resumes are otherwise identical. They find no significant difference, suggesting a limited gender discrimination in recruitment. However, the difference in callback rates between men and women varies considerably depending on the skill level of the job in question. Women are more likely to be recalled in skilled occupations, whereas they are disadvantaged in low-skilled occupations.

The absence of explicit signs of discrimination in recruitment at the resume selection stage does not mean that discrimination has disappeared. It takes more subtle forms which are harder to detect but just as damaging.

For example, researchers³⁸ examined the impact of direct interactions with hierarchical superiors on career progression and have shown that differences in the frequency and nature of these interactions between genders explain up to 40% of the gender pay gap within the company studied. Male employees are promoted faster in teams where a female supervisor is replaced by a man than in teams where she is replaced by a woman. On average, they experienced a 15% pay rise over the following two years, while women saw no effect on their likelihood of moving up the career ladder. In these teams, this difference is explained by the greater frequency of interactions between male employees and their (male) supervisors during shared break times. This observed effect is specific to men: in teams where a male manager has been replaced by a woman, women are neither advantaged nor disadvantaged.

Differences in treatment between men and women at work persist, even if they have become less explicit and therefore less visible. The figures bear this out: researchers³⁹ have shown that the pay gap between workers in the same company has not changed significantly since the 2000s. A change in pay practices within each company, promoting systematic equality between men and women in the same position, is therefore necessary if gender inequalities are to be reduced.

³⁵ Bronson M. A. and Thoursie P. S. (2023): "The Wage Growth and Within-Firm Mobility of Men and Women: New Evidence and Theory", Working Paper.

³⁶ Fana M., Villani D. and Bisello M. (2021): "Gender gaps in power and control within jobs", Socio-Economic Review, 21(3), pp. 1343-1367.

³⁷ Dares, IPP and ISM Corum (2021): "Discrimination à l'embauche selon le sexe: les enseignements d'un testing de grande ampleur", Dares Analyses no. 26 and IPP Note no. 67.

³⁸ Cullen Z. and Perez-Truglia R. (2023): "The old boys' club: Schmoozing and the gender gap", American Economic Review, 113(7), pp. 1703-1740.

³⁹ Palladino M., Roulet A. and Stabile M. (2024): "Narrowing Industry Wage Premiums and the Decline of the Gender Wage Gap", Working Paper.

The gap in pay expectations

A growing body of research⁴⁰ shows that women have lower salary expectations than men, given the same qualifications. This is particularly true at the top end of the earnings distribution and for more senior workers. A study carried out in partnership with an online recruitment platform specialising in IT engineering jobs (Hired.com) shows a gap between the salaries demanded by men and those demanded by women in France. More specifically, while there is no gap for positions requiring little experience, women demand salaries that are 8% to 10% lower than men's for positions of responsibility. This corresponds to an annual pay gap of almost €10,000. These differences are fully reflected in the salary offers made by companies on the platform. In other words, companies are offering lower salaries in response to women's requests for lower salaries.

Finding 11. Although gender discrimination in recruitment appears to be limited in France, gender inequality persists in more subtle forms and is a real obstacle to women realising their full potential in the labour market.

Why do women ask for lower wages? Researchers have long thought that it might be down to differences in self-confidence or in risk-taking between men and women. An article published in 2022⁴¹ shows that, in fact, these traits are not very gender-specific. So the answer lies elsewhere. Recent studies show that information asymmetries between men and women are at the heart of the observed differences in negotiation. Experimental research conducted with the online recruitment platform mentioned above has shown that informing women about the level of salary demands made by similar men reduces the salary demand gap to zero.42 Faced with higher salary demands from women, the response from companies was encouraging, as they increased their salary offers by the same amount. Once the information asymmetries were corrected, the gender pay gap disappeared from the platform.

Since 2019, companies with more than 50 employees in France are required to publish an index of professional equality between women and men, including an indicator on the pay gap. Although this is a step in the right direction, the scope of the indicator remains limited. In fact, the transparency obligation on pay gaps does not require the sharing of detailed information on salaries. Companies are only required to disclose the gender gap by age group and socio-professional category. A new European directive on pay transparency, adopted on 24 April 2023, requires employers to inform jobseekers of the starting salary or salary range for advertised positions, either in the advertisement or before the interview. Rigorous application of this directive, which provides for real penalties for companies that do not comply, could have a positive impact.

Forcing employers to share this information would empower workers, especially women, to seek better paid jobs and negotiate on an equal footing with employers. Business models that rely on underpaying their employees would find it harder to compete, while more productive companies that pay higher wages would have access to a larger pool of talent.

Reforms requiring companies to include salary ranges in job advertisements have recently been introduced in some US states such as California, Colorado and New York, and in Europe, notably in Austria and Slovakia. Several studies have shown the positive impact of these measures on labour market dynamism. In Slovakia, for example, increased competition for workers has led to wage increases of around 3%.⁴³

Recommendation 3. Require employers, facing penalties if they fail to comply, to state the salary or salary range in the job advertisement or before the interview.

Quota policies

Of all the public policies designed to break through the glass ceiling in the representation of women in business and in positions of power, quota policies have been the most widely used over the last fifteen years. In France, the Copé-Zimmermann law, promulgated on 27 January 2011, requires a minimum percentage of women on the boards of directors and supervisory boards of listed and non-listed companies with more than 500 employees (250 from 1 January 2020) and a turnover or balance sheet of at least 50 million euros. The 20% quota for women in 2014 has been increased to 40% from 2017. This law has increased the number of women on these boards⁴⁴: today, 46.4% of CAC 40 companies and 46.3% of SBF 120 companies have women on their boards.⁴⁵

However, there is still a long way to go to achieve equal representation of women in strategic decision-making positions. For example, women have less access than men to strategic and audit committees, which are at the heart of important corporate decisions. Furthermore, we have not seen a

⁴⁰ Reuben E., Wiswall M. and Zafar B. (2017): 'Preferences and biases in educational choices and labour market expectations: Shrinking the black box of gender', The Economic Journal, 127(604), pp. 2153-2186; Kiessling L., Pinger P., Seegers P. and Bergerhoff J. (2024): 'Gender Differences in Wage Expectations and Negotiation', Labour Economics, 87, 102505.

⁴¹ Bandiera O., Parekh N., Petrongolo B. and Rao M. (2022): "Men are from Mars, and Women Too: A Bayesian Meta-analysis of Overconfidence Experiments", Economica, 89, p. S38-S70.

⁴² Roussille N. (2024): "The Role of the Ask Gap in Gender Pay Inequality", Quarterly Journal of Economics, 139(3), pp. 1557-1610.

⁴³ Skoda S. (2022): "Directing job search in practice: Mandating pay information in job ads", Job Market Paper

trickle-down effect: the increase in the number of women on boards has not been accompanied by an increase in the proportion of women in the operational management of companies as a whole. The impact of the Rixain law on this point needs to be closely monitored: its main objective is to introduce quotas of at least 30% for women among senior managers and members of management bodies by 2027, rising to 40% by 2030 in companies with more than 1,000 employees.

Quota policies are important to accelerate the feminisation of power, but they must be accompanied by structural changes in gender norms and perceptions of women in business. Without deeper changes, women will only reach positions of representation, not decision-making. We need to intervene as early as possible in women's careers to avoid the loss of female talent at the age of 30-40. Sectoral agreements, such as those for architects and in the metallurgy sector,⁴⁶ already recommend that action be taken on career structure to avoid these breaks which disadvantage women.

Recommendation 4. Make quota policies for executive and managerial positions more binding. Encourage the social partners to negotiate sectoral agreements to restore gender equality in career development and access to promotion.

The need for a Big push

The differences in the life course trajectories of men and women remain massive, and we highlighted three major life episodes during which they emerge and crystallise: education, the arrival of children and career development. We also highlighted the strong interdependencies between the factors that cause and reinforce these divergences over the life course. These interdependencies explain the persistence of high levels of gender inequality and the maintenance of a situation that a marginal reform would have little chance to have an effect. In this context, little can be expected from a series of isolated measures. This explains, for example, why the overall impact of childcare policies on long-term inequality has been disappointing.⁴⁷ Historical examples show that overcoming such inequalities requires major shocks or coordinated, massive and ambitious policies. In other words, it is imperative to implement a large-scale reform using a Bigpush strategy, acting on all fronts at the same time.

Recommendation 5. Raise to the highest political level an inter-ministerial action plan covering education, career, and parenthood. Set up an operational monitoring committee to oversee its implementation and provide for evaluation of the various measures.

It is therefore essential to develop an ambitious plan covering all areas of public policy and to implement it in a concerted and proactive manner. Our recommendations are neither a catalogue nor a menu from which to pick and choose; on the contrary, they must be implemented together if they are to be effective.

⁴⁴ Azmat G. and Boring A. (2021): "Gender Diversity in Firms", Oxford Review of Economic Policy, Volume 36, Issue 4, Winter 2020, pp. 760-782.

⁴⁵ According to the IFA [French Institute of Directors] - Ethics & Boards Barometer of the gender mix of executive bodies 2024

⁴⁶ Agreement of 8 July 2020 on gender equality and Order of 17 September 2021 extending an agreement concluded within the framework of the national collective bargaining agreement for architecture (no. 2332); agreement of 24 April 2024 on professional equality and the elimination of pay gaps between women and men extending the national collective bargaining agreement for metallurgy of 7 February 2022.

⁴⁷ See for example: Kleven H., Landais C., Posch J., Steinhauer A. and Zweimüller J. (2024): "Do Family Policies Reduce Gender Inequality? Evidence from 60 Years of Policy Experimentation", American Economic Journal: Economic Policy, 16 (2): 110-49.

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Publishers Camille Landais Editor Hélène Paris Production Hélène Spoladore

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