

<Title> Gender differences in corporate hierarchies

<Teaser> How and why do the careers of men and women differ? And what policies could reduce the differences?

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<A> Elevator pitch

The gender wage gap is largely due to men and women holding different kinds of jobs. This job segregation is partly driven by gender differences in careers in corporate hierarchies. Research has shown that the careers of men and women begin to diverge immediately upon entry into the labor market and that subsequent career progress exacerbates the divergence. This divergence of career progress explains a large part of the gender wage gap. Understanding how and why the careers of men and women differ is necessary to design effective policies that can reduce the gender differences in hierarchies.

<A> Key findings

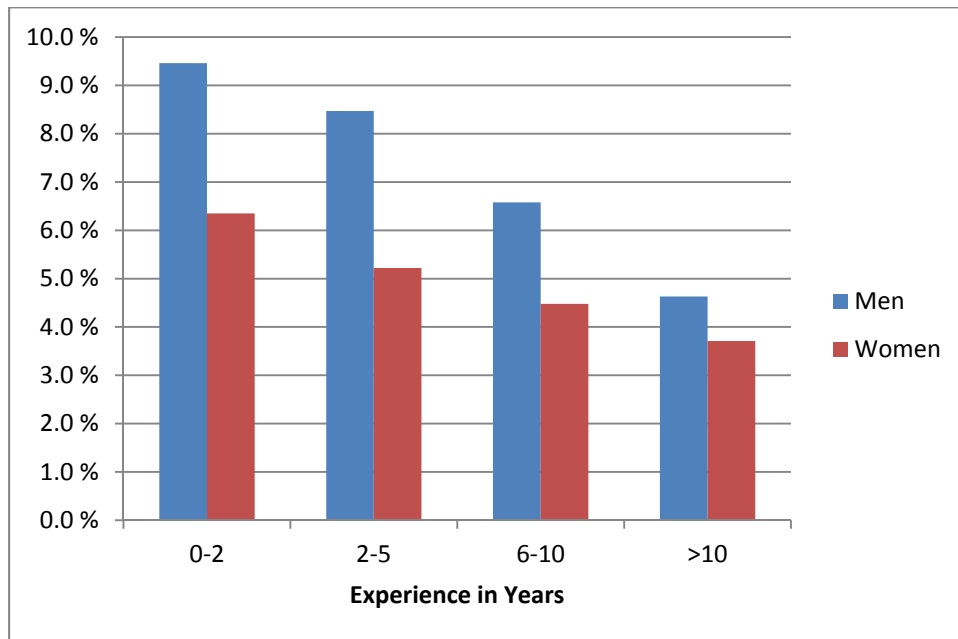
Pros	Cons
<ul style="list-style-type: none"> + Research has identified many feasible policy options to address gender differences in initial job assignments, promotion rates, and the wage returns of various career events. + Appropriate policies may be designed based on research showing that gender differences in career outcomes are largely due to differences in educational background, career interruptions, hours worked, and psychological attributes. + The key policy instruments are education and family-leave policies, which aim to decrease gender differences in educational background and career interruptions. 	<ul style="list-style-type: none"> – Designing effective policies is difficult due to lack of agreement about the relative importance of the causes of gender differences in careers. – Only little evidence exists on the effects of concrete policy interventions on gender differences in careers. – Most policies will only have effects in the long term as, for example, policies to reduce gender gaps in field of studies will take a long time to be reflected in career outcomes.

<A>Author’s main message

Research has shown that men begin their careers at higher levels in the corporate hierarchy and are also more likely to be promoted. These differences in careers are an important factor underlying the gender wage gap. Gender differences in careers reflect both the differing choices of men and women before and after entering the labor market and the different treatment of men and women in the labor market. Policy has traditionally focused on reducing discrimination in the labor market, but equally important are policies that address gender differences in career breaks, hours worked, and psychological attributes.

<A> Graphical abstract

The Probability of Promotion by Gender and Experience



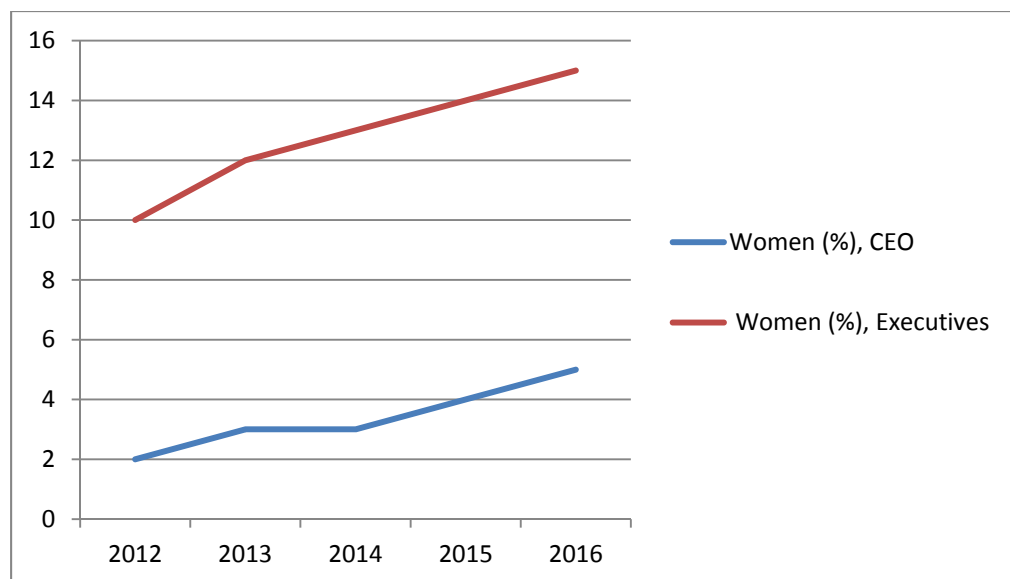
Source: Author's calculation based on Table III in [1].

<A> Motivation

The last 50 years have witnessed a notable convergence between men and women in labor force participation, hours worked, wages, and educational level. Despite this progress women are still less often found in high-paying occupations, and a substantial gender wage gap emerges in early career.

Very few women reach the highest rungs on the corporate ladder. Currently in Europe, only around 10% of board members are women, and in the mid-1990s in the US, the share of women among the five highest-paid executives in firms was about 2.5%. If women and men are equally capable as managers, this represents a severe misallocation of talent. Figure 1 shows the share of women CEOs and executives in the two highest decision-making bodies in the largest European publicly-traded companies. The data covers approximately 600 companies in the EU-28. The graph shows that there are very few women CEOs in these companies, although the number has risen in recent years. There are more women in executive positions, but even in these positions, only around 15% are women.

Figure 1. Share of women in CEO and executive positions in Europe



Source: Author's calculations based on data available at http://ec.europa.eu/justice/gender-equality/gender-decision-making/database/business-finance/executives-non-executives/index_en.htm

The gender wage gap is relatively small (6-10%) [1],[2] or non-existent [3] upon labor market entry, but it increases substantially during the first 10 years in the labor market. For example, in the UK, the gender wage gap is virtually 0 at labor market entry, but rises to more than 25% during the first 10 years [3]. For U.S. MBA's the gender wage gap is about 10% at labor market entry, but increases to 55% in 10 years [2].

Both the relatively small gap at entry and the increase in the gender wage gap is driven partly by gender differences in careers in corporate hierarchies. Understanding these differences in career progress is important when considering appropriate policy responses.

<A> Discussion of pros and cons

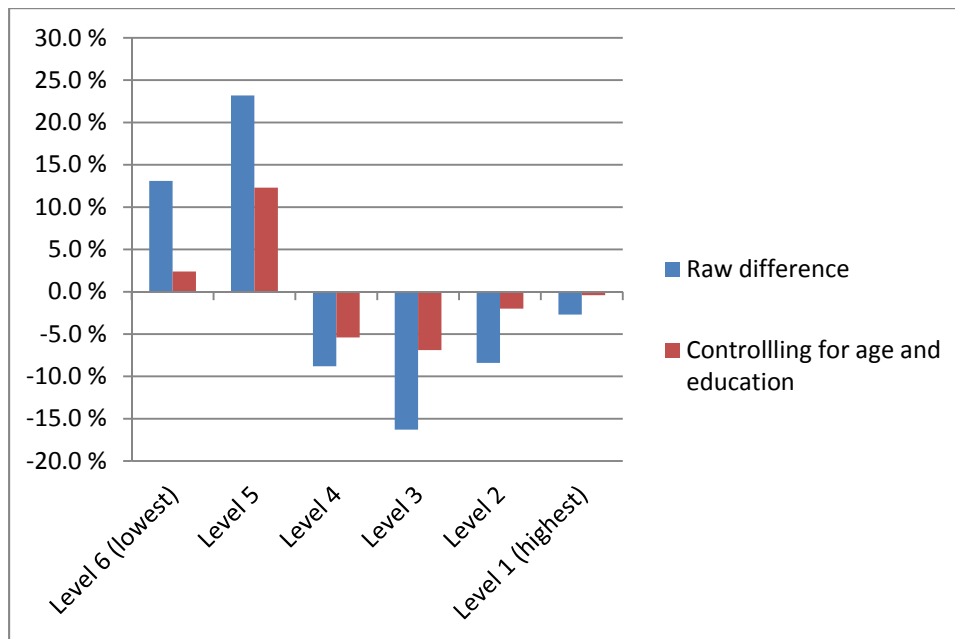
** Gender differences in initial job assignments**

The gender differences in careers are already evident in the first job assignments. A recent study investigates the careers of white-collar workers in Finnish manufacturing over time, beginning from labor-market entry [1]. Approximately 40% of the workers in Finnish manufacturing are women. Men and women in this sector differ in their educational background, and women work more often in administrative jobs, whereas men work more typically in production and research and development (R&D). The study concludes that women are much more likely than men to begin their careers at the bottom levels in the hierarchy. Figure 2 shows that women are more likely to enter at the two lowest levels (mainly clerical jobs), whereas men are more likely to begin their careers at higher levels (e.g. expert and professional jobs). The differences are substantial. For example, women are 10% more likely than men with similar educational backgrounds to begin at the second-lowest level. Similar results have been obtained in studies looking at individual firms [4] and particular industries [5].

The differences in initial job assignments are partly due to differences in educational background. Figure 2 shows, for Finnish manufacturing industries, that without controlling for education, women are 13 percentage points more likely to start their careers at the lowest hierarchy level, but controlling for the years of education and the field of education reduces this difference to around 2 percentage points. Other hierarchy levels show a similar pattern: controlling for educational background reduces the gender differences..

Although the gender differences in years of education are small, differences in the field of education chosen are large. In the data used in this study, 80% of the men have a degree in technology, whereas less than 20% of women do. The majority of women in this sector have a degree in business studies. This difference in the field of education has a large effect on initial job assignments in corporate hierarchies, which shows that the educational choices have a notable impact for the careers of men and women.

Figure 2. Gender difference in the initial assignment to hierarchy levels in Finnish manufacturing



Source: Author’s calculation based on Table II in [1].

Note: The y-axis shows the gender difference in the probability of starting in a given level in percentage points. Levels 6 and 5 include clerical occupations, levels 2-4 are professional occupations and level 1 includes managerial occupations.

The differences in initial job assignments contribute to the emergence of the gender wage gap. As wages are lower at lower hierarchy levels, lower initial job assignments mean that women on average tend to earn less compared to men, even when they have similar educational backgrounds. However, this is not the only source of the gender wage gap at labor-market entry. The same study shows that the wages at labor-market entry are lower for women even when controlling for the initial job assignment. Women’s wages at entry are about 6% lower than men’s, even when comparing men and women with the same initial job assignment and educational background.

** Gender differences in promotions**

The gender differences in career progress exacerbate the divergence in men’s and women’s careers that is evident at labor-market entry. There are several studies on gender differences in promotion rates, and their most common finding is that men are more likely to be promoted than women [1],[6]. However, a study using UK data finds no gender differences in promotion rates [7].

All studies control for a variety of personal characteristics, including age, years of education, work experience, firm tenure, and occupation. This means that the gender differences in human capital or

occupations do not explain the gender differences in promotion rates. . One possible explanation for the differences is job performance. Typically, job performance is not included in the set of control variables, but one study finds that even when controlling for supervisors assessment of job performance, women are less likely to be promoted [6]. In contrast, a study focusing on young lawyers finds that differences in job performance, measured by hours billed and the amount of new customer revenue generated, do explain the gender gap in being promoted to partner status in a law firm [8]. Thus, the role of gender differences in job performance for career progress remains an important issue for future studies.

The gender differences in promotion rates tend to be highest during the first years in the labor market. As seen in the illustration on page 1, promotion rates fall for both men and women as they gain work experience, but the decline is larger for men. Gender differences in early promotions matter to the evolution of the gender wage gap because of the large wage gains typically attached to promotions. A part of the gender wage gap is therefore caused by the fact that men are more likely to move into higher paying jobs more quickly.

Studies have also addressed whether men or women gain more from promotions in terms of wages, but the results are inconclusive. Some studies find that women gain more from promotions, some find that men gain more [7], and others find no clear differences [1], [6]. In sum, women are less likely to reach the higher rungs on the corporate ladder because they begin their careers at lower levels and are less likely to be promoted quickly.

** Why do the careers of men and women differ?**

There are various reasons for the gender differences in careers. Traditionally, economists have emphasized gender differences in the years and fields of education, work experience, and labor market discrimination. More recently, the literature has focused on differences in psychological attributes and hours worked.

<C> Career interruptions

Career interruptions and having children have big effects on career progress [9], [2]. Women are still more likely to have career interruptions due to having children and often have greater responsibility for childcare. This means that women have less work experience compared to men of the same age and may face difficulties taking more demanding and time-consuming jobs that would offer better possibilities for career advancement. In addition, a large share of the career breaks typically occur

during the first 10 years in the labor market, when a substantial amount of career progress takes place.

A recent study using a large Norwegian dataset finds that women with children enter firms at lower hierarchy levels than women without children [9]. In addition, women with children have more career breaks than women without children and are less likely to be promoted, especially during the first 10 years in the labor market. All in all, the results show that having children has significant implications for women's careers.

A study focusing on MBAs from a top US business school has similar results [2]. A substantial gender wage gap emerges during the first 10 years in the labor market, and a large part of this gap is due to women having more career breaks. To gain some understanding of the importance of career interruptions to the gender wage gap, this study compares the earnings of men to the earnings of women who do not have any career interruptions or children. The results show that after ten years in the labor market women earn 24% less. This gap is almost twice as large when the earnings of men are compared to earnings of all women. This difference shows that career interruptions have a large impact on earnings. An important finding in this study is that small differences in career continuity have large effects on labor market outcomes. The gender differences in career breaks are not that large, but the wage penalties associated with them are very large.

<C> Educational choices

Gender differences in educational levels have largely disappeared in developed countries, but there are still large differences in the fields of education that men and women choose. Earlier in this article it was noted that this affects men's and women's initial job assignments in the corporate hierarchy. The field of education also appear to affect the probability of promotion; therefore, gender differences in choice of educational field affect the overall incidence of promotions among men and women [1].

These results raise the question of why men and women choose different fields of education. If women expect to have more career breaks or expect that they will have difficulty holding jobs that require long working hours (due to childcare responsibilities), the 'theory of human capital' predicts that women will choose the types of education that fit their future career prospects. For example, women may not choose fields in which technological progress is very rapid (e.g. engineering) because career breaks would mean that their skills would become outdated during the break.

Societal discrimination is another reason why men and women make different educational choices. Societal discrimination refers to all societal influences that lead women to make educational choices

that are not rewarded well in the labor market. An example would be societal views on appropriate educational choices for women. For example, women may not be encouraged to enter science, technology, engineering and mathematics (STEM) fields as strongly as men.

A recent study shows how gender differences in competitiveness affect educational choices [10]. The authors study 15-year-old boys and girls in the Netherlands, who choose their academic track (focal subjects) in secondary school. The results show that even though boys and girls have similar academic abilities, boys choose more prestigious and math-intensive tracks. This choice is important because it affects the major choice in university education and later labor market outcomes. The authors show that 20% of the gender gap in the choice of study track is accounted for by the difference in competitiveness between boys and girls.

<C> Hours worked

Despite the convergence in hours worked by men and women, men still work longer hours. One reason for this is the greater responsibility that women have for childcare. Working shorter hours may have significant consequences for gender differences in career outcomes. At least for young professionals, working longer hours increases the probability of promotion [11]. However, only a few studies have information on the actual number of hours worked, so there is no strong evidence on how gender differences in hours worked translates into differences in promotion rates.

It has also been empirically established that hours worked and wages have a strongly non-linear relationship, e.g. individuals working 20% longer hours earn more than 20% more. This type of non-linearity appears to be particularly relevant for the gender wage gap in the financial and corporate sectors [2], [12]. Research has shown that the gender wage gap is larger when the relationship between hours and wages is non-linear (e.g. lawyers) and smaller when the relationship is linear (e.g. in pharmacies). Thus, in some occupations (e.g. banking), there is a heavy penalty for shorter hours or flexible hours. Due to non-linearity, small gender differences in working hours may lead to large differences in labor-market outcomes. It is likely that this non-linearity is partly due to the effects of longer hours on career advancement: if longer hours increase to probability of promotion and promotions come with large wage gains, small differences in hours may lead to large differences in earnings. Women may also choose occupations or jobs that are more linear in terms of hours worked, which may hinder their career advancement if these occupations do not offer similar advancement opportunities than other occupations.

Why is the number of hours worked in some occupations rewarded disproportionately? Recent research suggests that shorter and more-flexible hours notably decrease productivity in certain

occupations, such as the financial and legal occupations [12]. The argument being that if a worker is not present to carry out their job, other workers cannot fill in easily. This may be due to information that the employee has that is costly to communicate to others. The employee may also learn less from others if s/he is not present when important information is shared. In short, when the employee does not have a perfect substitute, small differences in working hours may lead to large differences in productivity and thus wages.

<C> Preferences and personality traits

Educational choices, career interruptions, and hours worked are important reasons behind gender differences in careers, but they do not completely explain the differences. Recently, economists have turned to gender differences in preferences and personality traits as additional explanatory factors. Laboratory experiments have shown that men and women differ in competitiveness, risk aversion, and attitudes toward negotiation [13], all of which potentially affect gender differences in careers.

Women are generally less competitive than men, which may mean that they choose jobs that do not require as much competitiveness or that they may be disadvantaged in promotion competitions compared to men. Research has shown that women tend to shy away from competition, especially when men are among the competitors. This means that in modern workplaces, women may fare less well than men in very competitive jobs.

There is also some evidence that women are less eager to negotiate, especially when negotiating for themselves. This may mean that they do not negotiate as hard as men concerning wage increases or promotions. This is perhaps one reason for the lower entry wages of women observed in [1]. There is evidence that women ask for lower starting wages and that women's lower propensity to negotiate hinders their career advancement [13].

Occupations where earnings are more risky, perhaps due to a larger share of the pay being dependent on performance, tend to pay more. Research has shown women to be more risk averse than men, which may be one reason for men and women choosing different jobs.

From a policy perspective, it is important to know whether gender differences in psychological attributes are due to biological differences or environmental influences. Research has shown that both of these mechanisms are at work [13]. There are biological differences that lead to differences in psychological attributes, but these attributes are also influenced by environmental factors (e.g. different treatment of boys and girls by their parents). For example, the willingness of women to compete depends on whether there are men among the competitors.

<C> Discrimination

Discrimination refers to a situation in which equally qualified employees are treated differently on the basis of gender, religion, ethnicity or orientation, etc. It is difficult to empirically evaluate the effect of discrimination on gender differences in careers. For example, the illustration on page 1 shows that men are around 3% more likely to be promoted than women, even when many other factors that influence productivity, such as educational background, are controlled for. However, this difference cannot be interpreted purely as discrimination. The number may overstate discrimination because it cannot measure all factors that influence productivity. For example, the controls do not include job performance, as it is typically not available in the data sets used by researchers. On the other hand, the number may understate discrimination if some of the controls, including initial job assignment, reflect discrimination. For example, if women are discriminated against in the initial job assignments and end up in lower paying jobs, analyses that compare men and women in the same jobs would understate the effect of discrimination on earnings. This does not mean that there would be no evidence of discrimination. There are, for example, lawsuits that reveal cases where women have been treated unfairly in terms of promotions and wages [4]. In sum, showing convincing quantitative evidence on discrimination in empirical studies is difficult.

There is also evidence that women are held to a higher standard for promotion, possibly due to statistical discrimination [5], in which employers make inferences about the productivity of an individual based on gender. The current, and especially future, productivity of an individual is difficult to assess and thus employers base their inferences partly on gender. Even though the employers' beliefs would be correct on average, this is still a form of discrimination because it treats equally productive individuals differently. If men are more networked than women (e.g. due to 'old boys' clubs), then employers may have more accurate information about the productivity of men and may more readily promote them.

Whatever the form of discrimination, it is extremely detrimental due to 'feedback effects'. Feedback effects mean that anticipation of discrimination affects choices concerning education, training, and the types of job applied for. Women may choose types of education or jobs in which they anticipate that discrimination will have the least effect on their career. This represents a significant misallocation of talent in the economy.

<A> Limitations and gaps

The existing literature has documented reasonably well the gender differences in careers. There is a lot of research on gender differences in initial positions, promotion rates, wages, and wage gains

from promotions. Many of the explanations for gender differences, including differences in educational choices, work experience and career breaks, working hours, discrimination and preferences, and psychological attributes, have also been studied. One factor that has received too little attention in the literature so far is job performance. A recent study has highlighted the importance of gender differences in performance and more research on this topic would be needed.

The main limitation of the existing research is that the relative importance of the various explanations for the gender differences in careers is unknown. This is an important piece of knowledge though because it would help to design appropriate policies. However, it is inherently difficult to study this because some of the causes are difficult to identify and many of them are interrelated. For example, the extent of discrimination is very difficult to ascertain empirically. In addition, labor-market discrimination may affect the choices made before even entering the labor market, including field of education.

Furthermore, the recent literature on gender differences in preferences and personality traits suggests that these may influence men's and women's labor-market outcomes, but it is not yet known how important these factors are. One study looking at this question suggests that psychological factors explain about 20% of the gender wage gap at 10 years after labor-market entry, and that human-capital factors, such as education and work experience, explain about 45%[3]. So, psychological factors may be important to labor-market outcomes, but there has been little research on how they affect gender differences in careers. In addition, psychological factors interact with other factors. For example, as was noted earlier, the educational choices of boys and girls are affected by their competitiveness, and educational choices affect career outcomes.

A further limitation is that there is little research on concrete policy interventions that would aim to reduce gender differences in careers. One reason may be that many of the policies would be inherently difficult to study due to the long period of time between their implementation and results. For example, an educational policy to reduce the gender differences in choices regarding field of study would take at least 10 years to be reflected in career outcomes. In addition, it is difficult to separate the effects of a policy from other changes that have taken place simultaneously. Recent research has also emphasized that the gender differences in the labor market vary by occupation [12]. In some occupations small differences in hours worked lead to large differences in productivity. These occupational differences need to be better understood to design appropriate policies.

<A> Summary and policy advice

The careers of men and women begin to diverge even before entry into the labor market. Men and women make different educational choices, which in turn influence their labor market outcomes. This is already evident in their respective entry positions in the labor market: men tend to begin their careers at higher hierarchy levels, which partly reflects the gender differences in education. Subsequent career progress exacerbates gender differences. Men are more likely to be promoted, even when many factors related to productivity are controlled for. These differences in career progress are an important driver of the emergence of the gender wage gap in the first 10 years in the labor market.

To increase gender equality in careers, policy must affect the reasons underlying these gender differences. Research has shown that gender differences in careers are due to differences in educational choices, work experience and career breaks, hours worked, discrimination, and preferences and psychological attributes. Perhaps the most important policy tools for policy-makers are thus education and family-leave policies.

Education policies aimed at reducing gender differences in the field of study would reduce gender differences in careers. The gender differences in competitiveness suggest that one policy option would be gender-segregated teaching in some subjects, including mathematics. Gender differences in educational outcomes may also be reduced by providers of education, such as universities. There are, for example, universities that aim to increase the number of women in computer science by using a variety of approaches such as mentoring.

The gender differences in career breaks may be affected by family leave policies. For example, in the Scandinavian countries, there are policy to increase fathers' use of family leave, the idea being that such policies would reduce the gender gap in career breaks and, over time, even affect the educational choices of women, thereby further reducing the gender disparity in the labor market.

The effect of gender differences in hours worked on labor-market outcomes can be addressed mainly by reducing the gender gap in hours worked, since the non-linearity between hours and wages is difficult to address through policy initiatives. Policies that improve the availability and quality of childcare could potentially offer women better chances to work longer hours or at times that are more inconvenient. Alternatively, policies could try to increase the responsibility that men have for childcare. The Scandinavian initiatives to increase the fathers' use of parental leave might be one such policy. However, it is not clear how effective such policy would be.

Perhaps in the future, firm-level policies will effectively reduce the non-linearity between hours and wages. For example, new information and communication technologies may make it feasible to redesign jobs so that tasks can be shared more easily between workers. According to recent research this would reduce the pay penalty associated with temporal flexibility [12].

All developed countries have legislation prohibiting gender discrimination in the labor market. At the same time, subtle barriers to women's career progress still exist. Some of these barriers amount to discrimination, but they are difficult to address with policy because of their nature.

The gender differences in psychological attributes are likely to be important to gender differences in careers, but the appropriate policy response is unclear. To the extent that these gender differences are due to 'nurture', rather than 'nature' they may be addressed by educational policy. For example, if the lesser competitiveness of women is due to environmental influences, it might possibly be addressed by policy. However, it would take a long time for the effects of such policies to be reflected in the labor market, as they do not produce 'quick wins'.

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Competing interests

The IZA World of Labor project is committed to the IZA Guiding Principles of Research Integrity. The author declares to have observed these principles.

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** Further reading**

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