

PREFACE

For most countries, women's labor force participation has risen while men's has fallen. Concomitantly, fertility rates declined, marriage rates decreased, and the average husband-wife age difference shrunk slowly but steadily. Further, the number of unwed mothers rose, and at least in the United States, women's schooling levels surpassed men's. Along with these trends, men's and women's wages and occupational structures have been converging. Are these trends related? This volume contains 10 articles on gender convergence. The first presents a general overview of the trends, including that over the last 50 years women workers' quality increased more than men's. The second offers a general biologically-based theory underlying the trends. The remaining eight articles deal with particular aspects of gender convergence, from family aspects of the pay gap, to government policy, to the role of skill-biased technological change, and finally to productivity differences at the establishment level.

In the first article, Joyce Jacobsen, Melanie Khamis, and Mutlu Yuksel provide an overview of the trends. They outline the evolution of women's relative to men's work activity from 1964 to 2013. In doing so, they track the changing levels of and returns to human capital in terms of education and potential experience over the last 50 years in the United States. They show that the average number of years of education has been increasing for both males and females since 1964, but at a much higher rate for females. This gender convergence began in the mid-1980s and by the early 2000s women overtook men in the average years of education. Concurrently, Jacobsen et al. find that the returns to education also converged, but when accounting for selection women's returns appear to be higher in the later years. Similarly, women experienced a convergence in hourly wages, but this convergence slowed down in the 2000s. Finally, the authors also document convergence in hours of work, but smaller convergence in expected lifetime earnings. To explain these trends, Jacobsen et al. examine worker selectivity. They find relatively more productive work-oriented women to be joining the labor market than men, especially since the late 1980s and 1990s. But questions remain both concerning why women are becoming

more devoted to work and the mechanism through which this commitment is beginning to pay off.

The predominant story to explain these trends relate to family constraints. Family constraints, proxied by marital status and the presence of children, manifest themselves through division of labor in the home. In turn, household division of labor often is explained by dissimilar husband-wife bargaining power, frequently related to disparities in male and female productivity at home and in the market. Solomon W. Polachek, Xu Zhang, and Xing Zhou propose a new explanation underlying the division of labor in the home and the resulting trends in the wage gap. The idea is based on inherently biological fecundity constraints facing women: Women cannot give birth to children past a certain age, whereas in contrast, men can impregnate women at almost any age, young or old. This fecundity imbalance makes older women less desirable to marry, and results in husbands being older and typically more educated than their wives at the onset of marriage. The extent of these age and education differences is related to the demand for children. A high demand for children strengthens men's demand for younger less educated wives because women have limited years of fecundity and because education takes time. To support this hypothesis empirically, Polachek et al. examine the effect of China's one-child law on fertility and on husband-wife education and age gaps. The decrease in demand for children induced by the one-child law reduced husband-wife age and education gaps, and it did so more in rural areas. Also, age and education gaps decreased even more in areas where there was a higher fine for violating the one-child policy. The authors' approach is consistent with the simultaneous decrease in fertility over time, the narrowing of husband-wife age differences over time, the rise in female labor force participation, and the contraction of gender wage and occupational disparities.

A number of studies validate the impact of family, particularly children, on the gender wage gap. Most of this "family pay gap" literature is centered on the United States and Western countries. Government policies may also affect lifetime work for those with children. One such policy is family leave legislation designed to subsidize parents to be home with new born or newly adopted children. The next article by James Albrecht, Peter Skogman Thoursie, and Susan Vroman examines the evolution of the glass-ceiling in Sweden over the period from 1985 to 2008. They concentrate on the extent the glass-ceiling is related both to having children, and to the way parental leave is taken. The authors find that the glass-ceiling in Sweden has persisted over time; it exists for natives; it is more pronounced among white-collar workers; and it increases with age. Although the

glass-ceiling is present even before the first child is born, it increases after having children and it increases if parental leave taking is spread out. These findings suggest that the availability of very long parental leave in Sweden may be responsible for the glass-ceiling because of lower levels of human capital investment among women and employers' responses by placing relatively few women in fast-track career positions.

Although family constraints may be important for the career prospects of women, few studies examine the impact of marriage and children on promotion probabilities. In the next article, Astrid Kunze fills this void by analyzing the family gap in job promotions in Norway using 1987–1997 panel data. She finds that women with children are 22% less likely to be promoted, and that work experience, work tenure, and part-time work explain a considerable part of the gap. Further, she shows that women fall behind men especially during the early parts of their careers, which coincide with their fertile period.

As mentioned above, one main mechanism for the family to be related to labor market outcome is the division of labor in the home and subsequent lifetime labor force participation. A number of past studies show marriage and family are associated with greater men's but smaller women's lifetime work. However, none examine more informal cohabitation type marriages. Common Law Marriage (CLM) is an informal marriage form considered valid by both partners, but not formally sanctioned through a formal ceremony – especially in the United States. In the next article, Shoshana Grossbard and Victoria Vernon use the 1995–2011 Current Population Survey (CPS) micro data as well as the 2003–2011 American Time Use Survey (ATUS) data to investigate effects of CLM on labor, household production, and leisure. They identify CLM effects through cross-state variation, given that three states abolished CLM over the time period they examine. Consistent with theory, they find CLM reduces labor supply for married women by 1–2 hours per week, but raises men's labor supply to a small extent. However, they find little evidence CLM affects leisure and household production.

Secularly, marriage rates appear to be declining and nonmarital child-bearing appears on the rise, especially for low-education low-income segments of the population. The strength and type of one's relationship status, whether it be a formal marriage, a CLM, or simply cohabitation, may depend on one's own personal traits. In the next article, Shelly Lundberg examines how personality is related to family union. Using Wave IV data from the National Longitudinal Study of Adolescent Health, she investigates whether disparities in cognitive ability and noncognitive skills

such as self-control are related to relationship stability. She finds individual noncognitive traits, particularly the Big-Five personality traits (openness, conscientiousness, extraversion, agreeableness, and neuroticism), are significantly associated with relationship status and single motherhood. Indeed, measured skills can explain as much as 25% of differences in these outcomes, but this effect disappears when own education is included in the analysis. In short, both cognitive and noncognitive skills predict education, but conditional on education they explain little of the difference in family stability.

Consistent with the division of labor and the gender wage gap is occupational segregation of women. For example, women are more likely to work in jobs involving helping and caring for others. These jobs are disproportionately in the public sector where wage penalties may be large. In the next article, Barry T. Hirsch and Julia Manzella perform cross-sectional and longitudinal analyses to examine the relationship between caring jobs and wages. Instead of simply depicting these jobs as the usual dichotomy of whether a job is in the care sector or not, Hirsch and Manzella consider the degree of caring tasks and attributes of all occupations in the United States. Their findings show that wage penalties are more notable for men than women, but that women are more likely to work in such jobs.

Whereas marriage and children affect household division of labor and subsequent work patterns of women, it is likely that demand considerations also play a role. To a large extent, how demand plays a role depends on whether men and women are complements or substitutes. Giacomo De Giorgi, Marco Paccagnella, and Michele Pellizzari estimated the elasticity of substitution between men and women. Using data from Italy, De Giorgi et al. exploit two sources of variation in relative female labor supply. The first is the abolition of compulsory military service and the second consists of sex-ratios at birth. The authors find evidence of imperfect substitutability for a sample of 15–24 years old. These findings may have important implications in terms of evaluating policies aimed at increasing female participation in the labor market.

Another consideration on the demand side is skill-biased technological change, which nowadays tends to favor women more than men. In the next article, Sonia R. Bhalotra, Manuel Fernández, and Atheendar S. Venkataramani investigate this hypothesis examining the evolution of the gender wage gap in Mexico from 1992 to 2012, before and after joining NAFTA, which has been associated with skill-biased technological change and differential growth across sectors. The relative share of college-educated women grew within the brain-intensive occupations largely

eliminating the gender wage gap at the upper tail of the wage distribution, with no change in the gap for the median. This narrowing of the wage gap, mostly driven by increased gender-based occupational sorting and improvements in women's relative to men's returns to human capital is consistent with demand-side structural changes coupled with decreases in the reward for physical labor.

Despite the increase in their labor force participation, women are still underrepresented in top leadership positions. Stefano Gagliarducci and M. Daniele Paserman investigate the effect of women in managerial positions on firm and employee outcomes. The focus of the analysis is based on the gender composition of the top and second layers of management using a linked employer-employee data set on a sample of German establishments in the last two decades. Gagliarducci and Paserman report a negative relationship between the share of women in top management and firm performance, wages, and employment outcomes. However, these effects at the firm level are mostly explained by women sorting into smaller firms, which are less productive, pay less, and have higher turnover. For employees, the authors find a negative effect of women in top management on employment and wages. These findings provide no evidence that a high fraction of women in top management improves relative women's outcomes, although there is some evidence that having more women in top management is associated with more family-friendly policies at the firm level. These results are consistent with human capital wage and occupational choice models.

As with past volumes, we aim to focus on important issues and to maintain the highest levels of scholarship. We encourage readers who have prepared manuscripts meeting these stringent standards to submit them to *Research in Labor Economics* (RLE) via the IZA website (<http://rle.iza.org>) for possible inclusion in future volumes.

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