

THE ASSESSMENT: GENDER AND THE LIFE CYCLE

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This assessment is an introduction to the Oxford Review of Economic Policy's issue on gender and the life cycle. It sets the stage by providing background information on various dimensions of gender differences, pointing out differences across countries as well as over time, and relates this evidence to the papers that follow. It further briefly reviews the articles in the issue and puts them into context.

I. INTRODUCTION

Differences in economic outcomes between males and females are not restricted to the labour market or to the working-age period, although it is this stage of the life cycle which has attracted most attention from researchers in economics and other social sciences. The foundation for outcome differences at this stage may be laid in earlier phases, such as early childhood and at the pre- and primary-school age. For instance, girls and boys may perform differently during the early stages of skill formation at kindergarten and primary school. At school, boys and girls may develop different networks and social ties, driven by gender-specific patterns of interac-

tions and interests. The type of interactions and interests pursued may, in turn, be determined by social norms and early childhood exposure. The transition from school to working life is a further key step for future career prospects, and the choice of activity and occupation when first entering the labour market may have long-lasting consequences. Gender differences in these choices may be related to differences in expected career patterns that are related to biological necessities as well as perceived responsibilities. These are, in turn, influenced by the social context, rooted in the views and values of the individual's social milieu. Such values and norms are subject to change, and influence institutions and regulations and their formation as well as behaviour

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and choice. These differences are important in explaining differences in behaviour and dynamics of behaviour of women across different countries and cohorts. But even within the same country, different groups, characterized by immigrant status and/or ethnic and cultural affiliation, may experience dramatically different gender differences in outcomes.

This issue brings together a set of papers that deal with gender issues in economics in a broader way than is usual, addressing them at various stages over the individual's life cycle. This starts at the pre-school age, continues through primary and secondary education, and on to transitions into the labour market, wage careers, career interruptions, and maternity. Furthermore, it addresses gender questions at the various stages from different perspectives, investigating, for instance, the way differences in gender behaviour relate to values and institutions or culture and origin.

To set the scene, we discuss gender differences in various outcomes over time and between a selected set of countries. We illustrate the large differences, in various outcomes and behaviour between men and women, that exist both in a cross-country as well as a time-series dimension. The figures provide background, helping to put the remaining papers into an overall context. The countries we consider include Continental European countries (Germany, France, Italy, and Sweden); Anglo-Saxon countries (Australia, UK, USA), and Japan. In the light of this overall picture, we will then briefly discuss the papers in the issue and how they relate to each other.

II. SOME STYLIZED FACTS

(i) Education

In a recent report, Catherine Freeman (2004) studies the educational gap between males and females at various stages of the life cycle for the USA. She concludes that women have closed the gap that existed and, in various dimensions of educational achievement, perform at least as well as men, although she finds that women are under-represented in some fields of study. Other studies (see, for instance, Charles and Luoh (2004) for the USA,

and Burgess *et al.* (2004) for the UK) also find that at the cohort level, gender differences in educational achievement have vanished or even reversed.

The foundations for differences in educational outcomes, as well as under- or over-representation of females in particular fields of study, may well be laid at earlier stages in life, and, therefore, may be visible in academic performance at primary or secondary stages. Table 1 illustrates differences in educational achievement between boys and girls at secondary school age for different countries. The numbers are based on results from the 2000 Programme for International Student Assessment (PISA) study, and include differences in outcomes for reading, mathematics, and science for 15 year olds.

The figures suggest that girls perform better than boys in reading tests and that these differences are significant for every country we consider, as well as on average for the OECD. These patterns are remarkably stable across countries, and suggest some underlying difference that favours girls in reading performance. However, this advantage disappears when considering science tests, and turns into a disadvantage for some countries when we consider tests in maths. What are the reasons for these differences? One explanation may be differences in the development of interests at stages of early formation owing to parental guidance, or differences in rewards for boys and girls owing to particular goals that are set by peer groups. The paper by Shelly Lundberg in this issue addresses the way the gender of a child triggers different behaviour by fathers and mothers, while Adriaan Soetevent and Peter Kooreman investigate peer group effects. Stephen Machin and Sandra McNally, in their paper, provide detailed evidence and explanations for a widening achievement gap between boys and girls in the UK, and discuss several explanations.

In Table 2 we report some statistics on educational attainment for several European countries, drawn from the 2003 European Social Survey. The entries in the table are differences in the number of years of education achieved, as well as the percentage of individuals in each group (male and female) with a college education. We restrict the age range to between 24 and 60.



Table 1
Gender Differences (Males–Females) in Reading, Mathematical, and Scientific Literacy
in PISA 2000 Results

| | Reading | | Mathematics | | Science | |
|--------------|--------------------|---------------------------|--------------------|---------------------------|--------------------|---------------------------|
| | Mean score (total) | Difference in mean scores | Mean score (total) | Difference in mean scores | Mean score (total) | Difference in mean scores |
| Australia | 529 | –33* | 533 | 12 | 527 | –3 |
| France | 505 | –29* | 518 | 14* | 501 | 6 |
| Germany | 481 | –34* | 486 | 15* | 484 | 2 |
| Italy | 485 | –38* | 455 | 8 | 476 | –9 |
| Japan | 522 | –30* | 557 | 8 | 550 | –7 |
| Sweden | 516 | –37* | 509 | 7 | 511 | –1 |
| UK | 524 | –25* | 530 | 8 | 533 | 4 |
| USA | 504 | –28* | 493 | 7 | 499 | –5 |
| OECD total | 498 | –29* | 497 | 11* | 501 | –1 |
| OECD average | 499 | –32* | 498 | 11* | 499 | 0 |

Note: * significant at the 5 per cent level.

Source: <http://www.pisa.oecd.org>

Table 2
Gender Differences (Males–Females) in Educational Attainments
(born between 1943 and 1955)

| | Total population | | Employed | |
|----------------|------------------------------|---------------------------|------------------------------|---------------------------|
| | Years of full-time education | % with tertiary education | Years of full-time education | % with tertiary education |
| Germany | 1.1** | 16.5** | 0.5 | 11.7** |
| France | 1.1** | 5.2 | –0.2 | 4.1 |
| United Kingdom | 0.9** | 8.8** | 0.7* | 6.0 |
| Italy | 1.31** | 3.6 | –0.5 | –1.0 |
| Sweden | –1.0** | –17.6** | –1.1** | –19.9** |

Notes: ** Significant at the 5 per cent level; * significant at the 10 per cent level.

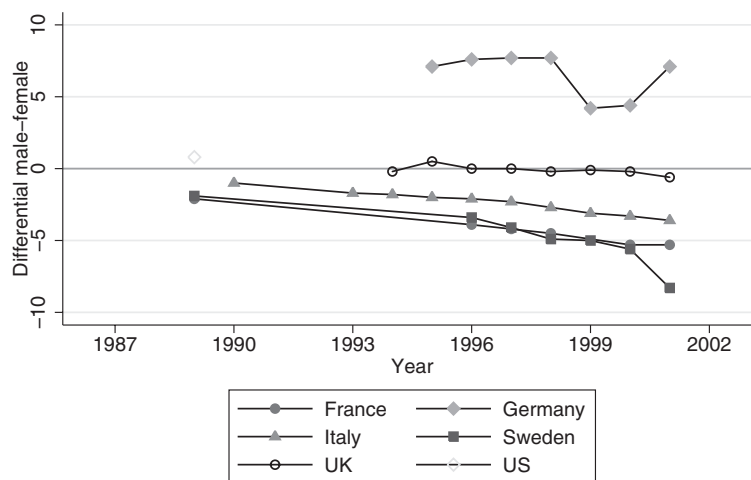
Source: European Social Survey 2003; individuals between 24 and 60 years of age.

With the exception of those for Sweden, the figures suggest that men have slightly higher levels of education than women, both in terms of years of education and in the percentage of individuals with tertiary education. In Sweden, there seems to be a substantial differential in favour of women. In the right-hand panel of the table, we display educational differences between males and females who are in employment. For all countries, the educational advantage of males decreases relative to that in the

overall population, suggesting that females who are in employment are relatively better educated than males who are in employment. This may suggest that education has a stronger influence in selecting women into employment than it has for men.

Figure 1 presents the trend in the male-female differential in tertiary education of individuals in the labour force over the last few decades for France, Germany, Italy, Sweden, the UK, and the USA.

Figure 1
Percentage of Labour Force with Tertiary Education, by Gender



Source: ILO (2003).

Differences in the level of the gender differential across countries are consistent with those in Table 1. Germany displays the largest differential in favour of men and no particular trend, while the differential is zero for the UK, and negative and decreasing for some of the other countries. This suggests a higher (and, in the case of Sweden, a substantially higher) fraction of females than males with tertiary education in the work force, with an upward trend.

(ii) Participation, Fertility, and Wages

Figure 3 displays female labour-force participation for various countries over the last four decades. Two things stand out immediately from these figures. First, there are large differences in the level of participation between countries. Second, there has been a general upward trend for all countries, at least over the last three decades. The high participation rate in Sweden is especially notable. This peaks in 1990 at around 80 per cent, and decreases slightly thereafter. On the other side of the divide is Italy, with a participation rate which is substantially and persistently lower than that in the other countries. Among the continental European countries, the levels and trends for Germany and France have been very similar.

In the right-hand panel, we group Australia, Japan, the UK, and the USA. The Anglo-Saxon countries lie close together, with participation rates in the

USA slightly higher than those in the UK and Australia and a similar upward trend. On the other hand, Japan had far higher participation rates than the other countries up to about 1970, after which there was a first decreasing and then slightly increasing trend in participation. None the less, participation is still far higher here than in Italy.

How do these numbers compare to those for male participation? In Figure 4 we display participation differentials between males and females. In all countries except for Japan, these differentials have decreased steadily, closing the gap between male and female participation. Among Continental European countries, the differences in levels are similarly ordered as those in the previous figure. For Sweden, males and females have nearly reached parity over the last decade.

Japan is an interesting exception: the trend in female participation was downwards until the mid-1970s, and then slightly upwards, while the difference between male and female participation has been almost constant over the last four decades, with a differential of about 30 percentage points.

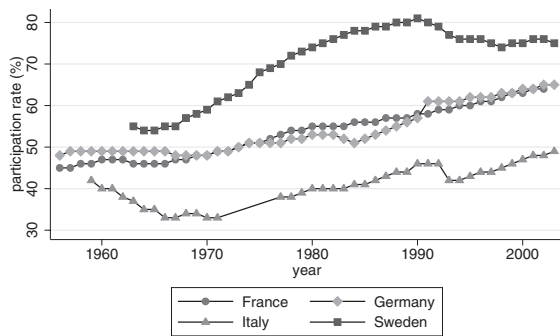
In Figure 5, we illustrate female participation for different age groups. For Continental European countries, the differences in levels seen in the previous figures seem to be replicated across age groups. The gap between Sweden, on the one hand, and Italy, on the other, seems to increase for older



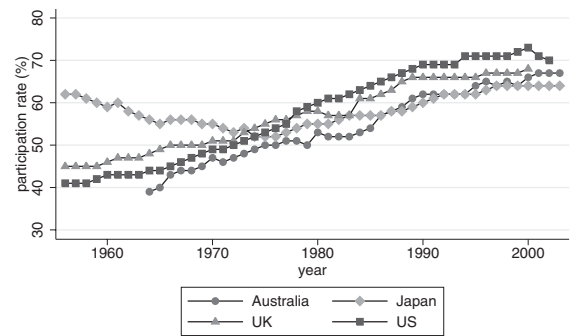
Figure 3

Female Labour-force Participation, age 15–64

(a) Continental Europe



(b) Anglo-Saxon countries and Japan

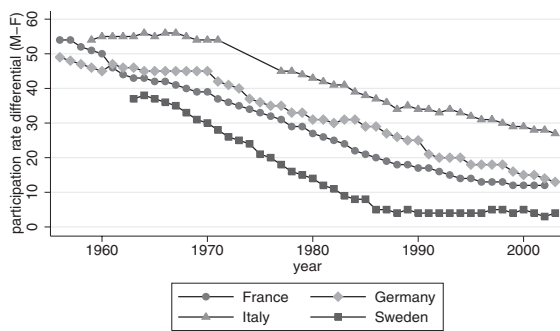


Source: OECD, Labour Force Statistics, 2004.

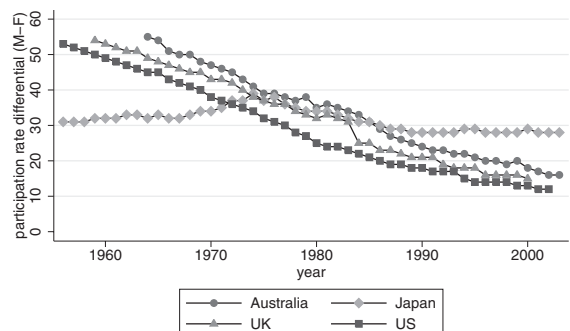
Figure 4

Participation Differentials, Males and Females

(a) Continental Europe



(b) Anglo-Saxon countries and Japan

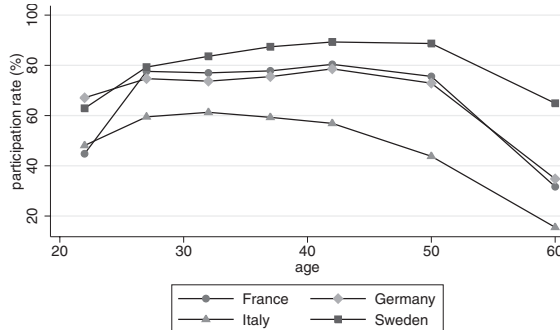


Source: OECD, Labour Force Statistics, 2004.

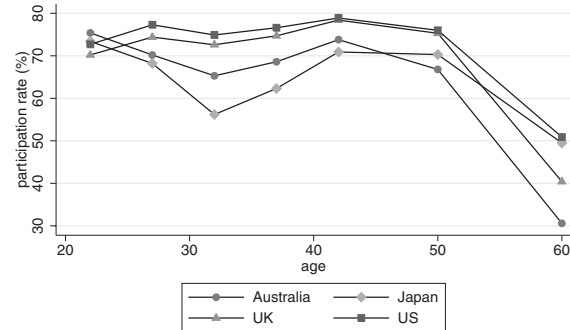
Figure 5

Female Participation across Age Groups (1997)

(a) Continental Europe



(b) Anglo-Saxon countries and Japan



Source: OECD, Labour Force Statistics, 2004.



age groups. The dip during child-bearing years is very pronounced in Japan, but is also visible in Australia, the USA, and the UK. Waldfogel (1998) emphasizes institutional differences in child care and maternity leave regulations as a reason for the pay gap between women with and without children. Such differences in child-care provision may also explain some of the differences in age patterns we see in the figure.

In Figure 6, we display part-time employment differentials between males and females. Again we see large differences across countries, but there are also differences in trends. Relative to males, the incidence of part-time employment for females is low in the USA and Sweden, with a slight decrease over the last decade, but very high in the UK and Germany. While the trend is downwards in the UK and Sweden (where, as in the USA, the differential is very small) it is upwards in Germany. Again, these differences in trends may be linked to institutional and tax policies—an issue that is taken up in much detail in the paper by Patricia Apps and Ray Rees in this issue.

In Figure 7, we show part-time employment for females in 2002, broken down into different age groups. It seems that, except for the youngest age group, part-time employment in the USA is consistently low, as it is in Sweden—both countries with the lowest overall rates of part-time employment, as shown in the previous figures. It increases slightly after the age of 25 in Italy and France, and it increases steeply in Germany, Australia, Japan, and the UK. This suggests that in these countries, women change to part-time employment at later stages of the life cycle. Of course, our simple figures do not allow us to distinguish age and cohort effects.

Figure 8 reports the percentage of children below the age of three that are enrolled into formal child-care centres. The figures suggest quite dramatic differences between countries. The proportion is highest in the USA, where over half of all children below the age of three are enrolled in formal child-care centres, and lowest in Germany and Italy, where only about one in ten children in this age range are enrolled in child-care facilities. It is Sweden and the USA, the two countries with the highest percentage of children enrolled into such facilities, which have the highest participation rates and,

among participants, the highest rates of full-time employment, suggesting a link between formal child care and participation. However, the numbers may be slightly misleading as there may be large differences in the provision of informal child care between countries. For instance, it is likely that provision of such informal child care is high in Italy, where traditional family structures are still common, and low in the USA.

(iii) Fertility

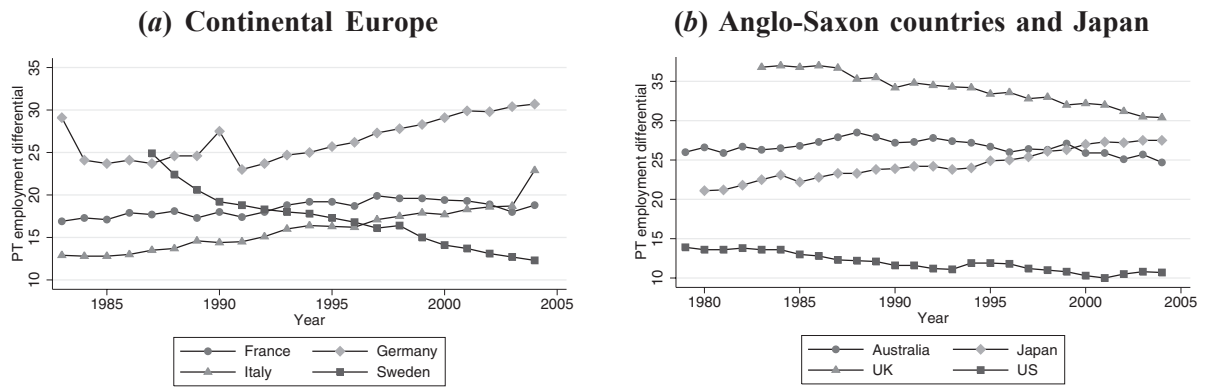
Fertility decisions, including decisions about timing and spacing of children, crucially depend on labour-market opportunities, as well as the way these are, in turn, affected by fertility choices. The trends over recent decades show the well-known phenomenon of a sharp decrease in fertility from the mid-1960s onwards (except for Australia and Japan, where the decrease started in the early 1970s). This is shown in Figure 9. Again, there are substantial differences in the levels across countries, with Italy and Japan having the lowest fertility rates in 2002, while those of France and the USA are the highest (although substantially lower than those three decades ago). While fertility rates seem to have been quite stable in the USA for more than a decade, they have increased slightly in France and Sweden. Interesting is that fertility rates have been consistently higher in Sweden than in Germany or Italy, but female labour-force participation has been much lower in the latter two countries, and the incidence of part-time work higher. More favourable child-care facilities may be one explanation for this.

Table 3 displays the age at first childbirth for different years. The figures in the table illustrate that the decline in fertility has been accompanied by a substantial rise in the age having the first child. The numbers show a clear upward trend for all countries over the last decades.

(iv) Earnings

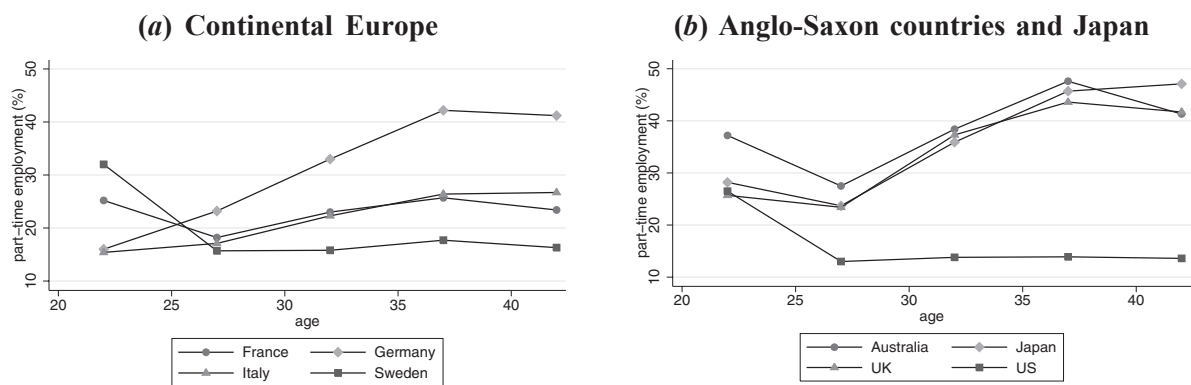
Figure 10 illustrates the earnings ratio between males and females. Note that the numbers we report refer to full-time workers only. The trend for almost all countries suggests that the gender gap between males and females became smaller, although the speed of this process differs across countries. There are also substantial differences in

Figure 6
Part-time Employment Differentials, Female–Male



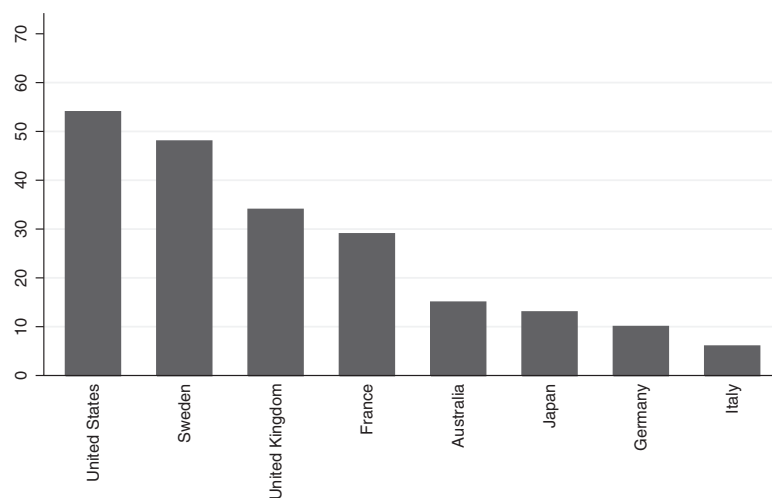
Source: OECD, Labour Force Statistics, 2004.

Figure 7
Female Part-time Employment across Age Groups, 2002



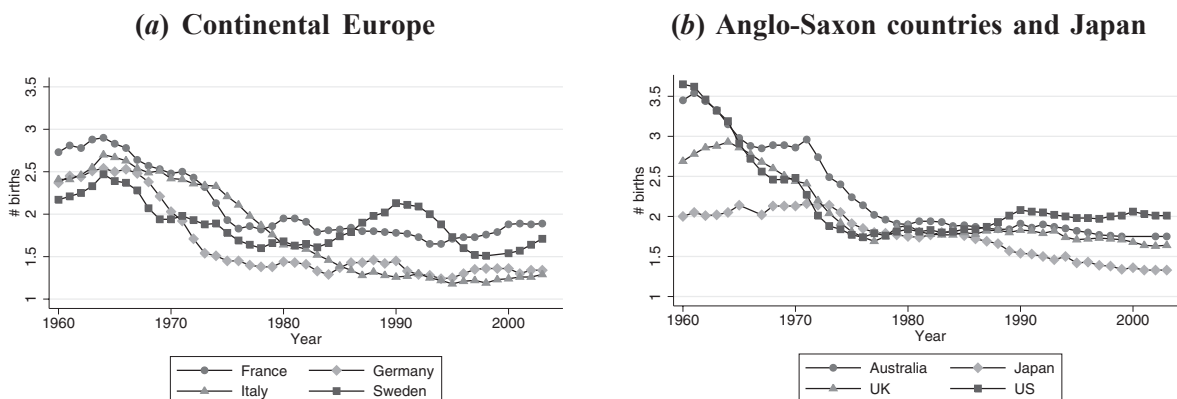
Source: OECD, Labour Force Statistics, 2004.

Figure 8
Percentage of Children in Formal Child-Care Centres



Source: OECD (2001), *Balancing Work and Family Life: Helping Parents into Paid Employment*.

Figure 9
Fertility Rates (number of births per woman)



Source: World Bank (2005).

Table 3
Average Age of the Mother at First Birth

| | 1970 | 1975 | 1980 | 1985 | 1990 | 1995 | 1996 | 2000 | 2003 |
|---------------|------|------|------|------|------|-------|------|--------|------|
| France | 23.8 | 24.2 | 24.9 | 25.9 | 27 | 28.1 | | | |
| Germany, East | 22.5 | 22.5 | 22.3 | 22.3 | 24.9 | 26.9 | 27.3 | | |
| Germany, West | 24.3 | 24.8 | 25.2 | 26.2 | 26.9 | 28.2 | 28.4 | | |
| Italy | 25.1 | 24.7 | 25.1 | 25.9 | 26.9 | 27.5 | | | |
| Sweden | | 24.5 | 25.5 | 26.1 | 26.3 | 27.3 | 27.5 | | |
| UK | 23.5 | 24 | 24.4 | 24.8 | 25.5 | 26.6 | 26.7 | | |
| USA | 21.4 | 21.8 | 22.7 | 23.7 | 24.2 | 24.5 | 24.6 | 24.9 | |
| Japan | 25.6 | 25.7 | 26.4 | 26.7 | 27 | 27.5 | | 28 | 28.6 |
| Australia | | | | | | 28.3* | | 29.1** | |

Notes: * Data for 1993; ** data for 1998.

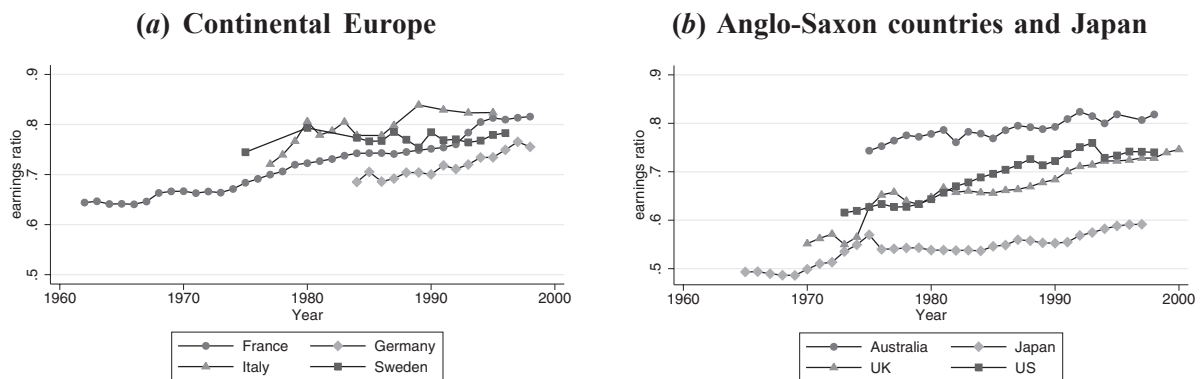
Sources: European countries: Bulletin on Population and Society (DEMOS), vol. 15, August 1999; USA: National Vital Statistics Reports, Vol. 51, No. 1, December 11, 2002 (from the National Center for Health Statistics); Japan: Statistical Handbook of Japan, ch. 2 ('Population'), p. 16, from the Statistics Bureau and Statistical Research and Training Institute, Ministry of Internal Affairs and Communications; Australia: Research FaCS Sheet, no. 9, 2001, Department of Family and Community Services, Canberra.

the level of the earnings ratio, with women in Japan earning about 60 per cent of male earnings, while women in Australia, Italy, France, and Sweden earn close to, or above, 80 per cent of male earnings. The USA, UK, and Germany take an intermediate position at about 75 per cent. One explanation for the trend may be a relative improvement in the educational achievement of women; however, the level differences are unlikely to be explained by education, as educational achievement of females who are in the labour force tends to be higher than that of males (see Figure 1). Waldfogel (1998) provides

figures for hourly pay irrespective of part-time or full-time employment. She finds similar differences across countries, and offers family policies as one possible explanation. Blau and Kahn (2001) suggest differences in the overall wage compression across countries as an explanation for the difference in the magnitude of the gender wage gap: low wage inequality induced by wage-setting mechanisms raise the relative pay of women, who tend to be at the bottom of the wage distribution. Based on micro evidence for 22 countries, they provide convincing evidence for this hypothesis. A further explanation may be

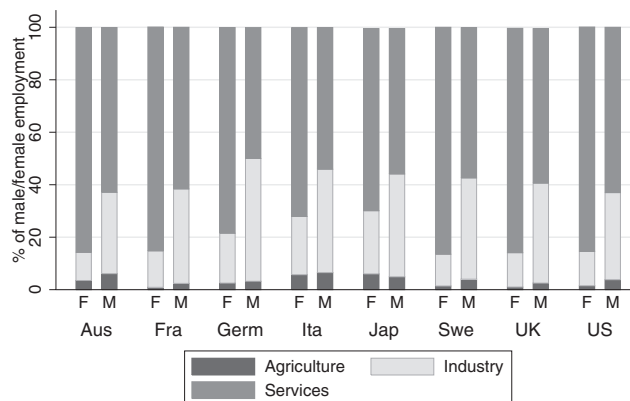


Figure 10
Gender Earnings Ratio
(female/male gross earnings)





Note: Gross earnings for full-time workers only.
 Source: OECD, Labour Force Statistics, 2004.

Figure 11
Sectoral Allocation, Males and Females (1997)



Source: ILO (2003).

occupational segregation. Kunze (2003, 2005) shows that occupational segregation does contribute substantially to explaining the wage gap between males and females in Germany, with women selecting predominantly into occupations that pay lower wages. The paper by Bernd Fitzenberger and Astrid Kunze in this issue erate these findings, and provide  detailed investigation of the initial occupational choice and subsequent career patterns of males and females, and how this has changed across cohorts.

(v) Sectoral Allocation

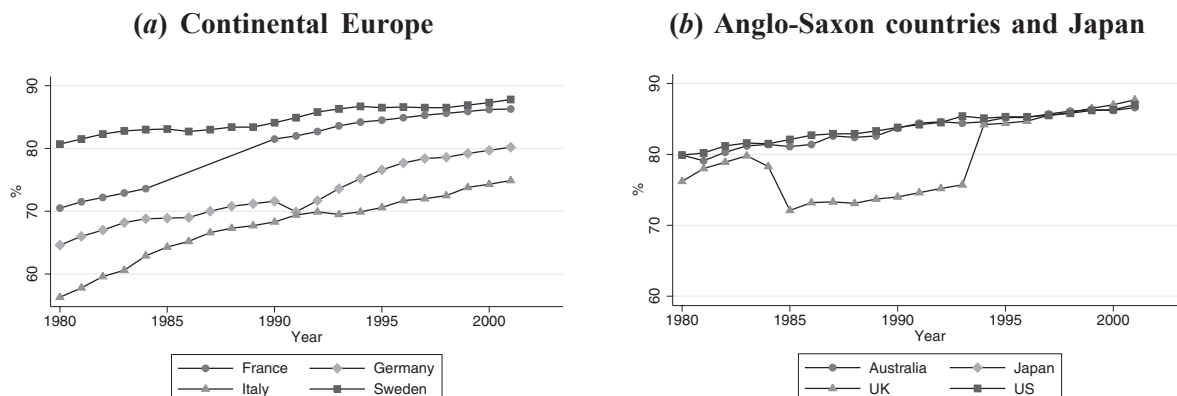
Figure 11 illustrates the sectoral allocation of males and females for the different countries in 1997. We

distinguish between the agricultural sector, industry, and services. Employment in the agricultural sector is small and, not surprisingly, is higher for males than for females in nearly all countries. More remarkable is that, for all countries, females are more strongly represented in services, while males are more strongly represented in industry.

Figure 12 shows an upward trend in the participation of females in the service sector over the last decades. It also shows substantial differences in levels—with females in France and Sweden approaching nearly 90 per cent in services, while in Italy, only about 75 per cent of females work in the service sector.²

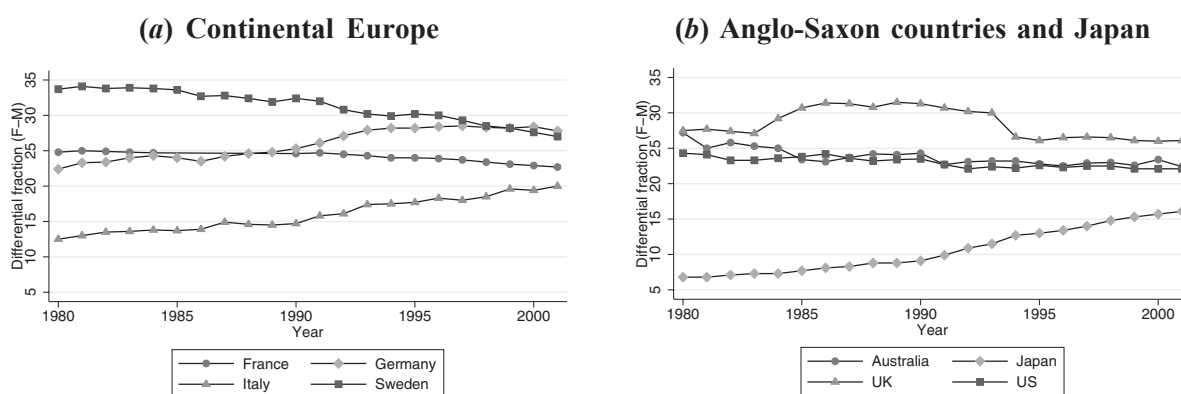
² The drop for the UK between 1985 and 1993 is related to changes in the classification system, and is also observable for industry. Over the same period, the percentage of employment that could not be assigned to services, agriculture, or industry increased.

Figure 12
Fraction of Female Labour Force in the Service Sector



Source: ILO (2003).

Figure 13
Male–Female Differential in the Fraction of Labour Force in Service Sector



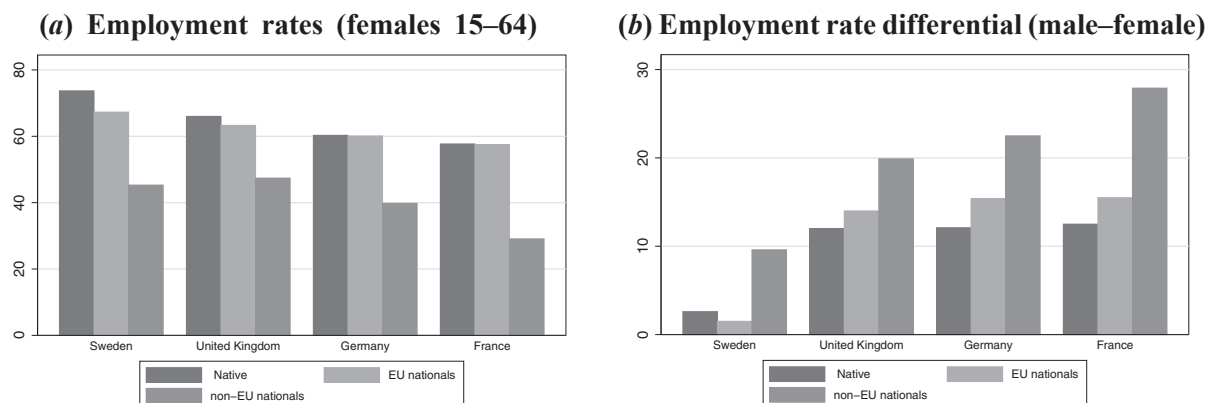
Source: ILO (2003).

The Anglo-Saxon countries and Japan show a remarkable similarity, both in levels and in the trend.

The upward trend in Figure 12 does not necessarily mean that the fraction of females in the service sector has increased over time relative to males—there is a general trend away from industry to services for both genders. Figure 13 shows the differential between males and females in services. While the fraction of females in services seems to decrease slightly in Sweden, it increases in Italy and Japan. Overall, the trends seem to suggest convergence of the relative fraction of females in service occupations across the countries we consider, with a differential approaching around 20–25 percentage points.

These figures suggest different sector and occupational choices among men and women, and these differences seem to be slightly converging over time. The paper by Fitzenberger and Kunze does suggest that these choices are responsible for some of the observed wage gap. A key question is what drives these differences. Much of it may be due to traditions and gender role attitudes, leading women and men to segregate into particular occupations and sectors. Nicole Fortin discusses gender role attitudes and labour-market outcomes in her paper in this issue. Other reasons may relate to early achievement differences and differential advantages of men and women in particular activities—for example, the numbers presented in Table 1 suggest advantages for women in some areas of scholastic achievement.

Figure 14
Male–Female Employment, Different National Groups



Source: European Social Statistics: Labour Force Survey results 2002 (Eurostat).

(vi) Differences across Groups

In the previous sections, we have illustrated the substantial heterogeneity in gender differences across countries. But even within the same country, gender differences vary across groups of individuals of different background.

In Figure 14, we display in the left-hand panel employment rates of females in the age range between 15 and 64, for four European countries (for the year 2002), where we distinguish between women who hold the nationality of the host country, women who are nationals of another European country, and women who are nationals of a non-European country.³ The figure shows relatively similar employment rates across women belonging to the first two groups, but dramatically lower employment rates for women who belong to the last group. In the case of France, employment rates of non-EU nationals are about half the employment rate of EU or French nationals.

The left-hand panel shows the difference in employment rates for each of these groups between males and females. Although, for all countries, the employment rates of males are also lower for the non-European group (figures not shown), the differ-

ences between males and females is nevertheless largest for this group, for all countries. In the case of Sweden, which has, as we have shown above, very high labour-force participation rates for females, there is hardly any gender difference within the groups of Swedish nationals or nationals from another European country. However, within the group of non-Swedish nationals the gender difference in employment rates is about 10 percentage points. For the other countries, there are gender differences for all groups, with the largest differentials for non-Europeans.

These figures suggest that, within the same country, economic outcomes of females relative to males may differ quite substantially according to the ethnic and immigrant group individuals belong to. In the last article of this issue, Christian Dustmann and Francesca Fabbri investigate labour-market outcomes for females and males of immigrant and non-immigrant status in detail. The article distinguishes between immigrant women who are white, and those who belong to an ethnic minority groups. The analysis investigates possible disadvantage, not only on the level of the individuals, but also in the family context, and along the distribution of the partner's economic potential.

³ Notice that the figures distinguish by nationality, not foreign-born status. Thus, they exclude naturalized foreign-born individuals, but may include individuals born in the respective country who maintained their nationality. Foreign-born status is not provided by some European countries in official aggregate statistics.

III. THE LIFE CYCLE

The last section illustrates substantial differences in various outcome indicators between women and men across countries, and differences in trends over time. The papers in this issue offer interpretation and explanation for gender differences at various stages over the life cycle, thus contributing to an explanation for some of the macro evidence we have shown above, and providing new perspectives and ideas for the possible reasons for these differences. This section briefly discusses the contributions to follow and puts them into context.

The influence that gender may have on a child's environment starts immediately after birth, with the gender of a newborn child triggering a difference in parental behaviour. This, in turn, may affect overall resources available within the family, and resource allocation to the child. In the first paper of this issue, Lundberg argues that such gender bias is not only a vital issue in developing countries, but is also important in wealthy, non-traditional societies. She presents evidence that a child's gender does affect aspects of family stability and the time allocation of parents. She discusses evidence that boys are more likely than girls to live with their father, and that boys enhance the work hours of their fathers—a reaction to greater expected marital stability induced by sons. An important conclusion is that girls, by receiving less paternal input both within and outside marriage, may experience disadvantages at later stages in life.

At school age, educational achievement can also differ between boys and girls. Machin and McNally discuss evidence of a widening gap between the average educational achievement of boys and girls at both early and later stages of compulsory education. In their paper, they study the dynamics of this process, and how achievement differences have evolved over time. As possible explanations for these observed gender gaps, they suggest school inputs, teaching practice, and the examination system. A further interesting hypothesis is the possible relevance of intergenerational mechanisms, working through higher educational achievement of mothers relative to those of previous generations. Their work is most relevant to whether changes in the school system can affect a change in the gender gap

in educational achievement. They conclude that education policy may have an impact on the achievement gap between boys and girls.

However, it is not only the formal curriculum which plays an important role for later outcomes. Important social ties are woven during primary and secondary education, with large potential relevance for key career decisions and later behaviour. The process of peer interaction may well differ between boys and girls. These different behaviour patterns and interaction with peers can have potentially important effects on later labour-market outcomes. Soetevent and Kooreman investigate this issue, using a survey in which all pupils in a sampled class are interviewed, and which combines data for several years. This allows identification of trends in the social relationships of teenagers. They provide a careful methodological discussion, followed by empirical analysis. One of their main findings is that the role played by gender and ethnicity in how teenagers interact varies strongly across different types of behaviour—for example, expenditures on cell phone and on clothing exhibit mainly between-gender interactions. They also investigate the relationship between class social interaction, and family background. Data of the type used in this paper allow important and fascinating insights into social interactions, and the impact these will have on early career choices.

Early career choices are likely to be important for differences in later economic outcomes and decisions. A country where occupational choices are made at an early stage, through enrolment into a 2–3 year occupation-specific apprenticeship scheme, is Germany, where about 65 per cent of the labour force has received apprenticeship training. Based on detailed longitudinal data that follow individuals from their labour-market entry onwards, and concentrating on a sample of individuals who enrol into occupation-specific training schemes after secondary school, Fitzenberger and Kunze investigate the relationship between the gender wage gap, the choice of training, occupation, and occupational mobility. They demonstrate that women and men make different occupational choices, which may lead to women becoming trapped in low-wage careers. Their findings establish a persistent gender wage gap with years in the labour market, which has

decreased over time. The gap is largely explained by women being in occupations that are characterized by lower wages. Likewise, occupational mobility is higher for males than for females. Although mobility is associated with positive wage gains, an increase in occupational mobility for women may explain part of the reduction in the gender wage gap. They also establish higher gender wage gaps in the lower parts of the wage distribution.

Why would women choose careers and occupations that seem inferior to those of their male peers? Part of this may have to do with intended fertility patterns, which may lead to different optimal career decisions between males and females, even though the wage returns are lower. How intended fertility affects career choice is importantly related to the flexibility of jobs available, as well as the existing facilities of child care. However, career choice may also be related to social attitudes regarding gender roles in the labour market. Different choices made by males and females with regard to occupation or, more generally, participation, may be influenced by perceived social acceptability. For instance, immediate re-entry into the labour market after child birth may be considered as inappropriate in some countries, and therefore put pressure on women to remain at home longer, thus possibly losing important human-capital and labour-market opportunities. In the longer run, such values may have helped to create institutions and regulations that support women who wish to stay at home after child birth (e.g. maternity-leave regulations), but put women who would like to join the labour market soon after child birth at a disadvantage (e.g. child-care facilities) in some countries—and help create facilities that allow combining work and child-raising in others.

Fortin uses data from the World Value Survey to investigate the impact of gender role attitudes and work values on women's labour-market outcomes across 25 OECD countries. She finds that anti-egalitarian views (in the sense that men have more rights to jobs than women) are negatively associated with female employment rates and the gender pay gap, but that these views are softening among recent cohorts. She also finds that perceptions of women's role as home-makers are more persistent over time than anti-egalitarian views, and associ-

ated with women's labour-market outcomes. She speculates that they could be implicated in the recent slow-down of the gender convergence in pay. She also finds that a clash between family values and egalitarian views (mother's guilt) is a further obstacle in the path towards greater gender equality. The findings of this paper establish a link between ideology and values on the one hand, and behaviour and institutions, as well as their evolution, on the other.

Such societal perceptions and attitudes may be difficult to change in the short run, and they may be one reason for differences in distributional policies, such as tax treatment of secondary earners and access to child care. Institutions have the strongest impact on the decisions and choices of females in the labour market. Apps and Rees argue that, given the decision to have children, life-cycle time use and consumption decisions of households are determined by public policy. They focus on the tax treatment of the female partner and on access to high-quality, affordable child care. Based on time-use data for various countries, they show that the presence of pre-school children, in combination with the tax treatment of the second earner's income and the cost of bought-in child care, dramatically change the pattern of time use, leading to large falls in female labour supply. They also find a large degree of heterogeneity in female labour supply, and argue that family demographics and the male partner's wage do not differ sufficiently to provide an explanation for these.

Apps and Rees argue that there is not only an immediate trade-off between labour supply and fertility—in fact, they show that this link is possibly quite small—but that decisions regarding family size are strongly linked to perceived possibilities of labour-market re-entry when children are older. Therefore, even women who do not work when the children are small may well be anticipating a return to the labour force later and, as a result, limit their family size. Policy-induced improvement in re-entry possibilities may, therefore, increase both family size and the rate of re-entry to the labour force.

Studying various phases over the age cycle, Apps and Rees find that the early phase is the hardest time of the couple's life. They argue that this is a result

of failure in the market to provide affordable child care of sufficiently high quality, as well as a tax distortion, since market child care must be bought out of taxed income, and the main factor of production in child care (labour) is also heavily taxed. They believe that there is a strong case for public intervention in the supply of child care. Furthermore, the high degree of heterogeneity in female hours across seemingly identical families may be due to different assessments of the gains and losses associated with the choice between working at home and in the market.

While institutions and tax regimes are related to differences in opportunities of females across countries, a reason for differences in labour-market outcomes of individuals within the same country may be differences in culture, religion, or beliefs related to immigrant status. With the number of foreign born in the labour force being close to, or even above 10 per cent in many industrialized countries (OECD, 2002), the disadvantage of females from these communities deserves particular attention. In the last paper of this issue, Dustmann and Fabbri investigate the economic activity of married or cohabiting female immigrants in Britain, distinguishing between foreign-born females who belong to an ethnic minority group and their husbands, and foreign-born white females and their husbands (with native-born white women and their husbands as a comparison group). They investigate employment, hours worked, and earnings for males and females, as well as their combined family earnings, along the distribution of husbands' economic potential. They find large differences between the two immigrant groups relative to husbands and wives in couples where the woman is white and British born. There is a strong disadvantage for the overall ethnic minority female population which is particularly pronounced at the bottom of the distribution of the husbands' economic potential. Low employment probabilities of minority immigrants translate into a substantial disadvantage for minority immigrant couples in terms of weekly earnings, again concentrated particularly at the bottom of the distribution of the husband's economic potential. Overall, the paper shows substantial differences in the relative performance of different immigrant populations, and demonstrates the importance to investigate relative economic disadvantage of immigrant groups on a household level.

IV. DISCUSSION

The evidence we have provided in this paper shows large differences in certain aspects of behaviour and outcomes for males and females. Moreover, there is substantial variation in these differences across countries, and over time. We have seen, for instance, that countries such as Sweden and Germany, both in the Northern European hemisphere, differ noticeably in the educational background of males versus females. They are also different in labour-force participation rates of females. Is the low female participation in Germany related to institutional differences between the two countries, and/or to differences in overall opportunities? And if this is the case, how have these differences evolved?

Economists tend to think that more education and/or higher labour-force attachment is generally a good thing. Why do Germany and Sweden then differ so substantially in participation rates? If institutional disadvantage is partly responsible, then why is there not a more rapid convergence? Perhaps high labour-force attachment of women is not considered equally desirable in both countries? And, if this is the case, then how do values and beliefs affect the evolution of institutions, and, in turn, what impact do institutions and opportunities have on values? Answers to these questions are not easy to find, and require addressing gender issues in a broad context.

Our figures have also illustrated some remarkably common patterns in gender differences across countries. Quite striking are the differences in achievement tests of 15-year-old secondary-school children across countries, with females consistently outperforming males in reading and writing, but not in science or maths. We also find remarkable similarities in sector allocation across countries, with females being relatively higher represented in the service sector. Is the different sector allocation, which may lead to economic disadvantage, determined by differences in early scholastic achievements, and ensuing educational and occupational choices? And, in turn, what are the determinants of these differences? Are they related to peer guidance early on in life, or laid at even earlier stages? Again, answers to these questions are important and need a perspective that recognizes the possible effects of early age experiences, either by choice,




through peers or values, or by institutional constraint, on later opportunities and decisions. In turn, perceived opportunities at later stages may affect early choices.

Gender differentials in choices and opportunities are perhaps one of the most important areas in social science, and related issues have a significant weight in policy and public debate. Understanding of these differences requires a broad angle, as processes leading to particular outcomes are complex, and rooted in interdependent choices and opportunities

at various stages over the life cycle. The economic foundations for differences of the type we have described above may in part be the result of an even more long-term evolutionary process, where institutions and values have interactively developed with choice and power allocation between genders over many generations, and, manifested as institutions and regulations, influence importantly the gender differences in behaviour and the differential outcomes which we observe. Many of the key research questions are addressed in the articles in this issue.

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