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Unlocking Female Employment Potential in Europe

Drivers and Benefits

*Lone Christiansen, Huidan Lin,
Joana Pereira, Petia Topalova,
and Rima Turk under the
guidance of Petya Koeva Brooks*

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Executive Summary

With an aging population and declining productivity growth, Europe faces serious challenges to raising its output growth. Adding to these challenges are the various gender gaps in the labor market. Despite significant progress in recent decades, there are still fewer women than men participating in Europe's labor market, and women are more likely to work part time. Furthermore, a smaller share of women reaches the top rungs of the corporate ladder. Could greater gender equality in the labor market help mitigate the slowdown in Europe's growth potential?

Against this backdrop, this paper investigates the drivers of female labor force participation in Europe as well as what effects greater gender diversity in senior corporate positions might have for Europe's economic performance. Reexamining the factors driving women's labor force participation is particularly important because in many European countries the process of closing the gender gap has stalled despite greater gender equality in human capital investment, declining birth rates, changing social norms, and equal legal access to employment opportunities. Investigating whether firm performance could be improved if women held a greater share of senior positions is also essential given that the empirical evidence from past research into this question has been inconclusive.

This paper finds that, for women in Europe, the decision to work is not simply a matter of personal choice—policies matter, too. For example, the tax policy treatment of a family's second earner could affect incentives to take up work, and public policies providing the kinds of services that make it easier for women to combine a job with household and care responsibilities could also support women's ability to enter or return to the labor market.

This paper finds that having more women in the labor force paves the way for increased diversity in senior corporate positions and better firm performance. The empirical evidence suggests a strong positive association between firms' gender diversity in senior positions and corporate financial performance. This correlation is more pronounced in sectors where women

comprise a larger share of the labor force (such as the services sectors) and where complementarities in skills and thinking—and greater creativity and innovative capacity—are in high demand (such as high-tech and knowledge-intensive sectors). To the extent that higher involvement by women in senior positions improves firm profitability, it may also help support corporate investment and productivity, mitigating the slowdown in Europe's potential growth.

1

Why Is Increasing Female Labor Force Participation Relevant?

Europe's population is aging and productivity growth has declined. Potential output growth in Europe has declined markedly in the aftermath of the global financial crisis (IMF 2015), owing in particular to slower growth in employment and productivity. In addition, the working-age population is expected to continue to shrink over the coming decades, with fewer people entering the labor force and old-age dependency ratios rising. To the extent the recent slowdown in productivity is not fully explained by cyclical factors, concerns about continued subdued productivity growth also linger.

Gender gaps in participation and senior positions are prevalent. Women in Europe remain less active participants in the labor force than men. In 2014, only 89 women were working for every 100 men of prime working age. Furthermore, in many countries, working women supply significantly fewer hours of work on aggregate than men. Gender gaps are even more glaring in senior corporate positions. As of April 2015, for every 100 corporate board members of large publicly listed firms, only 23 are women.¹

Greater involvement of women in the economy can help support Europe's economic performance. Gender equality in the labor market is an important social and developmental goal. In addition, it can bring significant macroeconomic benefits (World Bank 2011; European Commission 2011; Elborgh-Woytek and others 2013; Gonzales and others 2015a), in particular through two channels:

¹ Computed based on European Commission data (http://ec.europa.eu/justice/gender-equality/gender-decision-making/database/business-finance/executives-non-executives/index_en.htm). The corresponding female ratio is 16 out of 100 for top executive positions.

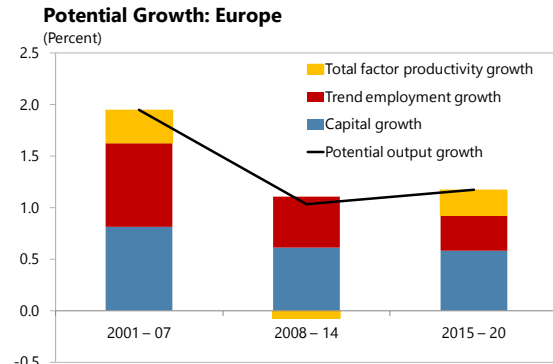
- *Increasing labor supply.* In the context of a rapidly aging population, increasing the share of women in the workforce could help mitigate the impact of a shrinking labor force. Closing the gender participation gap by increasing the number of women in the labor market would raise the European workforce by 6 percent. The impact could be as large as 15 percent if the gap in hours worked by men and women was also eliminated (Figure 1).² In turn, the resulting increase in labor input could have sizable effects on Europe's measured potential output. According to the Organisation for Economic Co-operation and Development (OECD), closing the gender participation gap could raise GDP by 12 percent over the next 15 years (OECD 2012).
- *Improving firm financial performance.* Greater involvement of women in senior management and in the boardroom could help strengthen firms' performance by broadening the talent pool and better representing the changing demographics of the workforce (OECD 2012).³ To the extent that higher representation of women in senior positions improves corporate sector profitability, it would help support corporate investment and productivity, mitigating the slowdown in potential growth.

² This is an illustrative exercise, which assumes that the population and unemployment rate of both genders as well as the male labor force participation rate and number of hours worked for men will remain constant. This exercise also abstracts from the cohort dimension of participation gaps.

³ The goal of bringing greater gender equality at the higher rungs of the career ladder, along with the potential benefits this may bring, has prompted many countries to institute quotas for women on the boards of publicly listed companies. The EU has also called for actively recruiting qualified women to replace outgoing male board members (European Commission 2012).

Figure 1. Europe's Economic Challenges

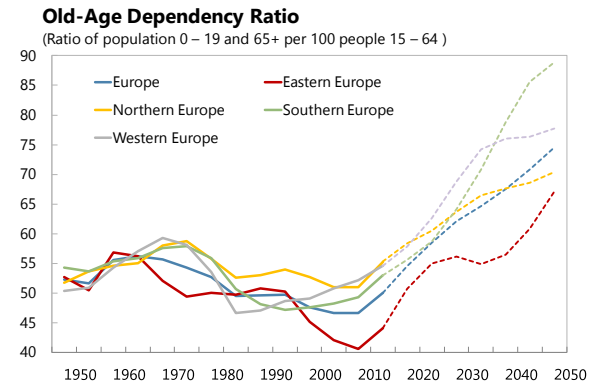
Potential output growth is declining...



Source: IMF 2015, chapter 3.

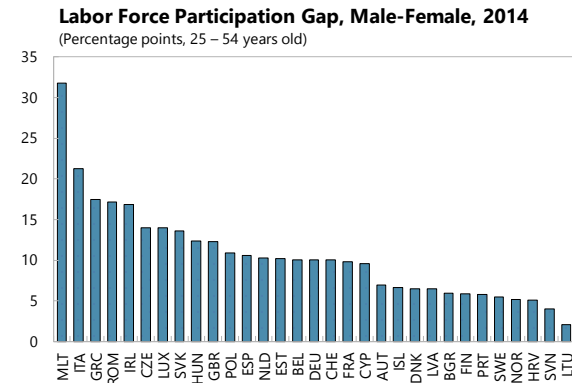
Note: Includes Germany, Italy, Spain, Turkey, and the United Kingdom.

...and population is aging.



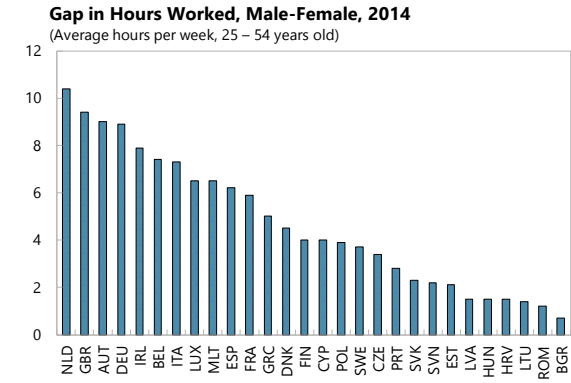
Source: United Nations Population Division.

The gender gap is sizable...



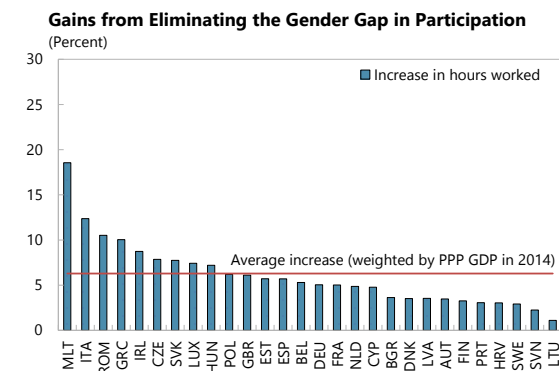
Sources: Eurostat and IMF staff calculations.

...and part-time employment is prevalent.



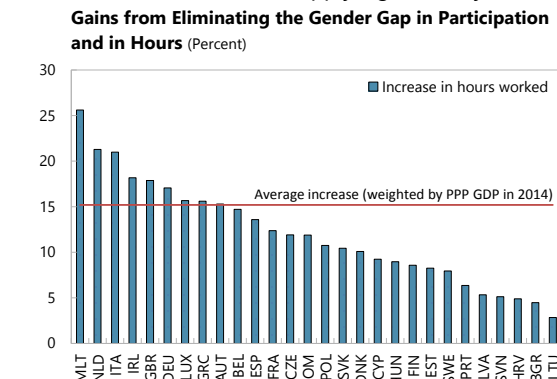
Sources: Eurostat and IMF staff calculations.

Eliminating the gender gap...



Sources: Eurostat and IMF staff calculations.

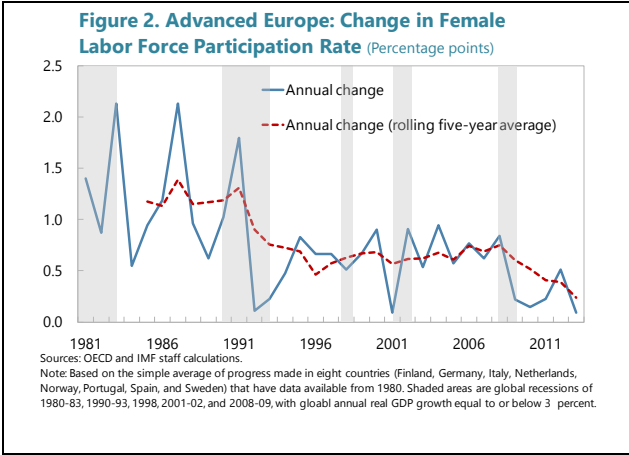
...would increase the labor supply significantly.



Sources: Eurostat and IMF staff calculations.

Note: AUT: Austria; BEL: Belgium; BGR: Bulgaria; CHE: Switzerland; CYP: Cyprus; CZE: Czech Republic; DEU: Germany; DNK: Denmark; EST: Estonia; FIN: Finland; FRA: France; GBR: the United Kingdom; GRC: Greece; HRV: Croatia; HUN: Hungary; IRL: Ireland; ISL: Iceland; ITA: Italy; LTU: Lithuania; LUX: Luxembourg; LVA: Latvia; MLT: Malta; NLD: Netherlands; NOR: Norway; POL: Poland; PRT: Portugal; ROM: Romania; SVK: Slovak Republic; SVN: Slovenia; SWE: Sweden.

Against this backdrop, two questions naturally arise. First, what can be done to boost female employment and close gender gaps in the labor force? Second, are there gains from greater female representation in senior corporate positions? The first question is particularly relevant in light of the slowdown in the rate at which women are joining the labor force in Europe, despite greater gender equality in human capital investment, declining birth rates, changing social norms, and equal legal access to employment opportunities for men and women (Figure 2). With female labor force participation in Europe at its highest level from a historical perspective, could changing policies bring more women into the labor force or do the current levels of participation reflect personal preferences? In regard to the second question of gains from greater female representation in senior corporate positions, numerous studies have examined this question in the context of individual countries, often reaching contradictory conclusions.

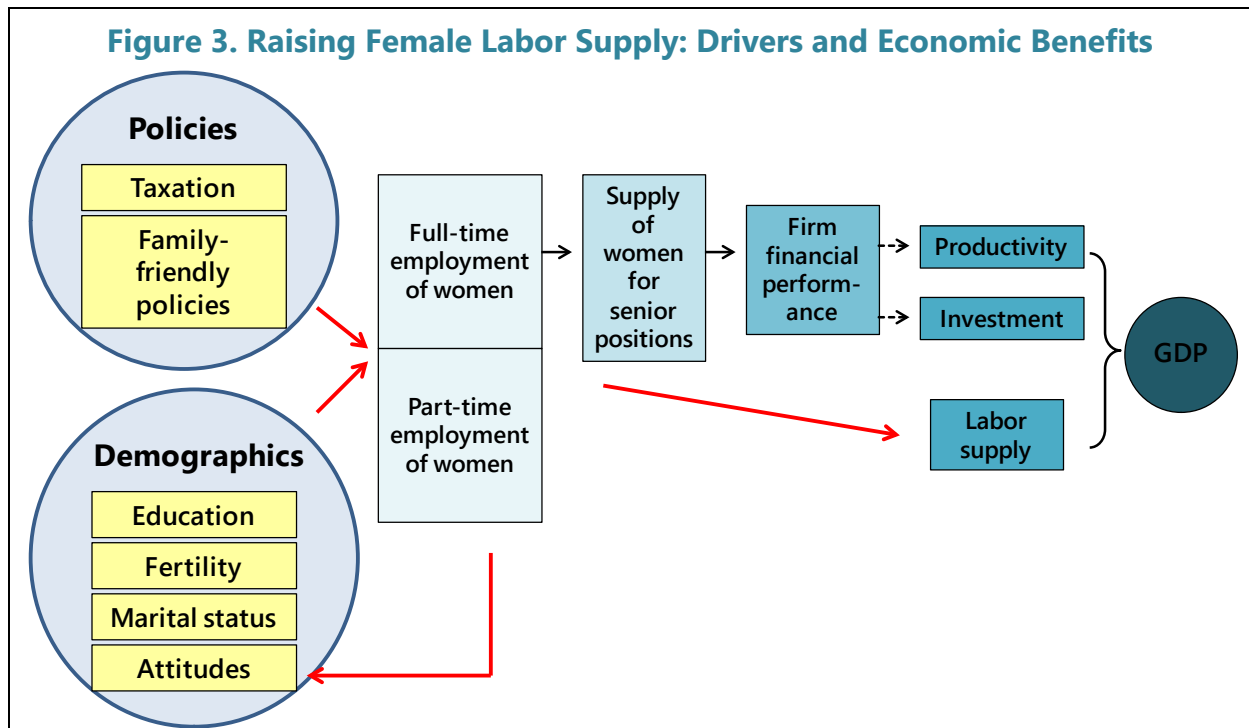


This paper contributes to the debate by addressing each of the two questions.

- *Increasing labor supply.* After taking stock of the evolution of female labor force participation and its key drivers in Europe, the paper revisits the relative importance of various demographic characteristics and policy variables in women’s employment decisions (Figure 3). A key contribution of the analysis is the ability to disentangle the effects on women’s employment decisions arising from individual (or household) choice and macro-level policies.⁴ The analysis highlights the significant role of demographics and attitudes in driving women’s employment decisions. Importantly, it confirms that policies matter as well.
- *Improving firm financial performance.* The paper investigates whether firms benefit from more gender diversity in senior positions. Using data from over 2 million firms in Europe, it provides new empirical evidence on women’s representation in senior positions and firm financial performance. The findings indicate a strong positive association between female

⁴ The paper uses “individual choice” and “personal choice” interchangeably and acknowledges that personal choice may be the result of household decision.

representation and firm performance, particularly in high-tech and knowledge-intensive sectors and in sectors where women represent a large share of the workforce.⁵



⁵ When discussing firm financial performance in this paper, we use “industry” and “sector” interchangeably.

2

How Has Women's Labor Supply Evolved?

More Women in the Labor Force

During the past few decades, European female labor force participation has increased substantially. From participation rates of at most 40 percent in the early 1980s in a number of advanced European countries, including Spain and Ireland (where participation rates were then below 40 percent), most advanced countries now stand at about 80 percent for women ages 25–54 years—the EU 2014 average. As a result, European female labor force participation is now almost on par with that of North America and East Asia and is well above that of South Asia and the Middle East and North Africa (Figure 4).

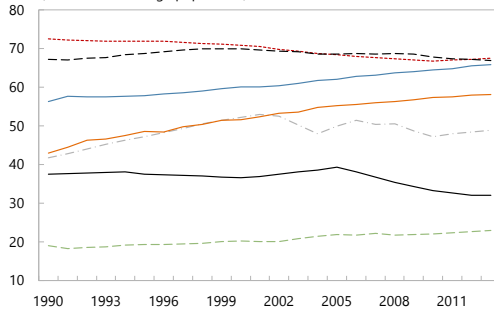
However, progress has been uneven across countries and has stalled in recent years. While the increase in women's participation in Spain and Luxembourg has continued at a broadly constant pace during the past three decades and Malta's female participation rate almost doubled in the past 15 years (albeit from a very low level), progress in Italy has been much slower.⁶ In contrast, labor force participation among prime working-age women in some emerging and northern European countries has traditionally been about 80 percent or higher, leaving less space for further significant increases. In fact, most of these countries have remained at broadly unchanged levels during the past two decades, and participation in Romania has declined moderately. In turn, whereas participation rates appear to be converging to Nordic levels, significant dispersion in participation across Europe remains, ranging from about 65 percent in Italy to about 90 percent in Lithuania, Slovenia, and Sweden (Figure 4).

⁶ The significant increase in female participation in Spain is a result of the gradual incorporation of younger cohorts with a higher average participation rate into the labor market (Banco de España 2015).

Figure 4. Progress in Female Labor Force Participation Rate

A substantial increase in participation in Europe...

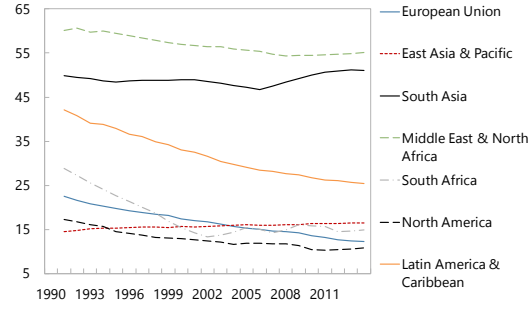
Female Labor Participation, 15 – 64
(Percent of same-age population)



Source: International Labor Organization.

...is helping to narrow gaps.

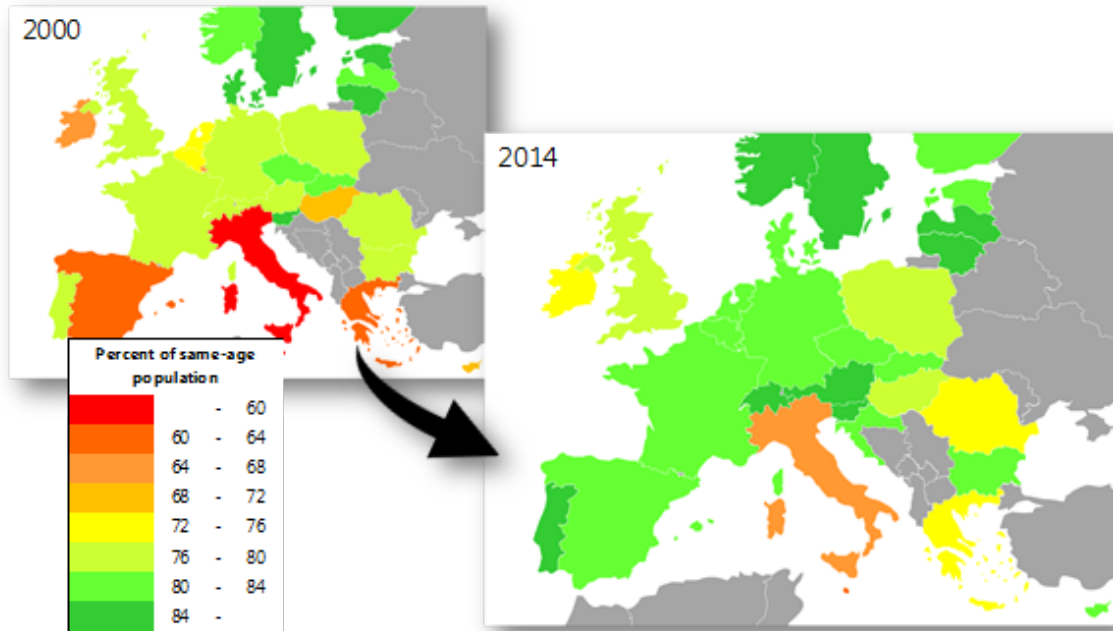
Labor Participation Gap, Male-Female, 15 – 64
(Percent of same-age population)



Source: International Labor Organization.

However, progress has been uneven, with participation still lagging in several European countries.

Female Labor Force Participation, 25 – 54
(Percent of same-age population)



Sources: Eurostat and IMF staff calculations.

Gender gaps in participation also remain. While there has been a marked increase in female labor force participation rates, they remain well below male participation rates. As of 2014, the gender participation gap was above 10 percent in a majority of countries, and above 20 percent in Malta and Italy. In contrast, the gap was only about 5 percent in Sweden and Norway and virtually closed in Lithuania. The gender gap also varies across age groups and education levels. In Italy, the participation gender gap is most prevalent among people older than 30, while in

Poland it narrows for people in their 40s and 50s, when women are past their prime childbearing years. Gender gaps also tend to narrow with higher education levels.

In addition, many working women are employed at less than full time. The average number of hours worked per week has remained broadly stable over the past decade for the average EU country. However, this masks substantial variation across countries. In the Netherlands, a high female labor force participation rate coincides with a considerable gap in hours worked between women and men, as more than half of women between the ages of 25 and 54 are employed part time. In Germany, women work about 30 hours per week, while men work for nearly 40 hours per week. On the contrary, women and men in Bulgaria work equally long workweeks of about 40 hours. While enhanced opportunities to work part time can lift participation rates through a reconciliation of family life and employment, part-time employment may also result from policy-induced constraints to taking up full-time work (for example, taxation or under-provision of childcare).⁷

But Still Few Women in Corporate Leadership Roles

More European women have entered the corporate boardroom. Since 2003, when Norway passed a law mandating at least 40 percent representation of each gender on the board of publicly listed companies, many European countries have followed suit (Profeta and others 2014). Most recently, Germany passed a law that requires publicly listed companies to have women occupy at least 30 percent of supervisory seats as of 2016. Overall, the introduction of quotas has supported a substantial rise in the share of women on the boards of Europe's largest publicly listed companies (Figure 5).

However, most countries are still a long way away from gender parity in senior corporate positions. While legal requirements have boosted the share of women in the boardroom to about 18 percent, only 12 percent of executive positions among Europe's 620 largest listed

⁷ For European countries, part-time work has been found to be more prevalent when fertility rates are higher, employment regulation is more favorable, and employment protection is stricter for permanent contracts. The share of the services sector in the economy and of young adults in tertiary education are also important determinants. Part-time work can also allow employers to adjust hours worked to cyclical conditions, although the responsiveness is higher for male workers (Buddelmeyer, Mourre, and Ward 2008). Finally, tax incentives to work part time also seem to have a significant effect on part-time participation rates (Thévenon 2013).

companies were held by women in 2015.⁸ In the broader corporate sector, women have made greater strides. Analysis of the gender composition of senior positions—both in management and on corporate boards—of more than 2 million companies in 34 European countries reveals that almost a quarter of such positions are held by women.⁹ However, the cross-country variation is large. Further, in all countries, a sizable gap remains between the gender composition of the workforce and the gender composition of senior positions.

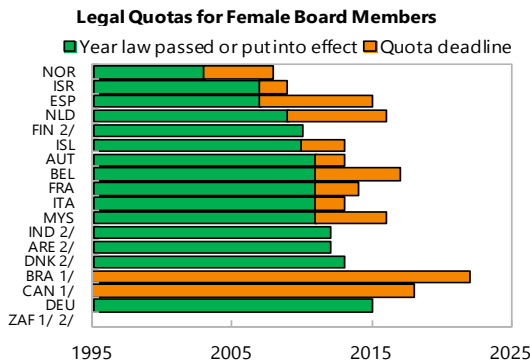
Greater gender parity in senior corporate positions has been achieved in countries where women are attached to the labor force full time. Various hypotheses have been offered for the underrepresentation of women in leadership positions in the corporate world as well as in politics: from demand-side constraints, such as preexisting social norms and gender stereotypes that create a glass ceiling for women, to supply-side explanations, such as women’s shorter work hours. For instance, preexisting social norms and gender stereotypes may serve to bias bosses and voters against appointing women as managers and leaders (Huddy and Terkildsen 1993; Eagly and Karau 2002). Lack of exposure to female leaders, in turn, may perpetuate biased perceptions of women’s effectiveness in leadership roles (Beaman and others 2009). Women themselves might not believe in their ability to lead, since they rarely see other women succeed in such positions (Beaman and others 2012). They may also leave high-power career tracks to have children (Bertrand, Goldin, and Katz 2010).

⁸ The statistics come from Eurostat, which covers the largest publicly listed companies in each country. Data on board members cover all members of the highest decision-making body in each company, which is typically either the supervisory board or the board of directors. Data on executives cover senior executives in the two highest decision-making bodies in each company.

⁹ The analysis relies on the Orbis database, compiled by Bureau van Dijk. The reported figure refers to the simple mean of the average share of women in senior positions in the 34 countries considered.

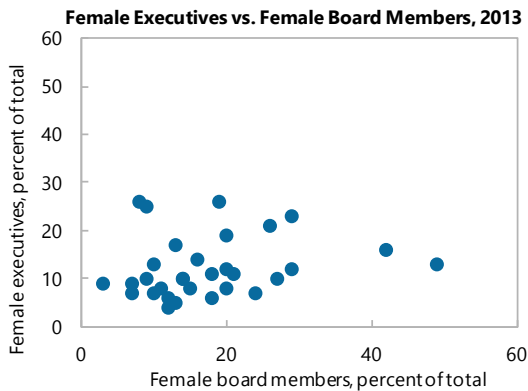
Figure 5. Women in Senior Positions

Many countries have introduced quotas for women on the boards of publicly listed companies...



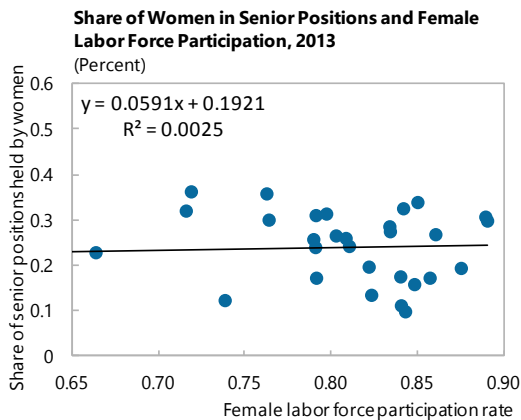
Sources: Deloitte's Women in the Boardroom 2013 survey; Bertrand et al., 2014 (Norway); National (UAE); Spiegel Online (Germany).
1/ Law passage is pending; 2/ No quota deadline.

However, women are significantly underrepresented in executive positions.



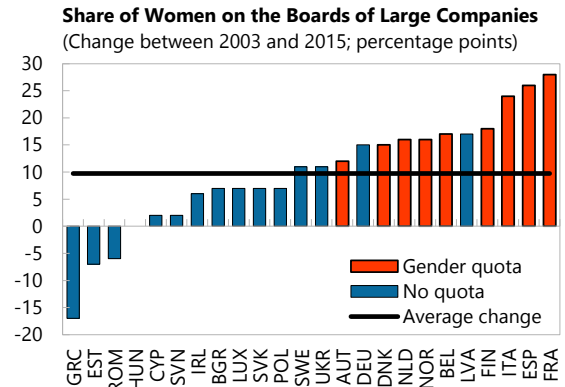
Sources: Eurostat and IMF staff calculations. Based on a sample of about 620 large listed companies.

Female labor force participation is not a good predictor of the share of women in senior positions.



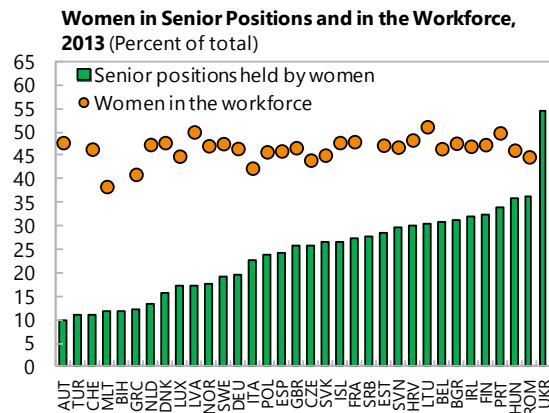
Sources: Eurostat, OECD, Orbis, and IMF staff calculations.

...supporting a rising share of women on the boards of large companies.



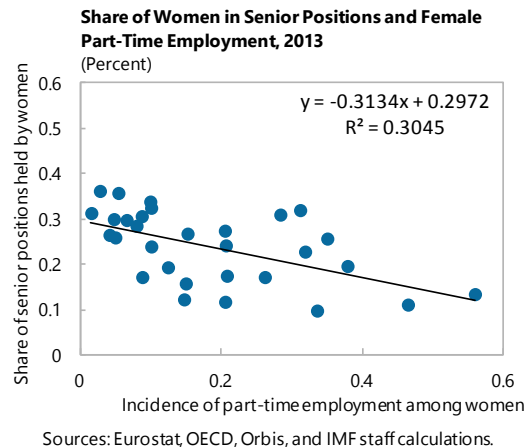
Sources: Eurostat and IMF staff calculations. Based on a sample of about 620 large listed companies.

In the broader corporate sector, the share of senior positions held by women is higher.



Sources: Eurostat, Orbis, and IMF staff calculations.

Greater gender balance exists in countries where part-time employment is less prevalent.



Sources: Eurostat, OECD, Orbis, and IMF staff calculations.

While pinning down the causes for the underrepresentation of women in senior positions is beyond the scope of this paper, two stylized facts emerge from our analysis. The overall female labor force participation rate is not a good predictor of the representation of women in senior positions in the broader corporate sector. However, a very strong negative association exists between the incidence of part-time employment among working women and the share of women in senior corporate positions, lending support to the supply-side explanations for the gender gaps in senior positions (Figure 5, panels 5 and 6).

3

Do Policies Matter?

In Addition to Individual Choice, Policies Affect Employment Decisions

Both individual characteristics and policies likely affect a woman's decision to work (Figure 6).¹⁰

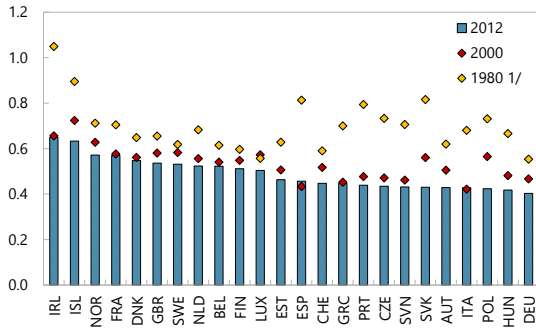
- *Individual characteristics.* When deciding whether to join the labor force, women compare the value of home production relative to the return to working outside the house (Becker 1965). For example, the return derived from household work increases with the number of children, while higher education credentials strengthen incentives for labor force participation through higher potential earnings. Gender attitudes or beliefs about women's role in society are also important, as they determine the disutility of market work from violating personally held beliefs or social norms (Fernandez 2013). In this respect, both demographics and women's attitudes have become more favorable toward women working in Europe. Among demographic factors, women now tend to have fewer children and obtain more education than three decades ago, virtually closing the education gap vis-à-vis men (Bloom and others 2009; Eckstein and Lifshitz 2011). At the same time, social norms and attitudes toward women working have become more favorable, and the rising number of women in positions of power provides role models for new generations. In 2014, women accounted for 28 percent of European parliamentarians, up from 18 percent about two decades earlier.

¹⁰ The structure of the economy also likely affects the level of female labor force participation through the expansion of sectors that have historically been much more likely to employ women, such as the services sector.

Figure 6. Individual Characteristics and Policies

Birth rates have declined markedly...

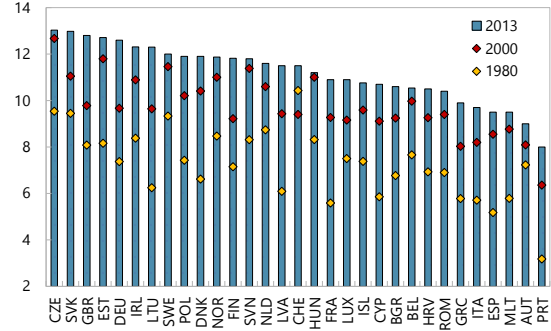
Number of Children (under 14) Per Woman



...and women have become more educated.

Female Education

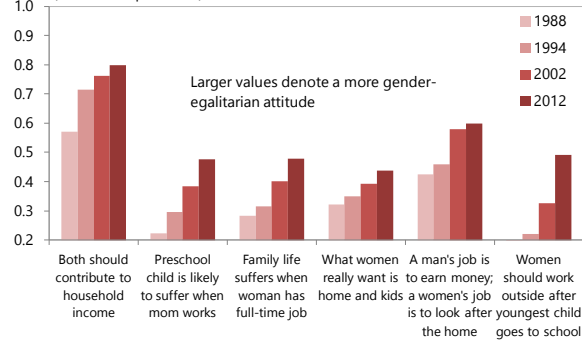
(Average number of years of schooling)



Attitudes toward working have become more favorable.

Attitudes Toward Gender Roles

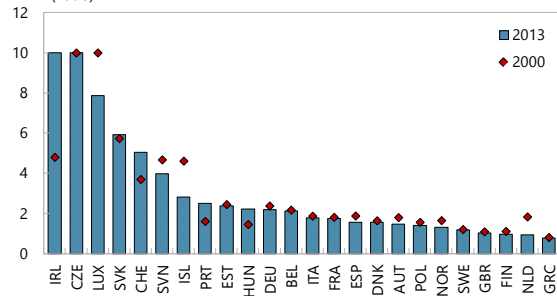
(Share of respondents)



Countries differ significantly in taxation.

Relative Tax on the Second Earner

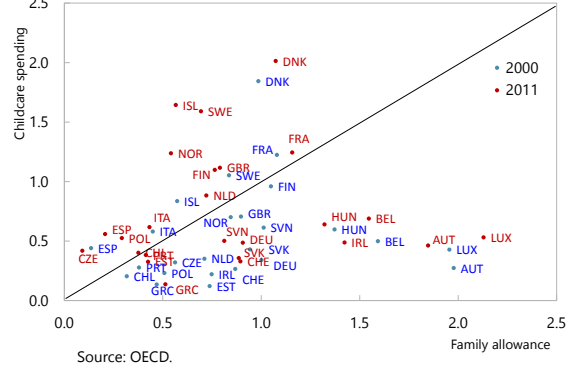
(Ratio)



Family-related public spending has declined in many countries, in favor of higher childcare spending.

Family Allowance and Childcare Spending

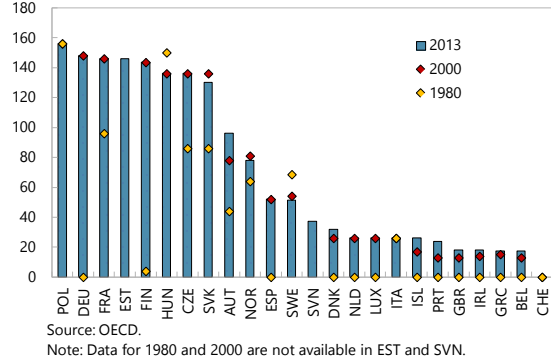
(Percent of GDP)



Parental leave has become more generous.

Parental Leave with Job Protection

(Weeks)



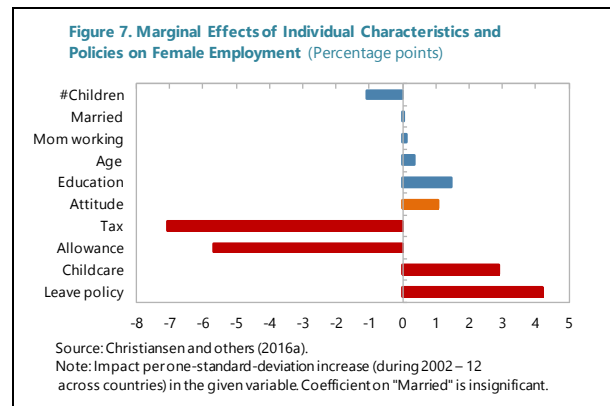
- *Policies.* Policies can create substantial (dis)incentives for women to work, in particular for women with children. First, the tax system can create disincentives to work, or to work full time, for the second earner in a family (often a woman) through a relatively high marginal tax rate (Bick and Fuchs-Schündeln 2014; Dao and others 2014; Colonna and Marcassa 2015). However, there has been no clear direction of change in this area, and taxation for married couples across countries varies from completely joint to separate. In contrast, specific family-oriented policies have generally moved in the direction of supporting women’s participation in the workforce (Carta and Rizzica 2015). Public spending on early education and childcare has increased across most countries since the early 1990s, facilitating mothers’ return to work (Jaumotte 2003; Steinberg and Nakane 2012; Thévenon 2013). At the same time, family allowances in the form of cash lump-sum transfers have been generally reduced. While parental leave policies are adjusted only infrequently, a number of countries, including the United Kingdom, Ireland, and Slovak Republic, now provide more than 30 weeks of maternity leave for women, supporting the return of mothers to work (Ondrich and others 2003; Edin and Gustavsson 2008).¹¹

Our analysis confirms that both individual characteristics and policies are important for understanding the employment decision for women (Figure 7; Box 1). A substantial literature has examined the drivers of female labor force participation. However, without micro-level data it is difficult to fully account for individual attitudes and choice and establish the role of changes in policies. Using such data on individuals, Christiansen and others (2016a) examine the role of both individual characteristics and policies.¹² Specific policy recommendations would vary, however, depending on each country’s circumstances.

¹¹ In countries where female labor force participation is already high, policies that act on how jobs are structured and remunerated may also be beneficial (Goldin 2014).

¹² As noted in Christiansen and others 2016a, a causal interpretation of the correlations documented here is difficult. Policy changes may simply reflect changes in social norms and preferences, they may be put in place in response to the rise of female labor force participation, or they may be correlated with other factors that influence the decision by women to work but are not accounted for in our empirical framework. Similarly, women’s attitudes could be driven by their participation in the labor market rather than the reverse.

- *Individual characteristics.* The analysis highlights that while more education is associated with a higher probability of a prime-aged woman working, education does not help explain the extent of full-time versus part-time work. In contrast, while marriage in itself does not significantly alter the employment decision for women, among working women the



data reveal that married women do tend to work shorter weeks than unmarried ones. Also, each additional child is associated with a lower probability of a woman working.

Importantly, a woman's self-reported attitude toward working, which helps capture her personal employment choice, is a strong predictor of whether she is working. Likewise, intergenerational patterns should not be dismissed. Women who grew up with working mothers are more likely to work themselves, suggesting that the gender gap can be gradually closed over time to the extent that policies do not discriminate against women working today.

- *Policies.* The significance of the coefficient on taxation underscores that as working women often earn the secondary income in a family unit, higher relative tax rates on the secondary earner discourage women from participating in the labor force (in particular in advanced Europe) and from working full time. However, the positive association between the probability of employment and public spending on childcare and early childhood education (in particular in emerging Europe) supports the hypothesis that public spending can facilitate the return to work after childbirth. In contrast, lump-sum cash transfers may lessen the necessity for a woman to work, given the associated increase in non-wage household income. While excessive parental leave may deter a woman from returning to work full time, more parental leave is associated with a higher likelihood of employment. Finally, the finding that changes in these policies matter more for women than for men underscores that removing disincentives created by policies can help narrow the gender participation gap.

Recent changes in policies have supported female employment in a number of countries.

Using the results of the empirical analysis described in Box 1, a decomposition of the actual change in employment rates across countries between 2002 and 2012 suggests that the positive evolution of attitudes toward women working have helped lift women's employment

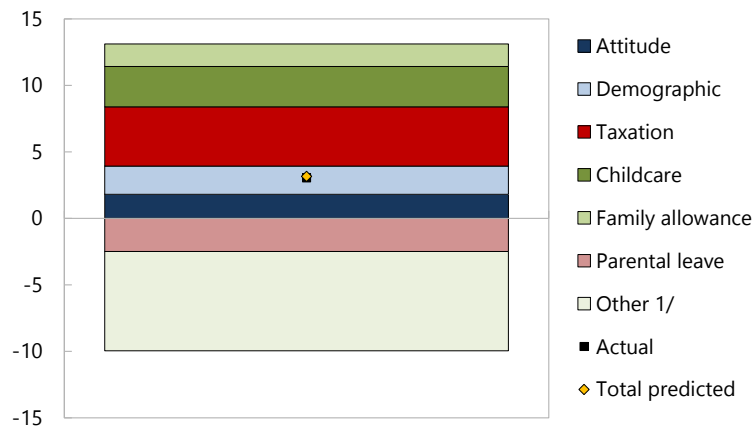
rates (Figure 8). However, even after accounting for demographics and personal choice, policies have had significant influence. In particular, lower taxes on the second earner in a number of countries, including Norway and the United Kingdom, have helped support female employment. Across a number of countries, including the Czech Republic, Poland, and Norway, increased spending on childcare and reduced family allowance have also positively contributed.

Figure 8. Decomposing the Change in the Female Employment Rate, 2002–12

Lower relative tax has broadly supported employment, as have childcare spending and reduced family allowance.

The Role of Individual Characteristics and Policies

(Percentage points; based on data for countries with both years in regressions)



Source: IMF staff calculations.

1/ Captures time dummy and other macro controls.

Box 1. What Shapes the Employment Decision for Women?

Over the past decades, there has been a substantial increase in the share of women working in EU countries. A large literature has examined the drivers of female employment in advanced economies, largely focusing on supply-side explanations including the role of policies. However, two questions remain: (1) to what extent do women's decisions to work simply reflect individual preferences? and (2) can removing policy distortions and improving public provision of services that help women reconcile work and family life further boost female labor force participation in Europe?

In an accompanying background paper (Christiansen and others 2016a), we address these two questions using individual-level data from the 2000 and 2012 rounds of the "Family and Changing Gender Roles" module of the International Social Survey Programme (ISSP) across 24 European countries. The ISSP data provide detailed measurement of individuals' beliefs concerning the relative roles of men and women in society. These beliefs include, among others, whether working mothers can ensure a warm and secure relationship with their children, whether family life and children suffer when mothers are employed outside the home, and whether women find work in the domestic sphere more fulfilling than work outside the home. With an exclusively European focus, the analysis takes advantage of these micro-level data to disentangle the effects of individual choice and macro-level policies on women's employment decisions, exploring both extensive (whether a woman is employed) and intensive (number of hours worked) margins of female employment.

The estimated model of female labor supply assesses the relative importance of various demographic characteristics, women's self-reported attitudes toward women working (from the principal component of responses to a total of nine questions in each of the two rounds of the ISSP surveys), and policy variables that are likely to affect women's employment outcomes.

Table 1. Individual Characteristics, Policies, and Employment

	Whether or not employed		Full-time vs. part-time Employed women	
	(1)	(2)	(3)	
Structural	Number of children	-0.0562*** (0.0072)	-0.0565*** (0.0072)	-0.0659*** (0.0099)
	Education (years)	0.0378*** (0.0069)	0.0391*** (0.0071)	0.0047 (0.0081)
	Education (years), squared	-0.0010*** (0.0002)	-0.0010*** (0.0002)	-0.0001 (0.0003)
	Age (years)	0.0624*** (0.0105)	0.0618*** (0.0104)	0.0209*** (0.0060)
	Age (years), squared	-0.0008*** (0.0001)	-0.0008*** (0.0001)	-0.0003*** (0.0001)
	Mother working	0.0220** (0.0108)	0.0227** (0.0108)	0.0175 (0.0115)
	Married	-0.0001 (0.0126)	0.0011 (0.0127)	-0.0626*** (0.0125)
	Attitude	0.0439*** (0.0045)	0.0437*** (0.0046)	0.0281*** (0.0038)
	Policies	Tax on the second earner	-0.7531*** (0.0781)	-0.6557*** (0.0520)
Childcare spending		0.1168** (0.0441)	0.1025*** (0.0363)	0.0336 (0.0299)
Family allowance			-0.1048*** (0.0280)	0.0328 (0.0326)
Parental leave		0.1548*** (0.0174)	0.2079*** (0.0200)	-0.1338*** (0.0211)
Parental leave, squared		-0.0004*** (0.0001)	-0.0007*** (0.0001)	0.0005*** (0.0001)
Observations	10,495	10,495	8,174	
Adjusted R-squared	0.1524	0.1535	0.1575	

Source: IMF staff estimates.

Note: Robust, clustered (at the country-year level) standard errors in parentheses. Significance is denoted as follows: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. All regressions include time and year fixed effects and controls for the output gap and the male employment rate.

Box 1. What Shapes the Employment Decision for Women? (concluded)

The model has the following general form:

$$E_{jit} = \alpha + Z_{jit}\beta + X_{it}\delta + \theta_i + \rho_t + \varepsilon_{ijt}$$

where E_{jit} takes the value of 1 if individual j living in country i is employed (Table 1, models 1 and 2) or working full time (Table 1, model 3) at time t ; Z_{jit} includes individual characteristics, such as the number of children living in the family, marital status, education, age, whether the mother worked, and attitudes toward gender roles.¹ X_{it} reflects country policies, including the relative tax rate on the second earner, public spending on early child education and childcare (in percent of GDP), public spending on family allowance (in percent of GDP), and number of weeks of parental leave for women with job protection. θ_i and ρ_t are country and time fixed effects, respectively. All regressions also include the male employment rate and the output gap to control for gender-neutral labor market policies that affect the overall level of employment and cyclical demand-side factors. The regressions are estimated using a linear probability model where robust standard errors are clustered at the country-year level.

In line with theoretical predictions and the findings in the literature, the analysis confirms the importance of demographic characteristics of women on their decision to work. Adding one more child to the household is associated with a 6 percentage point reduction in the likelihood of a woman working. More education increases women's likelihood of employment. However, it does not affect the number of hours worked for those already in the labor force. Contrary to prior beliefs, married women in Europe are not less likely to work but working mothers who are married are more likely to work at less than full time. Similar to the findings of McGinn, Lingo, and Castro (2015), we document the presence of an intergenerational transmission of female employment outcomes in Europe. Women who grew up with working mothers are more likely to work outside the household as adults. Further, women with more egalitarian gender attitudes are more likely to be active in the labor market.

But policies also matter. The coefficient on the relative tax rate of the family's second earner (usually a woman) is both statistically and economically significant, similar to previous findings in the literature (Jaumotte 2003; Thévenon 2013).² The design of tax policy should thus be mindful to minimize disincentives for women to work. Furthermore, the composition of family-friendly policies matters for female employment: higher spending on childcare services encourages women to participate in the workforce, but lump-sum allowances act in the opposite direction.³ Finally, there is an inverted U-shaped relationship between the number of weeks of parental leave and the likelihood of female employment. Here again, the design of parental leave—which generally increases female employment—should be mindful to avoid being excessive, with the optimal threshold calculated on average at 140 weeks. In sum, analysis of the ISSP microdata reveals that individual demographics, attitudes toward gender roles, and policies are all important drivers of the decision by women to supply market labor.

¹ Our findings are robust to the inclusion of a proxy for individual predicted wages, following Klasen and Pieters (2015).

² As noted in Christiansen and others (2016a), the estimates presented here suggest greater sensitivity of female labor force participation to relative taxation of the secondary earner compared to Jaumotte (2003) and Thévenon (2013). This could be due to a number of factors, including differences in methodologies, the time period covered, and the sample of countries included.

³ The availability of childcare is imperfectly captured by the variable used in the regressions (childcare spending in percent of GDP), as it does not account for differences in countries' demographics, quality of public childcare provision, and availability of full-time childcare services. The latter is a particularly important caveat in the regression for full- versus part-time employment.

Corporate Performance May Improve

Policies that strengthen women’s attachment to the labor force could help build the pipeline of women for senior corporate positions. One of the potential causes for the persistent gender gaps in senior positions may be the limited supply of women willing or able to take on these positions. Indeed, across European countries, a strong negative correlation exists between the share of women employed on a part-time basis and the presence of women in senior corporate positions. While part-time employment is a useful entry point to the labor market for women whose labor supply is constrained by family responsibilities, policies that boost the overall labor supply of women and facilitate their eventual transition from part-time to full-time employment could help narrow gender gaps at the higher rungs of the career ladder.

In turn, greater gender equality in senior positions could generate significant benefits at the firm level. Diversity might improve corporate productivity to the extent that it fosters complementarities in skills, generates knowledge spillovers, stimulates critical and creative thinking, makes the workplace more enjoyable, or stimulates demand.¹³ Given the existing differences in preferences and behavior along gender lines, important complementarities arise between the managerial style of men and women.¹⁴

Moreover, the economic returns to gender diversity in senior positions may have risen.

- *More women in the labor force.* Over the past three decades, millions of women have joined the labor force in Europe, while senior corporate positions continue to be held mostly by men. Bridging the widening gender gaps between those who hold senior positions in the

¹³ Female managers could be better positioned to serve consumer markets dominated by women (CED 2012; CAHRS 2011). Greater gender diversity would increase the heterogeneity in values, beliefs, and attitudes, which would broaden the range of perspectives (OECD 2012) and stimulate critical thinking (Lee and Farh 2004).

¹⁴ See Croson and Gneezy (2009) for a review of the literature on gender differences in preferences and other factors that might affect managerial style. McKinsey (2009) argues that certain leadership behaviors were seen more often in women than men; namely, people development, setting expectations and rewards, providing role models, and participative decision making.

corporate world and the workforce could improve firm performance.¹⁵ Women in leadership positions may be more likely to support family-friendly changes in corporate policies or serve as role models for other women, thereby raising the productivity of female workers. Women’s leadership style may also be more effective in female-dominated or female-oriented settings (Eagly, Karau, and Makhijani 1995).¹⁶

- *High-tech and knowledge-intensive sectors.* Relative to traditional industries, sectors characterized by complex tasks and innovative output stand to benefit more from greater diversity—including along gender lines—to the extent that it increases the set of ideas and potential solutions.¹⁷ At 40 percent of GDP, high-tech and knowledge-intensive sectors now account for a sizable fraction of economic activity in Europe.

Nevertheless, existing evidence on the impact of gender diversity on firm performance is inconclusive, often relying on small sample sizes.^{18,19} Influential work by McKinsey (2007) and Catalyst (2007) documented a strong positive association between the representation of women on the boards of Fortune 500 companies and corporate performance. However, later studies, which plausibly identify the causal impact on firm performance of raising the share of women in corporate boards, have challenged the early evidence (see, for example, Ahern and

¹⁵ Giuliano, Levine, and Leonard (2006) document large negative effects of demographic differences between managers and subordinates in terms of subordinates’ rate of quits, dismissals, and promotions.

¹⁶ Introducing the concept of identity in a model of economic behavior, Akerlof and Kranton (2000) argue that the utility of a person joining a group (for example, a firm) increases with the proportion of group members of the same social category. This would suggest that the benefits of gender diversity would rise with the share of women in the workforce.

¹⁷ Prat (2002) and Jehn, Northcraft, and Neale (1999) examine the role of sectoral characteristics, such as complexity of tasks, in shaping optimal labor diversity. Garnero, Kampelmann, and Rycx (2014) provide empirical evidence on the heterogeneous effects of workforce diversity across sectors in Belgium.

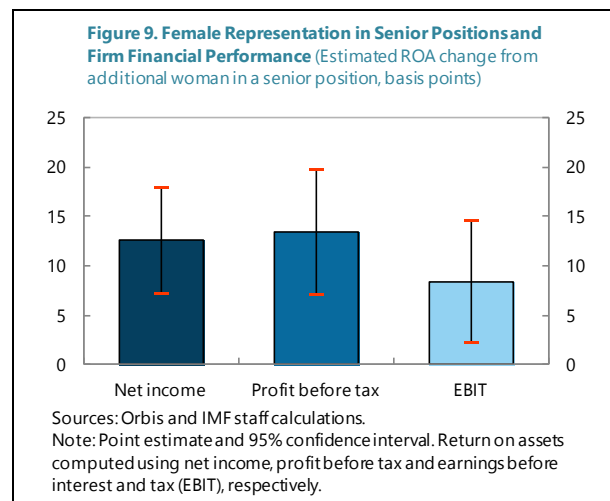
¹⁸ See Rhode and Packer (2014) for a survey of the literature on the gender composition of boards and financial performance.

¹⁹ For the purposes of this paper, we refer to “increased gender diversity” and “greater female representation” interchangeably as an increase in female representation from current levels will lead to increased gender diversity.

Dittmar 2012). Common to all studies is an important limitation: data availability typically constrains the analysis to publicly listed companies in individual countries.²⁰ The resulting small sample sizes make it hard to detect a statistically significant effect of gender diversity, particularly if its magnitude is small.

The new empirical evidence we present here suggests a strong positive association between firms’ financial performance and gender diversity in senior positions.

Using a large sample of both listed and unlisted firms in Europe, we compare financial outcomes of firms within narrowly defined sectors based on the gender diversity of the senior management team and the corporate board (Christiansen and others 2016b). The analysis reveals that firms with a larger share of women in senior positions have higher return on assets (Figure 9). Adding one more woman in senior management or on the corporate board, while keeping the size of the board unchanged, is associated with an 8–13 basis points higher return on assets, or about 3–8 percent.²¹



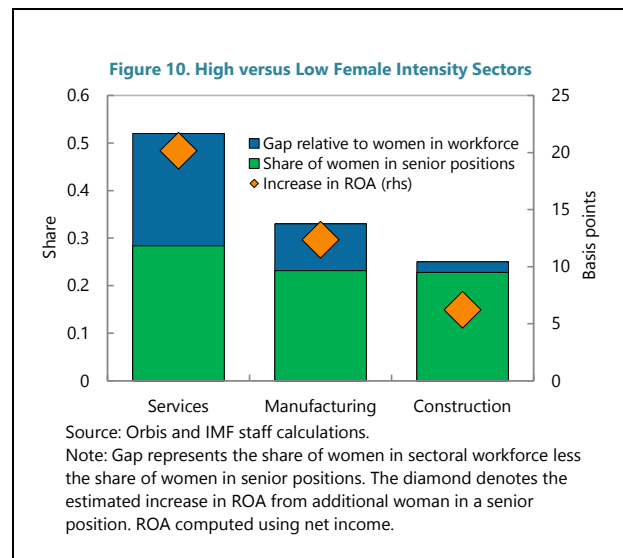
Greater female representation could shape firm performance through two channels. Since firm performance and gender composition of its board and senior management are jointly determined, it is difficult to give a causal interpretation to the positive association. To shed light on the underlying mechanisms, we examine how sectoral characteristics shape the consequences of gender diversity (Box 2). As discussed earlier, the effect of greater female representation in senior positions is expected to be more pronounced in sectors with a larger share of women in the workforce and in sectors that demand greater creativity and innovative

²⁰ Studies that use the introduction of quotas for women on corporate boards as an exogenous source of variation to gender diversity understandably focus only on publicly listed companies, for which the legal requirement is binding (see, for example, Matsa and Miller 2013; Bertrand and others 2014).

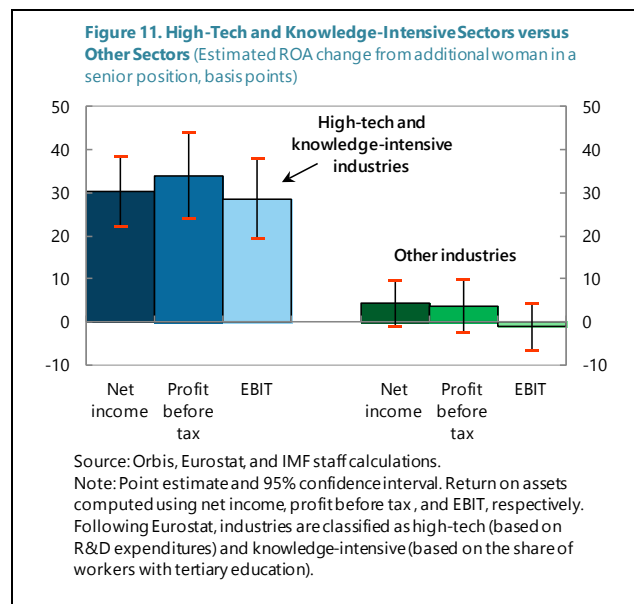
²¹ In Christiansen and others (2016b), we look for the presence of nonlinearities between the share of women in senior positions and firm performance, and establish that indeed there is an inverted U-shaped relationship between the two, with the marginal return to raising female representation turning negative beyond a certain point.

capacity, such as high-tech and knowledge-intensive industries. We find evidence for both of these channels at work.

- Women in the labor force.* The positive correlation between gender diversity and firm financial performance is more pronounced in sectors where women form a larger share of the labor force (Figure 10). In the services sectors, where more than 50 percent of employees are women and a large gap exists between the gender composition of senior positions and the labor force, changing the *composition* of the board or management to include one more woman is associated with a 20 basis points higher return on assets. At the other end of the spectrum, in the construction sector, where relatively few women are employed in either the labor force or senior positions, changing the *composition* of the board or management to include one more woman is associated with about a 6 basis points higher return on assets—an estimate that is not statistically different from zero.



- High-tech and knowledge-intensive sectors.* The positive association between gender diversity and firm performance is significantly higher in high-tech and knowledge-intensive sectors. For firms operating in these sectors, improving gender balance in senior positions is associated with a much larger increase in profitability (Figure 11).



Box 2. The Importance of Women in Senior Positions

There is a large literature on the effects of female representation in corporate boards on the financial performance of large publicly listed firms. However, little is known about how women in senior positions in the broader corporate sector shape the financial performance of firms. In an accompanying background paper (Christiansen and others 2016b), we provide new evidence on the link between gender diversity and firm performance in Europe.

Using the Orbis database, compiled by Bureau van Dijk, we build a sample of the unconsolidated financial statements of more than 2 million listed and unlisted companies across 34 European countries in 2013. We select firms with at least two people in the senior management team or on the corporate board, and for which information on the gender of members in senior management and corporate boards is available. Following the corporate finance literature, we capture financial performance as return on assets (ROA), which is measured in three different ways: net income over total assets, profits before taxes over total assets, and earnings before interest and taxes (EBIT) over total assets (two of which are addressed in Table 1). Gender diversity is reflected in the share of women in senior positions.

We begin by estimating the following regression model to capture the conditional correlation between a firm's gender composition and its performance:

$$y_{inc} = \beta * sh_wmn_{inc} + \gamma * x_{inc} + \alpha_{nc} + \varepsilon_{inc} \quad (1)$$

where y_{inc} is the ROA of firm i , in industry n , operating in country c ; sh_wmn_{inc} is the share of women in senior positions; x_{inc} are firm-specific controls (indicators for the size of the firm, firm age, the number of directors/senior managers, and tangible assets); and α_{nc} denotes the full set of roughly 16,000 country-industry fixed effects. Controlling for various firm characteristics, firms with greater gender diversity in senior management have consistently higher ROA (Table 1, columns 1 and 2).

Table 1. Firm Financial Performance and Women in Senior Positions

ROA based on	Correlation		Role of Female Intensity		Role of Knowledge-Intensity	
	Net income	Profit before tax	Net income	Profit before tax	Net income	Profit before tax
	(1)	(2)	(3)	(4)	(5)	(6)
Share of Women in Senior Positions	0.41 *** (0.09)	0.44 *** (0.11)	-0.26 (0.24)	-0.28 (0.26)	0.13 (0.09)	0.11 (0.11)
Share of Women in Senior Positions *Female Intensity of Sector			1.63 *** (0.57)	1.74 *** (0.65)		
Share of Women in Senior Positions *High-Tech/Knowledge Intensive Sector					1.02 *** (0.19)	1.19 *** (0.23)
N Obs	2,003,279	2,000,422	2,003,279	2,000,422	2,003,279	2,000,422

Note: All regressions include country-industry fixed effects, indicators for the size of the firm, and control for the age of the firm, log assets, and size of the board. Robust standard errors are clustered at the industry level.

Although the very granular fixed effects absorb a significant amount of heterogeneity, causal interpretation of the coefficient of interest, β , is problematic. The prevalence of women may be correlated with unobserved characteristics of the firm, which affect its financial performance. In equilibrium, it is also difficult to distinguish if the greater presence of female managers improves firm performance, or better-performing firms are simply able to attract more women.

Box 2. The Importance of Women in Senior Positions (concluded)

To shed light on the causal effect of greater female participation in senior positions, we use a simple difference-in-difference strategy. In particular, our identifying assumption is that if gender diversity in management can help improve the performance of firms, its effect must be stronger in two types of industries: (1) industries that employ significantly more women in the labor force, and (2) industries with greater demand for the creativity and critical thinking that diversity in general may bring. To test these hypotheses, we estimate the following specifications:

$$y_{inc} = \delta * SEC_n * sh_wmn_{inc} + \beta * sh_wmn_{inc} + \gamma * x_{inc} + \alpha_{nc} + \varepsilon_{inc} \quad (2)$$

Where SEC_n is alternatively (1) the female intensity of the sector to which the firm belongs and (2) an indicator for whether the sector is a high-tech or knowledge-intensive sector.

We find strong evidence for both of these channels at work. The positive association between gender equality in senior positions and firm performance is significantly stronger in sectors that employ more women in the labor force (Table 1, columns 3 and 4). For a firm that is in an industry in the top quartile in terms of female intensity, replacing one man with a woman on the board or in senior management would be associated with about a 20 basis points higher ROA. For a firm in a sector with no women in its labor force, the associated change would not be statistically different from zero or even slightly negative. Similarly, high-tech and knowledge-intensive sectors benefit significantly more from a higher share of women in senior management (Table 1, columns 5 and 6). In these sectors, the effect of adding one more woman on the board or in senior management, while keeping the size of the board unchanged, could lead to about a 30 basis points higher ROA.¹

These findings are robust to various empirical modifications. Results are robust to the treatment of outliers, they are not driven by firms in a particular country, and they are robust to using alternative measures of firms' performance, such as labor productivity. Unfortunately, due to the cross-sectional nature of the data, we are unable to examine the association between gender diversity and volatility of returns.

¹ It is important to emphasize that, in equilibrium, it is difficult to distinguish empirically between the various theories of why greater representation of women in senior positions improves firm performance in certain sectors. Sectors that would benefit from gender diversity because of their technological characteristics already have a higher prevalence of women in the labor force, making it hard to confidently conclude whether it is the gender composition of the workforce or the nature of technology that matters for women's value added in senior positions.

4

Policies Should Focus on Leveling the Playing Field

For women in Europe, the decision to work is not just a personal choice—policies do have an influence. Our study shows that more education, lower birth rates, exposure to working mothers, and favorable attitudes toward women working are all important drivers of the decision by women to work outside the household. But even after accounting for all these factors that influence personal choice, we find that supportive policies matter. Specifically, the tax policy for the second earner in the family could strongly shape incentives for or against work and therefore should be carefully designed. Public spending on childcare may support the return of mothers to work, while lump-sum cash allowances may deter women from working, through the income effect.²²

Having more women in the labor force paves the way for greater diversity in senior corporate positions and higher firm performance. Our empirical evidence suggests a strong positive association between firms' financial performance and gender diversity in senior positions. Such correlation is more pronounced in sectors where women form a larger share of the labor force (such as the services sectors) and where complementarities in skill and thinking and greater creativity and innovative capacity are in high demand (such as high-tech and knowledge-intensive sectors). To the extent that higher involvement by women in senior positions improves firm profitability, it may also help support corporate investment and productivity, mitigating the slowdown in potential growth.

Moreover, policies should aim to remove disincentives for full-time employment. For many women, part-time employment is a useful entry point to the labor market, as it allows them to combine labor force participation with family responsibilities. However, it may reduce their prospects of reaching the higher rungs of the corporate ladder, where their participation could have important positive spillovers on corporate performance. The strong positive association between the incidence of full-time employment among working women and the share of women in senior positions suggests that the current low representation of women in the

²² Although female-employment-friendly policies can entail a fiscal cost in the short term, there would be long-term (fiscal) benefits through the support of women's long-term attachment to the labor force, full-time employment, and, thereby, households' income levels (which would be taxed).

boardroom or in senior positions may be partly due to the scarcity of candidates who are willing or able to take on more responsibilities at work.

Finally, this paper considers the potential role of boosting female labor force participation in raising measured GDP but abstracts from other implications. Whereas leveling the playing field could be welfare enhancing (for example, removing tax distortions), this paper abstracts from effects on overall welfare arising from women's switch between household work and labor force participation, nor does it take a normative stance on women's participation in the labor force (Gonzales and others 2015b). Rather, it lays out the importance of leveling the playing field through policy actions and providing services to allow women to reach their full employment potential if they so choose.

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