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Unlocking the Potential of Greater Female Employment in Europe

Gender gaps in Europe's labour market are prevalent. Despite significant progress, women remain less active participants in the labour market and supply significantly fewer hours of work than men. Furthermore, relative to men, very few of Europe's women reach the top rungs of the corporate ladder. Could greater gender equality in the labour market also lead to higher growth in Europe?

This paper investigates the drivers of female labour force participation in Europe, as well as the implications of achieving greater gender diversity in senior corporate positions. Re-examining the drivers of women's decisions to work is particularly important in the context of Europe. In many European countries, the process of closing gender gaps in labour force participation has stalled, despite greater gender equality in human capital investment, declining birth rates, changing social norms and equal legal access to employment opportunities. As such, it is a legitimate question to ask whether government policies could further boost women's labour supply. With regard to gender diversity in senior positions, the empirical evidence so far on women's potential to enhance firm performance through greater participation in senior positions has been mixed.

This paper finds that, for women in Europe, whether or not to work is not just a personal choice – policies do matter.

More education, lower birth rates, exposure to working mothers and favourable attitudes toward women working are important drivers of women's decisions to work outside the household. But even after accounting for these factors that influence personal choice, supportive policies matter. Specifically, tax policy for the second earner in the family can affect incentives to take up work. Providing services that make it easier for women to combine a job with household and care responsibilities also supports women's entry and/or return to the labour market.

Having more women in the labour 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' financial performance and gender diversity in senior positions. Such correlation is more pronounced in sectors where women form a larger share of the labour force (such as the services sectors) and where complementarities from diversity 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, contributing to long-term growth.

The relevance of increasing female labour force participation

Europe's population is ageing and productivity growth has declined. Potential output growth in Europe has declined markedly in the aftermath of the global financial crisis,¹ 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 labour force and old-age dependency ratios rising (see Figure 1). To the extent that the recent slowdown in productivity is not fully explained by cyclical factors, concerns about continued subdued productivity growth also linger.

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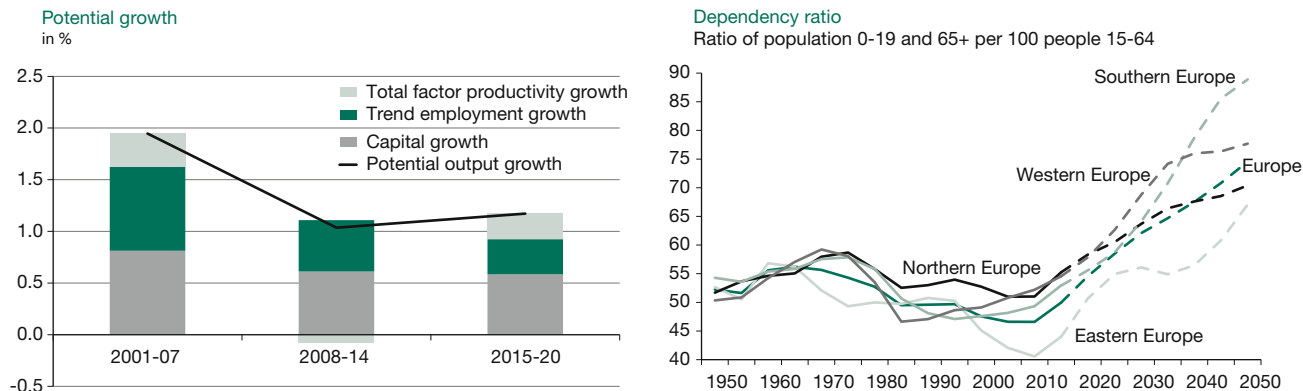
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The views expressed in this paper are those of the authors and do not necessarily represent the views of the IMF, its Executive Board or IMF management.

1 International Monetary Fund: World Economic Outlook: Uneven Growth – Short- and Long-Term Factors, Washington 2015, International Monetary Fund, pp. 69-110.

Figure 1
Europe's economic challenges: declining potential growth and rising dependency ratios



Note: The left figure includes Germany, Italy, Spain, Turkey and the United Kingdom.

Sources: International Monetary Fund: World Economic Outlook: Uneven Growth – Short- and Long-Term Factors, Washington 2015, International Monetary Fund, pp. 69-110 (left figure); United Nations Population Division (right figure).

At the same time, gender gaps in labour market participation and senior positions are prevalent. Women in Europe remain less active participants in the labour force than men. In 2014 only 89 women were working for every 100 men of prime working age. Further, in many countries, working women supply significantly fewer hours of work than men. Gender gaps are even more glaring in senior corporate positions. As of April 2015, for every 100 men serving on corporate boards of large publicly listed firms, only 23 are women, while for every 100 men in top executive positions, only 16 are women.²

Greater involvement of women in the economy can help support Europe's economic performance. Gender equality in the labour market is an important social and development goal. In addition, it can bring significant macro-economic benefits,³ in particular through two channels:

- *Increasing labour supply:* In the context of a rapidly ageing population, increasing the share of women in the workforce could help mitigate the impact of a shrinking labour force. Closing the gender participation gap by lifting women's labour supply would in-

crease the European labour force by six per cent (see Figure 2); the impact could be as large as 15% if the gap in hours worked by men and women were also eliminated.⁴ In turn, the resulting increase in labour input could have sizable effects on Europe's measured potential output. According to the OECD, closing the gender participation gap could raise GDP by 12% over the next 15 years.⁵

- *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.⁶ To the extent that the 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.

Against this backdrop, two questions naturally arise. First, what can be done to boost female employment and close gender gaps in the labour force? Second, are there eco-

2 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).

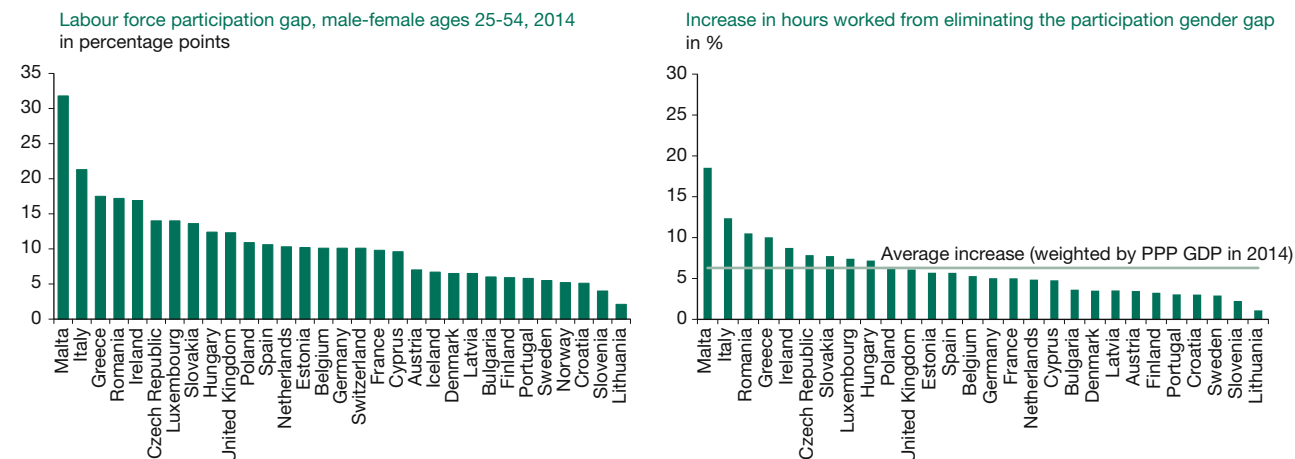
3 The World Bank: World Development Report 2012: Gender Equality and Development, 2012; European Commission: Strategy for equality between women and men 2010-2015, 2011; K. Elborgh-Woytek, M. Newiak, K. Kochhar, S. Fabrizio, K. Kpodar, P. Wingen-der, B. Clements, G. Schwartz: Women, Work, and the Economy: Macroeconomic Gains from Gender Equity, IMF Staff Discussion Note SDN13/10, 2013; C. Gonzales, S. Jain-Chandra, K. Kochhar, M. Newiak, T. Zeinullayev: Catalyst for Change: Empowering Women and Tackling Income Inequality, IMF Staff Discussion Note SDN/15/20, 2015.

4 This is an illustrative exercise based on IMF staff calculations of Eurostat data. It assumes that the population and unemployment rate of both genders as well as the male labour force participation rate and number of hours worked for all remain constant. This exercise also abstracts from the cohort dimension of participation gaps.

5 Organization for Economic Cooperation and Development: Closing the Gender Gap: Act Now, Paris 2012, OECD Publishing.

6 Ibid. The goal of bringing greater gender equality to the higher rungs of the career ladder in order to accrue 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. See European Commission: Women in economic decision-making in the EU: Progress report, A Europe 2020 initiative, 2012.

Figure 2
Gender gap in labour force participation



Sources: Eurostat; and IMF staff calculations.

conomic 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 labour force in Europe, despite wide-ranging improvements in terms of human capital investment, declining birth rates, changing social norms and legal access to employment opportunities (Figure 3). With female labour force participation in Europe at its highest level from a historical perspective, could changing policies bring more women into the labour force, or do the current levels of participation reflect personal preferences? With regard to the second question, the empirical evidence so far on women’s potential to enhance firm performance has been mixed. Numerous studies have examined this question in the context of individual countries, often reaching contradictory conclusions.

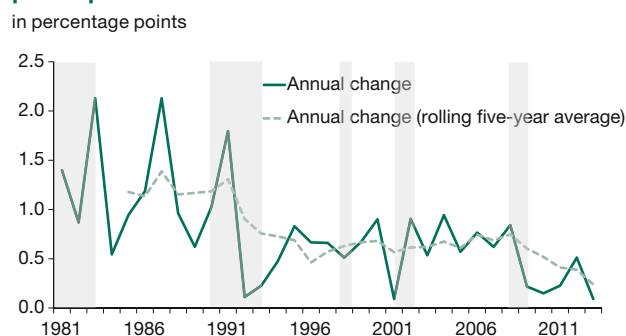
This paper contributes to the debate by addressing each of the two questions. After taking stock of the evolution of female labour force participation and its key drivers in Europe, the paper revisits the relative importance of various demographic characteristics and policy variables that influence women’s employment decisions. A key contribution of the analysis is the ability to disentangle the effects on women’s employment decisions arising from individual (or household) choices and those resulting from macro-level policies.⁷ The analysis highlights the significant role of demographics and attitudes in driving women’s employment decisions. Importantly, it confirms that policies matter as well.

⁷ This paper uses “individual choice” and “personal choice” interchangeably and acknowledges that personal choice may be the result of a household decision.

With regard to whether firms benefit from more gender diversity in senior positions, the paper uses data from over 2 million firms in Europe to provide new empirical evidence on women’s representation in senior positions and firm financial performance. The findings indicate a strong positive association between female representation and firm performance, particularly in high-tech and knowledge-intensive sectors and in sectors where women represent a large share of the workforce.⁸

⁸ When discussing firm financial performance in this paper, we use the terms “industry” and “sector” interchangeably.

Figure 3
Advanced Europe: change in female labour force participation rate

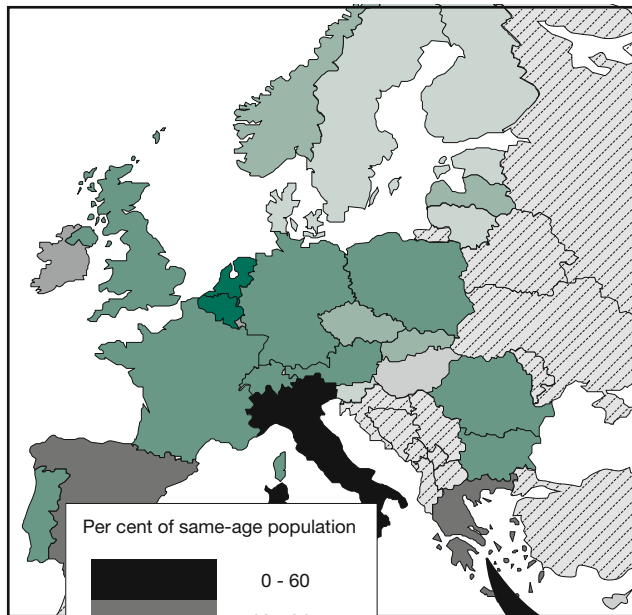


Note: Based on the simple average of progress made in eight countries (Finland, Germany, Italy, Netherlands, Norway, Portugal, Spain and Sweden) that have data available from 1980. Shaded areas are global recessions with global annual real GDP growth equal to or below three per cent.

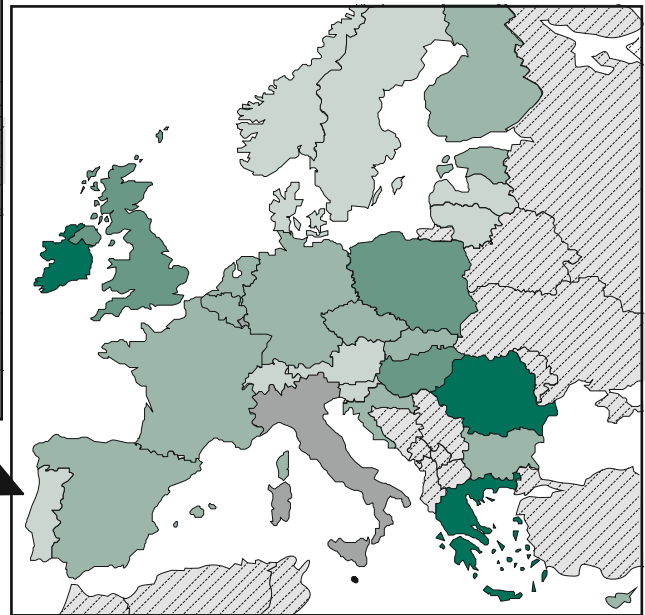
Sources: OECD; and IMF staff calculations.

Figure 4
Female labour force participation, ages 25-54
 in % of same-age population

2000



2014



Sources : Eurostat; and IMF staff calculations.

How has women's labour supply evolved?

More women in the labour force

During the past few decades, European female labour force participation has increased substantially. While participation rates in the early 1980s hovered around 40% in a number of advanced European countries, the 2014 EU average for women aged 25-54 years was around 80%. As a result, European female labour force participation rates are now almost on par with those of North America and East Asia, and they are well above those of South Asia and the Middle East and North Africa.

However, progress has been uneven across countries and has stalled in recent years. For example, while the increase in women's participation rates in Spain and Luxembourg has continued at a broadly constant pace dur-

ing the past three decades, and Malta's female participation rate almost doubled in the past 15 years (albeit from a very low initial level), progress in Italy has been much slower.⁹ In contrast, labour force participation among prime working-age women in some emerging and northern European countries has traditionally been around 80% 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 even declined moderately. In turn, whereas participation rates appear to be converging to Nordic levels, significant dispersion in par-

⁹ The significant increase in female labour market participation in Spain is a result of the gradual incorporation of younger cohorts with higher average participation rates into the labour market. See J.M. Montero, A.V. Regil: The Cyclical Resilience and Determinants of the Participation Rate in Spain, Economic Bulletin, May 2015, Banco de España, 2015.

ticipation across Europe remains, ranging from around 65% in Italy to around 90% in Sweden, Lithuania and Slovenia (Figure 4).

Gender gaps in participation also remain. While there has been a marked increase in female labour force participation rates, they remain well below male participation rates. As of 2014, the gender participation gap was above ten percentage points in a majority of countries and above 20 percentage points in Malta and Italy. In contrast, the gap was only around five percentage points in Sweden and Norway and virtually eliminated in Lithuania (see Figure 2). The gender gap also varies across age groups and education levels. In Italy, the labour 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.

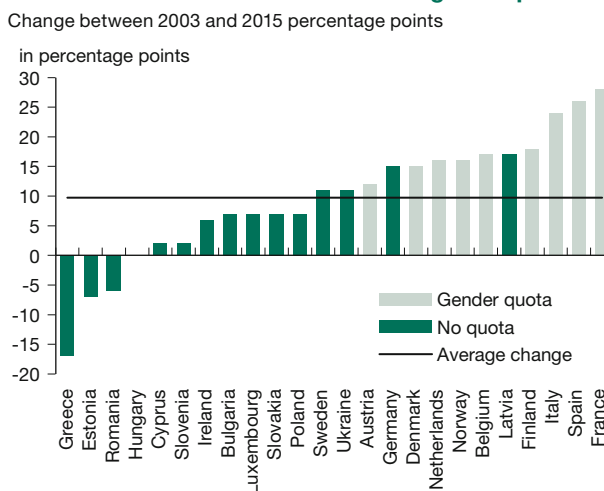
In addition, many working women are employed at less than full-time. The average number of hours worked per week has remained broadly stable over the past decade for the average EU country. However, this masks substantial variation across countries. In the Netherlands, a high female labour force participation 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 in part-time positions. In Germany, women work around 30 hours per week, while men work nearly 40 hours per week. On the contrary, women and men in Bulgaria work equally long work weeks of around 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 (e.g. taxation or under-provision of childcare).¹⁰

Still few women in corporate leadership roles

Meanwhile, more European women have entered the corporate boardroom. Since 2003, when Norway passed a

10 For European countries, part-time work has been found to be more prevalent when fertility rates are higher, employment regulation is more favourable 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; see H. Buddelmeyer, G. Mourre, M. Ward: Why do Europeans work part-time? A cross-country panel analysis, European Central Bank Working Paper Series No 872, 2008. Finally, tax incentives to work part-time also seem to have a significant effect on part-time participation rates; see O. Thévenon: Drivers of Female Labour Force Participation in the OECD, OECD Social, Employment and Migration Working Papers No. 145, 2013.

Figure 5
Share of women on the boards of large companies
Change between 2003 and 2015 percentage points



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

law mandating at least 40% representation of each gender on the boards of publicly listed companies, many European countries have followed suit.¹¹ Most recently, Germany passed a law requiring publicly listed companies to have at least 30% of supervisory seats occupied by women 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 (see Figure 5).

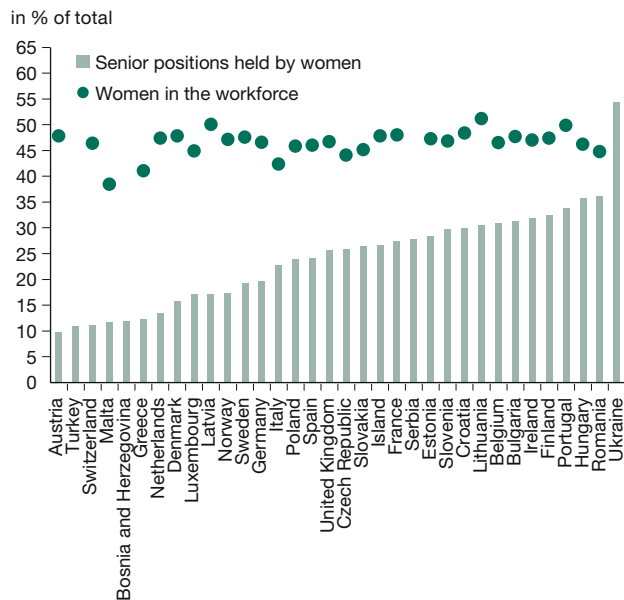
However, most countries are still a long way away from gender parity in senior corporate positions. While legal requirements have boosted the share of women in the boardroom to about 18%, only 12% of executive positions among Europe's 620 largest listed companies were held by women in 2015.¹² In the 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.¹³ However, the

11 P. Profeta, L.A. Aliberti, A. Casarico, M. D'Amico, A. Puccio: Quotas on Boards: Evidence from the Literature, in: P. Profeta, L.A. Aliberti, A. Casarico, M. D'Amico, A. Puccio: Women Directors. The Italian Way and Beyond, London 2014, Palgrave Macmillan, pp. 41-67.

12 The statistics are from Eurostat, which covers the largest publicly listed companies in each country. Data on board members covers 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 covers senior executives in the two highest decision-making bodies in each company.

13 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 6
Women in senior positions and in the workforce, 2013



Sources: Eurostat; Orbis; and IMF staff calculations.

cross-country variation is large. Further, in all countries, there is still a sizable gap between the gender composition of the workforce and the gender composition of senior positions (see Figure 6).

Greater gender parity in senior corporate positions has been achieved in countries where women are attached to the labour force in full-time positions. Various hypotheses have been offered for the under-representation of women in leadership positions in the corporate world as well as in politics. These range from demand-side constraints, such as pre-existing 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, pre-existing social norms and gender stereotypes may serve to bias bosses and voters against appointing women as managers and leaders.¹⁴ Lack of exposure to female leaders, in turn, may perpetuate biased perceptions of women's effectiveness in leadership roles.¹⁵ Women themselves might not believe in their ability to lead, since

14 L. Huddy, N. Terkildsen: Gender Stereotypes and the Perception of Male and Female Candidates, in: *American Journal of Political Science*, Vol. 37, No. 1, 1993, pp. 119-147; A.H. Eagly, S.J. Karau: Role Congruity Theory of Prejudice Toward Female Leaders, in: *Psychological Review*, Vol. 109, No. 3, 2002, pp. 573-598.

15 L. Beaman, R. Chattopadhyay, E. Duflo, R. Pande, P. Topalova: Powerful Women: Does Exposure Reduce Bias?, in: *The Quarterly Journal of Economics*, Vol. 124, No. 4, 2009, pp. 1497-1540.

they rarely see other women succeed in such positions.¹⁶ They may also leave high-power career tracks to have children.¹⁷

While pinning down the causes for the under-representation of women in senior positions is beyond the scope of this paper, two stylised facts emerge from our analysis. The overall rate of female labour participation is not a good predictor of the representation of women in senior positions in the broader corporate sector. There exists, however, a very strong negative association 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.

Do policies matter?

While individual characteristics certainly affect women's employment decisions, there has been some debate with regard to the impact that policies can have on these decisions.¹⁸

Individual characteristics

When deciding whether or not to join the labour force, women compare the value of home production relative to the return to working outside the house.¹⁹ For example, the return from household work increases with the number of children they have, while higher education strengthens incentives for labour 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.²⁰

In recent decades, both demographics and women's attitudes have become more favourable towards women working in Europe. In terms of demographic factors, women now tend to have fewer children and obtain more

16 L. Beaman, E. Duflo, R. Pande, P. Topalova: Female Leadership Raises Aspirations and Educational Attainment for Girls, in: *Science*, Vol. 335, No. 6068, 2012, pp. 582-586.

17 M. Bertrand, C. Goldin, L.F. Katz: Dynamics of the Gender Gap for Young Professionals in the Financial and Corporate Sectors, in: *American Economic Journal: Applied Economics*, Vol. 2, No. 3, 2010, pp. 228-255.

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

19 G.S. Becker: A Theory of the Allocation of Time, in: *The Economic Journal*, Vol. 75, No. 299, 1965, pp. 493-517.

20 R. Fernández: Cultural Change as Learning: The Evolution of Female Labour Force Participation over a Century, in: *American Economic Review*, Vol. 103, No. 1, 2013, pp. 472-500.

education than three decades ago, virtually closing the education gap vis-à-vis men.²¹ At the same time, social norms and attitudes towards women working have become more favourable, and the rising number of women in positions of power provide role models for new generations. For example, in 2014 women accounted for 28% of European parliamentarians, up from just 18% about two decades earlier.

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 relatively high marginal tax rates.²² 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.²³ Public spending on early education and childcare has increased across most countries since the early 1990s, facilitating mothers' return to work.²⁴ 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 UK, Ireland and Slovakia, now provide more than 30 weeks of maternity leave for women, thereby supporting mothers' return to work.²⁵

21 E. Bloom, D. Canning, G. Fink, J.E. Finlay: Fertility, Female Labour Force Participation, and the Demographic Dividend, in: *Journal of Economic Growth*, Vol. 14, No. 2, 2009, pp. 79-101; Z. Eckstein, O. Lifshitz: Dynamic Female Labour Supply, in: *Econometrica*, Vol. 79, No. 6, 2011, pp. 1675-1726.

22 A. Bick, N. Fuchs-Schündeln: Taxation and Labour Supply of Married Couples across Countries: A Macroeconomic Analysis, 2014, CEPR Discussion Papers No. 9115; M. Dao, D. Furceri, J. Hwang, M. Kim, T.-T. Kim: Strategies for Reforming Korea's Labour Market to Foster Growth, IMF Working Paper No. 14/137, 2014; F. Colonna, S. Marcassa: Taxation and female labour supply in Italy, in: *IZA Journal of Labour Policy*, Vol. 4, No. 1, 2015, pp. 1-29.

23 F. Carta, L. Rizzica: Female employment and pre-kindergarten: on the unintended effects of an Italian reform, Bank of Italy Working Papers Series No. 1030, 2015.

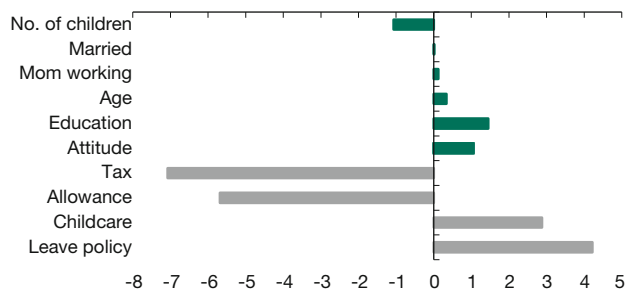
24 F. Jaumotte: Female Labour Force Participation: Past Trends and Main Determinants in OECD Countries, OECD Working Paper ECO/WKP(2003)30, 2003; C. Steinberg, M. Nakane: Can Women Save Japan?, IMF Working Paper WP/12/248, 2012; O. Thévenon, op. cit.

25 J. Ondrich, C. Spiess, Q. Yang, G. Wagner: The Liberalization of Maternity Leave Policy and the Return to Work after Childbirth in Germany, in: *Review of Economics of the Household*, Vol. 1, No. 1, 2003, pp. 77-110; P.-A. Edin, M. Gustavsson: Time out of Work and Skill Depreciation, in: *Industrial and Labour Relations Review*, Vol. 61, No. 2, 2008, pp. 163-180. In countries where female labour force participation is already high, policies acting on how jobs are structured and remunerated may also be beneficial, see C. Goldin: A Grand Gender Convergence: Its Last Chapter, in: *American Economic Review*, Vol. 104, No. 4, 2014, pp. 1091-1119.

Figure 7

Marginal effects of individual characteristics and policies on female employment

in percentage points



Note: Impact per one standard deviation increase (during 2002-2012 across countries) in the given variable. Coefficient on "Married" is insignificant. Green bars represent individual characteristics, and grey bars represent policies.

Source: L. Christiansen, H. Lin, J. Pereira, P. Topalova, R. Turk: Individual Choice or Policies? Drivers of Female Employment in Europe, IMF Working Paper No. 16/49, 2016.

Analysis

Our analysis confirms that both individual characteristics and policies are important for understanding women's employment decisions (see Figure 7 and Box 1). A substantial body of literature has examined the drivers of female labour force participation. However, without micro-level data, it is difficult to fully account for individual attitudes and choices and to establish the role of changes in policies. Making use of such data on individuals, Christiansen et al.²⁶ examine the role of both individual characteristics and policies.²⁷ Their specific policy recommendations vary, however, depending on each country's circumstances.

Looking at 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 choice of full-time versus part-time work. In contrast, while marriage in itself does not significantly alter women's employment decisions, the data reveal that, among working women, married

26 L. Christiansen, H. Lin, J. Pereira, P. Topalova, R. Turk: Individual Choice or Policies? Drivers of Female Employment in Europe, IMF Working Paper 16/49, 2016.

27 As noted in L. Christiansen et al., op. cit., 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 labour force participation, or they may be correlated with other factors that influence women's decisions to work but are not accounted for in our empirical framework. Similarly, women's attitudes could be driven by their participation in the labour market rather than the reverse.

Box 1

What shapes a woman's employment decision?

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: (i) To what extent does a woman's decision to work simply reflect individual preferences? (ii) Can removing policy distortions and improving public provision of services that help women reconcile work and family life further boost female labour force participation in Europe?

In an accompanying background paper, 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.¹ The ISSP data provide detailed measurement of individuals' beliefs concerning the relative roles of men and women in society. These 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 exclusive European focus, the analysis takes advantage of this 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 or not) and intensive (number of hours worked) margins of female employment.

The estimated model of female labour supply assesses the relative importance of various demographic characteristics, women's self-reported attitudes towards 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. It has the following general form:

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

where E_{jit} takes the value of 1 if individual j living in country i is employed (models 1 and 2 in Table 1) or working full-time (model 3 in Table 1) 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 towards gender roles.² X_{it} reflects country

1 L. Christiansen, H. Lin, J. Pereira, P. Topalova, R. Turk: Individual Choice or Policies? Drivers of Female Employment in Europe, IMF Working Paper No. 16/49, 2016.

2 Our findings are robust to the inclusion of a proxy for individual predicted wages, following S. Klasen, J. Pieters: What Explains the Stagnation of Female Labour Force Participation in Urban India?, World Bank Economic Review, Vol. 29, No. 3, 2015, pp. 449-478.

Table 1
Individual characteristics, policies and employment

	Whether or not employed		Full-time vs. part-time	
	All women		Employed women	
	(1)	(2)	(3)	
Individual characteristics	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	

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.

Source: IMF staff calculations.

policies, including the relative tax rate on the second earner, public spending on early child education and childcare (in per cent of GDP), public spending on family allowance (in per cent 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 labour 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 determining a women's decision to work. Adding one more child to the household is associated with a six percentage point reduction in the likelihood of a woman working. More education increases a woman's likelihood of employment. However, it does not affect the number of hours worked for those already in the labour force. Contrary to priors, married women in Europe are not less likely to work, but working mothers who are married are more likely to work less than full-time. Similar to the findings of McGinn et al.,³ 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 labour 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, in line with previous findings in the literature.⁴ The design of tax policy should thus be mindful to minimise 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.⁵ 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 towards gender roles, and policies are all important drivers of women's decisions to supply market labour.

3 K.L. McGinn, E.L. Lingo, M.R. Castro: Mums the Word! Cross-national Effects of Maternal Employment on Gender Inequalities at Work and at Home, Harvard Business School Working Paper No. 15-094, 2015.

4 As noted in L. Christiansen et al., op. cit., the estimates presented here suggest greater sensitivity of female labour force participation to relative taxation of the secondary earner compared to Jaumotte and Thévenon. See F. Jaumotte: Female Labor Force Participation: Past Trends and Main Determinants in OECD Countries, OECD Working Paper ECO/WKP(2003)30, 2003; and O. Thévenon: Drivers of Female Labour Force Participation in the OECD, OECD Social, Employment and Migration Working Papers, No. 145, 2013. This could be due to a number of factors, including differences in methodologies, the time period covered and the sample of countries included.

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

women do tend to work shorter weeks than unmarried ones. Furthermore, each additional child is associated with a reduced 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 or not 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 as long as policies do not discriminate against women working today.

Turning to the impact of policies, the significance of the coefficient on taxation underscores the fact 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 labour force (in particular in advanced European countries) 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 European countries) 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 full-time work, 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 female employment rates. 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 UK, 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.

Corporate performance may improve

Policies that strengthen female attachment to the labour force could help build the pipeline of women moving towards senior corporate positions. One of the potential causes of the persistent gender gaps in senior positions may be the limited supply of women willing and/or able to take on these positions. Indeed, across European countries, there is a strong negative correlation 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 into the labour market for women whose labour supply is constrained by family responsibilities, policies that boost the overall labour 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.²⁸ Given the existing differences in preferences and

28 Female managers could be better positioned to serve consumer markets dominated by women; see Committee for Economic Development: Fulfilling the Promise: How More Women on Corporate Boards Would Make America and American Companies More Competitive, Washington 2012, Committee for Economic Development; and R. Heller, P. Stepp: Re-Examining the Female Path to Leadership Positions in Business, Center for Advanced Human Resource Studies, 2011. Greater gender diversity would increase the heterogeneity in values, beliefs and attitudes, which would broaden the range of perspectives and stimulate critical thinking; see Organization for Economic Cooperation and Development: Closing the Gender Gap: Act Now, Paris 2012, OECD Publishing; and C. Lee, J.-L. Farh: Joint Effects of Group Efficacy and Gender Diversity on Group Cohesion and Performance, in: Applied Psychology, Vol. 53, No. 1, 2004, pp. 136-154.

behaviour along gender lines, important complementarities arise from the differing managerial styles of men and women.²⁹

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

- *More women in the labour force*: Over the past three decades, millions of women have joined the labour 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 corporate world and the workforce could improve firm performance.³⁰ 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.³¹
- *High-tech and knowledge-intensive sectors*: Relative to traditional industries, sectors characterised by complex tasks and innovative output stand to benefit more from greater diversity – including along gender lines – to the extent that it increases the available set of ideas

29 See R. Croson, U. Gneezy: Gender Differences in Preferences, in: Journal of Economic Literature, Vol. 47, No. 2, 2009, pp. 448-474 for a review of the literature on gender differences in preferences and other factors that might affect managerial style. McKinsey & Company: Women Matter 3: Women leaders, a competitive edge in and after the crisis, 2009, argues that certain leadership behaviours were seen more often in women than men, namely people development, setting expectations and rewards, providing role models, and participative decision-making.

30 L. Giuliano, D.I. Levine, J. Leonard: Do Race, Age, and Gender Differences Affect Manager-Employee Relations? An Analysis of Quits, Dismissals, and Promotions at a Large Retail Firm, Institute for Research on Labour and Employment Working Paper 151-07, 2006, documents the large negative effects of demographic differences between managers and subordinates in terms of subordinates' rates of quits, dismissals and promotions.

31 See A.H. Eagly, S.J. Karau, M.G. Makhijani: Gender and the effectiveness of leaders: A meta-analysis, in: Psychological Bulletin, Vol. 117, No. 1, 1995, pp. 125-145. Additionally, Akerlof and Kranton introduce the concept of identity in a model of economic behaviour, arguing that the utility of a person joining a group (e.g. 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. See G.A. Akerlof, R.E. Kranton: Economics and Identity, in: The Quarterly Journal of Economics, Vol. 115, No. 3, 2000, pp. 715-753.

and potential solutions.³² At 40% of GDP, high-tech and knowledge-intensive sectors now account for a sizable fraction of economic activity in Europe.³³

Nevertheless, existing evidence on the impact of gender diversity on firm performance is inconclusive, often relying on small sample sizes.³⁴ Influential work by McKinsey and Catalyst documented a strong positive association between the representation of women on the boards of Fortune 500 companies and corporate performance.³⁵ 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.³⁶ Common to all studies is an important limitation: data availability typically constrains the analysis to publicly listed companies in individual countries.³⁷ 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,

32 A. Prat: Should a Team be Homogeneous?, in: *European Economic Review*, Vol. 46, No. 7, pp. 1187-1207; and K.A. Jehn, G.B. Northcraft, M.A. Neale: Why Differences Make a Difference: A Field Study of Diversity, Conflict and Performance in Workgroups, in: *Administrative Science Quarterly*, Vol. 44, No. 4, 1999, pp. 741-763, examine the role of sectoral characteristics, such as complexity of tasks, in shaping optimal labour diversity. A. Garneró, S. Kampelmann, F. Rycx: The Heterogeneous Effects of Workforce Diversity on Productivity, Wages and Profits, in: *Industrial Relations: A Journal of Economy and Society*, Vol. 53, No. 3, 2014, pp. 430-477, provide empirical evidence on the heterogeneous effects of workforce diversity across sectors in Belgium.

33 IMF staff calculations of Eurostat data.

34 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. For a survey of the literature on the gender composition of boards and financial performance, see D. Rhode, A. Packel: Diversity on Corporate Boards: How Much Difference Does Difference Make?, in: *Delaware Journal of Corporate Law*, Vol. 39, No. 2, 2014, pp. 377-426.

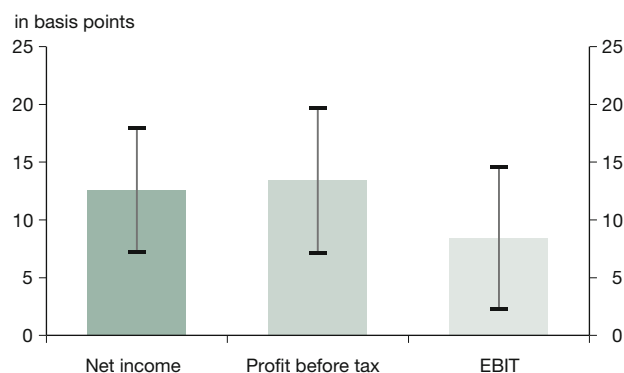
35 McKinsey & Company: *Women Matter: Gender Diversity, A Corporate Performance Driver*, 2007; and Catalyst: *The Bottom Line: Corporate Performance and Women's Representation on Boards*, 2007.

36 See, for example, K. Ahern, A. Dittmar: The Changing of the Boards: The Impact on Firm Valuation of Mandated Female Board Representation, in: *The Quarterly Journal of Economics*, Vol. 127, No. 1, 2012, pp. 137-197.

37 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, D. Matsa, A. Miller: A Female Style in Corporate Leadership? Evidence from Quotas, in: *American Economic Journal: Applied Economics*, Vol. 5, No. 3, 2013, pp. 136-169; and M. Bertrand, S. Black, S. Jensen, A. Lleras-Muney: Breaking the Glass Ceiling? The Effect of Board Quotas on Female Labour Market Outcomes in Norway, NBER Working Paper No. 20256, 2014.

Figure 8
Female representation in senior positions and firm financial performance

Estimated ROA change from additional woman in a senior position



Note: Point estimate and 95% confidence interval. Return on assets computed using net income, profit before tax, and earnings before interest and tax (EBIT).

Sources: Orbis; and IMF staff calculations.

we compare financial outcomes of firms within narrowly defined sectors based on the gender diversity of the senior management team and the corporate board.³⁸ The analysis reveals that firms with a larger share of women in senior positions have higher return on assets (see Figure 8). Adding one more woman in senior management or on the corporate board, while keeping the size of the board unchanged, is associated with a higher return on assets of about 8-13 basis points, or about three to eight per cent.³⁹

Greater female representation could shape firm performance through two channels. Since firm performance and the gender composition of the firm's 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. As discussed above, 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

38 L. Christiansen, H. Lin, J. Pereira, P. Topalova, R. Turk: Gender Diversity and Firm Performance: Evidence from Europe, IMF Working Paper 16/50, 2016.

39 L. Christiansen et al.: Gender Diversity ..., op. cit. looks for the presence of nonlinearities between the share of women in senior positions and firm performance, and establishes that there is indeed an inverted U-shaped relationship between the two, with the marginal return to raising female representation turning negative beyond a certain point.

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

- *Women in the labour force*: The positive correlation between gender diversity and a firm's financial performance is more pronounced in sectors where women form a larger share of the labour force. In the services sectors, where more than 50% of employees are women and there is a large gap between the gender composition of senior positions and the labour force, changing the composition of the board or management to include one more woman is associated with a higher return on assets of 20 basis points. At the other end of the spectrum, in the construction sector, where there are relatively few women in both the labour force and in senior positions, changing the composition of the board or management to include one more woman is associated with a higher return on assets of about six basis points – 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.

Conclusion: policies should focus on levelling the playing field

For women in Europe, whether or not to work is not just a personal choice – policies also have an important influence. Our study shows that more education, lower birth rates, exposure to working mothers and favourable attitudes toward women working are all important drivers of women's decisions 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 should therefore be carefully designed. Public spending on childcare may support mothers' return to work, while lump-sum cash allowances may deter women from working because of the extra income they provide.⁴⁰

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

Having more women in the labour 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 labour force (such as the services sectors) and where complementarities from diversity in skill and thinking, as well as greater creativity and innovative capacity, are in high demand (such as high-tech and knowledge-intensive sectors). To the extent that greater involvement of women in senior positions improves firm profitability, it may also help support corporate investment and productivity, mitigating the ongoing slowdown in potential growth.

Moreover, policies should aim at removing disincentives for women to engage in full-time employment. For many women, part-time employment is a useful entry point to the labour market, as it allows them to combine labour 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 boardroom or in senior positions may be partly due to the scarcity of candidates who are willing and/or able to take on more responsibilities at work.

Finally, this paper considers the potential role that reducing gender inequality in the labour market can play in raising measured GDP, but it does not attempt to assess all of the other implications. Whereas levelling the playing field could be welfare enhancing (e.g. by removing tax distortions), this paper disregards effects on overall welfare arising from women's switch between household work and labour force participation, nor does it take a normative stance on women's participation in the labour force.⁴¹ Rather, it lays out the importance of levelling the playing field through policy actions and providing services to allow women to reach their full employment potential if they so choose.

41 C. Gonzales, S. Jain-Chandra, K. Kochhar, M. Newiak: Fair Play: More Equal Laws Boost Female Labour Force Participation, IMF Staff Discussion Note SDN/15/02, 2015.