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**Article**

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Intereconomics

*Suggested Citation:* Maceira, Helena Morais (2017) : Economic Benefits of Gender Equality in the EU, Intereconomics, ISSN 1613-964X, Springer, Heidelberg, Vol. 52, Iss. 3, pp. 178-183, <https://doi.org/10.1007/s10272-017-0669-4>

This Version is available at:

<https://hdl.handle.net/10419/213131>

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Helena Morais Maceira\*

## Economic Benefits of Gender Equality in the EU

To analyse how gender equality measures can contribute to economic growth in the EU, the European Institute for Gender Equality studied the impacts of reducing gender inequalities in areas relevant from a macroeconomic perspective: STEM education, labour market activity and pay. It also considered the demographic changes that would take place if these gender gaps are reduced and a more equal distribution of unpaid care work between women and men is achieved. The study is the first of its kind to use a robust econometric model to estimate a broad range of macroeconomic benefits of gender equality at the EU level. The results of the modelling show that improved gender equality would have a largely positive effect on GDP per capita and on employment of women. The positive impacts are due to an increase in productivity and an improvement to the potential productive capacity of the economy.

Gender equality and equal opportunities in the labour market have improved over recent decades as a result of legislative, societal and cultural changes towards women in the labour force. However, there are still large persistent gender gaps between women and men when comparing their educational attainment, labour market participation, income and wage rates, provision of unpaid work and distribution of time. On average, the gender employment gap in the EU is 11.6%, and it increases with the number of children in the household.<sup>1</sup> Women's over-representation in part-time work affects not only their labour market involvement, but also their risk of poverty or social exclusion (in 2015, on average, 32.1% of women worked part-time, in contrast to 8.9% of men).<sup>2</sup> Part-time employment rates of women also increase with the number of children they have. 39% of women across the EU28 reported that the main reason for not seeking employment was "looking after children or incapacitated adults", while this is the

case for only four per cent of men.<sup>3</sup> Women earn 16.1% less than men on average across the EU, which means that a woman would have to work approximately 40 days more per year (or until the end of February), to earn what a man had by the end of the previous year.<sup>4</sup>

Against this background, there is an increasing consensus on expanding the perception of gender equality from a purely social goal to a wider one which includes economic aspects.<sup>5</sup> Consequently, the debate about the benefits of gender equality has broadened and incorporated the potential economic implications.

The economic case for gender equality emphasises the economic benefits of gender equality at the macro level.<sup>6</sup> It recognises the costs of non-equality and starts viewing gender equality as an investment – a productive factor that can be leveraged to exploit the full productive potential of the labour force, a precondition for sustainable demographic development, and an increase in net contributions to fiscal systems, thus providing financial gains to states.

Within this framework, the European Institute for Gender Equality (EIGE) assessed the wider socio-economic im-

\* This article is based on the results, outputs and publications of EIGE's work on the economic benefits of gender equality in the EU; see European Institute for Gender Equality: Economic Benefits of Gender Equality in the European Union, 2017, available at <http://eige.europa.eu/gender-mainstreaming/sectoral-areas/economic-and-financial-affairs/economic-benefits-gender-equality>. The study was commissioned by EIGE and carried out by ICF, Cambridge Econometrics and Collegio Carlo Alberto.

1 Eurostat: Gender Statistics, 2016, [http://ec.europa.eu/eurostat/statistics-explained/index.php/Gender\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Gender_statistics); Eurostat: Employment Statistics, 2016, [http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment\\_statistics](http://ec.europa.eu/eurostat/statistics-explained/index.php/Employment_statistics).

2 Ibid.

3 Ibid.

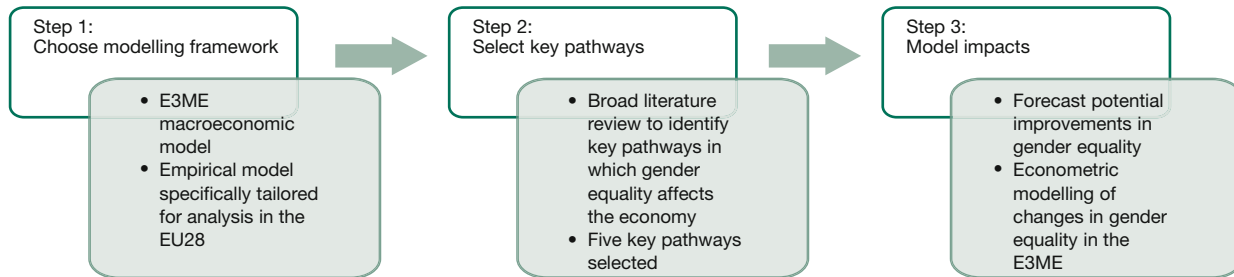
4 Ibid.

5 See, for example, F. Bettio, M. Smith: Analysis Note: the Economic Case for Gender Equality, European Commission, Directorate-General for Employment, Social Affairs and Equal Opportunities, 2008; J. Chabaan, W. Cunningham: Measuring the Economic Gain of Investing in Girls: The Girl Effect Dividend, Policy Research Working Paper 5753, World Bank, 2011; D. Cubers, M. Teignier-Baquet: Gender Inequality and Economic Growth, Background Paper, World Bank, 2011; OECD World Development Report 2012: Closing the Gender Gap: Act Now, Paris 2012, OECD Publishing.

6 F. Bettio, M. Smith, op. cit.

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Figure 1  
Key methodological steps



Source: European Institute for Gender Equality: Economic Benefits of Gender Inequality in the European Union, 2017.

pacts of narrowing gender gaps – as a result of the implementation of measures to improve gender equality – on the macroeconomic performance of the EU. The study focuses on three potential future gender equality improvements:

- more women graduating with degrees in science, technology, engineering and mathematics (STEM graduates);
- more women actively participating in the labour market; and
- reduced gender pay gaps.

A common theme throughout the three areas of improvement is a shift to a more equal distribution of unpaid care work, which is a necessary precondition for the realisation of gender equality and is likely to lead to an increase in fertility rates.<sup>7</sup> As changes in fertility rates have important macroeconomic consequences, they were also included in the modelling.

### Methodology of the study

The methodological approach of the study involved three key steps summarised in Figure 1 and described in detail below.

#### Step 1: Choosing the macroeconomic modelling framework

To estimate the economic impacts of improved gender equality, this study used the E3ME macroeconomic model. E3ME is an empirical macroeconomic model tailored

7 For references, see European Institute for Gender Equality: Literature review: existing evidence on the social and economic benefits of gender equality and methodological approaches, 2017. This publication includes a review of studies that analyse the economic benefits of gender equality in different policy areas.

specifically to model outcomes at both the EU28 and individual member state levels.<sup>8</sup> The model includes a detailed representation of the labour market and captures interactions at the sectoral, as well as national, level. It is a model widely acknowledged as suitable for modelling economic issues at the EU level.<sup>9</sup> The nature of the E3ME model only allows for modelling impacts of improved gender equality that are robustly evidenced at the macroeconomic level. Impacts documented only through microeconomic or qualitative research are therefore excluded from the modelling.

#### Step 2: Selecting pathways through which gender equality affects the economy

An extensive literature review was carried out to identify possible pathways/outcomes through which gender equality can affect the economy.<sup>10</sup> The socio-economic impacts of gender equality were then discussed with a forum of independent experts to select impacts that could be modelled at the macroeconomic level. The pathways modelled in this study were selected based on three main selection criteria:

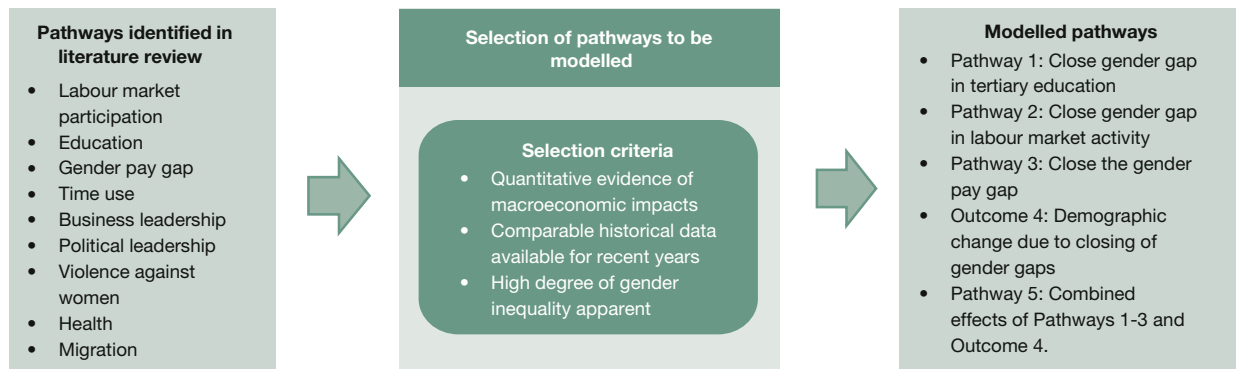
- robust evidence of pathway impact at the macroeconomic level;

8 See [www.e3me.com](http://www.e3me.com) for further information, including the full model manual.

9 Examples of recent E3ME model assessments include an assessment of the impacts of high oil prices on the global economy for the 2009 London G20 summit, a contribution to the official assessment of the EU's 2030 environmental targets and input to the EU's Impact Assessment of the revised Energy Taxation Directive. For more information, see E3ME Technical Manual, Version 6.0, April 2014, p. 8, available at <http://www.e3me.com>.

10 The term "pathway" refers to a certain gender inequality, for which at least a theoretical link to macroeconomic performance has been established in literature. The term "outcome" refers to potential consequences of gender equality (i.e. change in fertility) that can affect the performance of the economy.

Figure 2  
Pathway selection process



Source: European Institute for Gender Equality: Economic Benefits of Gender Inequality in the European Union, 2017.

- comparable historical and empirical data are available to model the impact at the EU level;
- the pathway captures important gender inequalities apparent at the EU level.

Figure 2 provides further details on the pathway selection process.

### Step 3: Modelling economic impacts of selected pathways

The first action was to develop forecasts of potential improvements in gender equality in labour market activity, education participation and wages. A forecast of demographic changes resulting from such improvements was also developed, reflecting evidence that higher gender equality tends to increase fertility rates.<sup>11</sup> These forecasts were based on a detailed analysis of likely impacts of adopting new gender equality measures across the modelled pathways. The modelling of the pathways focused on areas where women were disadvantaged compared to men – the closing of gender gaps was assumed to be achieved by improving the situation for women rather than worsening the situation for men.

These forecasts were then put into the E3ME model to assess the wider socio-economic impacts of gender equality on GDP, employment and other macroeconomic indicators. The forecasts were entered separately for each pathway/outcome to allow for estimating the socio-economic impacts of each individual pathway/outcome and to avoid double counting. The cumulative effect of combining the three pathways and the demographic outcome was also modelled to provide a comprehensive estimate of the eco-

nomomic impacts across all pathways and to analyse their possible interactions.

The impacts were estimated by comparing future economic performance in the case of continued historical trends (baseline case) to scenarios which forecasted improvements in gender equality. The modelling approach had three phases:

- model the economic baseline to forecast economic performance in the absence of improvements in gender equality;
- model the scenarios to estimate economic performance when improvements in gender equality occur;
- estimate impacts as the difference in key macroeconomic indicators between the scenarios and the baseline.

### Results of the study: improving gender equality boosts economic growth

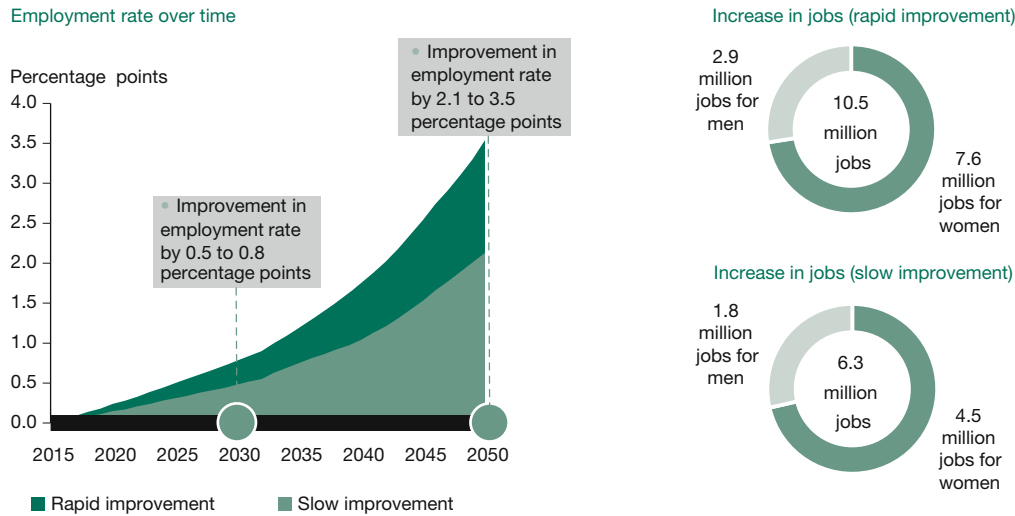
The study provides robust evidence of strong, positive and increasing benefits from gender equality on economic growth. The positive impacts can be largely attributed to addressing some of the structural weaknesses of the EU economy that were identified in the Europe 2020 strategy.<sup>12</sup> For instance, improving gender equality will help to address employment, productivity and issues arising from the ageing of the population.

The study shows that gender equality in one domain, such as education, has spillover effects in other domains,

<sup>11</sup> European Institute for Gender Equality, op. cit.

<sup>12</sup> European Commission: Europe 2020. A strategy for smart, sustainable and inclusive growth, COM(2010) 2020 final, 3 March 2010.

**Figure 3**  
**Effect of improvements in gender equality on employment**



Source: European Institute for Gender Equality: Economic Benefits of Gender Inequality in the European Union, 2017.

such as employment. Spillover effects could lead to concurrent improvement in women's education (more women in STEM studies), improvement in the labour market activity rates of women and increases in women's wages. Thus, addressing different aspects of gender inequality together as a whole is likely to have more positive impacts than addressing each aspect of gender inequality separately.

The overall results of the modelling exercise are described in detail in the following sections.

### Higher employment rates and more jobs

The employment rate in the EU will rise substantially if women have more equal opportunities in STEM education and the labour market. This would lead to an increase in the EU employment rate of 0.5 to 0.8 percentage points by 2030 and of 2.1 to 3.5 percentage points by 2050. In 2050 the EU employment rate will reach almost 80% if substantial gender equality improvements are achieved. Without such improvements, the rate would be 76%. If more women join the labour force and/or study in fields with skill shortages that have good future employment prospects, e.g. STEM disciplines, they are likely to find employment and make substantial contributions to the economy. Such a move would contribute to increased earnings and reduced wage gaps for women. Reducing the gender pay gap can also play an important role in attracting more women to the labour force (see Figure 3).

Improvements in gender equality would lead to an additional 10.5 million jobs in 2050, which would benefit both women and men. About 70% of these jobs would be taken

by women; however, female and male employment rates meet in the long run, reaching an 80% employment rate by 2050. The amount of new jobs roughly corresponds to the current total number of jobs in the Netherlands.

New jobs occupied by women are particularly important as they can help to reduce poverty,<sup>13</sup> one of the key priorities of the Europe 2020 strategy. As shown by findings in EIGE's recent study on women and poverty, women are generally affected by poverty more often than men because of lower employment and salary prospects.<sup>14</sup>

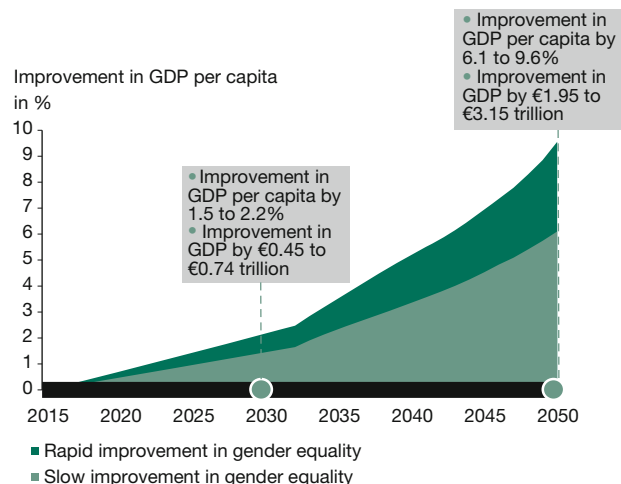
### Increased GDP

By 2050 improving gender equality would lead to an increase in EU GDP per capita by 6.1 to 9.6%, which amounts to €1.95 to €3.15 trillion. The increase would already be apparent in 2030, when GDP per capita would have increased by up to two per cent as a result of increased gender equality. This increase is mainly a result of improved employment rates of women and their progression into more productive

<sup>13</sup> This change will happen if member states address the unequal distribution of unpaid care responsibilities between women and men, and remove barriers to labour market participation for women by introducing measures such as improved work-life balance initiatives for parents, better access to high-quality and affordable childcare facilities, family-friendly and flexible working arrangements, and the promotion of more equal take-up of flexible working schemes by both women and men.

<sup>14</sup> European Institute for Gender Equality: Poverty, gender and intersecting inequalities in the EU. Review of the implementation of Area A: Women and Poverty of the Beijing Platform for Action, Luxembourg 2016, Publications Office of the European Union.

**Figure 4**  
Effect of improved gender equality on GDP per capita



Source: European Institute for Gender Equality: Economic Benefits of Gender Inequality in the European Union, 2017.

STEM jobs. If the EU acts now and boosts gender equality measures in areas such as STEM education, labour market activity and pay, this will allow societies to benefit from the full economic potential of women (see Figure 4).<sup>15</sup>

Compared with labour market and education policies, gender equality policies have a strong impact on GDP. Therefore, gender equality is a highly relevant policy measure to foster economic growth. For example, a recent European Commission study showed that improvements in educational attainment across EU member states would lead to a 2.2% increase in EU GDP in 2050,<sup>16</sup> which is much lower than the impact forecast for gender equality improvements.

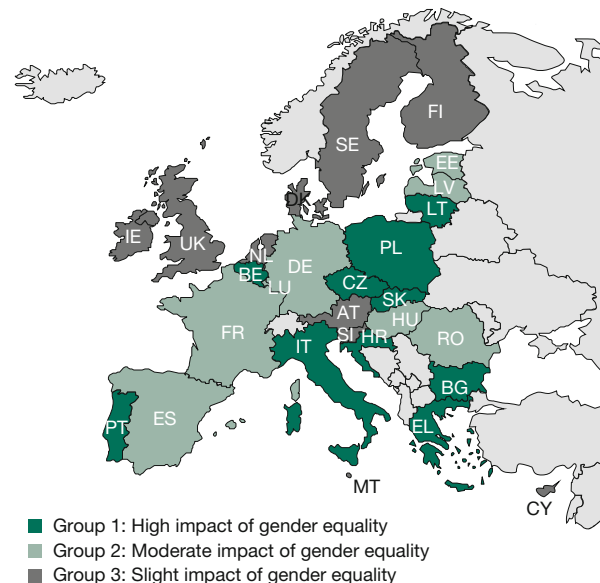
### Addressing ageing population challenges in the EU

Improved gender equality in education and labour market participation, as well as a more balanced sharing of unpaid

<sup>15</sup> Gender equality measures that are likely to lead to a higher number of women graduating from STEM subjects include the removal of gender stereotypes in education, awareness raising and promotion of STEM subjects to girls and women, and career guidance to encourage girls to consider studying in fields dominated by men and boys. Gender equality measures that can reduce gender gaps in the labour market include, among others, providing childcare and other care provision, changes in parental leave pay and conditions, promotion and support of part-time and flexible working arrangements, legal provisions and policies regarding equal pay and working conditions, removing gender segregation across sectors and occupations, reducing the number of career breaks among women, and promoting women into senior positions.

<sup>16</sup> O. Andruszkiewicz et al.: Study on the potential of education to cause macroeconomic imbalances and negative spillovers, European Commission, Directorate-General for Education and Culture, Luxembourg 2016, Publications Office of the European Union.

**Figure 5**  
Impacts of gender equality: differences across member states in GDP in 2050



Source: European Institute for Gender Equality: Economic Benefits of Gender Inequality in the European Union, 2017.

care work between women and men, could lead to an increase in fertility rates, reflecting the recent research findings in this area. EIGE's study calculated that fertility rates would increase by between zero and eight per cent by 2030.<sup>17</sup> Higher fertility rates in turn lead to a larger population and an increase in long-term labour supply. This study highlights the long-term benefits of such a development. By 2050 increased fertility would lead to an estimated increase in employment of 1.3 to 2.6 million people. Improved employment is particularly important in light of current EU demographic projections, which predict a significant increase in the number of older people who are inactive in the labour market.

### Boost in competitiveness

Gender equality measures could lead to an increase in the productive capacity of the economy and lower prices. Following these developments, the EU would be able to produce more goods and services domestically and also become more competitive in international markets. It would lead to improvements in the trade balance, where EU exports would increase by 1.6% to 2.3% and imports would decrease by 0.4% to 0.7% in 2050. Thus, gender equality

<sup>17</sup> For detailed information on the study assumptions for changes in fertility rates, see European Institute for Gender Equality: Economic Benefits of Gender Equality in the European Union: Report on the empirical application of the model, 2017, p. 59, available at <http://eige.europa.eu/rdc/eige-publications/economic-benefits-gender-equality-european-union-report-empirical-application-model>.



could help to maintain international trade as one of the key engines of European growth, in line with Europe 2020. Further, higher rates of GDP growth could lead to additional private investment in the EU by companies, because they choose where to invest based on expected benefits.

### Countries that increase gender equality will reap bigger benefits

The estimated impacts of increased gender equality vary considerably across member states, depending on the present levels of gender equality.<sup>18</sup> Overall, the results are very positive, with some individual countries seeing around a four per cent GDP increase and others exceeding ten per cent.

The larger impacts are typically in countries where gender equality is currently a low priority (see Figure 5). The study shows that those countries would gain much by putting gender equality higher on the agenda. This is particularly important in the context of inclusive growth, i.e. the EU's aim to diminish disparities among regions and make sure that the benefits of growth reach all parts of the EU.

Countries with a lot of room for improvement can achieve substantial economic improvements as a result of more gender equality. On average, increased gender equality in these countries is expected to lead to an increase in GDP of about 12% by 2050. The best performing countries in the area of gender equality have already achieved good levels of gender equality and therefore already enjoy some of the associated economic benefits. However, further improvements can generate additional economic gains even in these member states, often reaching around four per cent of GDP.

## Conclusions

Gender equality has been a long-standing policy commitment of the European Union. However, gender inequalities persist in several areas, undermining women's economic opportunities and affecting the global economy. Persisting inequalities come at a significant cost for women, men, employers and society as a whole, leaving a large share of talent under-utilised.

The results of EIGE's study on the economic benefits of gender equality show that encouraging more active participation of women in the labour market and increasing their educational attainment in science, technology, en-

gineering and mathematics would have a largely positive effect on the EU economy.

Overall, the study results show that higher gender equality would lead to a large increase in the number of jobs, to the benefit of both women and men. There would be up to 10.5 million additional jobs in 2050 due to improvements in gender equality, with about 70% of these jobs taken by women. The study further shows that improving gender equality has strong, positive impacts on GDP per capita that grow over time. The results show a positive impact of gender equality measures on economic growth due to more women in STEM education, higher labour market participation by women and a lower gender pay gap.

The study also shows that reducing the gender gap in STEM education could help reduce bottlenecks in the labour market, increase the employment and productivity levels of women, and reduce occupational segregation. Ultimately, this would foster economic growth via both higher productivity and increased labour market activity.

The results of the study also indicate that closing the labour market activity rate gap would significantly increase the level of employment and have the largest impact on GDP per capita. An increase in women's salaries as a result of narrowing the pay gap would contribute to reducing the activity rate gap, possibly accounting for part of the positive employment effects associated with improving the labour market activity of women. In sum, fostering the greater participation of women in the labour market and ensuring pay equality is crucial to achieve an overall employment rate of women and men of at least 75% and to boost inclusive growth.

The study demonstrates that there is a clear need to introduce gender equality measures as soon as possible in the key policy areas of education and employment in order to achieve the socio-economic goals of the EU.

The GDP impact of gender equality policies compares favourably with the impacts of other labour market and education policies, making gender equality a highly relevant policy measure to promote economic growth. Moreover, the results also show that increased gender equality will help to improve employment, address productivity challenges and cope with population ageing issues in the EU.

Putting gender equality at the heart of the follow-up strategy of Europe 2020 and other policy reforms would make the economic system inclusive, enabling women to fulfil their full potential, and hence benefit women and society as a whole. This would help the EU to achieve smart, sustainable and inclusive economic growth.

<sup>18</sup> The clustering of countries is based on EIGE's Gender Equality Index. See European Institute for Gender Equality: Gender Equality Index 2015 – Measuring gender equality in the European Union 2005-2012, Luxembourg 2015, Publications Office of the European Union.