Female labour force projections using microsimulation for six EU countries

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INAPP, Rome, 21 February 2017
A shrinking workforce...

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A shrinking workforce...

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- Further, demographic change is accelerating: the old age dependency ratio (the ratio of people aged 65 and over to people aged 15-64), which is now below 30%, is expected to rise to approximately 50% by 2050.
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- Further, demographic change is accelerating: the old age dependency ratio (the ratio of people aged 65 and over to people aged 15-64), which is now below 30%, is expected to rise to approximately 50% by 2050.

- These dynamics create temporal imbalances in the labour market and put strains on welfare system and younger workers, who will be responsible for supporting an ageing society.
...requires higher participation rates

- Female LF participation: 70.9%. Range: 56.8% (IT) – 84.2% (SE).
- Gender participation gap: 12 ppt. Range: 22.7 ppt (IT) – 3.4 ppt (FI).

Gender participation gap, 20-64
## Country selection

Participation sub-index of the Gender Equality Index

<table>
<thead>
<tr>
<th>Country</th>
<th>Index</th>
<th>Country</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>SE</td>
<td>94.7</td>
<td>FR</td>
<td>75.0</td>
</tr>
<tr>
<td>DK</td>
<td>85.3</td>
<td>BG</td>
<td>72.9</td>
</tr>
<tr>
<td>FI</td>
<td>85.3</td>
<td>SK</td>
<td>72.3</td>
</tr>
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<td>EE</td>
<td>83.6</td>
<td>RO</td>
<td>71.8</td>
</tr>
<tr>
<td>LV</td>
<td>80.8</td>
<td>LU</td>
<td>71.3</td>
</tr>
<tr>
<td>LT</td>
<td>79.8</td>
<td>PL</td>
<td>71.1</td>
</tr>
<tr>
<td>CY</td>
<td>79.6</td>
<td>IE</td>
<td>69.8</td>
</tr>
<tr>
<td>PT</td>
<td>78.4</td>
<td>ES</td>
<td>69.5</td>
</tr>
<tr>
<td>SI</td>
<td>77.4</td>
<td>HU</td>
<td>67.5</td>
</tr>
<tr>
<td>UK</td>
<td>77.4</td>
<td>BE</td>
<td>66.9</td>
</tr>
<tr>
<td>AT</td>
<td>77.0</td>
<td>HR</td>
<td>62.0</td>
</tr>
<tr>
<td>DE</td>
<td>75.9</td>
<td>EL</td>
<td>59.5</td>
</tr>
<tr>
<td>NL</td>
<td>75.6</td>
<td>IT</td>
<td>57.1</td>
</tr>
<tr>
<td>CZ</td>
<td>75.3</td>
<td>MT</td>
<td>56.2</td>
</tr>
</tbody>
</table>

Notes: The index ranges from 0 (maximum inequality) to 100 (maximum equality). Selected countries in bold.

Source: European Institute for Gender Equality (2015).
Model structure
## Modules specification

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Determinants</th>
</tr>
</thead>
<tbody>
<tr>
<td>student</td>
<td>age, gender, region</td>
</tr>
<tr>
<td>education</td>
<td>age, gender, region</td>
</tr>
<tr>
<td>consensual union</td>
<td>age, student(t-1), education, participation(t-1), cohabitation(t-1), children(t-1), region, retired(t-1)</td>
</tr>
<tr>
<td>maternity</td>
<td>age, student(t-1), education, participation(t-1), cohabitation(t-1), children(t-1), region, fertility rate, public childcare, parental leave benefits, part-time rate</td>
</tr>
<tr>
<td>participation: women with kids 0-3</td>
<td>age, student(t-1), education, participation(t-1), cohabitation(t-1), region, public childcare, parental leave benefits, part-time rate, post-crisis dummy</td>
</tr>
<tr>
<td>participation: women with kids 4-12</td>
<td>age, student(t-1), education, participation(t-1), cohabitation(t-1), region, part-time rate, post-crisis dummy</td>
</tr>
<tr>
<td>participation: women without kids 0-12</td>
<td>age, student(t-1), education, participation(t-1), cohabitation(t-1), region, post-crisis dummy</td>
</tr>
<tr>
<td>participation: men</td>
<td>age, student(t-1), education, participation(t-1), region, post-crisis dummy</td>
</tr>
<tr>
<td>employment</td>
<td>age, gender, student(t-1), education, participation(t-1), unemployment rate, region, post-crisis dummy</td>
</tr>
</tbody>
</table>
Data


- Initial populations: EU-SILC cross-sectional 2012.


- Individuals enter the simulation at age 17 (first age observed in EU-SILC data is 16).
Baseline: participation rates
Baseline: comparison

<table>
<thead>
<tr>
<th>Outcome:</th>
<th>Participation rate (%)</th>
<th></th>
<th></th>
<th>Participation rate (%)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Model:</td>
<td>Eurostat</td>
<td>CSM</td>
<td>MSM</td>
<td>Eurostat</td>
<td>CSM</td>
<td>MSM</td>
</tr>
<tr>
<td>Age group:</td>
<td>15-64</td>
<td>15-64</td>
<td>18-64</td>
<td>55-64</td>
<td>55-64</td>
<td>55-64</td>
</tr>
<tr>
<td>Time:</td>
<td>2013</td>
<td>2060</td>
<td>2050</td>
<td>2013</td>
<td>2060</td>
<td>2050</td>
</tr>
<tr>
<td></td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
<td>%</td>
</tr>
<tr>
<td>Greece</td>
<td>67.7</td>
<td>75.4</td>
<td>77.3</td>
<td>42.4</td>
<td>78.0</td>
<td>76.8</td>
</tr>
<tr>
<td>Spain</td>
<td>74.2</td>
<td>78.9</td>
<td>79.3</td>
<td>54.2</td>
<td>82.5</td>
<td>76.9</td>
</tr>
<tr>
<td>Hungary</td>
<td>64.7</td>
<td>73.0</td>
<td>72.8</td>
<td>41.8</td>
<td>77.5</td>
<td>75.1</td>
</tr>
<tr>
<td>Ireland</td>
<td>69.7</td>
<td>68.2</td>
<td>75.2</td>
<td>57.3</td>
<td>64.6</td>
<td>77.5</td>
</tr>
<tr>
<td>Italy</td>
<td>63.4</td>
<td>65.2</td>
<td>75.2</td>
<td>45.4</td>
<td>69.0</td>
<td>70.9</td>
</tr>
<tr>
<td>Sweden</td>
<td>81.3</td>
<td>82.3</td>
<td>86.3</td>
<td>77.7</td>
<td>78.9</td>
<td>95.1</td>
</tr>
</tbody>
</table>

Notes: Labour force participation (male and female population).
Baseline drivers scenarios

- "Swedish demography": Evolution of the demographic structure by age and gender as in Sweden.
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Baseline drivers scenarios

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- “Swedish education”: Distribution of educational attainments is the same as in Sweden.
- “Swedish participation”: All covariates have the same effect as in Sweden, with respect to participation.

Aim: disentangle the effects of individual characteristics from composition effects: Differences in outcomes must be attributed to composition effects only.
Results: Baseline drivers

Females, 20-64
Results: Baseline drivers /2

Females, 20-44
• The low female participation rates in the countries under analysis can be explained mainly by an adverse behaviour of older women (even after controlling for differences in individual characteristics).

• Moreover, in most countries the behaviour of younger women is not detrimental to participation, their lower educational attainments are only partly responsible for the participation gap, and demography does not helping either in explaining it.

• The last source of the participation gap for women in childbearing years – in the model – is the role of family-friendly policies, and in particular the presence of public, affordable childcare, paid parental leave, and part-time opportunities.
Results: Enhanced family policies
Conclusions

- The Europe 2020 target of 75% employment rate will be approached by the low-participation countries no sooner than 2050.

- There is a trend of increasing participation rates, mainly related to the exit of older cohorts up to 2030.

- These projections are not too dissimilar from other forecasting exercises in the literature. However, the microsimulation approach permits a finer disaggregation of the results, which turns out to be crucial in understanding the dynamic causal mechanisms at work.

- There is strong persistence: choices about labour market participation made in the past by older women, in a different cultural and political context with respect to the current one, are embedded in the participation rates observed today and very little can be done to offset their long-lasting effects.

- By converse, the labour market behaviour of younger women in most countries is not too different from their counterparts in Sweden.

- The reason of their persistently low participation rates in these countries has to be searched in the lack of adequate family policies and in the limited opportunities for family-work conciliation for younger women.
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- There is **strong persistence**: choices about labour market participation made in the past by **older women**, in a different cultural and political context with respect to the current one, are embedded in the participation rates observed today and very little can be done to offset their long-lasting effects.
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Thank you for your attention.

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Baseline: employment rates

Employment rate
Population 20-64

SIMULATION_TIME
2010 2020 2030 2040 2050

EL ES HU IE IT SE
Average effective retirement age

- **Men**
  - EU-27
  - UK

- **Women**
  - EU-27
  - UK
Average effective retirement age

case studies, males
Average effective retirement age

case studies, females