UNLOCKING FEMALE EMPLOYMENT POTENTIAL IN EUROPE: DRIVERS AND BENEFITS

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MORE WORKING WOMEN MAY UNLEASH GROWTH POTENTIAL

Motivation
Stylized Facts
Results
Conclusion
EUROPEAN POPULATION IS AGING

Old-Age Dependency Ratio
(Ratio of population 0 – 19 and 65+ per 100 people 15 – 64)


Europe Eastern Europe Northern Europe Southern Europe Western Europe

... AND LONG-TERM ECONOMIC PROSPECTS ARE SUBDUED

Potential Growth: Europe

(Percent)

Source: WEO, April 2015, chapter 3.
Note: Includes Germany, Italy, Spain, Turkey, and the United Kingdom.
CAN EUROPEAN WOMEN HELP?

Labor supply

Higher female labor force participation raises labor input, mitigating the negative impact of aging

Productivity

Higher participation of women in senior positions might raise productivity

Our study: Two questions

What drives female labor force participation in Europe? Could raising women representation in senior positions boost productivity?
RAISING FEMALE LABOR SUPPLY
... BRINGS ECONOMIC BENEFITS

Policies
- Taxation
- Family-friendly policies

Demographics
- Education
- Fertility
- Marital status
- Attitudes

Full-time employment of women → Supply of women for senior positions → Firm financial performance

Part-time employment of women

→ Productivity
→ Investment

Labor supply

GDP

Stylized Facts
Results
Conclusion
Unlocking Female Employment Potential in Europe

IMPRESSIVE PROGRESS, BUT GENDER GAP REMAINS

Motivation
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SIGNIFICANT PROGRESS IN THE PAST DECADES

Female Labor Force Participation: Advanced Europe
(aged 25-54, Percent of same age population)

Female Labor Force Participation: Emerging Europe
(aged 25-54, Percent of same age population)
BUT THE GENDER GAP IS SIZEABLE
...BOTH IN PARTICIPATION AND IN HOURS WORKED

Labor Force Participation Gap, Male-Female, 2014
(Percentage points, 25 – 54 years old)

Gap in Hours Worked, Male-Female, 2014
(Average hours per week, 25 – 54 years old)

Sources: Eurostat and IMF staff calculations.
QUOTAS FOR WOMEN HAVE HELPED RAISE...

...WOMEN’S SHARE ON CORPORATE BOARDS

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.
BUT STILL FEW WOMEN IN SENIOR POSITIONS…

…MORE SO IF WORKING PART-TIME

**Women in Senior Positions and in the Workforce, 2013 (Percent of total)**

- Senior positions held by women
- Women in the workforce

**Share of Women in Senior Positions and Female Part-Time Employment, 2013 (Percent)**

\[ y = -0.3134x + 0.2972 \]

\[ R^2 = 0.3045 \]

Sources: Eurostat, Orbis, and IMF staff calculations.

Sources: Eurostat, OECD, Orbis, and IMF staff calculations.
... AND EVIDENCE IS MIXED ON BENEFITS OF FEMALE REPRESENTATION IN SENIOR POSITION

- Positive correlation between gender diversity on boards and economic performance

- No clear evidence of a positive impact from female representation
  - Ahern and Dittmar (2012); Matsa and Miller (2013).

- But evidence limited to individual countries, publicly listed companies, small sample size
(1) POLICIES MATTER FOR FEMALE EMPLOYMENT;

(2) WOMEN REPRESENTATION IN SENIOR POSITIONS MATTERS FOR FIRM FINANCIAL PERFORMANCE.
DO NATIONAL POLICIES MATTER?

Data

*International Social Survey Program (ISSP)*
- 24 European economies included, more than 15,000 women aged 25-54 years old.
- Individual \( j \) structural characteristics \( Z \), incl. attitudes, and employment \( E \) information

*OECD*
- Various policies \( X \) at the country \( i \) level, incl. relative tax on secondary earner, child benefits etc.

**Methodology**

\[
E_{jit} = \alpha + Z_{jit} \beta + X_{it} \delta + \theta_i + \rho_t + \varepsilon_{ijt}
\]
YES, AND THEIR IMPACT CAN BE LARGE, EVEN WHEN CONSIDERING WOMEN’S WORK PREFERENCES

Marginal Effects of Individual Characteristics and Policies on Female Employment (Percentage points)

Source: Christiansen and others (2016a).
Note: Impact per one-standard-deviation increase (during 2002 – 12 across countries) in the given variable. Coefficient on "Married" is insignificant.
WOMEN IN SENIOR POSITIONS AND FIRM PERFORMANCE: NEW EVIDENCE FROM EUROPE

Large sample of listed and non-listed firms in 34 European countries (no single proprietorships)

Basic regression model

\[ y_{inc} = \beta \times sh_{wmn_{inc}} + \gamma \times x_{inc} + \alpha_{nc} + \varepsilon_{inc} \]

- \( y_{inc} \): Return on assets of firm \( i \), in industry \( n \) and country \( c \)
- \( sh_{wmn_{inc}} \): Share of women in senior positions
- \( x_{inc} \): set of firm-specific controls
- \( \alpha_{nc} \): country-industry fixed effects
FEMALE REPRESENTATION IS POSITIVELY ASSOCIATED WITH CORPORATE FINANCIAL PERFORMANCE

Female Representation in Senior Positions and Firm Financial Performance (Estimated ROA change from an additional woman in a senior position, basis points)

Sources: Orbis and IMF staff calculations.
Note: Point estimate and 95% confidence interval. Return on assets computed using net income, profit before tax, and earnings before interest and tax (EBIT), respectively.
WOMEN IN SENIOR POSITIONS AND FIRM PERFORMANCE: EXPLORING THE CHANNELS

Difference-in-difference estimation:

\[ \gamma_{inc} = \delta \ast \text{SEC}_n \ast \text{sh}_{wmn_{inc}} + \beta \ast \text{sh}_{wmn_{inc}} + \gamma \ast x_{inc} + \alpha_{nc} + \varepsilon_{inc} \]

\text{SEC}_n \text{ is either}

1. the female intensity of the sector to which the firm belongs;

2. an indicator for whether the sector is a high-tech or knowledge-intensive sector.
STRONGER ASSOCIATION IN INDUSTRIES EMPLOYING MORE WOMEN OR WITH GREATER DEMAND FOR CRITICAL THINKING

High versus Low Female Intensity Sectors

High-Tech and Knowledge-Intensive Sectors versus Other Sectors

Source: Orbis and IMF staff calculations.
Note: Gap represents the share of women in sectoral workforce less the share of women in senior positions. The diamond denotes the estimated increase in ROA from additional woman in a senior position. ROA computed using net income.

Source: Orbis, Eurostat, and IMF staff calculations.
Note: Point estimate and 95% confidence interval. Return on assets computed using net income, profit before tax, and EBIT, respectively. Following Eurostat, industries are classified as high-tech (based on R&D expenditures) and knowledge-intensive (based on the share of workers with tertiary education).
Unlocking Female Employment Potential in Europe

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IMPORTANT TO LEVEL THE PLAYING FIELD
LEVELING PLAYING FIELD IS IMPORTANT

• Whether or not to work is not just a personal choice—policies do matter

• Closing gender gaps in the labor market paves the way for greater diversity in senior corporate positions and higher firm performance.

• Policies should therefore aim at broadening opportunities for women to work, without discouraging full time employment.
THANK YOU
Background Slides
Share of Women in Senior Positions and Female Labor Force Participation, 2013
(Percent)

\[ y = 0.0591x + 0.1921 \]
\[ R^2 = 0.0025 \]

Sources: Eurostat, OECD, Orbis, and IMF staff calculations.
<table>
<thead>
<tr>
<th>Structural</th>
<th>Whether or not employed</th>
<th>Fulltime vs. part-time</th>
<th>Hours worked</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All women</td>
<td>Employed women</td>
<td>Employed women</td>
</tr>
<tr>
<td>Number of children</td>
<td>-0.0565*** (0.0072)</td>
<td>-0.0659*** (0.0099)</td>
<td>-1.8585*** (0.2765)</td>
</tr>
<tr>
<td>Education (years)</td>
<td>0.0391*** (0.0071)</td>
<td>0.0047 (0.0081)</td>
<td>-0.0531 (0.2878)</td>
</tr>
<tr>
<td>Education (years), squared</td>
<td>-0.0010*** (0.0002)</td>
<td>-0.0001 (0.0003)</td>
<td>0.0048 (0.0101)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>0.0618*** (0.0104)</td>
<td>0.0209*** (0.0060)</td>
<td>0.7468*** (0.1653)</td>
</tr>
<tr>
<td>Age (years), squared</td>
<td>-0.0008*** (0.0001)</td>
<td>-0.0003*** (0.0001)</td>
<td>-0.0098*** (0.0021)</td>
</tr>
<tr>
<td>Mother working</td>
<td>0.0227** (0.0108)</td>
<td>0.0175 (0.0115)</td>
<td>0.9450*** (0.2935)</td>
</tr>
<tr>
<td>Married</td>
<td>0.0011 (0.0127)</td>
<td>-0.0626*** (0.0125)</td>
<td>-1.7242*** (0.3496)</td>
</tr>
<tr>
<td>Attitude</td>
<td>0.0437*** (0.0046)</td>
<td>0.0281*** (0.0038)</td>
<td>0.7490*** (0.1263)</td>
</tr>
<tr>
<td>Tax on the second earner</td>
<td>-0.6557*** (0.0520)</td>
<td>-0.1016 (0.0816)</td>
<td>-6.0473*** (2.1760)</td>
</tr>
<tr>
<td>Childcare spending</td>
<td>0.1025*** (0.0363)</td>
<td>0.0336 (0.0299)</td>
<td>-1.6086* (0.8309)</td>
</tr>
<tr>
<td>Family allowance</td>
<td>-0.1048*** (0.0280)</td>
<td>0.0328 (0.0326)</td>
<td>-0.6206 (1.0011)</td>
</tr>
<tr>
<td>Parental leave</td>
<td>0.2079*** (0.0200)</td>
<td>-0.1338*** (0.0211)</td>
<td>-4.9310*** (0.6812)</td>
</tr>
<tr>
<td>Parental leave, squared</td>
<td>-0.0007*** (0.0001)</td>
<td>0.0005*** (0.0001)</td>
<td>0.0193*** (0.0042)</td>
</tr>
<tr>
<td>Observations</td>
<td>10,495</td>
<td>8,174</td>
<td>8,174</td>
</tr>
<tr>
<td>Adjusted R-squared</td>
<td>0.1535</td>
<td>0.1575</td>
<td>0.1501</td>
</tr>
</tbody>
</table>

**Individual Characteristics, Policies, and Employment**
Policies Have Supported Female Employment

Decomposing the Change in the Female Employment Rate, 2002–12 (Percentage points)

Sources: IMF staff calculations.
1/ Captures time dummy and other macro controls.
### EMPIRICAL RESULTS

<table>
<thead>
<tr>
<th>ROA based on</th>
<th>Correlation</th>
<th>Role of Female Intensity</th>
<th>Role of Knowledge-Intensity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Net income</td>
<td>Profit before tax</td>
<td>Net income</td>
</tr>
<tr>
<td>1</td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td>4</td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>

| Share of Women in Senior Positions | 0.41 *** | 0.44 *** | -0.26 | -0.28 | 0.13 | 0.11 |
|                                   | (0.09)   | (0.11)   | (0.24) | (0.26) | (0.09) | (0.11) |
| Share of Women in Senior Positions | 1.63 *** | 1.74 *** |       |       |       |      |
| *Female Intensity of Sector       | (0.57)   | (0.65)   |       |       |       |      |
| Share of Women in Senior Positions | 1.02 *** | 1.19 *** |       |       |       |      |
| *High-Tech/Knowledge Intensive Sector |       |         |       |       |       |      |

| 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.
### Share of Women in Senior Positions and Firm Financial Performance

<table>
<thead>
<tr>
<th>Sample 1/</th>
<th>At least 2 people</th>
<th>At least 3 people</th>
<th>At least 4 people</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA based on</td>
<td>Net income</td>
<td>Profit BT</td>
<td>EBIT</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
</tr>
<tr>
<td>Share of women in senior positions</td>
<td>0.0041 ***</td>
<td>0.0044 ***</td>
<td>0.0028 ***</td>
</tr>
<tr>
<td>(0.0009)</td>
<td>(0.0011)</td>
<td>(0.0010)</td>
<td>(0.0010)</td>
</tr>
<tr>
<td>Observations</td>
<td>2,003,279</td>
<td>2,000,422</td>
<td>1,992,658</td>
</tr>
<tr>
<td>Mean dep. variable</td>
<td>0.016</td>
<td>0.027</td>
<td>0.032</td>
</tr>
<tr>
<td>Mean share of women</td>
<td>0.26</td>
<td>0.26</td>
<td>0.26</td>
</tr>
<tr>
<td>Mean N senior positions</td>
<td>3.29</td>
<td>3.29</td>
<td>3.29</td>
</tr>
<tr>
<td>Increase in ROA (basis points)</td>
<td>12</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Increase in ROA (percent)</td>
<td>7.9</td>
<td>5.0</td>
<td>2.6</td>
</tr>
</tbody>
</table>

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

1/ Sample includes all firms with at least two, three or four members in senior positions in columns (1)-(3), (4)-(6) and (7)-(9) respectively.
Share of Women in Senior Positions and Firm Financial Performance
Sectoral Differences

<table>
<thead>
<tr>
<th>Sample</th>
<th>Services</th>
<th>Manufacturing</th>
<th>Trade</th>
<th>Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td>ROA based on</td>
<td>Net income</td>
<td>Profit BT</td>
<td>EBIT</td>
<td>Net income</td>
</tr>
<tr>
<td></td>
<td>(1)</td>
<td>(2)</td>
<td>(3)</td>
<td>(4)</td>
</tr>
<tr>
<td>Share of women</td>
<td>0.0070 ***</td>
<td>0.0074 ***</td>
<td>0.0062 ***</td>
<td>0.0044 ***</td>
</tr>
<tr>
<td>in senior positions</td>
<td>(0.0017)</td>
<td>(0.0020)</td>
<td>(0.0018)</td>
<td>(0.0012)</td>
</tr>
<tr>
<td>Observations</td>
<td>777,462</td>
<td>775,053</td>
<td>771,695</td>
<td>265,520</td>
</tr>
<tr>
<td>Mean dep. variable (ROA)</td>
<td>0.020</td>
<td>0.033</td>
<td>0.034</td>
<td>0.016</td>
</tr>
<tr>
<td>Mean share of women</td>
<td>0.28</td>
<td>0.28</td>
<td>0.28</td>
<td>0.23</td>
</tr>
<tr>
<td>Mean N senior positions</td>
<td>3.50</td>
<td>3.51</td>
<td>3.50</td>
<td>3.56</td>
</tr>
<tr>
<td>Increase in ROA (basis points)</td>
<td>20</td>
<td>21</td>
<td>18</td>
<td>12</td>
</tr>
<tr>
<td>Increase in ROA (percent)</td>
<td>9.9</td>
<td>6.4</td>
<td>5.2</td>
<td>7.5</td>
</tr>
</tbody>
</table>

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