Population growth is slowing and the number of elderly is rising in most European economies...

Demographic Transition in European Economies, 1960-2100

1. Population Ages 65 and Older (Percent of population ages 20-64)

2. Population Growth (Percent)

- Interquartile range
- Median
- USA

Projection
...yet so far participation rates have increased in most European countries and exhibited convergence...
Regional patterns point to significant heterogeneity...

(Percentage points)
Regional patterns point to significant heterogeneity...

(Percentage points)
...and worse outcomes in rural areas

Changes in Labor Market Dynamics
(Percentage points)
This could reflect differential initial exposures to routinization and offshoring...

Exposures to Routinization and Offshoring, 2000

1. Exposure to Routinization (index)
   - x < 25th
   - 25th <= x < 50th
   - 50th <= x < 75th
   - x >= 75th

2. Exposure to Offshoring (index)
This could reflect differential initial exposures to routinization and offshoring...

Exposures to Routinization and Offshoring, 2000
...which weigh on participation in the United States...

Table 1. Drivers of Labor Force Participation Rates in US Metropolitan Areas

<table>
<thead>
<tr>
<th>Variables</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
<th>(5)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Real GDP Growth</td>
<td>0.0362</td>
<td>0.0396*</td>
<td>0.0540**</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0227)</td>
<td>(0.0227)</td>
<td>(0.0221)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in Old-Age-Dependency Ratio</td>
<td>-0.149***</td>
<td>-0.137***</td>
<td>-0.159***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.0393)</td>
<td>(0.0397)</td>
<td>(0.0378)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in Postsecondary Share</td>
<td>0.441***</td>
<td>0.443***</td>
<td>0.370***</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.144)</td>
<td>(0.143)</td>
<td>(0.139)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Initial Exposure to Routinization</td>
<td>-2.617**</td>
<td></td>
<td></td>
<td>-2.342*</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1.133)</td>
<td></td>
<td></td>
<td>(1.194)</td>
<td></td>
</tr>
<tr>
<td>Initial Exposure to Offshoring</td>
<td></td>
<td>-4.026***</td>
<td></td>
<td></td>
<td>-4.825***</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(0.914)</td>
<td></td>
<td></td>
<td>(0.937)</td>
</tr>
<tr>
<td>Observations</td>
<td>381</td>
<td>381</td>
<td>346</td>
<td>346</td>
<td>346</td>
</tr>
<tr>
<td>$R^2$</td>
<td>0.284</td>
<td>0.313</td>
<td>0.358</td>
<td>0.367</td>
<td>0.412</td>
</tr>
</tbody>
</table>

Source: IMF staff calculations.
Note: Standard errors are in parentheses. The dependent variable is change in labor force participation rate.

* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$. 
...but do not appear to displace workers on average in Europe

<table>
<thead>
<tr>
<th>Table 1. Drivers of Labor Force Participation Rates in European Regions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Variables</td>
</tr>
<tr>
<td>-----------</td>
</tr>
<tr>
<td>Average Real GDP Growth</td>
</tr>
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<tr>
<td>Observations</td>
</tr>
<tr>
<td>R²</td>
</tr>
</tbody>
</table>

Source: Authors' calculations.

Note: Standard errors are in parentheses. The dependent variable is change in labor force participation rate.

* p < 0.1; ** p < 0.05; *** p < 0.01.
In the United States routinization and offshoring can account for about half of the decline in participation...
In the United States routinization and offshoring can account for about half of the decline in participation...

Contributions of Exposures to Routinization and Offshoring to Changes in Labor Force Participation Rates

1. Exposure to Routinization

2. Exposure to Offshoring

25th percentile 75th percentile

Contribution of exposure to routinization
Change in labor force participation rate

Contribution of exposure to offshoring
Change in labor force participation rate
...in Europe overall gains are mostly driven by gains in education...
...but routinization and offshoring have significant effects in some regions.

Contributions of Exposures to Routinization and Offshoring to Changes in Labor Force Participation Rates

1. Exposure to Routinization

- **Contribution of exposure to routinization**
- **Change in labor force participation rate**

2. Exposure to Offshoring

- **Contribution of exposure to offshoring**
- **Change in labor force participation rate**
Net migration accounted for about half of population growth in advanced economies since the mid-1980s...

Contributions of Natural Population Growth and Net Migration to Total Population Growth, 1985-2015

(Percent)
...migrants are more likely to be prime-age and thus increase overall participation

Age Profile of Natives and Migrants
(Percent of population)

Projected Participation Rates, 2015-2050
(Percent)
Migrants’ participation rates are typically lower than those of natives, but converge over time.
Higher education increases migrants’ participation less than that of natives...
...likely due to difficulties in the recognition of qualifications
Policy implications

- Heterogeneity in the evolution of participation rates across European regions and US states and metropolitan areas, with more pronounced declines in rural regions.

- Trade and technology explain about half of the observed decline in participation in the US, but are not associated with displacement in Europe, likely driven by a second worker effect.

- Support should be provided to workers displaced as a result of automation and globalization to dampen the negative effects of labor market shocks.

- Striking within-country differences may, however, call for more explicit recognition of the spatial dimension of economic vulnerability.
Policy implications

- Migration plays a very significant role in alleviating aging pressures, driven by an age composition effect.

- However, participation rates are lower among migrants than among natives, though the participation gap narrows with years since migration.

- The effects of education on participation appear to be smaller for migrants than for natives.

- Policies that support migrant integration, such as recognition of educational qualifications or language training could increase the positive effects of migration on participation.