Understanding the Stagnation of Modern Economies

Professor Robert Hall
Robert and Carole McNeill Senior Fellow, Hoover Institution
Professor of Economics, Stanford University

Professor Francesco Caselli
Norman Sosnow Professor of Economics, LSE
Chair, LSE

Hashtag for Twitter users: #LSEPhillips
Allocation of 10.0 percentage points of shortfall in real GDP, 2010

- Excess unemployment: 3.3
- Shrunken labor force: 1.3
- Reduced productivity growth: 3.1
- Depleted capital stock: 2.3
Allocation of 15.4 percentage points of shortfall in real GDP, 2015

- Excess unemployment: 0.5%
- Shrunken labor force: 3.3%
- Reduced productivity growth: 6.6%
- Depleted capital stock: 5.1%
Topic 2: Unemployment

![Graph showing unemployment rate from 1948 to 2014. The y-axis represents percent of labor force, ranging from 0 to 12%, and the x-axis represents years from 1948 to 2014. The graph shows fluctuations in unemployment rate over time.](image-url)
Unemployment and productivity

Unemployment rate (left scale)

Output per worker (inverse, right scale)

Percent of population working or looking for work

Reciprocal of index of real output per worker

**Unemployment and the Stock Market**

Unemployment rate (left scale)

Stock market (inverse, right scale)

Percent of population working or looking for work

Reciprocal of index of real value of the stock market
DIRECT EFFECT OF UNEMPLOYMENT

Detrended Real GDP, trillions of 2009 dollars

Real GDP

Adjusted for direct effect of unemployment

Topic 3: Shrinkage of the labor force

Percent of population working or looking for work

Men

Women
Role of family income from Hall and Petrosky-Nadeau (2016)
### Changes in weekly hours of time use, 2003 to 2013, people 15 and older

<table>
<thead>
<tr>
<th></th>
<th>Personal care</th>
<th>Household work</th>
<th>Market work</th>
<th>Education</th>
<th>Leisure</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Men</strong></td>
<td>1.3</td>
<td>0.1</td>
<td>-2.5</td>
<td>0.2</td>
<td>1.3</td>
<td>-0.4</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td>1.6</td>
<td>-0.7</td>
<td>-0.8</td>
<td>-0.1</td>
<td>0.8</td>
<td>-0.8</td>
</tr>
</tbody>
</table>
Topic 4: Total Factor Productivity

Detrended index of output per unit of Input

Declining IP investment

Detrended Index of investment in intellectual property including R&D
Technology diffusion is sensitive to macro conditions

From Anzoategui et al.

Figure 4: Diffusion Speed for 3 Internet Technologies in the UK, 2004-2013

Source: Eurostat; see footnote 6 for details of calculations. Shaded areas are UK recession dates as dated by UK ONS.
Topic 5: Capital Depletion

Detrended index of business capital
Business Earnings as a Ratio to the Value of Capital
Allocation of 15.4 percentage points of shortfall in real GDP, 2015

- Excess unemployment: 0.5
- Shrunken labor force: 3.3
- Reduced productivity growth: 6.6
- Depleted capital stock: 5.1
Topic 6: The Lower Bound on the Nominal Interest Rate

Short-term future interest rate implied by yields on longer-term treasury bonds
Monetary policy has much less scope for stimulus
Diego Anzoategui, Diego Comin, Mark Gertler, and Joseba Martinez, “Endogenous Technology Adoption and R&D as Sources of Business Cycle Persistence”, February 2016

Robert Hall, “High Discounts and High Unemployment”, “Understanding the Decline in the Safe Real Interest Rate”, “Macroeconomics of Persistent Slumps” (chapter for new Handbook of Macroeconomics)

Department of Economics and *Economica* public lecture

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