UNDERSTANDING THE STAGNATION OF MODERN ECONOMIES

Robert E. Hall
Hoover Institution and Department of Economics
Stanford University

The Phillips Lecture
London School of Economics
28 April 2016
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 1: Output

Detrended real GDP

Trillions of 2009 dollars
Topic 2: Unemployment
Unemployment and Productivity

Percent of population working or looking for work

Output per worker (inverse, right scale)

Unemployment rate (left scale)

Reciprocal of index of real output per worker

UNEMPLOYMENT AND THE STOCK MARKET

Unemployment rate (left scale)

Stock market (inverse, right scale)
Direct Effect of Unemployment

Detrended Real GDP, trillions of 2009 dollars

- Red line: Real GDP
- Blue line: Adjusted for direct effect of unemployment
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
Declining IP investment
Technology diffusion is sensitive to macro conditions

From Anzoategui et al.

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

Index

Business Earnings as a Ratio to the Value of Capital
**Topic 6: The Lower Bound on the Nominal Interest Rate**

![Graph](image)

*Short-term future interest rate implied by yields on longer-term treasury bonds*
Monetary policy has much less scope for stimulus.
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
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*)