Dimensions of the Economic Outlook, 2011-15

American Economic Association Meetings
Denver, Colorado

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January 8, 2011

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The views I will express are my own and do not necessarily reflect the positions of the Federal Reserve Bank of St. Louis or the Federal Reserve System.
Growth Accounting Framework

• Start with a simplified version of a standard growth accounting framework that links labor inputs with productivity to produce output (real GDP):

\[
\text{GDP} = (\text{GDP/Worker}) + (\text{Workers/Population}) + \text{Population}
\]

**NOTE:** The above series are expressed in terms of annualized growth rates.
Growth Accounting Framework

Relatively weak growth of real GDP during the 2001-07 expansion.

Growth of real GDP in the current expansion has picked up modestly but it is comparatively weak.

NOTE: Quarterly data
Population growth in the current expansion has slowed significantly compared with the previous three expansions.

Growth of working-age population is projected to begin slowing sharply this year.
Growth of the employment-to-population ratio has declined sharply since the 1980s expansion. In the current expansion its growth has turned significantly negative.
However, productivity growth in the current expansion has accelerated sharply compared with the previous three expansions.

December employment report consistent with this development.
Initial Impressions

• The deceleration in real GDP growth largely reflects slower growth of labor input.
• Labor market dynamics may be changing in ways not yet clearly understood.
• Current growth rates of labor productivity seem unsustainably high.
• Productivity growth going forward is key—but measurement issues/revisions are huge.
The Productivity Outlook: Three Scenarios

• Projections from Jorgenson and Vu (2010).
  ➢ Use a neoclassical production function model, but model the IT and non-IT sectors separately:
    ▪ \[ Y(Y_n, I_{IT}) = AX(K_n, K_{IT}, L) \]
The Productivity Outlook: Three Scenarios

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    the IT and non-IT sectors separately:
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• Key uncertainties are growth of capital quality, capital-output ratio, and growth of TFP (A).
  ➢ Base case: 1989-2008 trend holds for key variables.
The Productivity Outlook: Three Scenarios

A significant deceleration in productivity growth is projected under the base-case scenario.

![Productivity Growth Chart](chart)

- **1998-2008**: 2.17%
- **1989-2008**: 1.98%
- **Actual**: 1.5%
- **Projections, 2009-2019**:
  - **Pessimistic**: 0.99%
  - **Base-case**: 1.5%
  - **Optimistic**: 2.06%

**SOURCE**: Jorgenson and Vu, 2010
The Outlook for Real GDP: Three Scenarios

With growth of labor inputs slowing (aging population). . .

This results in a pronounced slowing in real GDP growth under the base-case scenario.

SOURCE: Jorgenson and Vu, 2010
Key Risks

• Lengthy adjustment in U.S. labor markets.
  ➢ Marginal tax rates and labor laws adjust to enhance social safety net.
  ➢ Erosion of job skills.
  ➢ Suggests upside risks to productivity growth projections.

• Policymakers fail to adequately address outsized federal budget deficit.
  ➢ Key finding from Rogoff and Reinhart.
Higher debt/GDP is consistent with weaker real GDP growth and thus living standards over time.

Suggests downside risks to productivity projections.

SOURCE: Reinhart and Rogoff (2010).
End