Japanese Productivity: 
Determinants of Potential Growth

ESRI International Forum on *Growth Potential of Japan, US and EU – IT, Corporate Strategy, and Economic Policy*

February 14, 2005

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Real GDP, Labor Inputs and Labor Productivity: Japan vs. EU & US

• Until 1990—High Real GDP Growth backed by Productivity Growth
• After 1990—Precipitous Decline of GDP Growth—Two Major Causes
  – Decline in Labor Inputs (change in work hour regulations around 1990 and long-run labor adjustment caused by weak demand after 1990)
    • Long before actual decline in the labor force
  – Substantial Decline in Labor Productivity Growth
    • Productivity increase is insufficient to compensate declining labor inputs
  – The same pictures when we use TFP instead of Labor Productivity
Real GDP Growth 1980-2002

- EU
- US
- Japan
Labor Input (Man-Hour) Growth 1980-2002

EU
US
Japan

1980-90 1990-95 1995-00 2000-02
Labor Productivity Growth 1980-2002

EU
US
Japan

Labor Productivity (GDP/Man-Hour) Growth 1980-2002
Who are Culprits?

- Japanese IT Hardware (Electronic) industries outperform US counterparts
- Some manufacturing industries are better-performed and some are not, but on the average slightly lags behind US. (A sharp contrast with outperforming past.)
- Dismal performance of non-manufacturing sectors including IT Software industries
Labor Productivity Japan and US: Manufacturing

100 million $/
1000 man-hours ('95 PPP)

0.0
0.5
1.0
1.5
2.0
2.5


US
Japan
Importance of Firm-Level Analysis

The Growth of a Country Results from the Growth of Her Industries, which Comes from the Growth of Their Firms.


➤ Two Aspects
  ➤ Productivity growth of existing firms
  ➤ Entry and Exit
Productivity Slowdown of Existing Firms

- Stylized “excellent” Japanese firms
  - Process improvement
    - <= Long-term relationship (labor and suppliers)
    - => Cutting Costs, Improving quality
  - “Integral” product architecture (exemplified in passenger cars)
  - “Vertical enclosure” of loyal customers

- Stylized “excellent” US firms
  (after the decline of “big business” around 1980s)
  - Combinatorial improvement
    - <= Arm’s length engagement
    - => Creating new value-added
  - “Modular” product architecture (exemplified in personal computers)
  - “Horizontal dominance” in key modules
Biased Technological Change and Worldwide Production

• Until 1990
  • Established product architecture => Competition on cost-cutting, quality-improvement
  • Constraints on moving people and information around the globe
  • Japanese “Excellent Firm”s’ behavioral characteristics fitted well

• Supply shocks: common to US and Japan
  • Technological change: ICT
  • Modularization and globalization of production
  • favorable to US and biased against Japan

• Demand shocks: unique to Japan
  • Collapse of the “Bubble Economy”
  • Mismanaged aggregate demand policy
Extremely Slow but Steady Adjustment – It’s Close to an End

• Most part of 1990s … Fixed costs are increasing due to very slow adjustment. Since labor adjustment is in the form of attrition with extra severance pay for early retirement, the adjustment initially increases labor costs.

• => Little impact of demand policy (very limited spillover of demand to derived investment.)

• Turning point: 1999 … both fixed labor and capital costs started to decline

• => large impact of small foreign demand increase through spillover to derived investment

• Cautiously Optimistic Prospects for Better Performance in the near Future
Entry, Exit and Industry Dynamics

• Industry Productivity Improves By Productive Firms’ Entry and Unproductive Firms’ Exit.
  – Natural Selection Mechanism in Market Economy

• Who are responsible to choose firms?
  – Banks
  – Stock Markets
Breakdown of Natural Selection Mechanism – Malfunction of Banking

Breakdown of the Natural Selection Mechanism of the Market Economy – 1: Banking Crisis

TFP of Surviving and Exiting Firms

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The year 1996 is key to the interpretation of the results because the vulnerability of the Japanese financial market started to become obvious in 1996-97.
Breakdown of NSM – Malfunction of Stock Markets

Breakdown of the Natural Selection Mechanism of the Market Economy – 2 : IT Bubbles

TFP of Surviving and Exiting Firms

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2000-2001 is the period of the IT bubble and its burst.
Future Prospects

• Productivity Resurgence: Adjustment is over.
• Beyond that, much depends on two factors:
  – Productivity-enhancing innovations within firms
    • Importance of “Synergy” of new ideas to make this happen
    • Product innovations based on “integral architecture” are the key.
  – Efficient selection mechanism: role of banking and stock markets
    • Present performance of Japanese banking sectors is simply disappointing
    • Present stock market performance is also disappointing
    • New innovations are again the key to future improvement.