Productivity in Brazil in long-term perspective

<table>
<thead>
<tr>
<th>Year</th>
<th>Labor Productivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1950</td>
<td>0.15</td>
</tr>
<tr>
<td>1952</td>
<td>0.17</td>
</tr>
<tr>
<td>1954</td>
<td>0.19</td>
</tr>
<tr>
<td>1956</td>
<td>0.21</td>
</tr>
<tr>
<td>1958</td>
<td>0.23</td>
</tr>
<tr>
<td>1960</td>
<td>0.25</td>
</tr>
<tr>
<td>1962</td>
<td>0.27</td>
</tr>
<tr>
<td>1964</td>
<td>0.29</td>
</tr>
</tbody>
</table>

Labor productivity in Brazil relative to the U.S. (U.S. = 100)
How does recent Brazilian performance stack up against leading comparators?

Labor productivity growth in Brazil and comparators

BRA 1.8%
How does recent Brazilian performance stack up against leading comparators?

Labor productivity growth in Brazil and comparators

BRA  1.8%
TUR  4.0%

In Turkey, productivity growth is higher, but also more volatile.
How does recent Brazilian performance stack up against leading comparators?

In Korea, productivity growth is higher and more stable, but gap with Brazil has diminished recently.
How does recent Brazilian performance stack up against leading comparators?

In Thailand, productivity growth has converged with Brazil as well.
How does recent Brazilian performance stack up against leading comparators?

In Latin America, Chile tends to outperform Brazil…
How does recent Brazilian performance stack up against leading comparators?

Labor productivity growth in Brazil and comparators

<table>
<thead>
<tr>
<th>Year</th>
<th>Brazil</th>
<th>Mexico</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>BRA 1.8%</td>
<td>MEX 2.2%</td>
</tr>
</tbody>
</table>

as does Mexico...
How does recent Brazilian performance stack up against leading comparators?

Labor productivity growth in Brazil and comparators

BRA 1.8%
PER 3.7%

and Peru.
Proximate sources of productivity growth

Labor productivity growth =

physical capital investment

+ upgrading of labor skills

+ total factor productivity (TFP) growth
  (which is an amalgam of increased efficiency in resource use and technological progress)

Note: All data on labor productivity and its sources are from Conference Board, Total Economy Database.
Comparing sources of productivity growth

Labor productivity growth and its sources, 1990-2012
Comparing sources of productivity growth

Labor productivity growth and its sources, 1990-2012

- Total
- Labor skills
- Physical capital
- TFP
Comparing sources of productivity growth

Labor productivity growth and its sources, 1990-2012

- TUR
- KOR
- THA
- CHL
- MEX
- PER
- BRA

Total
Labor skills
Physical capital
TFP
A structural interpretation of productivity growth

Economy-wide productivity growth =

labor reallocation from low- to high-productivity sectors (structural change)

+ productivity growth within sectors

Note: All data on sectoral labor productivity and employment are from Timmer and de Vries (2007) and McMillan and Rodrik (2011).
Structural change was not growth promoting in Brazil.

Correlation Between Sectoral Productivity and Change in Employment Shares in Brazil (1990-2005)

\[ \beta = -2.2102; \text{t-stat} = -0.17 \]

*Note: Size of circle represents employment share in 1990
**Note: \( \beta \) denotes coeff. of independent variable in regression equation: \( \ln(p/P) = \alpha + \beta \Delta \text{Emp. Share} \)
Source: Author’s calculations with data from Timmer and de Vries (2009)
Unlike Turkey…

**Correlation Between Sectoral Productivity and Change in Employment Shares in Turkey (1990-2005)**

\[ \beta = 3.0601; \text{t-stat} = 1.14 \]

*Note: Size of circle represents employment share in 1990*

**Note:** \( \beta \) denotes coeff. of independent variable in regression equation:

\[ \ln(p/P) = \alpha + \beta \Delta \text{Emp. Share} \]

Source: Authors' calculations with data from the Turkish Statistical Institute
Thailand…
or Mexico

Correlation Between Sectoral Productivity and Change in Employment Shares in Mexico (1990-2005)

\[ \beta = 4.9089; \text{t-stat} = 0.70 \]

*Note: Size of circle represents employment share in 1990
**Note: \( \beta \) denotes coeff. of independent variable in regression equation:
\[ \ln(p/P) = \alpha + \beta \Delta \text{Emp. Share} \]

Source: Author's calculations with data from Timmer and de Vries (2009)
But picture is not better in South Korea…

*Note: Size of circle represents employment share in 1990
**Note: \( \beta \) denotes coeff. of independent variable in regression equation:
\[ \ln(p/P) = \alpha + \beta \Delta \text{Emp. Share} \]
Source: Author’s calculations with data from Timmer and de Vries (2009)
Chile...

Correlation Between Sectoral Productivity and Change in Employment Shares in Chile (1990-2005)

\[ \beta = -2.3674; \text{t-stat} = -0.43 \]

*Note: Size of circle represents employment share in 1990
**Note: \( \beta \) denotes coeff. of independent variable in regression equation:
\[ \ln(p/P) = \alpha + \beta \Delta \text{Emp. Share} \]

Source: Author's calculations with data from Timmer and de Vries (2009)
and certainly not in Peru
But countries that experienced growth-reducing structural change compensated through high productivity growth within sectors.
Countries that experienced growth-reducing structural change compensated through high productivity growth within sectors

Contributions of the within and structural-change components of labor productivity, 1990-2005
Countries that experienced growth-reducing structural change compensated through high productivity growth within sectors.
Whereas Brazil lagged badly behind in within-sector productivity growth.
Brazil does particularly badly in services

Labor productivity growth within selected sectors, 1990-2005
Two possible paths for Brazil

• More rapid structural change (as in Thailand or Turkey)
  • seems the harder path for Brazil going forward, in view of:
    • much smaller reserve pool of labor in agriculture
    • less hospitable macro/global environment for industrialization

• Higher productivity growth in services (as in Korea, Chile, and Peru)
  • seems inevitable path going forward
A closer look at retail trade
Productivity differences across different retail segments are very large.

Source: Lagakos (2009)
There are significant gains from reducing resource misallocation within retail sector.

Figure 1: Potential aggregate productivity gains from resource reallocation.

Source: de Vries (2012)
There has not been much improvement in allocative efficiency since mid-1990s

Figure 1: Potential aggregate productivity gains from resource reallocation

Source: de Vries (2012)
Recent reports are bullish

“As international players continue expanding in Sao Paulo and Rio de Janeiro, modern retail is also spreading in Brazil’s north and northeast and to larger interior cities. Many international funds are showing confidence in the market.... Major players such as Wal-Mart ... are investing billions to open new stores, expand current ones, and improve technology.”

AT Kearney 2013 Global Retail Development Index
But foreign investment is no panacea

Wal-Mart’s unequalizing effect in Mexico

Source: Iacovone, Javorcik, Keller, and R Tybout (2011)
A closer look at retail trade

- Big productivity differences across firms of different size
  - larger, modern establishments versus smaller, traditional stores
- Significant productivity losses due to inefficient allocation of resources
  - modern segment too small
  - TFP could more than double with feasible reduction in resource misallocation
- Very limited gains in reducing resource misallocation within sectors since mid-1990s
  - despite service-sector liberalization in 1990s
- Entry of modern firms has asymmetric effects
- Policies also have differentiated effects
  - credit constraints hurt smaller firms, profit taxes larger firms
Summing up, the problem is not…

• bad macroeconomic management (fiscal, monetary policy)
• lack of skills, education
• too little physical capital accumulation
• deindustrialization
• performance of tradable sectors (manufacturing, agriculture)
• bad infrastructure
• inadequate technology, innovation, R&D
It’s…

- Specific productivity blockages in non-traded services
  - such as public administration and wholesale & retail trade
- There is no magic or quick solution to these blockages
- Will require ongoing, fine-grained reforms in regulatory systems and institutional arrangements
- Sustainable levels of growth will remain moderate
The (relative) good news

• Compared to most emerging markets, Brazil has a number of strengths
  • robust democracy
    • Dilma Rousseff vs. Tayyip Erdogan’s reactions to protests
  • investments in education, social programs
  • reduction in inequality
  • cooperation between government and private sector
• Ultimately, the quality of growth is as important as its rate