Policies for equitable growth: New data and new approaches

Duncan Pieterse, Economic Policy, National Treasury: November 2016
New data permit new approaches

• New baseline social accounting matrix (SAM) for 2012 and a time series of real and nominal SAMs from 1993-2013
  – The time series is new in the South African context (and rare internationally)
  – Allows for detailed study of structural change in South Africa and rigorous evaluation of productivity growth rates by sector

• South African Revenue Service and National Treasury created firm- and worker-level panel datasets from tax administrative records
  – Permit analysis at the level of the firm, rather than sector
  – Highlights high degree of heterogeneity across firms

• Post-Apartheid Labour Market Series
  – Microdata from 54 household surveys conducted by Statistics South Africa between 1994 and 2015 and 1993 Project for Statistics on Living Standards and Development
  – Allows for analysis of evolution in income and inequality over time
South Africa has a revealed comparative advantage in services exports

Services sector grows faster than GDP...

... making it the main driver of output...

... accounting for 68% of value added

Source: Statistics South Africa, 2015
Volume of services exports more than quadrupled from 1993 to 2013

Source: van Seventer (2015)
SA share of global service exports generally falling

Source: UNCTAD
Sources of Economy-wide Productivity Growth: Standard Sectoral Approach

- Economy-wide productivity is the sum of productivity in sectors, weighted by their shares in value added
- Economy-wide productivity rises because
  - Sectors become more productive
  - Resources are reallocated to more productive sectors
- Develop “snapshots” (social accounting matrices) of the economy from 1993-2013 in real and nominal terms
A Growth and Productivity Matrix

- Sectors can be classified by their employment and productivity growth performances

<table>
<thead>
<tr>
<th>Productivity Growth</th>
<th>Employment Growth</th>
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<tbody>
<tr>
<td>Low</td>
<td>Low</td>
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<tr>
<td>High</td>
<td>High</td>
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<tr>
<td>(Low, High)</td>
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<td>(High, High) [good]</td>
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<td>Low</td>
<td>Low (Low, Low)</td>
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<tr>
<td>High</td>
<td>(High, Low)</td>
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<td>(Low, Low)</td>
<td>(High, Low)</td>
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Sectoral employment-productivity performance 1993-2013

Average Annual Productivity and Employment Growth Rates by Sector, 1993-2013

Source: Arndt, Davies, and Gabriel (2016)
Understanding heterogeneity in productivity across firms

• Total factor productivity (TFP) grows through technology adoption, innovations or business practices that lead to efficiency improvements

• Factors that stifle productivity growth therefore include:
  – those that prevent firms from becoming more efficient
  – frictions that distort the allocation of resources across firms and prevent the flow of resources from the least productive to the most productive firms

• Understanding productivity at the firm level is therefore crucial to identifying the drivers and constraints to productivity growth in an economy – requires use of firm-level data
Log of weighted TFP demeaned by industry and year

- 1-4 (16,441)
- 5-9 (15,415)
- 10-19 (15,357)
- 20-49 (14,047)
- 50-99 (4686)
- 100-249 (2324)
- 250-1000 (745)
- 1000+ (92)
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Traders employ more labour, pay higher wages and are more productive.

Source: Edwards, Sundaram, and Sanfilippo (2016)
Importers of intermediate inputs are 10% to 46% more productive than other firms. 

Source: Edwards, Sundaram, and Sanfilippo (2016)
Firms respond to tax incentives: kinks in the tax schedule

Source: Boonzaaier et al. (2016)
Economic growth appears to be powerfully skills constrained (wage premium by age)

Source: Branson and Leibbrandt (2013)

Note: The figure presents the converted wage regression coefficients (and 95% confidence bands) on incomplete secondary (bottom line), matric (middle line) and tertiary (top line) relative to primary or less from a linear regression of log earnings, controlling for a quadratic in age and coloured, Indian and white indicators. Separate regression results presented for young respondents (15-30) and older respondents (31-64). Sample restricted to males. Converted coefficients = exp(b). All regressions weighted using the cross entropy weights.
Economic growth appears to be powerfully skills constrained (by earnings percentile)

Source: Wittenberg 2014
Policy implications

1. South Africa has a revealed comparative advantage in services exports
2. Access to high quality imported intermediate inputs is an important component of an export orientation
3. Large, productive firms with existing links to international markets likely have the highest near term growth potential
4. Economic growth in South Africa appears to be powerfully skills constrained
5. Skills constraint is especially harmful to exporters