

Productivity in Emerging Market Economies: Slowdown or Stagnation?

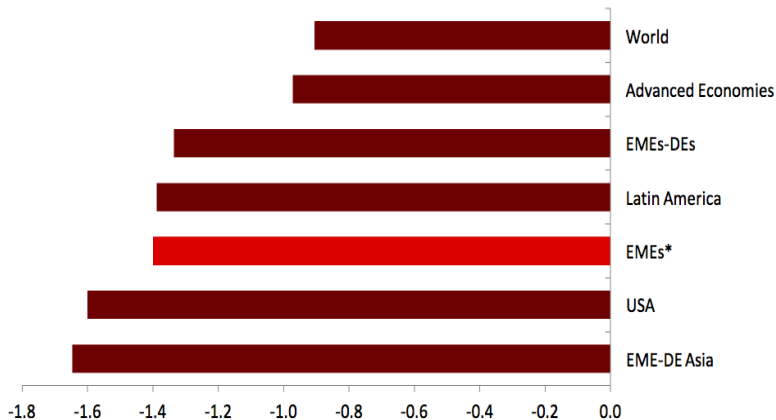
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Agenda

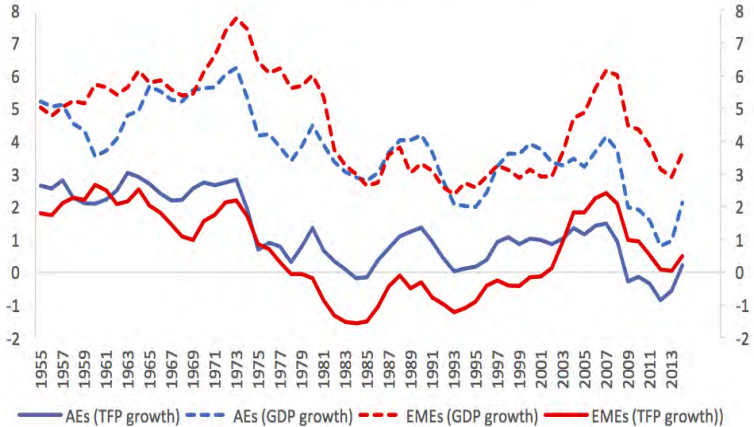
1. Introduction
2. Closing the gaps: output, factors and TFP
3. Development accounting
4. Growth accelerations and TFP
5. TFP and the global economy
6. Opportunities and headwinds

Change in Long-Term Growth between 2012 and 2017 (percent)



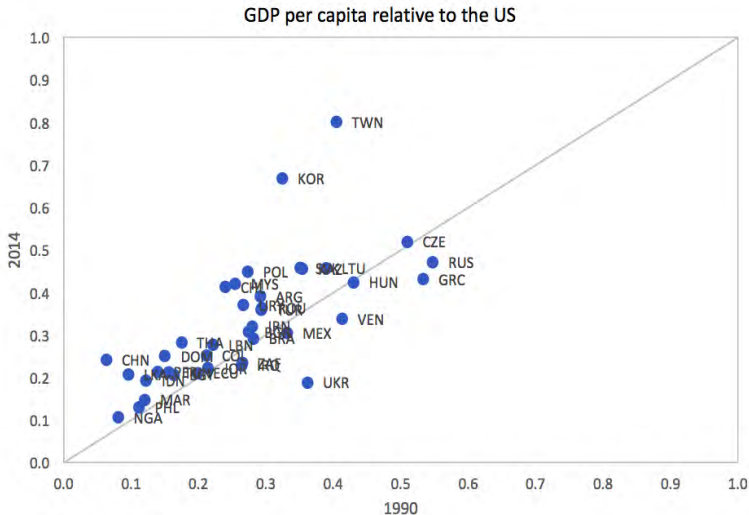
Source: IMF World Economic Outlook, April 2012 and April 2017. * Simple average for EMEs of this paper.

TFP growth in EMEs and AEs (five-year average growth, percent)



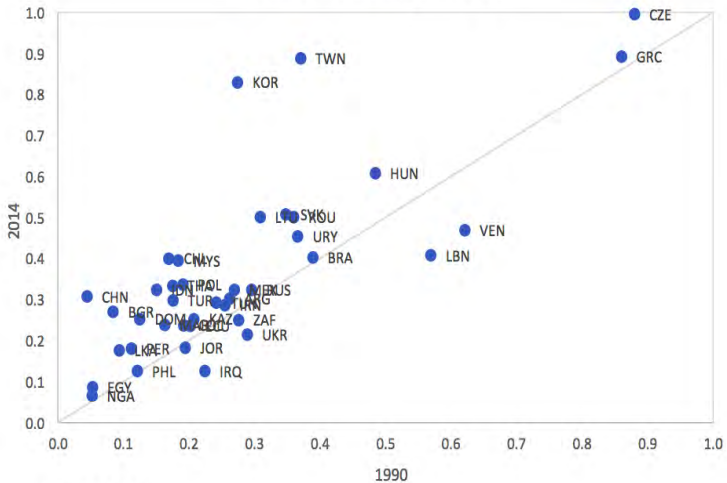
Source: PWT 9.0.

Closing the output, factors and TFP gaps



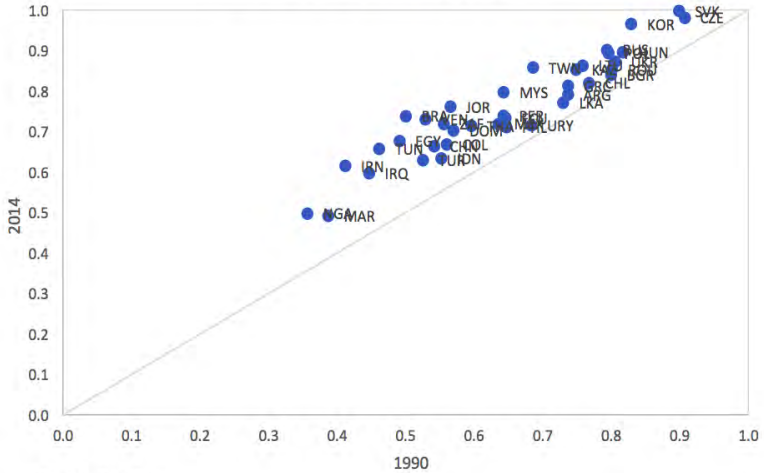
Source: PWT 9.0.

Capital stock relative to the US



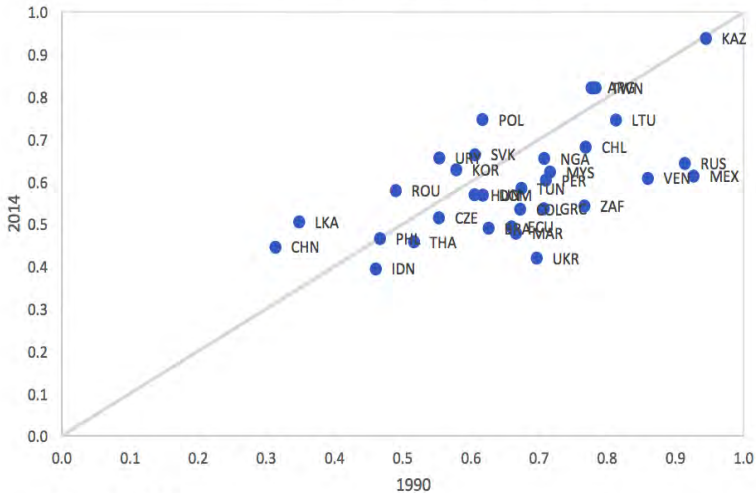
Source: PWT 9.0.

Human capital relative to the US



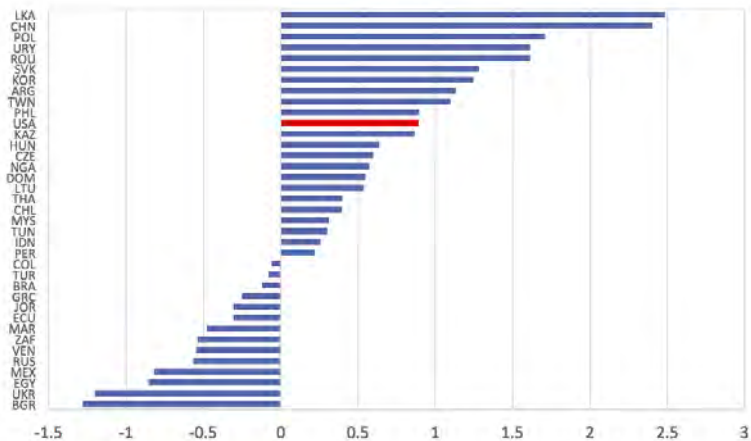
Source: PWT 9.0.

Total factor productivity relative to the US



Source: PWT 9.0.

Total factor productivity annual growth, 1990-2014 (percent)



Source: PWT 9.0.

Development accounting

$$Y = AK^\alpha L^{1-\alpha} \quad (1)$$

$$\frac{y_i}{y_u} = \left(\frac{k_i/y_i}{k_u/y_u} \right)^{\alpha/(1-\alpha)} \left(\frac{h_i}{h_u} \right) \left(\frac{A_i}{A_u} \right)^{1/(1-\alpha)} \quad (2)$$

Alternatively

$$\frac{y_i}{y_u} = \left(\frac{k_i}{k_u} \right)^\alpha \left(\frac{h_i}{h_u} \right)^{1-\alpha} \left(\frac{A_i}{A_u} \right) \quad (3)$$

Development accounting

	GDP per Worker (1)	Capital/GDP (2)	Human Capital (3)	TFP (4)	Share due to TFP (5)
Asia					
1990	0.127	0.799	0.595	0.266	64.1
2000	0.147	0.969	0.654	0.232	73.3
2010	0.208	1.024	0.694	0.293	70.8
Latin America					
1990	0.246	0.909	0.617	0.440	56.0
2000	0.242	1.025	0.668	0.354	65.9
2010	0.293	0.961	0.714	0.428	61.6
Emerging Europe					
1990	0.306	0.938	0.796	0.410	64.6
2000	0.307	1.034	0.846	0.351	71.4
2010	0.473	1.106	0.873	0.490	66.3

Source: Author's calculation based on PWT 9.0.

Countries in each group: Asia: China, India, Indonesia, Korea, Philippines, Malaysia, Thailand. Latin America: Argentina, Brazil, Chile, Colombia, Mexico, Peru, Venezuela. Emerging Europe: Czech Republic, Hungary, Latvia, Lithuania, Poland, Romania.

Development accounting using equation (3)

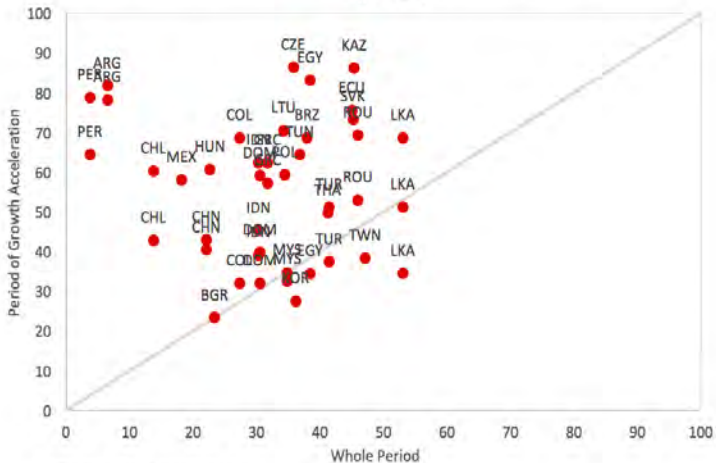
	GDP per Worker (1)	Capital (2)	Human Capital (3)	TFP (4)	Share due to TFP (5)
Asia					
1990	0.127	0.420	0.714	0.423	41.4
2000	0.147	0.501	0.759	0.386	49.6
2010	0.208	0.586	0.788	0.450	50.7
Latin America					
1990	0.246	0.576	0.730	0.586	41.8
2000	0.242	0.618	0.769	0.509	48.3
2010	0.293	0.634	0.803	0.576	46.9
Emerging Europe					
1990	0.306	0.634	0.862	0.560	49.4
2000	0.307	0.676	0.897	0.506	54.5
2010	0.473	0.822	0.915	0.629	54.4

Growth accelerations

Definition:

- $g_{t,t+n} > 3.5\%$, that is, growth is relatively high, greater than 3.5% a year.
- $\Delta g \geq 2\%$, that is, growth increases by at least 2 percentage points.
- Per capita GDP at the end of the episode is greater than or equal to the maximum growth before the episode, so no recoveries from a big slump are considered.
- The year that maximizes the F-statistic of a spline regression is assumed to be the year of the break in growth.
- If average growth for three years following the eight-year episode is greater than or equal to 2.5%, that is, growth is still in the acceleration period.
- Sustainable and unsustainable accelerations: If per capita GDP in the fourth or fifth year after the period ends is below the level at the end of the spell, I call it unsustainable

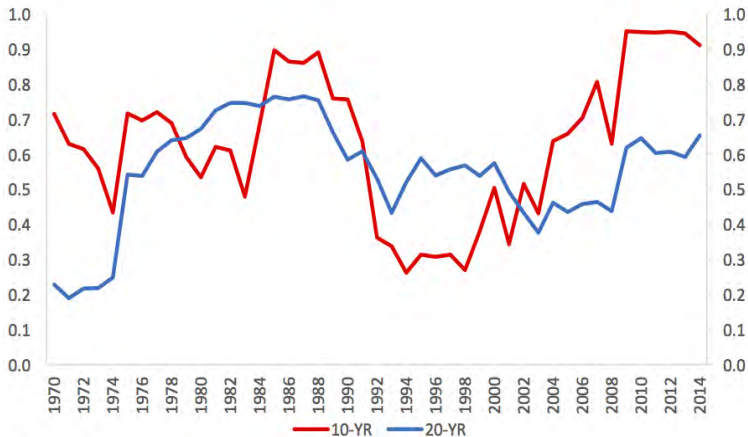
Contribution of TFP to GDP per worker growth (percent)



Source: Author's calculations.

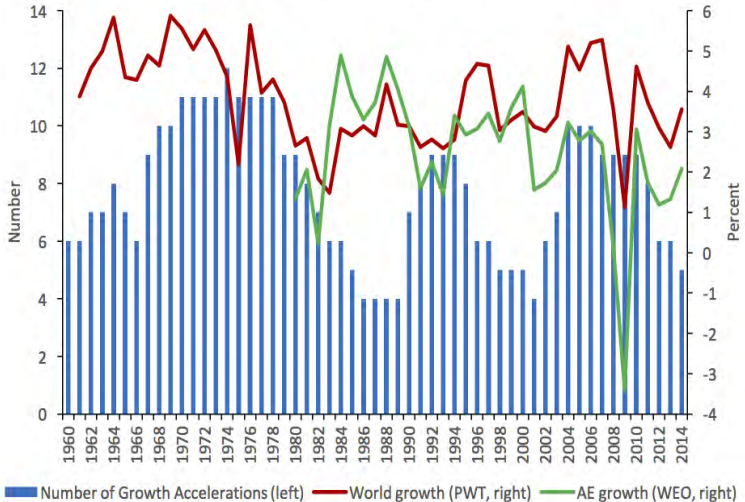
TFP and the global economy

Ten and twenty-year correlation of TFP growth in AEs and EMEs



Source: Author's calculations based on PWT 9.0

Growth accelerations and global growth



Sources: Author's calculations, WEO October 2017 and PWT 9.0.

Opportunities and headwinds

- Interest rates
- Trade
- Demographics
- Inequality
- Corruption

Real interest rates in Chile and the US
(percent)



Sources: Central Bank of Chile and FRED.

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Corruption Perception Index 2016

