



# TURKEY: MACRO-MICRO PRODUCTIVITY LINKAGES

The World Bank Group

January 10, 2019



# Outline

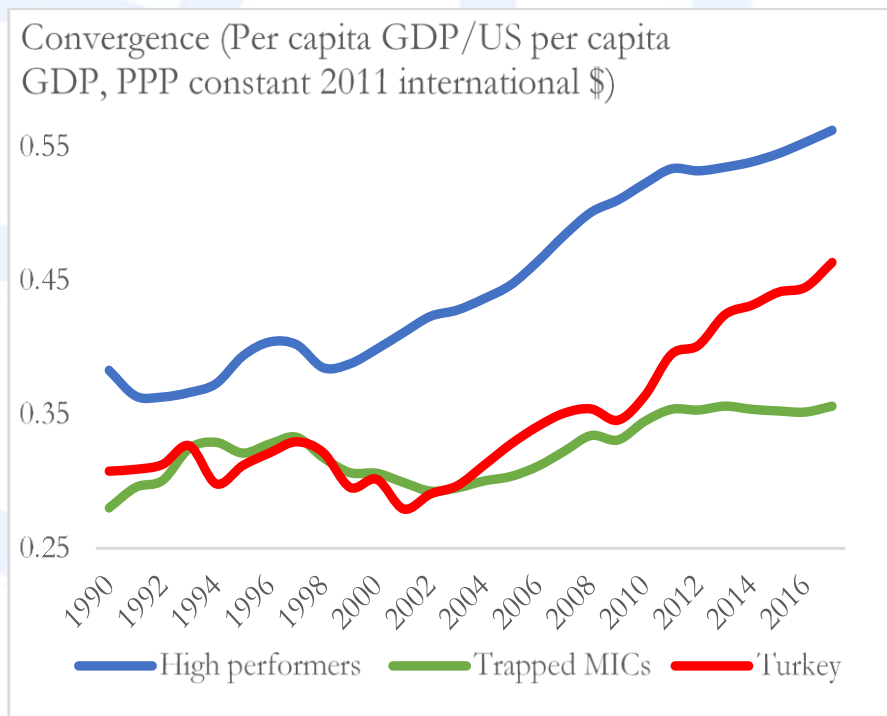
- **Macro picture**
  - Performance of growth in the last 15 years
  - Drivers and challenges of economic growth
  - Rebalancing reforms from short-term demand management towards long-term structural reforms.
- **Micro evidence**
  - Firm level evidence-productivity stagnation.
  - Allocative efficiency
  - Productivity growth decomposition
  - Pro-development sectors



Macro Picture

# Remarkable progress of Turkey in income convergence

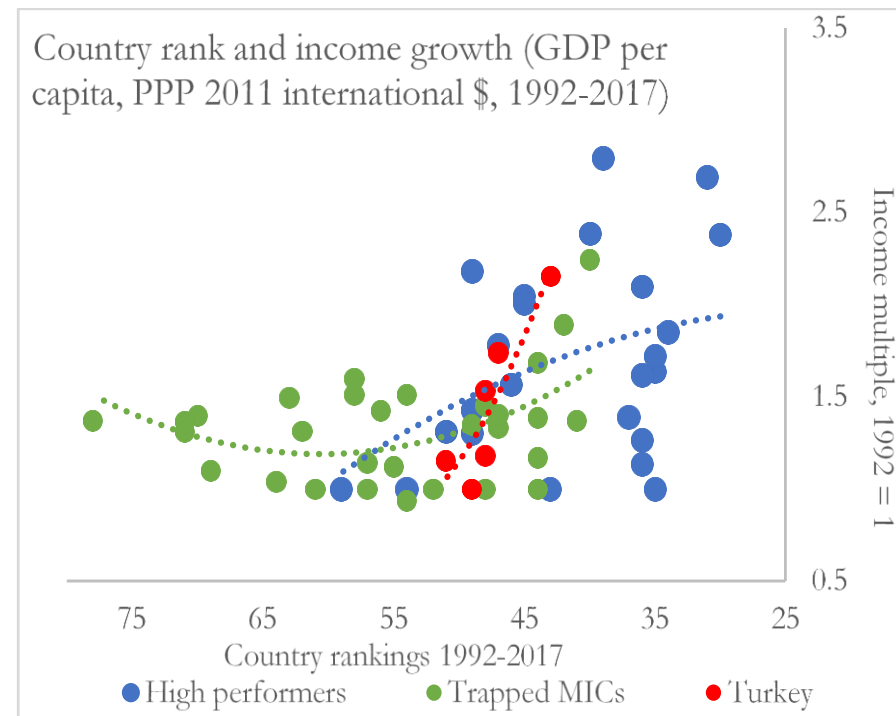
## Convergence accelerating further post-GFC



Sources: WDI, WB Staff estimates

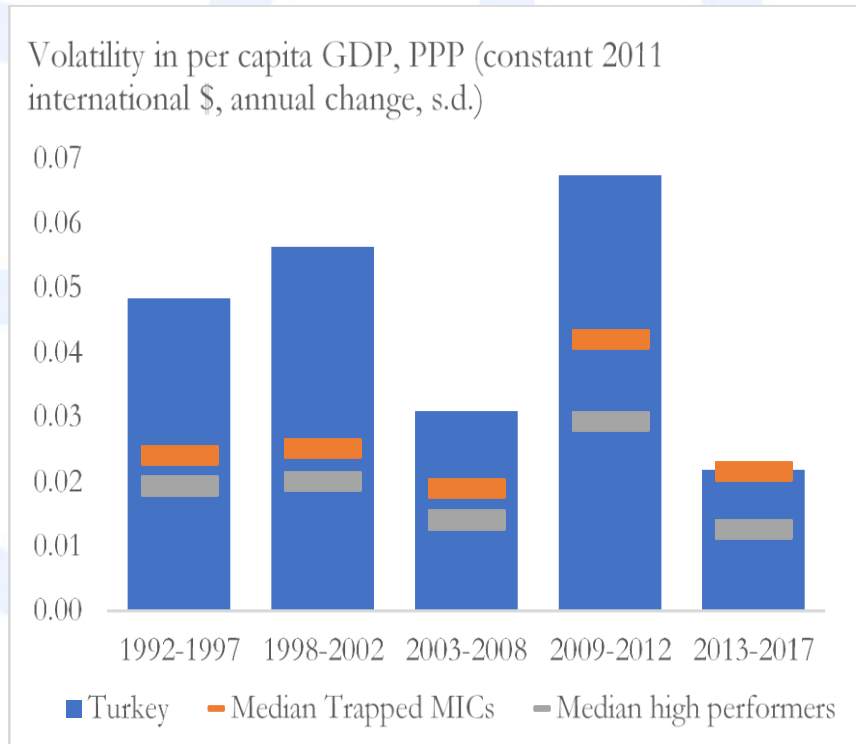
Note: Convergence estimates for high performers and trapped MICs based on their weighted averages of per capita GDP

## Catch up with high performers



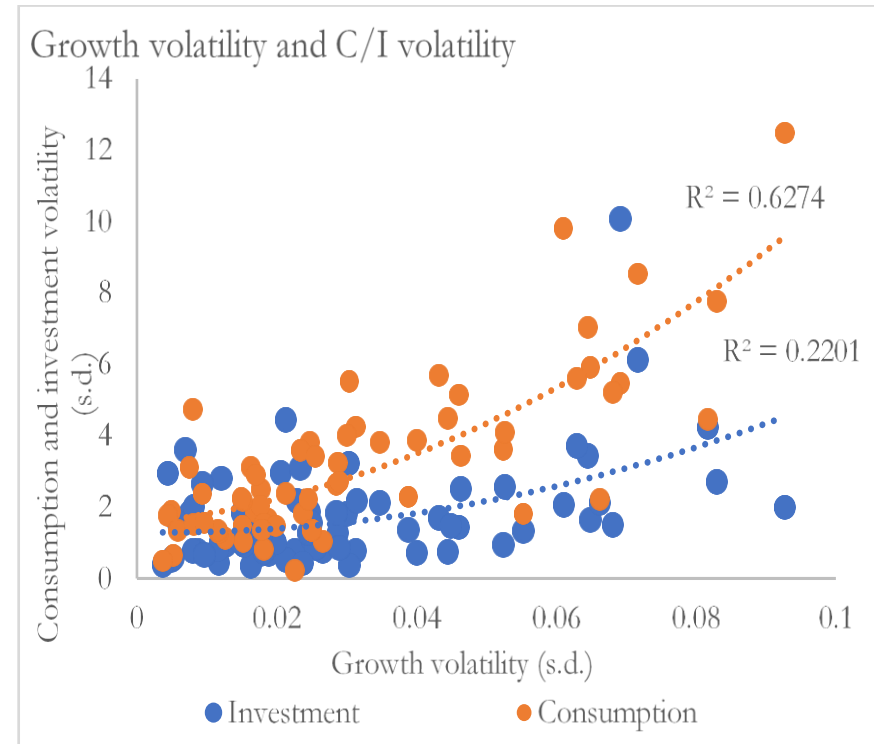
Sources: WDI, WB Staff estimates

# Diversion from long-term supply reforms diminish the quality of growth



Sources: WDI, WB Staff estimates

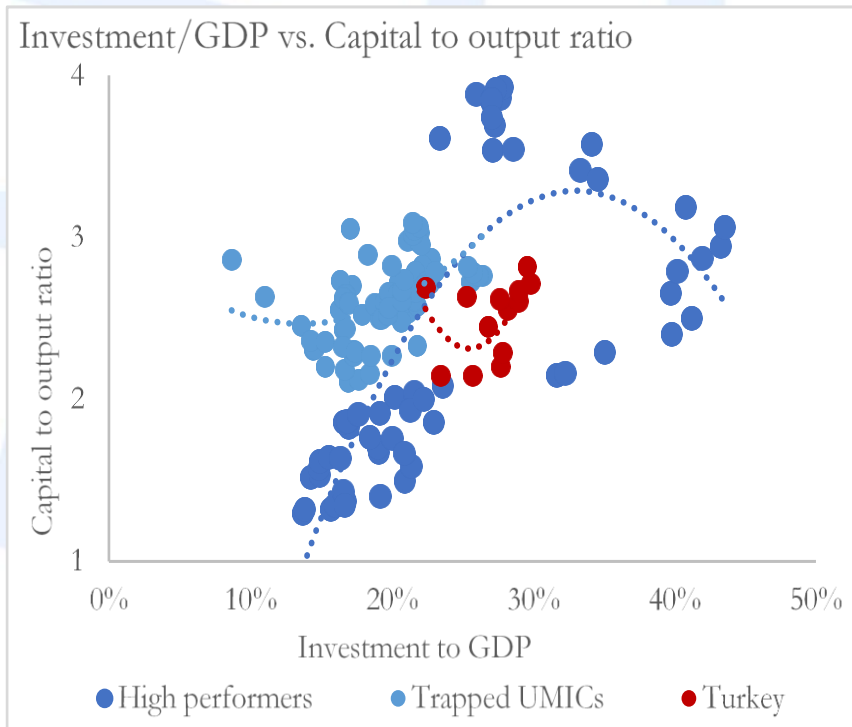
Note: Standard deviation for period average growth of pc GDP



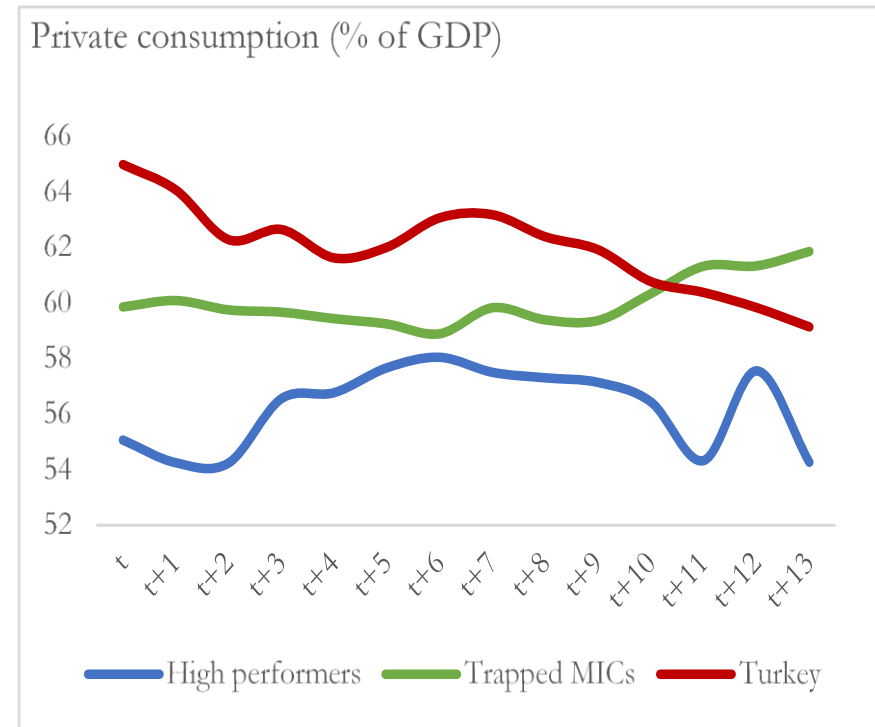
Note: Includes China, Hungary, India, Indonesia, Romania and Russia in addition to high performers and trapped MICs

# Low Investment Efficiency and High Consumption

Investment efficiency closer to Trapped MICs



High levels of private consumption



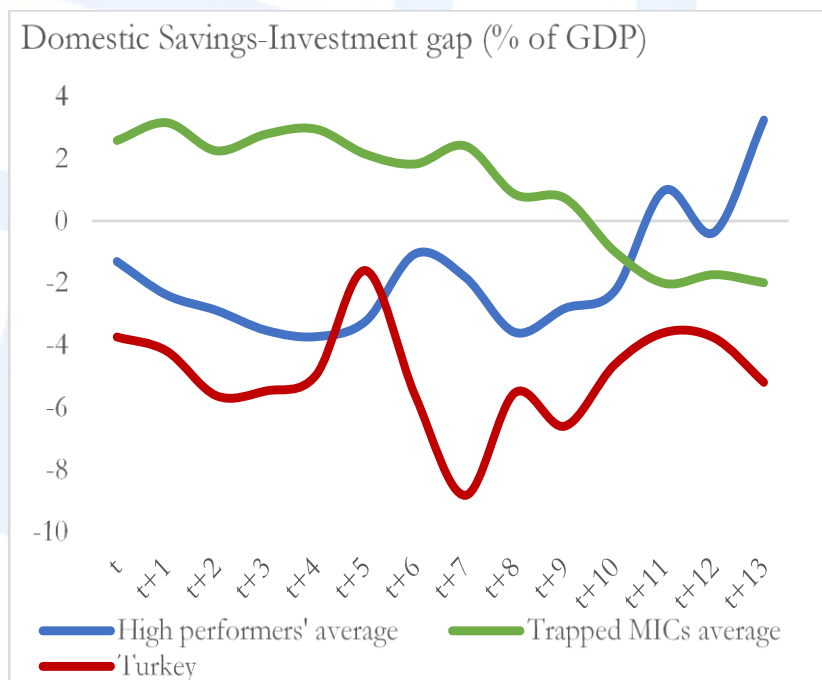
Sources: WDI, WB Staff estimates

Notes: Period for High performers are years they were in UMIC group; for Trapped MICs, 2002 onwards, for Turkey 2004 on.

Sources: WDI, WB Staff estimates

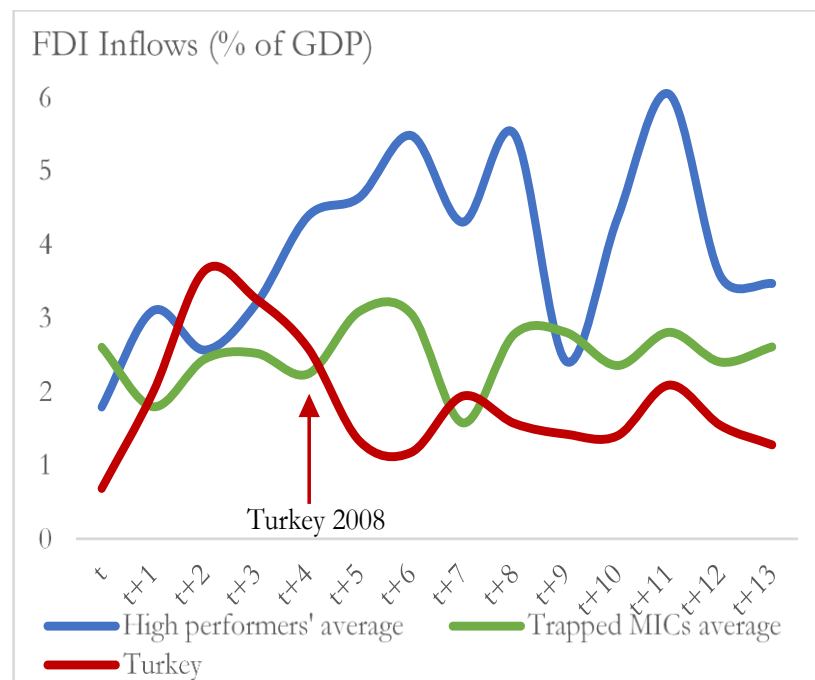
# Turkey's large and persistent domestic savings-investment gap and change in quality of external financing

Acceleration in capital inflows



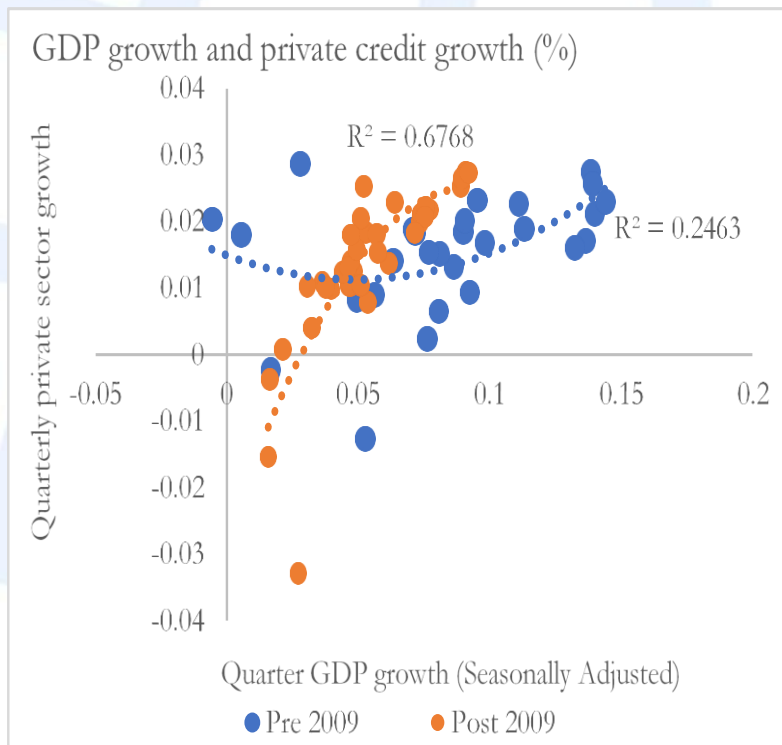
Sources: IMF WEO, WB Staff estimates

Shifting from FDI to volatile portfolio flows

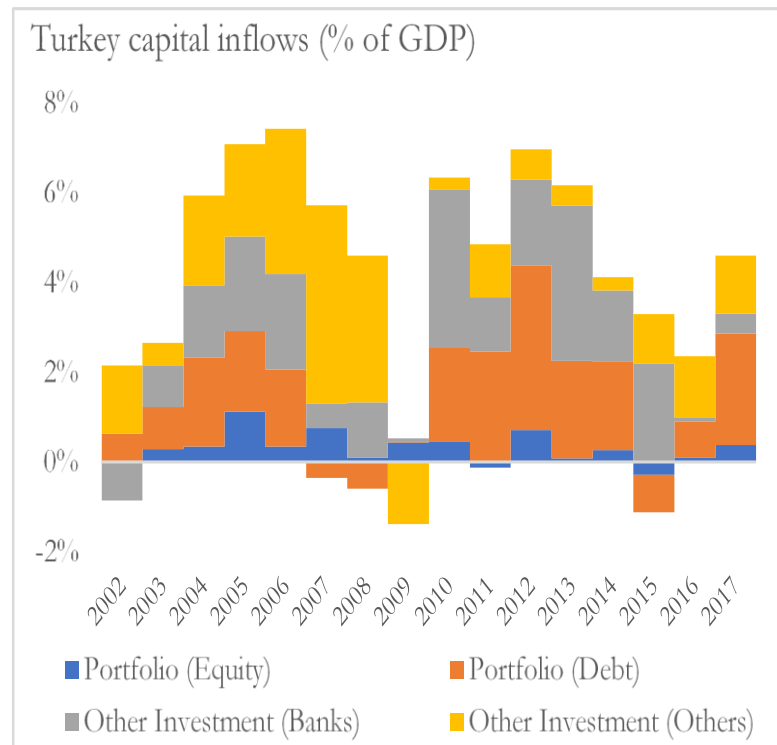


Sources: WDI, WB staff estimates

# Credit to the private sector highly procyclical driven by global monetary easing



Sources: WDI, WB Staff estimates

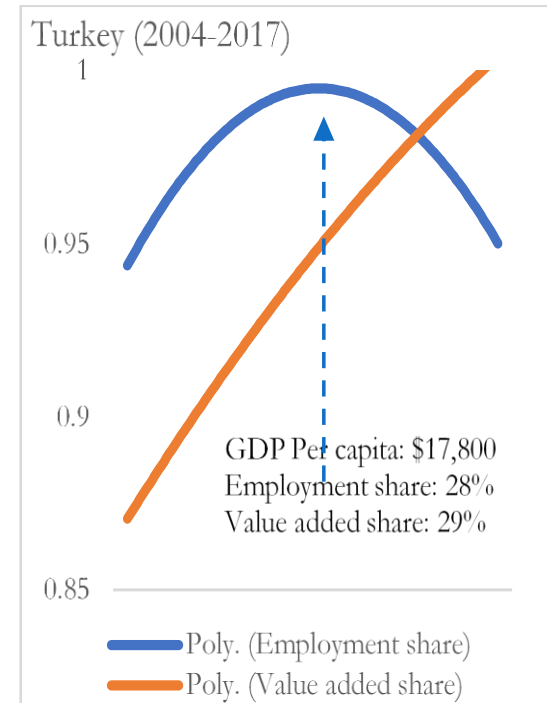
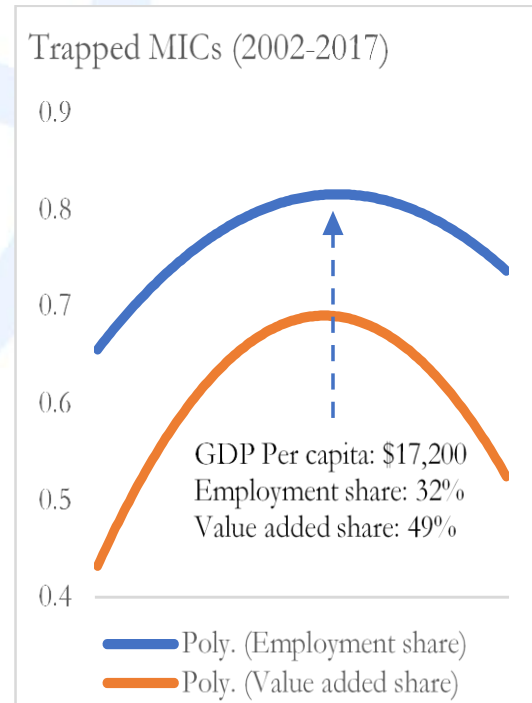
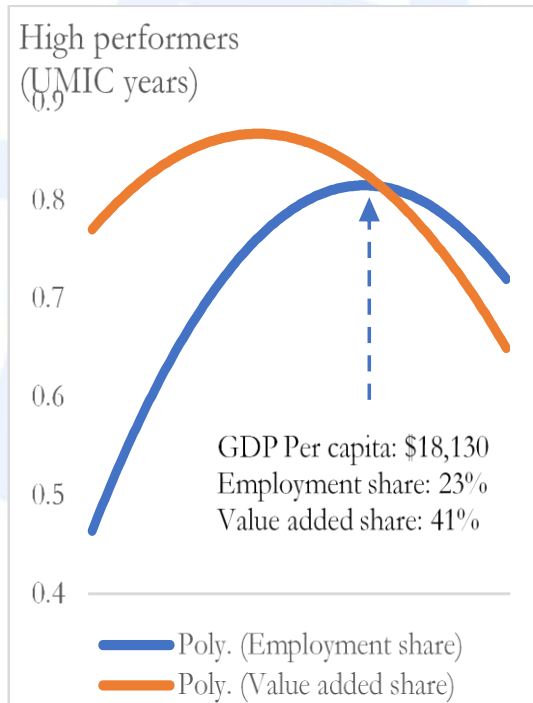


Sources: WDI, WB Staff estimates



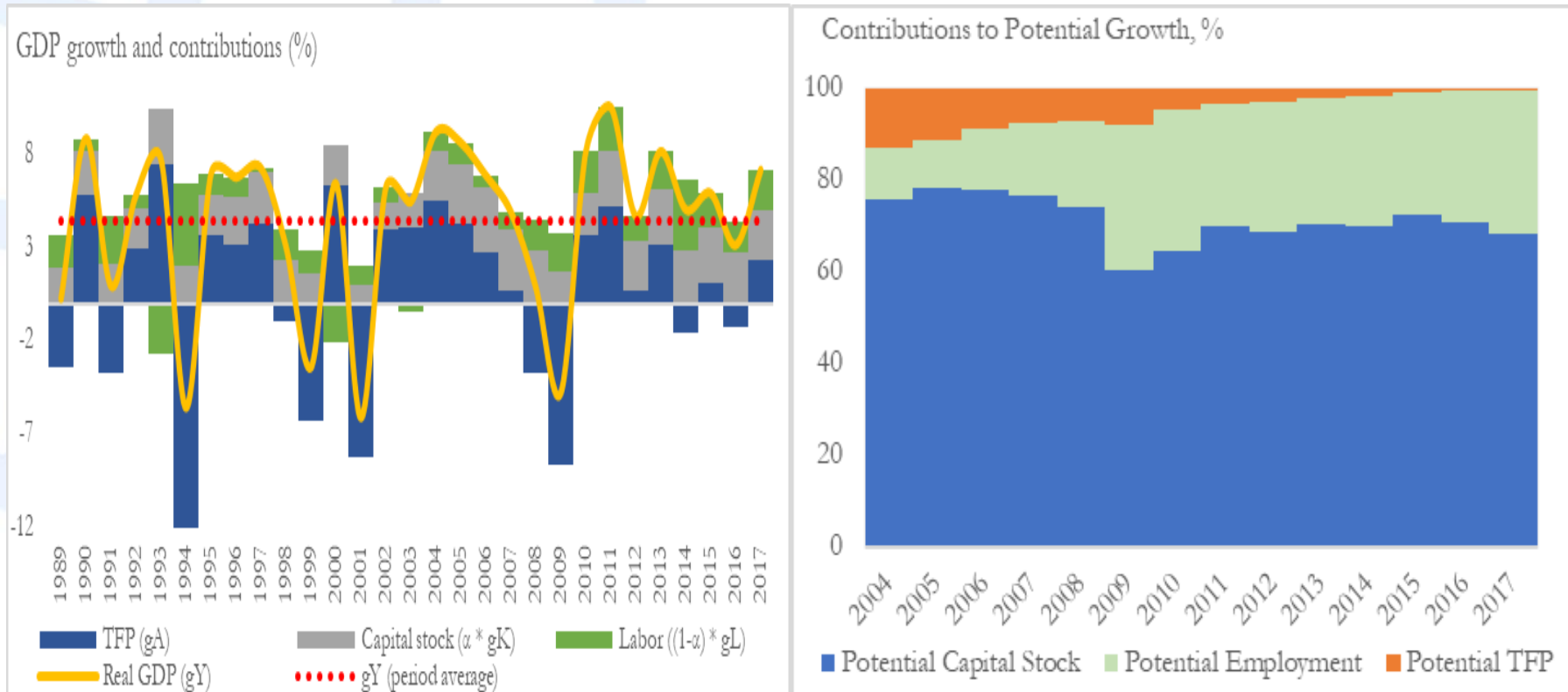
# Premature deindustrialization could limit growth sustainability

Trends in industrial employment and value-added shares during UMIC phase



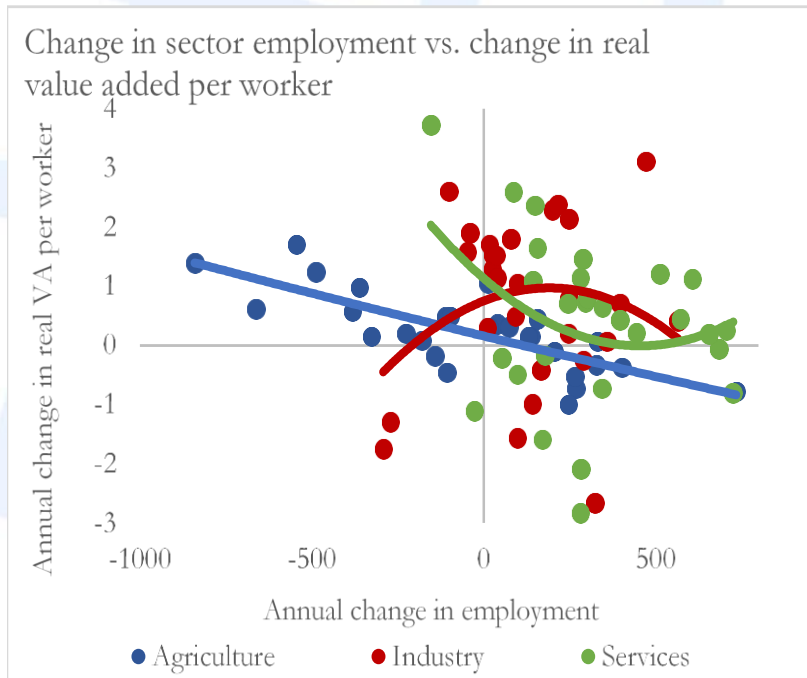
Sources: WDI, WB Staff estimates. GDP Per capita in PPP 2011 \$.

# Time for a productivity boost

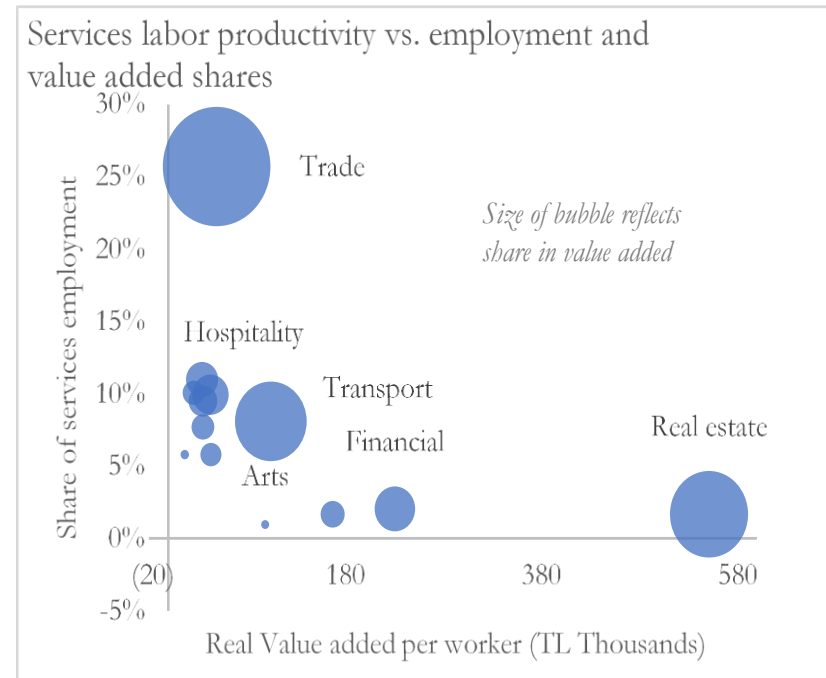


# Living standards will stagnate without TFP growth

Services are experiencing declining MPL



With more employment in low skill sectors



Sources: WDI, TURKSTAT, WB Staff estimates

# Key Messages

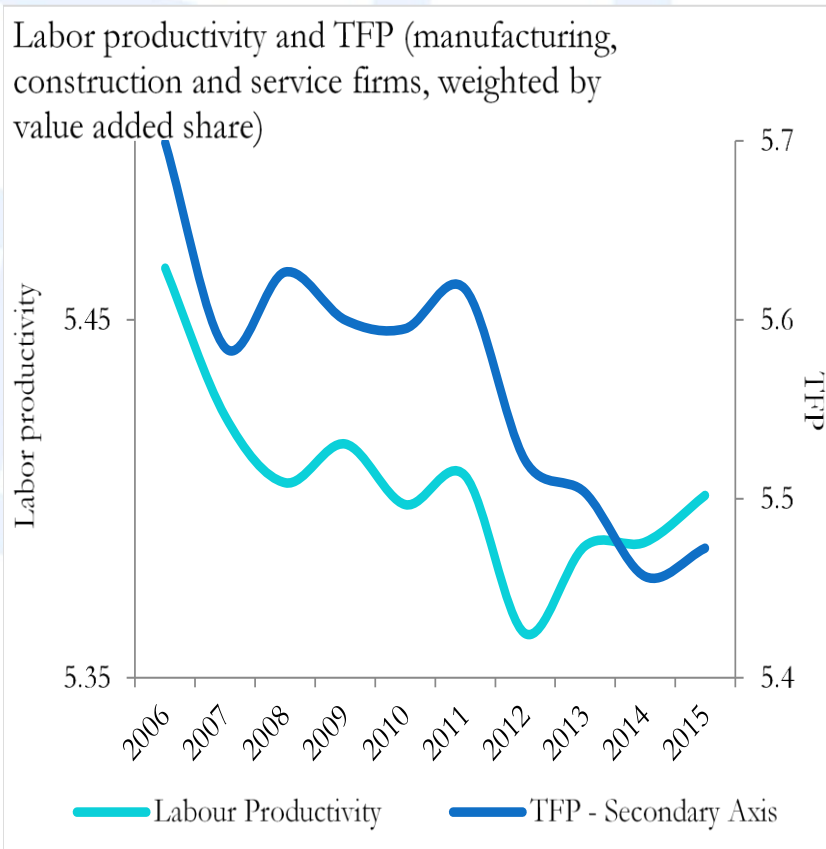
- Strong economic convergence with limits on sustainability.
- A productivity boost is needed to sustain improvements in living standards.
- Restoring macroeconomic stability is a precondition to accelerating TFP.
- Addressing competitiveness challenges to expand more sophisticated and skill intensive sectors through higher quality financing is critical.



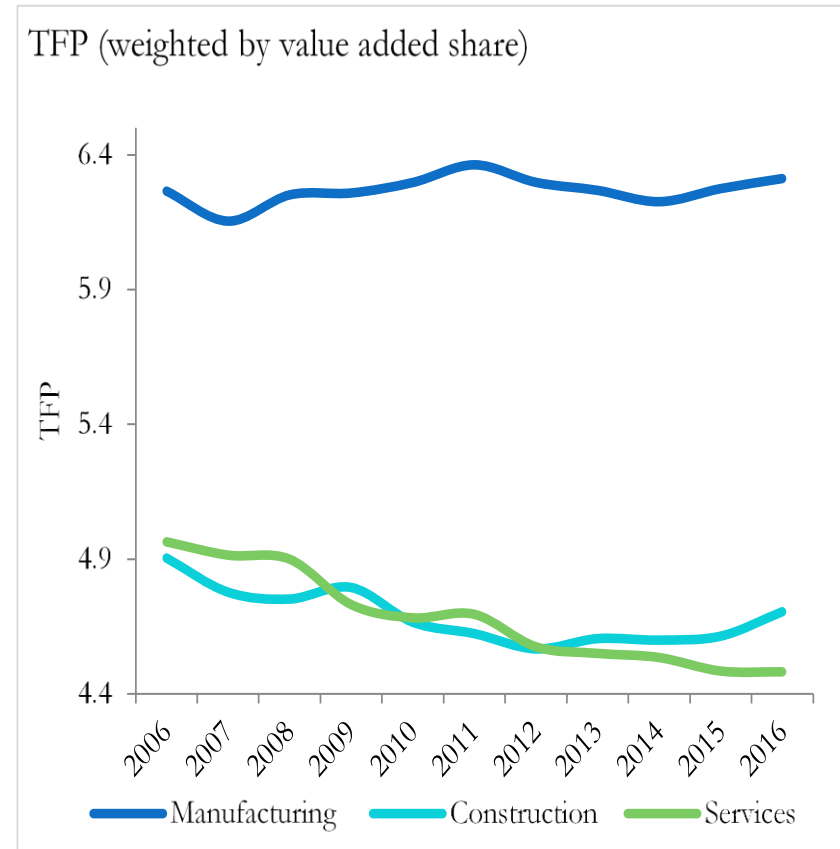
Micro Evidence

# Firm level productivity results consistent with macroeconomic trends

Declining TFP across all sectors



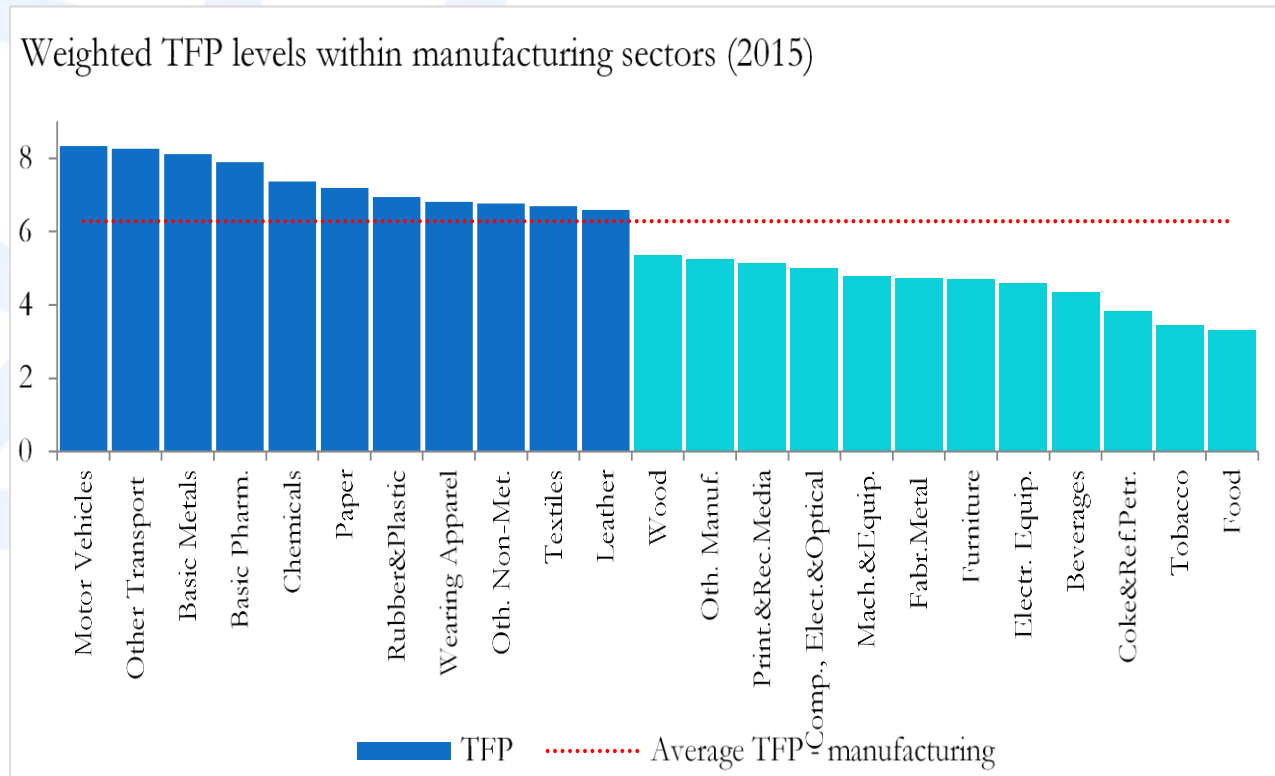
Manufacturing productivity slowdown is relatively lower



Sources: EIS, WB Staff estimates

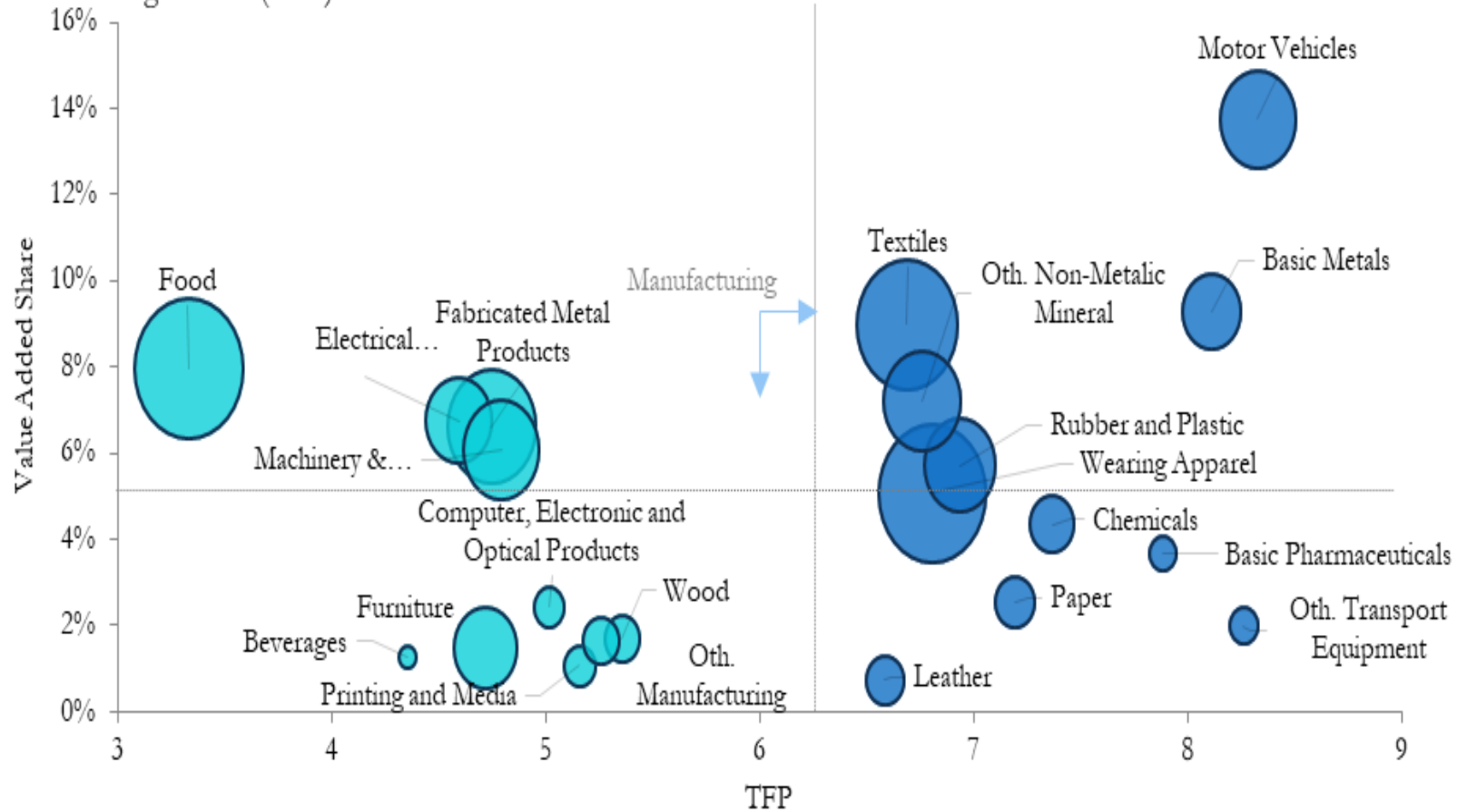
# Substantial variation in sub-sector productivity performance of manufacturing firms

TFP levels in tradable sectors are higher than non-tradable sectors



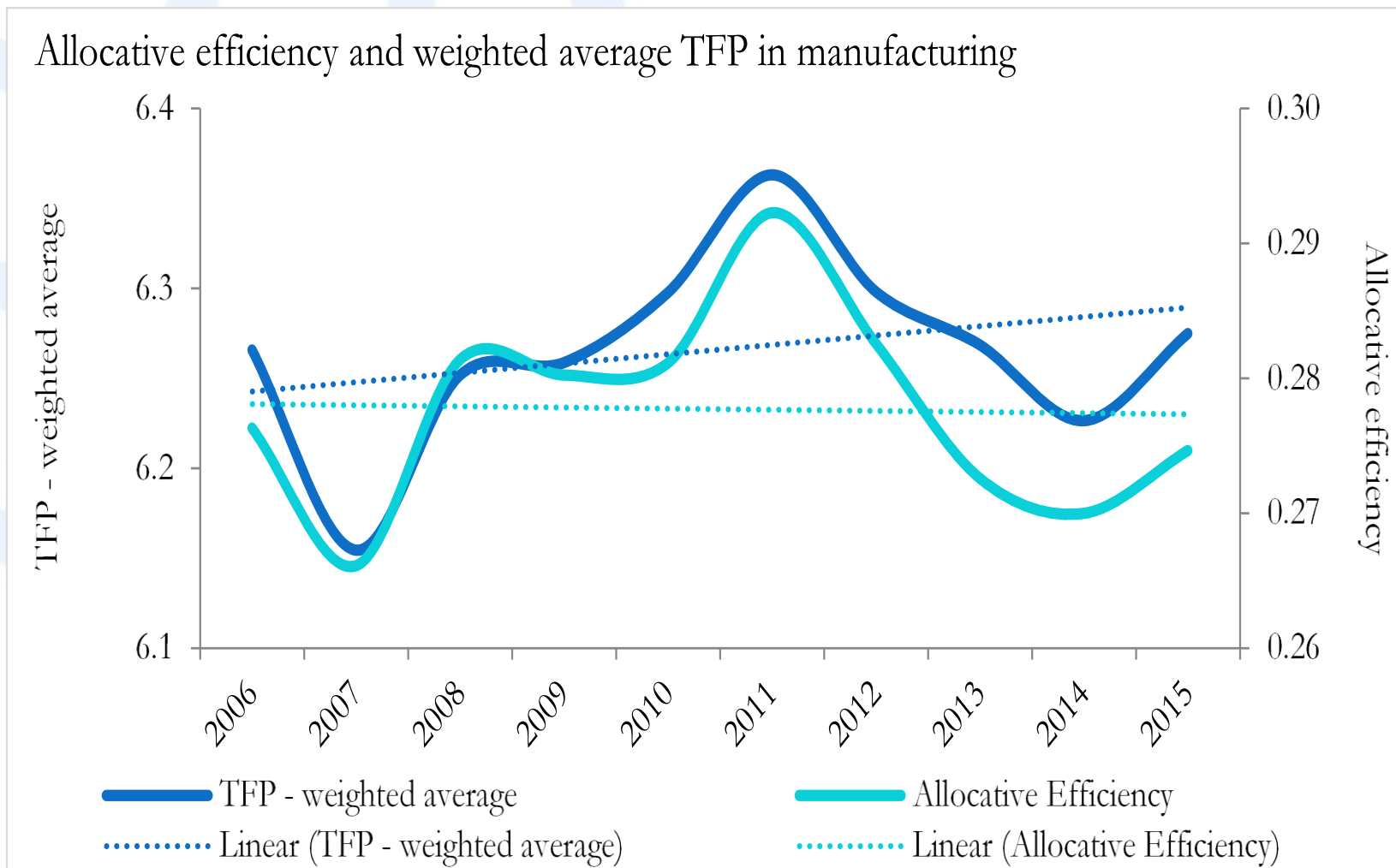
# Current productivity patterns within manufacturing, a drag on the growth of the manufacturing sector

Manufacturing: Weighted TFP levels vs. value added and employment shares within manufacturing sectors (2015)





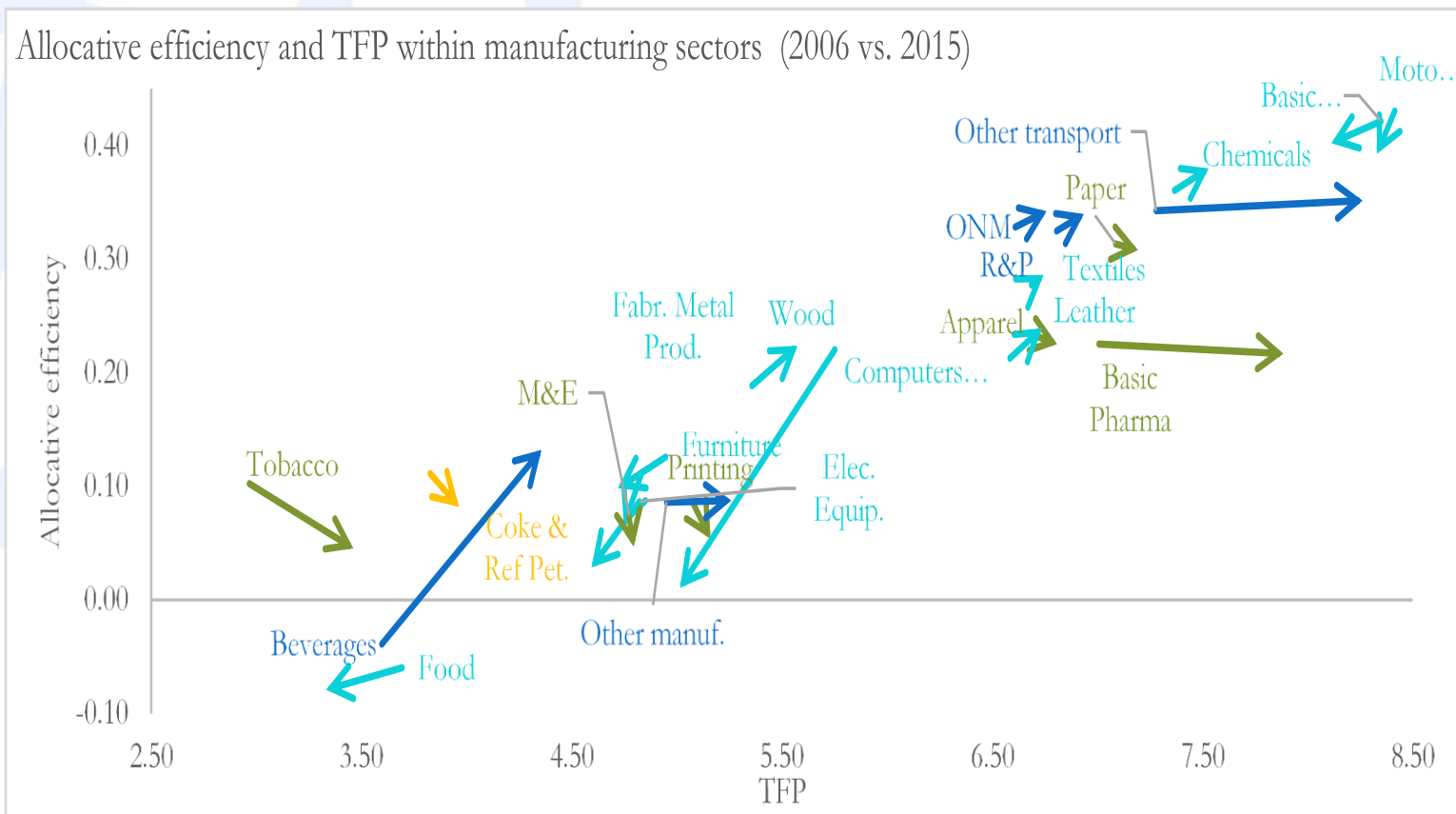
# Allocative efficiency in manufacturing positive but declining



Sources: EIS, WB Staff estimates

# Most efficient sectors have high TFP but experienced a drop in allocative efficiency

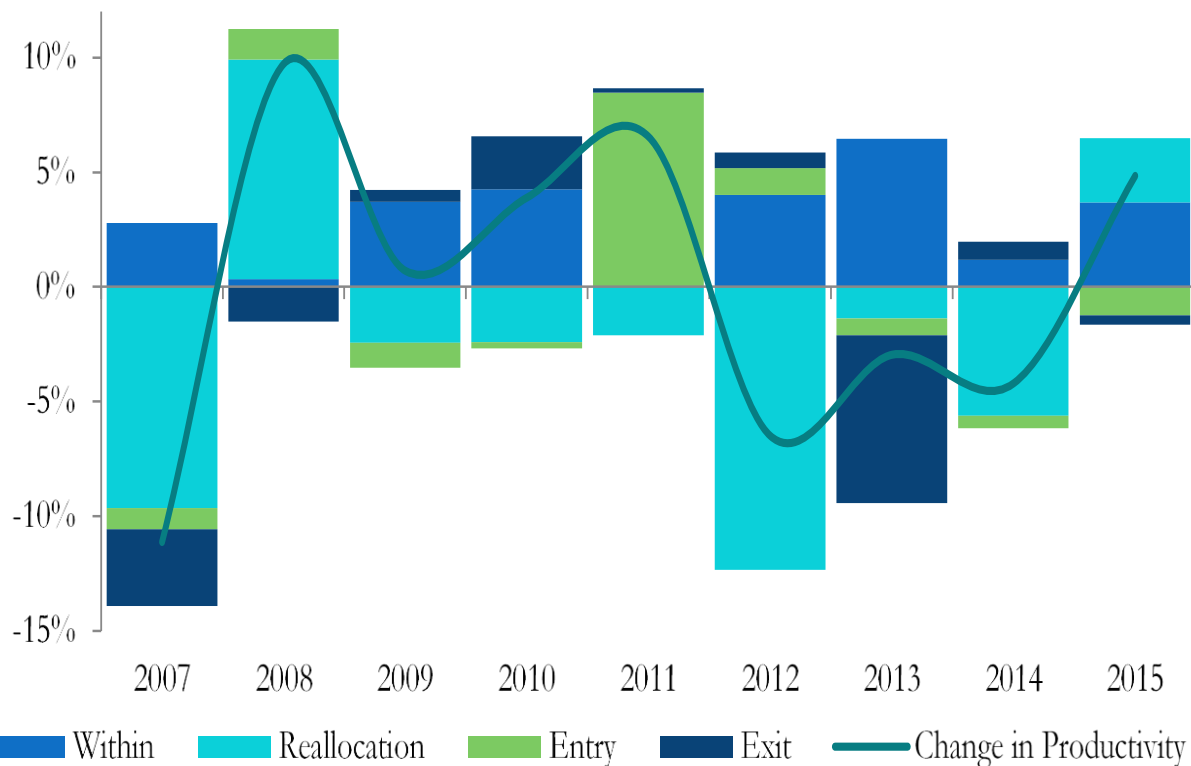
Figure 1: Most efficient sectors have high TFP but experienced a drop in allocative efficiency



Sources: EIS, WB Staff estimates

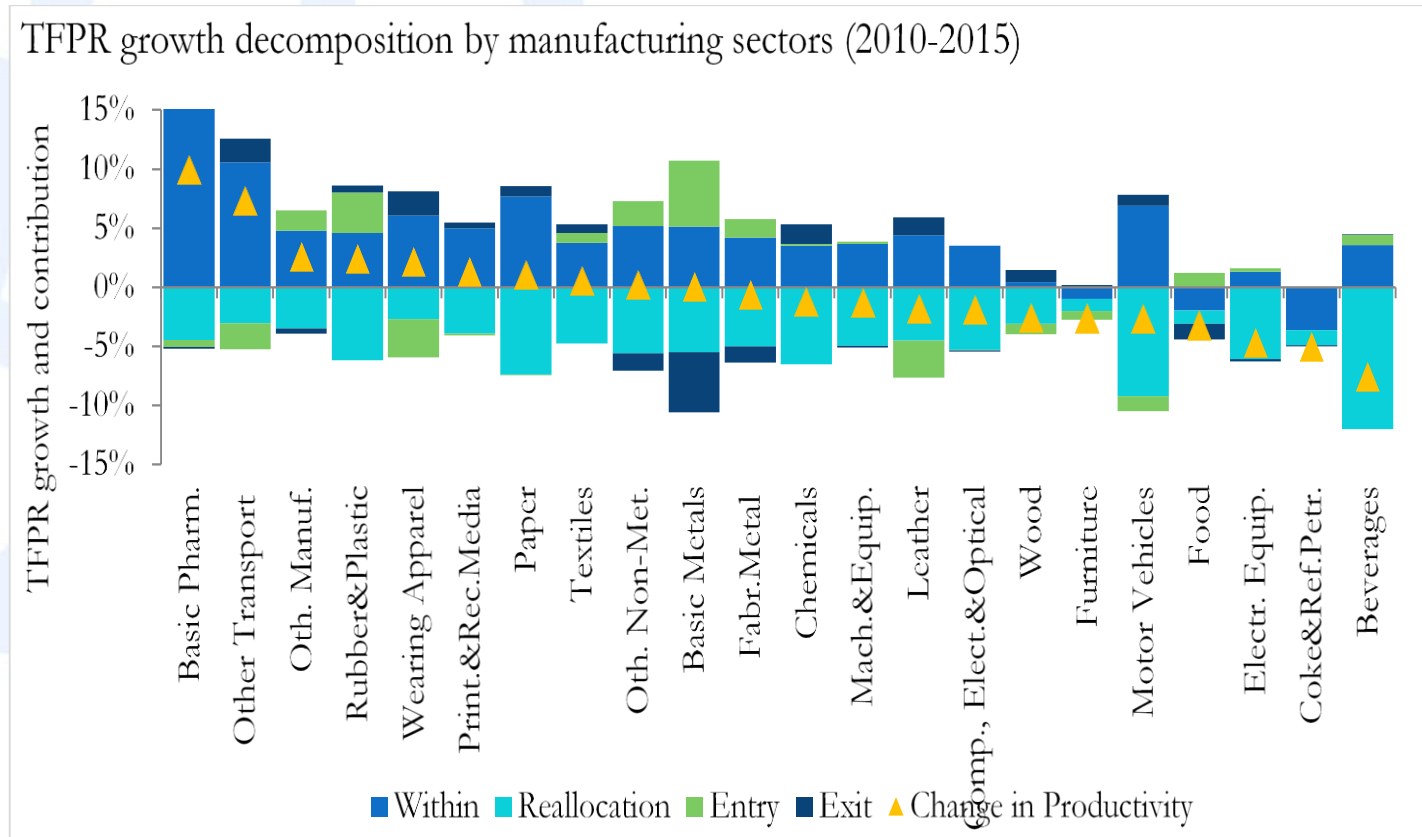
# Within firm productivity growth helps partially offset negative reallocation and net entry

Manufacturing TFP growth decomposition (2010-2015)



Sources: EIS, WB Staff estimates

# Negative reallocation and net entry effects are evident within manufacturing



Sources: EIS, WB Staff estimates

# Pro-development characteristics in the manufacturing sector in Turkey are defined by 6 criteria:

- (i) **Productivity:** Index of average productivity level in 2015 and productivity growth following the 2009 crisis. Indicates the sectors' potential for growth and convergence.
- (ii) **Employment:** Sector's share in employment and employment growth. Indicates the sectors' potential for job creation;
- (iii) **Value addition:** Sector's share in value added and value-added growth. Indicates the sectors' significance and growth performance.
- (iv) **Low skill employees:** Share of manual workers in total employment. Indicates the sectors' potential to employ low-skilled workers.
- (v) **Tradability:** Sector's export to sales ratio, number of exporter firms. Indicates demand beyond domestic market.
- (vi) **Innovation:** Number of firms engaging R&D and innovative activities. Scope for innovation and diffusion.

Draws on a combination of **Hallward- Driemeier and Nayyar (2018)** and Amirapu, A and Subramanian, 2015 “Manufacturing or Services: An Indian Illustration of a Development Dilemma,” Center for Global Development (Working Paper 409).

# Manufacturing Sub-sectors, by Pro-Development Characteristics

Nace 2-digit	TFP Index Value	Emp. Share	Δ in Emp. (2010-2015)	Value Added Share	Δ in Value Added (2010-2015)	Foreign Sales / Net Sales	Exporters / Number of Firms	R&D Active / Number of Firms	Innovative / Number of Firms	Share of Manual Workers in Total Empl.
<b>COMMODITY-BASED REGIONAL PROCESSING</b>										
Food	24.0	13.0%	7.2%	7.7%	4.1%	17.5%	13.2%	0.8%	1.3%	83%
Beverages	20.6	0.4%	10.0%	1.2%	5.0%	4.1%	35.9%	1.1%	3.3%	69%
Wood	69.4	1.6%	10.3%	1.6%	11.2%	8.8%	12.3%	0.6%	0.7%	90%
Fabricated Metal Products	67.8	8.7%	11.1%	6.3%	15.2%	18.7%	21.7%	1.2%	2.6%	88%
Paper	126.2	2.0%	10.1%	2.4%	10.9%	20.3%	39.7%	0.5%	2.5%	83%
Printing & Repr. of Recorded Media	88.5	1.2%	4.4%	1.0%	8.4%	7.7%	13.8%	0.3%	0.8%	76%
Rubber and Plastic	128.9	5.9%	10.7%	5.5%	11.8%	20.1%	28.6%	1.2%	4.3%	89%
Other Non-Metalic. Mineral	112.8	7.0%	9.8%	6.9%	10.4%	11.6%	20.2%	1.1%	1.4%	87%
Basic Metals	139.8	4.0%	8.3%	8.9%	7.3%	28.3%	31.8%	1.7%	2.4%	84%
<b>CAPITAL-INTENSIVE REGIONAL PROCESSING</b>										
Chemicals	118.3	2.3%	7.7%	4.2%	7.2%	17.9%	42.9%	3.4%	2.8%	73%
<b>LOW-SKILL LABOR INTENSIVE TRADABLES</b>										
Textiles	113.4	11.3%	10.7%	8.6%	10.3%	17.4%	30.5%	0.7%	2.5%	90%
Wearing Apparel	125.4	12.9%	8.8%	4.9%	10.3%	35.6%	25.6%	0.3%	1.2%	84%
Leather	97.7	1.8%	8.8%	0.7%	7.9%	12.9%	27.4%	0.3%	3.0%	87%
Furniture	56.6	4.6%	11.2%	1.4%	9.0%	11.9%	21.0%	0.3%	5.4%	87%
Other Manufacturing	97.3	1.7%	7.2%	1.3%	13.0%	30.7%	31.2%	2.0%	3.6%	77%
<b>MEDIUM-SKILL GLOBAL INNOVATORS</b>										
Machinery and Equipment n.e.c.	64.8	6.6%	12.3%	5.8%	18.3%	27.6%	43.0%	4.1%	4.5%	83%
Motor Vehicles, Trailers & Semi-trailers	126.9	6.5%	9.5%	13.2%	6.5%	41.2%	41.4%	5.2%	5.6%	65%
Other Transport Equipment	184.2	1.0%	7.7%	1.9%	14.0%	59.4%	40.2%	5.1%	3.8%	75%
Electrical Equipment	40.6	5.0%	8.8%	6.5%	3.9%	38.5%	35.7%	3.4%	5.0%	81%
<b>HIGH-SKILL GLOBAL INNOVATORS</b>										
Computer, Electronic & Optical Products	65.3	1.2%	8.0%	2.3%	8.6%	45.0%	42.8%	11.3%	6.3%	41%
Basic Pharmaceuticals	191.0	0.9%	0.2%	3.5%	14.1%	12.2%	53.3%	17.8%	7.6%	28%

# 3Cs and Risk of Turkish manufacturing sectors

Sectors	Competitiveness, capabilities and connectedness priorities	Risk of disruption in Turkey
Transport equipment, electronics, pharmaceutical, electrical machinery, machinery and equipment n.e.c and manufacturing n.e.c	All 3Cs needed	Higher risk
Textiles, Apparel and Leather Products	Higher competitiveness and high connectedness needed	Medium to high risk
Rubber and Plastics, Fabricated Metals	High capabilities needed	Low risk
Food and Beverages, coke and refined petroleum	Higher competitiveness needed	Medium to high risk
Wood, paper, basic metals, non-metallic mineral products	No significant change anticipated	No risk

Sources: Adapted from Hallward- Driemeier and Nayyar (2017).

**Competitiveness** factors consider the efficiency of the business environment to offset increased labor costs (indicators include ease of doing business, the rule of law, and the use of mobile technologies to complete financial transactions);

**Capability** factors consider the ability of workers and firms to adopt and use new technologies (indicators include ICT use, tertiary school enrolment rates, and the share of royalty payments and receipts in trade)

**Connectedness** factors look at not only shifts in international trade, but also the cross sector synergies needed for success in manufacturing (indicators include logistics performance, restrictions on trade in manufactured goods, and the restrictions on trade in professional services).

# Key Messages

- Manufacturing: some breakout sectors but overall productivity has remained flat in the past decade.
- Services experiencing declining allocative efficiency and within sector productivity growth
- A few sectors stand out as having potential for acting as growth escalators, but progress is needed on competitiveness, capabilities, and connectedness.
- The current situation calls for urgent structural reforms to deepen supply side capacity.





*“Productivity isn't everything, but, in the long run, it is almost everything”*

Paul Krugman (1994)