



Asia and Pacific Department

2017 MOSF-BOK-IMF-PIIE International Conference
Prospects and Challenges for Sustained Growth in Asia

China: Impact of Structural Changes on Long-Term Growth

Discussant:

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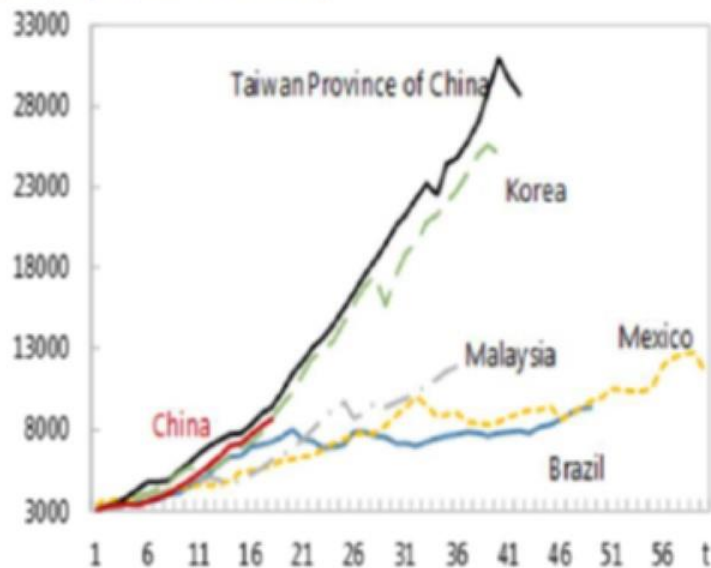
Roadmap

- Context
- Model
- Caveats
- Policies

To be or not too be?

China Income Convergence at Cross Road

(GDP/Capita, in PPP U.S. dollars)

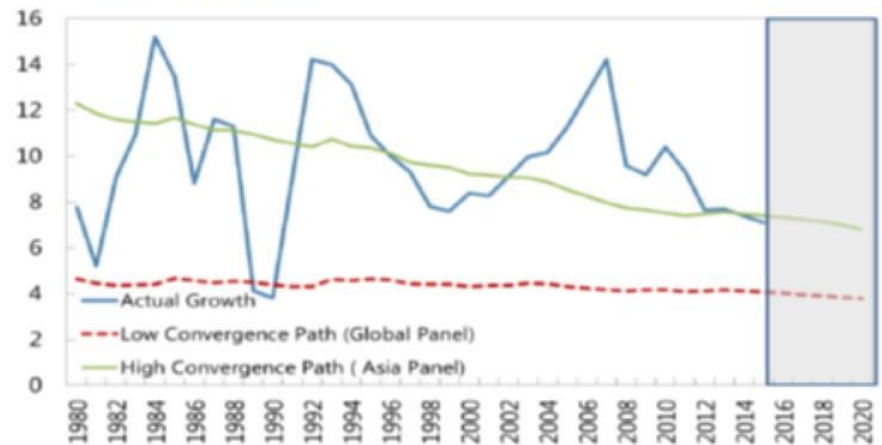


Source: Aljar et al (2013)

¹ $t=0$ is defined as the year when the GDP per capita for a particular country reached 3000 U.S. dollars in PPP terms.

China - Actual vs. Predicted Convergence Path

(GDP/Capita, in percent)



Sources: IMF Staff Estimates.

Diverging views

- Bulls: 7 percent and above (Lin)
 - Bears: Below 5 percent (Barro)
 - Goldilocks: 5-7 percent (Cai, Maliszewski)
- Different methodologies:
 - Growth miracle—reference convergence of East-Asia
 - Mean reversion-reference convergence of an average country
 - China specific production function

China's long-run growth: DSGE analysis

Structural changes

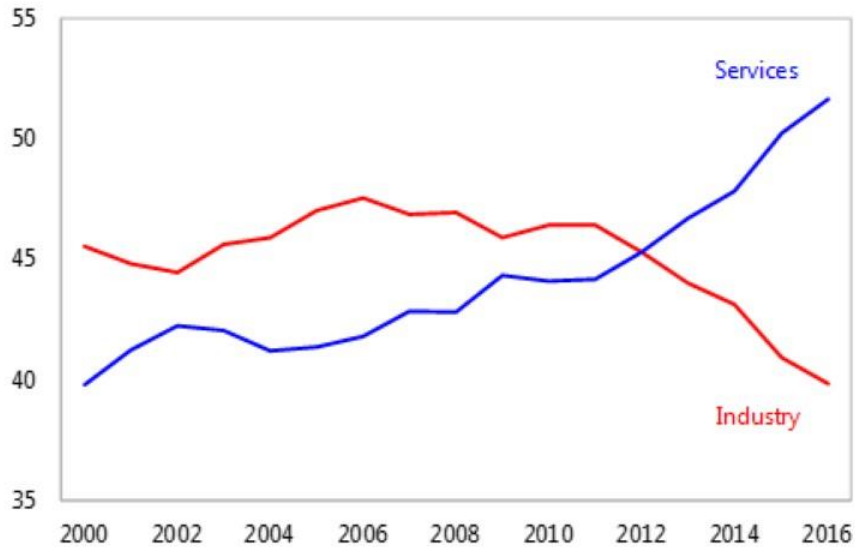
- Quantified impact of structural changes on potential growth
 - Demographic changes
 - Shift to services
 - Environmental cost
 - SOE reform

Methodology

- DSGE model with both SOE and non-SOEs, captures general equilibrium effect
- Calibration a bit challenging
- Reasonable results, growth slows to 5 percent after two decades

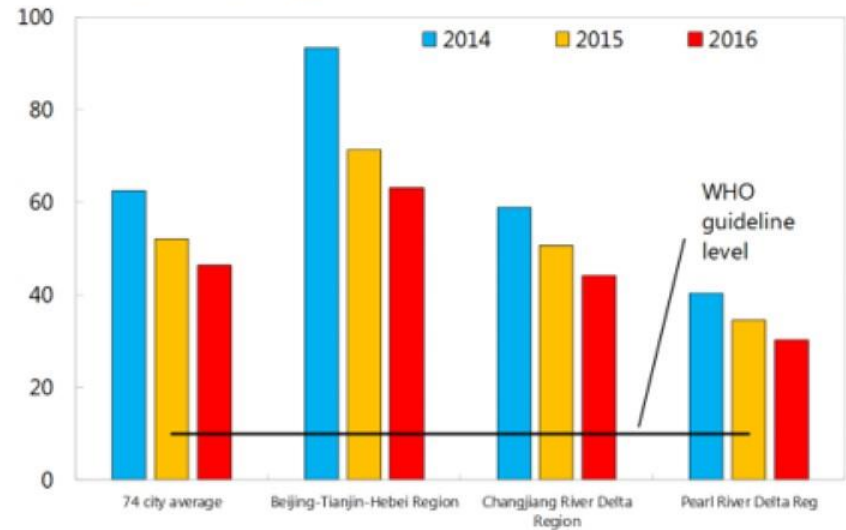
Services and the environment

GDP by Production
(In percent of nominal GDP)



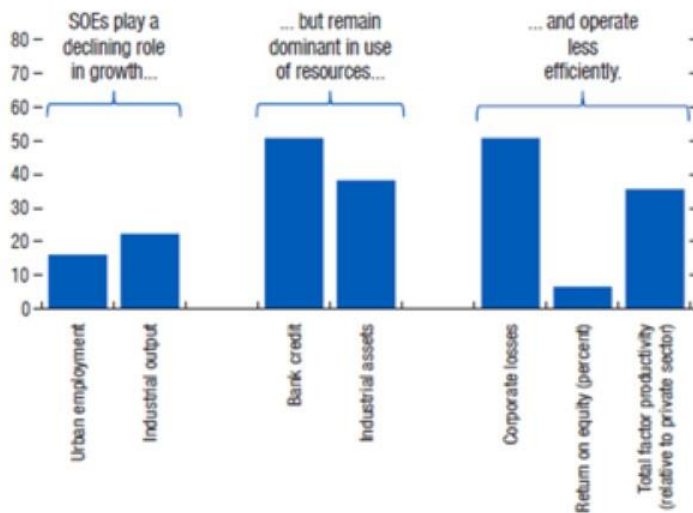
Air Pollution

(PM2.5 concentration, in mcg/Cub m)



Reforming SOEs and resolving zombies critical

Figure 11.1. SOEs Dominate Resource Use and Operate Less Efficiently
(SOEs' share of total unless otherwise stated¹)



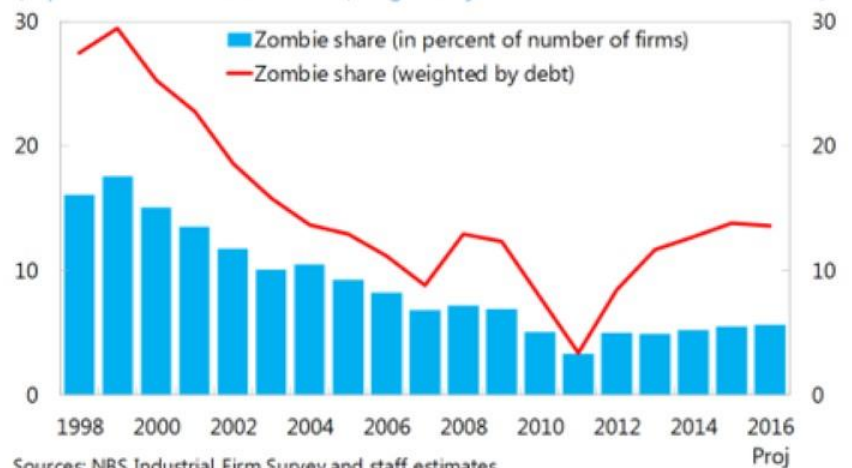
Sources: CEIC; Ministry of Finance; National Bureau of Statistics; People's Bank of China; WIND; and IMF staff estimates.

Note: SOE = state-owned enterprise.

¹ Sample period as of end-2015 where data are available. Bank credit and total factor productivity are average between 2011 and 2015.

Nonviable Zombie Firms are Rising Again 1/

(In percent of total industrial firms, weighted by number of firms and total liabilities)



Sources: NBS Industrial Firm Survey and staff estimates.

1/ Data for 2010 are missing and based on average of 2009 and 2011. Estimates are average between two definitions of zombies (State Council and Fukurama and Nakamura (2001). Nonviable zombie firms are those whose liquidation value is greater than their value as a going concern, taking into account potential restructuring.

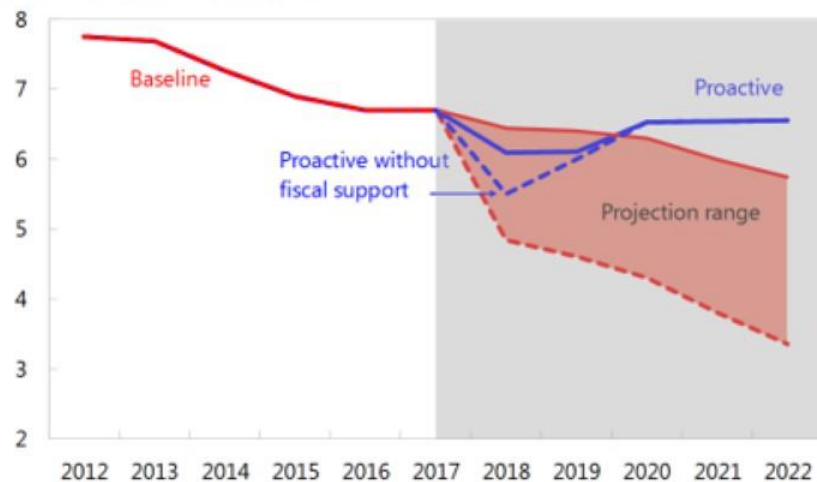
Some potential caveats

- **Impact of SOE reform**
 - Estimates based on micro data suggests somewhat larger gain from SOE reform, smaller effect by the author may reflect calibration (especially capital stock of SOE vs. non-SOE)
- **Impact of labor supply**
 - What explains the much larger effect of labor supply in this model compared to those in standard production function analysis?
- **Impact of sectoral transition**
 - The model does not capture the manufacturing and service sector explicitly
- **Impact of environmental cost**
 - Environment cost is modeled as a mark-up shock, which will directly lead to higher inflation, how this will then affect real output seems to depend on CB reaction function. If CB tolerates a somewhat higher inflation, no necessarily impact long-term growth.

Higher growth rates in the medium term, but...

Real GDP Growth Scenarios

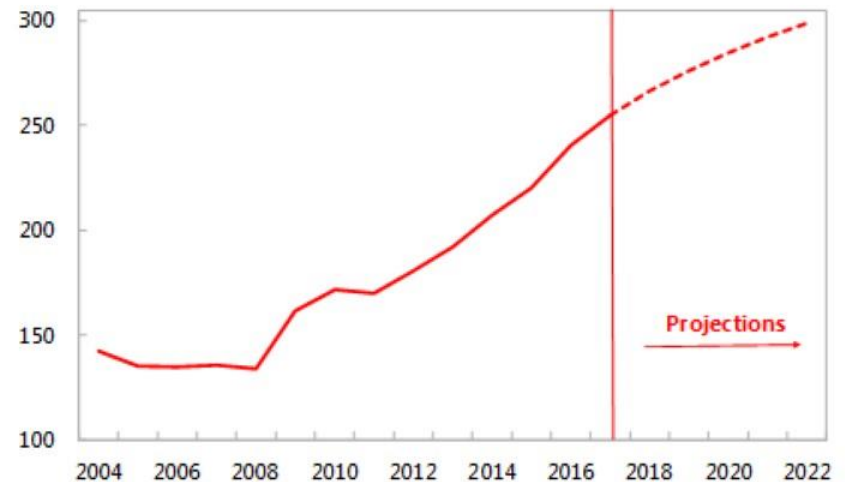
(In percent, year-on-year growth)



Sources: CEIC Data Company Ltd.; and IMF staff estimates and projections.

Non-Financial Sector Debt

(In percent of GDP)



Sources: Haver Analytics; and IMF staff estimates.

Thank you!