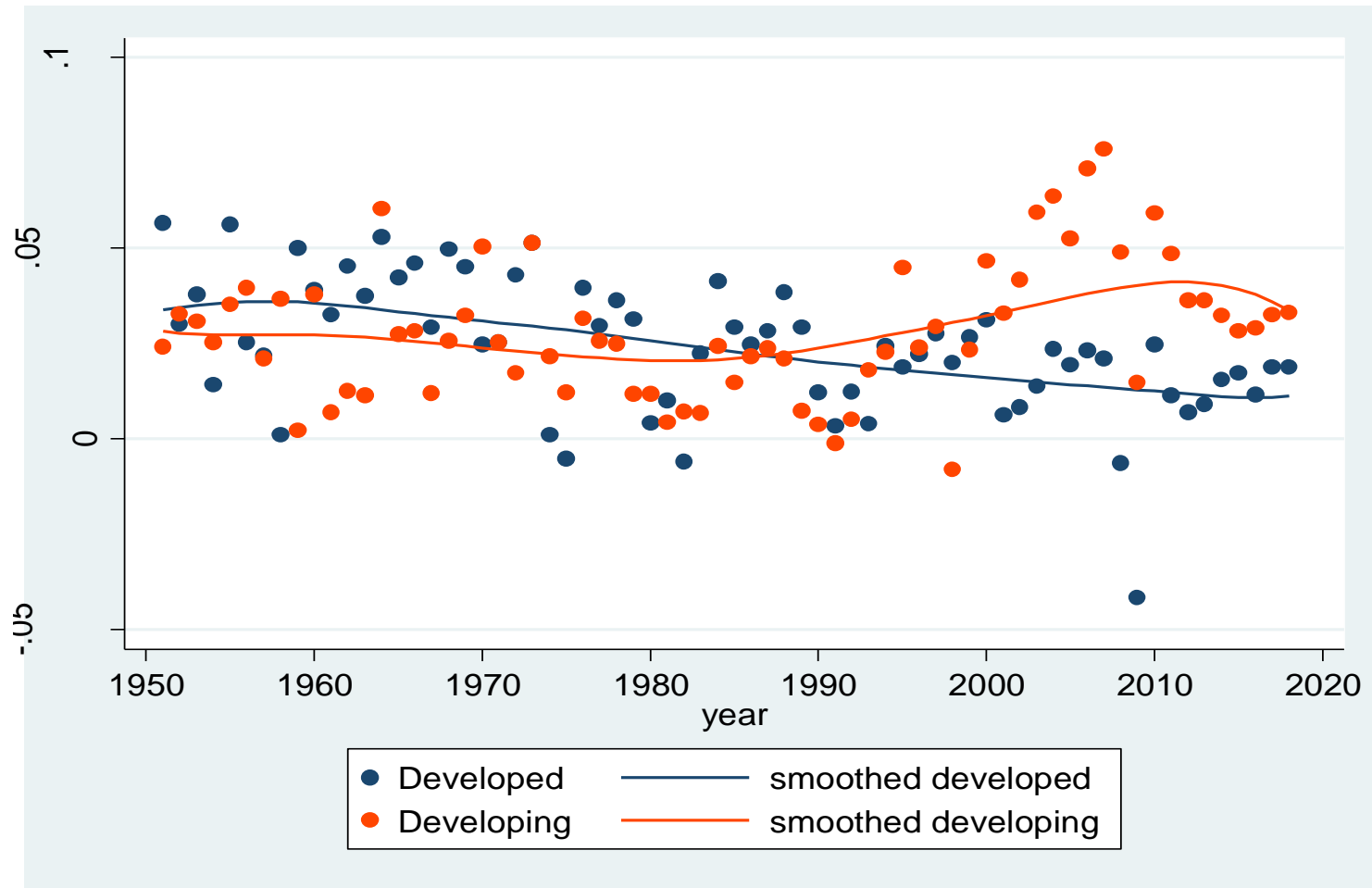


The End of Growth Miracles

Dani Rodrik

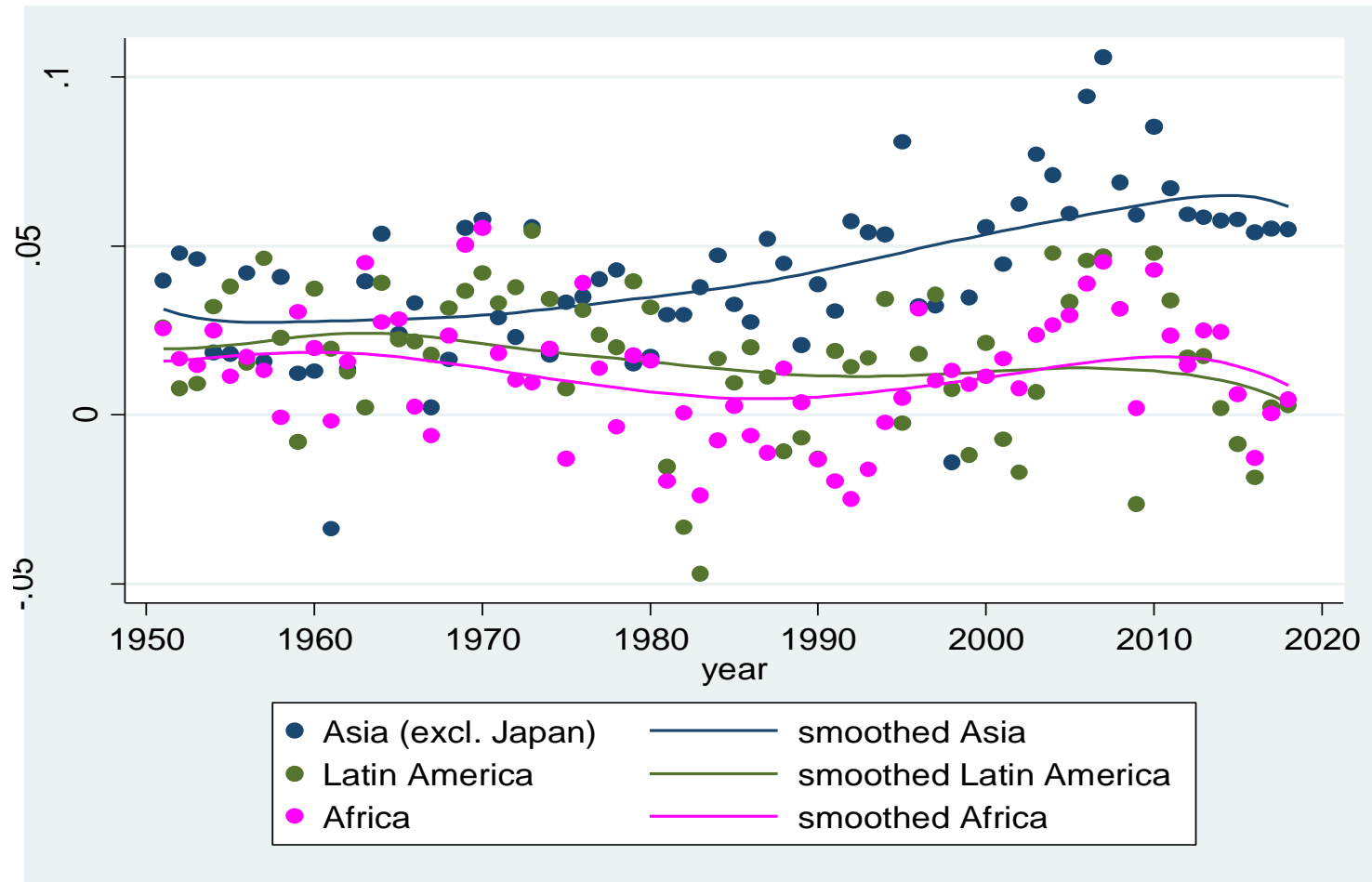
July 2019

Global growth trends since 1950



Growth trends in developed and developing countries 1950-2018
(per-capita GDP)

Growth trends – by region



Growth trends in developing regions since 1950 (per-capita GDP)

Some (traditional) growth miracles

	period	average growth rate (per capita)
Italy	1945-1973	6.1%
Spain	1945-1973	4.6%
Japan	1945-1973	7.6%
S. Korea	1959-1997	6.2%
Taiwan	1958-1988	6.4%
Malaysia	1971-1995	5.0%
Mauritius	1971-1991	4.6%
China	1978-2010	6.6%

Long-term growth rate of U.S.: 2%

Low-income countries, 1966-2015: 0.7%

Recent high-growth episodes

Country	Initial year of growth acceleration (t)	growth in pre-accel'n period (t-6, t)	growth in post-accel'n period (t, t+6)	Differences in pre- & post-accel'n periods (4)	Whether GDP pc in post-accel'n period \geq max in pre-accel'n period (5)	Growth after 7-years' growth acceleration (t+6, 2014) (6)
	(1)	(2)	(3)	(4)	(5)	(6)
→ ETH	2000	1.13	3.71	2.59	Yes	7.95
GHA	1984	-5.23	2.02	7.25	Exceeded in 1999	2.85
KEN	2003	-0.34	2.08	2.42	Exceeded in 2004	3.04
MWI	2002	-1.51	3.60	5.11	Exceeded in 2006	0.35
NGA	2000	0.30	7.61	7.31	Yes	3.21
SEN	1995	-1.65	2.23	3.88	Exceeded in 1999	0.98
ZAF	2001	0.98	3.10	2.12	Yes	0.83
TZA	1998	0.67	3.50	2.83	Yes	3.13
ZMB	2000	0.64	3.77	3.13	Yes	4.60
→ IND	1983	1.52	3.59	2.07	Yes	4.93
ARG	1992	-0.54	2.80	3.34	Yes	2.98
BRA	2002	0.50	3.00	2.50	Yes	2.90
CHL	1988	2.66	6.25	3.59	Yes	3.02
COL	2001	-0.79	3.66	4.45	Exceeded in 2003/04	3.19
MEX	1996	-0.12	2.28	2.40	Exceeded in 1997/98	0.92
→ PER	2002	0.76	5.47	4.71	Yes	4.17
VEN	2001	-1.11	4.20	5.31	Exceeded in 2005/06	-0.18
BOL	2003	0.34	2.93	2.59	Yes	3.77
CRI	2002	2.59	4.76	2.17	Yes	3.23

Source: Diao, McMillan, and Rodrik (2017)

Outline

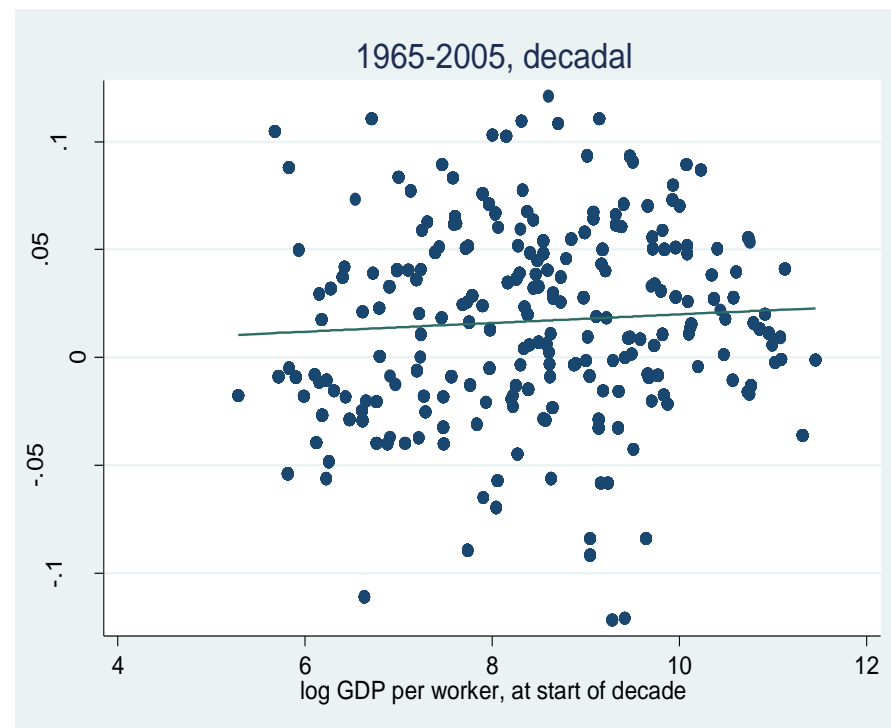
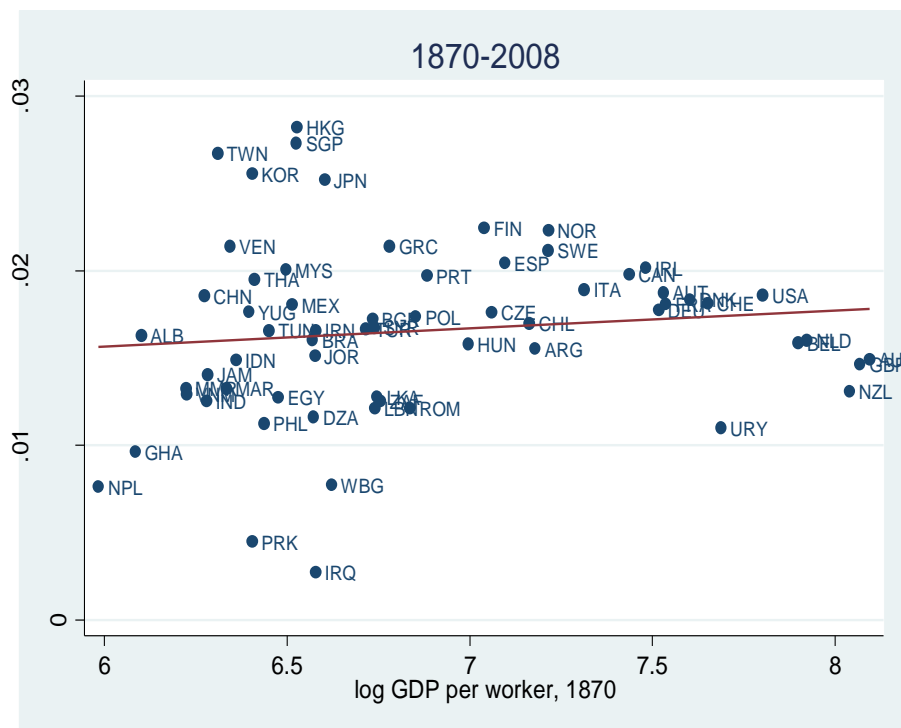
- Growth miracles are special
- Role of manufacturing
- Premature de-industrialization
- Alternative paths?
- Why recent growth spurts may not be sustainable

Standard theory has trouble with Growth Miracles

- Convergence to the productivity frontier?
 - no evidence in the data of (unconditional) convergence
- Conditional convergence?
 - too slow to account for rapid growth
- Good policies, institutions, or luck?
 - miracle countries typically not blessed by advantageous initial conditions
 - nor distinguished by particularly good policies by orthodox criteria

Convergence to the frontier?

No evidence in the data of (unconditional) convergence $\hat{y}_j = \gamma(\ln y^* - \ln y_j)$

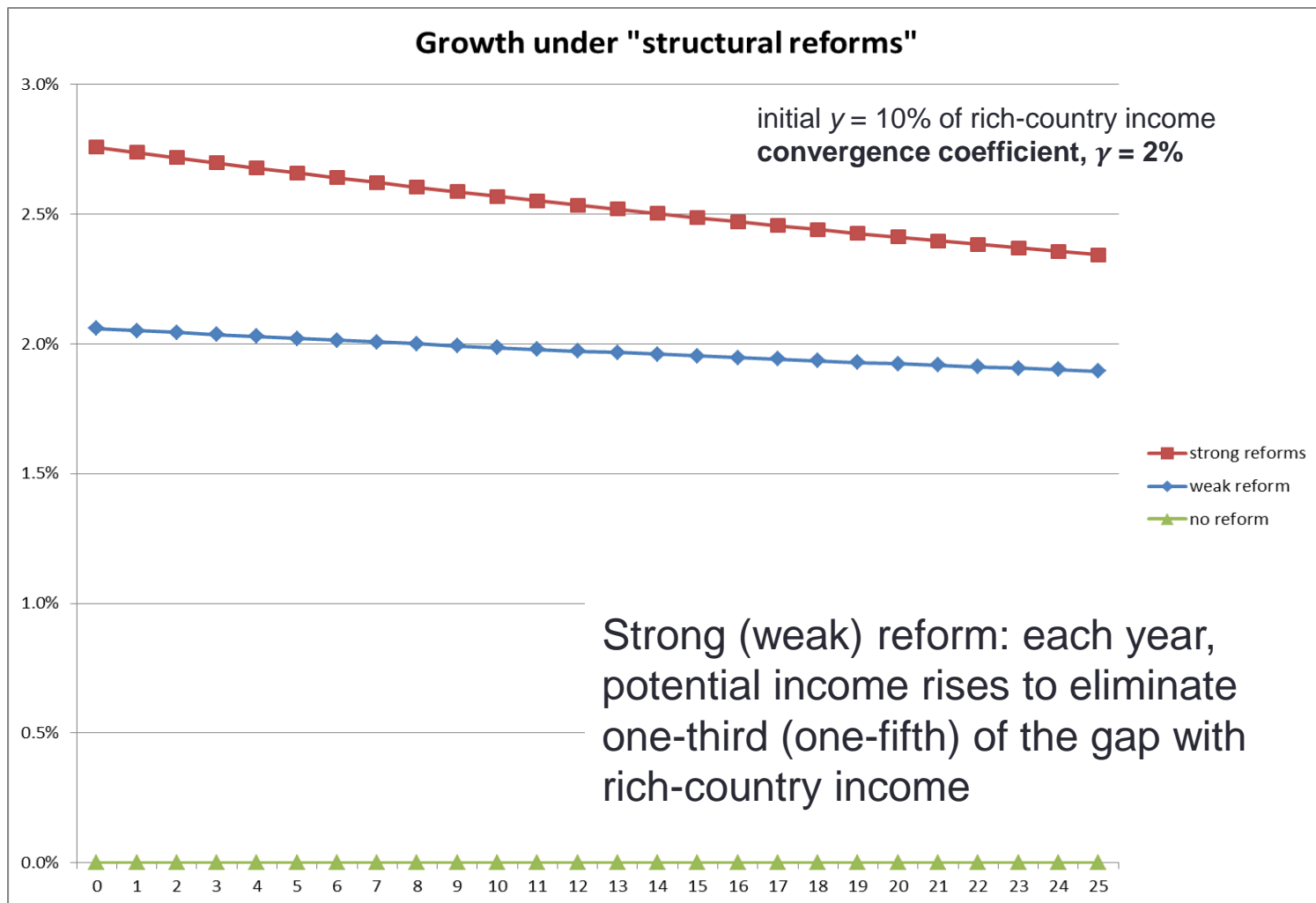


Notes: For RHS chart, variable on the vertical axis is growth of GDP per worker over four separate decades (1965-1975, 1975-1985, 1985-1995, 1995-2005), controlling for decadal fixed effects.

Source: Rodrik (2013), using data from Maddison (2010) and PWT 7.0 (2011).

Conditional convergence?

Too slow to account for rapid growth $\hat{y}_j = \gamma(\ln y^*(\theta_j) - \ln y_j)$



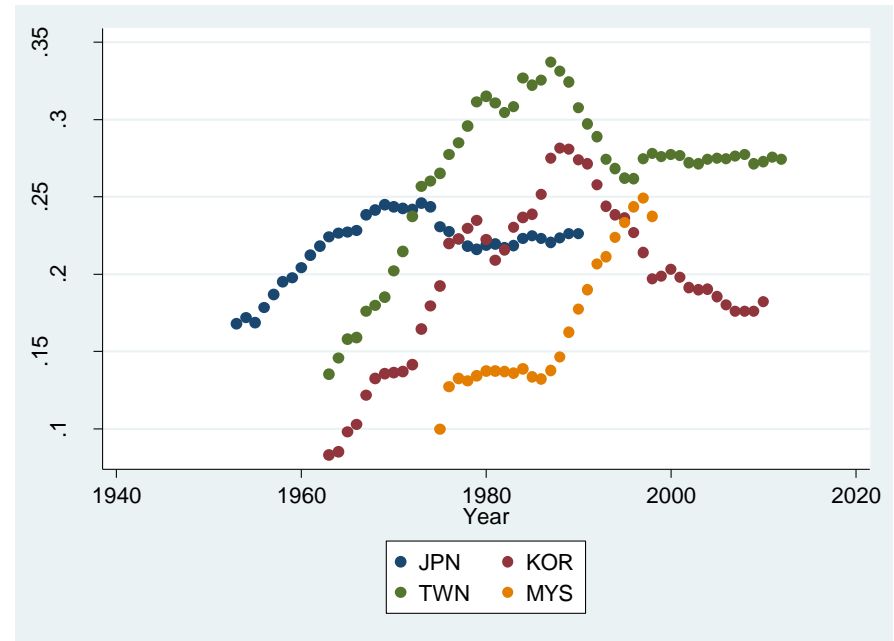
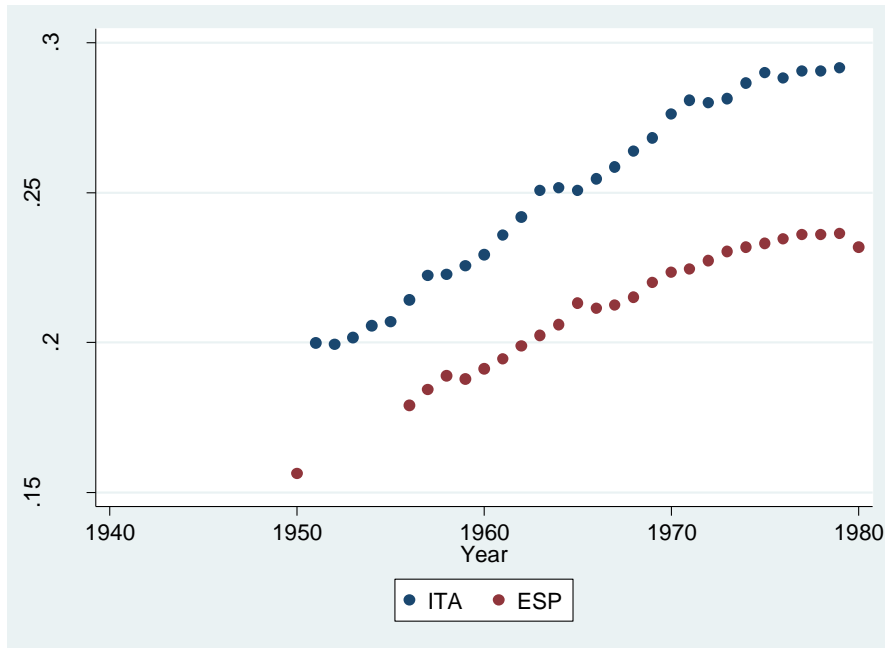
Exceptionally good policies, institutions, or luck?

Miracle countries typically not blessed by advantageous initial conditions, nor distinguished by particularly good policies by orthodox criteria

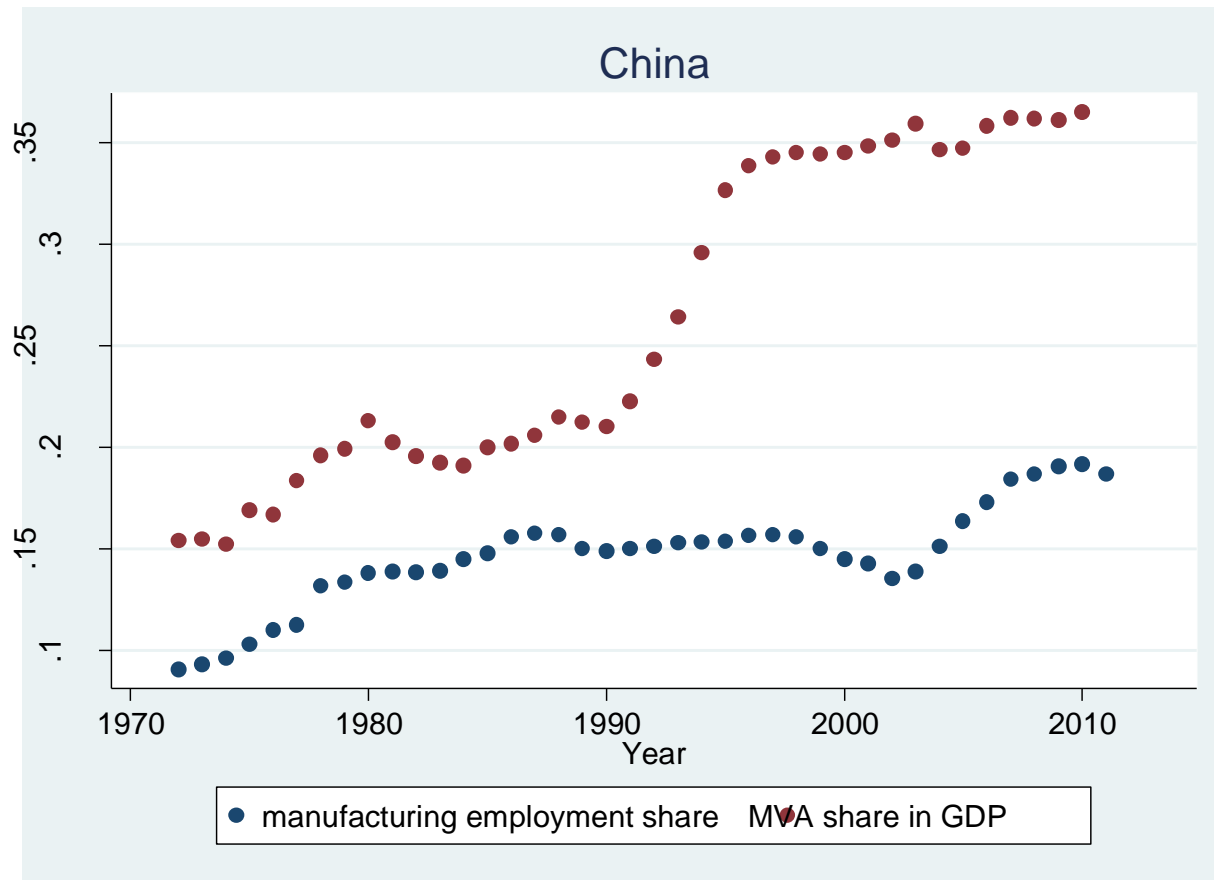
East Asian “Heresies”

Institutional domain	Washington Consensus ideal	“East Asian” pattern
Property rights	Private, enforced by the rule of law	Private, but govt authority occasionally overrides the law (esp. in Korea).
Public finance	Sound money, fiscal prudence	Sound money, fiscal prudence
Corporate governance	Shareholder (“outsider”) control, protection of shareholder rights	Insider control
Business-government relations	Arms’ length, rule based	Close interactions
Industrial organization	Decentralized, competitive markets, with tough anti-trust enforcement	Horizontal and vertical integration in production (chaebol and keiretsu); government-mandated “cartels”
Financial system	Deregulated, securities based, with free entry. Prudential supervision through regulatory oversight.	Bank based, restricted entry, heavily controlled by government, directed lending, weak formal regulation.
Labor markets	Decentralized, de-institutionalized, “flexible” labor markets	Lifetime employment in core enterprises (Japan)
International trade	free	Restricted in a selective and discretionary manner (until late 1980s).
International capital flows	“prudently” free	Restricted (until the 1990s)
Industrial policy	none	Plenty (credit subsidies, tax incentives, trade protection, export subsidies, etc. on a selective basis).
Public ownership	None in productive sectors	Plenty in upstream industries.

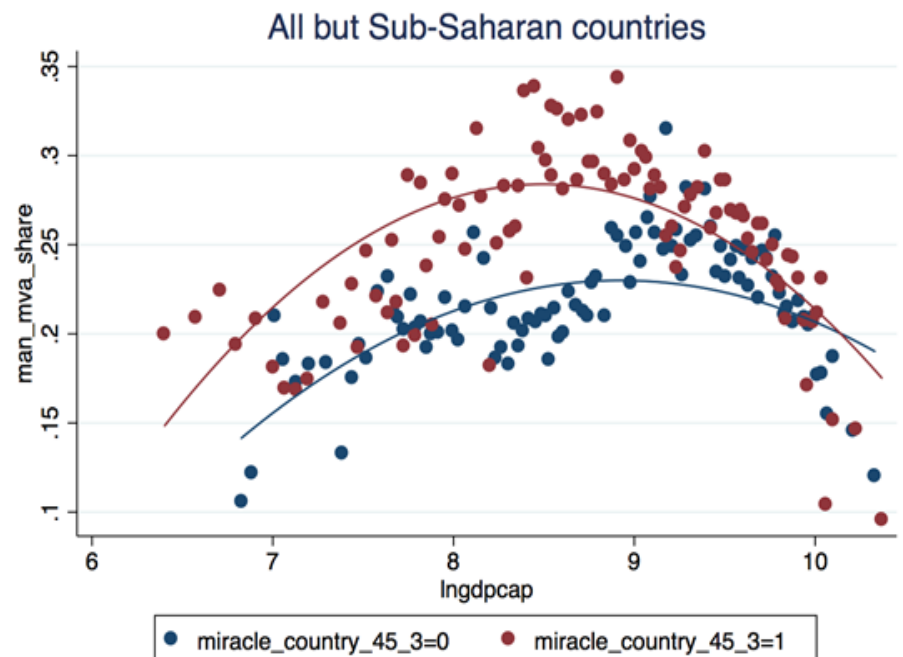
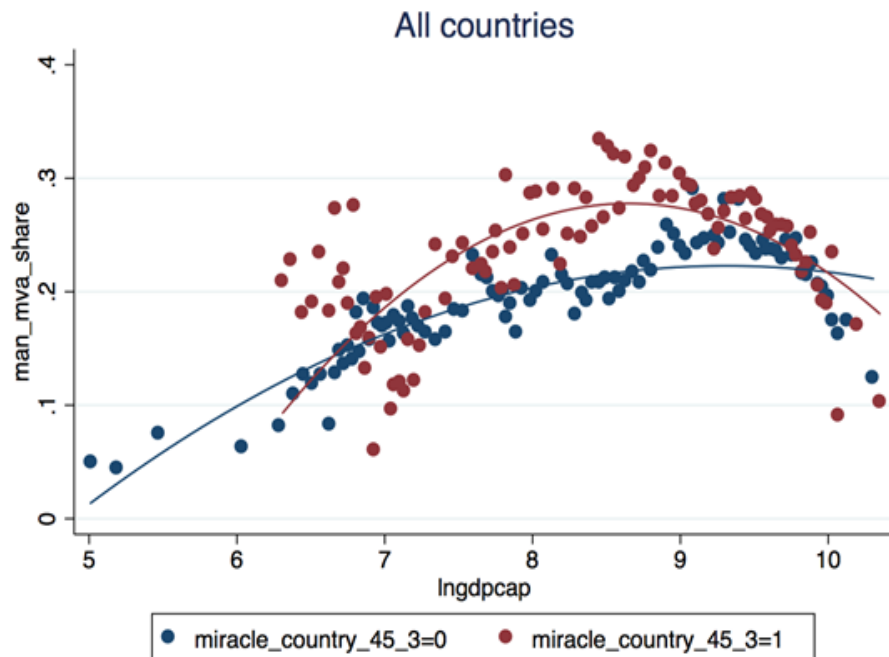
A common feature: rapid industrialization



A common feature: rapid industrialization



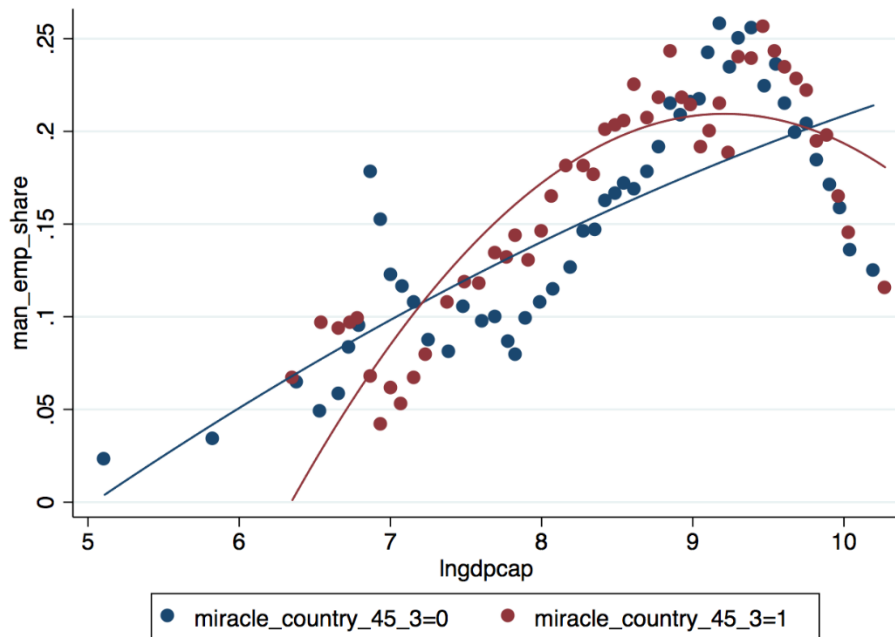
Growth miracles versus other countries



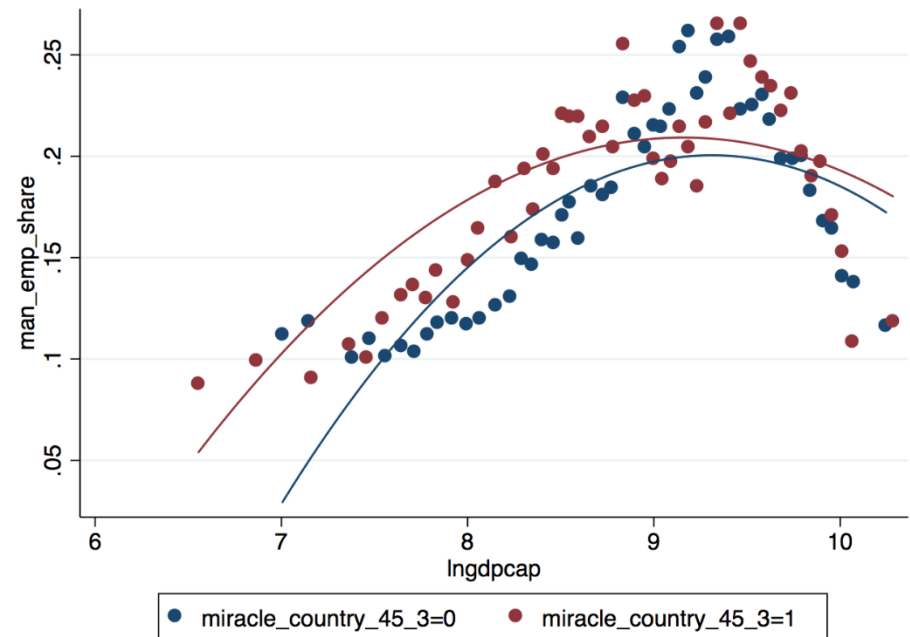
Manufacturing VA shares (at constant prices) during the course of economic growth (miracle counties in red; others in blue)

Growth miracles versus other countries

All countries



All but Sub-Saharan countries



Manufacturing employment shares during the course of economic growth (miracle counties in red; others in blue)

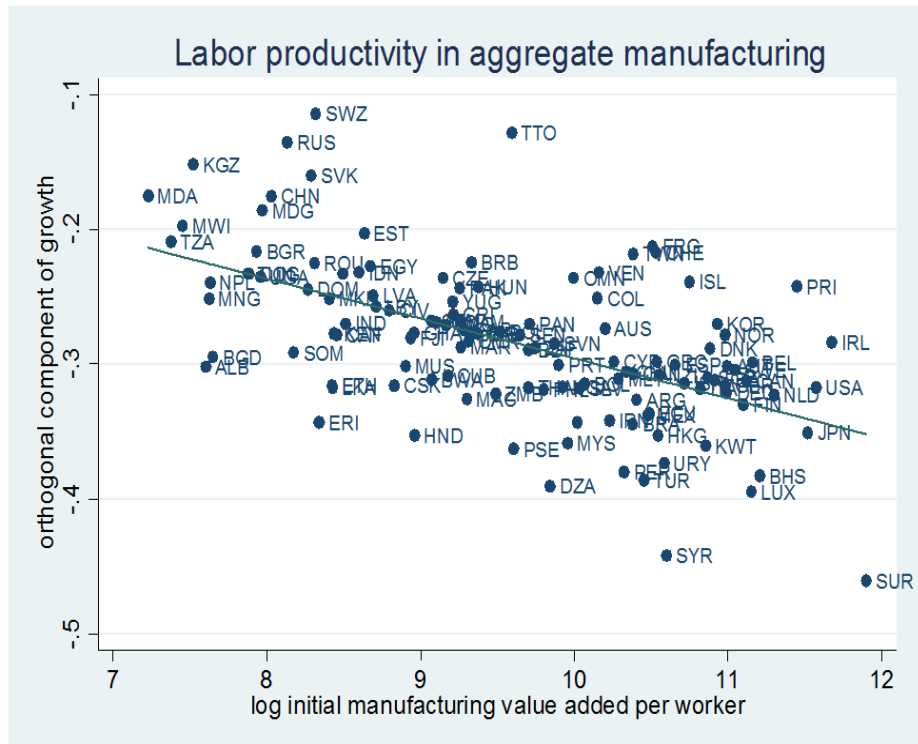
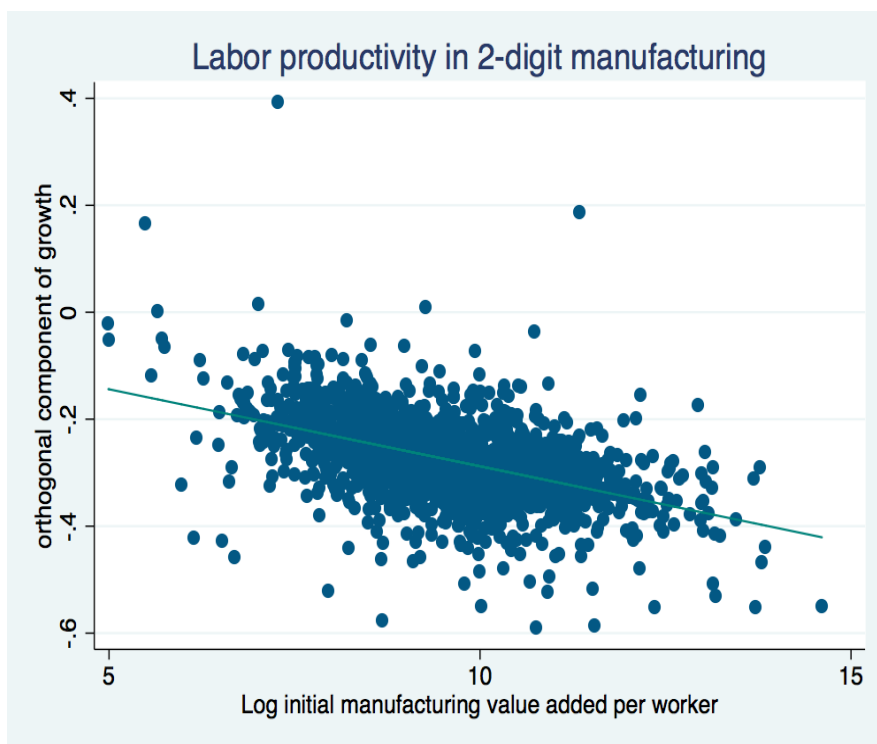
Why manufacturing industries are special

1. Productivity dynamics
 - [unconditional convergence](#)
2. Labor absorption capacity
 - intensive in low-skill labor (traditionally)
3. Tradability
 - can expand without turning terms of trade against itself

Specialization in narrow range of manufactures can be potent engine for growth

Narrower focus also eases policy challenges of economy-wide reform

Productivity convergence in (formal) manufacturing appears to be unconditional and quite general (regardless of period, region, sector, or aggregation)



$\beta \approx 3\%$ (t-stat ≈ 7), implying a half-life for full convergence of 40-50 years!

Notes: Data are for the latest 10-year period available. On LHS chart, each dot represents a 2-digit manufacturing industry in a specific country; vertical axis represents growth rate of labor productivity (controlling for period, industry, and period \times industry fixed effects).

Source: Rodrik (2014)

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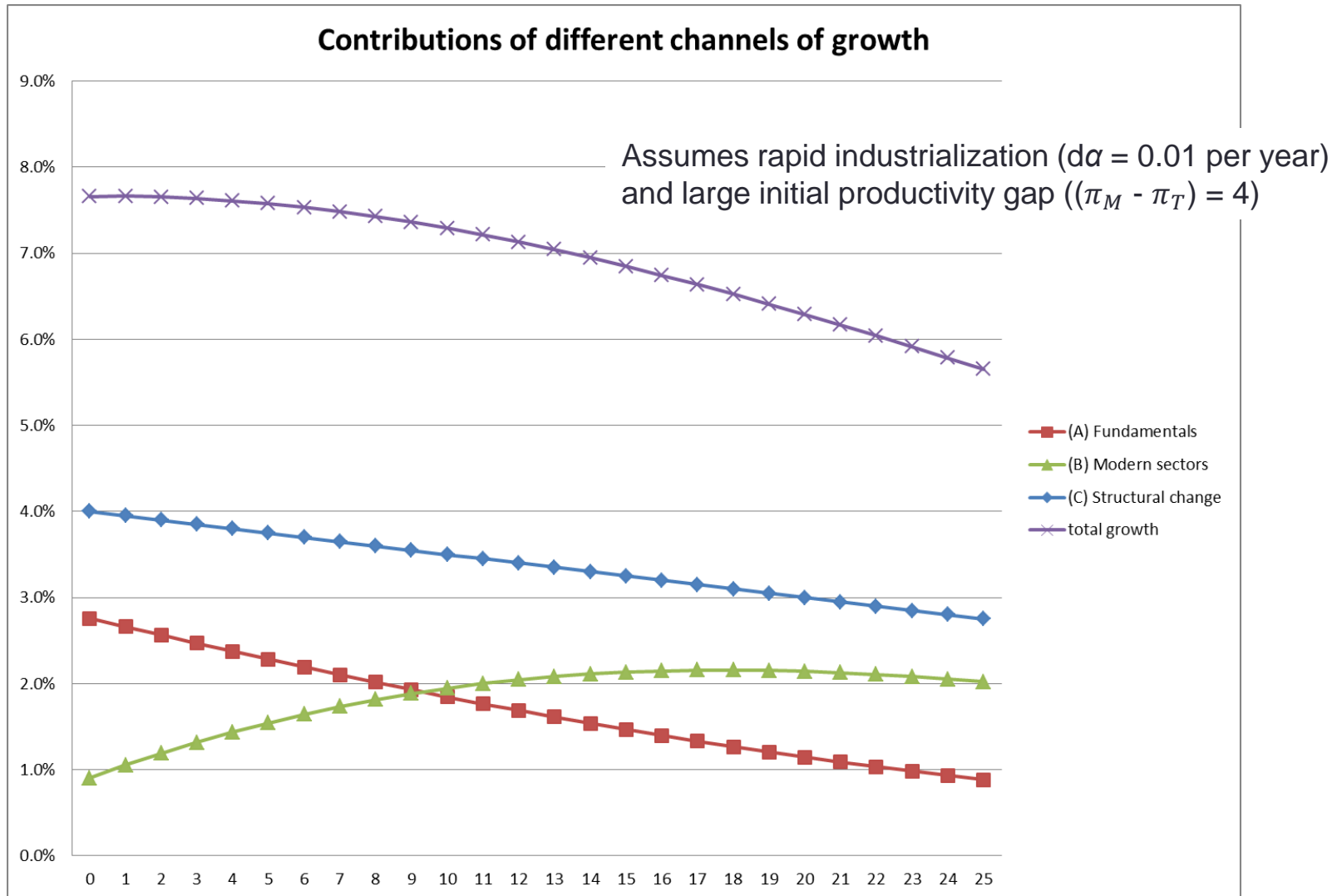
Reconciliation: embedding dualism in growth theory

- Economic dualism is endemic
- Traditional activities (with rel. productivity π_T)
 - traditional agriculture; small, informal firms
- Modern activities (with rel. productivity $\pi_M \gg \pi_T$)
 - high productivity, exhibiting (unconditional) productivity convergence
 - share (α_M) too small to produce significant aggregate effects early on (B)
- Economy-wide productivity requires steady accumulation of “fundamentals,” which is slow
 - human capital, institutions (A)
- Rapid growth possible nonetheless by expanding modern activities (C)
- Which requires policies that overlap with, but are not same as, fundamentals

$$\begin{aligned}\hat{y} &= \gamma(\ln y^*(\theta) - \ln y) & (A) \\ &+ \alpha_M \pi_M \beta (\ln y_M^* - \ln y_M) & (B) \\ &+ (\pi_M - \pi_T) d\alpha_M & (C)\end{aligned}$$

Standard convergence is augmented by two additional terms

How structural change enables growth miracles



Policies: How did successful countries promote rapid industrialization?

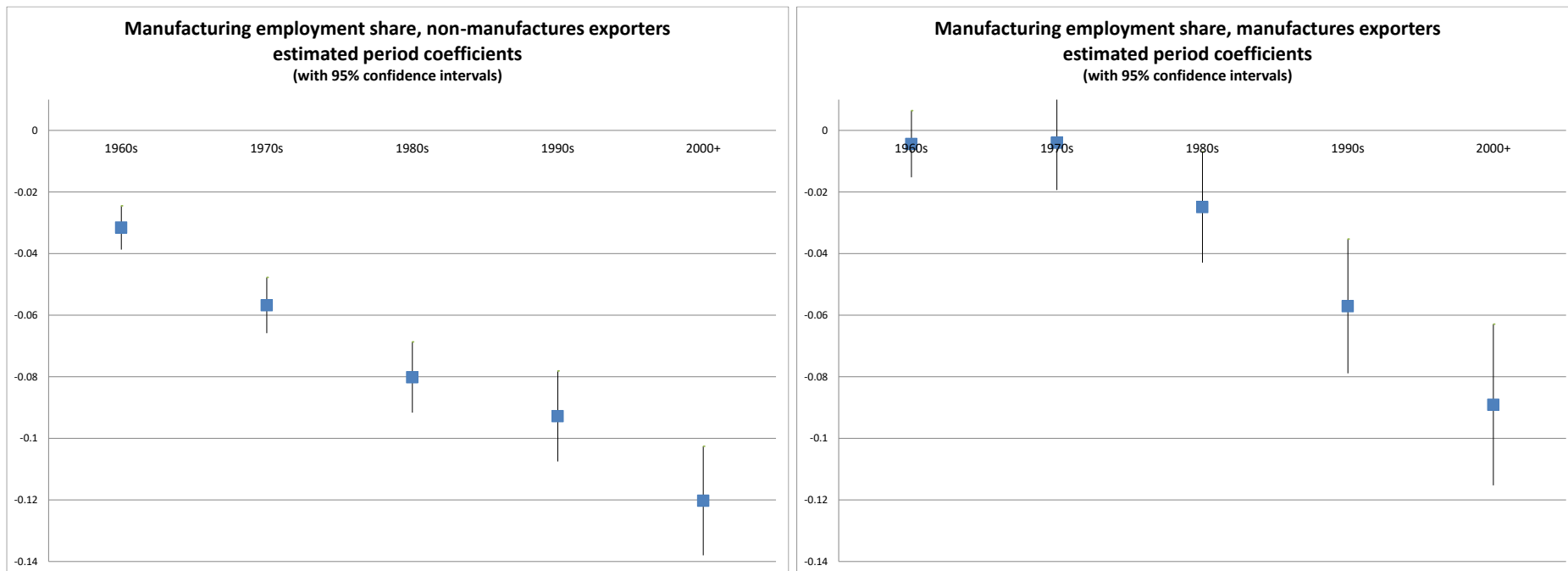
- macro “fundamentals”
 - *reasonably* stable fiscal and monetary policies
 - *reasonably* business-friendly policy regimes
 - steady investment in human capital and institutions
 - but more important for sustaining growth past middle income than launching it
- pragmatic, opportunistic, often “unorthodox” government policies to stimulate domestic manufacturing industries
 - protection of home market, subsidization of exports, managed currencies, local-content rules, development banking, special investment zones, ... with specific form varying across contexts
- a development-friendly global context
 - access to markets, capital and technologies of advanced countries
 - benign neglect towards industrial policies in developing countries

No more growth miracles?

- Premature de-industrialization, result of:
 - technological change: manufacturing increasingly skill-intensive
 - globalization: manufactures concentrated in fewer countries with strong comparative advantage
 - shifts in global demand: away from goods and into services
- Why services are not like manufactures

The manufacturing curve has been shifting down at a rapid clip

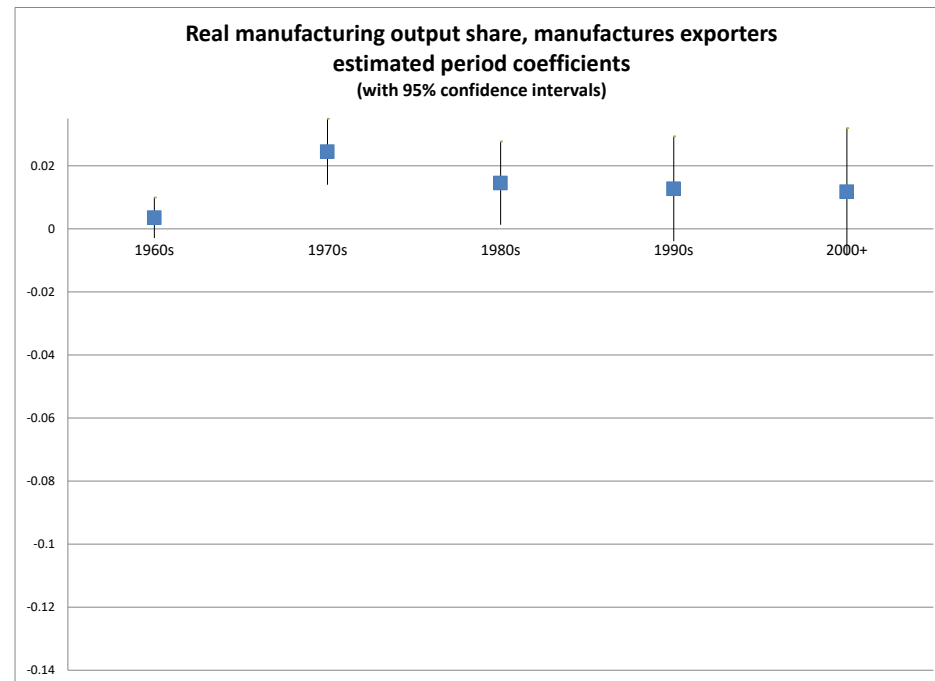
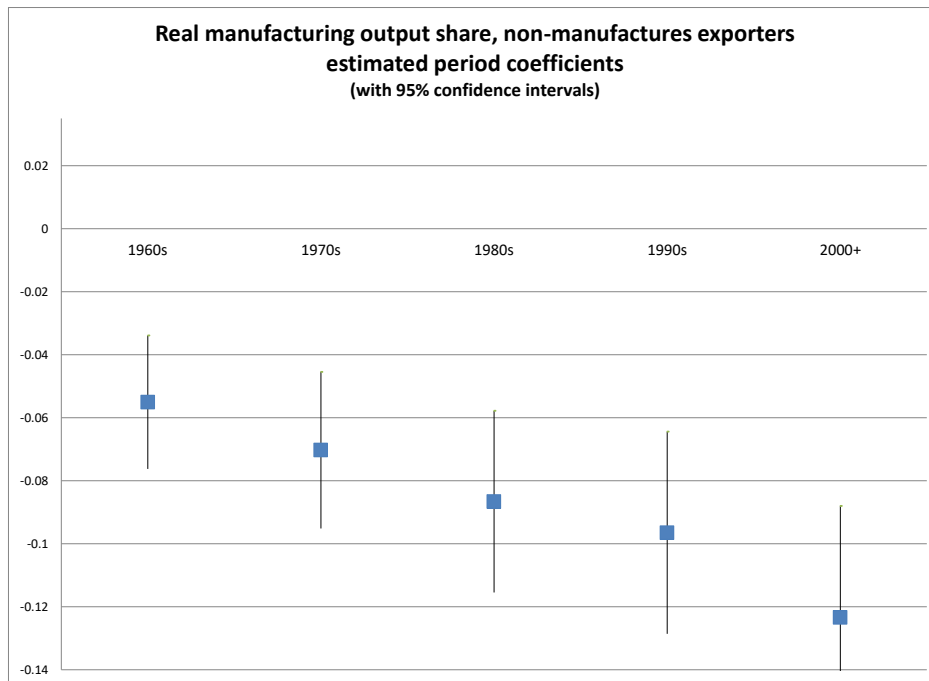
Employment



Estimated coefficients on decade dummies from a regression where manufacturing shares are regressed on income, population (and their squares), country fixed effects, and period dummies

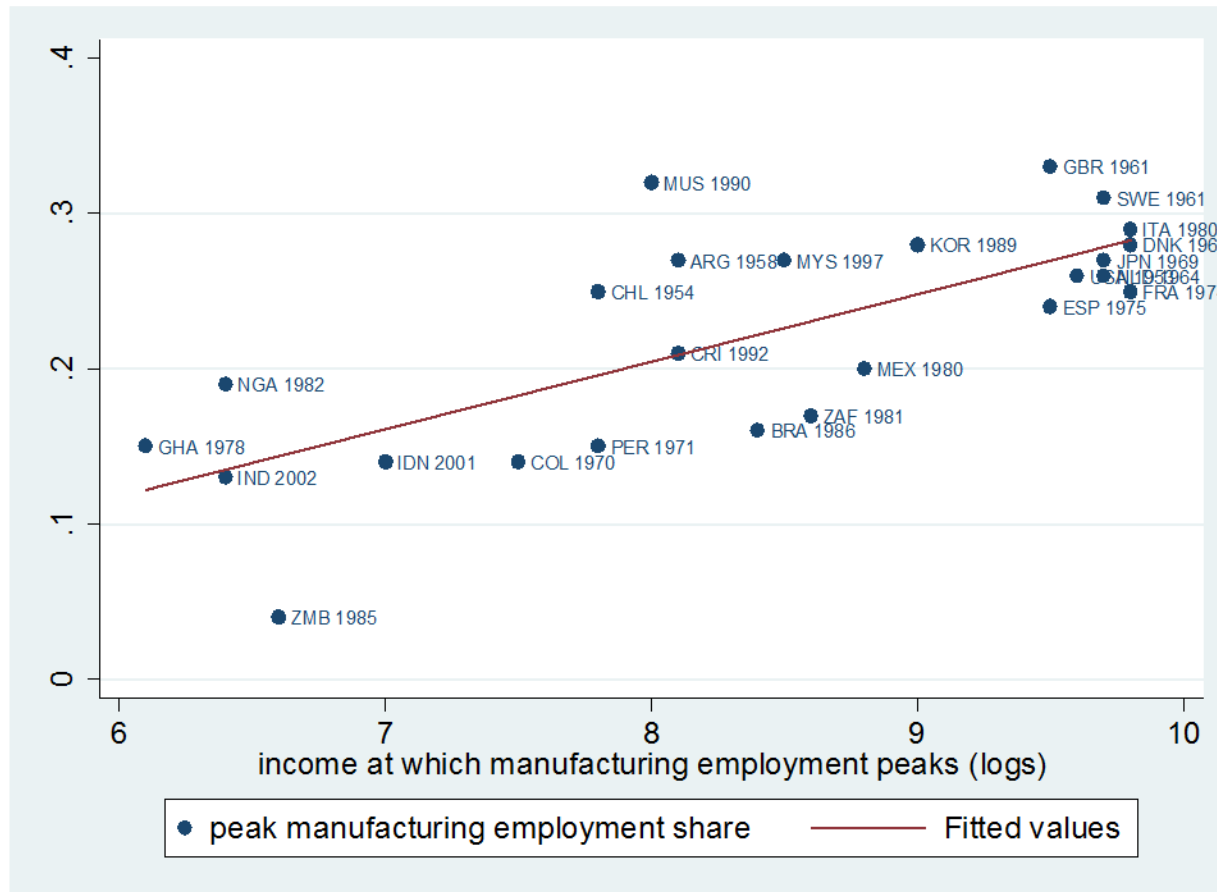
... has been shifting down at a rapid clip

Output



Estimated coefficients on decade dummies from a regression where manufacturing shares are regressed on income, population (and their squares), country fixed effects, and period dummies

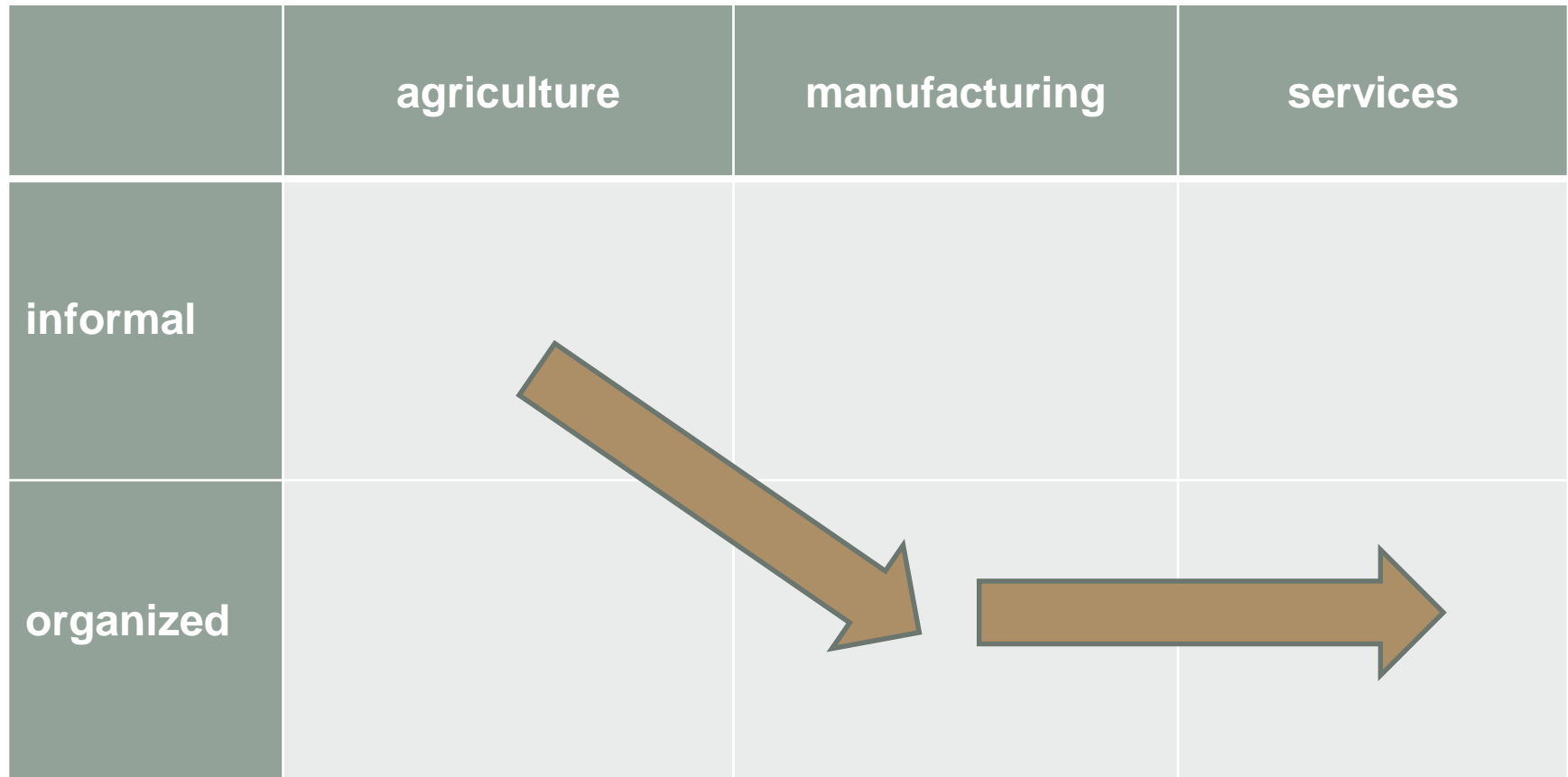
Premature de-industrialization



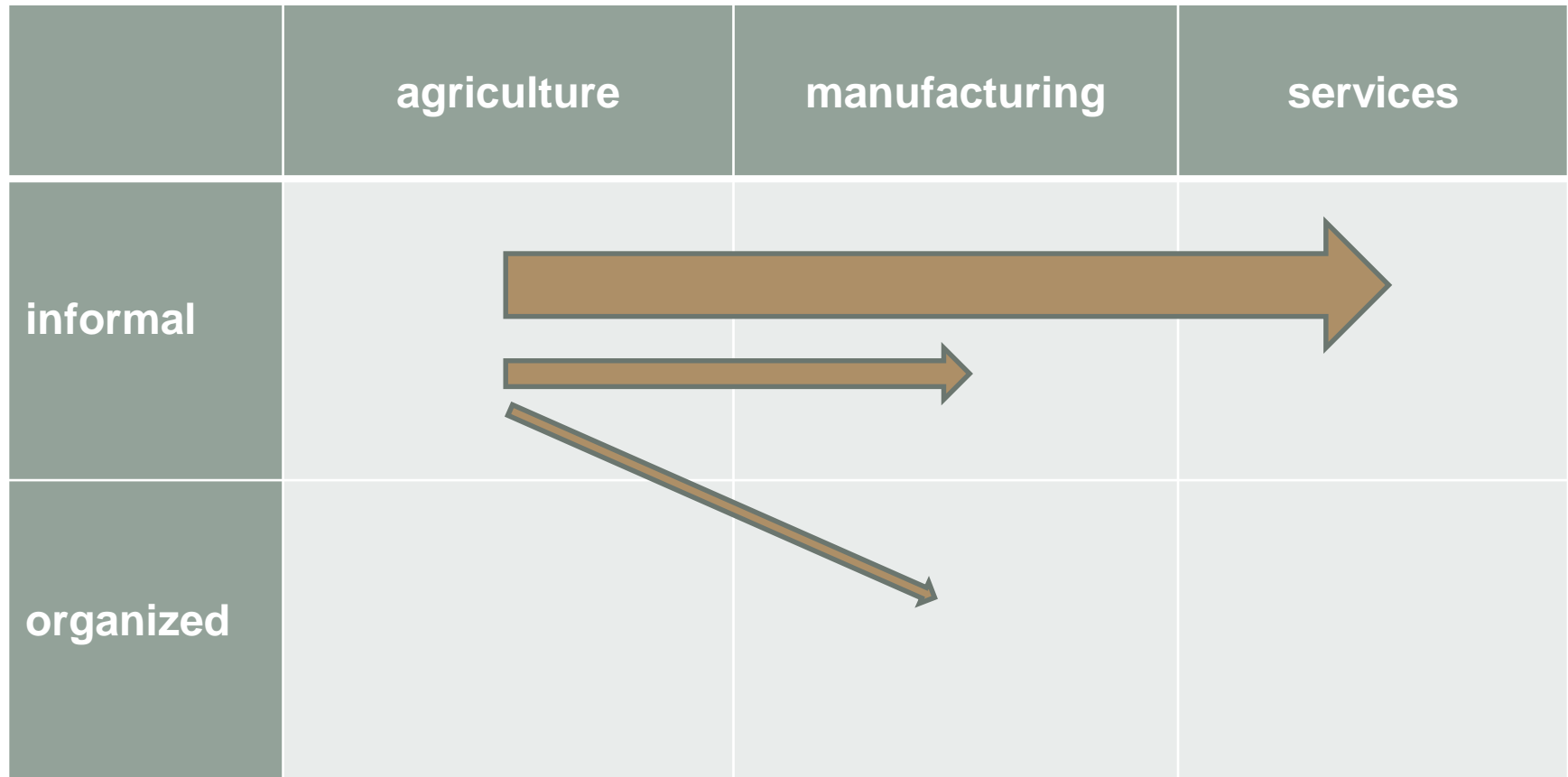
Patterns of structural change

	agriculture	manufacturing	services
informal			
organized			

Patterns of structural change: East Asia and advanced countries



Patterns of structural change: low-income countries today



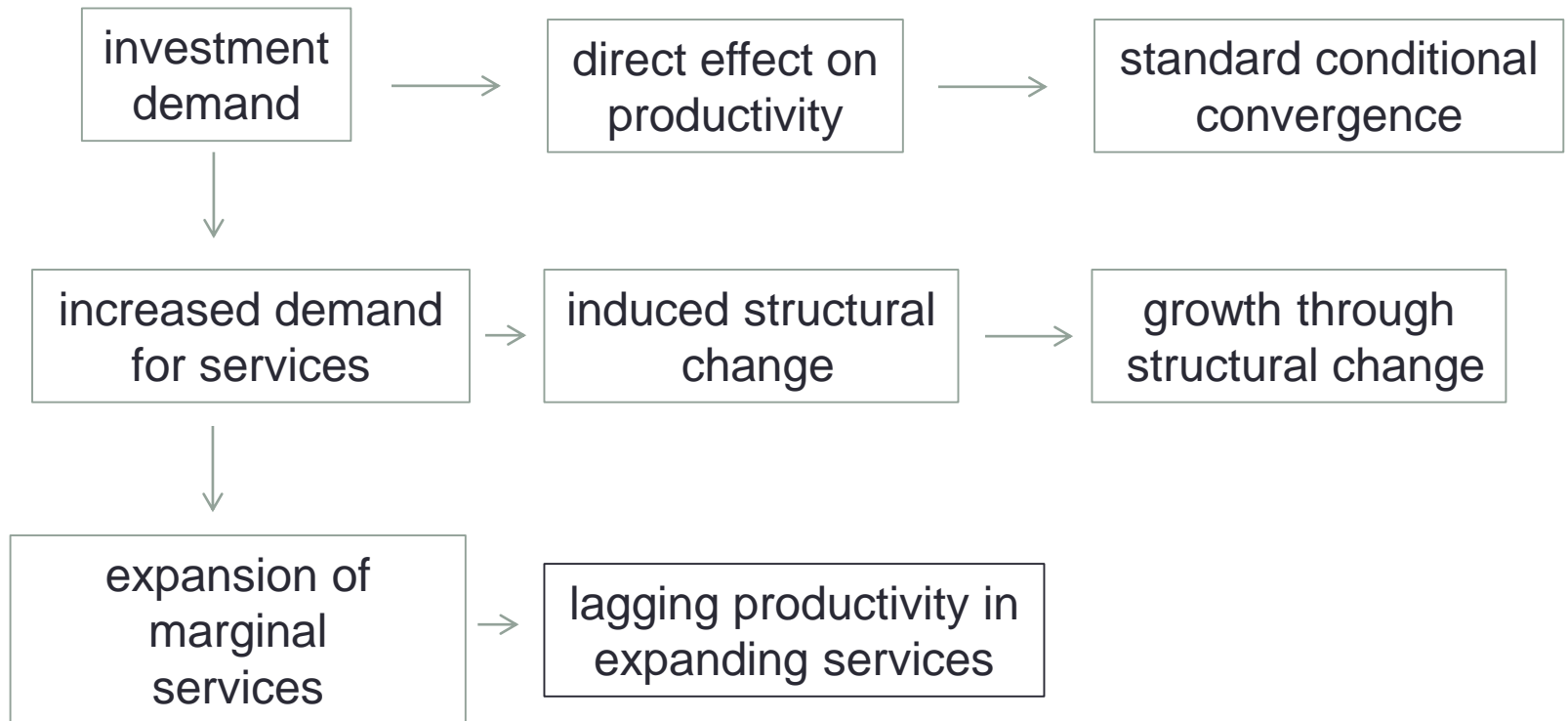
Alternatives: services and agriculture

- Services: two types
 - high-productivity (tradable) segments of services cannot absorb as much labor
 - since they are typically skill-intensive
 - IT, FIRE, business services
 - low productivity (non-tradable) services cannot act as growth poles
 - since they cannot expand without turning their terms of trade against themselves
 - continued expansion in one segment relies on expansion on others
 - limited gains from sectoral “winners”
- Agriculture
 - significant productivity gains possible in traditional agriculture
 - possibilities in non-traditional agriculture
 - but hard to imagine agriculture will absorb employment
 - where will labor go?

What about recent growth spurts?

- Structural change in recent rapid-growth episodes very different than traditional industrialization cases
 - not manufacturing-led
 - growth of modern sectors accompanied by stagnant or declining productivity in those sectors
- Evidence that this growth is demand-led, and probably unsustainable

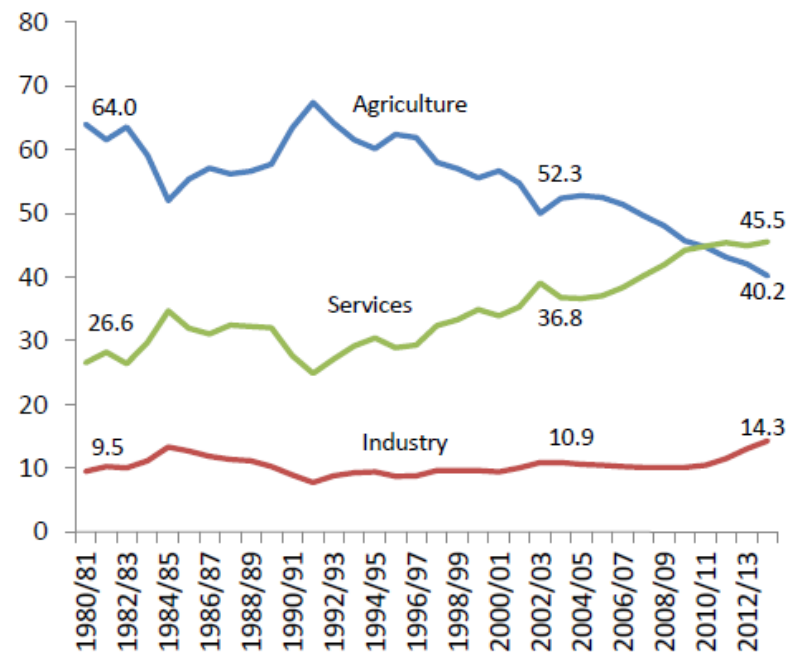
The demand-led growth model



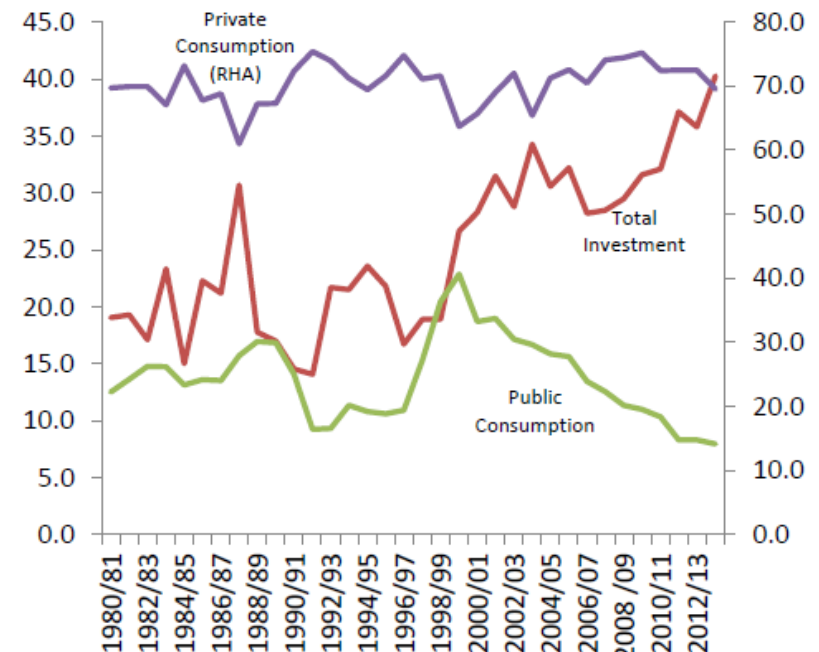
Source: Diao, McMillan, and Rodrik (2017)

Ethiopia: public investment

3. Real GDP Shares (supply side), 1980/81-2013/14



4. Real GDP Shares (demand side), 1981-2013/14

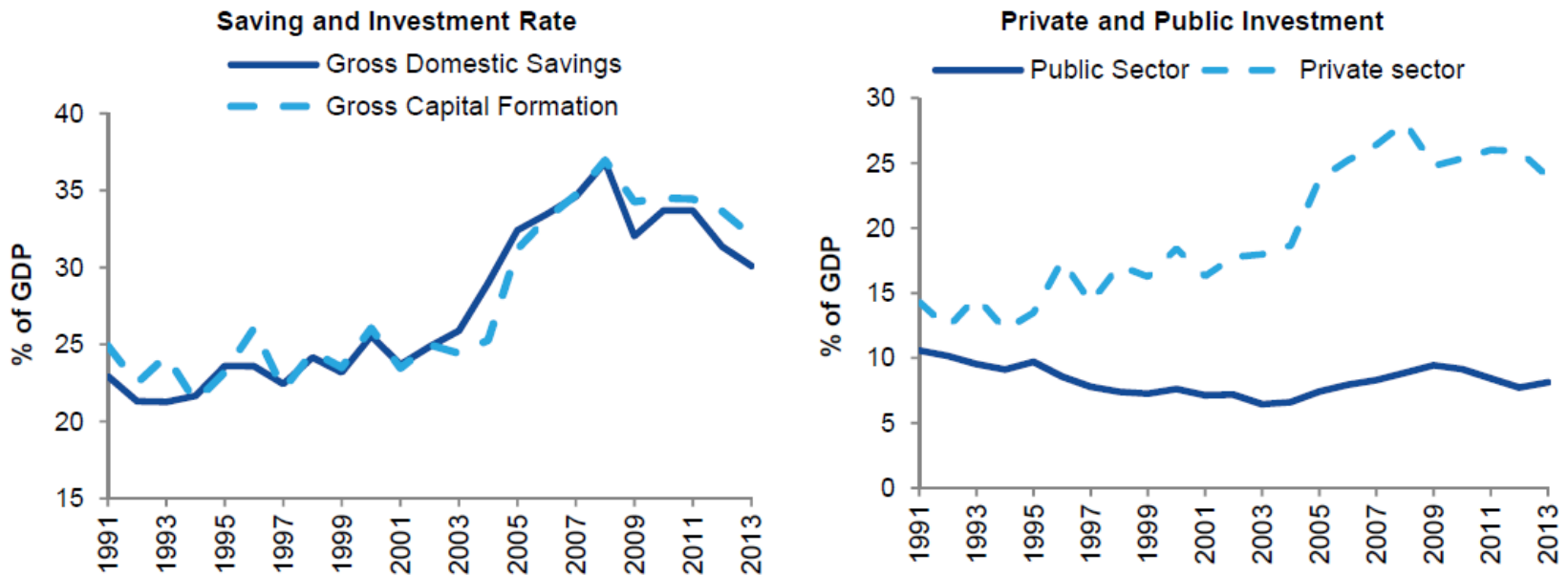


Source: World Bank (2015)

GDP growth of more than 10% p.a. over last decade, due in large part to increase in public investment, from 5% to 19% of GDP.

India: private investment

Figure 3: After Increasing Impressively in the mid-2000s, Savings and Investment Ratios have declined, and Rebound is not yet in Sight (data for fiscal years)



Source: Central Statistical Office, India

Source: World Bank (2015)

Bottom line

- East Asia style growth miracles are unlikely in the future
- Growth in emerging markets have been unsustainably high in last decade, and will come down by a couple of points
- Convergence will continue, but not as rapidly, and in large part because of low growth in advanced economies
- As domestic rather than global trends drive growth, significant heterogeneity in long-term performance across developing countries is likely