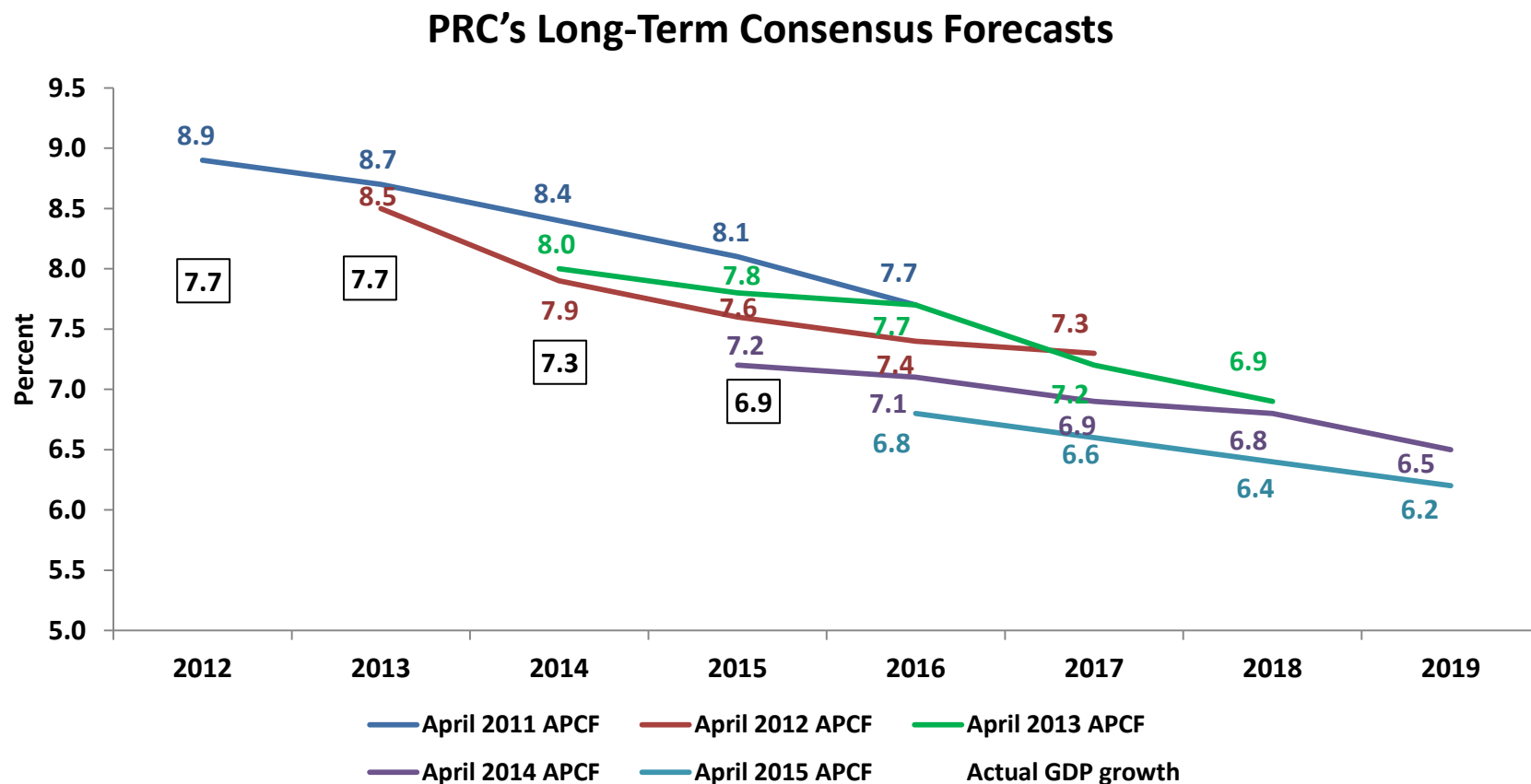


Global Impact of China's Growth Slowdown and Structural Change

Dr. Donghyun Park, Asian Development Bank
Workshop on Bond Market Development in Emerging East Asia
Raffles Hotel Le Royal
Phnom Penh, Cambodia,
17-18 August 2016

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China is slowing. A slowdown was expected, but growth has been weaker than envisioned.

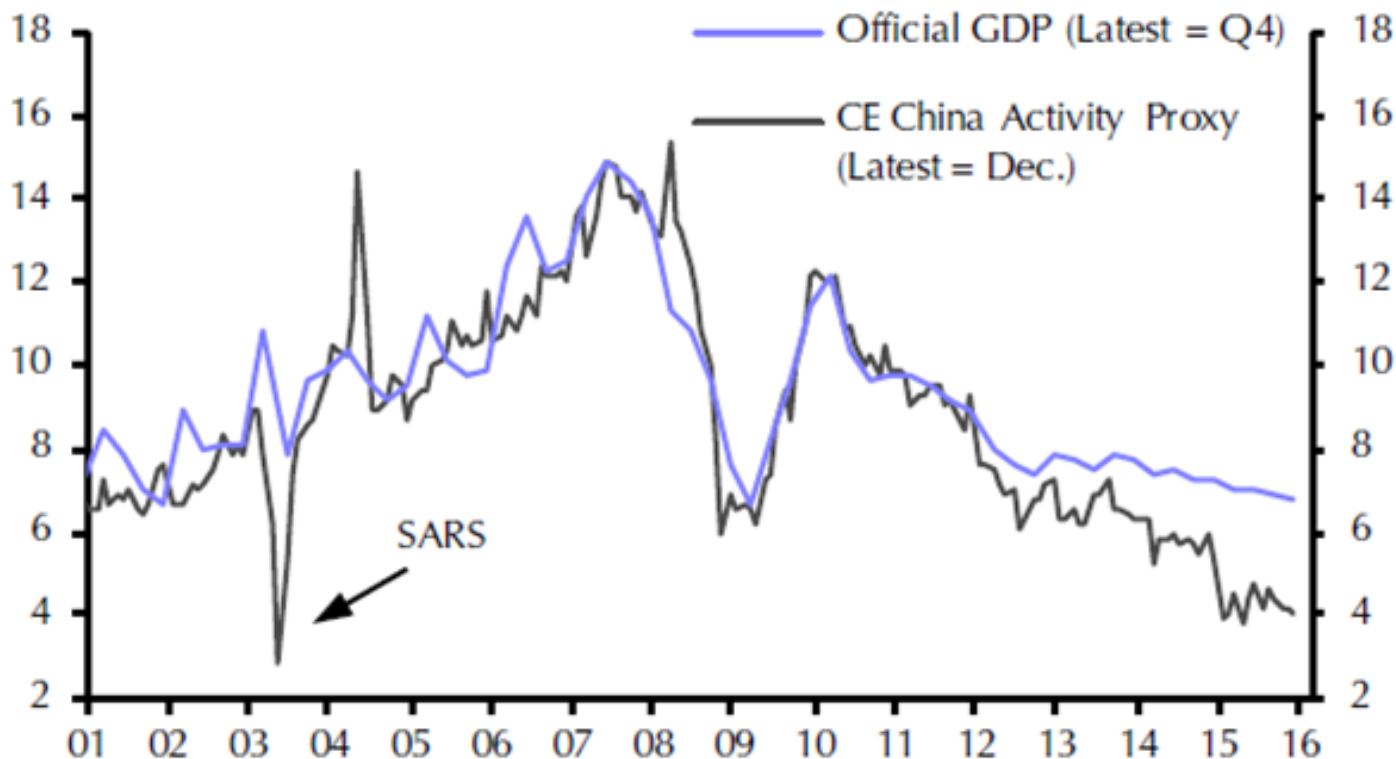


Source: Asia Pacific Consensus Forecasts (APCF).

1. Bordered numbers refer to actual GDP growth rates.

High-frequency indicators suggest growth may be even lower than GDP figures suggest.

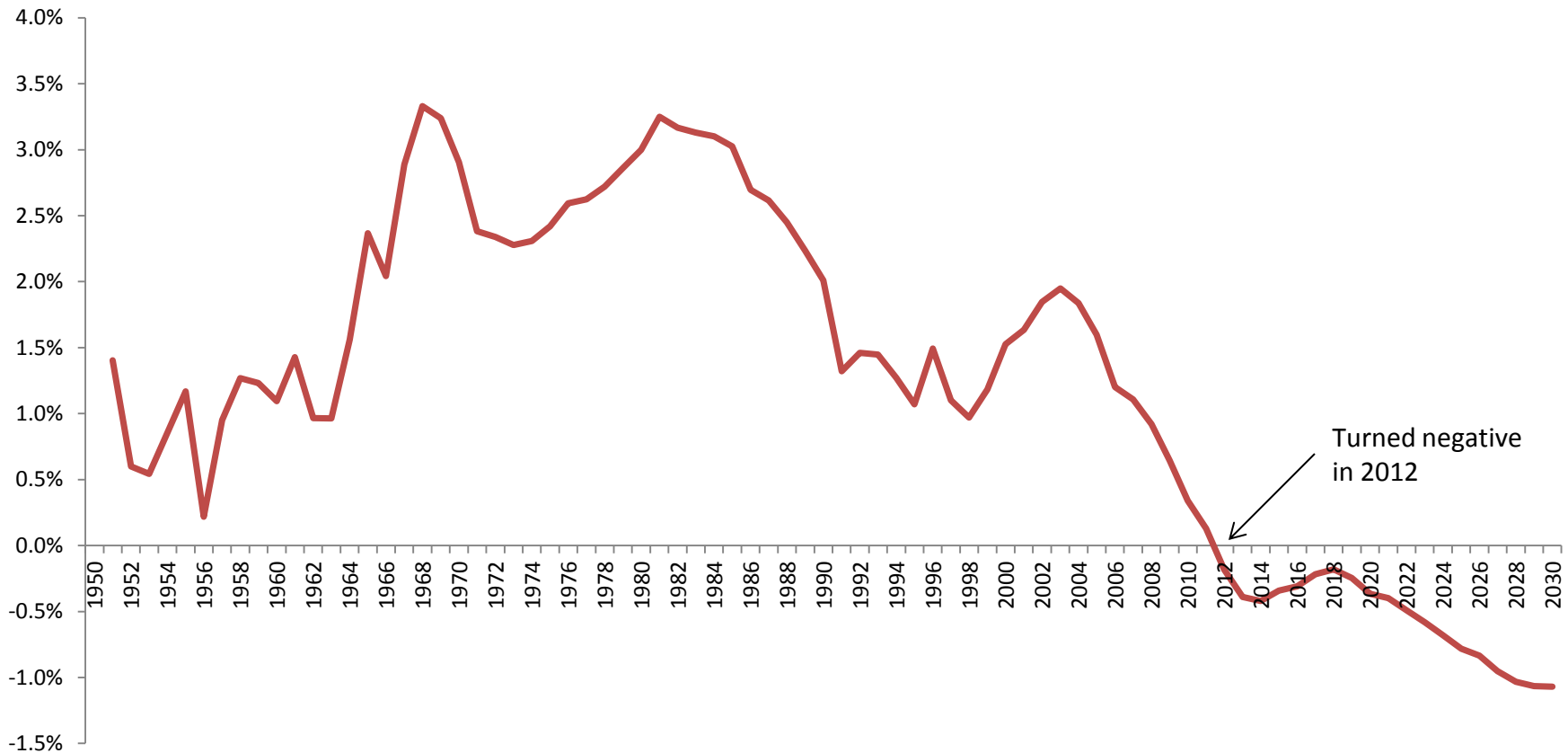
China Activity Proxy & GDP (% y/y)



Source: Capital Economics.

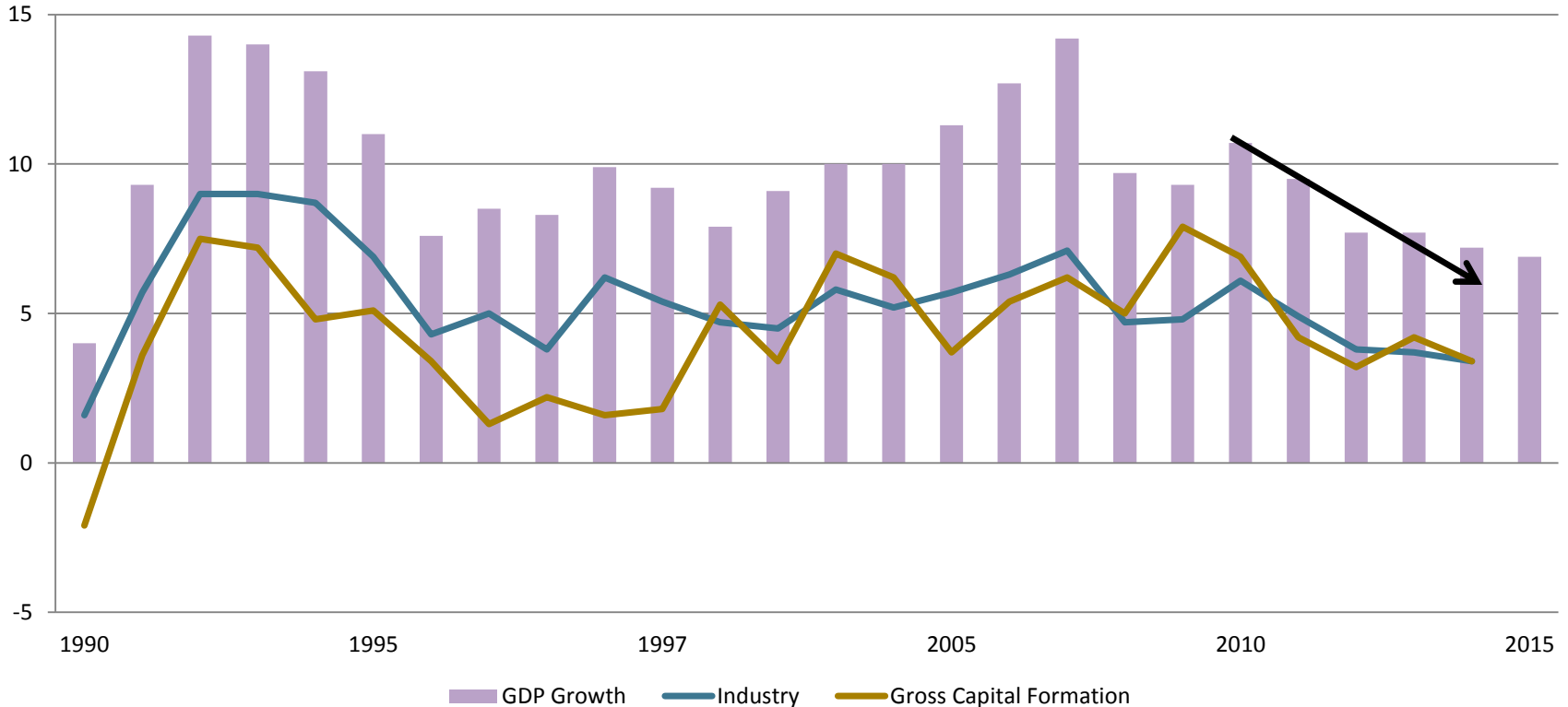
The slowdown reflects a number of factors, including demographics...

**Growth rate of China's working age population
(15-59)**



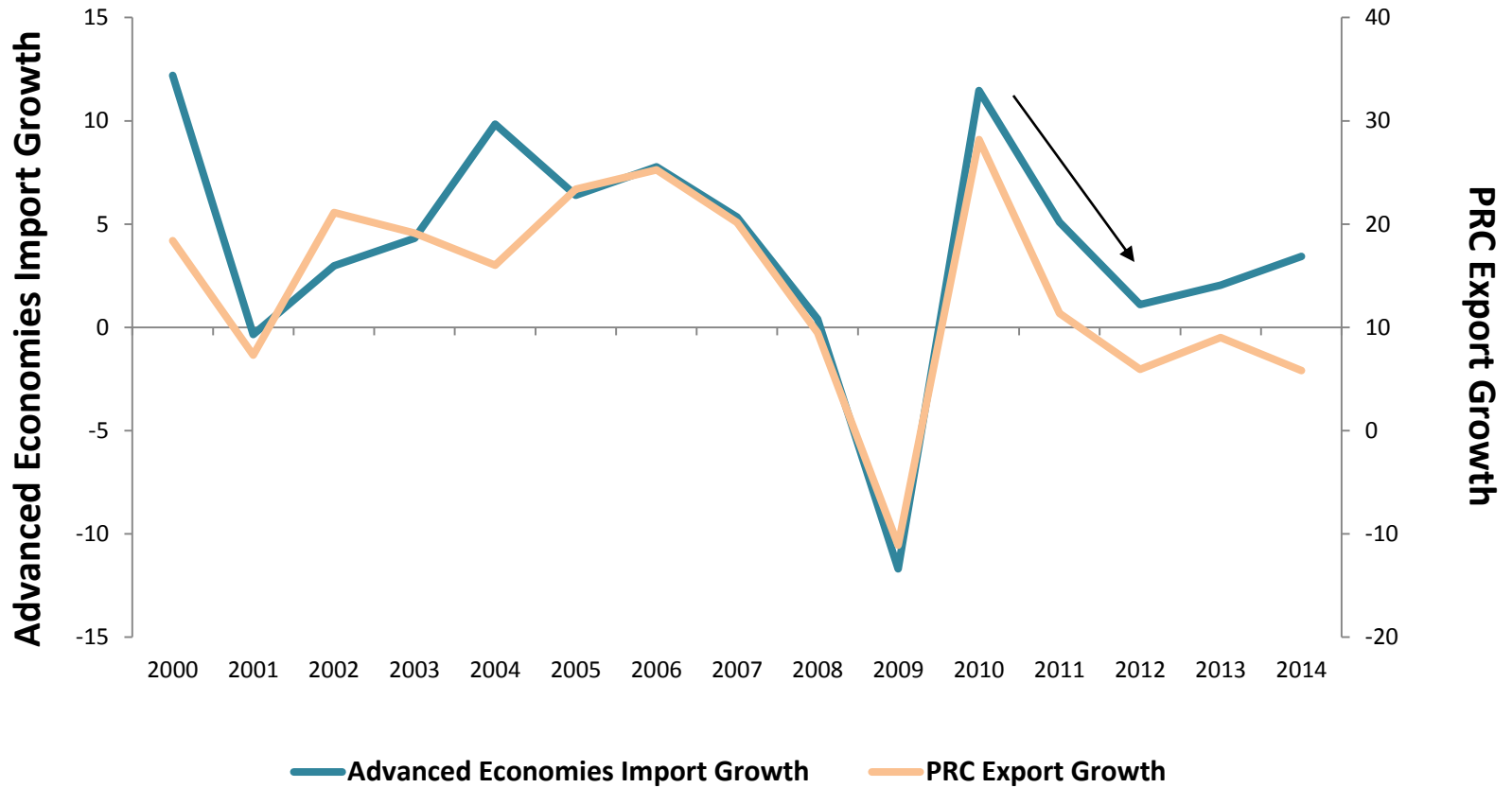
... a structural shift away from industry (supply side) and investment (demand side)...

GDP Growth, Contribution to Growth of Industry and Investments



Source: National Bureau of Statistics of China

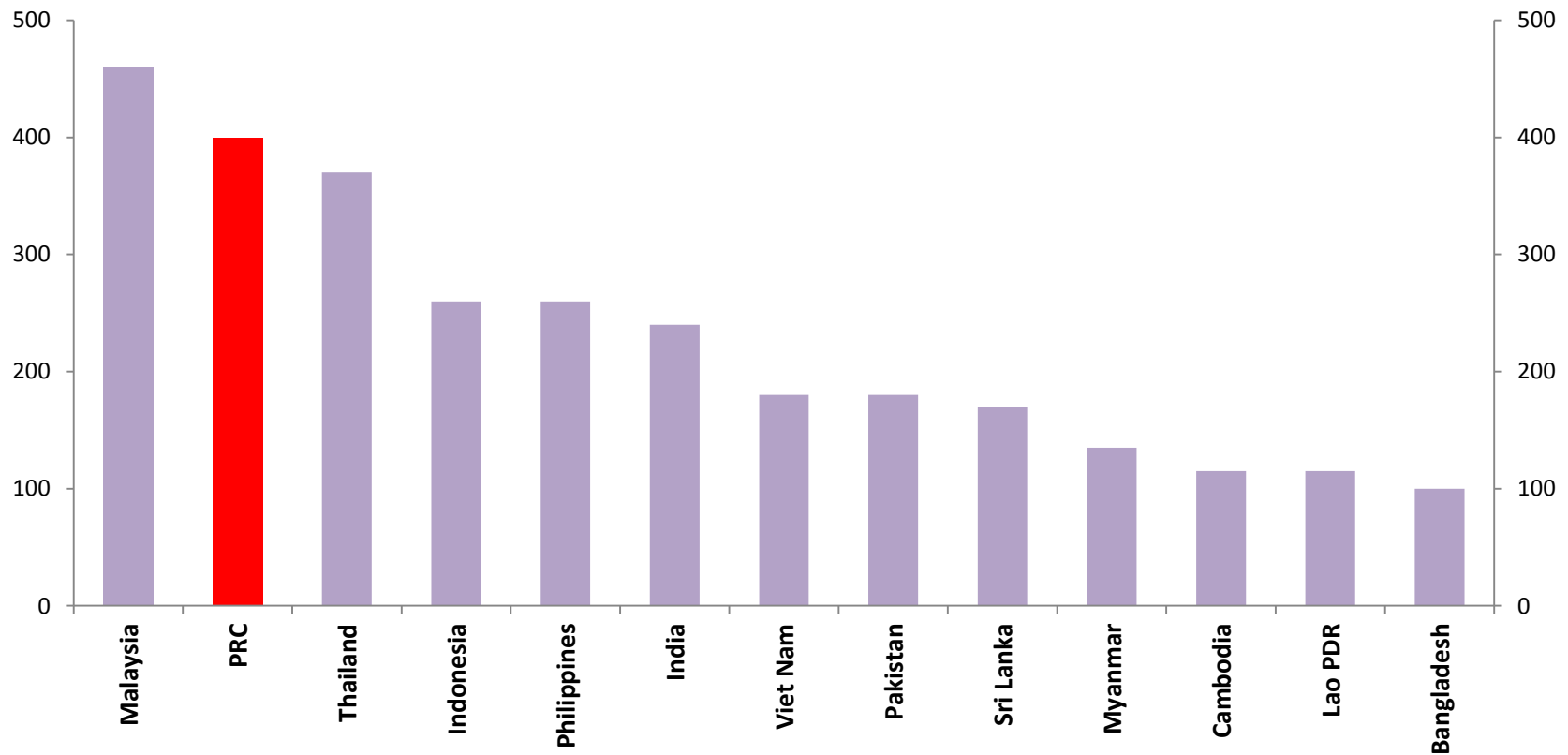
...weakness in external demand...



Source: IMF World Economic Outlook Database

... and convergence, as higher wages make PRC less attractive for low-cost production.

Average Monthly Wage of a Factory Worker
(US\$, 2014)



Source: Capital Economics.

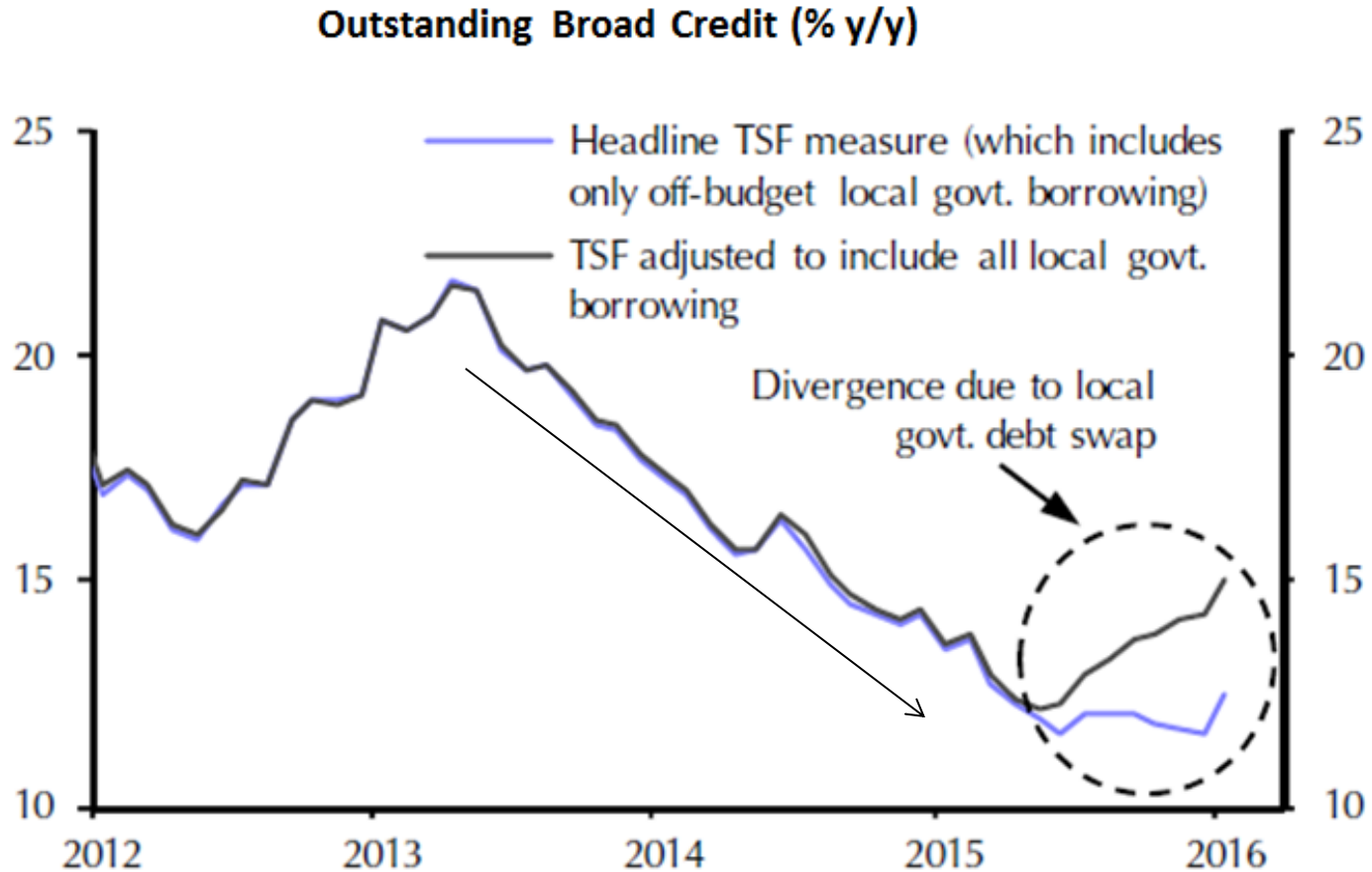
Also, concerns about rising vulnerabilities from debt-financed investment...



Source: Bloomberg

Total Social Finance/GDP refers to total outstanding corporate and household borrowing in China as a percentage of GDP, calculated using outstanding bank loans at end 2002 as a starting point and adds net growth in total social finance in every month since. Funds raised through equity issuance, which are included in total social finance, are netted out.

...have led to policy tightening in past two years (which has recently been reversed?)

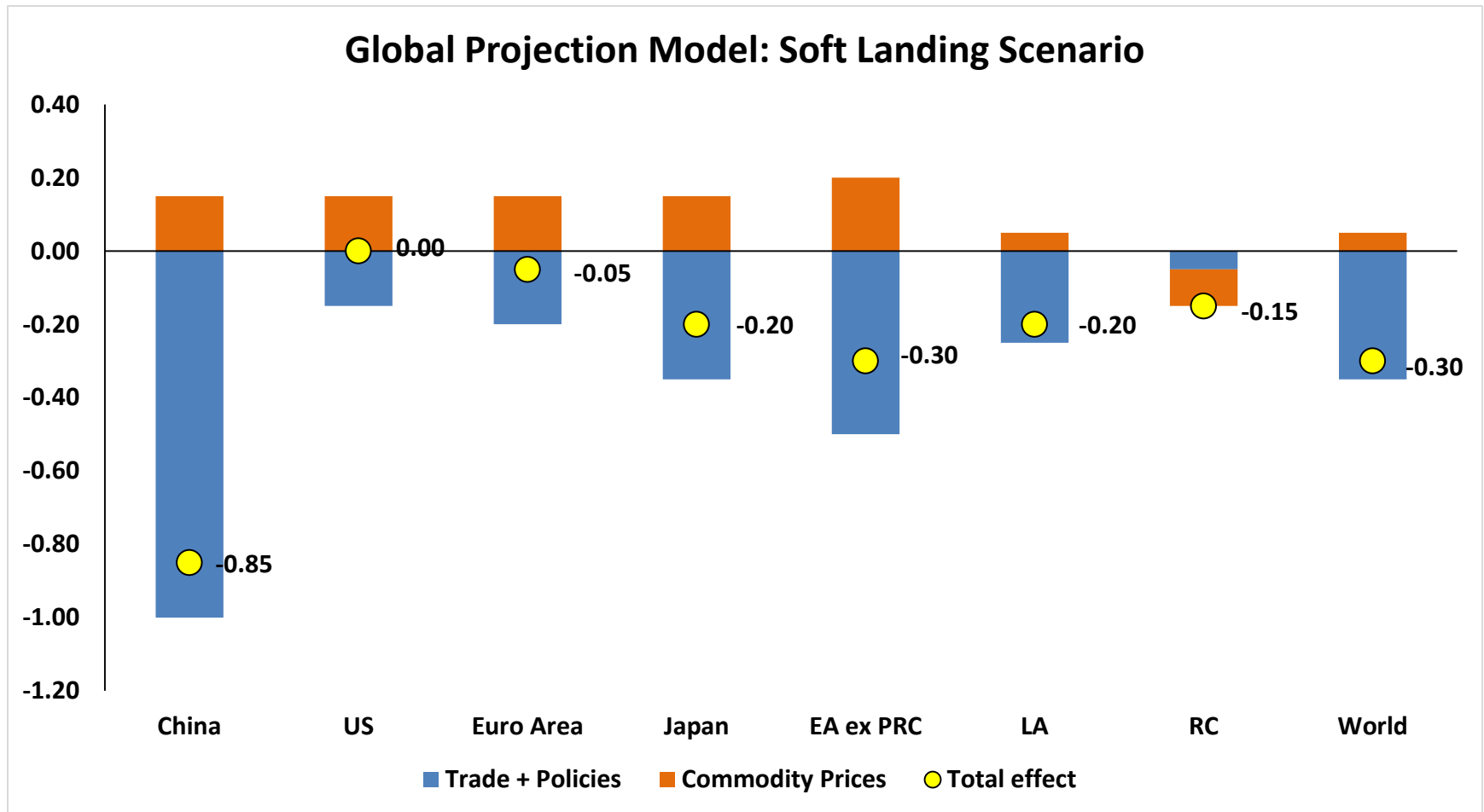


Source: Capital Economics.

So what kind of slowdown do we envision? The current baseline is for a “soft landing” ...

- Recognition by authorities that potential growth is weaker than previously thought (currently about 6½ percent);
- Maintaining growth at previous levels (above 7 percent) would require accommodative policies that would continue raising vulnerabilities;
- Instead, authorities adjust policies (less policy accommodation) to match lower potential growth;
- Vulnerabilities remain contained.
- To measure the impact of the slowdown, our counter-factual is a “no-slowdown” scenario where growth is kept above 7 percent.

...which affects Asia and commodity exporters, but has negligible effects on US and Europe.



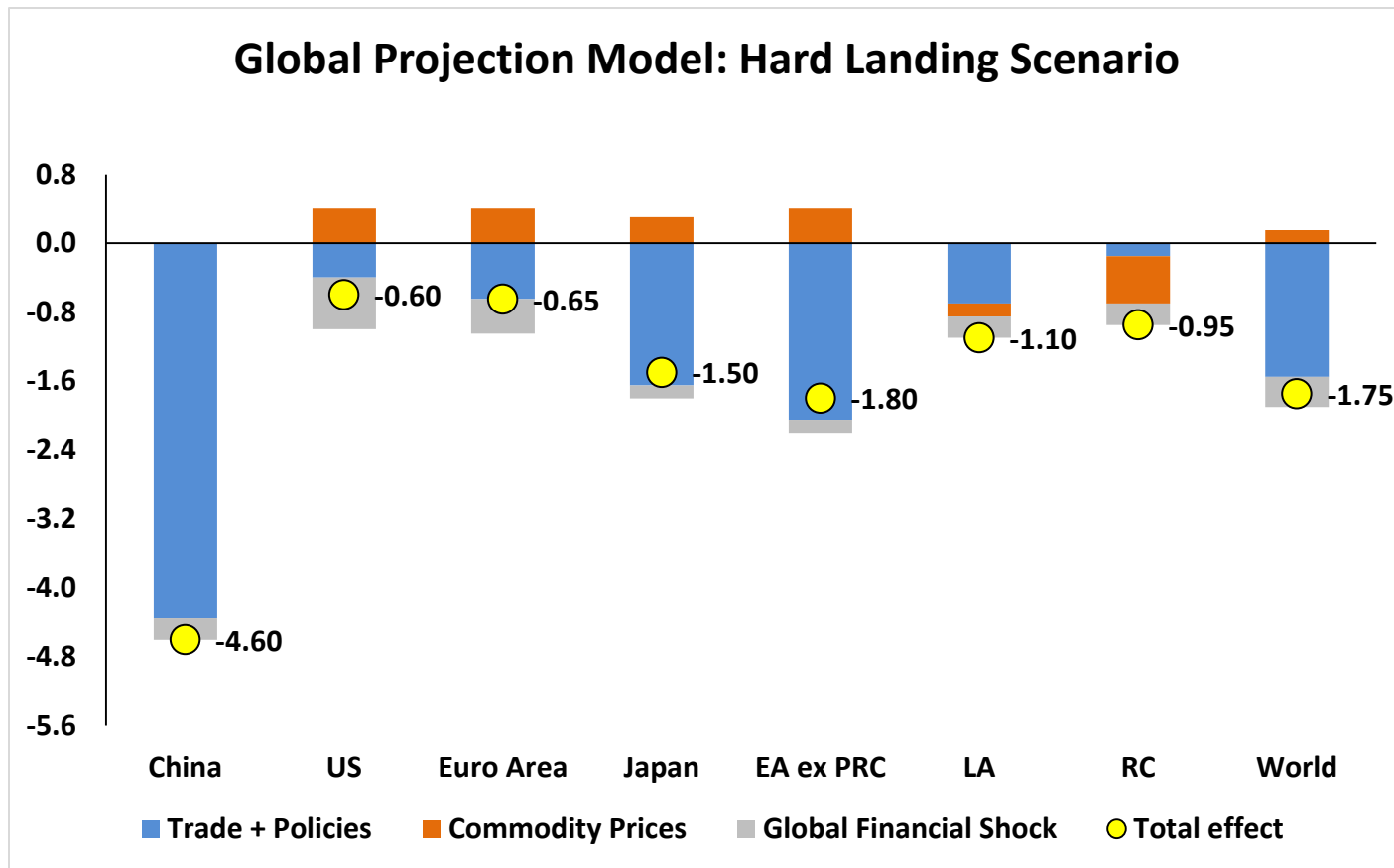
There is a low-probability tail risk of a “hard landing” occurring...

- Disorderly unwinding of imbalances—a credit boom-bust, a property market downturn, a sharper-than-expected investment slowdown, a financial crisis (or some combination of these)
- Historical experience suggests that investment growth falls by about 10pp; consumption growth by 2pp; and government spending by 1pp.
- In PRC’s case, the high share of investment implies a growth deceleration of about 4½ percentage points if such a hard landing materializes.

Magnitudes of Growth Decelerations During Disorderly Slowdowns (Growth in the 1st 2 years after the event relative to growth in previous 5 years, % points)

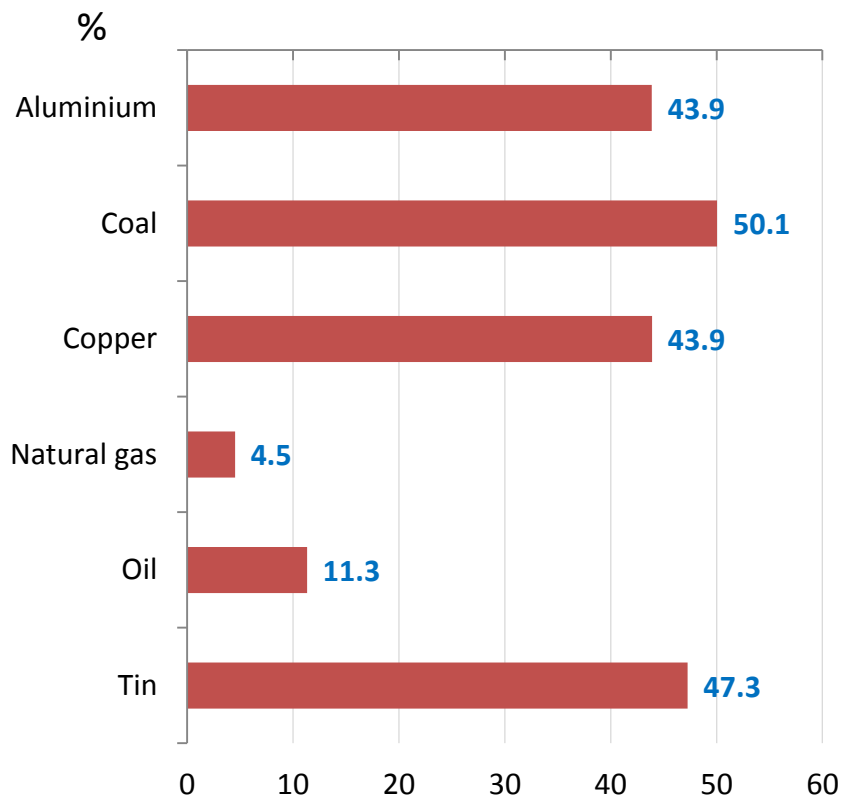
	Real GDP	Government consumption	Investment	Private consumption	Imports	Exports
Credit boom-bust	-3.4	-1.0	-11.7	-2.8	-7.9	-3.1
Banking crisis	-2.0	-1.0	-8.0	-2.0	-6.3	-1.5
Housing downturn	-2.1	-0.2	-7.8	-2.2	-6.4	-3.0
Investment slowdown	-2.7	-2.1	-23.3	-2.1	-14.5	-3.7

...with bigger effects on the rest of Asia and the world.

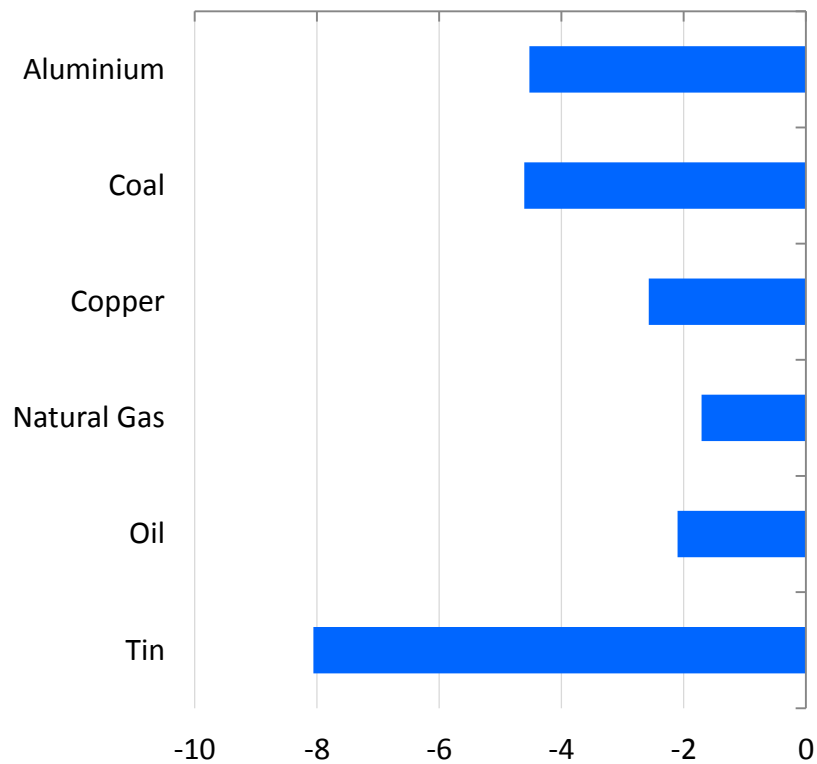


A China slowdown would lower prices of various commodities, particularly metals...

PRC's consumption as a share of world consumption...



...and the estimated impact of a 1pp PRC slowdown on various commodity prices



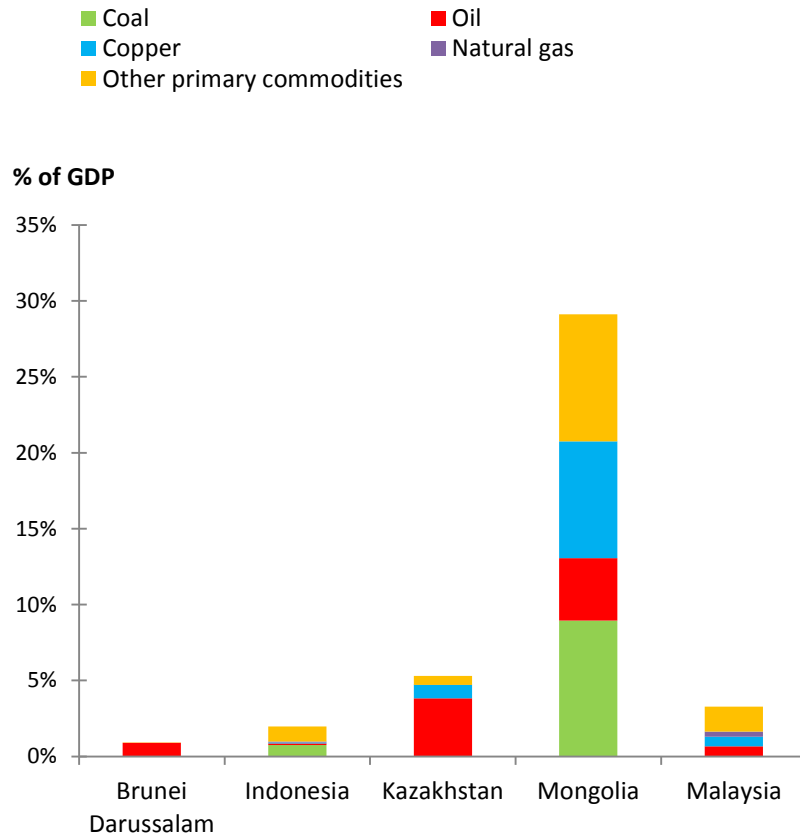
... and would have larger effects on those that trade more with PRC, for certain commodities

<i>Dependent variable: GDP growth_{CTY}</i>						
Independent variables:	(1)	(2)	(3)	(4)	(5)	(6)
Terms of trade growth _{CTY}	0.0379**	0.0341*	0.0363*	0.0355*	0.0369*	0.0363*
	(2.068)	(1.862)	(1.874)	(1.937)	(1.854)	(1.968)
Non-primary exports to PRC/GDP _{CTY} x GDPgr _{PRC}	0.540**	0.505**	0.524**	0.518**	0.521**	0.524**
	(2.575)	(2.532)	(2.612)	(2.634)	(2.498)	(2.496)
Coal exports to PRC/GDP _{CTY} x GDPgr _{PRC}	9.595***				9.177***	9.228***
	(11.65)				(7.849)	(10.12)
Copper exports to PRC/GDP _{CTY} x GDPgr _{PRC}		1.612**			1.434**	1.430**
		(2.651)			(2.083)	(2.114)
Oil exports to PRC/GDP _{CTY} x GDPgr _{PRC}			-0.115		-0.274	
			(-0.173)		(-0.370)	
Natural gas exports to PRC/GDP _{CTY} x GDPgr _{PRC}				-25.22	-24.26	
				(-0.745)	(-0.677)	
Constant	3.634***	3.630***	3.711***	3.743***	3.640***	3.574***
	(44.11)	(45.36)	(42.19)	(38.15)	(30.39)	(44.28)
Number of observations	500	500	500	500	500	500
Number of countries	40	40	40	40	40	40
R-squared	0.020	0.016	0.013	0.015	0.024	0.022

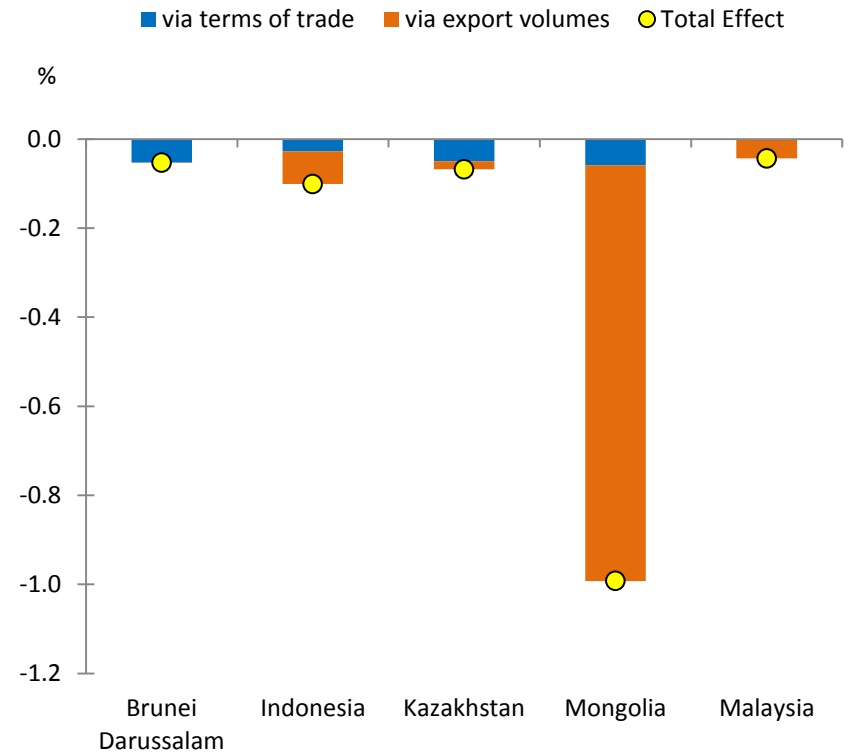
Note: Robust t-statistics in parentheses. Significance at 1%, 5% and 10% levels are denoted respectively by ***, ** and *.

Mongolia, which has by far the strongest trade exposures to PRC, is most at risk.

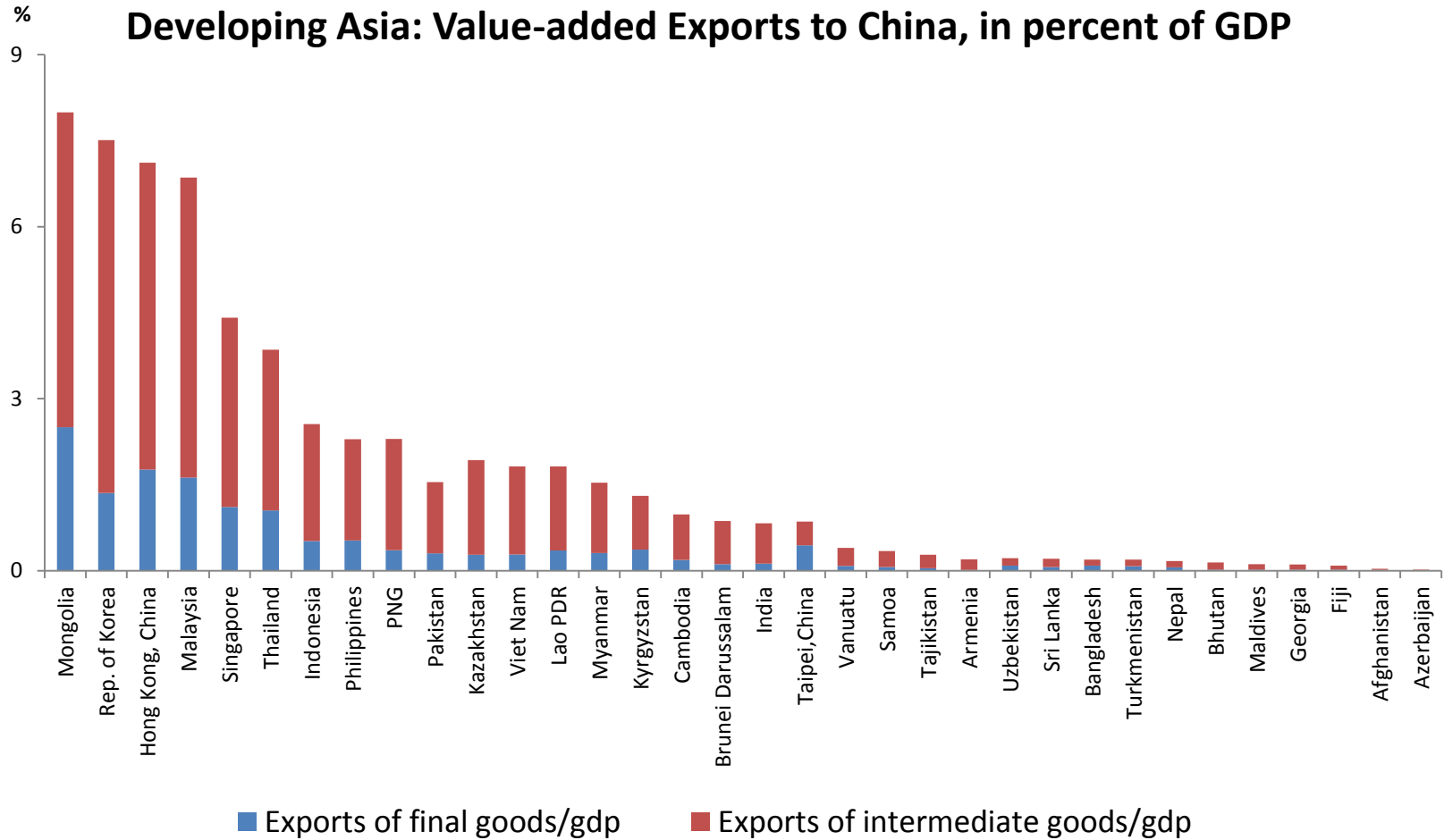
Commodity exports to PRC



Effect on Commodity-exporting DMCs of a 1pp decline in PRC growth

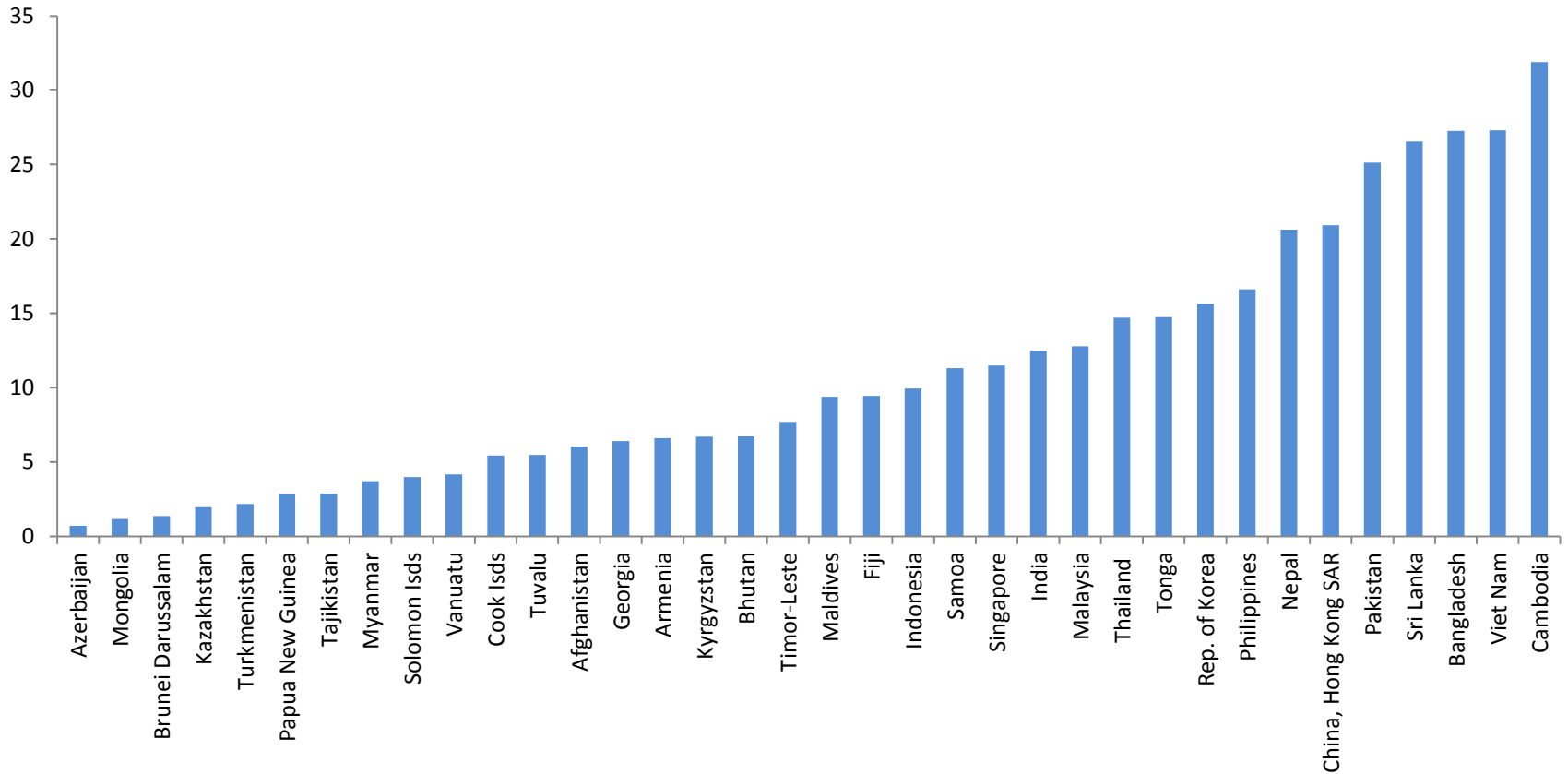


Spillovers to DMCs will vary with the strength of their trade and production linkages with China...



... and the degree to which they compete with China.

Developing Asia: Index of Competition with China, 2014



Preliminary regression results confirm these differences.

Dependent variable: real GDP growth	(1)	(2)
Lagged real GDP growth	0.0745*** <i>(0.00435)</i>	0.221*** <i>(0.00159)</i>
Lagged real GDP	-0.139*** <i>(0.0100)</i>	-0.0968*** <i>(0.00908)</i>
Volatility	-0.963*** <i>(0.0703)</i>	-0.397*** <i>(0.00497)</i>
Private Credit (% of GDP)	-0.0248*** <i>(0.000193)</i>	-0.0179*** <i>(0.000288)</i>
(Intermediate input exports to China/GDP)*(PRC growth)	1.235*** <i>(0.0561)</i>	1.030*** <i>(0.0598)</i>
(Final goods exports to China/GDP)*(PRC growth)	3.571*** <i>(0.363)</i>	0.744 <i>(0.516)</i>
Export similarity index	0.770*** <i>(0.0570)</i>	
Export similarity*(PRC growth slowdown dummy)	1.906*** <i>(0.161)</i>	
(Competition index)*(PRC growth slowdown dummy)		0.0164*** <i>(0.00146)</i>
Constant	6.157*** <i>(0.283)</i>	5.850*** <i>(0.137)</i>
Number of Observations	538	519
Number of countries	69	72

Standard errors in parentheses; *** p<0.01

Conclusions

- Baseline “soft landing” scenario (PRC growth weaker by 0.85pp) takes about 0.3pp off developing Asia’s growth
- A low-probability “hard landing” scenario would see PRC’s growth decline by 4.5pp, with larger spillover effects
- PRC’s slowdown will affect the region’s commodity exporters through prices but mostly through lower export volumes, with Mongolia being most vulnerable
- DMCs with stronger trade and production linkages will be hit harder by PRC’s slowdown, but those that compete with China will see these effects mitigated
- Manufacturing in developing Asia will be the most affected sector, although mining/quarrying, agriculture, and services will also be affected in a few Asian economies

How commodity prices affect ToT for Asia's commodity exporters

<i>Dependent variable: Log of Terms of trade</i>						
	(1) Azerbaijan	(2) Brunei Darussalam	(3) Indonesia	(4) Kazakhstan	(5) Mongolia	(6) Malaysia
Independent variables:						
Log of Coal prices _{WLD}			0.164*** (6.817)		0.191*** (4.466)	
Log of Copper prices _{WLD}				0.0607** (2.587)	0.284*** (8.074)	
Log of Oil prices _{WLD}	0.320*** (3.343)	0.286*** (3.341)		0.570*** (19.80)		-0.0553** (-3.012)
Log of Natural gas prices _{WLD}	0.307** (2.212)	0.486*** (4.030)	0.00212 (0.0614)			0.0897*** (3.340)
Constant	1.219*** (3.740)	0.454 (1.563)	3.885*** (35.89)	1.462*** (25.01)	2.616*** (24.56)	4.388*** (67.48)
Number of observations	14	14	14	14	14	14
R-squared	0.984	0.977	0.948	0.998	0.970	0.524

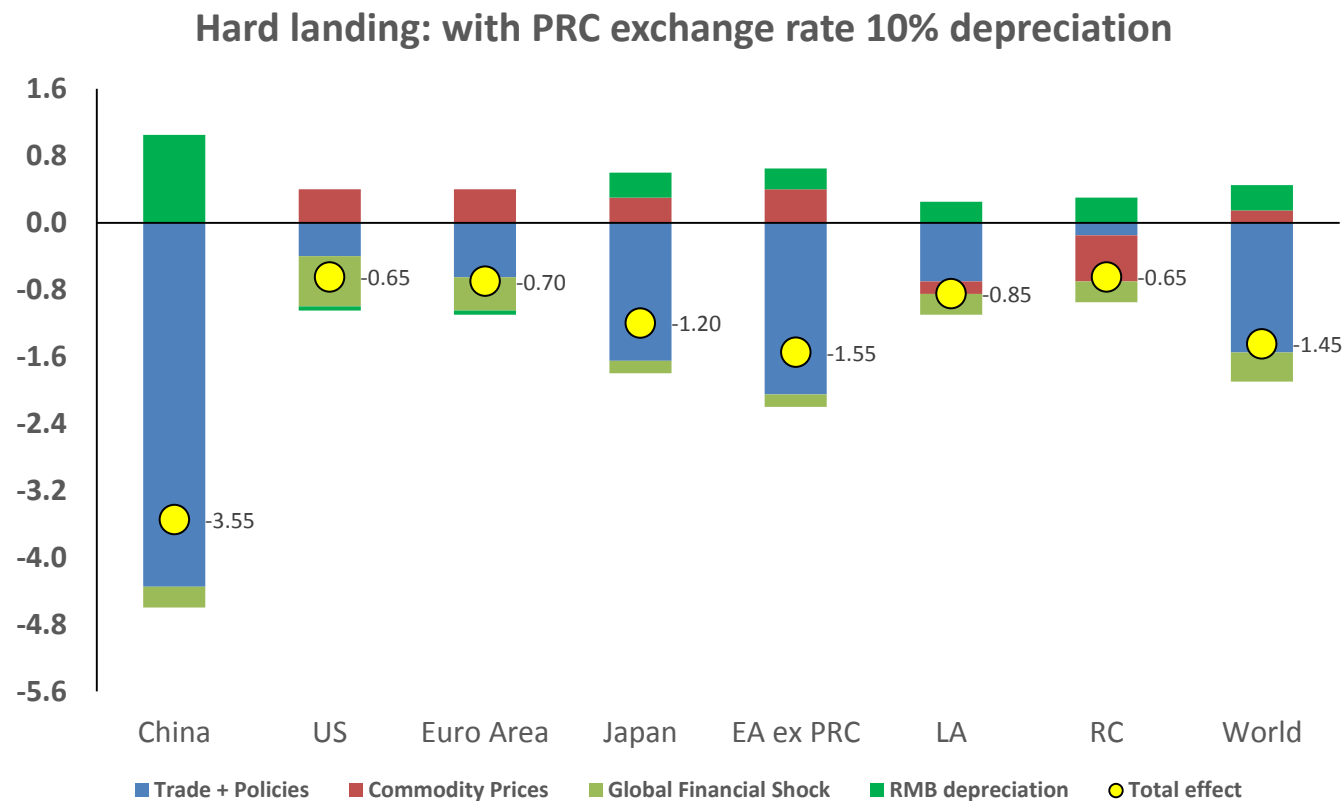
Note: Robust t-statistics in parentheses. Significance at 1%, 5% and 10% levels are denoted respectively by ***, ** and *. Impact of commodity prices on terms of trade is similar when regressions are run in log-differences.

How PRC growth affects commodity exporters

<i>Dependent variable: GDP growth_{CTY}</i>						
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Terms of trade growth _{CTY}	0.0379** (2.068)	0.0341* (1.862)	0.0363* (1.874)	0.0355* (1.937)	0.0369* (1.854)	0.0363* (1.968)
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Number of observations	500	500	500	500	500	500
Number of countries	40	40	40	40	40	40
R-squared	0.020	0.016	0.013	0.015	0.024	0.022

Note: Robust t-statistics in parentheses. Significance at 1%, 5% and 10% levels are denoted respectively by ***, ** and *.

A RMB depreciation would help China, but would exacerbate negative spillovers.



Impact of China's Structural Change on Asian Exports

Dr. Donghyun Park, Asian Development Bank
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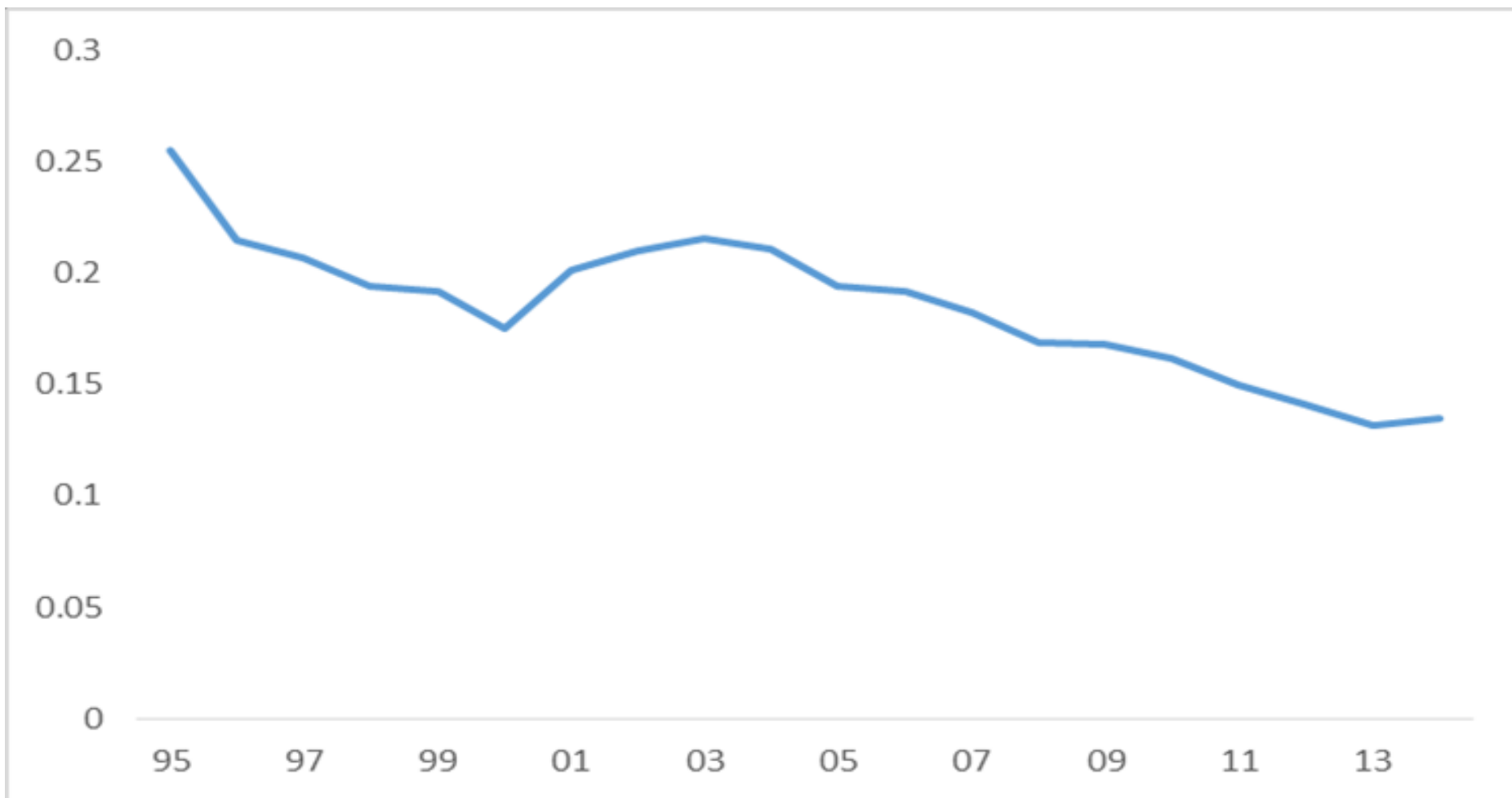
Motivation

- China's *structural change* or *structural transformation*, as opposed to economic growth slowdown, will affect the export performance of Asian countries
 - Slowdown and structural change are related, but separate and different, phenomena
- The structural change has many dimensions, but perhaps the central dimension is the shift from investment-led growth to consumption-led growth
- Yet another key dimension is a decline in China's role as the final point in the Factory Asia global value chain

Game plan for the analysis

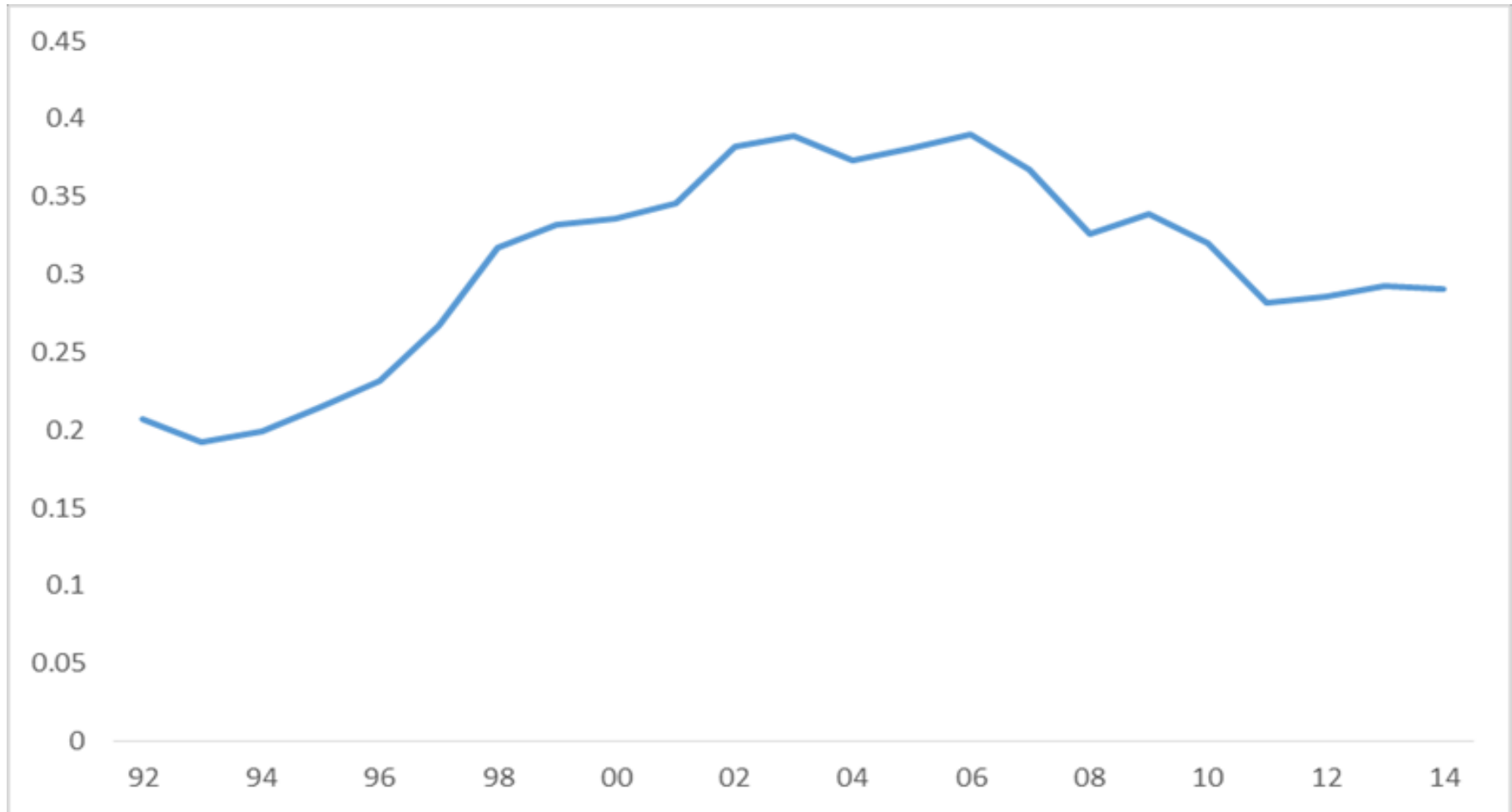
- We plan to empirically analyze the impact of China's *structural change* on the export performance of Asia countries
- To do so, we will use two types of databases.
 - UN Comtrade database
 - OECD's TiVA (trade in value added) database
- Our analysis is primarily descriptive, but should nevertheless give us some idea of how China's structural change affects its neighbors' exports

Share of capital goods in China's imports has been declining.....



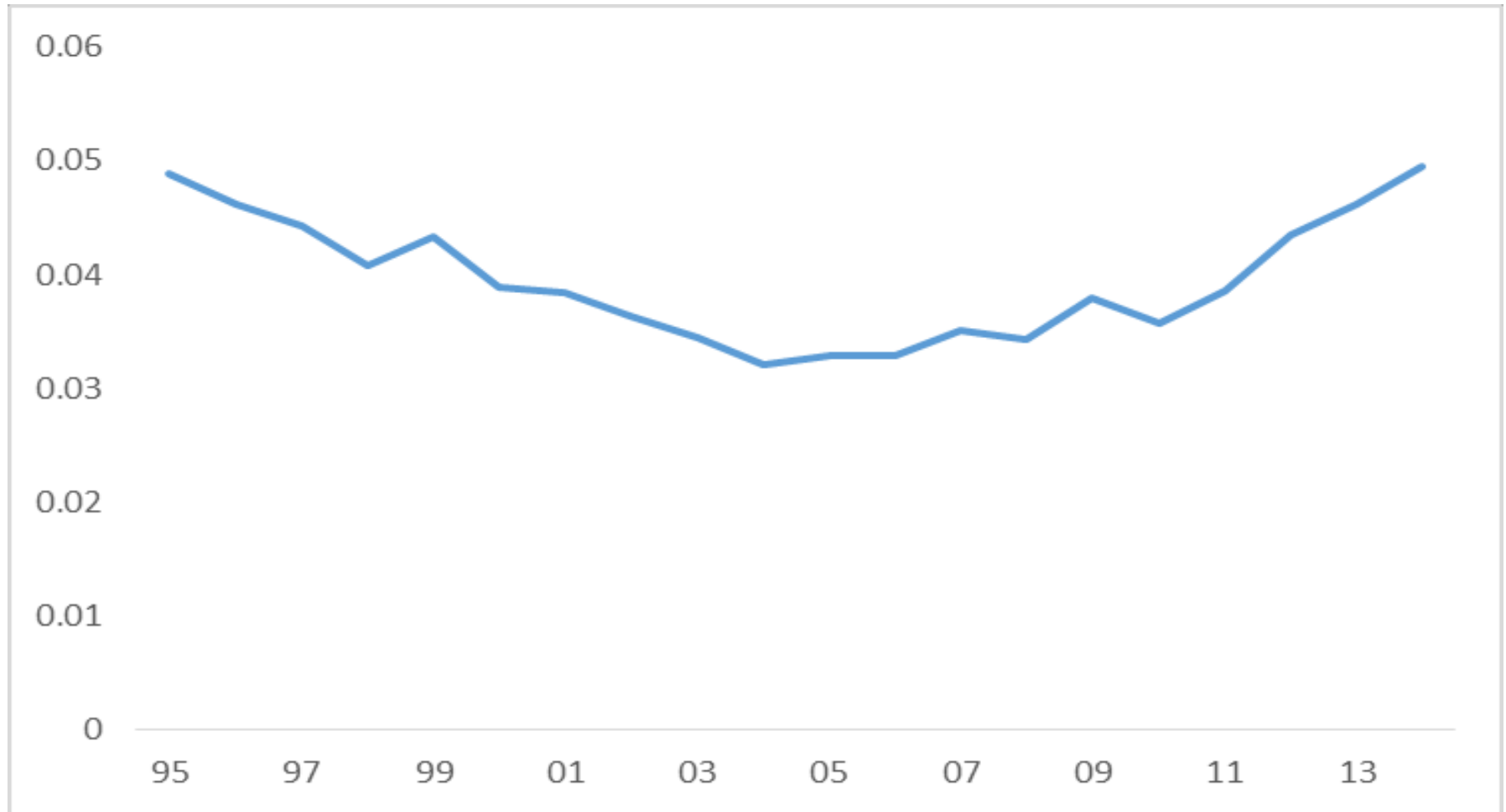
Source: Author computations based on UN Comtrade database

.....and the same pattern is observed in share of parts and components in China's imports



Source: Author computations based on UN Comtrade database

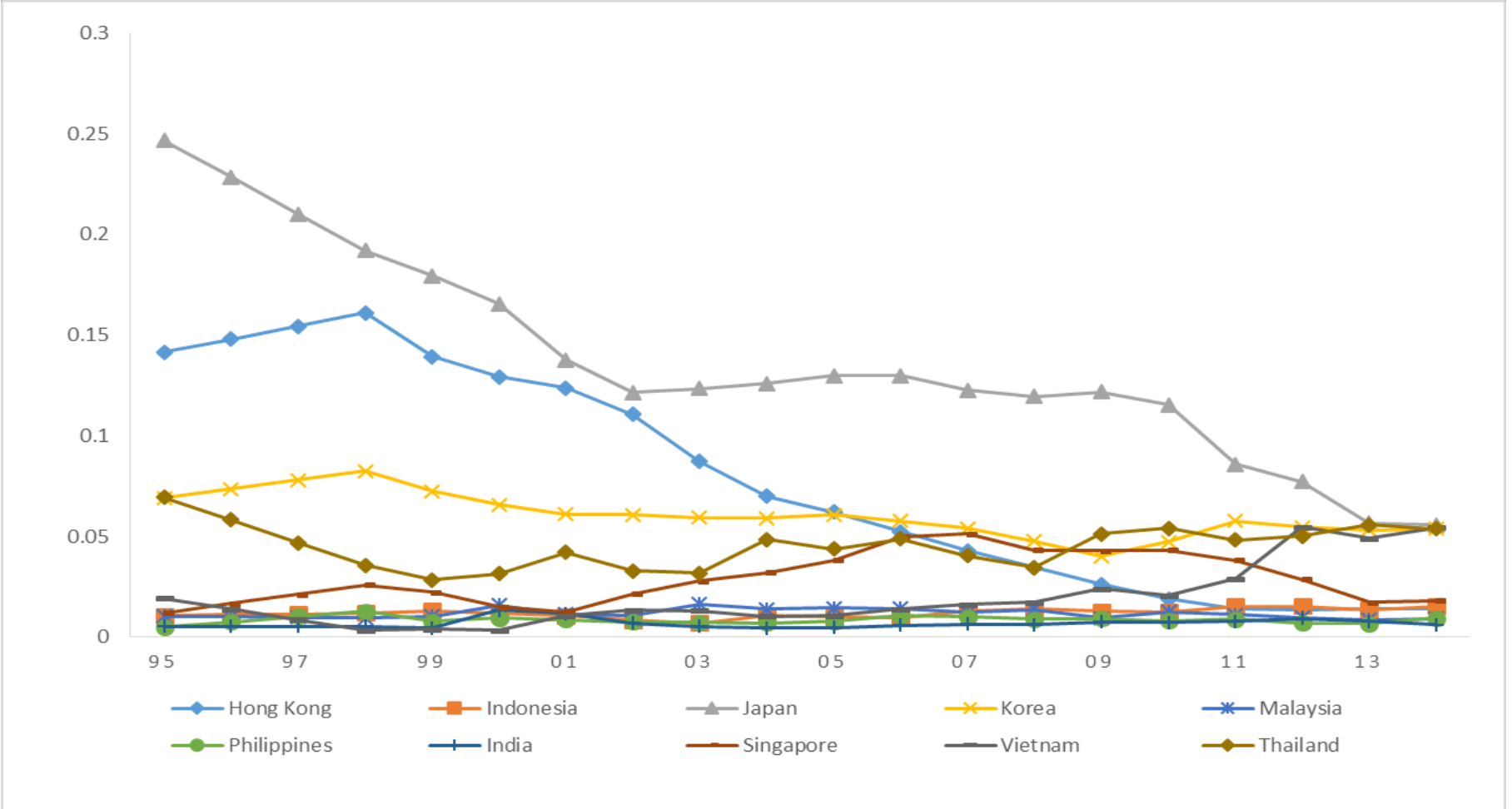
.....on the other hand, the share of consumption goods is picking up



Source: Author computations based on UN Comtrade database

Country-specific structure of exports to China varies...

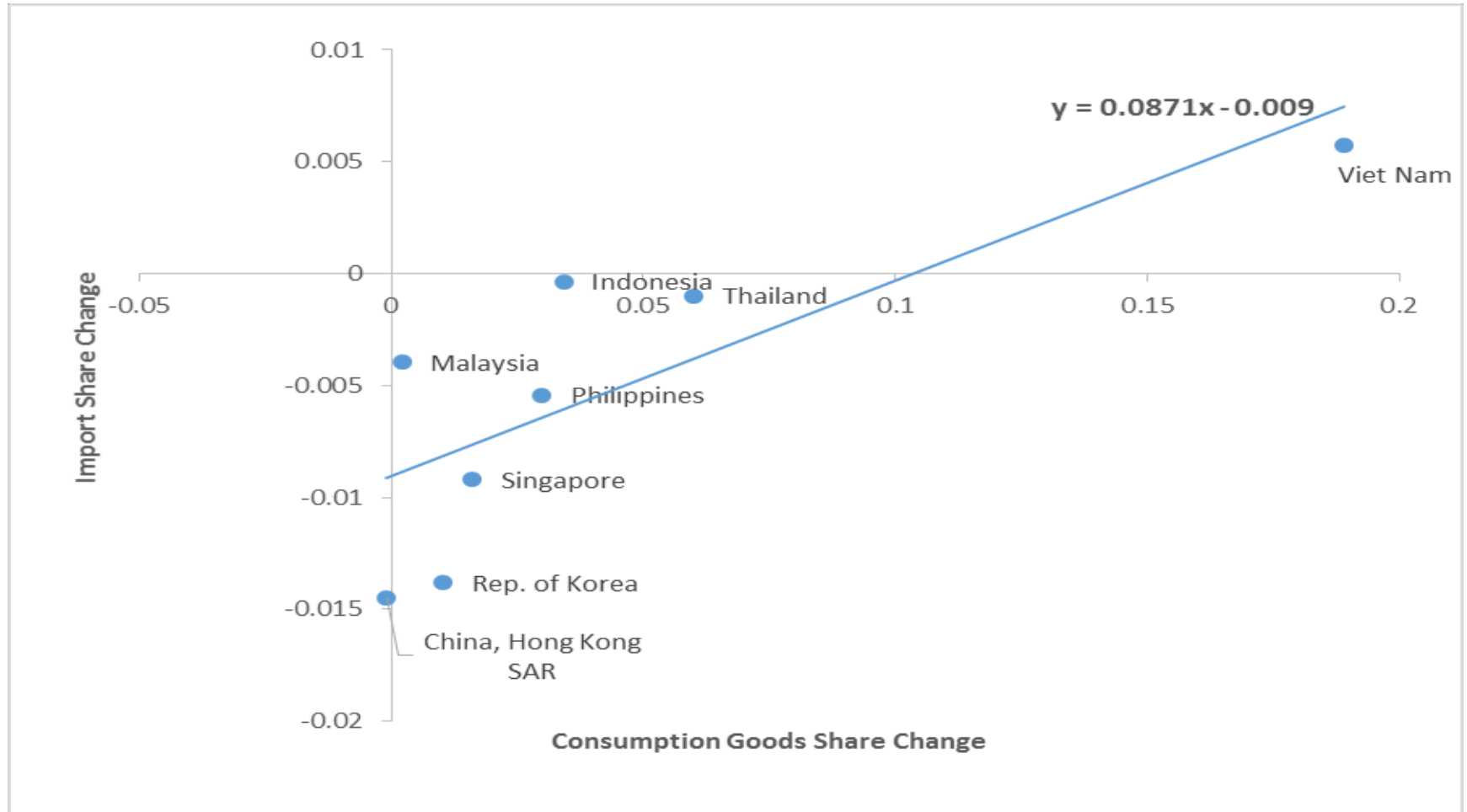
Country's share in China's total consumption good imports



Source: Author computations based on UN Comtrade database

...and that has implications for country-specific impact of China's structural change: example 1

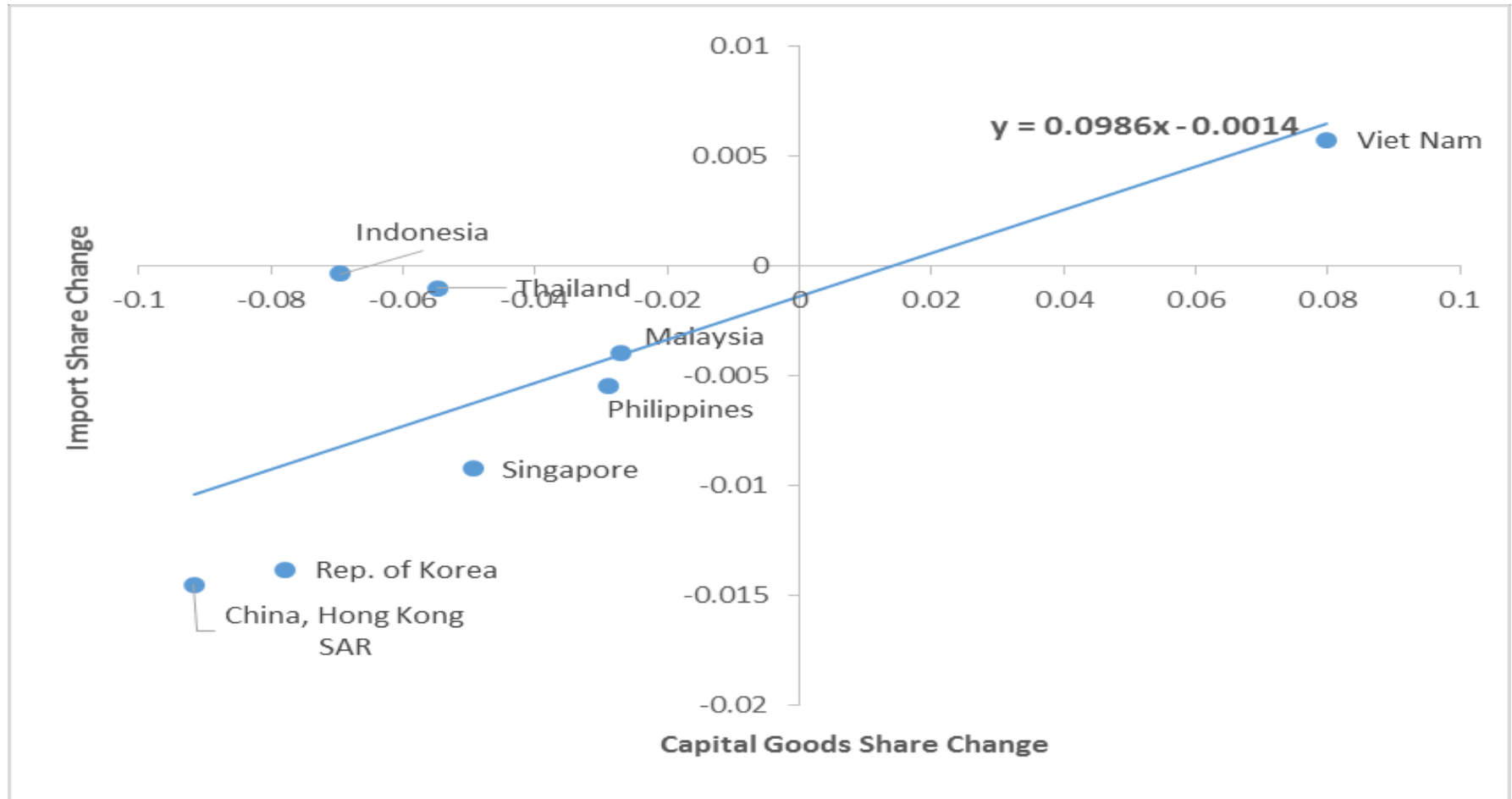
Change in PRC's Consumption Goods Import Share and Change in PRC's Total Import Share (2004-2014)



Source: Author computations based on UN Comtrade database

...and that has implications for country-specific impact of China's structural change: example 2

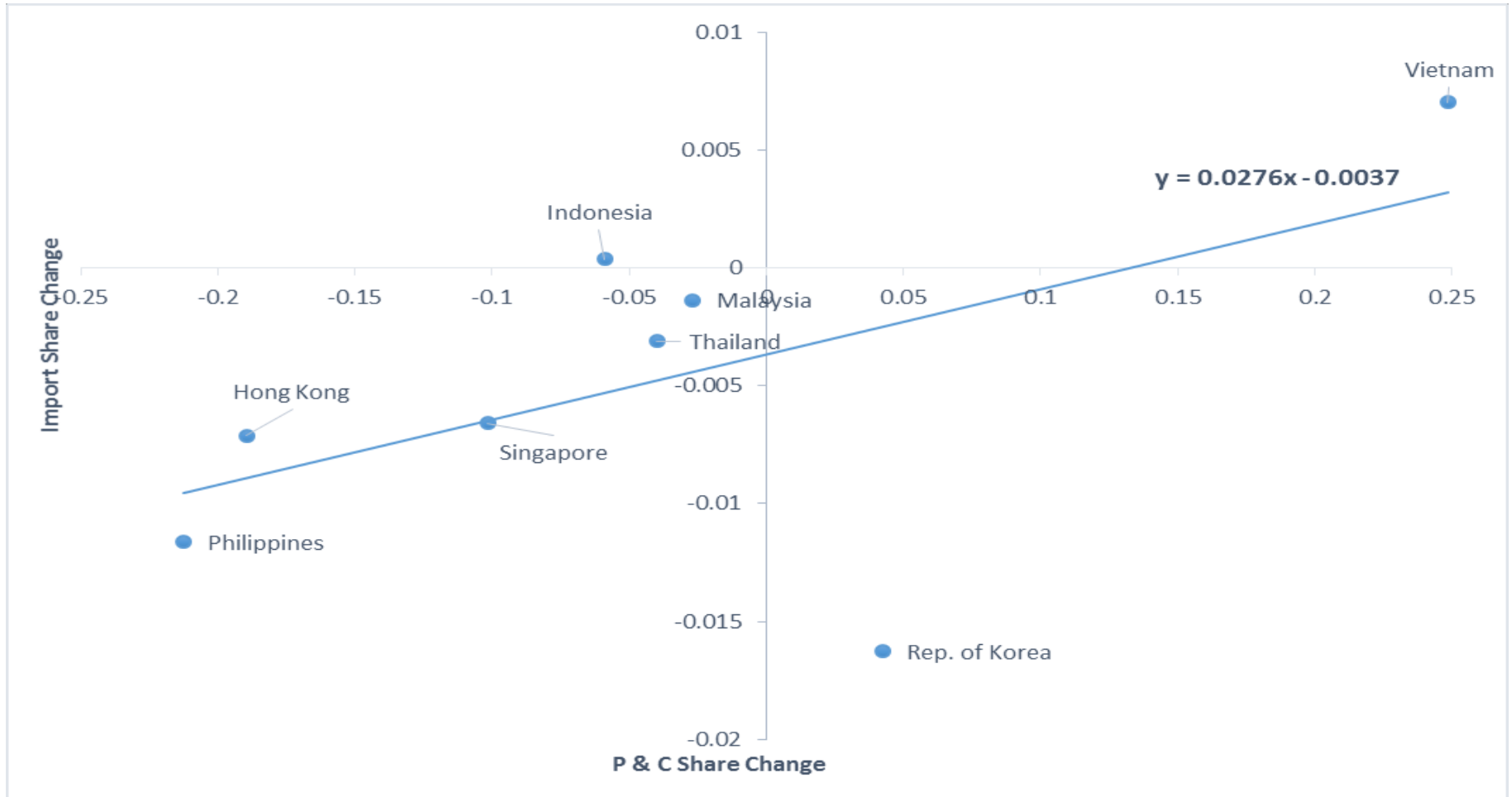
Change in PRC's Capital Goods Import Share and Change in PRC's Total Import Share (2004-2014)



Source: Author computations based on UN Comtrade database

...and that has implications for country-specific impact of China's structural change: example 3

Change in PRC's Parts and Components Import Share and Change in PRC's Total Import Share (2004-2014)



Source: Author computations based on UN Comtrade database

China's trade in value added and hence role in global value chain (GVC) is evolving.....

China's Trade in Value Added: forward and backward linkage indicators (%), all industries, 1995-2011

Source		China	
Partner		World	
Indicator		<u>FVADEX SH: Backward participation in GVCs: Foreign VA embodied in exports, as % of total gross exports</u>	<u>DVAFEX SH: Forward participation in GVCs: Domestic VA embodied in foreign exports, as % of total gross exports</u>
Year			
2011		32.1	15.6
2005		37.4	13.3
2000		37.2	10.8
1995		33.3	9.5

Source: OECD-WTO's Trade in Value Added (TiVA) Database

...and the pattern of China's trade in value added differs across industries

Foreign value added share of China's exports (%), different industries

Indicator	EXGR_FVASH: Foreign value added share of gross exports			
	1995	2000	2005	2011
Industry				
CTOTAL: TOTAL	33.4	37.3	37.4	32.2
C01T05: Agriculture, hunting, forestry and fishing	7.0	7.8	10.1	10.2
C10T14: Mining and quarrying	35.0	30.2	26.6	26.2
C15T37: Total Manufactures	48.1	50.6	48.0	40.1
C15T16: Food products, beverages and tobacco	38.9	35.3	25.2	25.4
C17T19: Textiles, textile products, leather and footwear	43.3	38.2	30.9	26.5
C20T22: Wood, paper, paper products, printing and publishing	50.2	51.2	37.3	42.0
C23T26: Chemicals and non-metallic mineral products	49.6	49.9	43.6	41.4
C27T28: Basic metals and fabricated metal products	34.4	38.6	33.2	32.5
C29: Machinery and equipment, nec	40.1	39.0	34.8	30.4
C30T33: Electrical and optical equipment	72.6	75.3	67.0	53.8
C34T35: Transport equipment	46.9	42.6	38.7	30.0
C36T37: Manufacturing nec; recycling	28.1	25.9	25.9	22.3
C40T41: Electricity, gas and water supply	4.2	6.0	7.8	9.3
C45: Construction	5.9	7.5	11.4	12.1
C50T74: Total Business Sector Services	3.3	5.0	5.8	6.3
C75T95: Community, social and personal services	4.4	5.5	7.6	7.7

Source: OECD-WTO's Trade in Value Added (TiVA) Database

...but overall, the data generally point to an erosion of the PRC's role as end-point in GVC

Re-exported intermediate imports of China (%), different industries

Indicator	IMGRINT_REII: Re-exported intermediate imports as % of intermediate imports			
Country	CHN: China (People's Republic of)			
Partner	WOR: World			
Unit	Percentage			
Time	1995	2000	2005	2011
Industry				
CTOTAL: TOTAL	58.3	57.8	59.0	47.2
C01T05: Agriculture, hunting, forestry and fishing	32.2	37.4	41.2	34.8
C10T14: Mining and quarrying	26.1	27.4	33.4	27.5
C15T37: Total Manufactures	62.1	62.2	64.3	53.9
C15T16: Food products, beverages and tobacco	54.8	50.8	45.9	36.3
C17T19: Textiles, textile products, leather and footwear	93.8	93.6	92.1	88.3
C20T22: Wood, paper, paper products, printing and publishing	67.8	65.9	57.0	49.3
C23T26: Chemicals and non-metallic mineral products	58.2	55.4	55.4	48.3
C27T28: Basic metals and fabricated metal products	65.3	69.1	64.1	54.3
C29: Machinery and equipment, nec	49.8	56.8	56.0	48.1
C30T33: Electrical and optical equipment	67.3	63.1	72.4	63.2
C34T35: Transport equipment	28.0	29.8	34.8	26.5
C36T37: Manufacturing nec; recycling	49.9	53.4	52.0	41.9
C40T41: Electricity, gas and water supply	31.4	26.6	36.9	35.1
C45: Construction	41.7	50.7	50.7	38.7
C50T74: Total Business Sector Services	56.5	57.2	57.7	48.7
C75T95: Community, social and personal services	47.6	52.6	46.9	42.5

Source: OECD-WTO's Trade in Value Added (TiVA) Database

Preliminary findings

- As expected, overall, China's structural change is likely to have a significant adverse impact on East and Southeast Asian countries' exports in the short run
- In particular, the region's heavy exposure to exports of capital goods as well as parts and components to the PRC leaves it vulnerable to PRC's structural change
- On the other hand, we can expect countries that are able to increase exports of consumption goods to PRC to fare better