

China: A Tale Of Two Polymers and the Trade War

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Vienna – April 2019

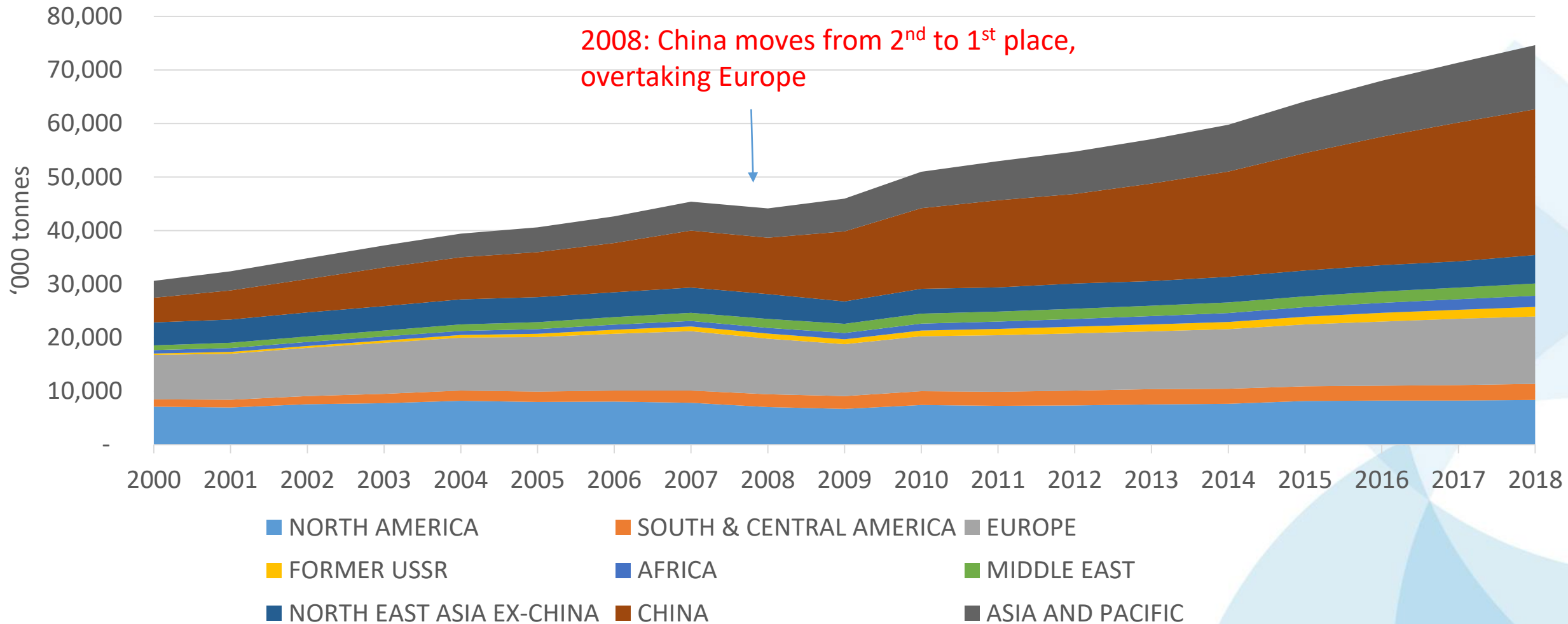
Today's agenda

- Broad split between durable and non-durable end-use applications so useful guide to the future. PP more dependent on credit cycles, GDP growth
- PE decoupled from GDP growth
- The trade war in the essential demographic context



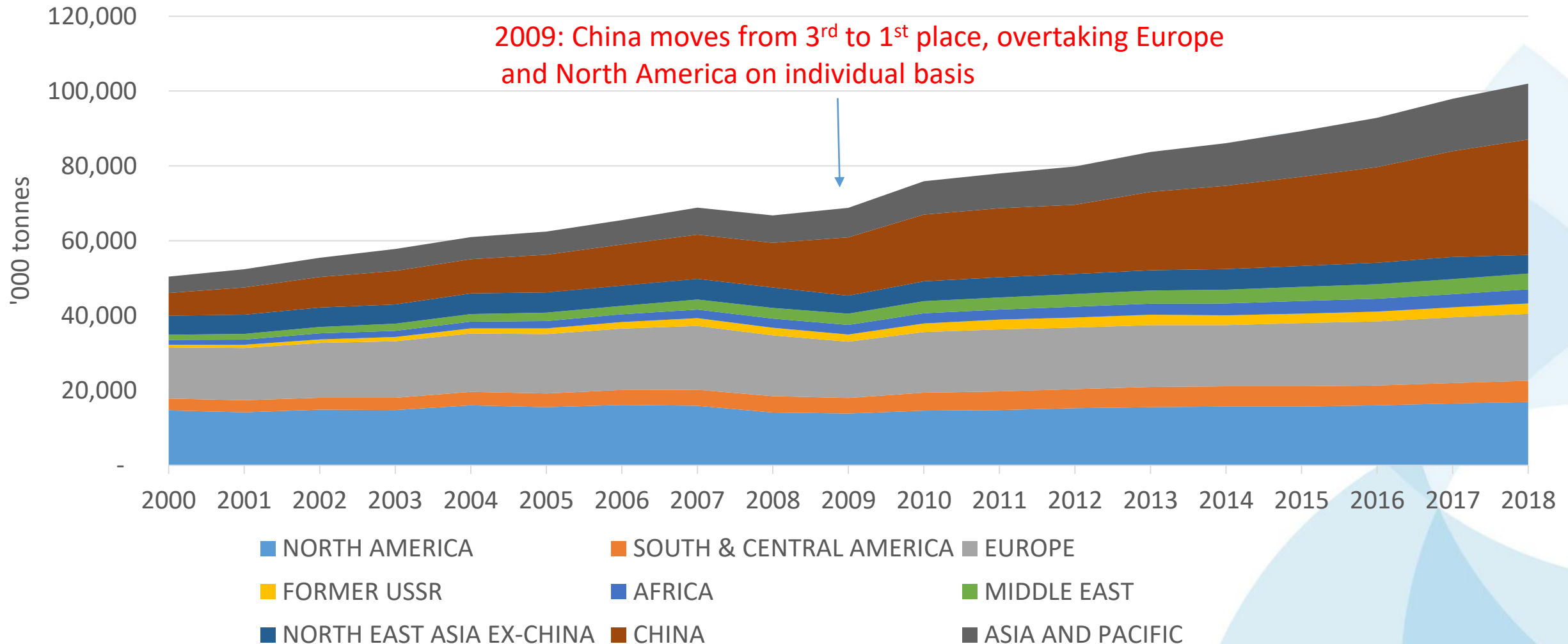
Why China is so important

Global PP consumption



Why China is so important

Global PE consumption



Polypropylene



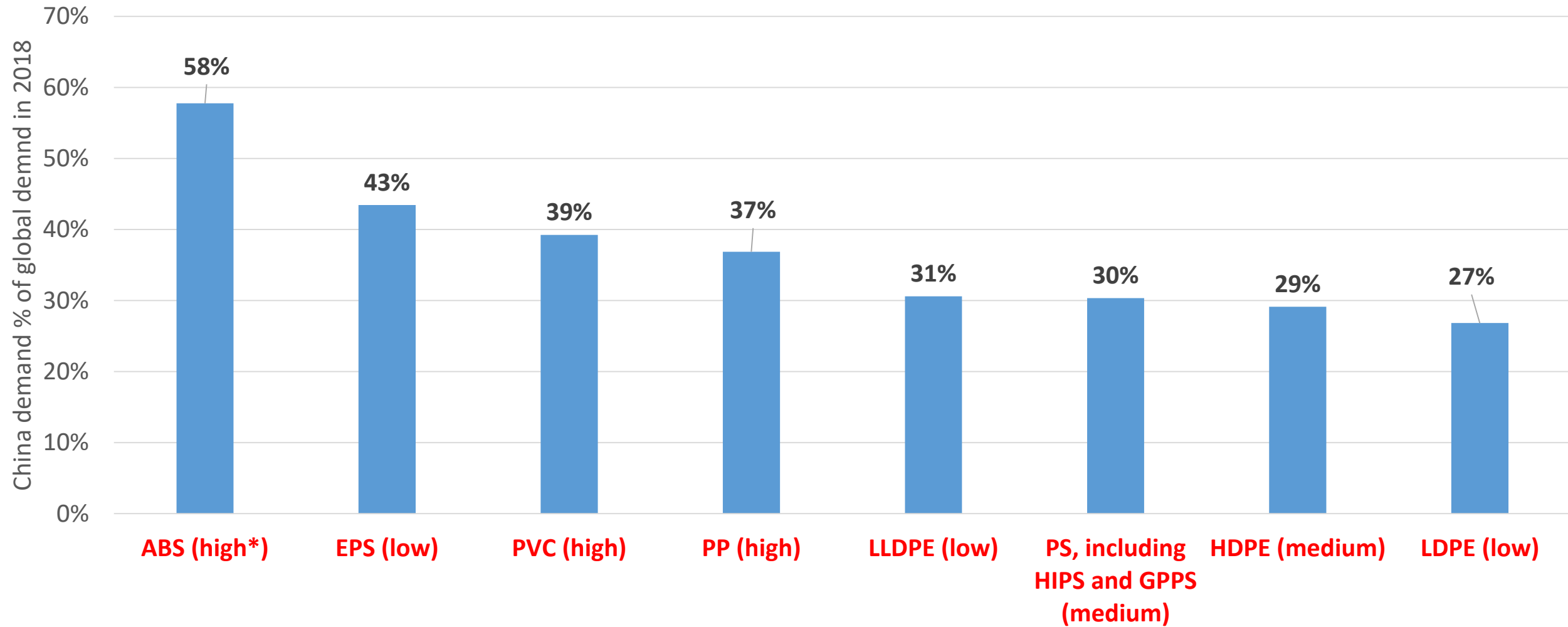


Clear from February that credit was slowing down, so Apple earnings warning should have been no surprise:

- China's shadow lending averaged around \$20bn/month in 2008, a minor addition to official lending
- But then it took off as China's leaders panicked after the 2008 Global Economic Crisis
- By 2010, it had shot up to average \$80bn/month, and nearly doubled to \$140bn in 2013
- President Xi Jinping then took office and the bubble stopped expanding
- But with Premier Li Keqiang still running a Populist economic policy, it was at \$80bn again in 2017
- At that point, Xi took charge of economic policy and slammed on the brakes. In 2018, monthly shadow lending was \$20bn

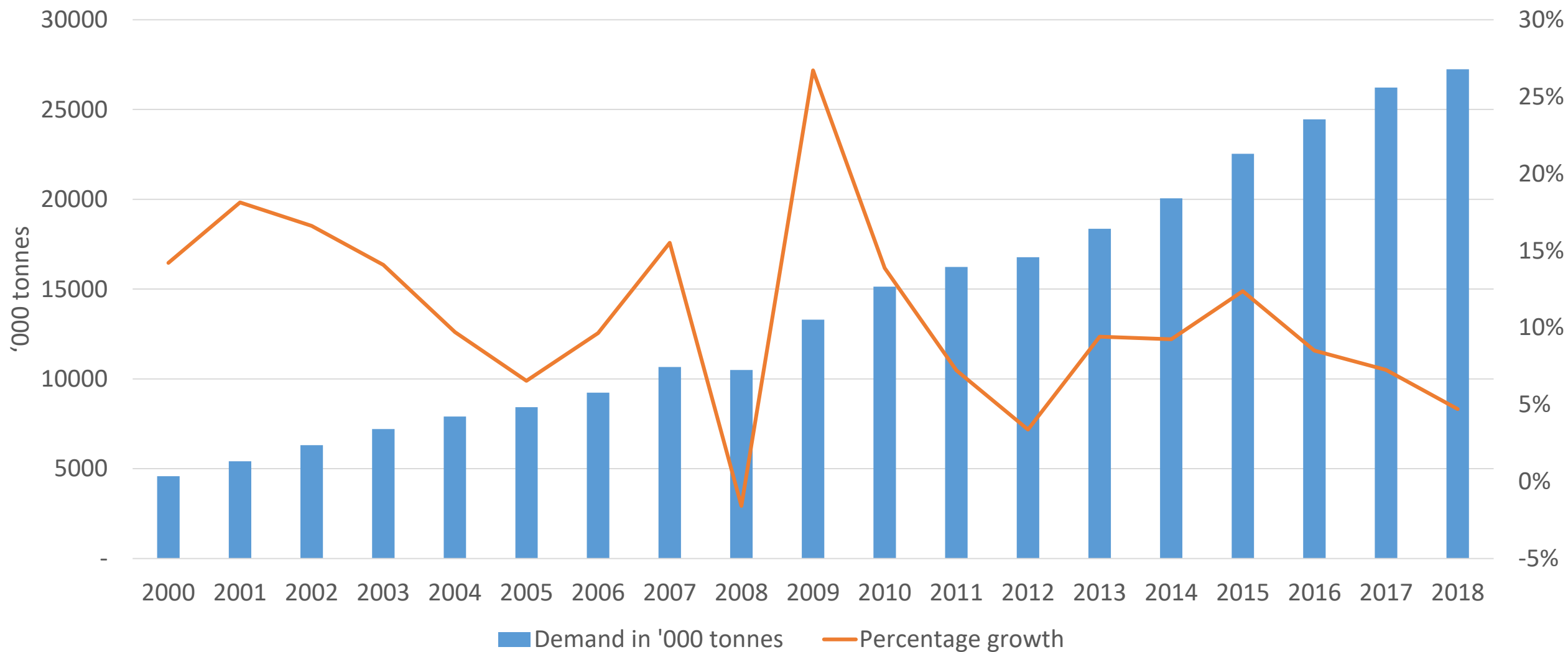


China polymers: Exposure to stimulus cycles and global importance of demand

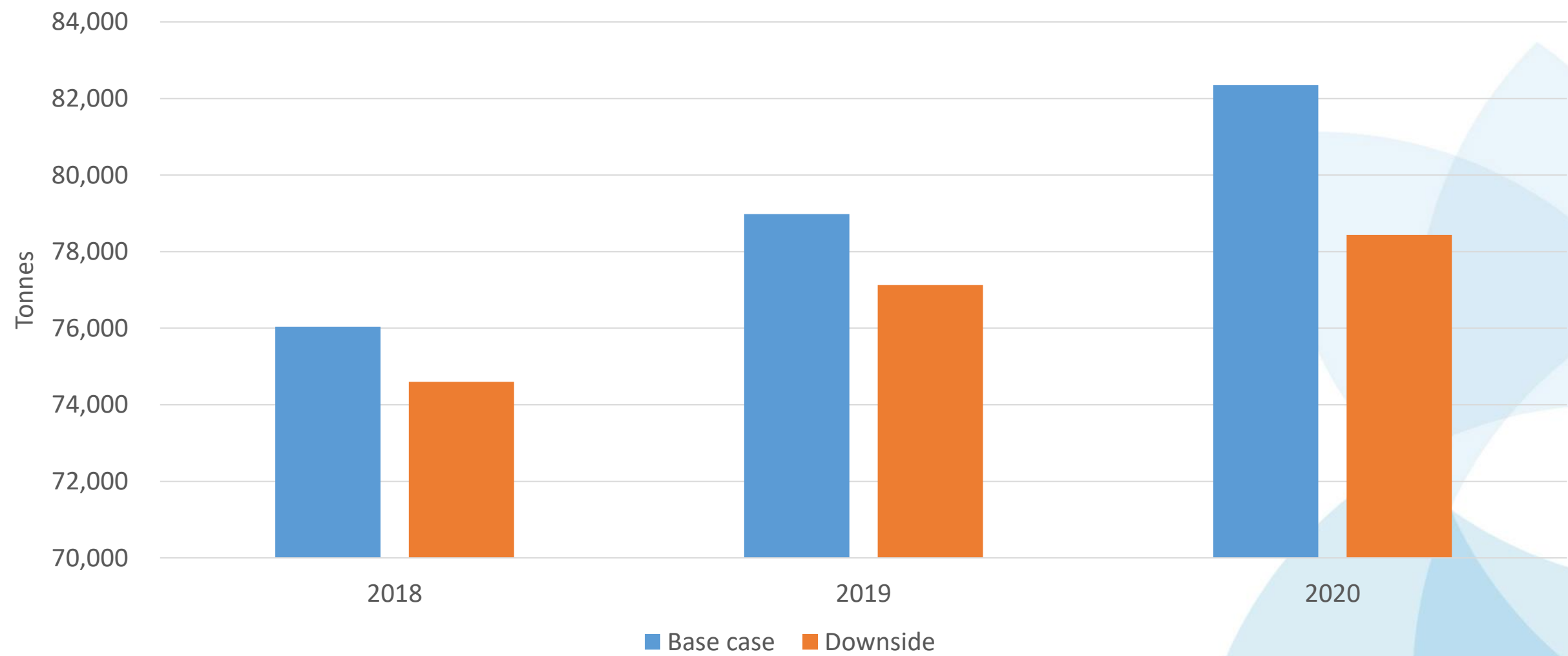


*Indicates high, medium or low exposure of polymer growth to China credit and infrastructure spending cycles

Lowest PP growth in China since 2012

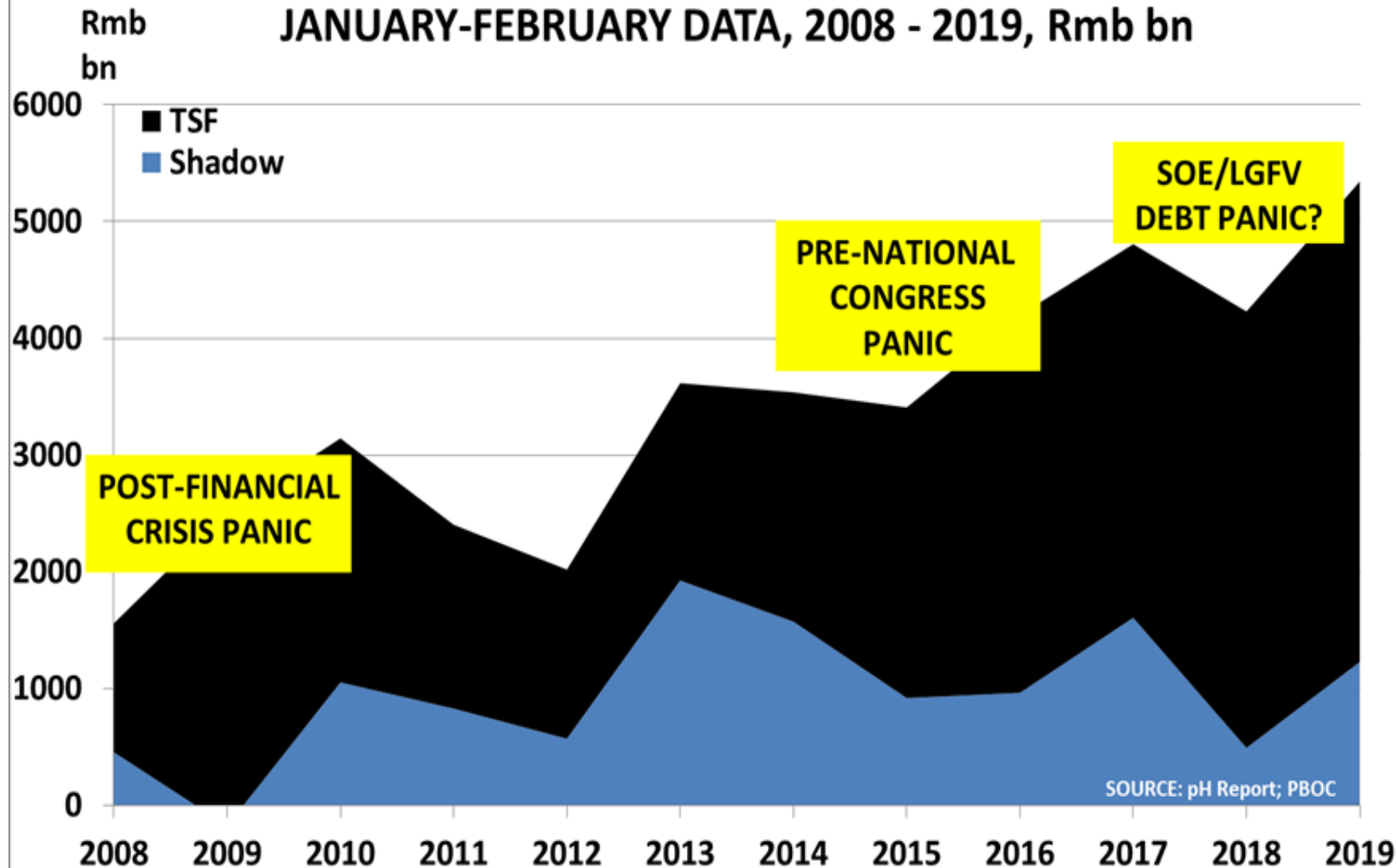


Global PP: Slower China leads to 7.2m tonnes lost demand



Here we go again?

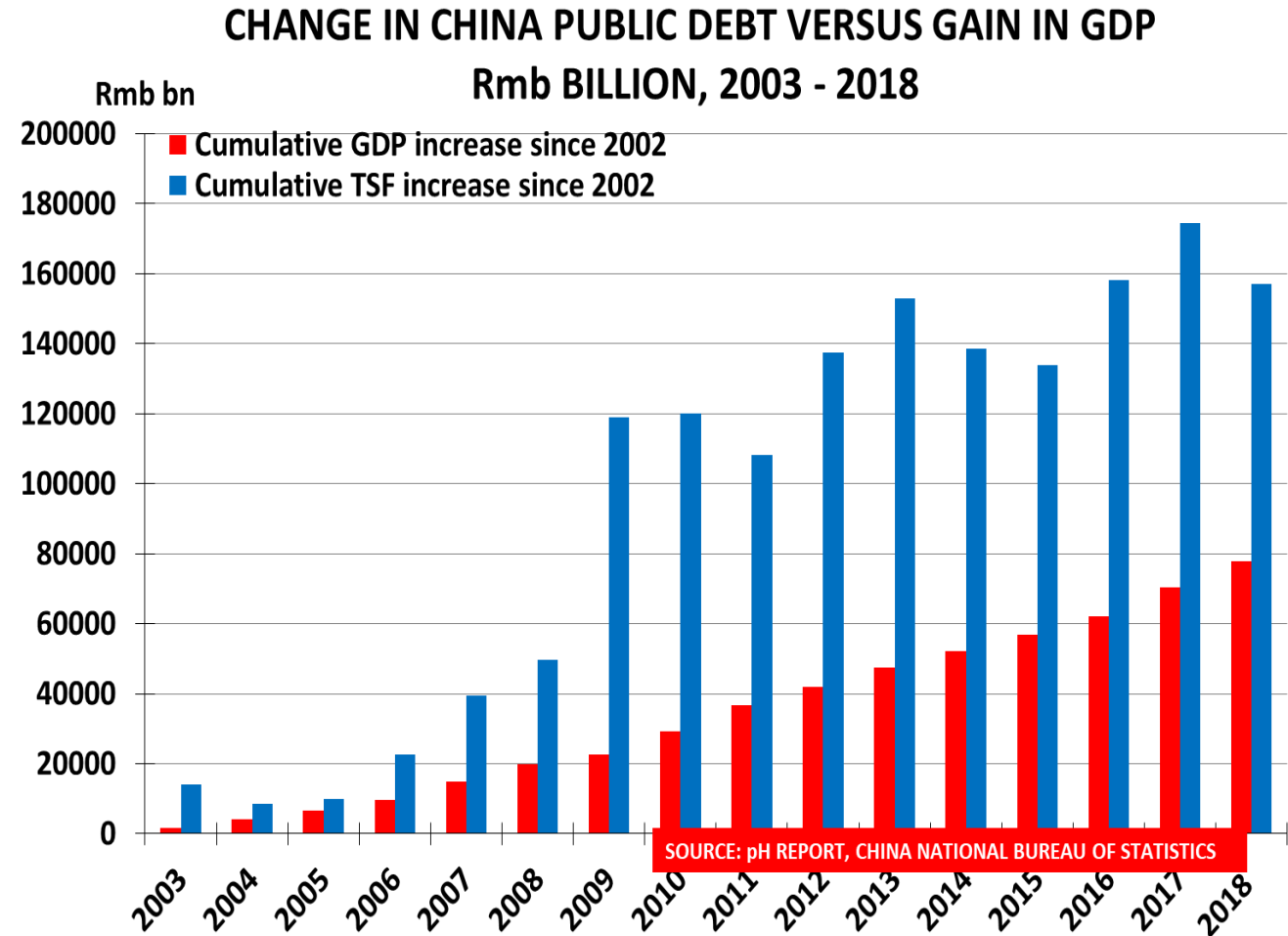
CHINA TOTAL SOCIAL & SHADOW BANK FINANCING
JANUARY-FEBRUARY DATA, 2008 - 2019, Rmb bn



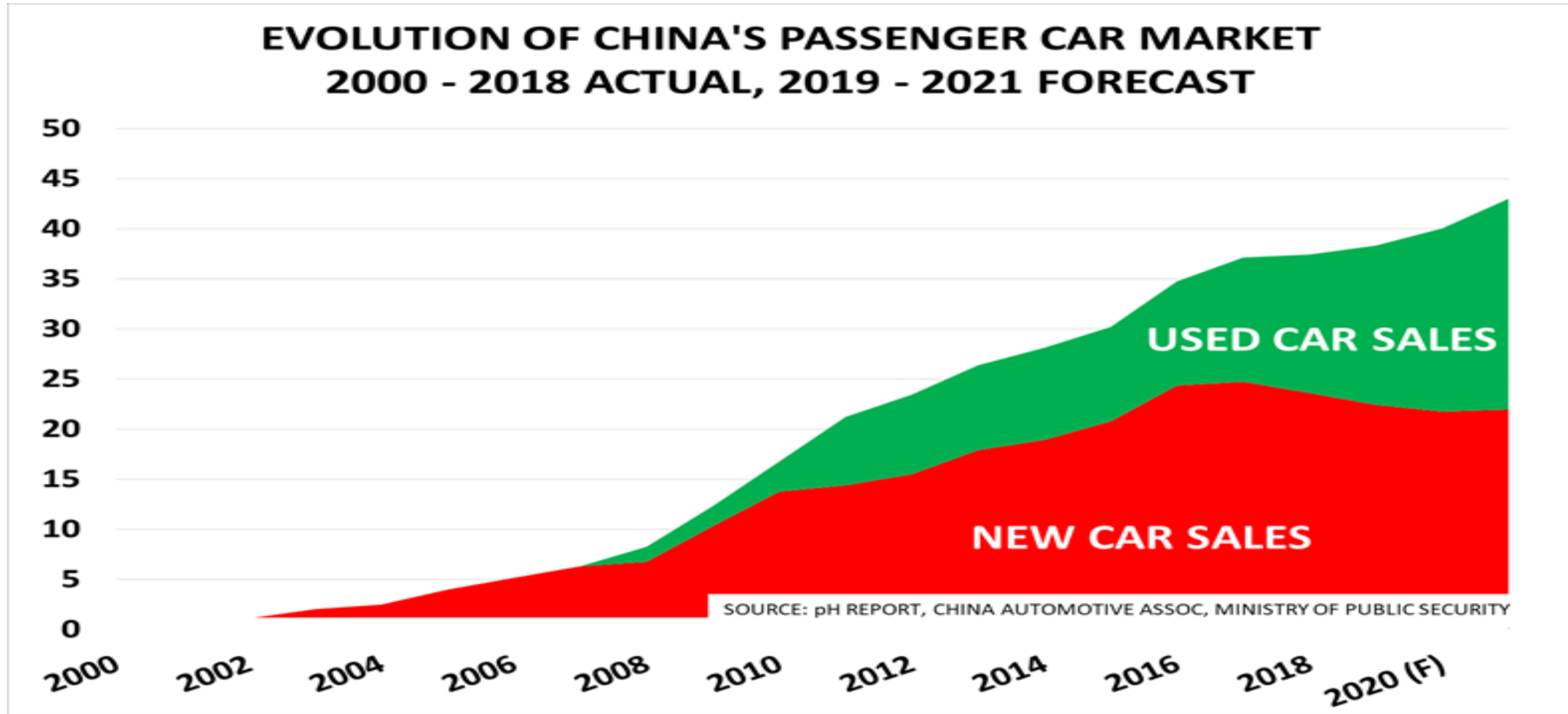
- ▶ January-February TSF up 26%
- ▶ So assumption is that this could be a repeat of 2009 and 2016
- ▶ But private sector starved of credit last year even though main driver of growth, so extra lending attempted reversal
- ▶ Local government financing vehicles at risk

Tighter lending in H2 or kicking the can down the road

- Scenario 1
 - *Trade deal gets done, which will be paper thin*
 - *Economy boosted, assuming tariffs are removed!*
 - *Credit tightens again*
- Scenario 2
 - *No deal or terms of deal bring no significant economic relief*
 - *In a year of political sensitivity, stimulus continues to rise*



Limited upside for autos even with stimulus in overdrive



A demographic disaster.....

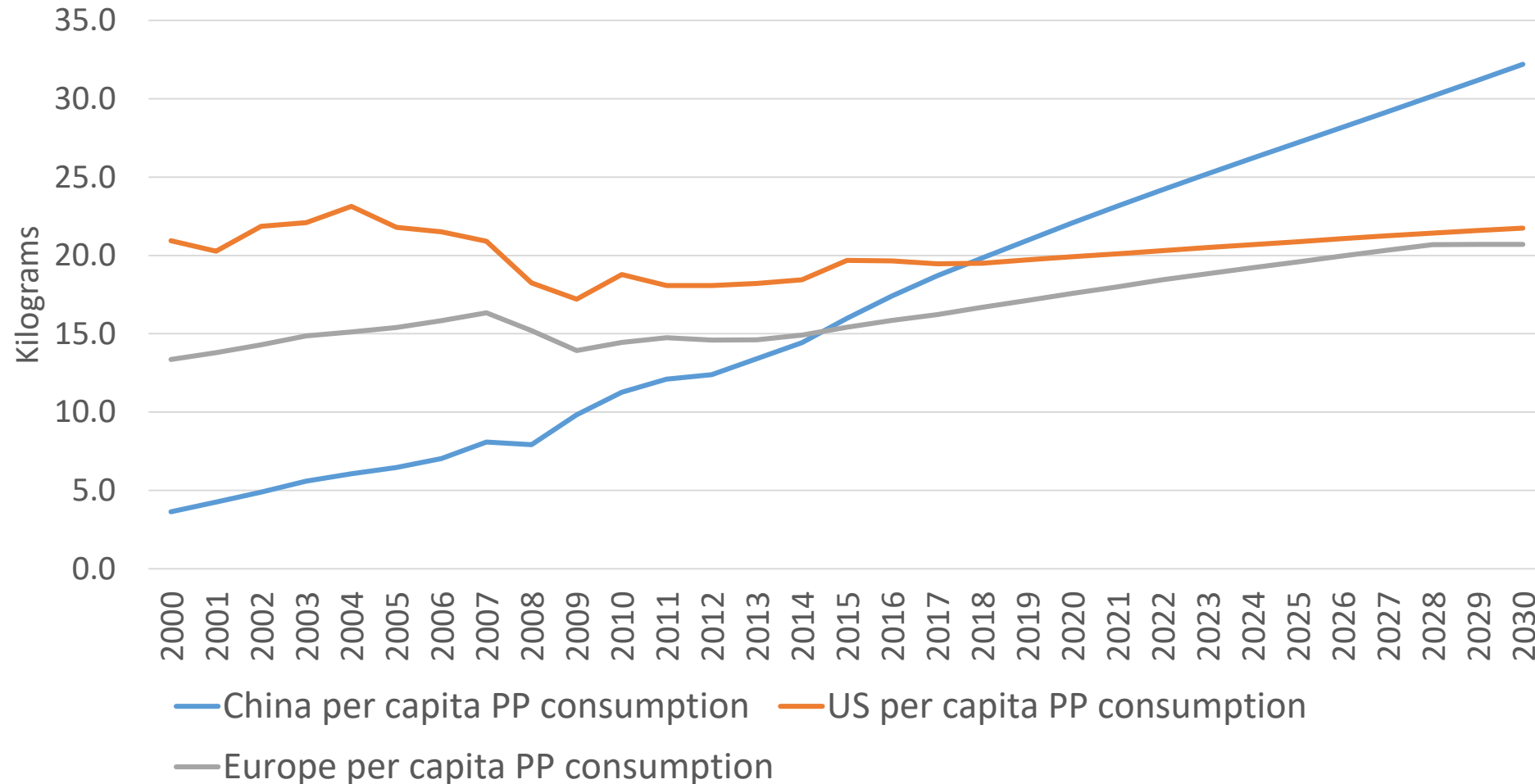
- Between 2015 and 2040, China's population aged 50 and over will increase 250m as the population under 50 falls by the same amount
- The 15-29 age group – which across all modern societies has the highest education and is the most IT and tech savvy – will shrink by 75m
- The only cohort that will grow in size will be the 50-64 age group and those over 64. In 2015-2020, the 65+ population will jump by almost 150% – from 135m to close to 340m



China's official 2019 Lunar New Year postage stamp

Has China's per capita growth maxed out?....

....in other words, is our base case too bullish?

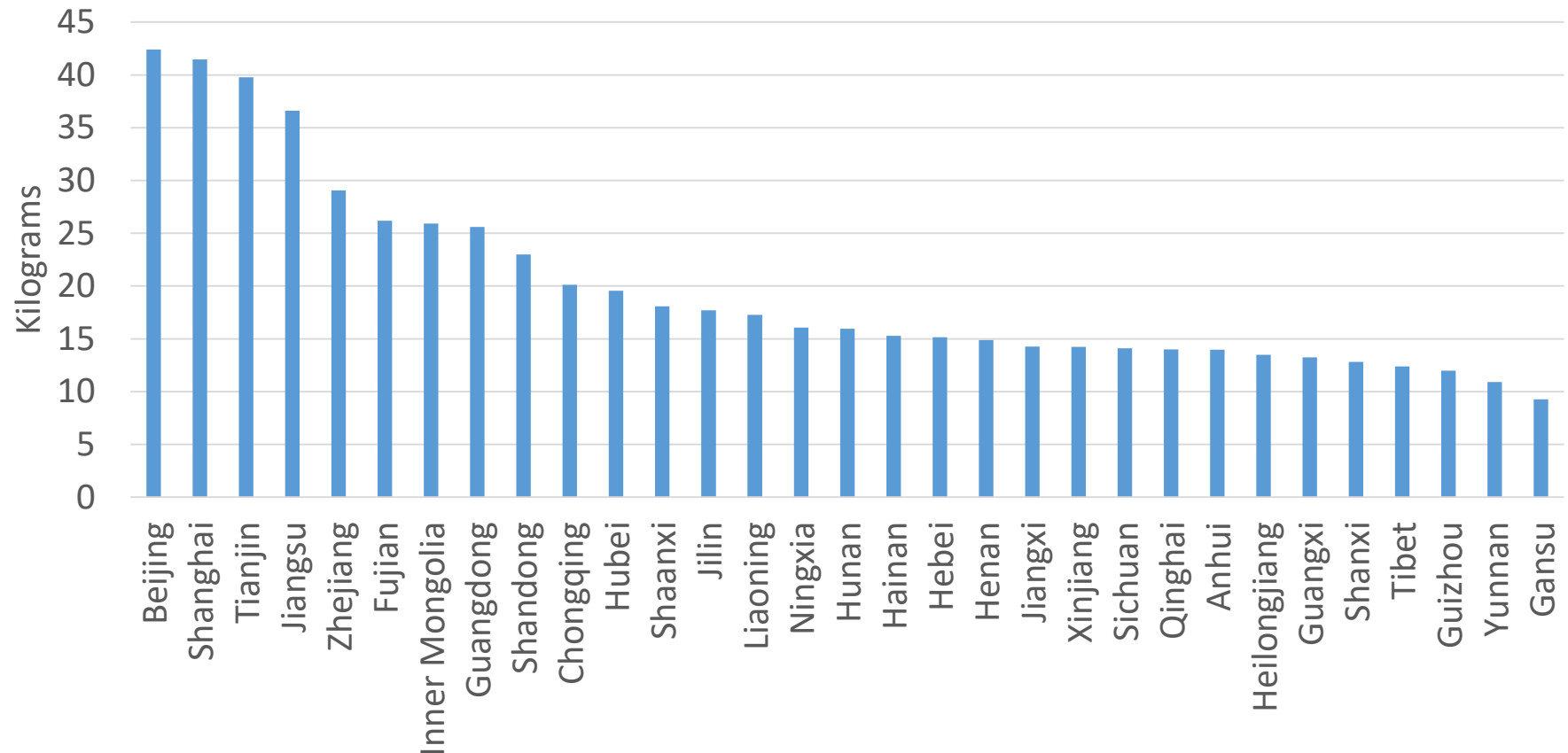


- Low value manufacturing gradually drifting away
- Can it be replaced by high value manufacturing?
- Spreading growth westwards when the west is ageing faster than the east a major challenge.....

Challenge of raising rural incomes

- Third of rural population over 65 by 2040
- Residents in poorer inland cities lack access to health care and education
- Unless China escapes middle income trap, major pension, healthcare shortfalls

Per capita PP consumption by administrative region in 2017



China's booming urban clusters are driving wealth growth

- ▶ But this might lead to lower than expected per capita PP consumption:
- 1. The rich, apart from sustainability concerns, don't want to waste time in traffic jams
- 2. China government funding for autonomous driving and ride-hailing
- 3. Focus on improving air quality
- 4. The time poor, cash rich and the washing machine



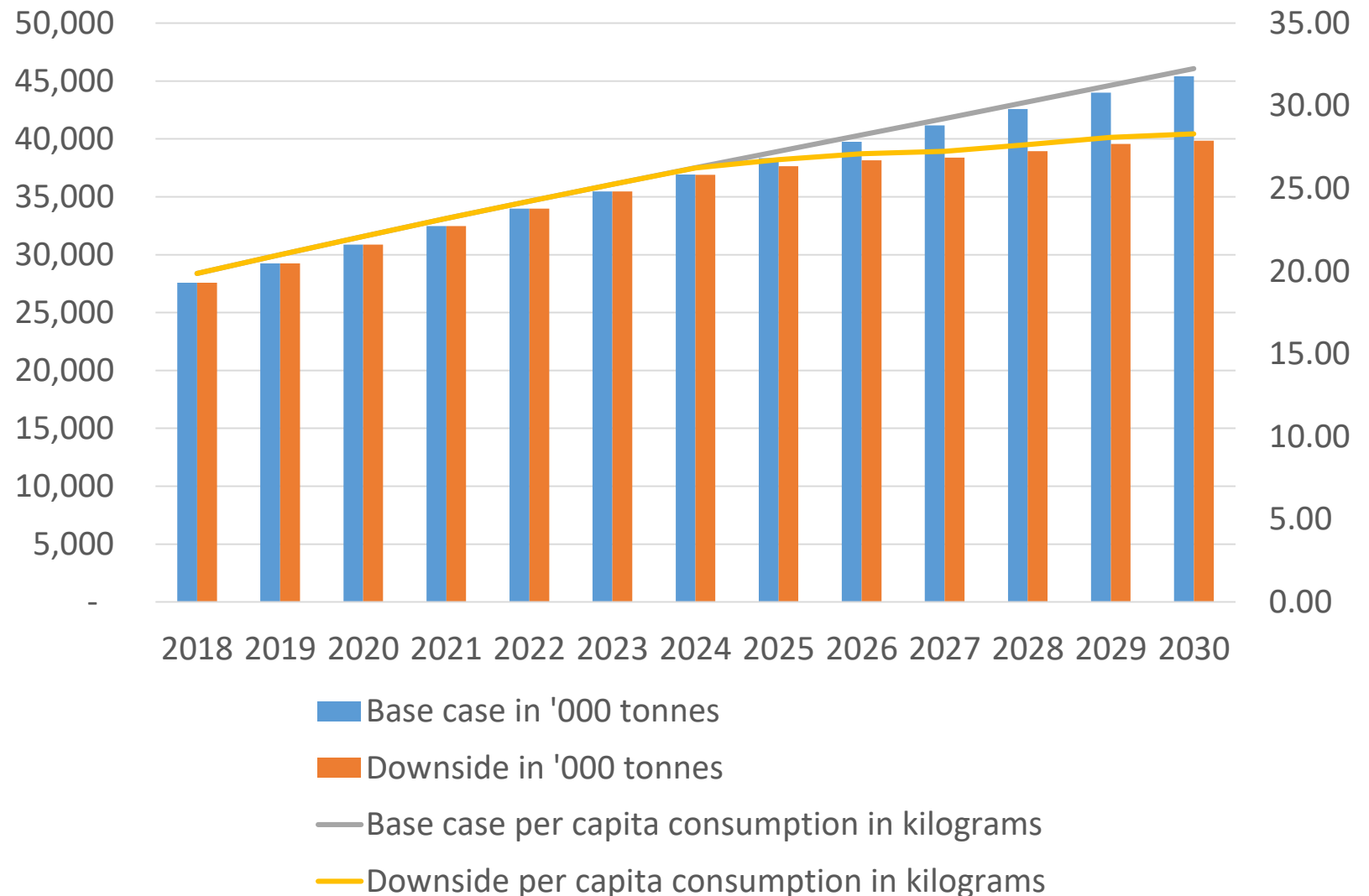
Bloomberg picture, September 2018:
Hong Kong surpasses New York
in number of super rich (number of
people worth at least \$30m)



South China Morning Post: Baidu
autonomous cars funded by
its Nasdaq-listed Apollo Fund

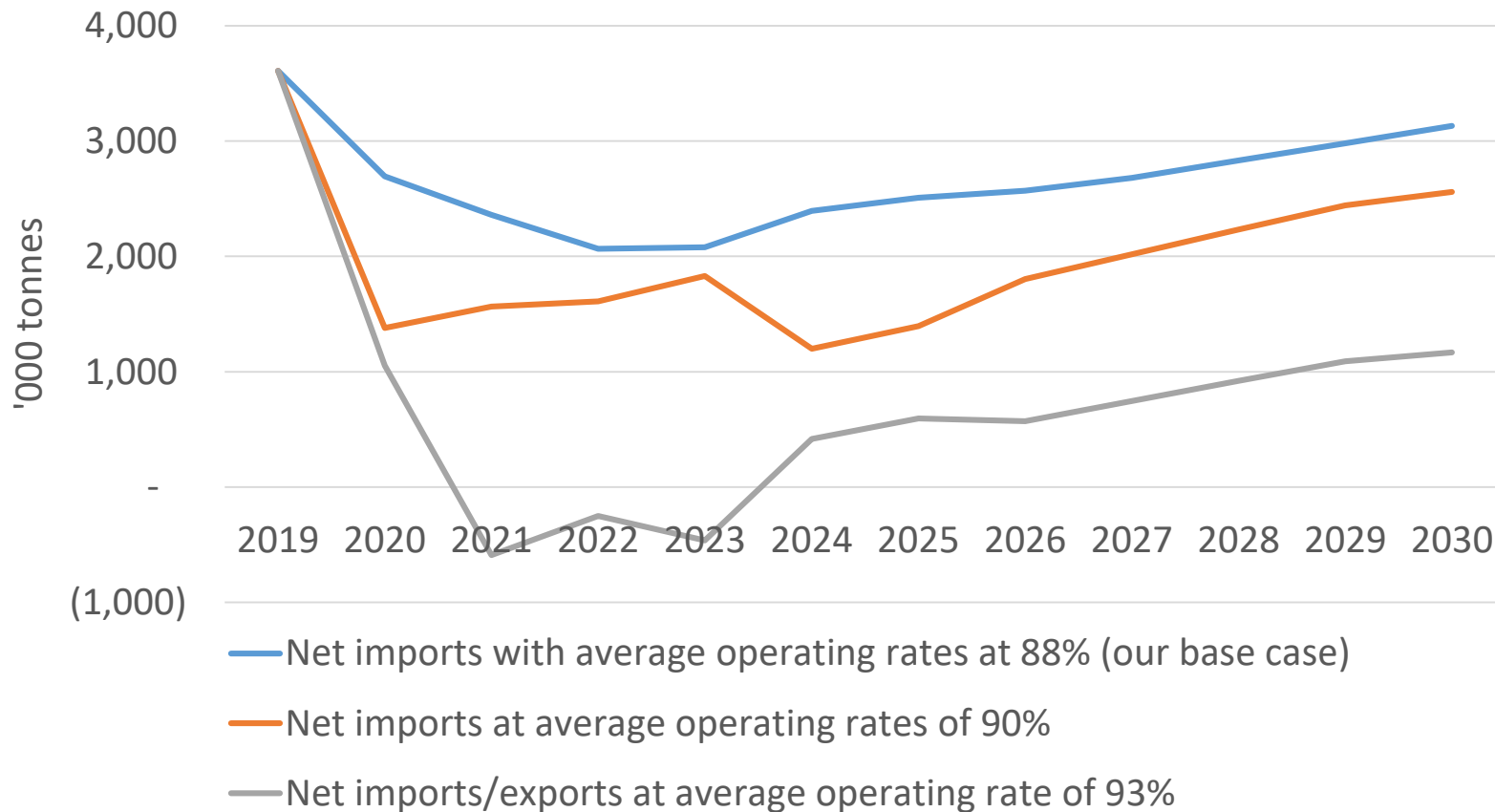
Quantifying downside for PP

- ▶ Base case: China's average per capita PP consumption rising from 19.9 kilograms in 2018 to 32.3 kilograms in 2030.
- ▶ This would result in PP demand growing from 27.6m tonnes in 2018 to 45.4m tonnes in 2030.
- ▶ Downside scenario: Only reaches 28.3 kilograms in 2030 with 19m tonnes of lost demand



Social and political versus economic motives

Three scenarios for China PP imports*



- Standard way is of course to look at forecast margins to get to operating rates
- But China has never run its plants purely on economics – it's about jobs as well
- And on the efficiency front, bigger and better plants
- Plenty of cheap feedstock

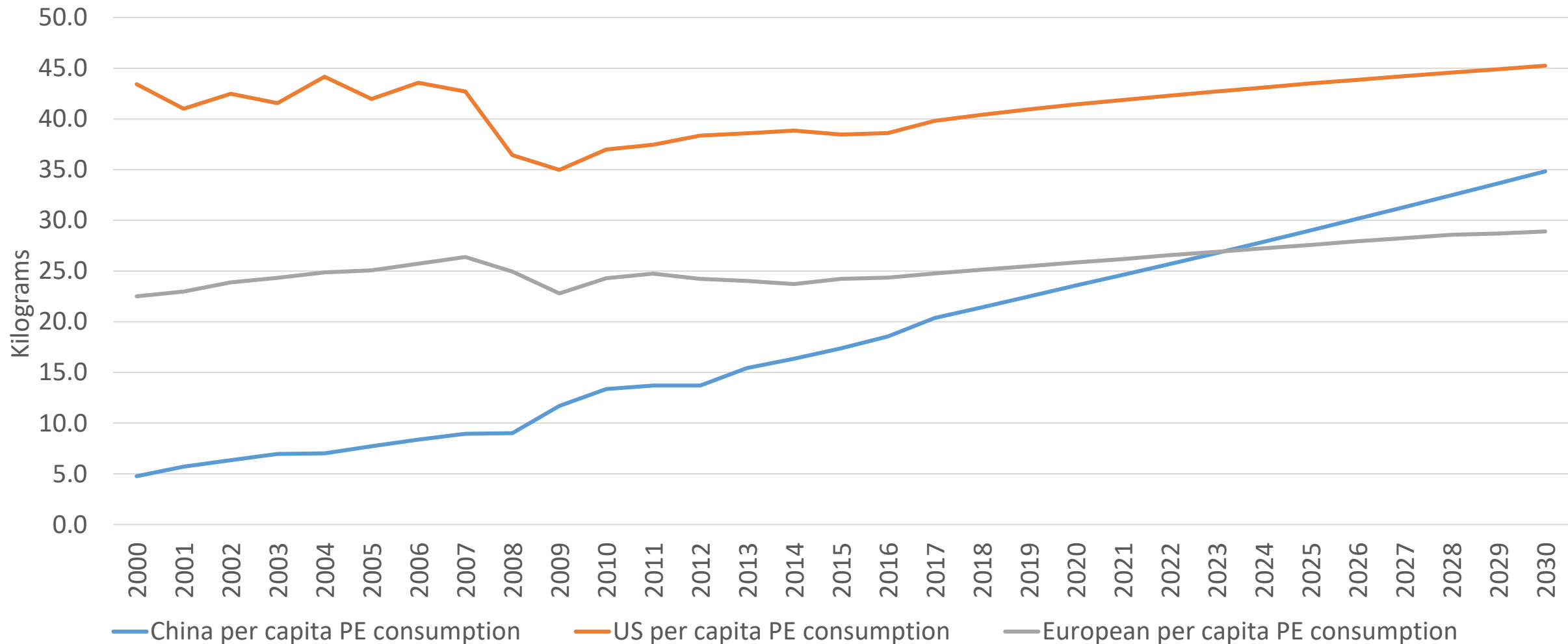
*All of these forecasts assume our base case demand numbers
ICIS Supply & Demand Database and my estimates

To what extent is polyethylene different?



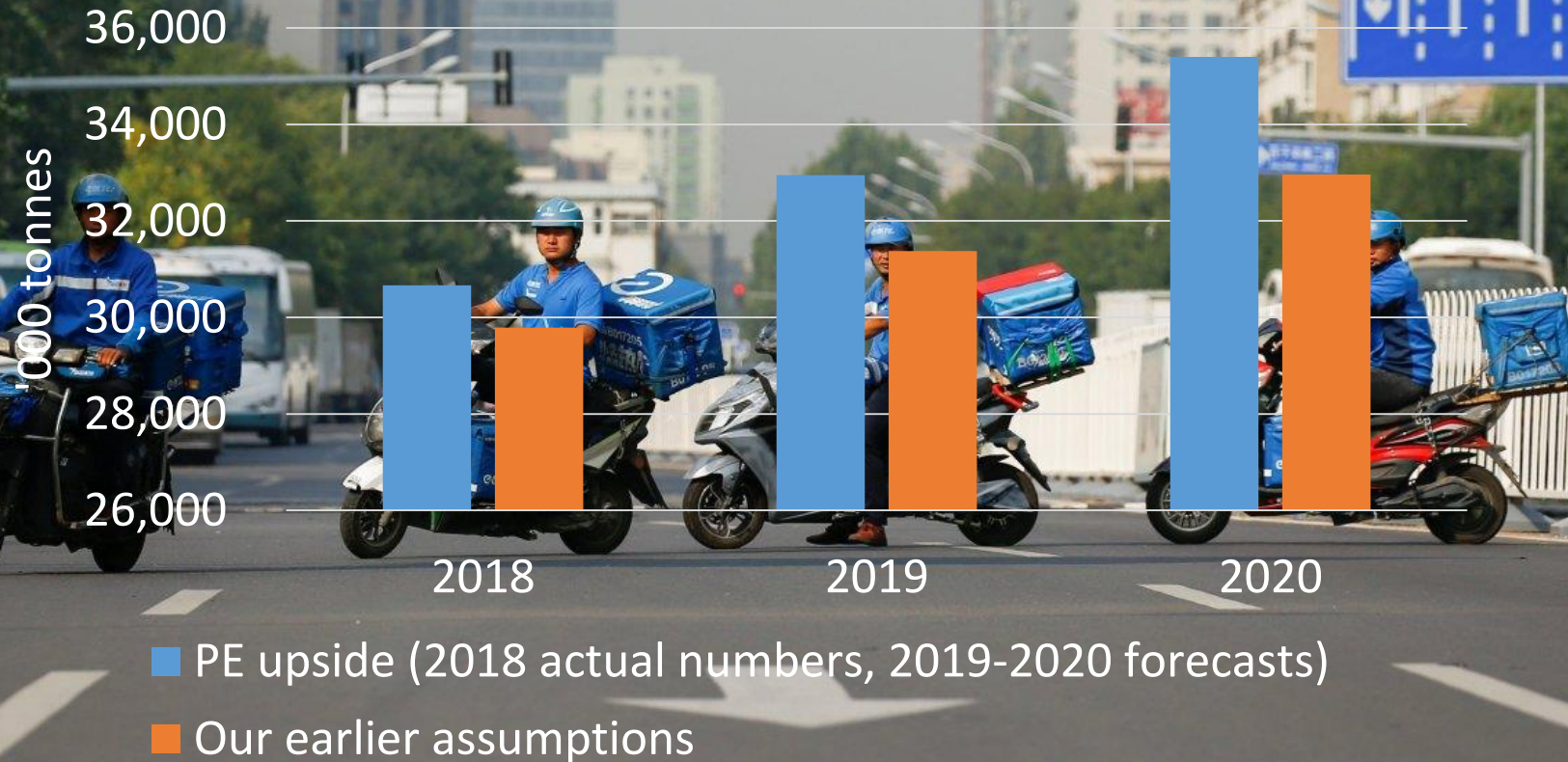
PE more “local for local”, driven by daily necessities....

.....in other words, has our base case underestimated growth?



PE growth isn't linked to GDP

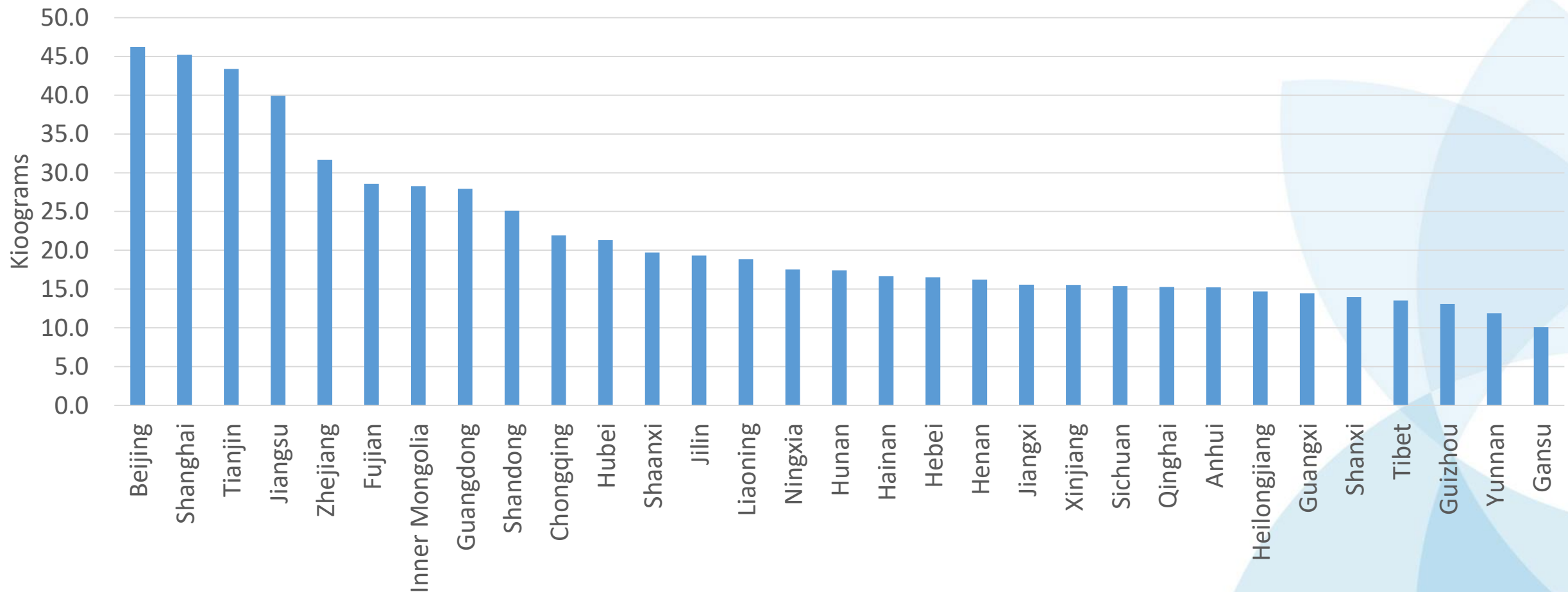
Upside is 4.9m tonnes



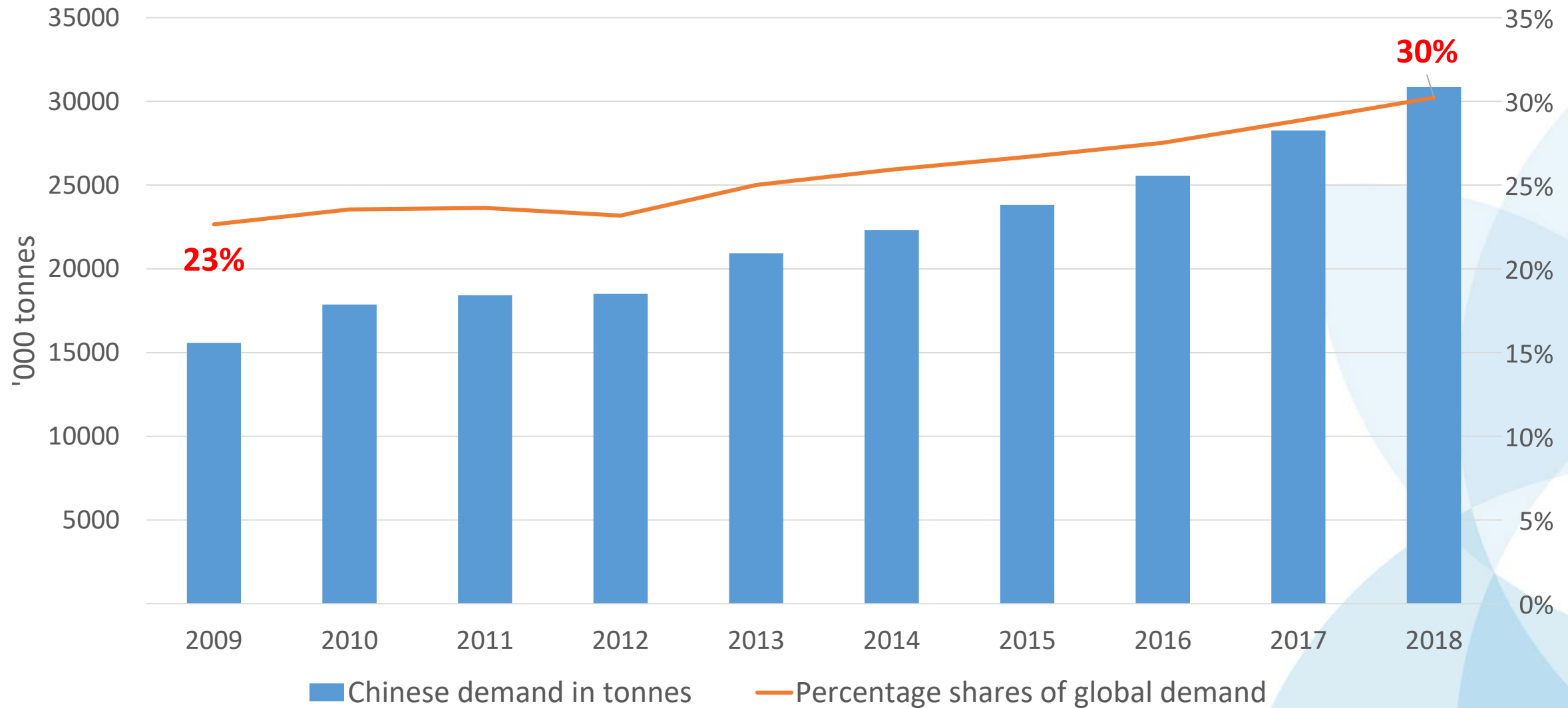
- ▶ Last year, demand rose by around 9% when had we expected 5.4%
- ▶ Result of booming internet sales and recycling restrictions
- ▶ Recycling rules now part of existing demand
- ▶ But:
 - Rising sales of food over internet
 - Govt. spending on rural internet services
 - HDPE pipe sales rising on more infrastructure spending

One demand number for China doesn't work

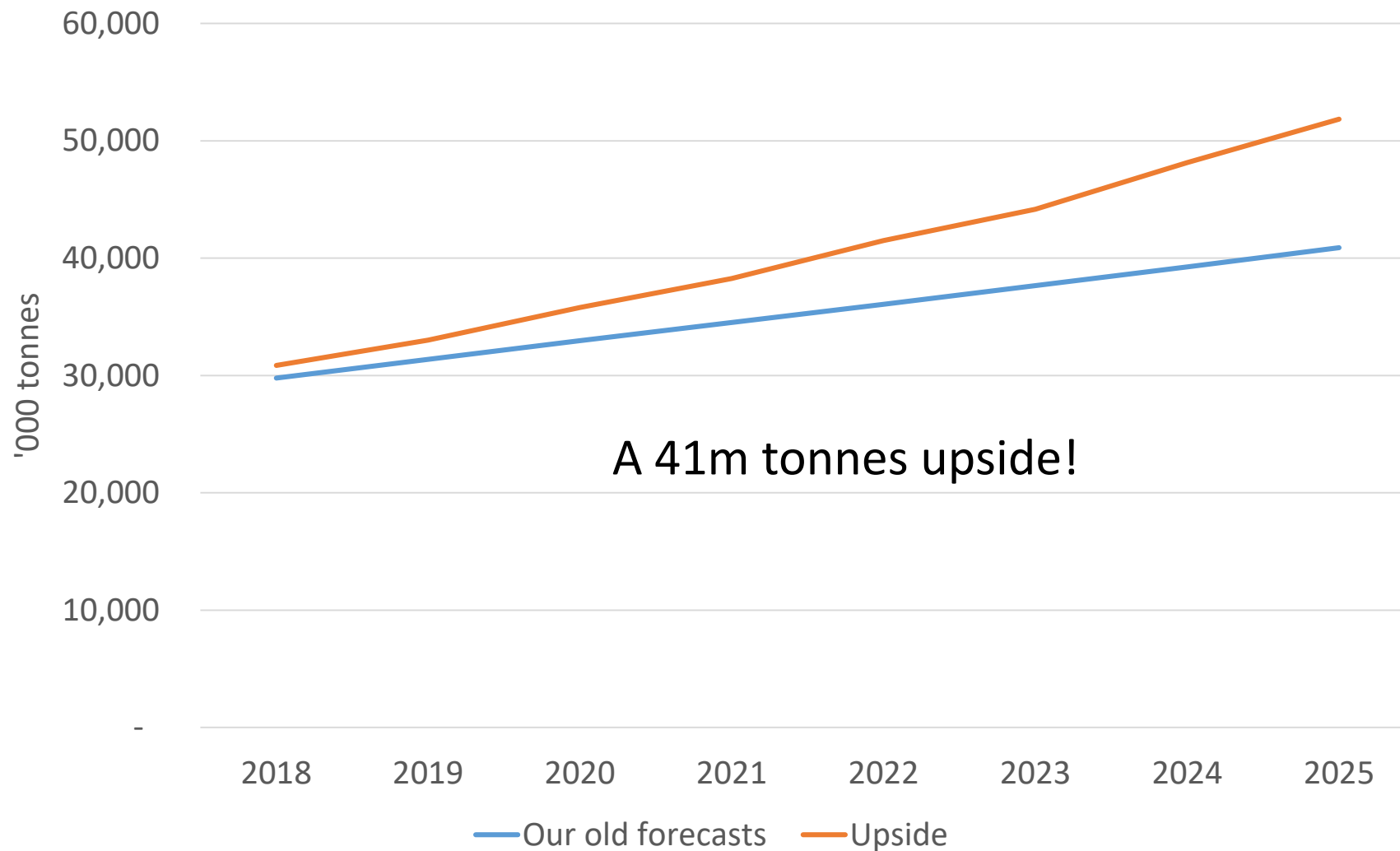
China PE capita consumption by administrative region in 2017



China's growing role in global PE consumption



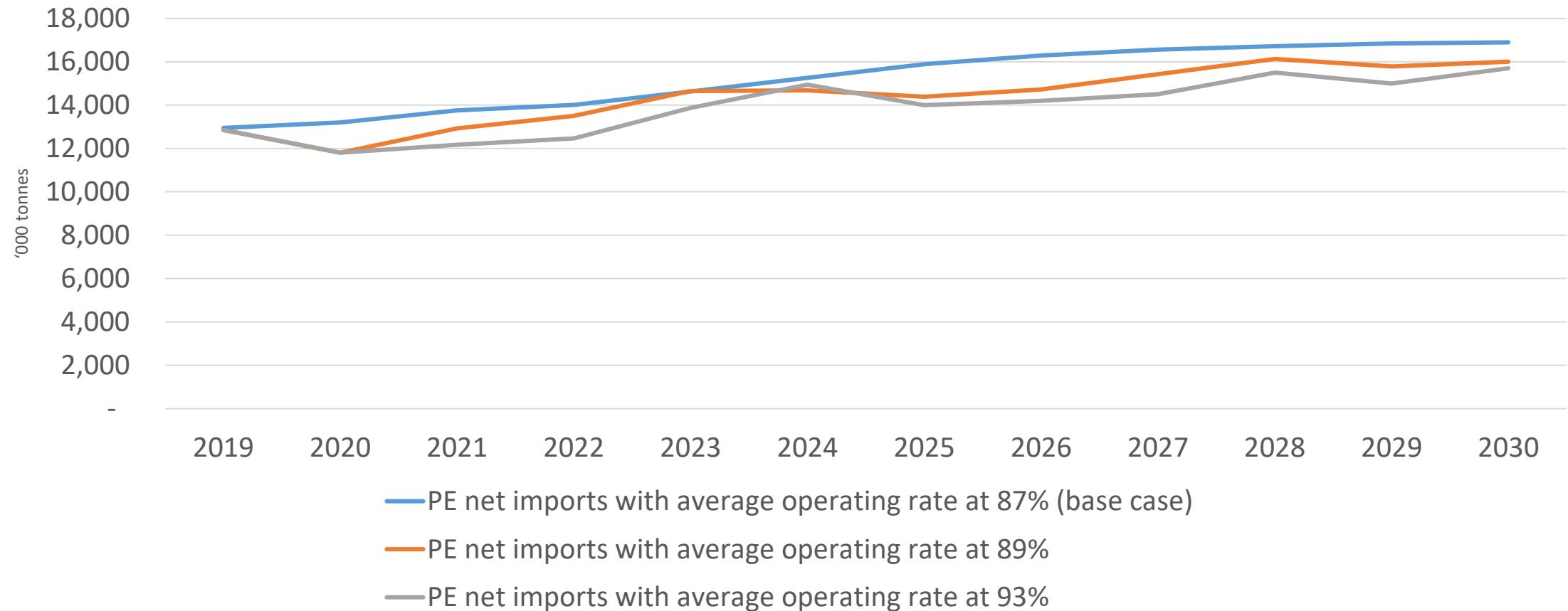
Standard assumption is that growth rates decline



- ▶ We assume average 4.6% growth in 2019-2025
- ▶ But previous seven years was at 7.7%. If history repeats itself, 41m tonnes of extra demand over our base case!!
- ▶ **How much demand, though, will be met by virgin production?**

Again, assuming that flat recycling growth

Three scenarios for China PE imports*



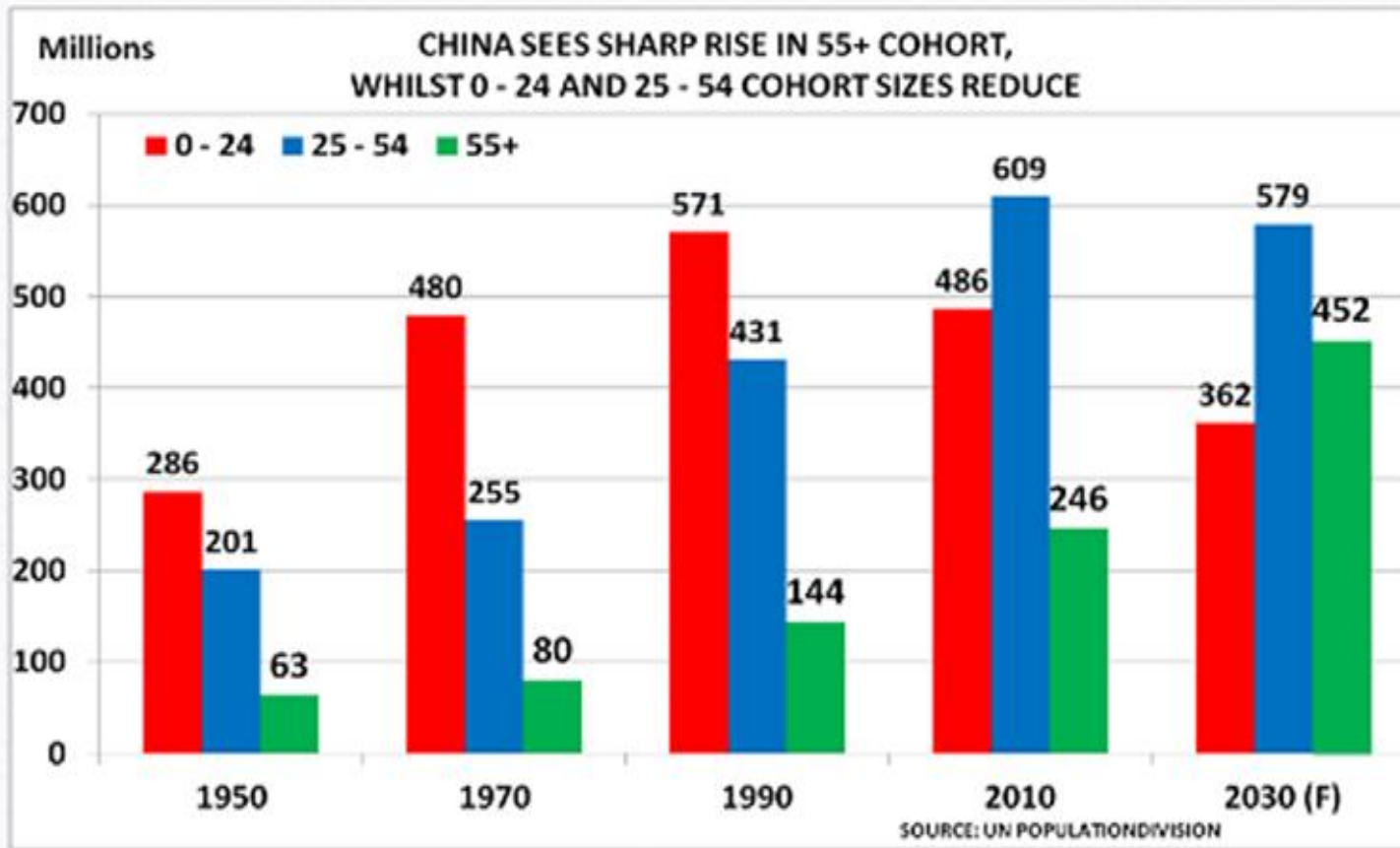
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The trade war



US is demanding China scrap its economic growth model....

CHINA SEES SAME AGEING PATTERN AS THE WEST *due to loss of 400m babies in 'one child policy'*



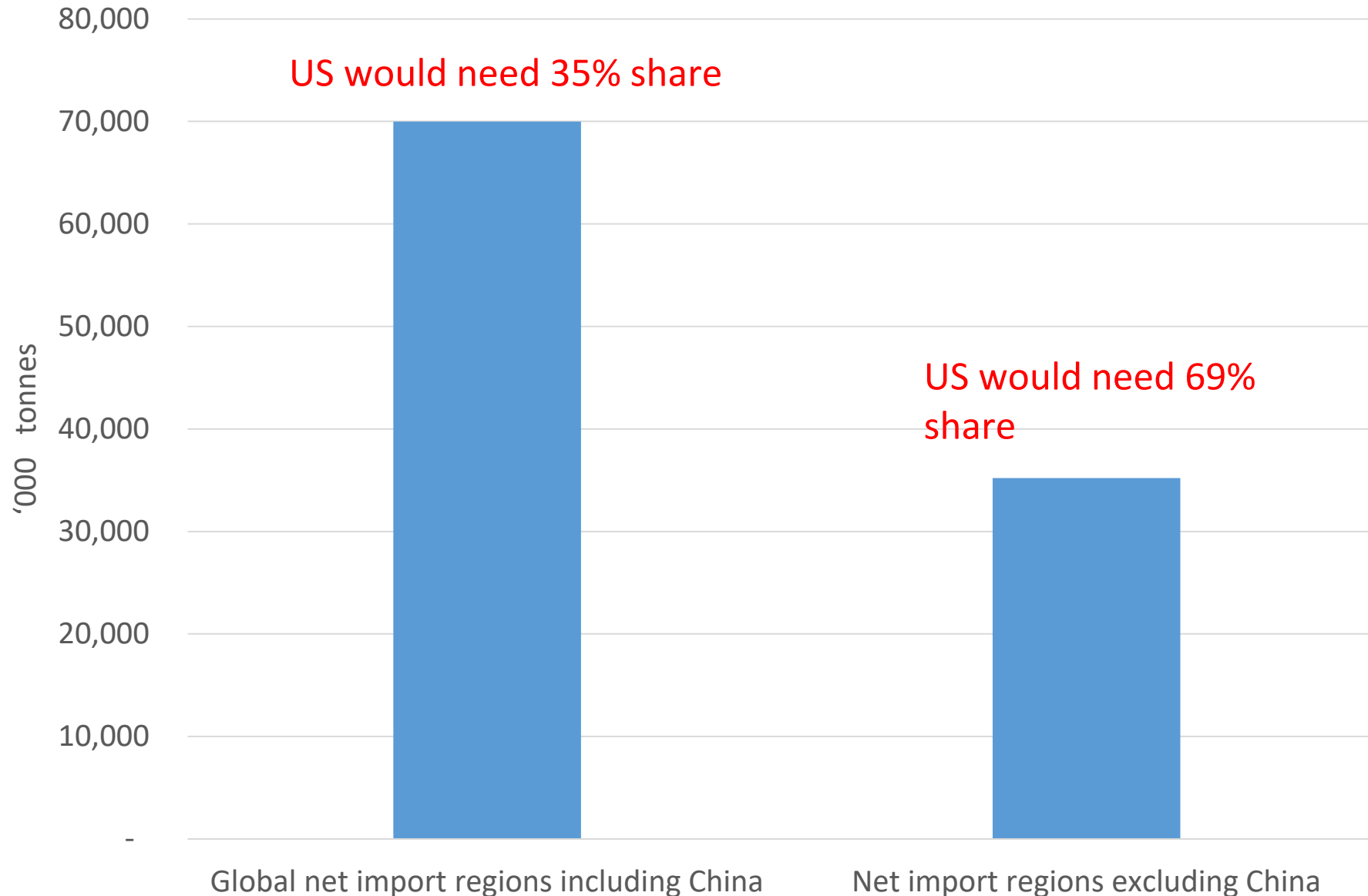
- ▶ ...when it is in a race against time to move up the manufacturing value chain as its populations ages
- ▶ Meanwhile, it still faces the challenge of 500m of its population who live on less than \$5.50 a day
- ▶ So it cannot possibly agree to stop state subsidies for manufacturing
- ▶ US also closing the door on technology transfers

The threat of a new Cold War

- ▶ Largely overlooked key moment last November when, for the first time, the US National Security Strategy identified China as a geopolitical threat
- ▶ Mike Pence: *China now spends as much on its military as the rest of Asia combined. Beijing has prioritised capabilities to erode America's military advantages. But they will fail.*
- ▶ Democrat support for Trump's China policies

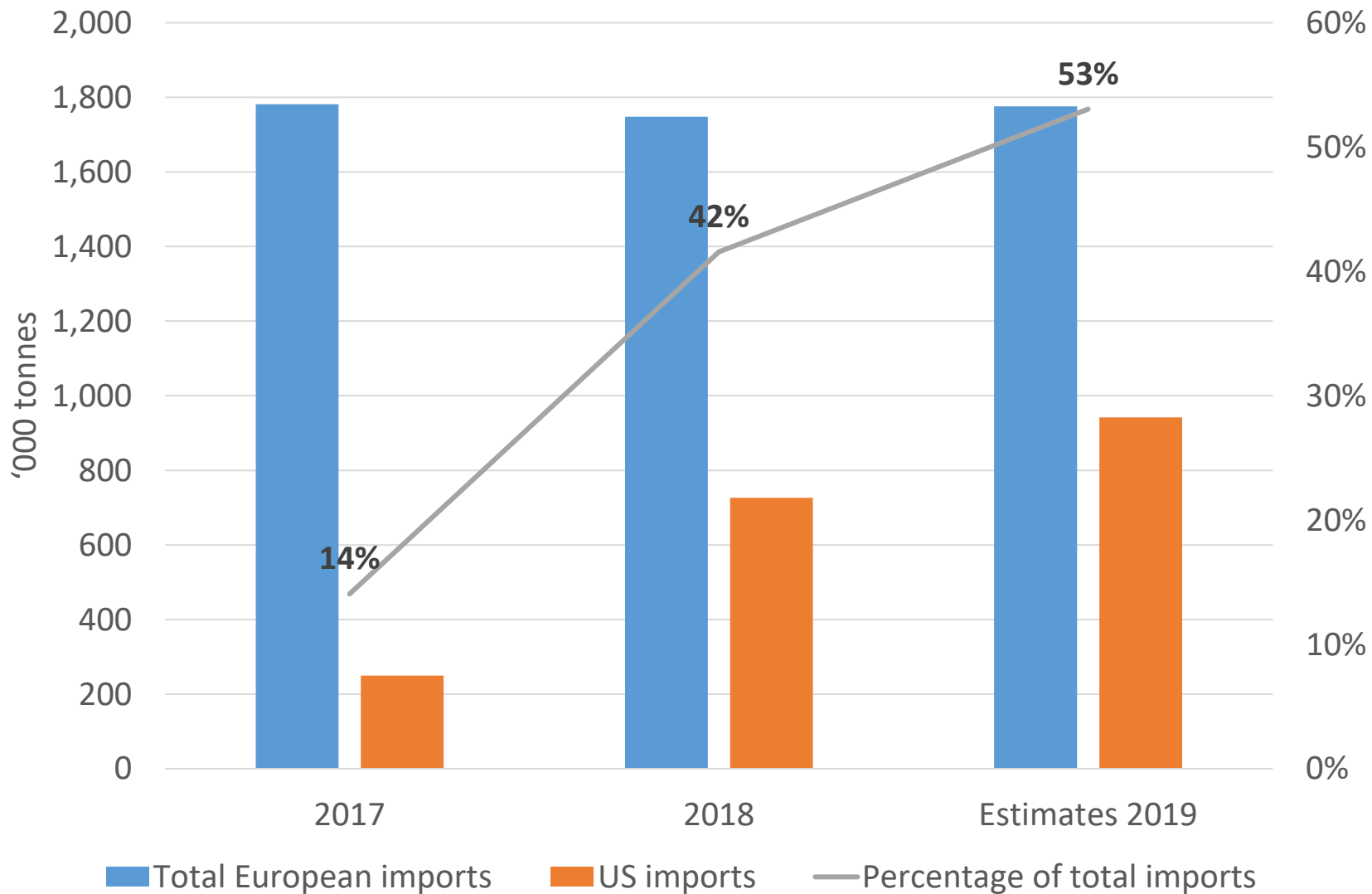


LLDPE in 2019-2025



- Scenario 1: If the US cannot export to China, but it still runs plants as hard as we expect
- Naphtha cracker operators forced to cut back operating rates – possibly consolidate
- Scenario 2: Naphtha players win trade protection and US forced to cut back

A flood of US LLDPE exports: Underestimate?



- Total US exports to rise to 4.5m tonnes this year from 3.4m tonnes in 2018
- Assuming US again sends same percentage of exports to Europe as last year, and based on expected growth in European imports, see right for the results
- BUT, what happens if the US struggles to export to China?
- And what about Turkey?

China is accelerating BRI because of the US



Economist.com

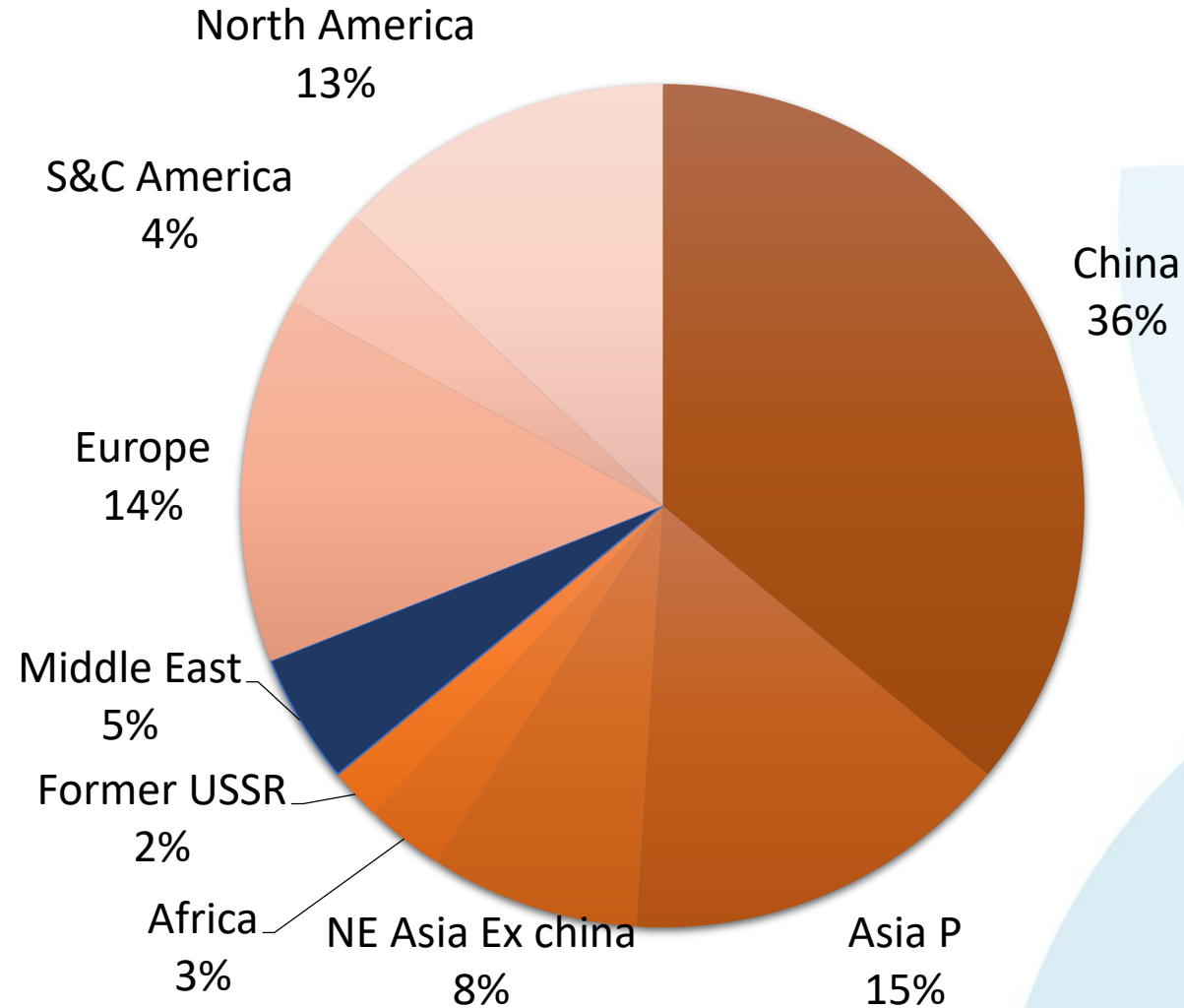
- ◆ China thought it had more time to make this multi-generational project work
- ◆ But risk of losing US export markets has made the project more urgent
- ◆ It has also created major geopolitical and economic opportunity for China to replace the US

◆ *In its largest definition, the Belt and Road Initiative would include 78 countries, 4.4 billion people and about 40% of global GDP – the World Bank*

Two new trading blocs – US petchems face major risk

2018-2025 percentage shares of PE, PP, styrene and ethylene glycols consumption

- ▶ One centred on China and its trading and geopolitical partners. This could comprise most of the developing world – and most consumption and growth
- ▶ The other trading bloc centred on the US and its partners
- ▶ Where does this leave the Middle East?



Just two of many scenarios

Scenario 1 - China/US reach deal and sustainability small effect

- Trump/XI reach a compromise. OR Trump leaves office and US/China trade war ends
- Petchem world remains fully globalised
- US production and export growth continue
- Producers in other regions continue today's strong capacity growth
- Demand big enough to easily absorb new capacities
- Pushback against plastic waste has small effect on demand

Scenario 2 - China/US fail to resolve differences and sustainability has major effect

- Trade war escalates
- New world of China + friends versus US + friends
- US unable to export to China and so floods Europe and developing world ex-China with excess supply
- US and other projects are cancelled
- Global investment also slows on demand loss from plastic rubbish crisis

