



# PEOPLE'S REPUBLIC OF CHINA

## SELECTED ISSUES

August 2019

This Selected Issues paper on the People's Republic of China was prepared by a staff team of the International Monetary Fund. It is based on the information available at the time it was completed on July 12, 2019.

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# PEOPLE'S REPUBLIC OF CHINA

## SELECTED ISSUES

July 12, 2019

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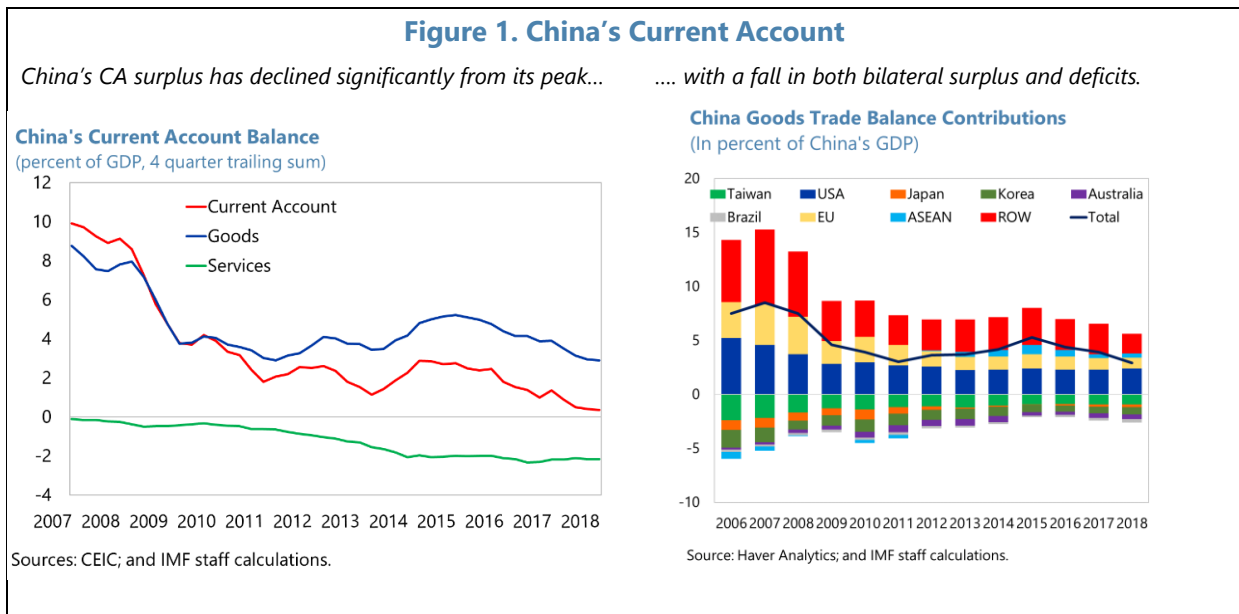
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# THE DRIVERS, IMPLICATIONS AND OUTLOOK FOR CHINA'S SHRINKING CURRENT ACCOUNT SURPLUS<sup>1</sup>

China's current account surplus has declined significantly from its peak in 2008 and the external position is now in line with medium-term fundamentals and desirable policies. While cyclical factors helped in 2018, the trend decline has been largely structural, driven by rebalancing, appreciation of the REER towards equilibrium, increase in outbound tourism, and moderation in goods surplus reflecting market saturation and China's faster growth compared with trading partners. Policies should focus on continued rebalancing and opening up to ensure excessive surpluses do not return; and to prepare the economy and the financial system to handle more volatile capital flows. From a global perspective, the decline in China's surplus has lowered global imbalances, with different impact across countries, with the trade balances of Korea, Germany, Brazil improving vis-à-vis China, while that of Japan, India, and Indonesia deteriorating.

## A. Trends in China's Current Account

**1. China's current account surplus has declined significantly from its peak in 2008.** While part of the sharp decline in 2018 is cyclical, the trend over the past decade is largely structural, driven by a widening of the services deficit and a moderation of the surplus in goods trade (Figure 1). Even at the bilateral level, the trend has been towards a greater balance, with declining goods trade surpluses with the US and the EU; and declining deficits with Japan, Korea and Taiwan, Province of China. With China's growth model moving from exports towards consumption, the trend toward a smaller surplus or even a small deficit is likely to stay, with far reaching implications for China and the rest of the world.



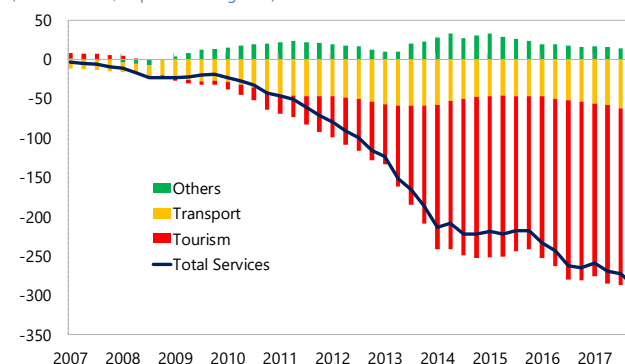
<sup>1</sup> Prepared by Pragyan Deb, Albe Gjonbalaj, and Swarnali Ahmed Hannan.

## 2. Massive increase in outbound tourism and associated overseas spending has led to a surge in the services deficit.

China's tourism balance, mostly on account of outbound tourism, has swung from a small surplus of around 5bn USD in 2008 to a deficit of nearly 250bn USD in 2018, driven by the increasing purchasing power of the middle class and an appreciating currency. While there is some controversy regarding the measurement of the tourism balance, with some observers opining that Chinese tourist spending is overestimated and reflects disguised capital outflows, the trend is undeniable. It is also borne out by an almost 4 times increase in the number of Chinese outbound visitors – from 46mn in 2008 to 162mn in 2018. While other items such as transport services and royalty payments for intellectual property use have also increased, their contribution and size has been much smaller.

**Components of Service Account**

(In USD billion, 4 quarter rolling sum)



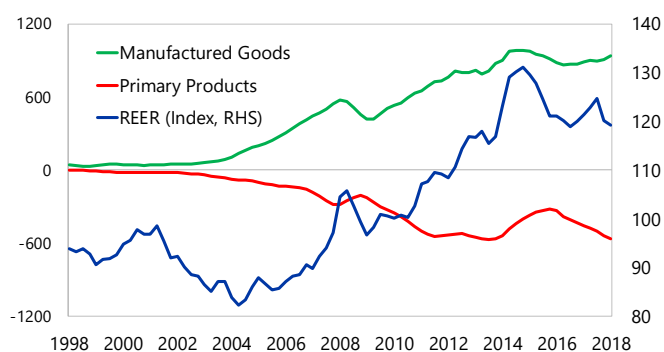
Sources: CEIC; and IMF staff calculations.

## 3. Import of raw materials and commodities have increased, but the surplus in manufacturing remains strong.

The trend in the goods balance is more volatile, affected by changes in commodity prices, government policy and stimulus measures – particularly through infrastructure investments – and broader Chinese and global growth prospects. While China has boosted imports of raw materials such as oil and iron ore to feed its domestic economy, its surplus in manufacturing, although sizeable, has plateaued as dividends from joining the World Trade Organization in 2001 have diminished and China already occupies dominant position in many markets. After significantly appreciating for much of this period, the REER has stabilized since 2016, though the relationship between REER and the goods balance is difficult to establish, with other factors such as domestic and external demand playing a more dominant role. The importance of processing trade (see below) and exporters adjustment of costs and profits to offset the impact of changes in REER further diminishes its effect.

**Trade Balance**

(In USD billions, 4 quarter rolling sum)

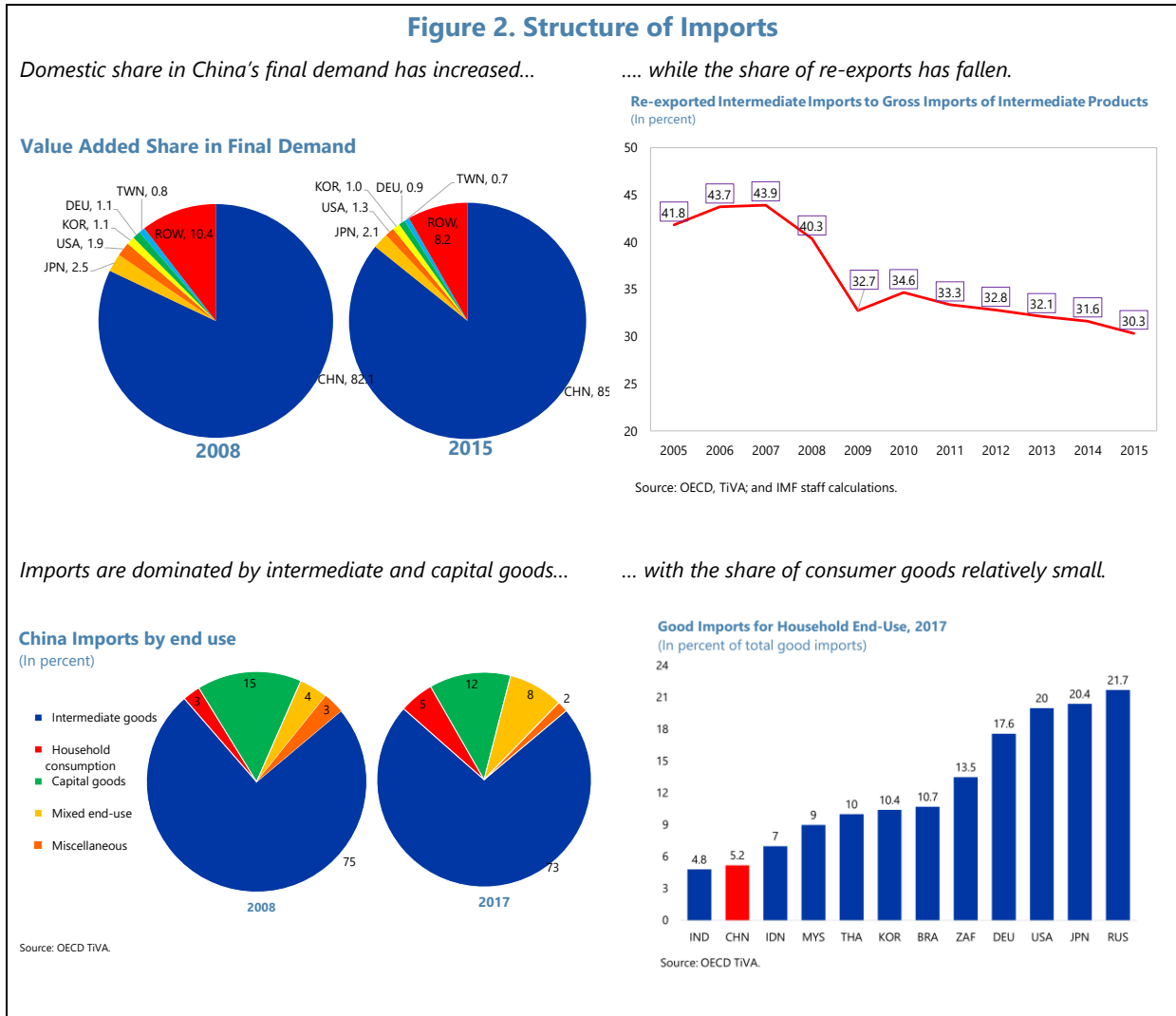


Sources: China Customs; Haver Analytics; and IMF staff calculations.

## 4. Technological upgrade in China and a small share of consumer imports have kept import growth below overall growth.

China's domestic share in final demand (as a share of total value added) has increased through a combination of increased domestic capabilities in manufacturing, particularly in high-tech sectors, and a desire for self-reliance and import substitution (Figure 2, top panel). In addition to its impact on final demand, it has also resulted in a decline in the

share of re-exports as Chinese firms have increasingly been able to move up the value chain and replace imported intermediate goods. While ongoing rebalancing and higher demand for more-expensive consumer goods by the country's growing middle classes is expected to increase demand for consumer imports, household consumption remains a small part of the overall import basket (Figure 2, bottom panel).



**5. Although China's export embody value-added by several countries, the domestic share is increasing as China moves up the value chain.** OECD data from 2015 shows that over 80 percent of value-added (VA) in total gross exports is due to China, with Korea and United States accounting for around 2 percent of VA in Chinese exports (Figure 3). In addition, China's share in VA has been increasing over time as it moves up the value chain, with the increase being particularly rapid for high tech sectors. The gaps in VA shares differ by countries, with the gap between gross and VA exports relatively wider for EU28 compared to that of the United States. Focusing on the United States-China bilateral trade balance, the VA trade balance in 2015, at USD219 billion, was 13 percent lower than the trade balance in gross terms (USD 251 billion). Taking the average of the

available years (2005-2015), the value added trade balance is 19 percent lower than the corresponding gross numbers.

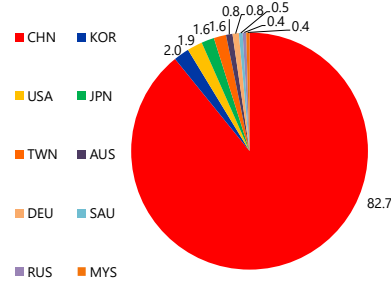
**Figure 3. Trade in Value Added Terms**

*China's exports embody VA by several economies,*

*... though China's share has been going up...*

**Distribution of China's Value Added Exports by Economies, 2015**

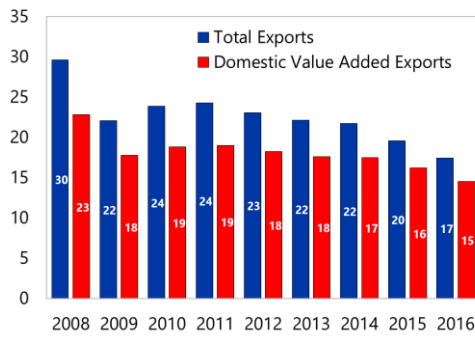
(In percent of China's total gross exports)



Sources: OECD TiVa; and IMF staff calculations.

**China's Gross Exports vs Value Added Exports**

(In percent of China's GDP)

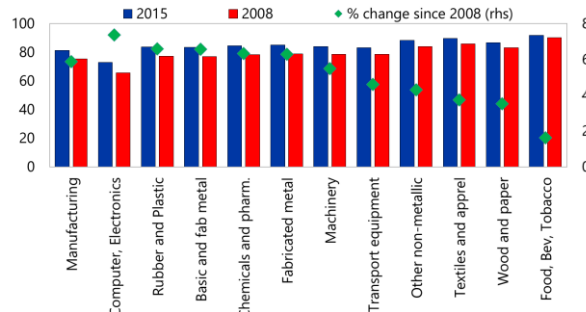


Sources: OECD TiVa; IMF, World Economic Outlook; and

*...as it moves up the value chain and witnesses a rapid expansion in VA shares in high-tech sectors.*

**China's Domestic Value Added in Gross Exports**

(In Percent of gross exports)

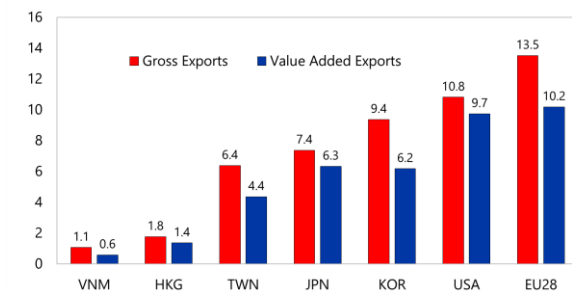


Sources: OECD, TiVa; and IMF staff calculations.

*VA shares differ by economies...*

**China's Gross Exports vs Value Added Exports to Key Markets, 2015**

(In percent of China's total gross exports)

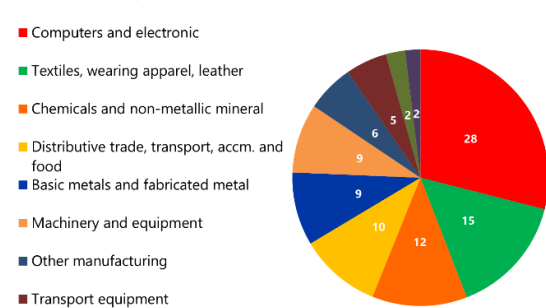


Sources: OECD TiVa; and IMF staff calculations.

*...and sectors.*

**Distribution of China's Exports, Value Added by Industry, 2015**

(In percent of total gross exports)

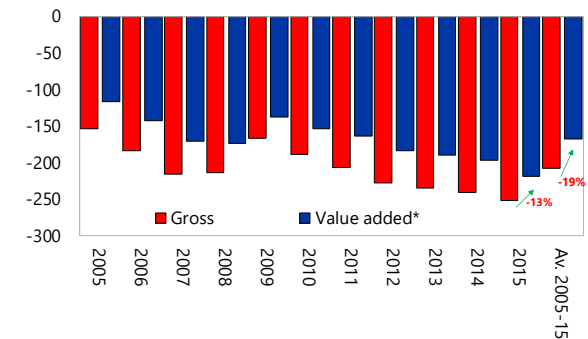


Sources: OECD TiVa; and IMF staff calculations.

*Bilateral trade balance with US is 13 percent lower in VA, compared to gross terms.*

**U.S. Bilateral Trade Balance with China**

(In billions of US dollars)



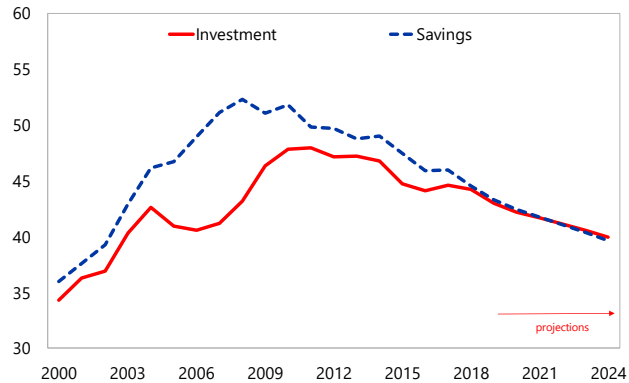
## B. Drivers Behind the Decline in the Current Account Surplus

### Structural Factors

#### 6. The fall in China's current account surplus primarily reflects normalization of domestic saving rate.

From a broad macroeconomic perspective, the decline in Chinese current account surplus reflects a gradual and still ongoing normalization of the domestic saving rate, which surged to an extraordinarily high level between 2000 and 2008. Since the peak, a weaker national saving rate, in part due to an ageing population, has decreased the savings-investment gap. While both savings and investment have declined, savings declined at a faster pace than investment, resulting in a fall in the current account surplus from its peak in 2008 to near balance in 2018.

**China's Gross Saving and Investment**  
(In percent of GDP)

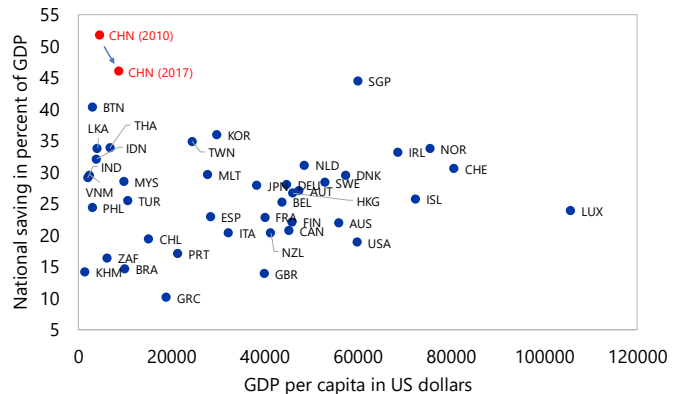


Sources: National authorities; and IMF World Economic Outlook.

#### 7. China's saving rate is expected to continue its downward trajectory as it remains an outlier in terms of the household savings ratio.

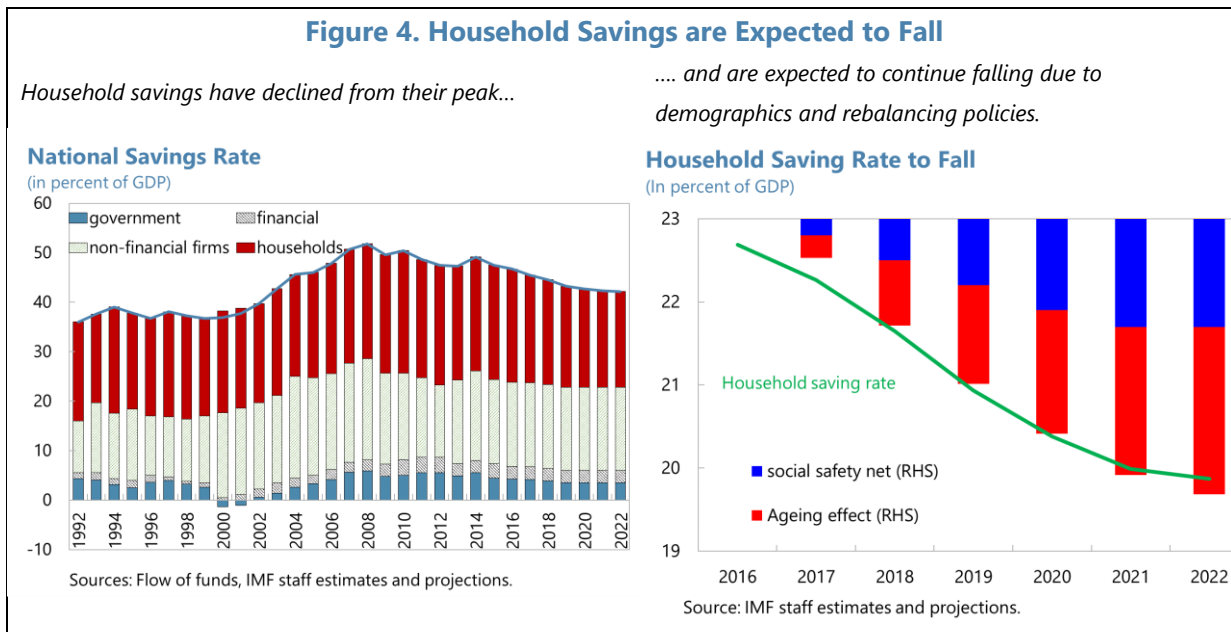
Despite the decline from its peak in 2008, China's national saving rate remains much higher than the global average and other countries with similar income levels, creating room for further declines. Much of this is due to very high levels of household savings, resulting from demographic changes induced by the one-child policy; the transformation of the social safety net and job security that occurred during the transition from planned to market economy; and housing reforms and rising income inequality. Corporate and government savings are largely in line with global norms, despite the significant widening of the augmented deficit since the global financial crisis (see Zhang et al, 2018). While adverse demographics and ageing will play a role in bringing household savings down, savings behavior is a slow-moving event and normalization will take time and would depend on the pace and success of rebalancing towards a consumption driven economy. In addition, improving the social safety net and reducing income inequality will be critical to continued decline in saving rate (Figure 4).

**National Saving Rate**

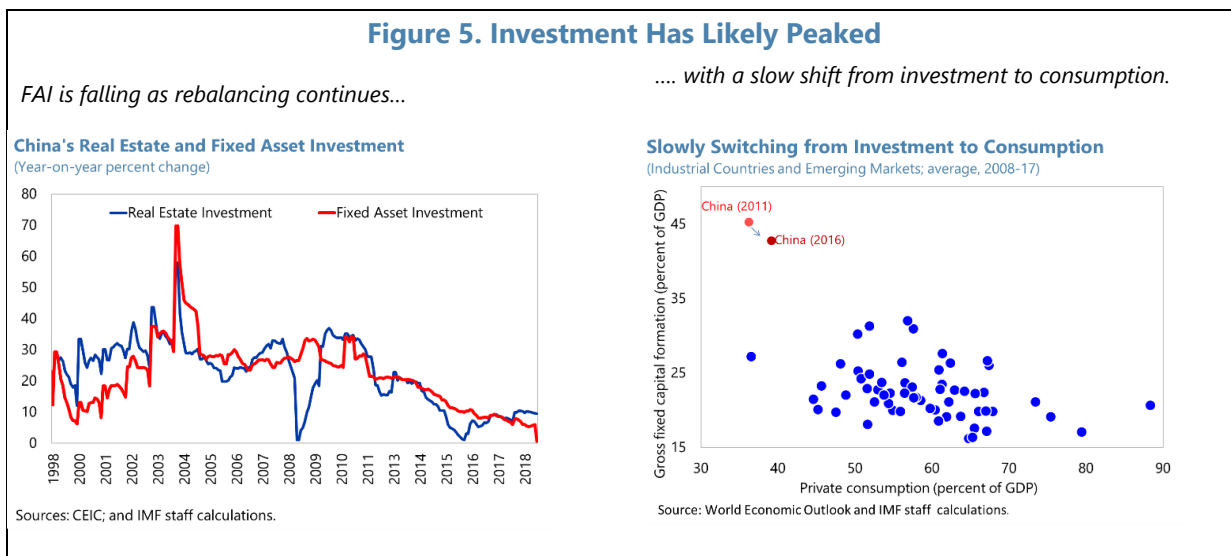


Sources: World Economic Outlook; and IMF staff calculations.

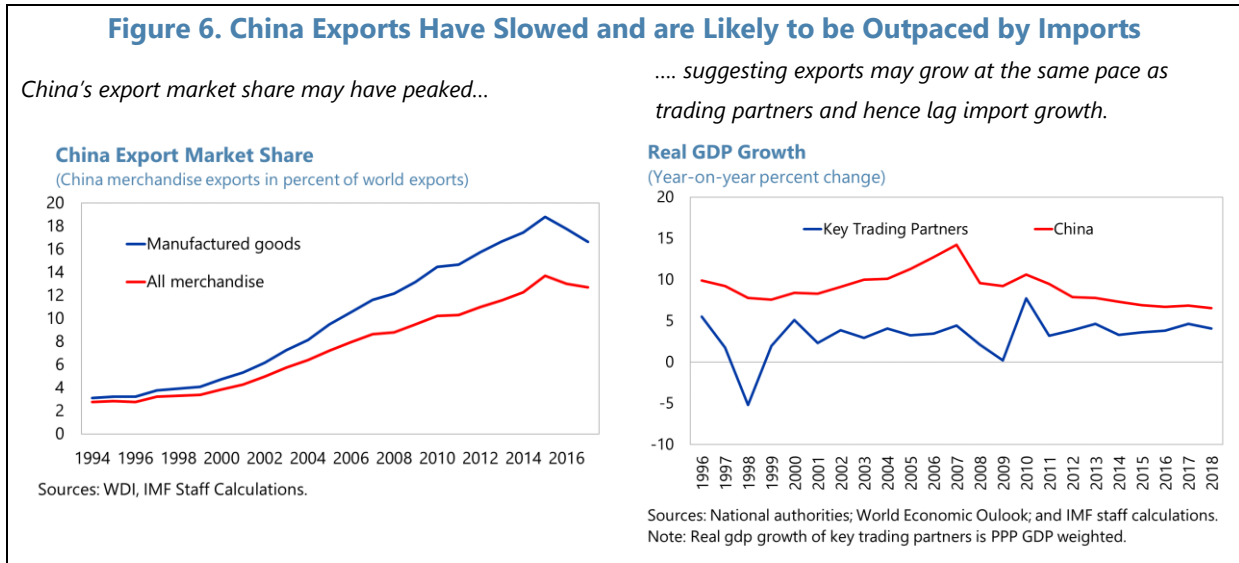




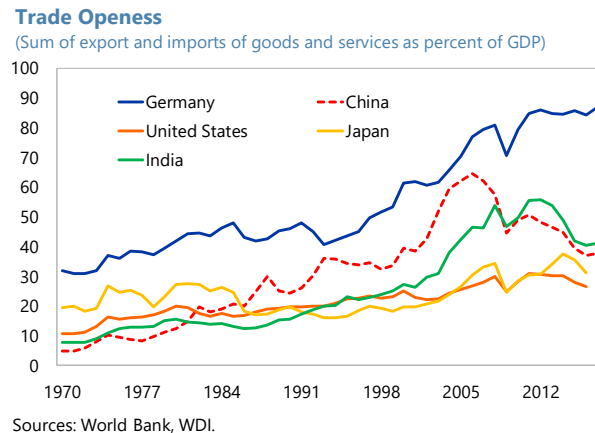
**8. While policies will play a key role, investment has likely peaked and is expected to decline, albeit at a slower pace than savings.** Fixed assets investment in China has been falling as rebalancing continues and the economy slowly switches from investment to consumption (Figure 5). Real estate investment, in particular, has declined from its nearly two decades of above 20 percent growth. It is expected to continue moderating given high vacancy ratios, declining working age population, and slowing migration to cities. As investment growth moderates, Chinese imports for commodities should also decline. However, this decline is expected to be offset by the decline in household savings ratio and the associated demand for consumption imports. Furthermore, continuing reforms and liberalization measures, specifically the lowering of tariffs on imports – according to government estimates, the average tariff ratio has fallen from 9.8 percent in 2017 to 7.5 percent after cuts in November 2018 – will encourage imports and is expected to keep the current account surplus in check.



**9. China's export market share is already large, making it difficult to continue increasing market share.** Historically, Chinese exports have grown faster than trading partner GDP as China has gained market share globally. In 2001, when China joined the WTO, the share of Chinese exports to total world exports was around 4 percent. This more than tripled to 13 percent in 2017. In the case of manufacturing, the corresponding figures are 5 and 17 percent respectively (Figure 6). China is now the largest goods exporter in the world and its share of world exports declined in 2016 and 2017. Exports are therefore likely to grow at the same pace as trading pattern growth, with a slowdown in global trade providing additional headwinds.



**10. Given China's faster growth compared to its trading partners, imports are expected to outpace exports.** As the economy rebalances towards greater consumption, as opposed to being export driven, demand for consumer imports and intermediate goods are expected to increase. A part of this can already be seen in the decline in the share of China's exports and imports as a share of GDP. Although this partly reflects the global trade slowdown, the trend is more pronounced in China relative to other large economies. Taken together, these trends would result in a smaller current account surplus and an overall shift towards a more balanced external position.

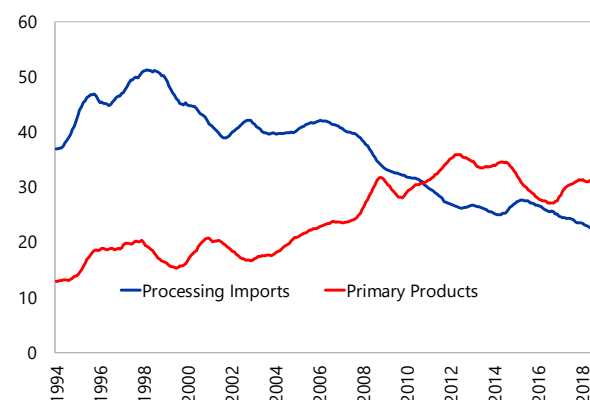


**11. With the declining importance of processing trade and the increasing share of commodities and tourism, China's current account is likely to be more volatile.** Processing trade is a customs arrangement that exempts from tariffs raw and auxiliary materials, parts and components, accessories, and packaging materials imported from abroad with the express intention of re-exporting the finished products after processing or assembly. The share of processing trade

has declined significantly as manufactures have shifted towards more local components and flexible trading arrangements, raising the volatility of the current account. For processing trade, exports automatically determine imports as a decline in exports would result in a corresponding decline in imports, leaving the current account largely unaffected. In contrast, the share of primary products, around half of it fuel and petroleum, has increased, which tend to be more volatile and driven by global commodity price cycles. Furthermore, the increase in share of outbound tourism is likely to make the current account more sensitive to currency fluctuations.

#### China's Goods Imports

(Share of China's imports, 12-month moving average)



Sources: CEIC; and IMF staff calculations.

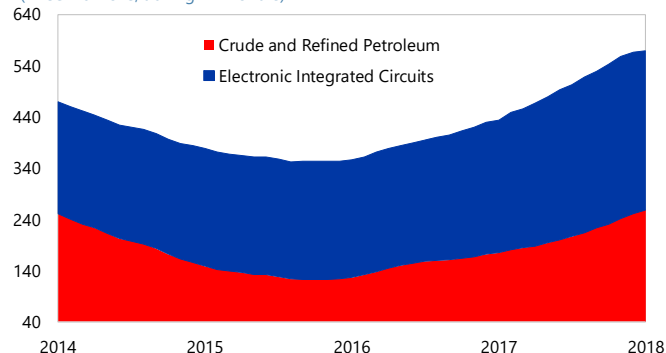
### Cyclical Factors

#### 12. The sharp decline in current account surplus in 2018 was in part driven by cyclical factors.

After recording a deficit in the first half of the year, China's current account surplus came in at 0.4 percent of GDP in 2018 (down from 1.4 percent of GDP in 2017). The 1 percentage drop in current account surplus was mostly due to a decline in the goods trade balance. In particular, the rise in imports of crude and refined petroleum and integrated circuits can explain close to half of the increase in 2018 imports, which increased by around 0.7 percent of GDP. The rest is mostly explained by lower exports due to trade tensions and weak global demand.

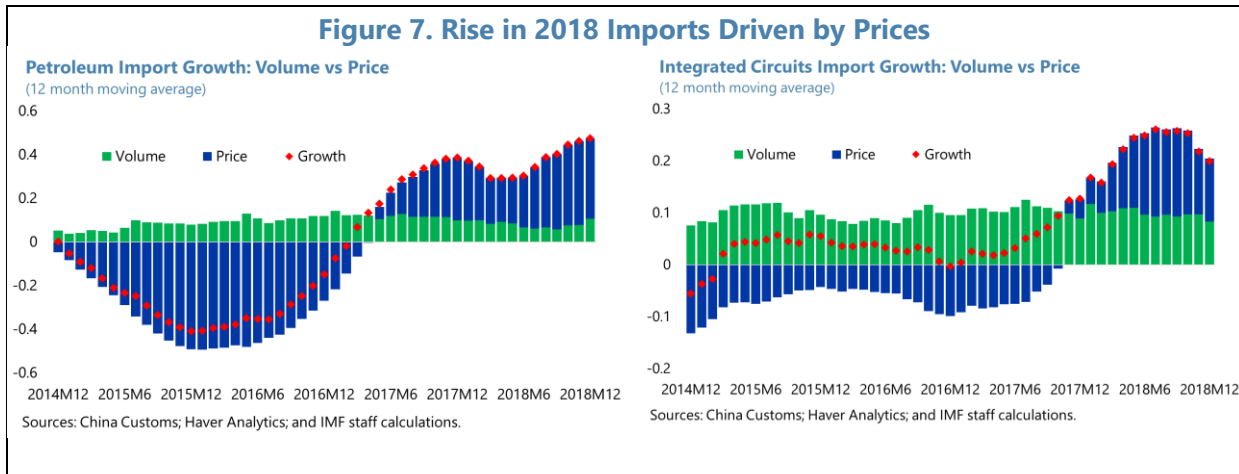
#### China Imports: Petroleum and Integrated Circuits

(In USD billions, trailing 12 months)



Sources: China Customs; Haver Analytics; and IMF staff calculations.

**13. The rise in imports was driven by an increase in oil and integrated circuit prices.** Oil prices spent much of 2018 in the range of US\$70-85/bbl, up from US\$55-65 range in 2017. The price increase accounted for close to 80 percent of the increase in petroleum imports, which increased by \$80bn or around 50 percent from 2017. Similarly, after years of price declines, the prices of semiconductors surged, pushing up imports by around \$50bn compared with 2017, with increase in prices accounting for around 60 percent of the increase in integrated circuit imports in 2018 (Figure 7).

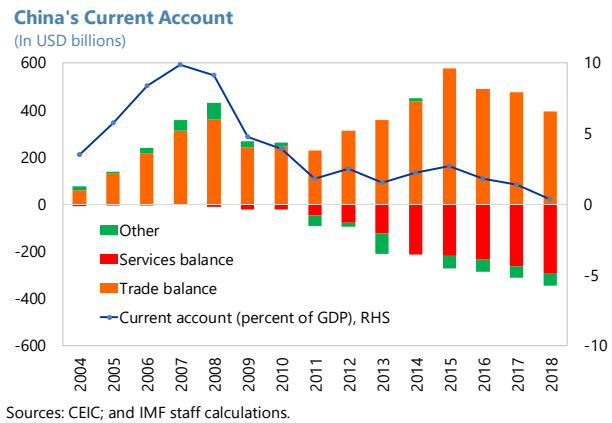


**14. Summary.** Since its peak, China's current account surplus has been declining due to structural factors, namely,

- rebalancing;
- increase in outbound tourism; and
- moderation in goods surplus due to market saturation and growth differentials with trading partners.

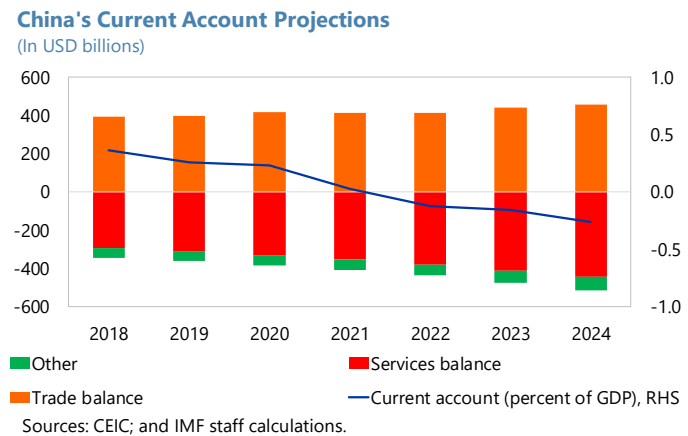
But the 1 percent decline in 2018 was in part driven by cyclical factors.

- Price impact of oil and semiconductor prices on import is estimated to be 0.4 and 0.2 percent of GDP respectively.
- Impact on CA likely to be smaller (due to higher export prices) and is estimated at around 0.4 percent of GDP.



## C. The Current Account in China—Looking Ahead

**15. Over the medium term, under the baseline of continued rebalancing, the current account is expected to remain close to balance.** Going forward, the small current account surplus recorded in 2018 is expected to turn into a small deficit as the structural factors outlined above continue to drive up imports and moderate exports. Specifically, the baseline assumes:



- Import demand increases as savings fall faster than investment – a rise in share of private consumption
- Export growth slows due to market saturation and continued higher growth in China relative to trading partners
- Benign outlook for commodity prices
- Tourism deficit increases in line with GDP
- No significant change in income account and the structure of assets
- Unless trade tensions escalate markedly, they are not expected to have a large impact on CA with offsetting effects on exports and imports. The impact of tensions in the area of high-tech exports is beyond the scope of this paper and is not taken into account in the baseline.

### 16. Despite sizeable foreign assets, China's income account remains in deficit.

This is because less than 30 percent of China's external assets consist of higher yielding risky assets such as direct and equity portfolio investment. Most assets comprise of lower-yielding investments such as international reserve assets, trade credit, and foreign currency deposits. In contrast, 70 percent of China's external liabilities comprise

of riskier and therefore higher (expected) return instruments such as direct and portfolio equity investments. While this has been a long-standing feature of China's International Investment Position, a significant shift in the asset composition can lead to a higher return on assets and push up the current account surplus via the income account. Some of this is already underway, with the share of direct investment abroad in total assets increasing steadily from less than 5 percent in 2007 to around 26 percent in 2018.

**17. Current account deficits could emerge if growth surprises on the upside.** Commodity prices, particularly oil prices, are expected to remain moderate in the baseline. However, if they turn out to be higher than projected, it can materially shrink the goods surplus and lead to higher current account deficits. At the same time, higher than projected growth – via domestic demand or credit – would increase imports and push up the current account deficit. Complicating the analysis is the fact that China is not a price taker in commodities market – higher Chinese growth would push up commodity prices, further pushing up imports. Furthermore, although the tourism deficit has been stable as a percentage of GDP over the last few years, and there is some evidence of a slowdown, it is nevertheless plausible that tourism may pick up further as per capita incomes rise and grow faster than GDP. Real appreciation, beyond those warranted by fundamentals, can boost imports and increase the current account deficit, as can higher than projected IP payments.

### China's International Assets

	USD bn	%		USD bn	%
<b>International assets</b>	<b>7,324</b>		<b>International liabilities</b>	<b>5,194</b>	
Reserve assets	3,168	43.3%	Direct investment in China	2,762	53.2%
			Equity portfolio investment	684	13.2%
Debt portfolio investment	228	3.1%	Debt portfolio investment	412	7.9%
Trade credit	597	8.2%	Trade credit	393	7.6%
Currency and deposits	394	5.4%	Currency and deposits	483	9.3%
Loans	710	9.7%	Loans	417	8.0%
Direct investment	1,899	25.9%			
Equity portfolio investment	270	3.7%			
Other	59	0.8%	Other	42	0.8%
<b>Net international assets</b>	<b>2,130</b>				

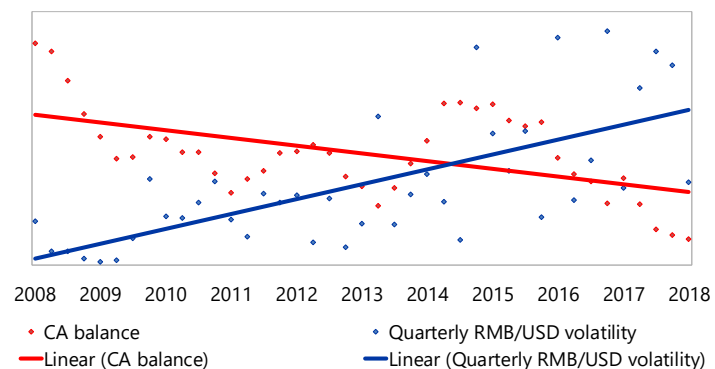
Sources: Haver Analytics; and IMF staff calculations.

**18. Lower growth or a slowdown in rebalancing can lead to higher current account surpluses and a return of external imbalances.** Lower growth can decrease import demand and increase the current account surplus. This is particularly the case if, unlike in the past, offsetting stimulus is via tax cuts, which are likely to have lower import intensity compared with higher public and quasi-public investment in infrastructure. A slowdown or reversal in rebalancing and a return to high savings and less consumption has the potential to undo the progress made in correcting external imbalances. Finally, faster progress in import substitution through initiatives like Made in China 2025 or technology upgradation – e.g. semiconductors – can lower import demand and increase global market share, increasing the current account surplus. In addition, greater availability of high-end and luxury products in the domestic market can diminish overseas spending by Chinese tourists, thereby moderating the services deficit and pushing up the overall current account.

**19. Policies should focus on continuing rebalancing and accelerating opening up to ensure excessive surpluses do not return.** On the domestic front, rebalancing efforts should continue and be accelerated to increase consumption demand. Regulatory and supervisory reforms should continue to stabilize leverage and pursue “debt neutrality” with SOEs. Made in China should focus on “comparative advantage” and not “import substitution”. At the same time, China should deepen and accelerate opening up and continue to support the international trading system that has benefitted China and the world. Concretely, this would involve further reduction in import tariffs and increased trade openness; further opening up of the service sector; liberalization of restrictions to trade and investment regime; and addressing structural issues such as intellectual property enforcement

**20. While the end of large current account surplus has moved the Chinese economy towards equilibrium, it has also diminished a source of global savings, with implications for the Chinese and global economy and internationalization of the RMB.** The large current account surplus in China contributed to the global savings glut, pushing down long-term yields. With an end to large surpluses, less global capital will likely be available for US debtors and other ODI, which can contribute to higher long-term yields. At the same time, the large current account surpluses have meant a steady flow of capital into China, providing a large cushion of foreign exchange reserves and the countercyclical tools to offset any slowdown or shocks. Going forward, without this backstop, more volatile components of the financial account, such as portfolio capital flows are likely to have a much larger impact, particularly as FDI becomes less important. This would likely mean less flexibility for economic and currency management in China and the Renminbi exchange rate may become more volatile and sensitive to capital flows.

**RMB Volatility vs Current Account**



Sources: National authorities; CEIC; and IMF staff calculations.

China, however, could support more stable capital inflows by encouraging the internationalization of the RMB. For example, China might sell more bonds to foreign investors – including to long term investors such as pension funds – or settle transactions in RMB (instead of USD). This would increase the availability of RMB assets for foreigners and make it available and used more widely, but would also require more flexibility and transparency in the management of the RMB.

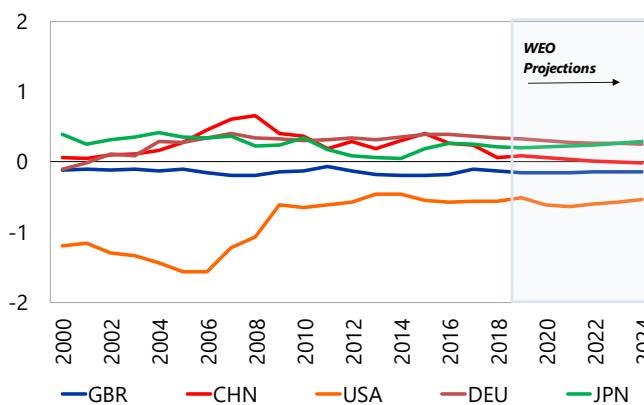
**21. The financial system needs to prepare to handle greater volatility and larger capital inflows.** The authorities should continue with financial de-risking and associated micro and macro-prudential reforms. At the same time, policy should focus on encouraging higher quality, stable and diversified inflows by further opening up of the capital account; transparency and regulatory reforms to adhere to international standards and encourage investment by institutional and long-term investors – e.g. reforms to the ratings industry; increase availability of internationally traded instruments; continued RMB internationalization; and a more diversified external asset portfolio to generate higher returns. The currency should also be allowed to respond more to short-term moves and allow for greater two-way flexibility of the exchange rate.

## D. International Impact of China's Declining Current Account Surplus

### The Global Perspective

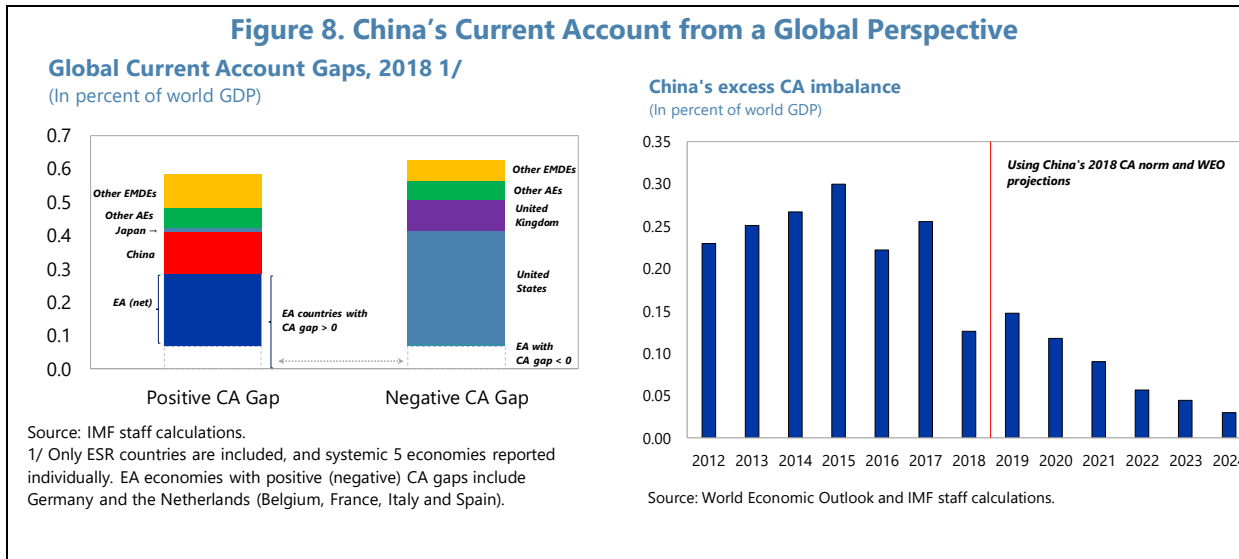
**22. As a share of global GDP, China's current account imbalance has declined and is expected to continue to shrink.** Peaking at 0.66 percent of global GDP in 2008, China's current account surplus has declined to 0.06 percent of global GDP in 2018 and is currently lower than other major surplus countries like Japan and Germany. Going forward, the current account is expected to continue to decline, reaching about -0.01 percent of global GDP in 2024.

**Current Account Balances, 2000-2024**  
(In percent of world GDP)



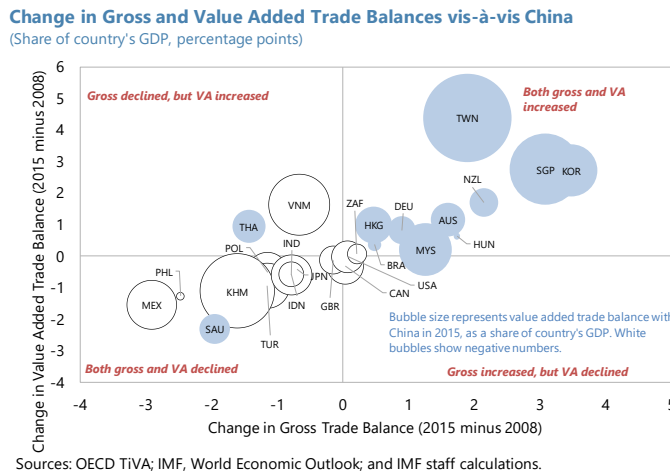
Source: IMF, World Economic Outlook.

**23. Further declines in the current account surplus will reduce excess global imbalances—a positive development for global stability.** China has historically run an excessive current account surplus, with the actual (cyclically-adjusted) current account deemed to be higher than its underlying norm—the level consistent with the country's fundamentals and desired medium-term policies. As the second largest economy of the world, the country's excess current account surplus was one of the highest contributors to global excess current account surplus, reaching a peak of around 0.3 percent of global GDP in 2015. The projected decline in China's current account surplus should narrow global excess imbalances (Figure 8). To the extent that large and sustained excess external imbalances in the world's key economies pose risks to global stability, a continued decline in China's excess external imbalances will thus be a positive step towards reducing global imbalances and strengthening the international monetary system.



**The Individual Country Perspective**

**24. Some Asian economies have benefitted from China's current account decline...** In line with China's rapid increase in imports of computers, electronics, and electrical equipment, the trade balance vis-à-vis China—in both gross and value-added terms—has improved the most for Asian economies exporting those items to China (Taiwan Province of China, Singapore, and Korea). The rise in Korea's trade balance—supported by the depreciation of the currency vis-à-vis renminbi towards end of 2007—has been predominantly due to electronics exports, which constituted 41 percent of total exports to China in 2017, up from 28 percent in 2008.

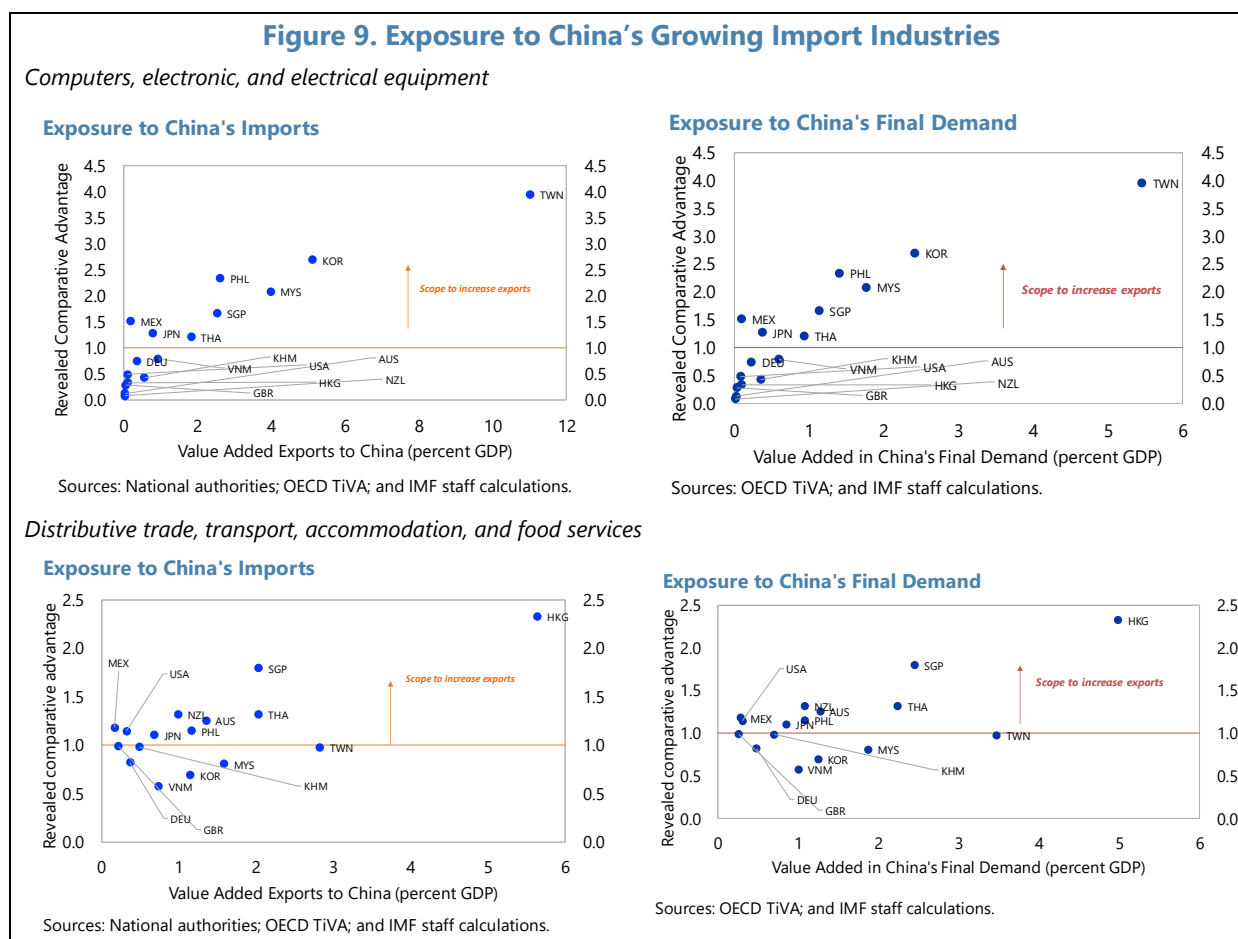


**25. ...while the trade balance of others (e.g. Japan, India, Indonesia) deteriorated.** Notably, Japan's trade balance with China, though improving in recent years, deteriorated by around USD 33bn in the period 2008–2015—equivalent to a decline of 0.7 percentage points, when expressed as a share of Japan's GDP. Japan's imports from China, owing to items like electronics and textiles, outpaced exports, where the sales of electronics—the country's top exports to China—slowed down possibly due to China's own increase in high-tech electronics production.

**26. Outside Asia, Germany's trade balance with China improved markedly,** predominantly due to the rise in exports of motor vehicles and machinery. The share of vehicles—Germany's top exports to China in 2017—increased to 24 percent of Germany's total exports to China from 15 percent in 2008. In addition, the commodity exporters (Brazil, Australia) witnessed higher trade



balances with China. For the U.S. and Canada, gross trade balance with China improved marginally while the value-added trade balance deteriorated moderately.



**27. Advanced economies (e.g. U.S., New Zealand, Japan) have the potential to increase exports to China.** The two sectors that have contributed towards China's import growth are electronics and services (to be more precise, distributive trade, transport, accommodation, and food services). The combination of the revealed comparative advantage of economies in these sectors (economies have an edge on exporting these products compared to others) and the current exposure to China in these sectors (economies have an existing relationship) provides a simple metrics of gauging which economies can benefit from China's rising imports (Figure 9).

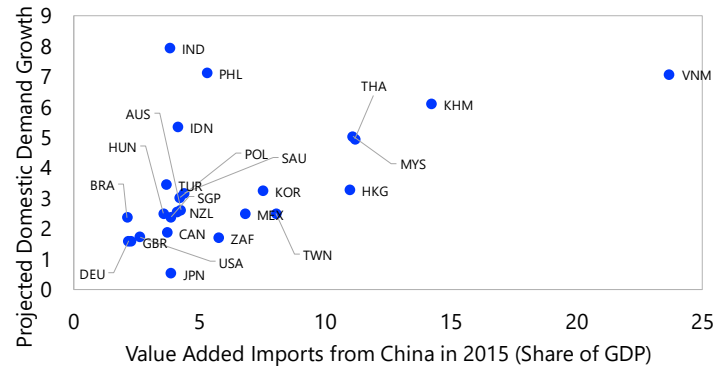
- Focusing on electronics, some Asian economies (Taiwan Province of China, Korea, Malaysia, Philippines) have both high revealed comparative advantages and significant exposure to China. Hence, these economies are likely to benefit if China's import growth in electronics continues. However, the exposure to China's final demand for these products is less than exposure to China's imports—hence, the benefits may not be as high as the gross numbers indicate.
- Some Asian economies (Hong Kong SAR, Singapore, Thailand) have high comparative advantages and high exposure, while some of the advanced economies (U.S., New Zealand, Australia, Japan) have comparative advantages as well as decent exposure to China's growing

imports in services. To the extent that the advanced economies have some existing relationship but relatively low exposure, there is potential for these countries to increase exports in this area.

**28. Potential to increase exports may not necessarily translate into higher trade balance—some economies may have strong imports from China, which would act as an offsetting force.**

Countries like India and Philippines are expected to have strong domestic demand growth in the medium-term, while Hong Kong SAR, Korea, and Thailand have significant import exposure as well as domestic demand increase in the medium-term. Outside Asia, the expected domestic demand growth of advanced economies like Germany, Canada, and the U.S. could also translate into high import growth from China.

**Domestic Demand Growth (2020-2024) vs. Import Exposure to China**



Sources: OECD TiVA; and IMF staff calculations.

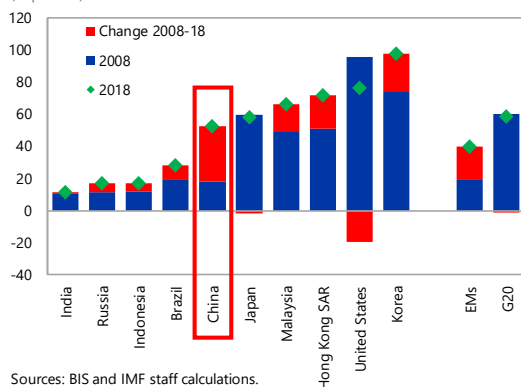
# HOUSEHOLD INDEBTEDNESS IN CHINA<sup>1</sup>

High household indebtedness could constrain consumption and real estate investment, and increase financial stability risks. In line with cross-country studies, we find that continued increase in household indebtedness could boost consumption in the short term, while reducing it in the medium-to-long term, and if left unaddressed, could undermine rebalancing and worsen external imbalances. Containing these risks would call for a strengthening of systemic risk assessment and macroprudential policies for the household sector. Other policies include improving the credit information system and establishing a well-functioning personal insolvency framework.

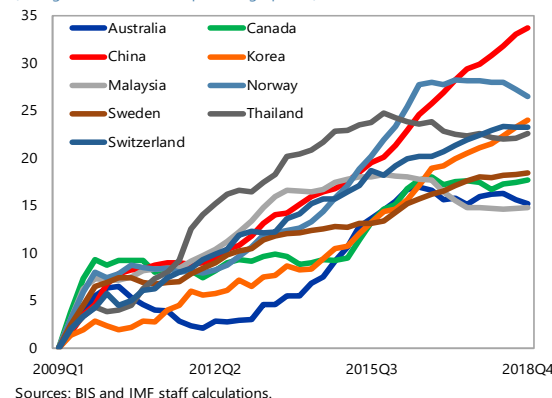
## A. Context

**1. Household debt has been rising rapidly in China since the global financial crisis...** As of June 2018, total debt of Chinese households stood at over 50.3 percent of GDP, above the emerging market average, and 32 percentage points of GDP higher than in 2008. Part of that buildup can be attributed to rapid financial market development in China and improving financial inclusion, which, combined with rising incomes, increased availability of credit to households. However, the speed with which households accumulated leverage was the highest among all BIS-reporting countries since the global financial crisis, raising concerns whether further debt increases could lead to significant adverse effects on growth and financial stability (IMF, 2017a).

**Large increase in China's household debt-to-GDP ratio**  
(In percent)

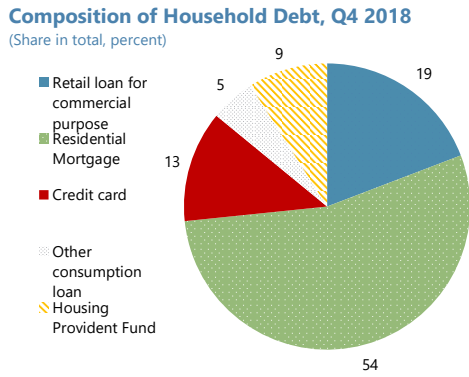


**Household debt-to-GDP ratio**  
(Change since 2009 Q1, in percentage points)

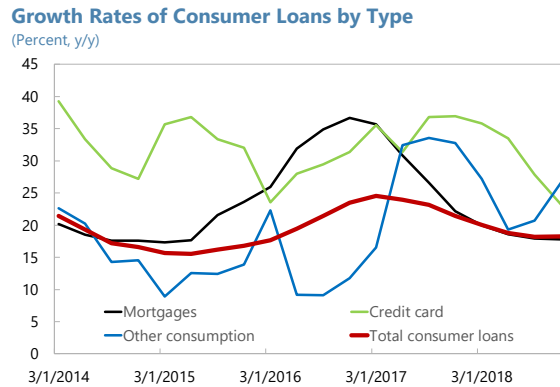


**2. ... mostly due to increased mortgage lending.** At the end of 2018, housing-related debt (mortgage loans and Housing Provident Fund lending) accounted for just below two-thirds of all household debt, a 7-percentage point (ppt) increase since 2013, while the remainder was almost evenly split between consumption loans (including credit card debt) and loans extended to households for commercial purposes (mostly SMEs). Most mortgages are extended on fixed-term rates, with maturity of about 10-20 years, and a minimum down payment of 20 (30) percent for the first (second) home that can be adjusted upwards by regional authorities. Mortgage rates are usually set at a discount/premium of 0-15 percent below/above the central banks' benchmark lending rate, with the adjustment depending on market conditions (Ding *et al.*, 2017).

<sup>1</sup> Prepared by Fei Han, Emilia M. Jurzyk, Wei Guo, Yun He, and Nadia Rendak.



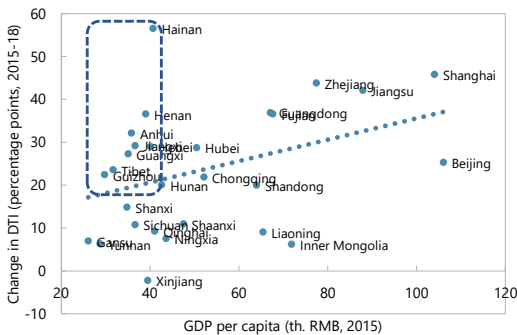
Sources: CEIC; HPF data for 2017; and IMF staff calculations.



Sources: Haver Analytics; CEIC; and Fund staff calculations.

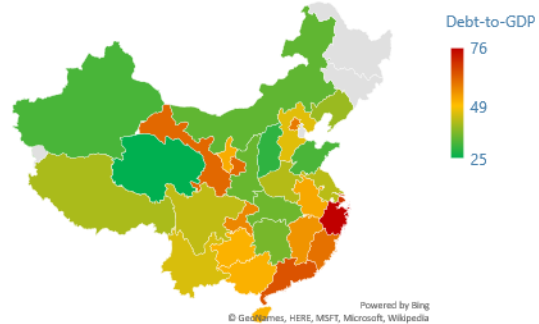
**3. Household indebtedness varies significantly by province...** Households in the richest, coastal provinces are the most indebted. In some provinces, debt has already risen above 60 percent of GDP—a threshold above which further increases in debt can adversely impact consumption growth according to some studies (Lombardi *et al.*, 2017). In addition, debt-to-income (DTI) ratios increased significantly in some of the poorer provinces.

**Change in Household Indebtedness v.s. GDP Per Capita**



Sources: WIND; CEIC; and IMF staff calculations.

**China: Household Debt-to-GDP**  
(In percent; end-2018)

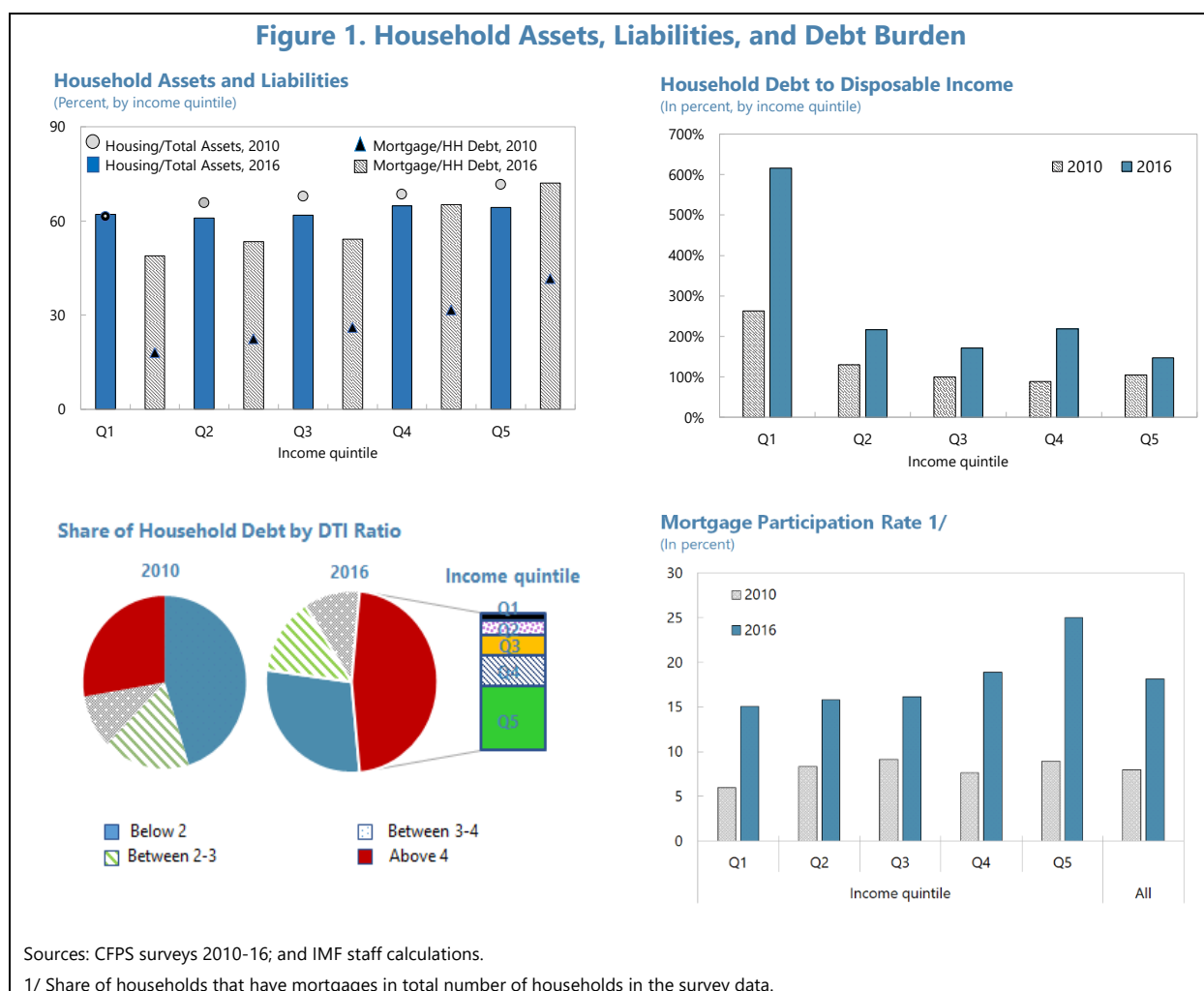


**4. ...as well as income levels.** Household survey data indicate that housing-related assets and debt are the main components of household balance sheets (Figure 1).<sup>2</sup> On average, housing assets constitute around 60 percent of all household assets, though this ratio has declined over time for richer households as new investment opportunities became available. At the same time, as demand for home financing grew, mortgage debt became the main household liability.<sup>3</sup> The riskiness of household debt increased as well: between 2010 and 2016, the share of debt held by highly indebted households—with a DTI ratio above 4—increased from around a quarter to almost half. Most of that debt, however, is held by richer households. Nevertheless, the increase in DTI ratio among the lower income households was quite substantial as well, reaching almost 600 percent. However, mortgage participation rate (share of households that have mortgages in the survey data),

<sup>2</sup> [The China Family Panel Studies \(CFPS\)](#) provide a household survey database with detailed debt and asset information of surveyed households every two years during 2010-16.

<sup>3</sup> The share of mortgages in total household debt could be even higher than shown in Figure 1, as some households took short-term loans for mortgage down payments.

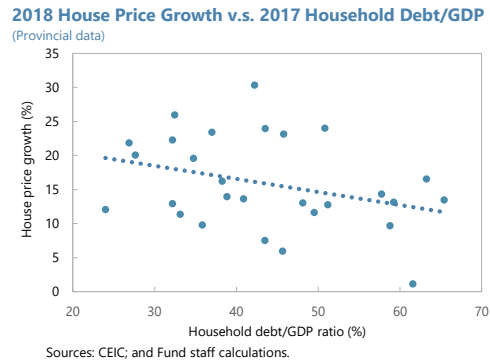
which increased from 8 to 18 percent between in 2010 and 2016, is still relatively low and serves as a mitigating factor.



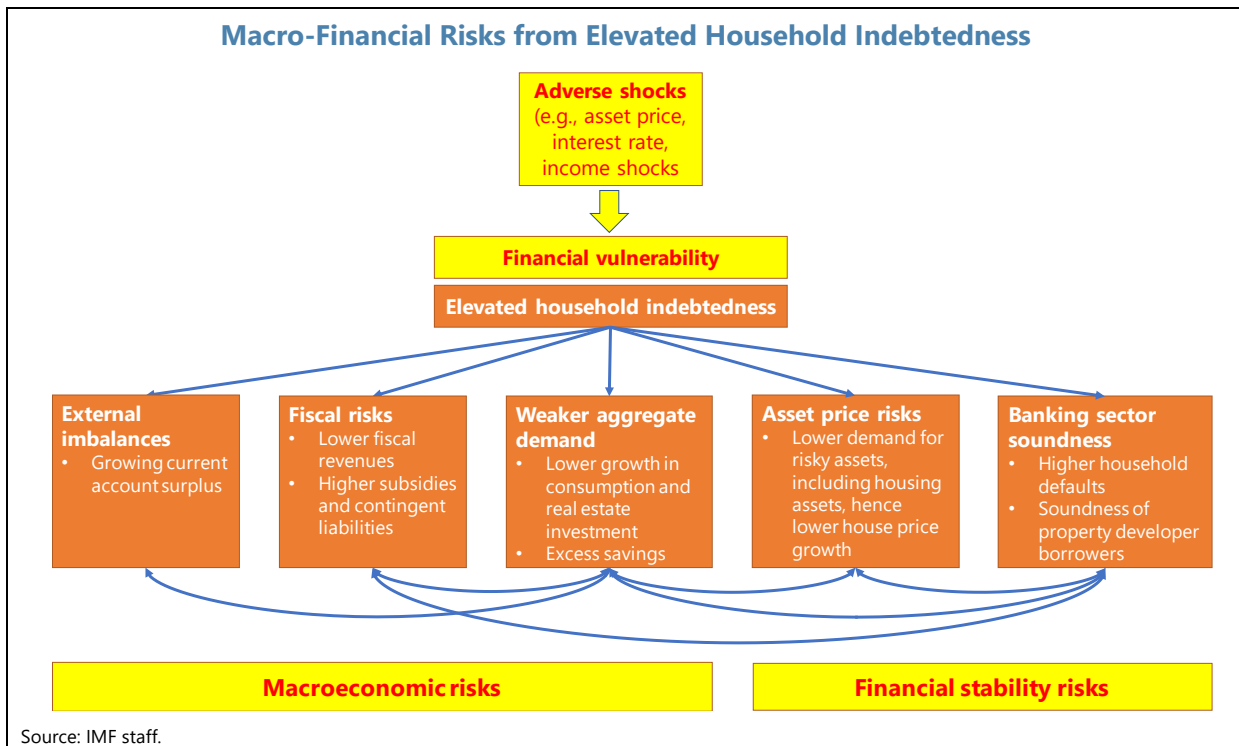
## B. Macro-Financial Risks from High Household Debt

**5. Higher household debt could increase financial stability risks.** With high indebtedness, households are more vulnerable to adverse shocks, which could force households to deleverage abruptly with a significant macro-financial impact. Given that more than half of household debt in China is mortgages, deleveraging could constrain housing demand growth, putting pressure on house price growth and the financial soundness of property developers. Indeed, house price growth seems to be negatively correlated with lagged household indebtedness. Severe house price corrections could further reduce banks' financial soundness through lower collateral valuation (real estate collateral for loans), and may also increase funding pressure for property developers, further

increasing risks for lending banks. Higher household debt may thus increase the probability of banking distress, and worsen any subsequent recessions—research has shown that recessions preceded by housing busts are longer and more severe (IMF, 2012). A mitigating factor for China is that most of the mortgages are first-home mortgages which are less prone to defaults. In fact, more than 93 percent of mortgages outstanding were first-home mortgages as of end-March 2019.



**6. Higher household borrowing could also increase macroeconomic risks.** Cross-country studies indicate that higher household debt may lead to lower GDP growth (Mian *et al.*, 2017; Jorda *et al.*, 2016). Higher debt repayments could constrain future consumption growth. Real estate investment may also be affected as housing demand slows, property developers face funding pressures, and banks are more reluctant to lend due to higher household credit risk. Lower fiscal revenues and public support of home ownership also create risks for the fiscal sector. These in turn could contribute to excess savings and growing external imbalances.



**7. In particular, higher household debt could increase consumption and GDP growth in the short term but reduce them in the longer term.** IMF (2017a) found that there is a trade-off between the short-term benefits of rising household debt and medium-term costs to growth. Using cross-country panel data, Lombardi *et al.* (2017) found that household debt increases consumption and GDP growth within one year but reduces them in the long run, with the negative long-run

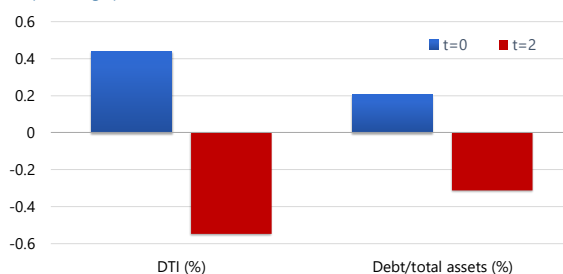
effects intensified when household debt/GDP ratio exceeds certain thresholds (60 percent for effects on consumption growth). Tian *et al.* (2018), using provincial data for China, found that high household debt in certain provinces has been associated with lower consumption growth. Higher household debt could also affect the income elasticity of consumption, particularly when facing a negative income shock (Nakajima, 2018; Baker, 2014). Given the importance of sustainable consumption growth in China's rebalancing process, this paper focuses on the impact of higher household indebtedness on consumption growth in China.

## C. Impact of High Household Indebtedness on Consumption

**8. We use panel regressions with both micro-level household survey data and macro-level provincial data to estimate the impact of higher household indebtedness on consumption growth (Annex I).** The CFPS survey data allow us to compute two widely used measures of household indebtedness—debt/disposable income (DTI) ratio and debt/asset ratio. The database also has detailed information about household expenditure, disposable income, and demographic characteristics. The quarterly provincial data span from 2015Q1 to 2018Q4 and cover 24 provinces. Debt/GDP ratio and DTI ratio are used as household indebtedness measures in the province-level regressions.<sup>4</sup>

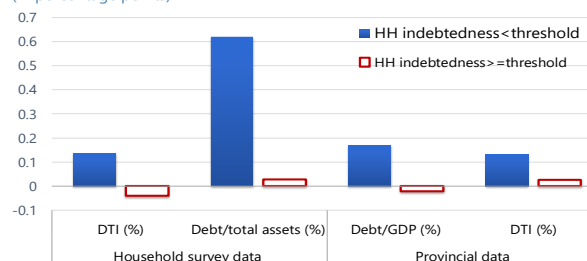
**9. Regression results suggest that an increase in household indebtedness is associated with higher contemporaneous consumption growth but lower consumption growth two years later (Annex II).** Households with higher DTI or debt/asset ratios experienced higher consumption growth in the same year but lower consumption growth two years later. In particular, a 100-percent increase in DTI ratio is associated with a 3.5-ppt increase in contemporaneous consumption growth but a 4.3-ppt decline in consumption growth two years later.<sup>5</sup> Similar results are observed with the debt/asset ratio. Provincial regression results also find the lagged negative effects of household indebtedness on consumption growth, although the contemporaneous effects are not statistically significant.

**Impact of Household Indebtedness on Consumption Growth**  
(In percentage points)



Source: IMF staff estimates.

**Income Elasticity of Consumption**  
(In percentage points)



Source: IMF staff estimates.

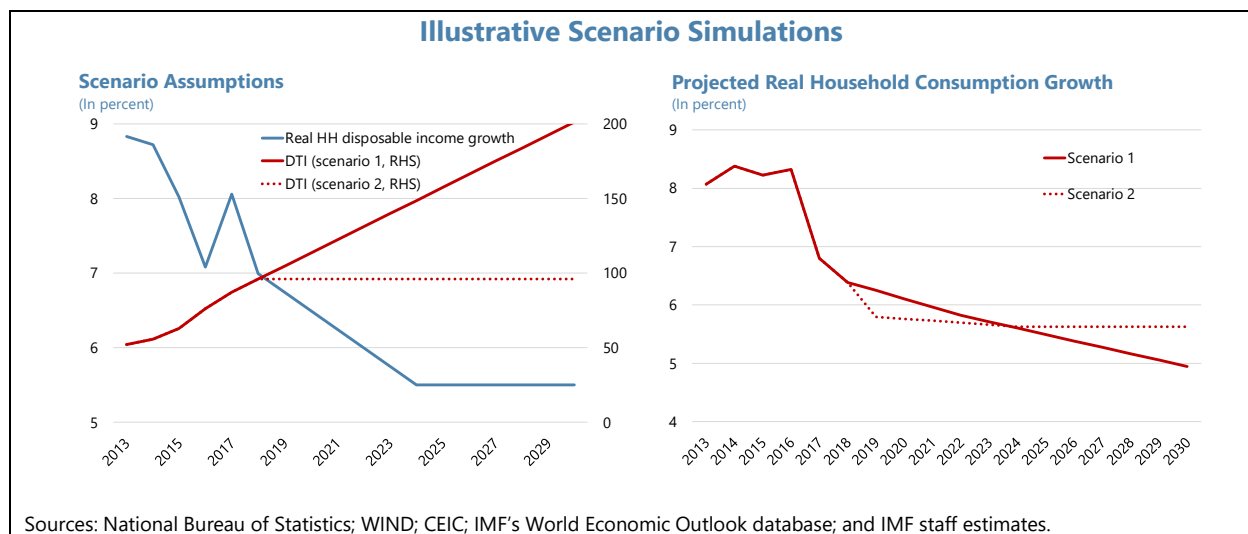
Note: The chart shows the impact of a 1-ppt increase in real income growth on real consumption growth based on estimates from household survey regressions and provincial regressions. Solid bars mean that the impact is statistically significant at the 95-percent confidence level.

<sup>4</sup> Independent variables include (province-level) house price growth, change in lending rate, public consumption growth, fixed-asset investment growth, and (national) stock price growth. Some other macroeconomic variables (such as unemployment rate) are also considered in the regressions but do not alter the main results.

<sup>5</sup> These numbers are normalized to the impact on national consumption growth in the text figure using standard deviations of consumption growth and indebtedness measures in the CFPS survey and national accounts.

**10. When household indebtedness exceeds a certain threshold, higher income growth does not lead to higher consumption growth (Annex II).** Specifically, threshold panel regressions suggest that, when lagged DTI ratio is below a threshold of 6.3, a 1-ppt increase in real income growth could boost consumption growth by 0.1 ppt. However, the estimate is not statistically significant if DTI ratio is above that threshold (about 10 percent of households in the sample).

**11. To better illustrate the impact of household indebtedness on consumption growth, we simulate the path of consumption growth under two scenarios with different dynamics of household indebtedness.**<sup>6</sup> In line with staff's baseline projections for real GDP growth, we assume that real income growth slows gradually to 5.6 percent by 2023 in the two scenarios. In scenario 1, the DTI ratio is assumed to increase at the average pace of last five years while remaining at the end-2018 level in scenario 2. Simulations suggest that rising household debt could reduce annual consumption growth from nearly 7 percent in 2017 to less than 5 percent by 2030. While consumption growth in scenario 1 is higher in the first few years due to the higher borrowing, it turns lower than scenario 2 over the medium-to-long term. If the household debt growth is between scenario 1 and scenario 2, then the projected consumption growth would also lie between the two scenarios. Moreover, if household debt can be maintained at the current level, consumption growth could stabilize at a rate higher than the baseline income or GDP growth rate, facilitating further internal rebalancing towards consumption.



## D. International Experience: Measures to Contain Household Vulnerabilities

**12. International experience suggests that improved data quality and strong policy and institutional frameworks can help counteract the negative effects of higher household debt.** Accurate and comprehensive indebtedness measures could help better monitor household

<sup>6</sup> Provincial regression estimates with DTI ratio are used in the simulations. For contemporaneous effects, we use the normalized impact estimates from survey regressions with DTI ratio. Simulation results using the estimates with debt/GDP ratio are very similar.

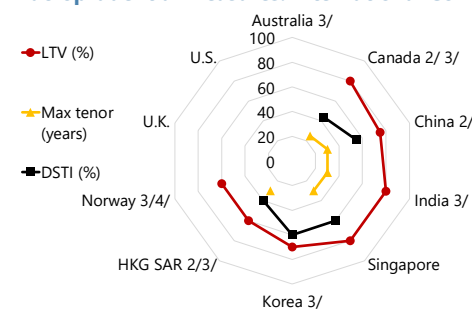


vulnerabilities. Cross-country studies have also shown that both demand-side macroprudential measures—such as limits on the debt-service-to-income (DSTI) and loan-to-value (LTV) ratios—and supply-side measures targeted at loans—such as limits on bank credit growth and loan loss provisions—tend to be highly effective in mitigating the negative effects of household debt on consumption and growth. Better financial sector regulations and institutions play an important role: countries with stricter banking sector supervision and more capitalized banking systems are more able to withstand higher levels of household debt. The existence of credit registries can also reduce the risk of a crisis as it is associated with greater overall financial sector transparency, and can help detect the problems early (IMF, 2017a).

### 13. Macroprudential measures currently in place in China appear broadly comparable to other countries.

The maximum LTV ratio for first-home buyers in China stands at 70 percent for cities with home purchase restrictions (restrictions on who can buy a house in the city and how many houses people can buy) and 80 percent for cities without purchase restrictions. However, provinces can independently reduce that ratio—in some it is as low as 60 percent, which is comparable to other jurisdictions with high household debt (e.g., Norway). The current regulation in China requires a borrower's monthly DSTI ratio to be less than 55 percent (with a cap on mortgage-service-to-income ratio of 50 percent), which is relatively high compared to the international norm of 30-50 percent. However, the absence of comprehensive credit registry hinders lenders' ability to properly evaluate household's total liabilities. China has not put in place supplemental capital requirements of different risk weights on household lending.

#### Macroprudential Measures: International Comparison 1/



Source: IMF's Annual Macroprudential Policy Survey.

1/ There are no LTV limits for Australia, the U.S., the U.K., and Thailand. For China, the average LTV limit on first-home buyers is shown. For Hong Kong SAR, the highest LTV ratio of 60 percent is shown.

2/ Fiscal measures to contain systemic risk, including non-resident tax, deed tax, and others, are in place.

3/ Capital requirements on household sector loans in place.

4/ Norway has a total DTI ratio requirement in place: a maximum of 5.

## E. Policy Implications

### 14. Systemic risk assessment of the household sector should be strengthened and extended beyond mortgages.

Given that non-housing loans account for about half of household debt for lower-income households (Figure 1), the authorities should step up efforts to collect and process data beyond the aggregate credit and housing market indicators. This could include having in place a wide range of household vulnerability indicators, such as leverage (e.g., consistent and comprehensive DSTI and DTI ratios), liquidity (average maturity of household loans or assets by type of loan or asset), composition of assets and liabilities, and interconnectedness with other sectors (such as banks and non-bank financial sector). The systemic risk monitoring framework should also take into account the distributional aspects of household debt by, for example, including the share of "debt at risk" and the share of "risky" borrowers (for example, the Bank of England monitors the share of households with high DSTI or loan-to-income ratios; see BoE, 2018). Interagency information and data sharing should also be strengthened, as recommended by the 2017 FSAP (IMF, 2017b).

**15. The macroprudential policy toolkit should be strengthened.** International experience suggests that demand-side macroprudential measures and supply-side measures targeted at loans are typically effective in mitigating the negative effects of household debt on consumption and growth. However, household debt in China still grew rapidly in the last three years (by around 20-30 percent per year) despite the existing LTV and DSTI limits.<sup>7</sup> The DSTI caps should be adjusted to the international norm of 30-50 percent and extended to other types of household loans including those from non-bank financial institutions. Stress testing of household DSTI ratio to interest rate and income shocks can also be used to gauge the potential risks in adverse scenarios. Sectoral capital requirements on banks' exposures to the real estate sector—a supply-side measure—may also help, but should be treated with caution, as they may result in leakages where loans are provided by non-banks and are often less effective in constraining credit growth than demand-side tools (Ding, *et al.* 2017).

**16. Combining different tools and increasing the scope of macroprudential policy may enhance policy effectiveness and reduce the leakages from any single measure.** More active use of DSTI limits backed by comprehensive analyses could enhance the effectiveness of LTV limits by restricting the use of short-term consumption loans for housing down payment. In this context, all leveraged providers of credit should be included in the purview of macroprudential policy. Otherwise, there is a risk that credit provision will migrate from banks to less-constrained nonbanks (Jacome and Nier, 2011). Given the importance of mortgages in household debt and the specific land ownership structure in China, land policies should also be used to increase effective housing supply and promote a transparent and efficient secondary market for land transactions (Box 1).

**17. China should also consider developing a legal framework for personal insolvency, while also ensuring effective debt enforcement of commercial claims.** The Enterprise Bankruptcy Law that came into effect in 2007 only applies to companies and not to individual debtors.<sup>8</sup> Chinese law includes provisions that allow certain protections for the debtor against enforcement by creditors.<sup>9</sup> However, these mechanisms are not well suited for situations where the debtor may have multiple creditors. Without a well-functioning personal insolvency regime, debtors cannot get a “fresh start” from over-indebtedness and may have to cut consumption more substantially to repay debt. As access to credit continues to increase in China, consideration should be given to developing a personal insolvency framework that would help address inevitable situations of over-indebtedness while mitigating moral hazard (Box 2). Effective debt enforcement, including mortgage enforcement, helps facilitate access to credit and allows banks to recover assets in the event of default.

<sup>7</sup> For example, some home buyers use financial innovation (e.g., P2P lending) to borrow money for mortgage down payments, circumventing LTV and DSTI limits, although the authorities are trying to crack down on such practices (IMF, 2017a).

<sup>8</sup> The introduction of a personal insolvency law was considered in the past but no law has yet been enacted.

<sup>9</sup> For example, courts can allow debtors to pay their obligation in installments (Article 108 of the General Principles of the Civil Law of the People's Republic of China). There are some other protections for debtors built into the law, e.g., allowing debtors to keep certain minimum assets to take care of themselves and their families. Also, some local courts are reportedly developing tools that would allow debt write-off for debtors with virtually no assets.

**18. A comprehensive credit information system should be developed as a prerequisite for strong policy frameworks.** The quality and scope of the credit registry should be strengthened in line with the 2017 FSAP recommendation—by capturing all individual debt obligations including those from nonbanks (such as P2P lenders) and other service providers (e.g., utilities and telecommunications). A comprehensive credit information system would help lenders better assess the credit risk of borrowers and allow policy makers to better monitor and assess financial stability risks of the system. It is also important for bankruptcy prevention and help ensure the effective functioning of the personal insolvency regime (Box 2).

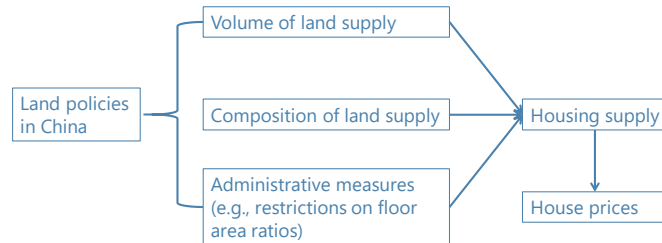
**19. Financial sector supervision and consumer protection should be strengthened.** Micro-prudential supervision with stronger supervisory powers or more stringent capital regulation frameworks would allow China to better contain any negative effects of rapidly rising household debt on macroeconomic and financial stability. Measures to strengthen consumer financial protection—including, for example, expanding financial education, increasing the transparency of financial contracts, and regulating certain financial innovation products—would help unsophisticated consumers make wiser finance decisions and enhance overall financial stability (IMF, 2017a).

### Box 1. Land Policies and House Prices in China

House prices in China are mainly affected by four types of policies—monetary (mainly interest rates and credit volume), macroprudential (mainly down payment requirements), tax, and land policies. Land policies are China-specific and are not seen as a major policy tool to contain rapidly rising house prices in international peers. This box aims to explain the main land policies in China and how they tend to affect house prices.

**In China, land policies affect house prices mainly through the volume and composition of land supply.**

Illustration of Land Policy Transmission in China



- In China, land is owned not privately but by the state (urban land) or by rural collectives (rural land). Land-use rights are privately owned, but those for residential use are only valid for 70 years. Higher land supply, without significant land hoarding by developers, should increase housing supply and alleviate the upward pressure on house prices. The composition of land supply, e.g., for residential, or commercial, or office use, could also affect residential housing supply and house prices.
- Different types of land have different pricing schemes, leading to potential arbitrage opportunities. Residential land is further divided into four types of residential housing, i.e., small- and medium-sized apartments, villa and deluxe apartments, 'economic' houses (subsidized houses), and others. Current land policies aim to increase land supply for small- and medium-sized apartments while restricting the supply for villas and deluxe apartments, which should benefit general population. At the same time, increases in land supply for economic houses may also limit land supply for other houses, leading to higher market-determined house prices.
- Administrative measures such as restrictions on floor area ratios (defined as the ratio of a building's total floor area to the size of the land upon which it is built) could also be used to guide land supply towards small- and medium-sized apartments. For example, the floor area ratios in Shenzhen were recently raised in the future planning of the Great Bay Area to facilitate higher-floor buildings.

**Land policies should aim to reduce land hoarding and enhance the market mechanism in the secondary land transaction market.** Land hoarding by property developers and significant supply-side distortions—such as local governments' control over land supply and high reliance on land sales to finance spending—render China's property market susceptible to both price misalignment and overbuilding.<sup>1</sup> In this context, policies to contain land hoarding including penalties for developers could be enforced more strictly, while alternative sources for local government financing such as property taxes should be adopted. The recent relaxation of Hukou requirements in smaller cities and allowing some collectively-owned rural land to be transacted in the land market (without having to be purchased by the state first) are a step in the right direction. There may also still be room for raising floor area ratios in Tier 1 cities (less than 2 in 2010), compared to New York, Singapore, and Seoul which were mostly above 3 in the same period according to CICC estimates.<sup>2</sup> These policies may help promote market mechanisms in land price formulation and increase housing supply.

<sup>1/</sup> Land hoarding refers to the practice of acquiring land and deliberately holding it and waiting for prices to increase in the future before selling it for a higher return.

<sup>2/</sup> Floor area ratio is the ratio of a building's total floor area to the size of the land upon which it is built.

### Box 2. Is It Time for China to Develop a Personal Insolvency Framework?

**An effective personal insolvency regime is an important part of the toolkit to address excessive personal debt.** While ex-ante prevention of excessive debt accumulation by households should be the first line of defense, personal insolvency is a tool that helps address the consequences of over-indebtedness by establishing rules and procedures for fair burden sharing between debtors and creditors. Unlike individual enforcement/collection proceedings against a debtor, personal insolvency is a collective proceeding with participation of multiple creditors. In essence, it allows honest debtors to get a “fresh start”, thus allowing the debtor to return to economic activity. In some countries, personal insolvency regime covers also individual entrepreneurs and unincorporated micro and small enterprises, thus seeking to reduce the stigma of business failure and promoting entrepreneurship (Bergthaler, *et al.* 2015).

**Over the past decade many countries have reformed their insolvency frameworks.** Whereas the Asian crisis in 1997 spurred corporate insolvency reforms in the region, the global financial crisis catalyzed a re-assessment of insolvency frameworks in many parts of the world, especially in European countries. The reforms, aimed at strengthening legal and institutional frameworks for corporate debt restructuring and establishing new regimes for personal insolvency, were often part of broader strategies for dealing with high non-performing loans (NPLs) that were weakening countries’ financial sectors (Aiyar, *et al.* 2015). Several Asian countries have personal insolvency frameworks, and some of them are considering the introduction of relevant reforms.<sup>1</sup>

**The adoption of a personal insolvency law would be an important step.** Unlike in the area of corporate insolvency, there are no international standards for personal insolvency, but cross-country experience and careful attention to the circumstances of China could guide the design of such a framework (Insolvency and Creditor/Debtor Regimes Task Force, 2014). As a general matter, the law—which could apply to individual debtors, including individual entrepreneurs and unincorporated enterprises—should establish procedures that allow insolvent debtors with sufficient repayment capacity the opportunity to restructure their debt (including secured debt) over a period of time by making partial payments to creditors, while providing a swift discharge from debt (a “fresh start”) after liquidation of the debtors’ assets for honest debtors with no repayment capacity. Given the novelty of personal insolvency in China, the law should be developed in broad consultation with all interested stakeholders. In addition to developing a personal insolvency law, consideration should be given to developing out-of-court mechanisms to facilitate resolution of personal debt distress. Cross-country experience demonstrates that such mechanisms, e.g., debt counseling, Financial Ombudsmen, mediation, arbitration, can be a useful supplement to formal personal insolvency procedures.

**Important conditions will have to be in place to ensure effective implementation of the new framework.** Legislative reforms should go hand-in-hand with putting in place and/or strengthening institutional arrangements that would help ensure the effective functioning of the personal insolvency regime. Those include but are not limited to: (i) an effective system of registration and enforcement of secured transactions, including mortgages; (ii) a well-functioning system of disclosure and verification of information about the debtor’s financial situation, (iii) establishment of a community of qualified and regulated insolvency practitioners who can help insolvent debtors to navigate the insolvency process, including the preparation of a repayment plan to restructure debt, and (iv) increasing judicial knowledge of and competency in handling insolvency matters, including by continuing with the development of specialized expertise in courts. Consideration can also be given to establishing an agency (or assigning this function to one of the existing agencies) to provide advice to debtors facing financial difficulties. More would have to be done to explain the concept of personal insolvency to the Chinese society to allow it to gain acceptance as one of the standard tools of a market economy.

<sup>1/</sup> Japan and Korea have experience with personal insolvency laws which are widely used. There are also personal insolvency regimes in the Philippines, Thailand, Singapore, and Malaysia. The comprehensive reform of personal bankruptcy in India introduced in 2016 is pending implementation.

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## Annex I. Design of Panel Regressions

### Effects of Household Debt on Consumption Growth

**1. Two panel regression models are estimated to explore the trade-off between positive short-term and negative longer-term effects.** The first model focuses on lagged effects of household indebtedness on consumption growth:

$$\Delta c_{i,t} = \beta_0 + \alpha_i + \beta_1 \Delta y_{i,t} + \beta_2 HD_{i,t-1} + \beta_3 (\Delta y_{i,t} * HD_{i,t-1}) + \beta_4 X_{i,t} + \varepsilon_{i,t}, \quad (1)$$

where  $\Delta c_{i,t}$  and  $\Delta y_{i,t}$  are household (real) expenditure growth and (real) disposable income growth,  $HD_{i,t-1}$  is a measure of household indebtedness with a two-year lag (given that the CFPS survey was conducted every two years),  $\Delta y_{i,t} * HD_{i,t-1}$  is an interaction term between income growth and lagged household indebtedness,  $X_{i,t}$  is a vector of household characteristics, and  $\alpha_i$  is the household fixed effect.<sup>1</sup> For a household with income growth  $\Delta y$ , the impact of lagged household indebtedness on consumption growth is  $\beta_2 + \beta_3 \Delta y$ . For a household with a lagged household indebtedness measure of  $HD$ , the income elasticity is  $\beta_1 + \beta_3 HD$ . Hence,  $\beta_3$  measures the impact of household indebtedness on income elasticity. To estimate the short-term effects, we estimate a similar panel regression model but with household indebtedness in the same year:

$$\Delta c_{i,t} = \beta_0 + \alpha_i + \beta_1 \Delta y_{i,t} + \beta_2 HD_{i,t} + \beta_3 (\Delta y_{i,t} * HD_{i,t}) + \beta_4 X_{i,t} + \varepsilon_{i,t}, \quad (2)$$

### Threshold Effects of Household Debt on Income Elasticity

**2. When household debt exceeds a certain threshold, higher income growth may not lead to higher consumption growth as households suffer from a higher debt repayment burden.** This is because households may choose to cut consumption growth to a minimum level and use the rest of their income to pay back the higher debt. This may be particularly true in countries without a well-established household bankruptcy regime such as China, as those households could not choose to default and have a “fresh start”.

**3. We estimate the following *threshold* panel regression model to examine the threshold effects of household debt on income elasticity:**

$$\Delta c_{i,t} = \beta_0 + \alpha_i + \beta_s \Delta y_{i,t} + \beta_3 X_{i,t} + \varepsilon_{i,t}, \quad (3)$$

where:

<sup>1</sup> Household characteristics include changes in household size and the household head's marital and education level. Adding more household characteristics (e.g., household location) does not alter the main results.



$$\begin{cases} \beta_s = \beta_1, & \text{if } HD_{i,t-1} < HD^* \\ \beta_s = \beta_2, & \text{if } HD_{i,t-1} \geq HD^* \end{cases}$$

When household indebtedness is lower (or higher) than the threshold  $HD^*$ , we would expect a positive (or zero) income elasticity, i.e.,  $\beta_1 > 0$  (or  $\beta_2 = 0$ ).

**4. We also estimate similar panel regression models with provincial data at the macro level.** In particular, we estimate a province-level panel regression model similar to equation (1) but with different control variables, mainly province-level macroeconomic variables including change in lending rate, house price growth, public consumption growth, fixed-asset investment growth, and (national) stock price growth (GFSR, 2017).<sup>2</sup> We also use dynamic panel models to control for the effects of lagged dependent variable due to consumption inertia. Finally, we estimate a similar threshold panel regression model to examine the threshold effect of household debt on income elasticity at the macro level. The models are estimated with a quarterly database spanning from 2015Q1 to 218Q4 and covering 24 provinces for which all the variables are available, and with one-year lagged household indebtedness measures (i.e., debt/GDP ratio and DTI ratio).

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<sup>2</sup> Some other macroeconomic variables (such as unemployment rate) are also considered in the regression but do not alter the main results.

## Annex II. Panel Regression Results

Household-Level Panel Regression Results				
Dependent variable	Real expenditure growth $\Delta c_{i,t}$			
Lagged or contemporaneous HD	Lagged HD		Contemporaneous HD	
Household indebtedness measure (HD)	Debt/disposable income	Debt/total asset (%)	Debt/disposable income	Debt/total asset (%)
Real income growth $\Delta y_{i,t}$	0.13*** (0.02)	0.12*** (0.02)	0.11*** (0.02)	0.08*** (0.02)
<i>HD</i>	-4.39*** (1.09)	-0.51*** (0.12)	3.54*** (0.68)	0.33*** (0.12)
$\Delta y_{i,t} * HD$	-0.0002 (0.01)	- 0.002*** (0.001)	0.01** (0.003)	-0.001 (0.001)
Change in family Size	4.99*** (1.71)	4.91*** (1.78)	5.02*** (1.70)	6.69*** (1.88)
Change in household head marital status	-9.90*** (3.74)	-9.11** (4.31)	-6.61** (3.22)	-5.19 (3.60)
Change in household head education level	3.38** (1.62)	4.06** (1.81)	2.86** (1.34)	4.36*** (1.47)
Constant	26.64*** (2.76)	31.74*** (3.25)	35.90*** (2.88)	41.70*** (3.46)
Household fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
# obs.	9,059	8,559	8,990	8,434
# households	6,365	6,112	6,199	5,905
Overall- $R^2$	0.04	0.03	0.03	0.02

Household-Level Threshold Panel Regression Results		
Dependent variable	Real expenditure growth $\Delta c_{i,t}$	
Household indebtedness measure (HD)	Debt/disposable income	Debt/asset (%)
Real income growth $\Delta y_{i,t}$ if $HD_{i,t-1} < HD^*$	0.14*** (0.03)	0.62*** (0.09)
Real income growth $\Delta y_{i,t}$ if $HD_{i,t-1} \geq HD^*$	-0.04 (0.07)	0.03 (0.02)
Change in family Size	1.98 (2.38)	3.15 (2.76)
Change in household head marital status	-10.50* (6.03)	-12.08 (8.33)
Change in household head education level	1.10 (2.47)	0.89 (2.76)
Constant	28.03*** (3.44)	33.77*** (3.65)
Household fixed effects	Yes	Yes
Year fixed effects	Yes	Yes
# obs.	1,689	1,455
# households	563	485
Overall- $R^2$	0.03	0.05
Estimated threshold $HD^*$	6.3	2.4%

Province-Level Panel Regression Results				
Dependent variable	Real retail sales growth (qoq) $\Delta c_{i,t}$			
Household indebtedness measure (HD)	Debt/GDP (%)		Debt/disposable income (%)	
Estimation method	Fixed-effects with Driscoll-Kraay s.e.	Dynamic panel GMM	Fixed-effects with Driscoll-Kraay s.e.	Dynamics panel GMM
$\Delta c_{i,t-1}$	—	-0.25** (0.10)	—	-0.26** (0.09)
Real income growth $\Delta y_{i,t}$	0.20*** (0.06)	0.23** (0.10)	0.13* (0.07)	0.20* (0.12)
$HD_{i,t-4}$	-0.10** (0.04)	-0.12** (0.05)	-0.05** (0.02)	-0.08*** (0.02)
$\Delta y_{i,t} * HD_{i,t-4}$	-0.002 (0.001)	-0.003 (0.002)	-0.0001 (0.001)	-0.001 (0.001)
Real house price growth (lagged)	0.06** (0.02)	-0.04 (0.03)	0.06** (0.02)	-0.03 (0.03)
Real stock price growth (lagged)	-0.02 (0.02)	0.004 (0.04)	-0.02 (0.02)	-0.01 (0.05)
Lending rate (lagged)	-1.34 (1.02)	6.42 (3.99)	-1.41 (1.11)	5.90 (3.92)
Real public consumption growth (lagged)	0.03 (0.14)	-0.22 (0.19)	0.05 (0.15)	-0.19 (0.19)
Real fixed asset investment growth (lagged)	0.02*** (0.004)	0.02 (0.02)	0.02*** (0.005)	0.02 (0.02)
# obs.	288	240	288	240
# provinces	24	24	24	24

Province-Level Threshold Panel Regression Results		
Dependent variable	Real retail sales growth (qoq) $\Delta c_{i,t}$	
Household indebtedness measure (HD)	Debt/GDP	Debt/disposable income (%)
Estimation method	Fixed-effects threshold	Fixed-effects threshold
Real income growth $\Delta y_{i,t}$ if $HD_{i,t-4} < HD^*$	0.17*** (0.05)	0.13** (0.06)
Real income growth $\Delta y_{i,t}$ if $HD_{i,t-4} \geq HD^*$	-0.02 (0.07)	0.03 (0.09)
Lending rate (lagged)	-2.29 (2.04)	-1.60 (2.27)
Real house price growth (lagged)	0.05 (0.04)	0.06 (0.04)
Real stock price growth (lagged)	-0.02 (0.04)	-0.01 (0.04)
Real public consumption growth (lagged)	-0.01 (0.21)	0.02 (0.22)
Real fixed asset investment growth (lagged)	0.02 (0.01)	0.02 (0.01)
Constant	12.73*** (1.23)	12.79*** (1.30)
# obs.	288	288
# groups	24	24
<b>Estimated threshold <math>HD^*</math></b>	<b>49%</b>	<b>131%</b>

# IMPROVING THE ALLOCATION OF CORPORATE CREDIT IN CHINA<sup>1</sup>

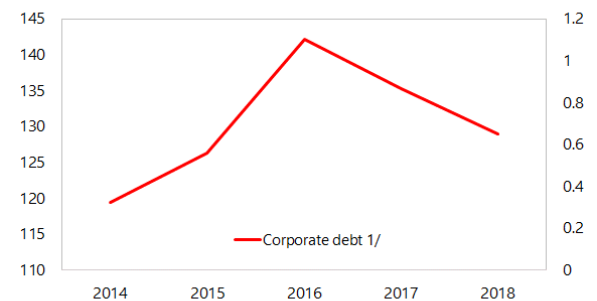
- China has succeeded in reducing the corporate debt-to-GDP ratio, but leverage remains high as credit allocation is skewed towards less efficient state-owned enterprises (SOEs) as a result of their implicit government guarantee. The needed financial regulatory tightening has reduced leverage but with the unintended consequence of constraining credit to the private sector, especially small and medium sized enterprises (SMEs). The authorities' initiative to establish competitive neutrality will help support the development of the private sector.
- Concerted efforts to promote debt and regulatory neutrality to create a level domestic playing field will improve the allocation of corporate credit. Implementation of the reforms will need to be sequenced appropriately. Equally important will be to ensure that policies are market-oriented so that they are durable and not circumvented, leading to a more efficient allocation of resources. Policies would include removing implicit guarantees given to SOEs, increasing banks' risk weights on corporate loans with implicit guarantees, adjusting cost advantages provided to SOEs, and hardening SOE budget constraints.
- Improving allocation of credit can also be achieved by enhancing support to private-owned enterprises (POEs) and SMEs under an expanded coverage of competitive neutrality, such as by lowering credit rating thresholds to allow small firms to issue bonds, encouraging equity financing, and revising or applying laws uniformly to improve credit allocation.
- Strengthening the overall credit culture will also improve lending decisions and enhance financial resilience. Reforms include improving credit ratings, strengthening credit registries, ensuring adequate capitalization of banks and promoting more risk-based vs. collateral-based lending.

## A. Impact of China's Deleveraging on Credit Allocation

### The Positives...

**1. China's corporate leverage, measured as the debt-to-GDP ratio, has declined, reflecting de-risking measures since 2016.** Peaking at 142 percent of GDP in 2016, China's corporate debt (for all types on enterprises excluding local government financing vehicles (LGFVs) declined to 129 percent of GDP in 2018. To reach this goal, the authorities implemented several measures, which include applying SOEs' debt ceiling and restricting the leverage ratios over the medium-term (IMF, 2018; see Annex I for details).

**Corporate Sector: Debt to GDP Ratio**  
(In percent of GDP)



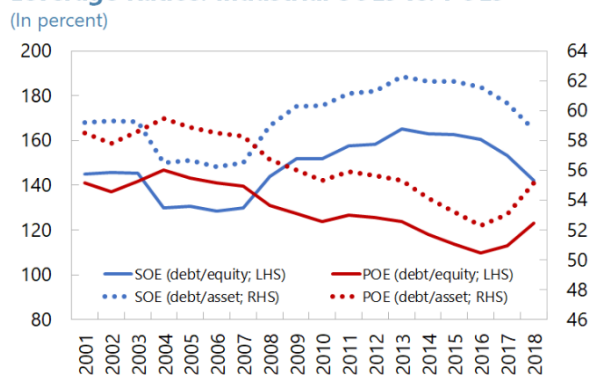
Sources: Haver analytics; and IMF staff calculations.  
1/ Excluding credit to LGFVs.

<sup>1</sup> Prepared by Sarwat Jahan (lead), Mario Catalan, Emilia Jurzyk, Simon Paroutzoglou, and Longmei Zhang. This note covers the reforms that directly impact corporate credit allocation, which are complementary to broader SOEs reforms.

## 2. SOE leverage ratios have also fallen.

Measures of SOE leverage such as the ratio of debt-to-assets or debt-to-equity have steadily declined since 2016. The decrease in the leverage ratio of industrial SOEs in 2018 was driven more by the increase in assets than by the reduction in debt (the assets and liabilities of the industrial SOEs increased by about 7 and 6 percent (y-o-y) respectively).

### Leverage Ratios: Industrial SOEs vs. POEs



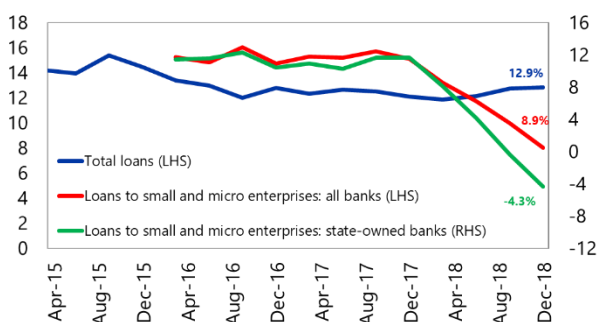
Sources: China Ministry of Finance; and IMF staff calculations.

### ...and the Unintended Consequences

**3. Financial regulatory tightening, while needed to support China's de-risking, has had the unintended consequence of constraining credit to private corporates.** SMEs were particularly hit hard from the contraction in shadow banking, an important source of financing for the private sector. The intended outcome of channeling credit to private corporates through the banking sector did not happen, as banks opted to continue lending to less risky SOEs. As a result, financing conditions tightened for POEs, and their default numbers increased.

### Small and Micro Enterprise Lending Growth

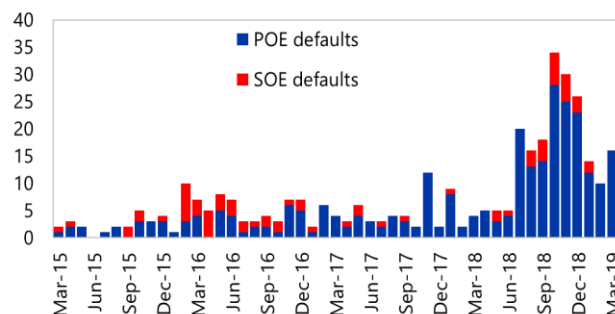
(In percent, year-on-year)



Sources: CBRC, PBOC, and IMF staff estimates.

### Bond Defaults by Corporates

(Number of defaults)



Sources: Wind; China bond; and IMF staff calculations.

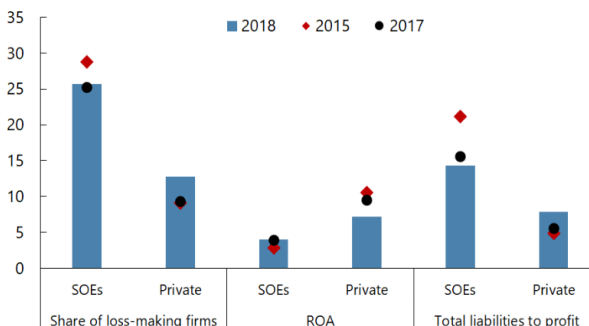
## Remaining Challenges and Vulnerabilities

### 4. Deleveraging has not significantly changed the overall allocation of credit in China.

- **SOE performance has gradually improved but remains below that of the POEs.** For example, the number of loss-making firms has declined since 2015 as many central zombie firms have exited, but there are still twice as many loss-making SOEs than POEs. Yet, despite SOEs' lower profitability and weaker balance sheets, a

### Corporate Performance: SOEs vs POEs

(In percent)



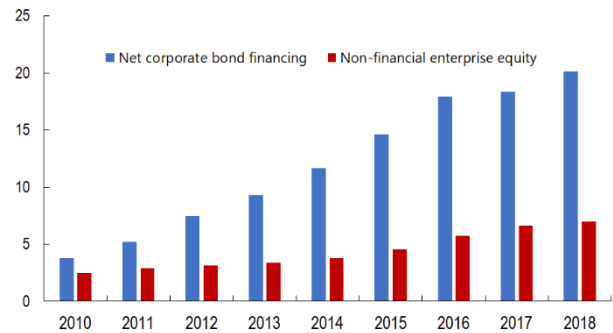
Sources: CEIC and IMF staff calculations.

majority of bank loans still flows to SOEs (Lardy, 2019), indicating scope for improving bank credit allocation.

- **Deleveraging has led to some increase in market financing.** Deleveraging has induced corporates to find alternate sources of funding, such as equity or retained earnings. However, the amounts so far are small, with banks still providing over 70 percent of corporate financing. In addition, while corporate bond and equity issuance has increased, it still constitutes a small portion of the total liabilities.
- **Although China's corporate debt-to-GDP ratio has fallen since 2016, it remains one of the highest in the world,** reflecting partly stimulus after the global financial crisis (GFC). Corporate debt ratios still remain above the average of advanced economies and emerging markets as well as China's pre-GFC levels of 2008. And there is the risk that the decline since 2016 may still unwind in coming years as credit growth picks up and if nominal GDP growth slows and industrial profitability weakens.

**Corporate Financing: Bonds vs. Equity**

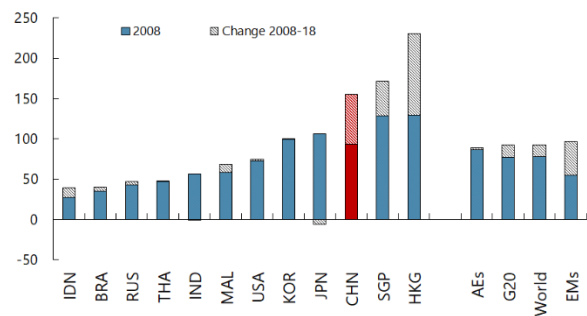
(In trillions of Renminbi)



Sources: Haver Analytics; and IMF staff calculations.

**Corporate Debt-to-GDP**

(In percent)



Sources: BIS; and IMF staff calculations.

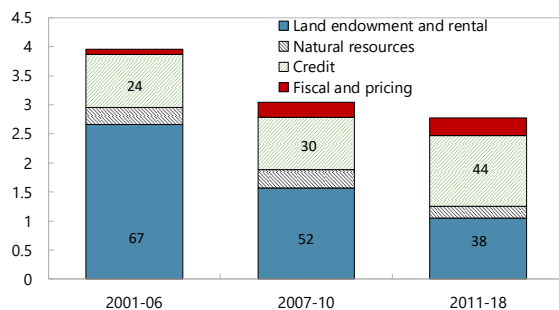
**B. Applying Principles of Competitive Neutrality to Credit Allocation**

**The Status of Competitive Neutrality in Financing**

**5. SOEs continue to receive a large share of credit allocation due to their prevalent and persistent implicit guarantees.** SOEs enjoy implicit support on several factor inputs such as land, credit, and natural resources. Overall the implicit support to SOEs in recent years has declined to below 3 percent of GDP, but a considerable part of the implicit support is related to credit allocation (left graph, Lam and Moreno-Badia, 2019). Banks are more inclined to lend to SOEs as they are

**Implicit Support to SOEs**

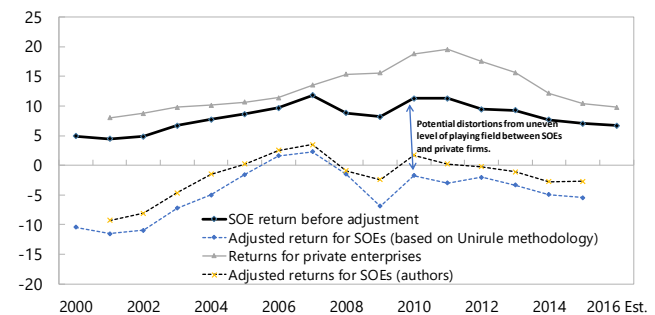
(In percent of GDP)



Sources: CEIC, WEO, Lam and Moreno-Badia (2019), and Lam and Schipke (2017). Note: Numbers in the bar chart refer to the share of total implicit support.

**Adjusting Return on Equity based on Implicit Support to SOEs**

(Net return on total owners' equity; Percent)



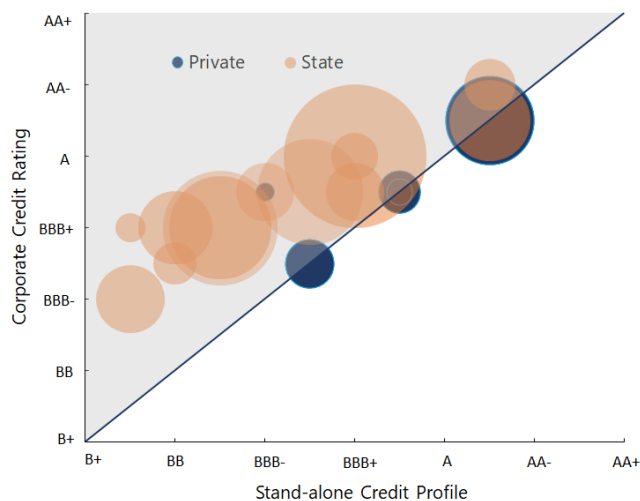
Source: Lam and Schipke, 2017. Note: Based on nominal profits of industrial SOEs net of fiscal subsidies, implicit support through the use of land and natural resources, and lower implicit financing cost.

perceived to be less risky and shielded from defaults. Implicit guarantees also boost the profitability of SOEs; adjusting for the estimated implicit support, SOE return on equity falls from an average of 8 percent to about –1.3 percent during 2011–15 (Lam and Schipke, 2017).

## 6. SOEs also benefit from lower cost of capital from higher credit ratings due to implicit guarantees.

The credit ratings of SOEs in China often overstates the firms' underlying financial health because of the perceived implicit guarantees. Comparing the two credit ratings of each corporate (with and without factoring in implicit guarantees), SOEs are estimated to have credit ratings about two to three notches higher than comparable POEs (graph). As a result, SOEs benefit from interest rates that are estimated to be 150- 200 bp lower than those paid by their private sector peers for bonds with similar maturities (GavekalDragonomics, August 2018). Even after controlling for additional factors (such as the type of credit bond, industry, and trading year), SOEs typically pay over 100 basis points less in borrowing costs than private firms with the same financial conditions such as leverage, profitability, and size (Zhang and Wu, 2019)<sup>2</sup>.

### Corporate Credit Rating



Sources: Standard & Poors; Bloomberg L.P.; and IMF staff calculations.  
Note: Size of the bubble denotes the entity's total debt. Shaded area shows corporates that have a higher credit rating than their stand-alone credit profile.

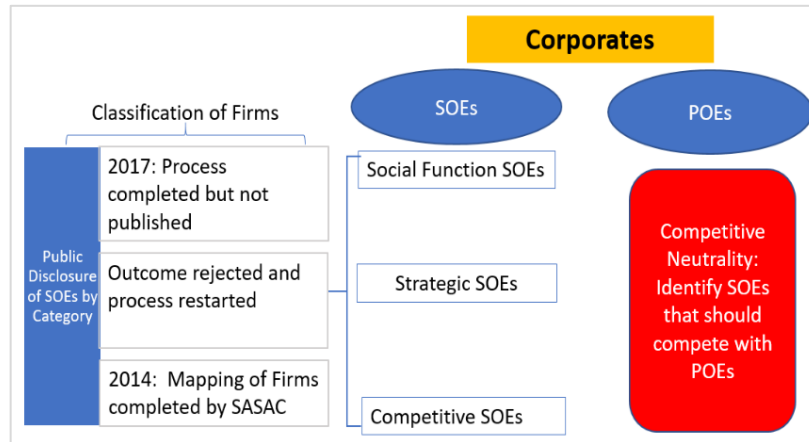
## How Can the Principles of Competitive Neutrality be Applied to Financing?

**7. To boost the prospects for the private sector, the authorities have adopted competitive neutrality as a mandate.** In the 2019 Plan for National Economic and Social Development, the authorities committed to *"follow the principle of competitive neutrality ... enterprises under all forms of ownership will be treated in equal footing"*. For the upcoming year, they have also announced several specific measures for credit allocation towards the private sector.

**8. The first step in establishing competitive neutrality would be to separate SOEs that should compete with POEs.** The authorities launched an initiative to divide non-financial SOEs into three categories – social, strategic, and competitive firms. Although SASAC completed the identification process in 2017, no information has been released on the firms in each category. The first step to level the playing field should be to release a publicly available list of the SOEs with their assigned category. This classification will ensure that identified SOEs will not be exempt from the rules that apply to POEs.

<sup>2</sup> The sample covers bonds traded on the exchange market. The regression may not capture other characteristics of SOEs for example age of firms, risk aversion, or social responsibilities.

### Classification of Corporates

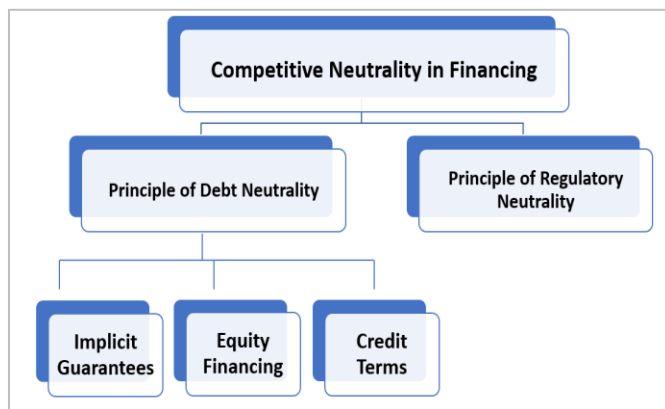


Source: Lardy (2019) and IMF staff.

**9. As China transitions to a market-based economy, it will benefit from recognizing the distinctive roles of the government and the market.** Historically, SOEs in China have fulfilled multiple roles including social responsibilities such as addressing poverty. Going forward, it will be important to evaluate areas where the central government can fulfill social functions instead of SOEs. Equally important would be to control the growth of state-owned capital invested in SOEs, including SOEs operating in non-strategic sectors as this could release public funds for other causes. At the very least, SOEs will need to make a commercial rate of return, otherwise this would imply a loss in the value for the state as an owner.

**10. Among the eight main principles of competitive neutrality formulated by the OECD, two directly impact allocation of credit:** debt neutrality and regulatory neutrality. All eight principles aim to eliminate market distortions or unfair regulations that give advantages to SOEs, and thereby could indirectly affect the allocation of credit. For example, the principle of procurement neutrality could help with equalizing input costs of firms and affect their profitability. This in turn would influence banks' and investors' decision about where to allocate credit. This paper focuses on debt and regulatory neutrality principles that directly impact credit allocation.

### Components of Competitive Neutrality



Source: OECD, 2012b.



## Policies to Establish Debt Neutrality in Financing

**11. OECD Guidance recommends that public enterprises access credit on the same terms as the private sector.** This guidance is generally applicable to state-owned enterprises as receivers of credit, but also to state-owned banks as providers of credit. In the case of China, three main guiding principles under the debt neutrality umbrella apply (Box 1).

### Box 1. OECD Guiding Principles on Debt Neutrality

SOEs should access finance according to “competitive conditions” and on “purely commercial grounds”. Good practices to avoid preferential treatment include:

- **Guarantees:** The state should not give an automatic guarantee to SOE liabilities.
- **Equity Financing:** SOEs should be encouraged to seek other sources of financing such as equity.
- **Credit Terms and Transparency:** Grant credit on the same terms as the private sector. If better terms are given, adjust the cost advantages. There should be fair practices with regard to the disclosure and remuneration of state guarantees.

Source: OECD, 2012, A Compendium of OECD Recommendations, Guidelines, and Best Practices Bearing on Competitive Neutrality.

## Debt Neutrality through Eliminating Guarantees

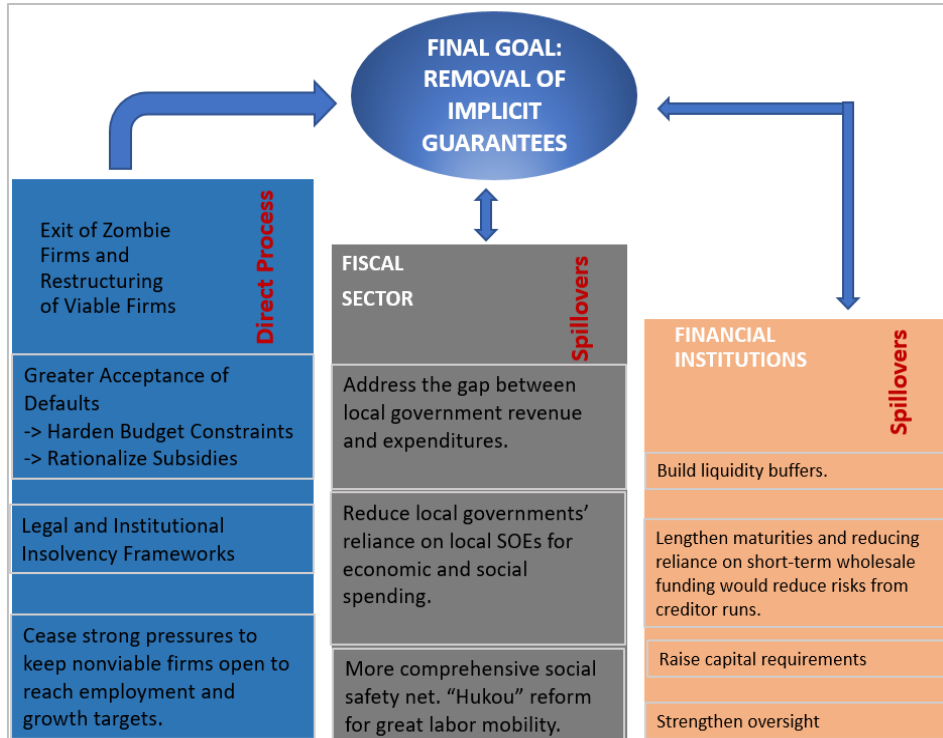
**12. Dismantling implicit guarantees would require careful sequencing of reforms.** Implicit guarantees have biased credit to SOEs by lowering the cost of capital and shielding SOEs from defaults. Unwinding these guarantees, however, should only occur after appropriate conditions are in place including: accepting more defaults through hardened SOEs budget constraints, rationalizing and phasing out implicit subsidies; and implementing a comprehensive system-wide plan with legal and institutional insolvency frameworks for exiting zombie firms and restructuring viable firms (Daniel et. al., 2016). Equally important would be to internalize that nonviable firms should not be in operation only to reach employment and growth targets.

**13. Removing implicit guarantees to SOEs would have spillovers on the fiscal sector.** Exit of local SOEs zombies will have fiscal implications for local governments that rely on local SOEs for economic and social spending, raising the need to address the gap between local government revenue and expenditures. Comprehensive reform of the social safety net will help soften the impact of exiting zombies on local employment. Reforming the “hukou” for greater labor mobility can also help. Opening more sectors to POEs can also support employment.

**14. The removal of implicit guarantees can also adversely affect the financial sector in the near term.** Any change to the perception on guarantees could lead to a sudden repricing of risk and disruptive withdrawals—such as by retail investors from investment products exposed to SOEs. Even a gradual reevaluation of expected returns, including the possibility of retail investors taking principal losses, may create uncertainty and trigger capital flight. To address these risks, the financial sector will need to be reinforced to remain resilient (IMF, 2017). To prepare banks for the removal of implicit guarantees, risk weights could be increased on loans to corporates that currently receive implicit guarantees, to mitigate the underpriced risk to the banks. Additional options include

building liquidity buffers, strengthening oversight, reducing reliance on short-term funding to reduce risks from creditor runs.

**Sequencing of Reforms for Dismantling Implicit Guarantees**

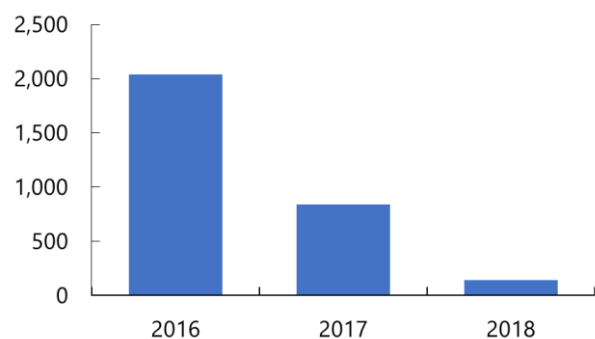


Source: IMF staff.

**15. The authorities have already embarked on policies that can support an orderly removal of implicit guarantees.** For example, the authorities have taken steps for the exit of zombie firms and are planning to review the Enterprise Bankruptcy Law. The results so far are uneven and concerted efforts are needed to put all the components together, including:

- **System-wide Plan for Restructuring and Exit of Local Zombies.** While the authorities have been successful in supporting the exit of central SOE zombies, they have not addressed the issue of local SOE zombies where few firms have been restructured on a market basis. To make further progress, a comprehensive system-wide plan is necessary (Daniel et.al, 2016; Wojciech et.al, 2016; Lam et.al, 2017), which includes:

**Number of Zombies: Legal Entities of Central SOEs**



Sources: Wind database; CEIC Ltd; and IMF staff calculations.

- Assessing the viability of distressed local firms; restructuring the viable and liquidating the nonviable.
  - Requiring banks to proactively recognize and workout NPLs;
  - Burden sharing among banks, corporates, institutional investors, and the government; and
  - Developing distressed debt markets.
- **Market-based Debt-Equity Swap.** This has been used for SOE reform since 2016 but with limited application<sup>3</sup> despite the authorities' supportive policies including RRR cuts to provide funding for swaps and lowering banks' risk weights. Improving the effectiveness of debt-equity swap would need:
    - Greater emphasis on strict solvency and viability eligibility criteria;
    - A more proactive approach of banks in their role as new equity holders to support restructuring;
    - Limits in scope and time to bank ownership of equity to reduce conflict of interest and improve incentives; and
    - Conversion at fair value, with recognition of losses.
  - **"TEMASEK-style" Reforms.** Restructurings of firms have not been entirely market-based in China with restructurings done through mixed ownership between public and private, or mergers with stronger SOEs. Alternate methods could be a Singapore style "Temasek" where a governing body holds shares in state firms, giving the body autonomy while requiring they operate as efficiently as the private sector.
  - **Legal Reform for Corporate Restructuring.** The Enterprise Bankruptcy Law (2007) generally follows best international practices but is very concise with many gaps, leaving it subject to uneven interpretation and implementation. As a result, the law does not provide adequate guidelines for many complex problems in insolvency, a growing problem given China's deadline to resolve "zombies" by 2020. The authorities' initiative to form a committee in June 2019 to draft the amendments to the existing law is a welcome step. The amendments to law should focus on providing greater clarity and details on:
    - the scope of the law's application,
    - the conditions for bankruptcy, and
    - bankruptcy procedures;

Furthermore, a tax neutral treatment for insolvency and debt restructuring in the law would contribute to a more efficient restructuring process. Along with reforming the law, enhancing the capacity of the judiciary to handle insolvency cases is needed. An effective application of the amended law will also help prevent unwarranted interventions in bankruptcy proceedings that could prevent the start of eligible cases.

- **Tolerance of Default Events.** Despite the recent increase in the number of SOEs defaults in the last quarter of 2018, the total default rate compared to POEs remains small. To strengthen

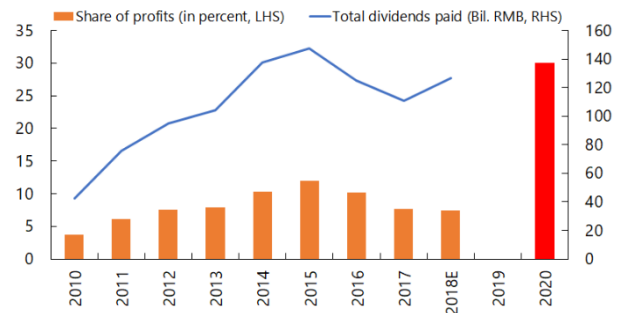
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<sup>3</sup> By Nov 2018, 226 agreements amounting to RMB 1.8 trillion had been signed. However, only 25 percent was delivered.

market discipline, defaults, if they occur, should be tolerated. Only through market-based defaults and resolution would investors start to properly price credit risks without the influence of implicit guarantees and the government would be able to establish a reputation for allowing market forces to work.

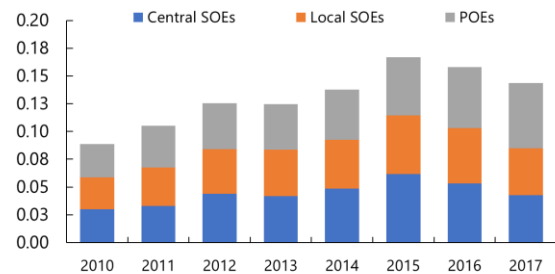
- Dividend Payout Policy:** The authorities have directed central SOEs to increase their dividend transfer to the fiscal budget to 30 percent of profits by 2020. Dividends as a share of profits have declined from their peak in 2015 to around 7 percent in 2018, highlighting that more effort is needed to harden the budget constraints. These funds should also be channeled to the general budget rather than transferred to weaker SOEs to enhance corporate discipline (Lardy, 2012).
- Rationalization of Subsidies:** The authorities have been successful in gradually reducing subsidies since 2015 for both SOEs and POEs. However, more needs to be done as SOEs receive relatively more subsidies than POEs who are typically smaller in size which can lead to market distortions competitive neutrality principles. Moreover, even with subsidies, a quarter of SOEs in 2015 remained loss making, possibly because they received subsidies to continue their support of government policies (Lardy, 2019).

**Dividend Paid to Government by Central SOEs**



Sources: CEIC, MoF, and IMF staff calculations.

**Government Subsidies to Listed Companies**  
(In percent of GDP)



Source: WIND.

## Removing the Debt Bias to Promote Equity Financing

**16. With SOEs receiving preferential treatment in credit/debt markets, other sources of financing such as equity could help level the playing field.** While both SOEs and POEs can benefit from access to alternate sources of financing, improving the conditions for equity financing can help POEs who rely more on equity financing. A possible step could be an Allowance for Corporate Equity (ACE) which provides an income tax deduction for a “normal” rate of return on equity, a measure which has been used by other countries such as Belgium (2006), Italy (2012), Cyprus (2015), Portugal (2010-13), and Turkey (2015) to minimize the debt bias. The implementation of ACE should be accompanied by measures to mitigate the impact on tax collection for the government.

## Paying the Cost of Implicit Guarantees

**17. Debt neutrality requires that all corporates be given credit on the same terms, and cost advantages be adjusted if any corporate receives benefits.** Ensuring that corporates adjust cost advantages requires transparency on practices with regard to the disclosure and remuneration of state guarantees. Several countries have successfully implemented this principle (box 2). In China, one way would be to require corporates that receive such implicit advantages to explicitly pay the cost to the budget; this would be in addition to the standard targeted transfer of SOE profits to the fiscal budget. However, it can be difficult to accurately estimate these advantages, especially when the guarantees are implicit and pervasive as in China.

**18. In the absence of the first best option where the corporates pay the implicit guarantees, increasing banks' risk weights on corporate loans that receive implicit guarantees can correct the underpricing risks to the banks.** Alternatively, SOEs that fail to meet the dividend payout target of 30 percent of profits could be penalized, such as by reducing their access to loans or increasing their credit spreads.

### Box 2. International Experience: SOEs Pay Cost of Guarantees to Budget

- **Australia:** Any cost advantages associated with public ownership can be adjusted through a **debt neutrality payment** to the Office of Public Accounts.
- **New Zealand:** Loan documentation from SOEs are required to have an **explicit disclaimer** making clear that the government does not guarantee repayment of debt.
- **Spain: Payments are made to the Treasury** taking into account the costs associated with advantages from public ownership (e.g., debt, guarantees, safeguards).
- **Switzerland:** SOEs (for example the postal service) pays **dividend to the government** as reimbursement for lower interest rate.
- **Turkey:** The government levies a **guarantee fee** for government guaranteed loans.

Source: OECD, 2012, Competitive Neutrality: National Practices

## Regulatory Neutrality in Financing

**19. Applying the same financial regulations between SOEs and POEs can help level the financial playing field** (box 3).

### Box 3. OECD Guiding Principles on Regulatory Neutrality in Financing

- To maintain competitive neutrality, government business should operate, to the extent feasible, in the same regulatory environment as private enterprises
- Government-controlled financial sector activities are often identified as an area where state-owned business may sometimes be subject to a lighter regulatory approach.
- Financial Regulation should be applied in a consistent, "functionally equivalent" manner (i.e., neutral from a product, institutional, sectoral, and market perspectives) so that similar risks are treated equivalently by regulation.

Source: OECD, 2012, A Compendium of OECD Recommendations, Guidelines, and Best Practices Bearing on Competitive Neutrality.

- **Prudential Tools.** Prudential tools can be used to level the playing field by applying the same regulatory policies to all corporates. In this context, bank exposure limits can be equally applied to SOEs and POEs, but this may take time as bank have large exposures to SOEs. A possible way forward in the near-term would be to put caps on bank lending to SOEs with large exposure and gradually increase the cap over time to the same limits that apply to POEs (large and related party limits). Increasing sectoral risk weights can also address credit misallocation by making it costlier to lend to overleveraged sectors, often dominated by SOEs. To improve SME's access to financing several policy options are available (see section D) which are preferable to lowering risk weights for SMEs or expanding public credit guarantees.
- **Transparency in Application of Regulations.** Large state-owned banks can also disclose their policies and practices in providing financial and other services to enterprises of different ownership types.

### C. Measures to Enhance Access to Finance by Private Enterprises

#### 20. Structural measures can help level the playing field and improve the allocation of credit.

- **Reduce Barriers to Entry:** Giving all corporates free entry into all sectors can help level the playing field. The authorities have recently announced opening up the financial sector, elderly care, education and health care to the private sector. This is a welcome step and could be extended to state-dominated services sector such as logistics, and telecommunications. Breaking up administrative monopolies can also enhance private sector entry, for example by ensuring under the Company Law no government entity may use industrial policies or regulations to restrict the access by POEs.
- **Elimination of Targeted Lending:** The authorities have announced several quantitative targets to allocate credit towards the private sector at lower cost. These include increasing loans to SMEs by large state-owned banks by 30 percent and using multiple policy tools to lower the financing cost of SMEs by 1 percentage point. In addition, the authorities announced the "1-2-5" policy goal to improve credit allocation to the private sector (at least 1/3 of new corporate loans from large banks to be extended to private firms; at least 2/3 of new loans to be extended from small and medium size banks; and at least 50 percent of all new corporate credit across the banking system to be extended to the private sector over the next three years). To improve credit allocation, credit should be channeled in a market-oriented manner towards highly productive industries, while avoiding moral suasion to reach allocated targets. In particular for SMEs, some policies include:
  - Using state-owned/development banks to expand credit to SMEs based on clear mandates, sound governance, clear performance criteria, risk-based loan pricing, and qualified staff, etc.
  - Developing specific capital markets targeted at SMEs (e.g., Korea has KONEX securities exchange platform for SME's direct financing).

- **Lowering Ratings Threshold for Bond Issuance.** In terms of issuance procedures, all credit bonds (excluding private placement) require minimum ratings, such as AA or A–, or in some cases AAA. Regulators can strike a better balance in risk sharing between investors and bond issuers by lowering the regulatory threshold for bond issuance which would encourage more issuance by smaller private firms, while allowing bonds to default and investors to bear the risks.
- **Harmonizing regulations of credit bond schemes.** Although there is no prohibition on issuing bonds, for historical reasons SOEs and POEs have mostly issued specific types of bonds. China's credit bond market is segmented, with different regulators, issuance procedures, trading platforms, and depositories (Schipke et. al., 2019). Harmonizing the regulation of the different bond schemes would be an important step forward to reduce segmentation and regulatory arbitrage, increase liquidity, and foster price discovery.
- **Uniform Application of Laws.** The Commercial Bank Law does not differentiate corporates based on ownership. Although the same law applies, bank officers are often more reluctant to lend to private enterprises because of the higher probability of defaults as opposed to SOEs which are perceived to be less risky. To address this bias, the Commercial Bank Law can protect bank staff who have exercised proper due diligence when extending a loan, by dropping the "lifelong accountability" to bank staff for a loan default by a private enterprise if a proper due diligence has been followed.

## D. Creating a Conducive Environment for Lending

**21. In general, strengthening the credit culture in China can benefit all corporates, especially SMEs.** Measures here include:

- **Credit Culture beyond Collateral.** As in many countries, SMEs in China usually do not have sufficient fixed asset collateral for bank loans. Policies to expand access to credit include:
  - Fostering the use of movable collateral (such as machinery and accounts receivables) as well as leasing and factoring through NBFIs for SME financing. This may require amending or formulating a new law on security interest.
  - Expanding risk-based lending to SMEs based on potential profitability rather than collateral.
  - Improving credit reporting mechanisms such as credit bureaus (CB) and public credit registries - for example, a specialized CB could be introduced to run credit ratings for "small enterprises." The specialized CBs can leverage different source of credit information (e.g., credit card sales slip, telephone/electricity bills, online shopping, various commercial transactions, information from fintech lenders) for SMEs without collateral or guarantee.
- **More Accurate Credit Ratings.** Better allocation of credit by ownership can be achieved through more accurate credit ratings. In China, over 90 percent of onshore bonds are rated AA to AAA by local rating agencies. This partly reflects the stringent regulatory threshold for issuance requirements, but also the nascent rating industry, which needs further improvement to provide more informative ratings. The recent approval of S&P Global Inc. to provide credit-rating services is a welcome development. Improving domestic ratings agencies and

encouraging operations of more foreign ratings agencies will strengthen the credit ratings sector in China.

- **Credit Bureau/Registry.** A properly designed credit bureau/ registry can strengthen bank supervision and improve the quality of credit analysis by financial institutions. China has one public credit registry, which covers credit history from the banking sector. Licenses have been granted to eight institutions to establish credit bureaus focusing on new types of financing (P2P, etc.), but progress is limited. An agreement to share key data by the public and the private credit bureaus/registry can ensure consistency of information as well as provide information on wider credit instruments. China can also strengthen supervision and regulation on credit registry agency (CRAs) by:
  - Enhancing disclosure to improve the comparability of ratings among CRAs;
  - Strengthening assessment of CRAs focusing on adequacy/consistency of rating methodologies and timeliness of rating adjustment;
  - Requiring more enhanced internal control to avoid conflicts of interests between issuers and agencies; strengthening enforcement actions of supervisors, etc.
- **Data Quality and Availability.** Accurate, high-quality data is needed to guide proper credit allocation and policies. For example, a breakdown on credit by corporate ownership and information on subsidies and guarantees are limited.

## E. Concluding Remarks

**22. Measures to reduce corporate leverage should continue and focus on improving the allocation credit to POEs, especially the SMEs.** The way forward would be to push ahead with high-quality reforms but in a sequential manner, under the mandate of competitive neutrality. Principles of debt and regulatory neutrality can be established to eliminate market distortions and promote a more efficient allocation of credit. Proactive, market-friendly measures can be also be taken to support SMEs to level the playing field. All policies should be market-oriented, to ensure a more efficient allocation of resources.



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## Annex I. Authorities' Major Initiatives to Channel Credit to the Private Sector in 2018 to 2019 Q2

Policies	Measures Adopted or Announced
<b>Monetary Policy (PBC)</b>	<ul style="list-style-type: none"> <li>• RRR cuts: 250 bps of RRR cuts in 2018 (April, July, and October); Effective May 15, 2019 RRR cut for small and medium-sized banks up to 3.5 ppt to 8 percent.</li> </ul>
<b>Other Measures taken by PBC</b>	<ul style="list-style-type: none"> <li>• In June 2018, PBC expanded MLF-eligible collateral to include AA+ and AA corporate bond, with a priority on small and micro enterprise, green, and agricultural bonds.</li> <li>• In November 2018, PBC announced a subsidy of RMB 10 bn to China Bond Insurance to support debt sales by private enterprises.</li> </ul>
<b>Fiscal Policy (MoF)</b>	<ul style="list-style-type: none"> <li>• Tax cuts for households and SMEs</li> </ul>
<b>Regulatory Policy (PBC, CBIRC, MoF, SASAC)</b>	<ul style="list-style-type: none"> <li>• In June 2018, PBC relaxed loan quota for some commercial banks; and in July 2018 MPA parameter was adjusted to encourage loan growth;</li> <li>• In November 2018, CBIRC announced the “1-2-5” policy goal to improve credit allocation to the private sector (at least 1/3 of new corporate loans from large banks to be extended to private firms; at least 2/3 of new loans to be extended from small and medium size banks; and at least 50% of all new corporate credit across the banking system to be extended to the private sector over the next three years).</li> <li>• In March 2019, announcement was made to increase loans to SMEs by large state-owned banks by 30 percent and using multiple policy tools to lower the financing cost of SMEs by 1 percentage point.</li> <li>• SASAC maintained its target of reducing central SOEs' liability-to-asset ratio by 2 pp in 2018-20.</li> </ul>
<b>Competitive Neutrality</b>	<ul style="list-style-type: none"> <li>• In March 2019, the 13th National People's Congress (NPC) sent an explicit signal of stronger support for private industry with competitive neutrality as its cornerstone by committing to <i>providing equal treatment to all businesses — whether state-owned enterprises (SOEs), private, or foreign companies — regarding production factors, acquisitions, market access, operations, government procurement, and open bidding.</i></li> <li>• In May 2019, the State Council issued a new regulation on government investment, effective July 1st 2019, stressing all investors should be treated equally when allocating government investment funds.</li> </ul>

# THE SPILLOVER EFFECTS OF THE U.S.—CHINA TRADE POLICIES<sup>1</sup>

*As the two largest economies of the world, the U.S.—China trade tensions pose a key risk to the rest of the world. Both continued tension or any managed trade deal is likely to result in trade diversions and negative sectoral effects for some via supply chain dislocations—and will also be a step away from multilateral solutions. In the absence of a meaningful boost in China's domestic demand and imports, bilateral purchase commitments are likely to generate substantial trade diversion effects. For example, the European Union, Japan, and Korea are likely to have substantial "exports-at-risk" due to exposure in items like vehicles, machinery, and electronics. Small oil exporters and some ASEAN economies would also be significantly affected. Trade tensions between the U.S. and China should thus be quickly resolved through a comprehensive agreement that supports the international system and avoids managed trade.*

## A. The U.S.—China Trade Policies

**1. As the two largest economies of the world, the outcome of the U.S./China trade talks—either a deal or higher tariff imposition—would have important implications for the rest of the world.**

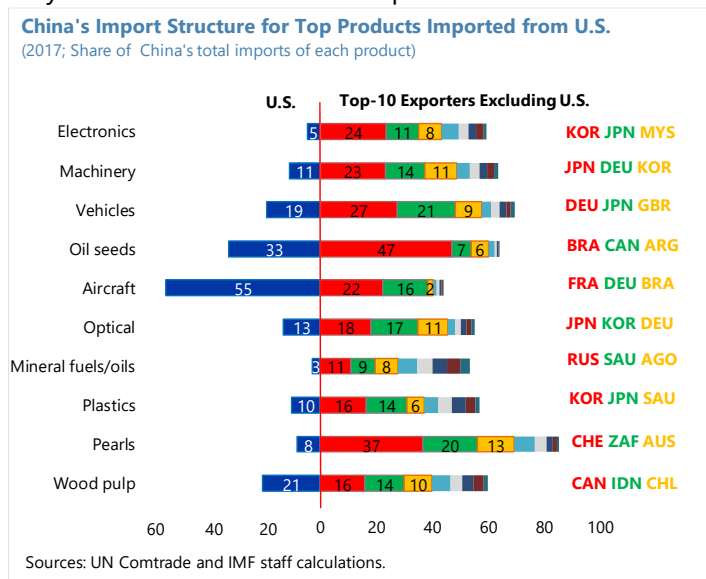
- Over the course of 2018, the U.S. increased tariffs on imported aluminum and steel and on a subset of Chinese imports worth USD 250 billion. This was followed by a period of "truce" between the U.S. and China with discussions of a managed trade deal, that broke down in May 2019 when the U.S. increased tariffs on a portion of the same subset of Chinese imports and announced imposing further protectionist measures in future. In both rounds of tariff imposition by the U.S. (2018 and May 2019), China retaliated by increasing tariffs on some of U.S. exports. At end-June 2019, Presidents Trump and Xi agreed to temporarily keep tariffs at their current levels and to restart bilateral trade negotiations.
- For either a managed trade deal or higher tariffs, it is important to bear in mind that changes in overall current account balances are best achieved through macroeconomic adjustments, not trade policies (Box 1). In addition, there might be spillover effects for the rest of the world due to disruptions in global value chains (GVCs) and trade diversion. Evidence suggests that the U.S.-China tariff increases in 2018 and related uncertainties led to a slowdown in global trade and industrial production and are weighing on investment and business sentiment (IMF External Sector Report, 2019). The additional tariffs imposed by the U.S. and China in May 2019 are likely to decrease trade and weigh on confidence and financial market sentiment, negatively affecting investment, productivity, and growth (G-20 Surveillance Note, June 2019).
- Trade talks could lead to benefits—lower tariffs, a decline in policy uncertainty, easing of financial markets conditions, and structural reforms commitment by China (intellectual property rights protection (IP)), technological transfer, state-owned enterprise (SOEs) reforms). On the

<sup>1</sup> Prepared by Pragyan Deb, Albe Gjonbalaj, and Swarnali A. Hannan.

other hand, any movement away from a multilateral solution could have considerable risks associated with trade diversion. In addition, there might be costs if the two sides end up with a transactional deal whereby China were to purchase more U.S. goods but with little progress in reducing underlying barriers to trade and investment.

## B. Closing the U.S.—China Bilateral Trade Deficit Via Managed Trade

**2. In the event of a new deal that involves China purchasing U.S. goods to reduce the bilateral trade balance, there will be significant trade diversion effects.** From late 2018 to around April 2019, the U.S.—China trade policy rhetoric had focused on a plan to eliminate the U.S. trade deficit with China over a couple of years, through China stepping up purchases of U.S. goods. In addition, the discussions focused on China committing to structural reforms in IP, technology transfers, and SOEs. Given that China is unlikely to significantly boost domestic demand in the short-run to accommodate significantly higher imports, the increase in purchases from the U.S.—if a similar deal materializes—is likely to be offset by decrease in imports from rest of the world, leading to huge trade diversions.



**3. The type of products that China purchases will determine which countries get affected due to trade diversion.** The above chart shows China's product structure across the top-ten items imported from the U.S., ranked according to the size of imports—i.e. electronics is China's top imports from the U.S. and wood pulp is the 10<sup>th</sup>. The right-hand side of the figure, showing other countries' export exposure towards China's purchase of these products, gives a good intuition of whose exports might be at risk. For example, purchases of more oil seeds (e.g. soya beans) will affect countries like Brazil, Canada, and Argentina; purchases of vehicles will affect Germany, Japan, and the U.K.; purchases of aircrafts will affect France and Germany; while purchases of machinery will affect Japan, Germany, and Korea.

**4. To identify the likely affected countries, we examine the spillover effect of a scenario where the U.S.—China bilateral trade deficit is reduced to almost zero.** It is assumed that China will close the trade deficit (USD 336bn in 2017) by purchasing U.S. goods, and China's total imports will not change—in other words, the extra purchases from the U.S. will be at the expense of cutting purchases from the rest of the world.

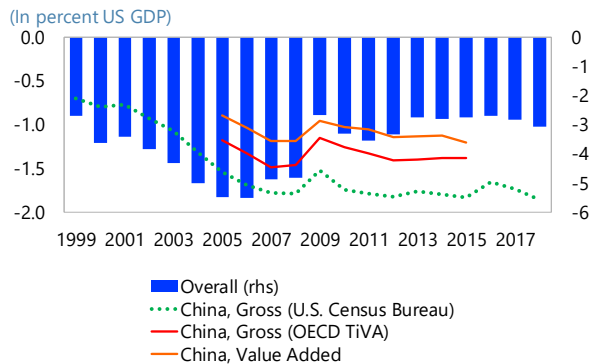
**Box 1. The U.S. Bilateral Trade Deficit with China**

**Targeting bilateral trade balances will not help to reduce a country's overall current account deficit.** Changes in current account balances—the difference between national saving and investment—is best achieved through adjustments to macroeconomic policies that influence saving/investment decisions, not trade policies (see IMF World Economic Outlook, April 2019; IMF External Sector Report 2018). Tariff increases, for example, will have no significant effect on the trade balance, as the impact of lower imports will be offset by an appreciation of the currency. Hence, reducing the bilateral trade deficit with China might not result in a decline of the overall U.S. trade balance.

**Though declining over time, China's gross exports to the U.S. continue to include significant value added from other countries (including U.S.).** The U.S. bilateral trade balance with China in 2015 (the latest available data in OECD TiVa database) was 13 percent lower in value added, compared to gross terms (see 2019 China Selected Issues Paper "The Drivers, Implications and Outlook for China's Shrinking Current Account Surplus"). Similarly, China's gross exports to the U.S. (as the final destination) included 82.3 percent of China's domestic value added in 2015, up from 76.7 percent in 2008, with the rest of the value added coming from economies like Germany, Japan, Taiwan Province of China, Korea, and U.S. In other words—apart from the traditional channels of trade diversion—policies affecting U.S.—China bilateral trade will also have direct implications for the rest of the world due to supply chain linkages amongst countries.

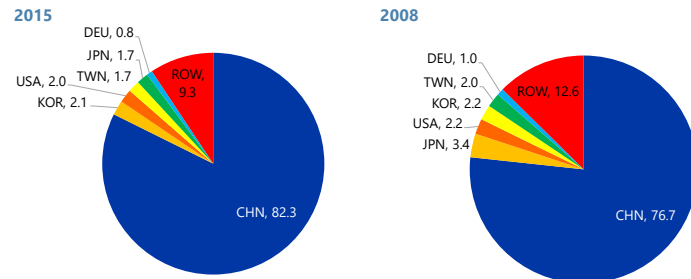
**China's role in reducing the U.S. overall trade deficit has been limited in recent times.** Documenting the role of bilateral trade balances in past episodes of large trade deficit adjustments across countries, IMF WEO (April 2019, Box 3) finds that (i) overall trade adjustments are not necessarily driven by disproportionate adjustments of the top deficit partners, (ii) large adjustments of the top deficit partners do not guarantee large adjustments in overall trade balance. In line with these observations, the U.S. trade deficit with China widened in recent cases of improvement of the U.S. overall trade deficit from troughs, suggesting that overall trade deficits can be reduced without large corrections in trade balances of key deficit partners.

**U.S. Trade Balance**



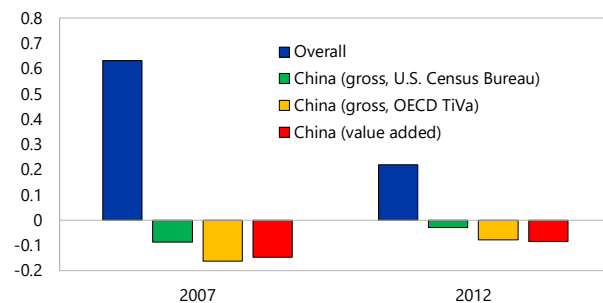
Sources: U.S. Census Bureau; OECD TiVa; and IMF staff calculations.

**Origin of value added in China's exports to the U.S.**  
(percent of total value added) 1/



1/ Origin of value added for gross exports from China to the U.S. (final destination). Source: OECD TiVa database.

**Change in U.S. Trade Balance During Recent Troughs**  
(percentage points)

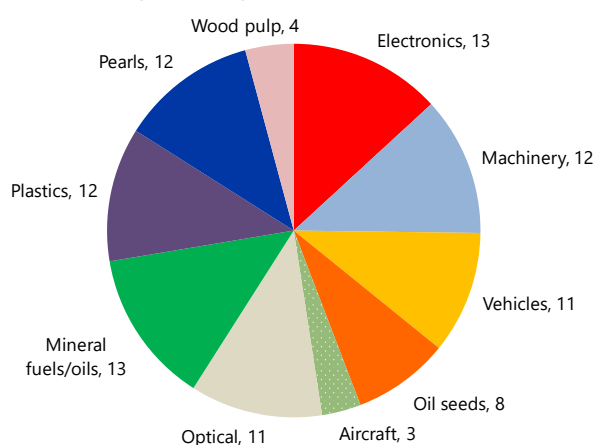


Sources: U.S. Census Bureau; OECD TiVa; IMF, World Economic Outlook; and IMF staff calculations.

**5. How will the extra purchases be distributed across products?** The distribution of extra purchases across products—taking into account U.S. catch-up potential and China's capacity constraints—is done using some simple assumptions:

- Trading relationships are difficult to change overnight which means that China will scale up purchases of U.S. imports in sectors where they are already importing U.S. products. *The analysis thus considers the top-ten products imported from the U.S.*
- Amongst the top-ten products, allocation of the purchases will be in proportion to where there is more scope of scaling up. For example, there is more scope for the U.S. to increase exports in electronics and mineral fuels/oils where its exposure to China's purchases is less, compared to aircrafts and oil seeds.
- The scale of the increases is *capped* so that the total purchase of each product does not exceed China's total imports of the product. The analysis does not pose any constraint on the total U.S. exports across products. However, for most products, the allocation of purchases does not exceed total U.S. exports—hence, this seems less of a practical concern.

**Distribution of Extra Purchases**  
(Share of total extra purchase, in percent)



Source: IMF staff calculations.

**6. Which countries will be affected?** China's top-ten non-U.S. exporters for each product is considered. For the identified amounts of each product, the loss in exports of other countries will be proportional to their share in China's imports in that product—the countries that are more exposed to these products will have more "exports-at-risk".

**7. There will be substantial "exports-at-risk" for European Union, Japan, and Korea.<sup>2</sup>**

Putting everything together, the scenario analysis shows that there is likely to be "exports-at-risk" worth: USD 61bn from European Union countries included in our sample due to significant exposure in vehicles, machinery and aircraft; USD 54bn from Japan (machinery, vehicles, and electronics); USD 46bn from Korea (electronics, opticals, plastics); and USD 45bn from ASEAN countries (electronics,

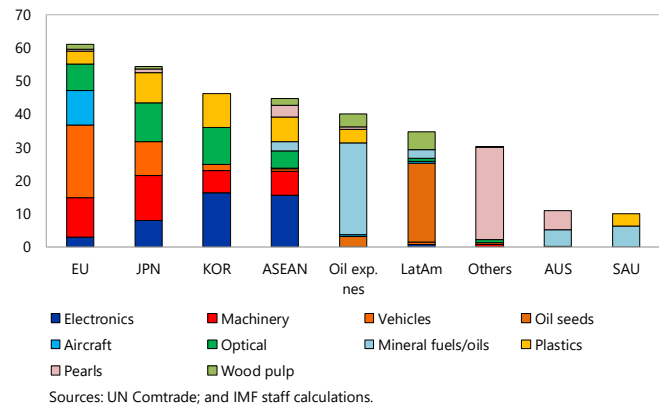
<sup>2</sup> The aggregates do not necessarily include all the countries present in that group. The aggregates are formed using the countries shown in the charts with individual economies.

plastics, machinery). In addition, there will be substantial “exports-at-risk” from oil exporters and soya bean producers.

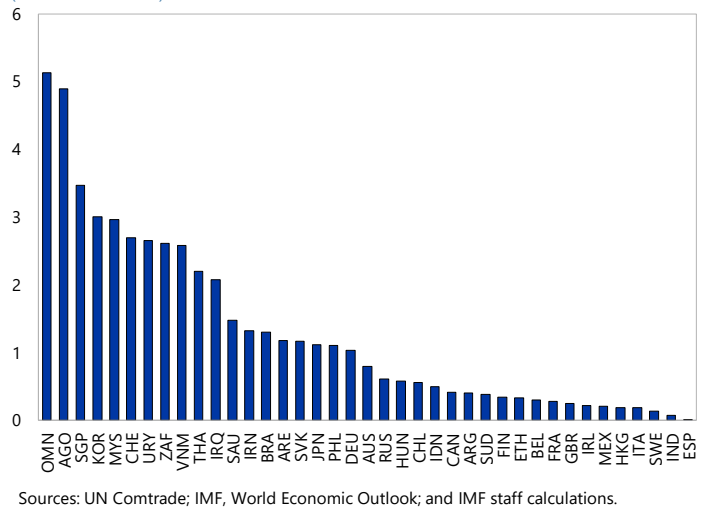
**8. In terms of individual exporters, the “exports-at-risk” amount to higher than 3 percent of GDP for Oman, Angola, Singapore, and Korea.** Smaller oil exporting countries will have high “exports-at-risk” as a share of their GDP. Some of the ASEAN economies (Malaysia, Vietnam and Thailand) will likely have “exports-at-risk” higher than 2 percent of GDP, owing to items like electronics, machinery, and optical. Germany and Japan have an exposure of around 1 percent of GDP, due to electronics, machinery, and vehicles. Brazil has “exports-at-risk” of 1.3 percent of GDP, predominantly due to oil seeds (e.g. soya beans).

**9. Two alternative scenarios are considered assuming different allocation of purchases across products.** It is possible that not all the ten products will be targeted. The first alternative scenario thus assumes that the purchases will be scaled up for a subset of the ten products, comprising the big items and the products under discussion (e.g. soya beans, liquefied natural gas (LNG) and oil, manufactured items). The second alternative scenario distributes the extra purchases in proportion to China’s import structure (excluding the U.S.).

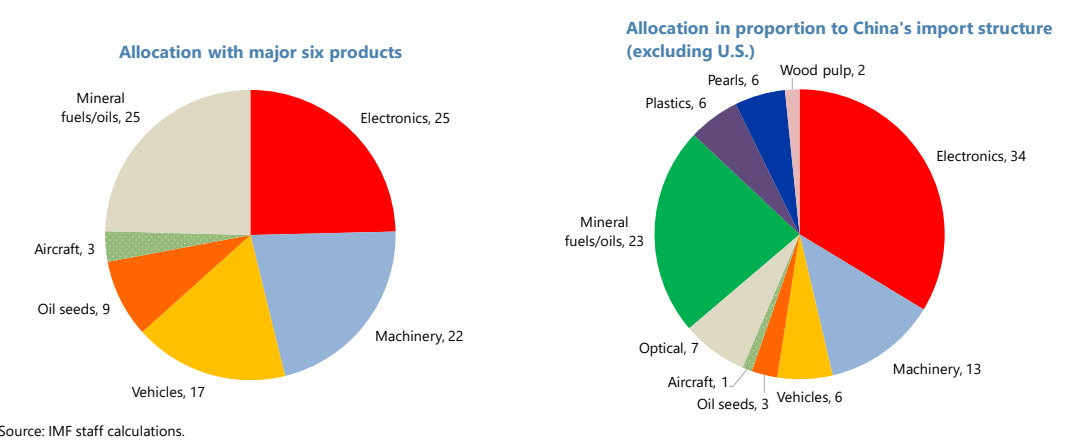
**Exports-at-Risk**  
In billions of US dollar



**Exports-at-Risk,**  
(Share of 2017 GDP)

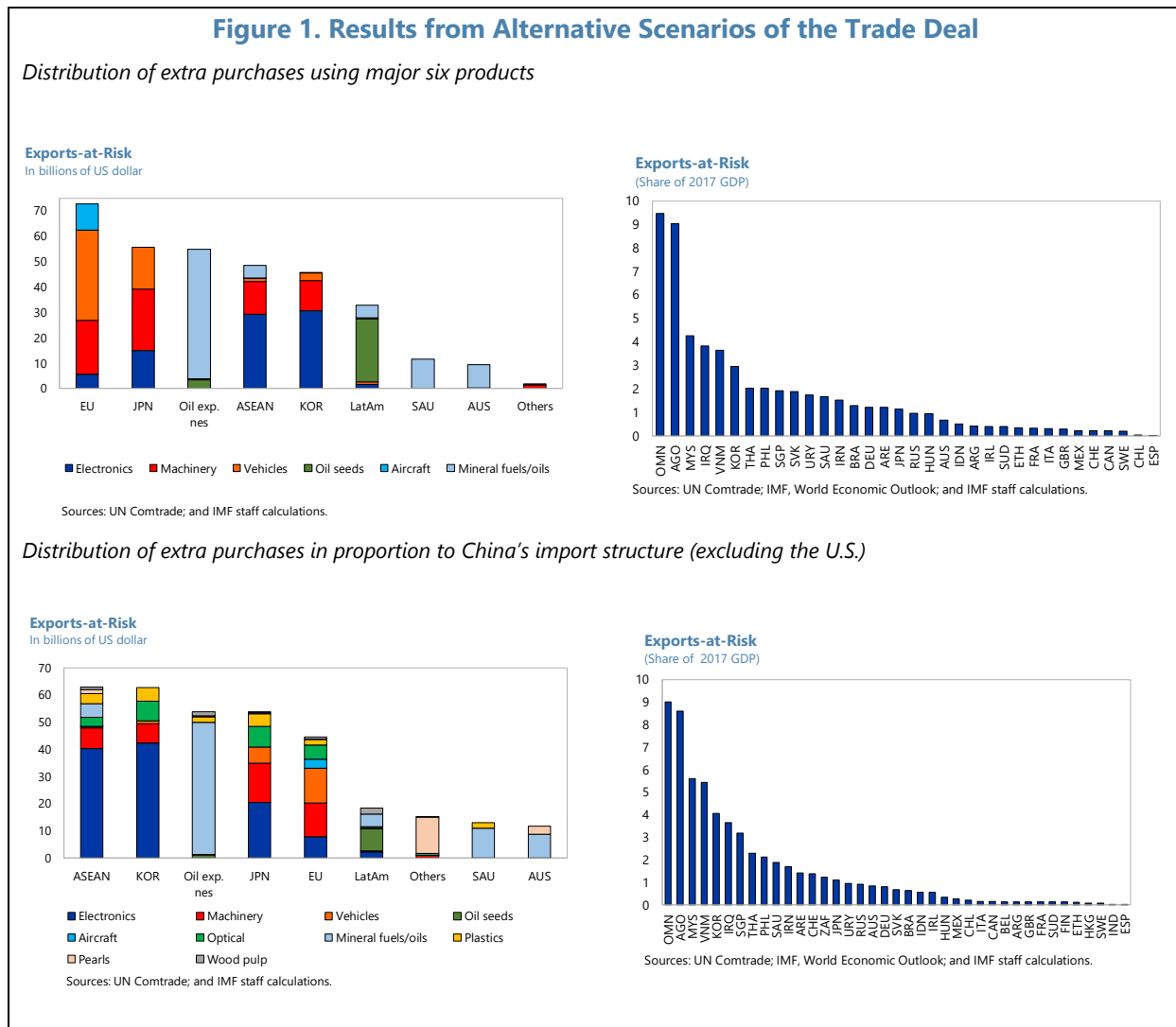


**Distribution of Extra Purchases**  
(Share of total extra purchases, In percent)





- In the first alternative scenario, the amount of “exports-at-risk” would be more pronounced for Germany, Japan, and ASEAN economies due to items like electronics, machinery, and vehicles. As a share of countries’ GDP, oil exporters will have higher “exports-at-risk” (Figure 1).
- With the caveat that the second alternative scenario is unlikely to happen, ASEAN economies and Korea will have higher “exports-at-risk” due to their exposure on electronics. Like the first alternative scenario, small oil exporters will have higher “exports-at-risk”, as a share of their GDP, since the purchase allocation mechanism gives higher weight to mineral and fuel oils in the two alternative scenarios.



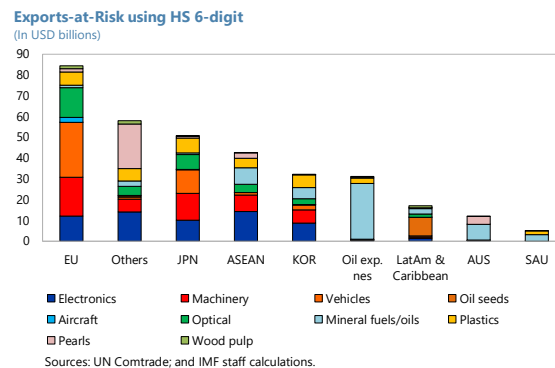
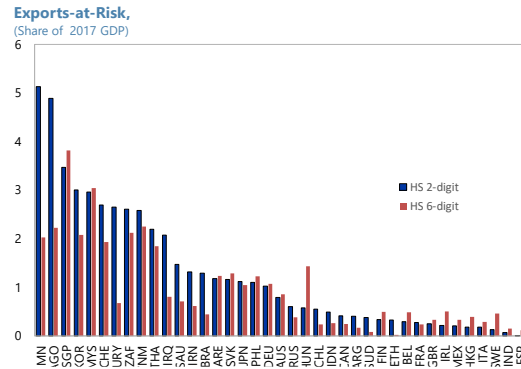
**10. In the absence of a meaningful boost in China’s domestic demand and imports, bilateral purchase commitments are thus likely to generate substantial trade diversion effects.** Some of the caveats of this exercise should be borne in mind. The scenario analysis assumes perfect substitution of imports across countries and does not take into account rigidities associated with existing GVCs, established relationships, etc. Smaller countries may be more affected if the burden of adjustment falls more on primary products and more easily substitutable homogeneous

commodities and less on sophisticated manufactured goods and electronics. In addition, the “exports-at-risk” is not the same as the value added that could be lost. The impact on value added depends upon factors like how easy it would be to switch to other markets. Finally, the analysis is performed on 2-digit Harmonized System (HS) codes. In some cases, the products can be considerably different under the same 2-digit code. Robustness check using HS 6-digit data suggest that the results are mostly similar (Box 2).

**Box 2. Estimating Spillover Effects Using More Granular Data <sup>1/</sup>**

**In this box, the main scenario is performed using HS 6-digit data.** In addition, instead of considering only the top-ten exporters for each product, the sample is expanded to around 200 economies. The extra purchases are distributed across the same top-ten products as the main scenario. Starting from the allocation of purchases across the ten products in the main scenario, changes are made such that the allocation does not exceed: (i) China’s current imports from the rest of the world at the 6-digit level, and, (ii) the U.S. current exports to the rest of the world at the 6-digit level.

**The main results are robust to using more granular data.** Of the 39 economies reported, the differences in the “exports-at-risk” (as a share of individual economies’ GDP) are within 1 percentage points for 35 and within 0.1 percentage points for 8. The total “exports-at-risk” in US dollar terms for aggregates can differ due to the inclusion of more countries in the robustness analysis (see footnote 2 of main text). For example, while the total “exports-at-risk” for European Union is higher in the robustness analysis due to the inclusion of all countries, the underlying numbers for the countries present in both samples are similar: e.g. 1 percent of GDP for Germany in both cases, 0.3 (2-digit) versus 0.2 (6-digit) percent of GDP for France.



<sup>1/</sup> Prepared by Eugenio M. Cerutti, Shan Chen, Pragyan Deb, Swarnali A. Hannan, and Adil Mohommad.

**C. Escalated Trade Tensions**

**11. While the resumption of trade talks between the U.S. and China in June 2019 is welcome, the already implemented tariffs are holding back global trade, and the unresolved issues create uncertainty about the future.**<sup>3</sup> The U.S.-China tariff increases in 2018 and related uncertainties led to a slowdown in global trade and industrial production, and are weighing on investment and business sentiment (IMF External Sector Report, 2019). The additional tariffs

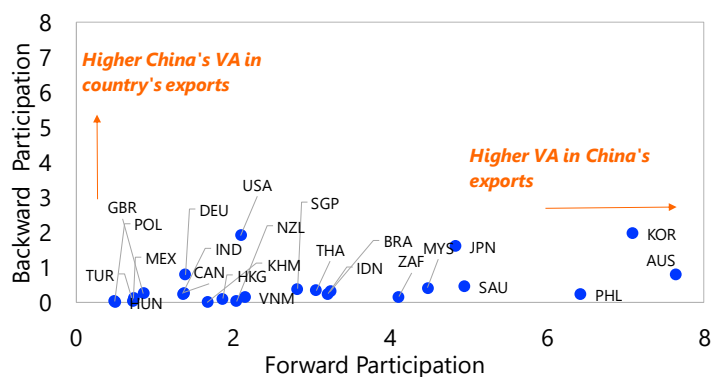
<sup>3</sup> See Christine Lagarde’s (Managing Director of IMF) statement at the conclusion of G-20 Leaders’ Summit in Osaka, Japan: <https://www.imf.org/en/News/Articles/2019/06/29/pr19259-imf-managing-director-christine-lagarde-calls-for-stronger-international-cooperation>.

announced by the U.S. and China in May 2019 should have negative effects for both the countries directly involved and many others owing to GVCs and cross-border investments. Simulations suggest that global GDP could decline by an additional 0.3 percent in 2020 due to these measures, on top of the impact of the 2018 tariffs, which have been projected to lower global GDP by 0.2 percent in 2020 (see G-20 surveillance note, June 2019; October 2018 IMF World Economic Outlook).<sup>4</sup> The detrimental effects of tariffs are due to the decline of trade and dampening of confidence and financial market sentiment, leading to adverse effects on investment, productivity, and growth.<sup>5</sup>

**12. In the scenario of increased trade tension and tariff imposition, sectoral spillovers across some countries are likely to be large as global value chains are repositioned.** The impact of the U.S.-China tariffs will be disruptive to GVCs and could have negative spillover effects, as countries tend to have forward participation with China. This is also evident from the fact that China's exports of some of the "affected" items contain significant value added from other countries (e.g. Australia, Korea, Germany; Figure 2). Using a multi-sector computable general equilibrium (CGE) trade model calibrated to 165 countries, Caceres, Cerdeiro, and Mano (2019) find that a potential escalation in bilateral tariffs between the U.S. and China could lead to significant sectoral disruptions and the positive and negative spillovers to highly exposed 'by-stander' economies can be large.<sup>6</sup>

**13. Trade tensions between the U.S. and China should thus be quickly resolved through a comprehensive agreement that supports the international system and avoids managed trade.** It is important that an agreement between the two large and systemically important trading partners serves to reinforce WTO rules, is non-discriminatory, and is based on market mechanisms and macroeconomic fundamentals.

**GVC Integration with China in 2015**  
(In percent)



Sources: OECD TiVA.

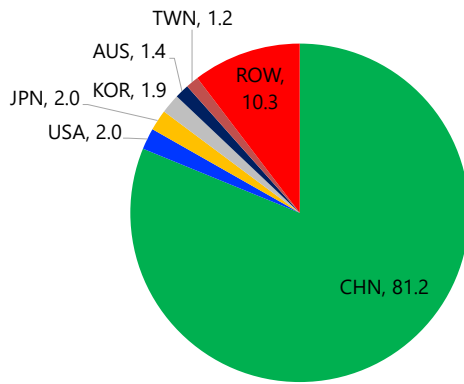
<sup>4</sup> Simulations include: (i) the increase in tariffs from 10 percent to 25 percent on USD 200 billion of U.S. imports from China (as of May 8, 2019), (ii) the possible 25 percent tariffs on the roughly USD 267 billion of U.S. imports from China (envisaged in May 2019). The simulations assume retaliatory actions by China.

<sup>5</sup> See Chapter 1 of the October 2018 World Economic Outlook for a detailed description of the channels at work.

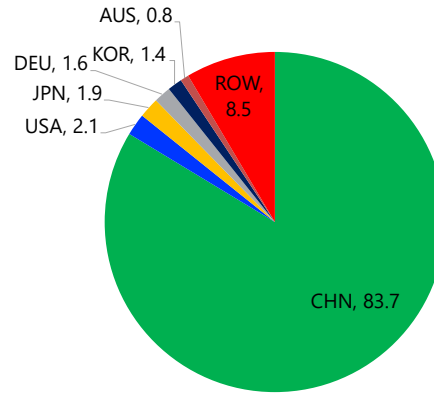
<sup>6</sup> C. Caceres, D. Cerdeiro, and R. Mano. 2019. "Trade Wars and Trade Talks: Estimated Effects Using a Multi-Sector Model", IMF Working Paper.

**Figure 2. Origin of Value Added in China's Exports to the U.S. in Likely Affected Industries**

**Electrical Equipment, 2015**



**Vehicles\*, 2015**



Numbers expressed as a share of China's gross exports to the U.S. in the relevant industry.  
 \*Motor vehicles, trailers, and semi-trailers.  
 Source: OECD TiVa database.