

Special Report | Research 27 April 2020

#virus

China: COVID-19 stimulus

# A changed playbook

The COVID-19 shock and unfolding collapse in external demand have prompted expectations that China may revisit its 2008 playbook and unleash massive stimulus to shore up growth and/or stabilise employment. In this report, we show how the COVID-19 outbreak may have reinforced earlier changes in China's strategic policy thinking. We then discuss the fiscal package we expect to be announced at the NPC meeting, and the implications for the economy.

We think there was a notable shift in China's policy approach before the COVID-19 outbreak, which was reflected in the policy easing being restrained, measured and targeted during the 2018-19 downturn (Figure 3). In our view, the US-China dispute was the catalyst for some new guiding principles being agreed among Chinese policy makers, including prioritising domestic strength.

Hence, while COVID-19 has created "unprecedented" challenges, we do not think it will reverse this shift in China's strategic outlook. On the contrary, we think the government is more likely to lean towards caution, and release stimulus at a measured pace and select tools with an eye to longer-term sustainability rather than immediate gains, especially as anti-globalisation/China sentiment and global supply-chain resets could be reinforced in the post COIVD-19 era.

Meanwhile, we think higher savings, stable domestic sentiment, and an economy more resistant to external shocks due to changes in its structure and employment patterns mean Chinese policy makers have more time to weigh various options and design more effective domestic relief measures.

We continue to expect the PBoC to deliver more easing to complement a larger fiscal expansion. We think the next fiscal package will focus more on "relief" than "stimulus", reflecting the government's shifting bottom-lines to "six (livelihood) guarantees" from "six stabilities". On the demand stimulus, we also expect most of the measures to be aimed at spurring investment rather than consumption.

The implications for the economy based on our views are:

- An overall stimulus package that will likely provide more support for domestic demand and create small global spillovers.
- Likely contained upside for infrastructure investment and China's imports from the rest of the world, similar to the 2018-19 experience.
- Consumption will see more recovery as services continue to normalise, but likely lack of strong impetus for a sustained rebound.
- The property sector will remain the bright spot of the economy despite Politburo's recent reiteration of "housing is for living not for speculation", in our view.

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PLEASE SEE ANALYST CERTIFICATIONS AND IMPORTANT DISCLOSURES STARTING AFTER PAGE 10

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# China's GFC policy playbook

China's economy was hit hard by the 2008-09 Global Financial Crisis, primarily through trade channels. We think its policy response then can be put in three broad categories:

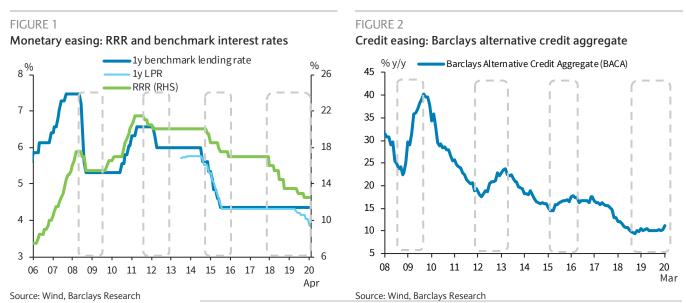
- Unprecedented fiscal stimulus. A CNY4trn stimulus package (12% of GDP) was announced in late 2008 and infrastructure investment accounted for ~60% of the total.
- Significant monetary easing. The PBoC cut the lending rate by 216bp over four months (Sep-Dec 2008), the quickest series of cuts in its history, and lowered banks' reserved requirement ratio (RRR) by 200bp in the fourth quarter of 2008 (Figure 1).
- Extraordinary credit expansion. Banks extended new loans equivalent to ~30% of GDP in 2009, while credit growth increased by ~20pp from trough to peak in 2009 (Figure 2).

# Policy playbook changed during 2018-19 downcycle

We believe the Chinese government's policy playbook had already changed before the COVID-19 outbreak, as seen in its restrained, measured and targeted easing approach to the 2018-19 downcycle (Figure 3). In *China: This easing cycle is different (*5 September 2019), we review the four most-recent downcycles (2008-09, 2012-13, 2015-16, and 2018-19), and note *three reasons* for the shift in policy thinking during the 2018-19 period:

- 1. More constrained policy room on debt, housing bubble and financial risk concerns.
- 2. Reduced efficacy of broad-based policy easing and infrastructure boost.
- 3. Desire to retain policy ammunition given the likely protracted Sino-US trade dispute.

In contrast to previous downcycles, policy makers have refrained from benchmark rate cuts and large credit stimulus this time, with credit having only expanded by ~0.6pp y/y in 2019 (Figure 1 and Figure 2), in sharp contrast to the surge during the GFC and in the 2015-16 downturn. It is worth noting that China's 2018-19 downturn was also driven more by domestic policy tightening, including the government's multi-year and multi-faceted deleveraging campaign to clean up the financial system and manage financial risks¹, rather than external factors, ie, escalating Sino-US trade tensions, in our view.



<sup>&</sup>lt;sup>1</sup> See China: The unfolding effects of deleveraging, 9 Aug 2018, and China: Easing while deleveraging, 15 Aug 2018,

FIGURE 3
We think China's policy playbook changed to an approach of *measured and targeted* during the 2018-19 downcycle

				Pre COVID-19	Post COVID-19		
	2008-09	2012-13	2015-16	2018 - Jan 20	Delivered	Further expected	
Monetary/credit policy							
Credit (BACA**) growth	+18pp	+6.1pp	+4.2pp	+0.6pp	+1.1pp	+2~3pp	
	(Dec 08-Nov 09 )	(May 12-May 13)	(Apr 15-Apr 16)	(Nov 18-Jan 20)	( Feb-Mar 20)		
Benchmark interest rate cuts	216bp	56bp	125bp	5bp	30bp	30~50bp	
(MLF/OMO rate cuts after 2018)	(Sep-Dec 08)	(Jun-Jul 12)	(Mar-Oct 15)	(Apr 18-Nov 19)	(Feb-Apr 20)		
	200bp	150bp	300bp	400bp	100bp	100~200bp	
RRR cuts (for major banks)	(Oct-Dec 08)	(Dec 11-May 12)	(Feb 15-Mar 16)	(~230bp netting out	(targeted cut,		
				MLF, Apr 18-Jan	Apr 20)		
Fiscal policy	2009 vs 08	2013 vs 02	2016 vs 15	2019 vs 18	Feb-Apr 20	2020 vs 19 (exp.)	
Budget fiscal deficit as % of GDP*	+2.1pp	+0.4pp	+0.7pp	+0.2pp		+0.7-1.2pp	
Augmented fiscal deficit as % of GDP*	+8pp	+1.3pp	+3.5pp	+1pp	1.1% of GDP	+5~8pp	
Tax & fee cuts as % of GDP*	+0.5pp	-	0	+1pp		+1pp	

Source: Note: \*\*BACA is short for Barclays Alternative Credit Aggregate. \*All pp changes denote the magnitude of increase. Source: Wind, Barclays Research

While the government stepped up its countercyclical easing in September 2019, we think some new *guiding principles were agreed among China's policymakers during 2018-19*, reflecting mounting domestic challenges and the deteriorating external environment:

- 1) A consensus for "no repeat of 2008" among government officials and the public.
- 2) A focus on domestic matters (health of China's economy and financial system first).
- 3) Balancing short-term cyclical gains against medium-term sustainability consequences.
- 4) Unleashing growth potential with a focus on urbanisation and supporting private SMEs.

# What changes will the COVID-19 outbreak bring?

While the prospect of a potential collapse in external demand makes today's situation reminiscent of 2008, we think *Chinese policy makers are unlikely to reverse the above shift in their policy playbook, especially* in view of an increasingly challenging external economic and political environment that China is likely to face in the post COVID-19 world.

#### Preparing for worst-case scenarios and a long battle

An important signal in the statement from the 17 April quarterly Politburo meeting was a warning for the whole nation about "unprecedented" economic challenges. In our view, this comment referred to both the unfolding deep global recession as well as the government's preparations for a post-COVID-19 world and a likely long battle ahead, in our view. We think it is also worth noting that at the Politburo meeting on 8 April, President Xi said: "we must get ready for the worst-case scenarios, and be mentally and practically prepared to address the changes in our external environment over a fairly long period to come."

#### Challenging external environment likely top of government's concerns

In our view, the following trends, which were in place before the COVID-19 outbreak and are likely to be reinforced post COVID-19, will be among the government's top concerns:

- Sino-US decoupling given the impact of the rise in trade tensions, technology disputes and potential risk of a financial 'war'.
- Rising anti-globalisation and anti-China sentiment, global supply-chain resets, especially risk to supplies considered essential for national security.
- Potential need for debt relief for countries along the Belt and Road routes.

These trends have become more visible in the past month as the COVID-19 outbreak spread globally. In particular, the US administration and President Trump have increased public criticism of China, with potential consequences being a rise in Sino-US tensions in the runup to the November elections and some re-escalation of the trade/tech/financial disputes.

#### Government's new bottom-lines focus more on domestic matters

Chinese government likely looking to the post COVID-19 era

Moreover, the 17 April Politburo meeting introduced a new phrase, the "six guarantees" which are intended to underscore the government's commitment to maintaining livelihoods. Specifically, the statement referred to protecting six areas, *jobs, livelihoods, market entities, food and energy security, the stability of industrial and supply chains, and the grassroots operations.* 

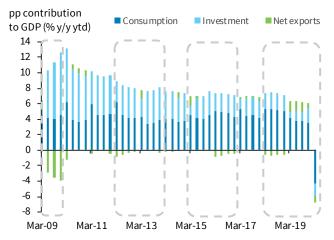
This suggests a shift of policy focus to domestic matters and basic needs due to the COVID-19 shock, in our view, and marks an expansion from the "six stability 六稳" macro policy, which was introduced at the July 2018 Politburo meeting amid rising Sino-US trade tensions. The "six stability" summed up the government's aim to *stabilise employment*, *finance*, *foreign trade*, *foreign investment*, *domestic investment*, *and market expectations*.

In this respect, we think it is important to note that the changing structure of China's economy, with the contribution of consumption and services to GDP growth rising to c.60% in 2019 from c.45% in 2008 (Figure 4 and Figure 5), means its larger domestic markets make the country more resilient to external shocks now compared with a decade ago.

# Policy implications: more "relief" than "stimulus"

Overall, we think the more hostile external environment has likely reinforced the strategy playbook that Chinese policymakers adopted in 2018-19 amid the escalation in Sino-US tensions. Mindful of greater challenges down the road, we think the Chinese government is: more likely to lean towards caution; release policy stimulus at a measured pace rather than all in; select its policy tools with an eye to longer-term sustainability and exit-strategies rather than immediate gains; and more likely to focus on policies that support domestic demand rather than those with large external spillovers.

FIGURE 4 China's changing economic structure; rising consumption ...

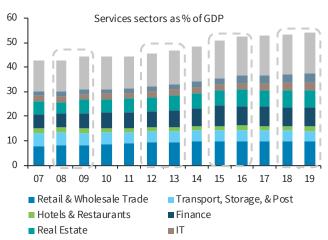


Source: Wind, Barclays Research

Source: Wind, Barclays Research

...and services share

FIGURE 5



27 April 2020

# Policy responses after the COVID-19 outbreak

Initially, we think Chinese policymakers thought the COVID-19 outbreak was a China-focused issue and the economy could see a V-shaped recover in Q2 once the outbreak was under control. To this end, the government quickly announced targeted monetary and fiscal relief measures on 3 February (before markets opened after the extended holiday). The magnitude of this fiscal stimulus at around 1% was, however, much smaller than the initial responses rolled out in most major economies (see Box 1 for more discussions on what was announced and an international comparison of fiscal stimulus packages).

As the COVID-19 outbreak began to spread and the global economy headed into a recession, the challenge facing China evolved from a domestic supply disruption to an external demand shock. Since late March, the Chinese government has committed to stepping up policy support in State Council and Politburo meetings. More RRR and policy rate cuts have been delivered by the PBoC in the past month. However, so far, there has been no announcement of additional fiscal stimulus, partly reflecting the legislative procedures that mean a new fiscal budget would need to be approved at the NPC meeting.

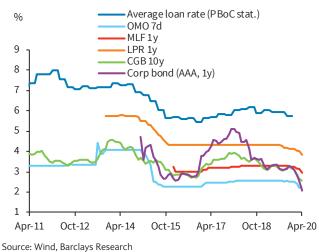
#### Monetary easing: appears guaranteed but delivery to be at a measured pace

Pre-COVID-19, we had been of the view that monetary easing would do more of the heavy policy lifting this year, given how restrained the PBoC was for most of 2019 and fact that the significant tax cuts in 2019 have resulted in a sharp decline in revenue and unsustainable local government balance sheets.

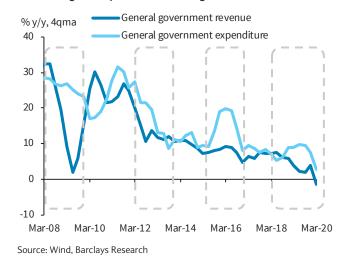
Post-COVID-19, while a bigger fiscal stimulus in response to the COVID-19 crisis seems widely agreed, we continue to see monetary easing as complementing fiscal support. Figure 2 shows that the PBoC preferred RRR cuts over rate cuts during the 2018-19 downcycle as the most effective tool to ensure ample liquidity and lower banks' funding costs. This year, we have seen more of both - the central bank has delivered 200bp in total of RRR cuts in January and March, and 30bp in total of policy rate cuts in February and April (Figure 6).

Our base case is for at least another 100-200bp of (targeted) RRR cuts over the rest of this year, another 30-50bp reduction in MLF/OMO rates (to guide LPR rates lower), and possibly 10-20bp cuts in benchmark deposit rates to further lower banks' funding costs.





# FIGURE 7 Worsening fiscal position on falling revenue



#### Fiscal package: A combination of relief measures and demand stimulus

With the government's stress on the "six guarantees" policy on 17 April, we expect it to announce increased fiscal support similar to the measures in Q1, which targeted those hardest hit by the outbreak – migrant workers who returned home and unemployed workers in cities – and focused on Wuhan province and Hubei, rather than blanket cash handouts to the general population, given fiscal constraints (Figure 7) and largely stable public sentiment.

Overall, we expect China's total potential 2020 fiscal package to amount to CNY10-13trn (or 10-13% of GDP, including the CNY1.1trn announced earlier and CNY2.3trn already allocated LG special bonds), or a 5~8pp increase from 2019, with total spending being financed via three main channels: general budgeted deficit (financed by general government bonds), LG special bonds, and special treasury bonds. As a result, we forecast:

- 1) A wider official budget deficit: We estimate the fiscal deficit will increase by 0.7-1.2pp of GDP, to 3.5-4.0% of GDP<sup>2</sup> versus 2.8% in 2019. The wider budget gap will be driven by both reduced revenue, including targeted tax cuts for SMEs, exporters and households, and increased spending on relief measures, likely focusing on unemployment benefits, including aid for jobless migrant workers, and cash support for low-income households.
- 2) An increased quota for local-government special bond issuance: We look for a quota of CNY3.5-4.2trn (including the CNY2.3trn allocated by April), compared with CNY2.15trn in 2019. The funds raised are likely to be used mainly for "old" infrastructure projects (eg, improvements to water networks, public health systems, emergency centres) and "new" infrastructure, such as 5G networks and data centres.
- 3) Issuance of COVID-19 special treasury bonds: We expect a total quota of CNY1-3trn, with the scale of issuance depending on the size of the on-budget deficit. The special treasury funds are expected to fund: 1) spending (currently 6% GDP) on disease control and prevention, and related R&D; 2) credit guarantees for corporates or to banks to replenish their capital to facilitate loans to SMEs; and 3) possibly expanded relief measures (eg, cash benefits and subsidies) for hard-hit sectors/firms/workers. We note that China's special treasury bonds traditionally need to have matching assets and therefore are not allowed to directly finance one-off subsidies or stimulus.

#### Demand stimulus: Likely more focused on investment than consumption

We expect more investment-related than consumption-related measures in the next stimulus package, especially taking into account local government priorities and their limited capacity to implement measures to boost consumption. Despite all the caveats, we believe infrastructure investment will remain the principal stimulus options, given: 1) it is easier to direct these outlays to a specific purpose; 2) there is still room for infrastructure improvements, given the uneven development within China, and 3) "new" infrastructure and high-tech investment are development priorities.

Although the central government is also keen to promote consumption, the lack of success in implementing consumption-boosting measures in the past could lead it to decide against rolling out a large-scale programme. For example, although the 2015-16 cut in the auto purchase tax drove a quick rebound in auto sales, once the tax cut expired, auto sales declined and fell into contraction during 2018-19. Local governments may be encouraged to issue more consumption vouchers, although we think many that have the fiscal room (eq, Shenzhen, Hangzhou), have already done so.

<sup>&</sup>lt;sup>2</sup> The actual budget deficit could be 5~6% of GDP on likely use of stabilization and carryover funds.

# Economic implications: Mixed fortunes but similar forces

Overall, we think the potential fiscal package will be designed to mitigate the shock from weaker external demand and arrest the downward momentum in domestic demand. This will mark a change from the post-GFC-stimulus, which had a large external spillover. Domestically, we expect the largest benefits to flow to the property market, with a milder boost to infrastructure and consumption, driven by similar economic forces and incentives that governed trends during 2018-19 (Figure 8).

FIGURE 8
Economic forecasts

	2020F	2019	2018	2010-17 average
GDP (%y/y)	1.3	6.1	6.6	7.9
Consumption (pp)	1.4	3.5	5.0	4.3
Investment (pp)	1.3	1.9	2.2	3.8
Net exports (pp)	-1.4	0.7	-0.6	-0.2
FAI (%y/y)	c.2	5.4	5.9	16.2
Property inv't (%y/y)	c.5	9.9	9.5	16.7
Infrastructure inv't (%y/y)	c.6	3.3	1.8	16.0
Manufacturing inv't (%y/y)	c5.0	3.1	9.5	16.2
Exports(%y/y)	-12.0	0.5	9.9	8.8
Retail sales(%y/y)	c.1	8.0	9.0	9.0
IP (%y/y)	1.1	5.7	6.2	9.5

Source: Wind, Barclays Research

#### Property market to remain the bright spot

While the recent politburo meeting reiterated that property was for living not for speculating, and restrictive and tightening measures have been put in place in a number of cities – notably Shenzhen – over the past two weeks, we think monetary easing in China will always benefit the housing market and expect its recovery to be sustained in 2020.

China's housing market showed signs of a strong recovery in March and April, with a return to growth in property investment, a rebound in home prices and an improvement in sales (Figure 9-Figure 10). We think the recovery in the property market is likely to be sustained by: 1) easier financing conditions, with the 5y LPR, to which mortgage rates are linked, down 15bp YTD; 2) local governments have more incentive to resort to land sales given deteriorating fiscal positions; and 3) sentiment among homebuyers is likely to remain buoyant amid rising home and land prices YTD.

## Limited upside for infrastructure investment

Despite the central government's stepped up efforts to boost infrastructure projects, we think a sharp and sustained rebound in infrastructure investment will be difficult. First, the overall amount of new credit provided will be far more modest than in 2008 (Figure 11). Second, we think the factors that have held back a strong rebound in infrastructure investment remain (see *Infrastructure: watch for LG financing and behaviour*, 28 March 2019). Therefore, we doubt that a sizable increase in the LG special bonds quota in 2020 will translate into more than 6% full-year growth in infrastructure investment (2019: 3.3%).

Third, although expectations for new infrastructure projects – mainly high-tech, including 5G, UHV, and big data – are high, we think their scale is likely to be small. For instance, according to State Grid, its investment in 5G and ultra-high-voltage transmission total

~CNY180bn, or about 1% of the company's total infrastructure investment. Moreover, we think a significant amount of spending on new infrastructure projects (eg, big data, AI) will be led by the private sector, which may be hesitant to spend now.

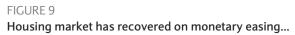
# Manufacturing investment to continue to decline

We expect manufacturing investment, which is dominated by private firms, to continue to contract in 2020. While the authorities have repeatedly called for more credit to be steered to private companies/SMEs, these segments have been hard hit, as shown by the manufacturing PMIs. We note that about 460k Chinese firms (mostly private) closed permanently in Q1, and the registration of new firms fell 29% y/y in the quarter (see "Coronavirus: nearly half a million Chinese companies close in first quarter as pandemic batters economy," South China Morning Post, 6 April 2020). Moreover, we see continued headwinds to a recovery in manufacturing investment from the sustained contraction in industrial profits and the rapid deterioration in external demand (Figure 12). NBS data suggest that exported-related industries account for roughly one-third of the manufacturing sector.

## Sustained recovery in consumption in doubt

We expect a recovery in consumption in Q2 (Figure 13), driven by pent-up demand (as suggested by the pickup in sales of luxury goods and autos) and a return toward normal in the services sector (see *China: COVID-19 tracking: Services outperform manufacturing*, 23 April 2020). However, with household real per capita income falling 3.9% y/y in Q1 (Figure 14, 2019: +5.8%) and unlikely to rebound strongly amid likely still-weak Q2 growth, we are sceptical about a sustained recovery in consumption.

Our outlook also assumes the absence of a large-scale program to stimulate consumption and factors in the experience of 2018-19, when consumption did not increase significantly following the income tax cut (retail sales growth stood at ~8% in 2019 vs ~9% in 2018). Although some relief measures, albeit not blanket-style government handouts, could help to support household spending, with the unemployment rate still relatively high (March: 5.9% versus 6.2% in Feb), we think these measures will mainly target low-income groups (Figure 15 and Figure 16) to cover their spending on necessities and therefore will not provide a broad-based boost to consumption.





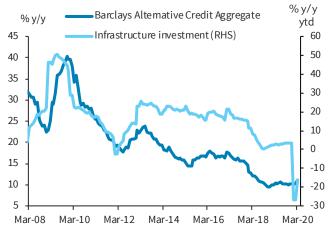
# FIGURE 10



Source: Wind, Barclays Research

#### FIGURE 11

#### Limited upside for infrastructure investment



Source: Wind, Barclays Research

#### FIGURE 13

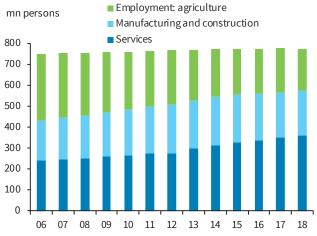
#### A sustained recovery in consumption...



Source: Wind, Barclays Research

#### FIGURE 15

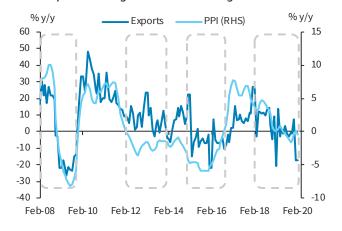
#### Higher employment in services



Source: Wind, Barclays Research

FIGURE 12

#### Fall in exports to weigh on manufacturing investment



Source: Wind, Barclays Research

#### FIGURE 14

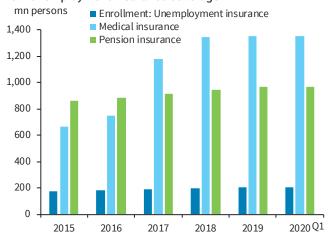
#### ... may be held back by reduced household income



Source: Wind, Barclays Research

#### FIGURE 16

## Low unemployment insurance coverage



Source: Wind, Barclays Research

## Box 1: China's initial fiscal stimulus was much smaller than other major economies

FIGURE 17

## Fiscal packages: An international comparison

			Corporate				Household		
Country	Fiscal stimulus (USD billion)	% of GDP	Loan/ guarantee	Tax cut/ deferral	Fee cut/ deferral	**Cash subsidy	Unemploy support	Tax cut/ deferral	**Cash subsidy
China*	160	1.1%		43	94		√		0.6
US	2,984	14.0%	1180	$\checkmark$	$\sqrt{}$	60	250	250	216
Germany	1,013	28.0%	840	$\checkmark$	$\sqrt{}$	56	√		$\sqrt{}$
France	472	19.0%	350	$\checkmark$	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$		$\sqrt{}$
Italy	855	51.4%	832	7	$\sqrt{}$	11	√		$\sqrt{}$
Spain	20	1.6%		18	$\sqrt{}$	$\sqrt{}$	$\sqrt{}$	$\checkmark$	0.4
UK	480	17.0%	410	24.8		33	√		8.7
Canada	140	8.4%		$\checkmark$	$\sqrt{}$	$\sqrt{}$	$\checkmark$	$\checkmark$	$\sqrt{}$
Australia	127	10.5%		$\checkmark$	$\sqrt{}$	81	√		$\checkmark$
Japan	1000	21.1%	$\sqrt{}$	$\checkmark$	√	√	√	$\checkmark$	$\sqrt{}$
S.Korea	28	1.8%	$\sqrt{}$	$\checkmark$	$\sqrt{}$	$\sqrt{}$	√	$\checkmark$	$\sqrt{}$

Note: \*China is based on our own estimates and marginally lower that the IMF estimate (1.2%, if excluding pre-allocation of local government special bond quota). Other countries are based on IMF estimates (https://www.imf.org/en/Topics/imf-and-covid19/Policy-Responses-to-COVID-19).

#### What has been announced by China?

Since early February, we estimate the announced fiscal measures by Chinese government amount to about CNY1.1trn (1.1% of GDP), coming from:

- Direct disease-control expenses: c.CNY160bn (0.16% of GDP); mainly covering three areas: 1) COVID-19 related medical expenses (any remaining personal expenses uncovered by insurance is 60% paid by central and 40% paid by local governments; 2) subsidies of CNY200-300 per day for front-line medical staff (and double for those at sent to Hubei) during the outbreak; and 3) procurement of disease-control resources.
- Targeted tax cut: c.CNY300bn (0.3% of GDP) for suppliers of disease-control resources and COVID-19-hit entities (especially SMEs) eg, the VAT rate for small-scale (self-employed) businesses cut to 1% from 3% during March to May, while eligible businesses in Hubei are exempted by VAT payments.
- Social insurance contribution deferral: c.CNY660bn (0.67% of GDP) for COVID-19-hit entities eg, SMEs (and self-employed businesses) exempt for employer contributions to pensions, and insurance for unemployment, and work injuries, while for big enterprises such costs are reduced by half (all employers in Hubei exempted).

Meanwhile, local governments (eg, Hangzhou, Shenzhen) have since March started to offer prepaid consumer vouchers to local residents, although the overall scale (~70 cities having such programs) is smaller than CNY10bn (0.01% of GDP).

# How does China compare to other major economies?

Figure 17 (based on tracking by the IMF) shows that the COVID-19 policies of other major economies are mainly focusing on supporting SMEs, offering job-loss relief, and providing cash (and other) subsidies to help corporates/households survive the crisis. In contrast, we find China's relief measures both narrower in coverage and smaller in scale. In particular:

- 1) China mostly covers the corporate sector but offers less supports to households;
- 2) The tax/fee relief for businesses is relatively smaller (in terms of % of GDP) versus many others; and
- 3) China offers limited cash subsidy amounts (mostly spending vouchers at local government level).

<sup>\*\*</sup>Cash subsidies to business include subsidies to firms to maintain employment; grants for small firms in the most-affected sectors etc. Cash subsidies to households include payments to workers without sick leave or insurance; child care benefits; direct aid to vulnerable people etc.

Source: IMF, Barclays Research

#### **Analyst Certification**

We, Jian Chang, Yingke Zhou and Eric Zhu, hereby certify (1) that the views expressed in this research report accurately reflect our personal views about any or all of the subject securities or issuers referred to in this research report and (2) no part of our compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed in this research report.

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