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Trade War

The Anatomy of US-China Trade Balance

By SHIN KOTBEE*

China's trade surplus with the United States recorded the highest level ever last year, followed by hard-line trade actions. The Trump administration, which has viewed the persistent trade imbalance with China as a threat to America's economic health, subsequently announced a list of Chinese goods imports to be subject to tariffs as penalty for the alleged unfair trade practices. The Chinese government has threatened to retaliate with its own tariff hikes on American goods. Despite three rounds of bilateral trade negotiation, the two countries have not reached an agreement on how to resolve the trade disputes.

China's goods trade surplus with U.S. is hardly new. Since China's accession to the World Trade Organization in 2001, it has rapidly increased from $83 billion in 2001 to $375 billion in 2017[1]. On the other hand, China has persistently posted a deficit in service trade with the U.S. and the service trade deficit has surged from $1.3 billion in 2007 to $40.2 billion in 2017. Most of China's service trade deficit comes from travel and charges on the use of intellectual property.

In Shin et al. (2018), we identify three features in China's goods trade surplus with the United States. First, it is highly concentrated in a few products including cellular phones, automatic data processing machines, monitors and projectors. The surplus in top ten products consists of 55.5% of the overall surplus with the United States[2]. Second, the surplus in capital goods has begun to exceed the surplus in consumer goods since 2016. The surplus in capital goods in 2017 grew by 21.3% from the previous year, recording $185.2 billion while the surplus in consumer goods decreased from $157.3 billion in 2016 to $135.8 billion in 2017. This suggests that the trade between the two countries is associated with production as well as consumption. Third, the surplus in high-technology products has caught up to that in low technology products. This is not only due to the upgrade of Chinese manufacturing industries, but also due to the dominant share of processing trade in high-technology products. According to Xing (2014)[3], the share of processing

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1 These numbers are based on statistics released by the United States. The Chinese statistics state $28 billion in 2001 and $282 billion in 2017. This statistical discrepancy mainly comes from conceptual and methodological differences in the compilation and processing of trade data.

2 Statistics are calculated for 2017 data and products are classified according to Harmonized System code 4 digit.

3 Xing, Yuqing. 2014. "China's High-tech Exports: Myth and Reality," Asian Economic Papers , vol. 13, no. 1, pp. 109-123.

exports in Chinese high-technology exports recorded 79.9% as of 2010 while processing exports accounted for 46.9% of Chinese total exports.

While the ongoing trade disputes focus on the U.S.-China trade balance, we have to note that the gross trade balance can be misleading when considering that China is deeply integrated in the international fragmentation of production. The domestic value added contents of Chinese exports to the United States only accounted for 65.3% in 2011[4]. This ratio shrinks for high-technology products. For example, the domestic contents account for 45.9% of Chinese electrical and optical equipment exports to the United States. This means that the trade balance measured in value added is much smaller than the gross trade balance. OECD estimates for 2013 show the U.S. deficit with China in value-added term is 25% smaller.

It is questionable whether Trump's recent trade policy to resolve America's trade deficit is essentially beneficial for the U.S. economy. Since imported capital goods from China are used to produce goods and services, tariffs levied on capital goods imports will have a backlash on US business. Tariffs targeting high-technology items will hurt other countries on the supply chain rather than China, due to the low domestic content of Chinese exports to the United States. In addition, if China imposes reciprocal tariffs on U.S. goods, this will have an even more severe effect on the U.S. trade balance. It will be beneficial for both sides to settle the trade disputes as soon as possible through U.S.-China trade talks to ease the tension and reduce uncertainty.

4 Trade in Value Added (TiVA) data is used. The most recent data is for the year 2011.

What will be China's weapons in the trade war arsenal?*

By Dong Jinyue and Xia Le*

Trade war between China and the US escalated recently

The trade war of China and the US finally exploded on July 6th when the US imposed 25% tariff on China's imports with the total target of USD 34 billion and China retaliated back with the same tariff rate on the same amount of the US imports.

Right after Chinese announcement, Trump threatened to impose another 10% on China's USD 200 billion goods immediately, which marks the escalation of the trade war between China and the US. Apparently, it has made it impossible for China to implement a similar retaliatory tariff measure since China's total exports to the US only amounted to USD 150 billion last year. To a certain extent, the Trump's move is drawing a new deadline for China and the US to reach an agreement in the near future.

How will China fight back in the trade war?

Except for the retaliatory tariff measure, China actually has many other weapons in the arsenal to fight back. Below we list a number of policy options for China to fight back the US tariff measures. We then assess their feasibility as well as pros-and-cons to Chinese economy.

(i) Retaliatory tariff measures

This "mirror" retaliatory tariff strategy has its natural limitation since US imports much more from China than its exports to China. In 2017 the US imported Chinese goods of USD 500 billion while only exported USD155 billion of US goods to China. As Trump decided to expand its punitive tariff to USD 200 billion of Chinese exports as he threatened, it is impossible for China to find the same amount of US imports for retaliatory tariff. (Chart 1)

(ii) Restrictions on US business in China

China could use some non-tariff measures to retaliate as well. Some people suggest that China could limit investment or market access of US firms in China. Indeed, US firms have a large presence in China. Some estimates show that the stock of US investment in China amounted to USD 256 billion as of 2017. (Chart 2) China could seek to punish these US firms in China for retaliation.

In this respect, the retaliatory measures could include: (i) to conduct more inspections on the US firms in China; (ii) to put restrictions on Chinese firms which are on the supply chain of these US firms; (iii) to increase penalties for US firms in China and delay their licensing approvals. Actually, China used these measures in the past when its territorial dispute with South Korea and Japan became acute.

However, these measures also have strong side effects on Chinese economy. First of all, one important goal of Trump's administration is to move US companies overseas back to the US. Therefore, by harassing US firms China's authorities are indeed doing a favor to the Trump administration to expedite the departure of these US firms. Second, these retaliatory measures could create a bad impression for investors from other countries and reduce the attractiveness of China as a FDI destination.

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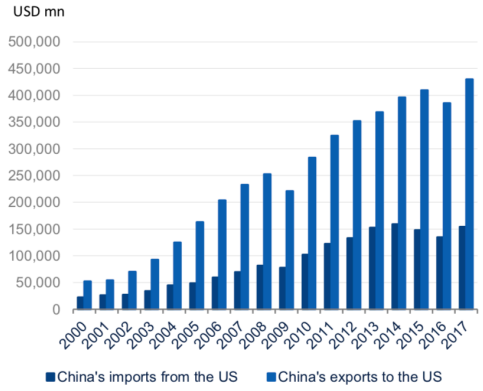
* This article first appeared in BBVA Research on July 12, 2018.

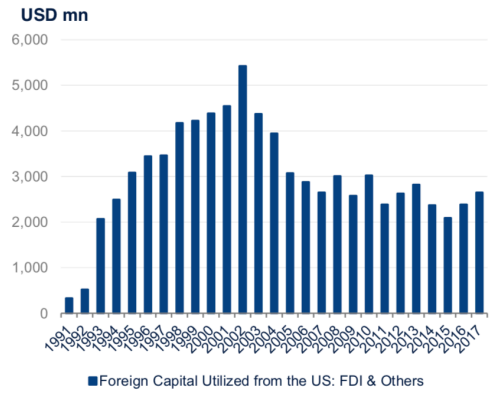
* Dong Jinyue, China Economist, BBVA. Xia Le, Senior Research Fellow of IMI, Chief Economist for Asia, BBVA.

Chart 1 China's exports to the US have been higher than the imports from the US in the past decades



Source: BBVA Research and CEIC

Chart 2 The volume of US FDI in China is large



Source: BBVA Research and CEIC

(iii) "Anyone but the US"

Recently, China's National Development and Reform Commission (NDRC) announced the 2018 "negative list" for foreign investment. Compared to its 2017 version, the new negative list features a significant reduction in the restrictions of foreign investment. In particular, China's authorities dropped many restrictions of foreign investment in a number of sectors including finance, automotive and aviation etc.

This opening-up measure can also create certain policy room for China to retaliate the US tariff measures. For example, China's authorities can intentionally prolong the approval process of US enterprises' applications to enter these newly opened industries while give certain fast track to firms from other trade partners. This method will give certain disadvantage to the US firms but won't hurt them immediately.

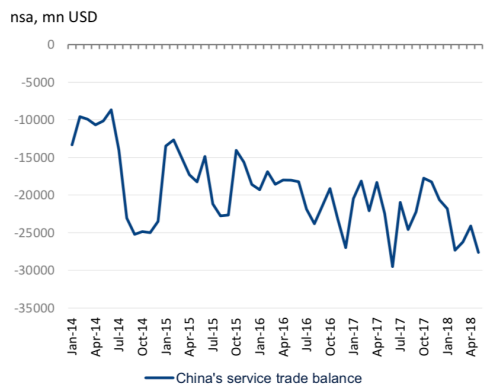
(iv)Targeting service trade such as education and tourism

It is noted that the US has a surplus of USD 39 billion against China under the service trade, more than half of which comes from spending by Chinese tourists and Chinese students attending American schools and colleges (Charts 3 and 4).

China could target this service trade deficit and put more restrictions to control the number of Chinese tourists to the US. Indeed China has a recent track record of using it as an economic weapon. For instance, China's authorities forbid domestic travel agencies to organize tourist groups to the South Korea in 2017 when the two countries' relations turned sour.

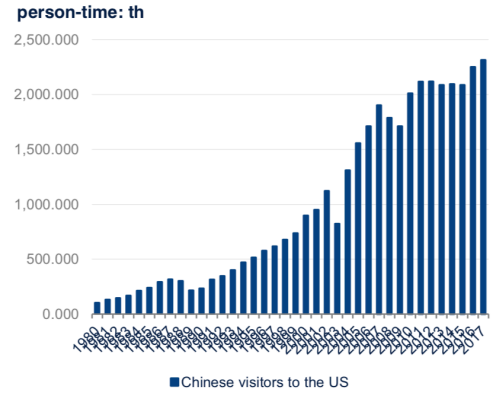
However, we expect the impact of this measure could be limited since the US tourism industry is not that susceptible to Chinese tourists as the South Korea. Moreover, now the Trump administration deliberately tightens the visa issuance to Chinese students and researchers for so-called national security reason. It is hard to tell to what extent these measures could hurt the US.

Chart 3 China's service trade balance has been deficit over time



Source: BBVA Research and CEIC

Chart 4 Chinese visitors to the US has been increasing over time



Source: BBVA Research and CEIC

(v) Cooperating with other countries in trade and international investment

Now China is trying to ally with the EU and Japan to fight against the US. Unfortunately, the EU seems to be not interested in it. As some EU officials revealed, they have rejected China's demand to publish an anti-US joint statement in the forthcoming Sino-European Summit. According to the media report, the EU is sharing almost every US concern with China although they don't agree to US practice of unilaterally imposing tariff.

At the same time, China actively pushes for the signing of free trade agreement (FTA) and bilateral investment treaty (BIT) with EU and Japan. It is also pushing for the signing of Regional Comprehensive Economic Partnership (ASEAN 10+ China, Japan, South Korea, India, Australian, New Zealand). These initiatives are aimed to offset the shock from the trade war. From our perspective, they also provide China a way to end this trade war with the US gracefully.

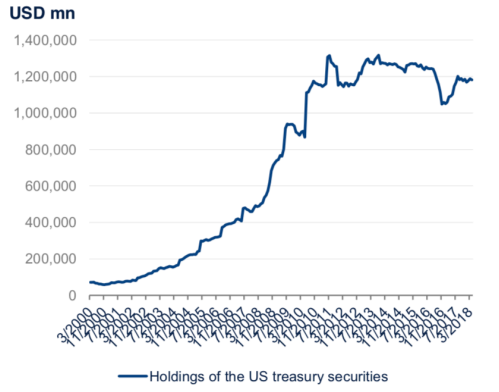
Indeed, US major complaints against China in essence are the market-access issues. For example, the US claimed "forced technique transfer" usually happened in the joint venture between China's local companies and multinational companies. The root reason is that China's government didn't fully open some sectors to foreign investors but only permit joint-ventures with local companies. As such, many local companies ask for technique transfer as one of premises to cooperate with foreign investors. Such a problem can easily be solved when China directly opens these sectors to foreign investors and permits them to establish branches or control the major stake in the joint venture.

That being said, if China can manage to sign FTAs and BITs with the EU and Japan, the market-access issues between China and the US will become much easier to solve, which can also lay a good ground for solving other differences between them. Thus, this should be the right way to end this trade war with the least cost.

(vi) Dumping US treasury bonds

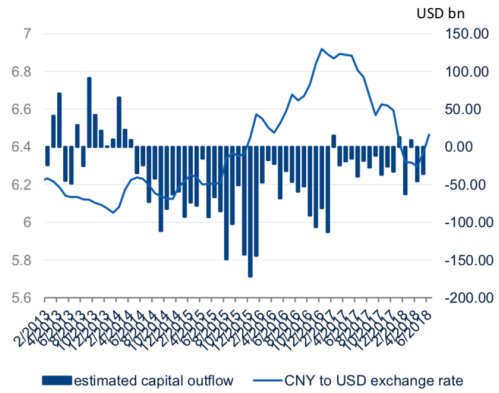
China is the biggest creditor of the United States: It owns more US government bonds than any other country, with the total amount around US 1.17 trillion as disclosed by US department of the treasury. We believe that the real figure could be higher than it as China's government also holds US treasury bonds through certain special purpose vehicles (SPVs). (Chart 5)

Chart 5 China holds a large amount of US treasury securities



Source: BBVA Research and CEIC

Chart 6 Significant RMB to USD depreciation in the recent months, leading to capital outflows



Source: BBVA Research and CEIC

Investors worry that if China could dump its holding of US treasury bonds to retaliate for US tariff measures against China. Although this action looks very powerful at the first glance, it might be not effective in practice.

As a response the Federal Reserve can signal a slowdown of rate hikes and change its pace of balance sheet reduction, which can help to cushion the shocks from China's short selling. Moreover, the US government could even cite national security laws to freeze China's holding of US treasury bonds if they believe that China's dumping behaviors aim to disrupt US financial market.

All in all, we believe that Chinese authorities will take a cool-headed approach and are unlikely to take extreme steps such as dumping US Treasury bonds.

(vii) Guiding RMB depreciation

The recent sharp depreciation of the RMB makes the market suspect whether China will use the RMB depreciation to retaliate the US. (Chart 6) We cannot agree to this point because the side effect of this currency weapon is too unpredictable.

As we witnessed in 2015-2016, a sharp currency depreciation could lead to large-scale capital outflows and pose material threats to the financial stability. There is no point for the authorities to risk financial stability in hitting back US tariff measures.

Indeed, the PBoC's intervention into the FX market early this week has confirmed our prediction. Although the authorities are willing to allow the market to play an important role in pricing the currency, they will be very cautious to avert any risk of creating an adverse spiral between currency depreciation and capital flight. That being said, although the RMB exchange rate is expected to maintain a weak trend in the coming months due to the trade war, the authorities will ensure that the pace of depreciation is not too steep.

Conclusion

After reviewing a number of methods which China could use in the escalating trade dispute with the US, we find that China's policy options to counter the US tariff measures are actually limited. We expect that the authorities will implement the methods from (i) to (v) but are unlikely to resort to method (vi) and (vii), namely dumping US treasury bonds and guiding currency depreciation.

More importantly, with time going, these retaliatory measures tend to have increasingly negative impact on China itself. For the positive side, the reality could make China actively seek for a solution through bilateral negotiation rather than escalating confrontation with the US. We expect that the two sides will restart the negotiation soon after the initial stage of the trade-war.

Evaluating the Impacts of China-US Trade Frictions on the RMB's Exchange Rate

By ZHIHUAN E*

Recently, the US is carrying out a series of trade protectionist measures, and there are rising difficulties in communication and negotiation between China and the US. The trade frictions manifest "America First" protectionism, underpinned by economic and social issues. Therefore, the trade frictions may continue to evolve for an extended period of time, reflecting its long-term and complex characteristics. The fast-changing international trade environment not only hits confidence in global financial markets but also brings uncertainty to global economic growth. Following the developments of trade frictions, there will be new changes in supply and demand for the RMB, accelerating the RMB's exchange rate adjustment. Trade frictions and the outlook of trade war could influence the RMB's exchange rate via three channels:

1. In terms of trade

The impact of trade frictions on the RMB's exchange rate is first reflected in merchandize exports. In the worst case scenario, USD 50 billion worth of exported goods to the US will be subject to 25% tariff, while USD 200 billion worth of goods will be subject to 10% tariff. On top of this, the US will impose additional 10% tariff on another USD 200 billion worth of goods. In other words, USD 450 billion worth of exported goods will be affected, involving tariff of USD 52.5 billion.

In June 2018, China's exports in terms of USD grew 11.3% year-over-year, or 1 percentage point lower than the same period last year. It is estimated that the impacts of trade war on China's exports to the US will gradually emerge in the second half of 2018.

Nevertheless, exports to the US as a percentage of Chinese GDP is still limited. According to the US Department of Commerce, China's exports to the US amounted to USD 505.6 billion in 2017, accounting for 4.13% of China's GDP. Meanwhile, statistics from China Customs showed that exports to the US amounted to RMB 2,910.3 billion, accounting for 3.52% of GDP. In light of this, the impact of exports adjustment in this certain area on China's economic performance will be limited.

2. In terms of capital flow

The US Department of Treasury is reportedly set to announce investment restrictions on Chinese enterprises. Direct investments, mergers and acquisitions by Chinese enterprises in the US may decline this year. The US aims to maintain its influence in global industrial landscape by launching a trade war. Many targeted products subject to the latest tariffs worth USD 50 billion come from 10 key priority sectors in "Made in China 2025" program, including information technology, robotic, aviation and aircraft components, energy saving and new energy vehicles, electrical generation equipment, pharmaceuticals and medical devices, etc., reflecting the US's concern on global industrial landscape in the next 5 to 10 years. Since the global supply chain has been highly integrated, the impacts of tariff on each specific industry will be complex and changing.

3. In terms of financial markets

Investors' risk-off sentiment continues to spread following the evolvement of trade frictions between China and the US, and global financial markets are volatile. The US 10-year treasury

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yield once retreated, reflecting influx of funds into the bond market for risk aversion. Also, there were large equity market corrections across Europe and Asian emerging markets. Compared with previous trade protectionist measures imposed by the US, the latest measures have tremendous impacts on equity markets, bond markets and foreign exchange markets globally. It shows that financial markets pay attention to the trade frictions between China and the US and worry about sizeable deprecation of the RMB due to the trade war.

4. The RMB's fluctuation will follow trends

To summarize the three aforementioned channels, trade frictions between China and the US will affect China's exports to the US, resulting in depreciation pressure for the RMB. However, Chinese investments in the US will drop accordingly, offsetting to some extent the impact of foreign exchange supply-demand dynamics under trade accounts. Therefore, it is necessary to cope with negative impacts on the RMB's exchange rate arising from financial market sentiment.

With reference to historical experience of trade war between the US and Japan, the US had its largest trade deficits with Japan between the 70s and 80s in the last century. The US successively initiated trade disputes on textile, steel and iron, automobiles and semiconductor with Japan. Furthermore, the US requested Japan to restrict exports growth to the US, open its market, and increase imports. Consequently, the US trade deficits with Japan gradually narrowed from 1.2% of its nominal GDP to 0.3%. Meanwhile, the USD experienced sizeable depreciation against the JPY in 1971 and 1985. From July 1971 to October 1978, the value of the Japanese Yen to one US Dollar appreciated from JPY 360 to JPY 180, an appreciation of 100% in 87 months. Subsequently from February 1985 to April 1995, the Japanese Yen appreciated further by 208% from JPY 259 to JPY 84 in 122 months. The US and Japan jointly promoted JPY internationalization while the JPY appreciated substantially.

Lessons from the US-Japan trade war shows that reducing bilateral trade surplus is the focus of trade war. Apparently, there is no room and political intention for depreciating the currency of trade surplus nation in order to enhance export competitiveness. On the contrary, if there is a vicious cycle between persistent depreciation of the currency and capital outflows, there will be adverse effects on the growth of investments and consumption. It may even trigger extensive economic and financial risks.

At present, economic fundamentals play a leading role in determining the RMB's exchange rate. China's economy remains stable, with current account surplus maintaining at a sustainable level of 1.2% of GDP, which is neutral on the RMB's exchange rate. However, the influence of cross-border capital flow under capital account will gradually surpass that of current account, becoming a dominant factor in the RMB's exchange rate. Since capital flow factor becomes increasingly important in determining the RMB's exchange rate, the growth of capital flow in financial markets, instead of direct investment, will gradually become an important variable in the trend of the RMB. In addition, the strength and weakness of the dollar index remain a major external factor for the RMB's exchange rate adjustment. The USD depreciated in early 2018 but rebounded recently. The trend of the RMB against the USD will switch from appreciation to fluctuation, but the magnitude of fluctuation will be less than that of the USD. Currently, the RMB is back to the level early this year.

For a period of time in future, the trend of the RMB's exchange rate will be mainly determined by the supply-demand dynamics in the foreign exchange market. The exchange rate fixing mechanism will continue to strength the flexibility of the RMB's exchange rate, which will remain basically stable at a reasonable and equilibrium level.

What Weapons Does China Have in the Trade War?*

By XIA LE*

The trade war between China and the USA finally broke out on 6 July, when the US imposed 25% tariffs on US$34 billion worth of imports from China, to which China responded by applying the same tariff to the value of imports from the US. Subsequently, Trump threatened to apply additional tariffs to all imports from China, close to US$500 billion worth, to which China would not be able to respond, simply because its total imports from the US only amount to some US$150 billion. However, China may consider reprisals beyond imports, although some of the possible measures might have secondary effects on its own economy.

(i) Restrictions on US companies in China.

US companies' investment in China amounted to US$256 billion in 2017. The authorities could slow down the business activity of US companies simply by intensifying inspections, delaying licences, imposing fines or even restricting shareholdings in Chinese companies in global value chains. However, such measures could make China less attractive as a destination for foreign direct investment.

(ii) Restrictions on trade in services, such as education and tourism.

The US has a surplus of US$39 billion in services, more than half of which relates to spending by Chinese tourists and students in the US. China could impose more restrictions with a view to controlling the number of tourists visiting the US. However, the effect of this measure would be limited, since China's weight in the US tourist sector is not great.

(iii) Greater cooperation with other countries in the fields of international trade and investment.

China is actively pushing for the signing of free trade agreements (FTAs) and bilateral investment treaties (BITs) with the EU and Japan, as well as a Regional Comprehensive Economic Partnership (RCEP) with ASEAN (the Association of South-East Asian Nations), among others. These initiatives are aimed at offsetting the repercussions of the trade war, as well as offering a path for China to be able to strengthen its negotiating position.

(iv) Sale of US Treasury bonds

China is the US' biggest creditor, since it holds Treasury bonds for a total value of close to US$1.17 trillion. Although this measure seems a potent one at first sight, it might not prove so effective in practice, not least because of the resulting devaluation of the collateral in China's balance sheet. Moreover, in response, the Federal Reserve could announce a slowdown in its rate hikes, which would contribute to cushioning the impact of China's sell-off. Also, the US could even invoke its legislation on national security to freeze the holding of its Treasury bonds by China if it considered that China were seeking to disrupt the US financial market.

(v) Devaluation of the renminbi.

The recent devaluation of the renminbi leads the market to suspect that China could resort to this measure in retaliation against the US. This option does not seem practicable to us, because the collateral effects of such a strategy are absolutely unpredictable. As we saw in 2015-2016, a sharp currency depreciation can lead to large-scale capital flight and pose a serious threat to China's financial stability. Therefore, the People's Bank of China will take great care to avoid any risk of creating an adverse spiral between currency depreciation and capital flight.

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* This article first appeared in BBVA Research on July 30, 2018.

* Xia Le, Senior Research Fellow of IMI, Chief Economist for Asia, BBVA.

In conclusion, having analysed the various instruments that China could use in its heated trade dispute with the US, we consider that its options for countering the US tariffs are limited. On the positive side, reality might lead China to actively seek a solution through bilateral negotiations instead of intensifying its confrontation with the US. We hope the two sides will soon resume negotiations after this initial phase of trade war.

Trump's Trade Wars Are Incoherent, Angry and Misguided*

By DANIEL J. IKENSON*

The US Constitution vests authority in Congress to collect duties and to "regulate commerce with foreign nations." But over the course of the 20th century, Congress delegated some of that authority to the president through legislation. Although the purpose was, ultimately, to facilitate the process of reducing tariffs, President Donald Trump has systematically weaponized a few statutes to serve a small-minded, protectionist, "America First" trade policy.

Since taking office, Trump has misappropriated his authority to launch six investigations under three seldom-invoked trade laws. Five of those investigations have led to the president imposing or announcing tariffs on imports of more than 1,500 products (steel, aluminum, washing machines, solar-panel components, and, mostly, Chinese technology products) valued at about US$100 billion. A new investigation into whether imports of automobiles and parts constitute a national-security threat could lead to sanctions on another US$300 billion of imports. Taking into consideration the likelihood of commensurate retaliation against American exporters, US$800 billion of US trade — or about 20 percent of total US trade in goods — could be ensnared in a trade war by year's end. And that assumes no new cases or an escalating tit-for-tat.

The last 13 presidents of the United States — going back to Franklin D. Roosevelt, who signed into law the watershed Reciprocal Trade Agreements Act in 1934 — considered trade to be mutually beneficial for their fostering of economic growth and good relations among nations. Those presidents aimed to avoid trade wars and committed their administrations to reducing barriers, respecting the rules, and supporting the institutions of trade.

Trump sees the world differently. He has departed from more than 80 years of US trade policy continuity, charting a new and deeply troubling course. Although Trump is not the first president to blame foreign trade practices for problems real and imagined, he may be the first to believe that protectionism is essential to making America great. He is certainly the only head of state ever to tweet that "trade wars are good, and easy to win." Trump's trade policy is motivated by a toxic blend of ignorance, petulance and nationalist grievance.

Keeping the Wrong Kind of Score

More than anything else, economic fallacies inform this president's trade views. Unlike his predecessors, he sees trade not as a win-win proposition, but as a zero-sum game with distinct winners and losers. Exports are Team America's points;

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*This article first appeared in Global Asia on June 22, 2018.

* Daniel J. Ikenson is director of the Cato Institute's Herbert A. Stiefel Center for Trade Policy Studies in Washington, DC.

imports are the foreign teams' points; the trade account is the scoreboard. Since the board shows a large overall deficit, and many bilateral deficits with individual countries, the US is losing at trade — and it's losing because Trump's predecessors were bad negotiators and because the foreign teams cheat. But in those US trade deficits, Trump also sees leverage.

Countries registering surpluses, Trump reckons, are more dependent upon the US market than US exporters are on theirs, making the threat of tariffs — even trade wars — an effective and powerful tool to compel foreign governments to cave in to his demands. Yet, so far, there has been very little acquiescence to those demands. Under the threat of steel tariffs and US withdrawal from their bilateral trade agreement, South Korea opted to put out the fire by agreeing to limit its exports of steel and raise its quota on imports of US automobiles. Other countries with economic heft, however, are fighting back.

In any case, while it might be true that the US would be less weakened than other countries by a trade war — after all, the US economy depends less on trade than almost every other country: imports plus exports account for 27 percent of US gross domestic product compared to a world average of 53 percent — the damage to the US economy would be considerable nonetheless. Cavalierly inviting a trade war because US "casualties" would be lighter than, for example, China's or Europe's, betrays a worrying absence of understanding of how trade and the global economy really work.

Most global trade is in intermediate goods — the purchases of producers, who have decentralized and diversified their operations to improve efficiencies, reduce costs and compete more effectively. Whereas in the 20th century, most of a company's production and assembly took place in one location, often under one roof, the factory floor has since broken through those walls and now spans borders and oceans. Taxing imports today is akin to erecting a wall through the center of that 20th century assembly line, impeding production and raising costs in similar fashion. That helps explain the preponderance of opposition among US manufacturers to Trump's trade tack. US tariffs raise their costs, and the resulting retaliation from foreign governments will reduce their export revenues, squeezing profits from both ends.

In 2017, US goods imports totaled US$2.2 trillion — of which US$1.1 trillion were purchases of raw materials, intermediate goods and capital equipment — and US goods exports totaled US$1.5 trillion. If Trump were to impose, for example, a 10 percent across-the-board tariff on all imports, producer costs would rise by roughly US$110 billion (or 10 percent of US$1.1 trillion). Commensurate retaliation abroad would reduce US export revenues by roughly US$150 billion (or 10 percent of US$1.5 trillion). Together, the increased costs and reduced revenue would amount to a US$260 billion reduction in manufacturing-sector profits. Last year, the US manufacturing sector's profits were US$550 billion, so a 10 percent import levy alone could end up cutting profits nearly in half. When Trump claims that protectionism will revitalize manufacturing and bring back jobs, one can only wonder where he thinks the investment will come from without the profits his tariffs will chase away.

False and Misleading

Trump's trade policy is driven by misleading statistics and the fallacious narrative that trade destroyed US manufacturing. Trump pines for the days when US industry was unrivaled in the world, accounting for a larger share of the US economy, and employing a significant chunk of the labor force. Manufacturing's share of the US economy peaked in 1953 at 28.1 percent and has been on a downward trajectory ever since. In 2017, that share was only 11.6 percent of GDP.

But in 1953, US manufacturing's value-added amounted to US$110 billion, whereas in 2017, it reached a record high of US$2.24 trillion. A sector that today produces more than six times the value in real terms than it produced when it was of much greater significance to the US economy can hardly be described as declining. The sector employs about two-thirds the number of workers as it did at its peak of 19.4 million in 1979, but that reflects massive increases in output per worker, which is attributable primarily to the adoption of new technologies.

Trump seems to believe that manufacturing is the only part of the economy that matters — or the only part of the economy, full stop. When citing trade balances, the president and his advisors simply ignore US services, where the US is most competitive and growing fastest. It's as if Google and Amazon, financial services and insurance companies, tourism and intellectual property licensing don't exist. Last year, US services exports amounted to US$800 billion and generated a US$250 billion trade surplus.

For a nation whose consumers spend twice as much on services than on goods, and where 90 percent of the workforce is employed outside the manufacturing sector, the obsession with manufacturing is misplaced. But even Trump's concerns about manufacturing are reserved for just a few heavy industries, such as steel and automobiles. He fails to recognize — or at least his policies fail to reflect — the diversity of industries within manufacturing, many of which are worried about the pain from Trump's steel and aluminum tariffs. For every US$1 that steel producers add to GDP, steel users add US$29; for every one job in steel production, there are 46 in steel-using industries. While Trump wants credit for "protecting" the steel industry with a 25 percent import tariff, he and his advisers downplay the adverse impact on steel-consuming producers.

Incoherent Uncertainty

Although it's difficult to discern any coherent trade-policy strategy, the administration's incoherent strategy seems to be to intentionally foment a climate of uncertainty. Some suggest the policy dissonance is intended to distract the public from the president's mounting domestic legal and ethical woes, but the persistent noise may be conducive to the administration's goal of repatriating global supply chains.

Trump has sought to deter US companies from investing abroad. His tweet-shaming of US firms that were considering establishing assembly operations in Mexico, and his threats of 35 percent taxes on re-importation into the US dissuaded a few from moving forward with their plans. Trump's repeated threats to withdraw the US from the North American Free Trade Agreement; his insistence

that any revised NAFTA agreement should require that products contain more US content to qualify for preferential treatment; and his demand for a five-year sunset clause under which NAFTA would automatically terminate unless the parties affirmatively agree to extend its terms are all designed to create uncertainty. Why?

Trump fears that trade agreements, which extend preferential access to the US market, encourage investment diversion and outflows from the US to the economies of its trade agreement partners. And he believes that by convincing the world that US trade barriers could rise at any moment, foreign companies will want to hedge their bets by investing in the US — inside the tariff wall. It may sound cynical and self-defeating, but this kind of thinking permeates the strategy sessions of America First nationalists, who like to think the specter of President Ronald Reagan's threatened tariffs on automobiles induced Honda to build the first foreign automobile plant in the US in 1982.

Either way, things have changed since then. The US is still the world's top destination for foreign direct investment, but its share of the global stock of FDI has decreased from 39 percent to 17 percent during the first two decades of the 21st century. The determinants of investment are diverse and many, and the number of viable destinations competing for that investment has increased as countries have developed. Obviously, the size of the market is important, but so are many other factors, including ease of access to supply chains, respect for the rule of law, policy predictability, and certainty in the business and regulatory climate.

Trump is betting that by making policy less predictable and creating an environment of "regime uncertainty," investment will flow into the US. Not only is the success of that approach doubtful, but the objective itself — attracting investment — is at odds with the president's primary goal, which is to reduce the trade deficit. When Americans buy more goods and services from foreigners than they sell to them (trade deficit), then they also sell more assets to foreigners than they buy from them (capital surplus). Increasing inflows of investment and reducing the trade deficit cannot happen at the same time, hence the conclusion of policy incoherence.

Anger as Policy

A sense of grievance also permeates the America First narrative. Trump and several of his advisors see the US as a benevolent giant, having selflessly provided the resources, security and generosity of spirit to rebuild Western Europe, East Asia and the rest of the free world after the Second World War. Under the US security umbrella, the rest of the West took advantage of America's kindness, took more from the till than they put in, skirted the rules to obtain artificial advantages in certain industries, adopted policies to promote their own interests at the expense of the US industrial base, became economic rivals and began to adopt views about foreign policy and geopolitics that weren't in lockstep with the US government's. Or so the story goes.

Expectations that other governments will acquiesce to US foreign and economic policy positions and accept the premise of American exceptionalism predominate this mindset. That the US isn't treated with deference within the international trading system, especially by the World Trade Organization's Dispute Settlement Body, for

its selfless leadership in establishing the rules and institutions of trade is an affront to Trump and his advisors. This premise is the well-spring of Trump's outrage in learning that Canada, Mexico, the European Union and China would even consider retaliating against the US for imposing punitive tariffs on steel, aluminum and technology products.

The Trump administration's concerns about China's mercantilist industrial policies have some validity, but its approach to resolution has been an unmitigated disaster. The US doesn't need China to agree to buy US$200 billion more US exports per year. Reducing the bilateral trade deficit is a silly, misguided objective.

Instead, the US should be pursuing deeper, enforceable commitments from China that it will operate within the letter and the spirit of the rules-based trading system. The way to do that is to stand shoulder-to-shoulder with like-minded governments and demonstrate to Beijing that certain behavior won't be tolerated. Instead, the Trump administration has done the opposite. It pulled out of the Trans-Pacific Partnership (TPP) trade accord, it picked fights with allies by hitting them with steel and aluminum tariffs, it transgressed WTO rules to impose sanctions unilaterally and it isolated the US as an international scofflaw. These missteps must be reversed, if that's still possible.

Those who subscribe to Trump's points of view — that trade is an "Us versus Them" proposition — probably think that the president is doing the right thing in subverting the institutions of global trade and provoking trade wars. More sycophantic supporters consider Trump's strategy to be ingenious. Apologists who know better say that the president is merely fulfilling his campaign promises — and how refreshing is it that a politician is making good on his promises! All are complicit in the unenlightened, provocative and possibly unhinged trade policy that Trump has wrought.

Trump Spends Billions in Taxpayer Dollars to Fix a Problem He Created: Taxpayer Subsidies Thrown at U.S. Agriculture Are a Huge Waste*

By SIMON LESTER*

President Trump has been imposing tariffs left and right, on close allies and on budding rivals, and on steel and aluminum from everywhere and on everything but the kitchen sink from China. The predictable response from U.S. trading partners was to impose retaliatory tariffs on U.S. exports. Now, in response to that retaliation, the Trump administration is proposing to counter the retaliatory tariffs with subsidies to the agriculture sector, which has been particularly hurt by these tariffs. Next up, presumably, is more subsidies by other governments, as the market distortions escalate and proliferate.

Agriculture subsidies are nothing new. The U.S. agriculture sector is already heavily subsidized, which has long been an irritant for many U.S. trade partners. When Trump complains about high Canadian tariffs on dairy products, Canada responds with complaints about U.S. dairy subsidies. These new subsidies just add to the problem. The Trump administration's proposed agriculture subsidies will be carried out through the Commodity Credit Corporation Charter Act, a Depression-era funding program. That is appropriate somehow, as the Trump administration's trade war harkens back to the Smoot-Hawley tariffs of the same era.

The question many people are asking is, where does this end? Will we reach a new status quo in which all tariffs on goods imported and exported from the United States are subject to significantly higher taxes? And what will that do to the economy? The economy has stayed strong so far, but the amount of trade subject to tariffs is still small.

As the amount of trade covered grows, the impact on the economy will become more apparent. We are already seeing reports of lost jobs, and as publicly listed companies feel the pain, the effects are likely to spread to the stock market. Perhaps that will be enough to sway Trump?

One way to put an end to this destructive trade policy is for Congress to step in. Congress has the Constitutional power over trade, and all of these tariffs are taken pursuant to authority Congress had delegated by statute. Congress can and should revisit the statutes, and rein in Trump's actions on tariffs.

It should also step in to stop the agriculture subsidies. Back in the 1990s, a Republican-led Congress passed the Freedom to Farm Act, in order to reform and reduce farm subsidies. If the Republicans want to be the party of free markets and limited government, they should act like it.

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At the same time U.S. trade policy is mired in protectionism, the rest of the world is pressing forward with trade liberalization. The EU and Japan recently signed a far-reaching trade agreement, cutting tariffs on trade in both directions, and liberalizing in other ways as well. Trump has been complaining about high EU tariffs on cars. Japanese producers will now see those tariffs phased out, but American producers will still be subject to them.

Trump could also negotiate such trade agreements, but he has chosen not to. We are now a year and a half into the Trump presidency, and no new trade negotiations have started. According to press reports about the agriculture subsidies, "[t]he plan's third element would put resources toward finding new markets for U.S. farmers to sell their products abroad." The best way to open new markets is to negotiate lower tariffs through trade agreements.

But instead of negotiating lower tariffs, the Trump administration has been imposing higher tariffs, which, of course, led to the retaliatory tariffs, and now to the new agriculture subsidies. Trade policy is going in the wrong direction, and the pace is picking up.

America and China: Destined for Conflict or Cooperation?

We Asked 14 of the World's Most Renowned Experts*

By JOHN GLASER*

The future of the Sino-American relationship is deeply uncertain.

Though the United States will remain at the top of the international hierarchy for the foreseeable future, it is undoubtedly experiencing relative decline, while China is indisputably on the rise. The two titans of the 21st century maintain an uneasy rapport, conscious of each other's power, suspicious of each other's intentions, and covetous of the stature that accompanies global supremacy.

In its approach to China over the past few decades, U.S. leadership has oscillated between dismissive arrogance, sincere cooperation and brazen competition.

Tragic foul-ups, like the Clinton administration's accidental bombing of the Chinese embassy in Belgrade and the in-air collision of a U.S. spy plane with a Chinese fighter jet early in the Bush administration, are seen in Beijing as the hubristic blunders of an intemperate bully. More deliberate taunts continue to this day, exemplified by the Obama administration's pointless opposition to innocuous Chinese initiatives like the Asian Infrastructure Investment Bank, overwrought anxiety toward the Belt and Road Initiative and President Trump's imperious trade war ultimatums.

Yet, on crucial diplomatic and security efforts, from the Six Party Talks and the Paris climate accord to post-9/11 counterterrorism cooperation and the Iran nuclear deal, the United States capitalized on overlapping interests while respecting China's position as a vital global player. Though less than perfect, the bilateral economic relationship has been immensely beneficial to both sides.

However, the U.S. approach at times appears to resemble outright containment. The cutthroat geopolitical undertones of the so-called Pivot to Asia were lost on no one. Washington's attempts to counter Beijing's claims in the South China Sea have, if anything, hardened China's posture. And the Trump administration's blunt confrontational approach seems to have provoked even greater distrust across the Pacific.

Rising powers must be managed carefully. China's growing strength will surely translate into a more ambitious foreign policy, but how we deal with it is up to us.

So far, China shows no inclination toward aggressive territorial conquest. Nor is it clear that a Chinese-led order would differ much on the essentials than the U.S.-led order. Indeed, China's rise is more a threat to America's status as the indispensable nation than any tangible threat to national security.

Many great powers throughout history have let fixations about national prestige thrust them into destructive wars. If the Sino-American relationship is to remain

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peaceful, we must learn to forfeit such superficial pretensions and focus on narrow, concrete security and economic interests. Failure to do so may lock us into a costly cold war that neither country can win.

Trump's Ill-Conceived Trade Nostrums*

By STEVE H. HANKE [*]

As the United States' dangerous trade war with China, and a host of other enemies, ratchets up, it's time to take a close look at the facts under the magnifying glass of economic logic.

In an important respect, this reveals more about the overall economic understanding in the U.S. than it does about the issue of free versus restricted trade. Even though international trade accounts for only a small share of the United States' economic activity, the reasoning used by politicians to formulate international trade policies provides insight into how they formulate domestic policies as well. If command and control, interventionist ideas guide their thinking about international trade, those ideas probably guide their thinking about the domestic economy, too. It is clear, for example, that President Trump's views on international and domestic economic activities are similar. The President likes to run the economic show, as do all central planners.

President Trump, and most in his administration, believe that the U.S. trade deficit is a "bad" thing caused by foreigners who engage in unfair trade practices. For them, the solution is U.S. imposed tariffs and other anti-trade measures. What a nostrum. Our trade deficit is made in the good, old U.S.A., not by foreigners engaging in "unfair" trade practices. Tariffs will not change the overall U.S. trade balance.

How could this be? In economics, identities play an important role. These identities are obtained by equating two different breakdowns of a single aggregate. Identities are interesting, and usually important, by definition. In national income accounting, the following identity can be derived. It is the key to understanding the trade deficit.

(Imports - Exports) $\equiv$ (Investment - Savings) + (Government Spending - Taxes)

Given this identity, which must hold, the trade deficit is equal to the excess of private sector investment minus savings, plus government spending minus tax revenue. So, the counterpart of the trade deficit is the sum of the private sector deficit and the government deficit (federal + state and local). The U.S. trade deficit, therefore, is just the mirror image of what is happening in the U.S. domestic economy. If expenditures in the U.S. exceed the incomes produced, which they do, the excess expenditures will be met by an excess of imports over exports (read: a trade deficit).

The table below shows that U.S. data support the important trade identity. The cumulative trade deficit the U.S. has racked up since 1975 is about $11.154 trillion, and the total investment minus savings deficit is about $10.435 trillion.

So, if tariffs and other anti-trade measures don't affect the overall U.S. trade balance, what do they do? They simply alter the playing field and the bilateral trade

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deficits that the U.S. runs with various countries. The total U.S. trade balance remains unaltered; however, the U.S. consumer is not unaltered. Shifting sources for U.S. imports means that U.S. purchasers will be forced to move away from their first choices to second best choices.

But, how can the U.S. continue to rack up big trade deficits year-after-year? The U.S. can do this by borrowing internationally to finance its trade deficit (read: the domestic savings deficiency). And, because the U.S. dollar is the world's reserve currency, the U.S. can borrow at attractive rates. Indeed, the dollar's reserve currency status gives the U.S. what the former French President Valéry Giscard d'Estaing described as an "exorbitant privilege." This privilege is simple: the issuer of the world's reserve currency and its citizens can borrow "cheap." The privilege works like a charm as long as the reserve currency stays on top. But, kings can be toppled. Remember when the pound sterling was the world's reserve currency? Well, when the pound was replaced by the greenback, the exorbitant privilege baton was passed from the United Kingdom to the United States.

So, while trade deficits have not proven to be a burden while the U.S. dollar is the world's reserve currency, a burden might rear its ugly head if the greenback were to be knocked off its top spot. Here is where the Trump administration's trade policies and its propensity to impose financial sanctions come into the picture. Those policies make the greenback vulnerable. Indeed, sanctions motivate targeted countries to try to find alternatives for the U.S. dollar. If they were able to do so, America's exorbitant privilege might wither away.

Global Economy

Tale of Two Creditors: Political Dynamite Behind Germany's Foreign Assets *

By DAVID MARSH*

At times of economic and financial stress, creditor nations will have the upper hand over debtors. That is conventional wisdom, yet it does not always correspond to reality. Germany has advanced to the position of the world's No.2 net creditor (after Japan), taking over the position during the past 12 months from China, according to data from end-2017 assembled by OMFIF.

The statistics – published in OMFIF's Global Public Investor 2018 – show that China has been more adept than Germany in recent years in adapting its net creditor status to support the country's perceived long-term interests.

Germany's net international investment position – the gap between the value of German investments abroad and that of foreign investments in Germany – rose to $2.21tn at end-2017 from $1.8tn at end-2016, 61% of GDP against 52% 12 months earlier. This compares with China, whose NIIP declined to $1.71tn at end-2017 from $1.8tn (14% against 16% of GDP) and Japan, whose NIIP rose to $3.12tn from $2.99tn (64% against 61%).

China has been moving its foreign surpluses into strategically important equity holdings in infrastructure ventures and technology companies abroad, and away from holdings of other governments' debt. Much of Germany's build-up is in non-interest-bearing, unconditional advances within economic and monetary union – much of which will probably never be fully repaid. These are the so-called Target-2 balances registering claims on and liabilities towards the European Central Bank from constituent national central banks. The German Bundesbank's claims under Target-2 look likely to approach or exceed €1tn as of the end of June, against €956bn at end-May, according to statistics to be released in the next few days.

In this tale of two creditors, China's system of state control and long-term planning is displaying some ostensible benefits.

Economically, Germany's large positive NIIP might bring strength. A rich, aging country like Germany running near-permanent current account surpluses arguably needs large foreign savings, to be run down systematically as it copes with future demographic decline.

Politically, though, Germany's large foreign assets represent dynamite that could explode against the country's own interests. This is because Germany is the largest

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asset owner in a potentially highly unstable nexus of 19 European debtor and creditor EMU members.

Italy, the largest EMU debtor, has a eurosceptic government that is using its Target-2 liabilities as leverage over Germany. The aim is to push through demands for a softening of European financial and monetary conditions and to take pressure off undue migration into Italy that Rome blames for exacerbating social and economic tensions.

One of the principal arguments behind a high-profile German constitutional court case being brought against the ECB's quantitative easing programme by well-funded plaintiffs is that the danger of government bond defaults in Europe exposes the Germans to unacceptable budgetary risks. Linked to the lawsuit at the German constitutional court, which the German constitutional judges appear to be taking very seriously, the European Court of Justice is organising a public hearing on the matter in Luxembourg on 10 July.

The issue at the heart of the court case – the risk of QE-related losses to German taxpayers – has been brought into dramatic relief by policy statements from politicians connected to Rome's two new governmental parties, the League and Five Star Movement.

Target-2 balances are the bedrock of Germany's overall net foreign assets that, according to Bundesbank figures, totalled €1.93tn at end-2017 against €1.7tn at end-2016, €1.46tn at end-2015 and only €471bn in 2007 before the financial crisis. When EMU started in 1999, Germany had virtually no net foreign assets, since it had run down its previous large foreign savings to help finance German reunification.

China, by contrast, has turned to foreign direct investment and portfolio investment as important vehicles for deploying Beijing's international reserves. China has financed infrastructure projects abroad, including in countries connected to Beijing's Belt and Road initiative, as well as resource-rich economies in Africa and Latin America. China has already invested heavily in real estate and technology in advanced economies, particularly in Europe. This trend is reflected in the impressive growth of Chinese FDI assets over the past decade to around $1.5tn in 2017 from just $115bn in 2007.

Financial historians in coming years may puzzle over an intriguing conundrum: which of the world's No.2 and No.3 creditor nations has deployed their foreign reserves more wisely during the years since the financial crisis. On present showing, China may have the stronger hand.

Making Returns on Knowledge: How Innovation Can Flow from Globalisation*

By OTAVIANO CANUTO*

The April issue of the International Monetary Fund's World Economic Outlook included a chapter on how globalisation has helped technology leaders' knowledge spread faster. Cross-border technological diffusion has not only contributed to rising domestic productivity levels in advanced and emerging economies, but also facilitated a partial reshaping of the innovation landscape. Some recipient countries have become significant new sources of research and development as well as patents.

More trade, foreign direct investment and international use of patents have disseminated knowledge and technology across borders. This diffusion can lead to increases in average outputs at relatively low costs. Knowledge flows from abroad can have an impact both on productivity, through the adoption of foreign technologies in the production process, and on innovation, when combined with domestic R&D. The WEO estimates that in emerging market economies, 'from 2004 to 2014, foreign knowledge accounted for about 0.7 percentage point of labour productivity growth a year, or 40% of observed sectoral productivity growth, compared with 0.4 percentage point annual growth during 1995-2003'. According to the report, these results remain robust even when China is excluded, indicating that productivity effects were broad-based among emerging market economies.

International sources of technological innovation are changing, as R&D expenditures skyrocket in China and stocks of international patents pile up in South Korea. These countries have joined traditional leaders in sectors such as electrical and optical equipment and, especially South Korea, machinery.

This has happened even as, since the early 2000s, frontier economies have gone through a slowdown in the increase of labour and total factor productivity, a measure of how efficiently inputs are being used in the production process. These economies have also experienced slower growth in patenting and, to some extent, lower R&D investment.

The WEO highlights the positive effects of heightened international competition on innovation and technological diffusion. This could be considered an additional channel through which globalisation is reinforcing incentives to innovate and adopt technologies from abroad.

Simple interconnectedness does not automatically spark productivity increases and local innovation. Any application of technology needs locally specific content that cannot be acquired or transferred by means of textbooks or other codifiable forms of knowledge transmission. This knowledge cannot be made explicit, such as

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through the use of blueprints, and thus cannot be perfectly diffused as either public information or private property. It must be developed locally.

Production, technology adoption and invention require a relatively high level of such idiosyncratic knowledge and local capabilities. It is typical for latecomers to start from production and technological adoption and only then move on to invention. That has been the case in South Korea and China. These countries are developing their innovation capabilities after intense learning through using and adapting existing technologies.

Success depends on access to finance, infrastructure, skilled labour, and good managerial and organisational practices. In the absence of these factors, returns from investing in the development of capabilities are likely to be low. Solutions must be found to market failures that generate disincentives to the accumulation of knowledge. The transaction costs associated with doing business, such as trading across borders, hiring and enforcing contracts, also cannot be too high.

This beneficial environment is not widespread, which is why there have not been large changes in the international innovation landscape. It also explains what Xavier Cirera and William Maloney, economists at the World Bank, have called the innovation paradox. Low levels of innovation-related investment in developing economies do not correlate with the high returns thought to accompany technological adoption and catch-up. Globalisation may spread knowledge. Profiting fully from that knowledge requires a further effort.

Crude Oil's Relentless Price Climb*

By STEVE H. HANKE*

When taking a glance at the performance of investments in stocks, currencies, and commodities — which is compiled by the Wall Street Journal for the second quarter of 2018 — one is struck by the fact that all of the top five performers were commodities. Lean hogs took the top honors, followed by crude oil.

Crude's position didn't surprise me. Way back in February 2016 — when West Texas Intermediate (WTI) was trading at $26/bbl. — I was confident that crude oil would make a relentless climb. How could I have been so confident then, and confident now, that today's WTI price of $69.50/bbl. will climb to $75/bbl. by year's end?

To answer these questions, we must have a model — a way of thinking about the problem. In this case, the starting point is Roy W. Jastram's classic study, The Golden Constant: The English and American Experience 1560-2007. In that work, Jastram finds that gold maintains its purchasing power over long periods of time, with the prices of other commodities adapting to the price of gold.

Taking the broad lead from Jastram, I developed a model that employs the price of gold as a long-term benchmark for the price of oil. So, if the price of oil changes dramatically, the ratio of the oil price to the price of gold (the oil-gold price ratio) will change and move away from its long-term value. Forces will then be set in motion to move supply and demand, so that the price of oil changes and the long-term oil-gold price ratio is re-established. This represents nothing more than a reversion to the mean. And the mean value for the oil-gold ratio, which is calculated by dividing the price of a barrel of oil by the price of an ounce of gold.

In support of this model, it is worth pointing out that a free-market economic system is an organism, and operates as such. Each organism is organized to maintain a certain "state" of homeostatis, to borrow a term from physiology. Any disturbance from the equilibrium sets in motion behavior within the organism which tends to re-establish the desired state of equilibrium. For example, the human body has a complex physiochemical equilibrium, which involves, among other things, a constant body temperature. If the equilibrium is disturbed, the body acts to restore the homeostatis or equilibrium.

There is a homeostatis in the structure of commodity prices, too. Any disturbance in this structure, which is anchored with the price of gold, sets in motion forces which will restore the status quo. So, the homeostasis of the commodity price system explains why the oil-gold price ratio reverts back to its mean of 0.0704 when the ratio has been disturbed.

The easiest, and best, way to determine whether a disturbance has occurred in the oil-gold price ratio is to construct a histogram of the ratios. The histogram below

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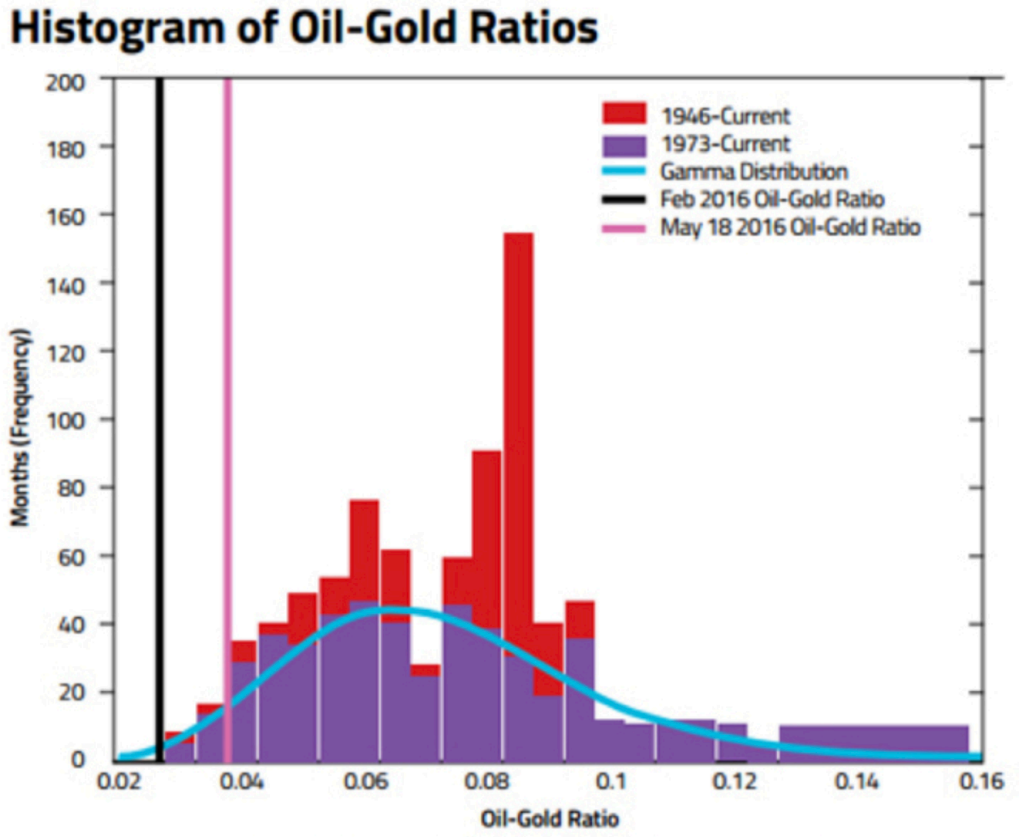
shows that when the oil price collapsed to $26/bbl. in February 2016, the oil-gold price ratio plunged, too. Indeed, it moved to 0.021, which is way to the left of the distribution of the oil-gold price ratios on the histogram. With that extreme reading of the ratio, we knew that forces would kick in to restore the homeostatis of the commodity price structure. In short, the oil-gold price ratio would start reverting to its mean, with most of the work being done by price increases in oil.



Sources: "Historical Data-Crude Oil" Historical Data-Energy. CRB, n.d Web.26 Apr 2016. <http://www.orbtrader.com/marketdata/energy.asp>. "Historical Data-Gold." Historical Data-Metals and Plastics. CRB, n.d. Web. 26 Apr. 2016. <http://www.orbtrader.com/marketdata/pro_metals.asp>.

Calculations by Prof. Steve H. Hanke, The Johns Hopkins University

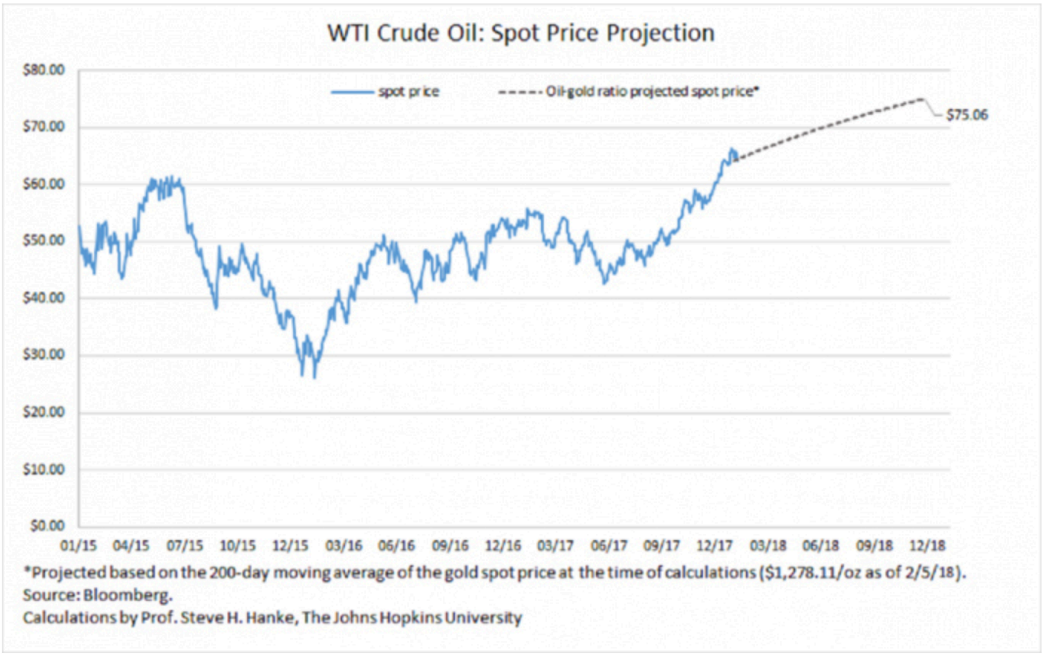
Just what forces kicked in to start crude's relentless price climb and force the oil-gold price ratio to revert back to its mean? Well, at bargain basement prices, the quantity of crude demanded increased. And, on the supply side, the major oil companies slashed capital expenditures for drilling and exploration. The majors reined in their capital spending appetites by 40-50%. Indeed, now few mega projects are on the drawing boards. Not surprisingly, oil and gas field discoveries are at a 60-year low. So, the disturbance of the homeostatis set in motion supply-demand forces to restore the status quo.

To understand the adjustment, consider my old Professor Ken Boulding's Bathtub Theorem: If production (the flow from the faucet) is less than consumption (the flow down the drain), it is clear that the oil in inventory (the economic bathtub) must fall.

That's just what's been going on as the oil-gold price ratio re-establishes itself and reverts towards its homeostatis.

But, how long will it take for the ratio to mean revert? My calculations (based on post-1972 data) are that a 50 percent reversion of the ratio will occur in 12.3 months. This translates into a price per barrel of WTI of $75 by January 2019. It is worth noting that, like Jastram, I find that oil prices have reverted to the long-run price of gold, rather than the price of gold reverting to that of oil. So, the oil-gold price ratio primarily reverts to its mean via changes in the price of oil.

At present, the oil-gold price ratio is 0.05581 ($69.59/$1247=0.05581), suggesting that oil's relentless bull market has a way to run, as the chart below shows.



US Fiscal Policy May Burst Asset Bubble: Painful Repricing of Credit Will Damage Emerging Markets*

By DESMOND LACHMAN*

Last year, President Donald Trump opted for a highly expansionary budget policy stance at a time when the US economy was at or beyond full employment. In 2018, ignoring economic troubles abroad, the administration is reinforcing its commitment to 'America first' policies, raising the risk of retaliation from trade partners.

The principles of sound budget management dictate that while budget deficits might be helpful during times of economic weakness, they should not be tolerated in times of strength. If not, the government's debt would be on an ever increasing path. In addition, as the budget deficit widens during times of strength, the government would not have the room for fiscal policy stimulus in times of weakness.

Seemingly oblivious to these principles, the Trump administration opted in 2017 for an unfunded tax cut that will increase the public debt by an estimated $1.5tn over the next decade. The administration also assented to a $300bn congressional increase in public spending.

Years of easy monetary policy by the world's major central banks have led to overvaluation in global equity and housing markets. At the same time, ample global liquidity has caused credit risk to be seriously mispriced around the world.

Pursuing expansionary fiscal policy risks causing long-term interest rates to rise sharply. As the Federal Reserve shrinks its bloated balance sheet, an increase in the US budget deficit is bound to push long-term rates markedly higher.

That threatens to burst asset price bubbles and could lead to a painful repricing of credit around the world. It risks suddenly halting capital flows to emerging markets. That could be especially damaging for countries like Argentina, Brazil, Indonesia, South Africa and Turkey.

Escalation in Trump's protectionist posturing on trade policy further exacerbates already tense global conditions. This goes well beyond taking punitive trade actions against China, where such measures might well be justified. Rather, it includes the imposition of steel and aluminium import tariffs on US allies in the Americas and Europe. It also includes the adoption of a much tougher stance in negotiations around the North American Free Trade Agreement, an antipathy towards trade agreements in general, and the threat of much higher tariffs on imports of German cars.

The reason given for increasing import tariffs is that the administration wishes to eliminate the country's trade deficit. But this contradicts its expansionary budget policy.

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* This article first appeared in OMFIF Commentary on July 2, 2018.

* Desmond Lachman is a Resident Fellow at the American Enterprise Institute.

If there is one point on which almost all economists can agree, it is that a country's trade balance is arithmetically the difference between its savings and its investment rates. By following policies that increase the budget deficit and reduce the country's savings rate, Washington is increasing the probability that the US will return to the twin deficit problem of the 1980s. That, in turn, raises the chances that the administration will intensify its protectionist stance on trade policy when the country's trade deficit widens.

The timing of Washington's beggar-thy-neighbour policies is especially unfortunate for Europe. At a time when developments in Italy threaten the return of the European sovereign debt crisis, the last thing the region needs is a trade war with the US that might further undermine investor confidence.

If Trump's budget and trade policies trigger a global economic recession, the US will hopefully be compelled to co-operate with trade partners to promote a quick recovery. However, such optimism seems misplaced in the light of the administration's major macroeconomic mistakes and high-handed treatment of US allies.

End of the 'Flat World': Regionally-Ordered Trading Systems Likely to Emerge*

By DAVID SKILLING*

Emerging market currencies and equity markets have been in sharp decline, in large part because of stresses associated with a strengthening dollar. Revised US GDP growth was 4.2% annualised in the second quarter, with an expectation of continuing Federal Reserve policy normalisation. Combined with action and rhetoric from the White House, from tariffs and sanctions to military alliances, it may appear that the rest of the world revolves around Washington.

But tectonic plates are moving below these headlines. A few years before the 2008 financial crisis, journalist Tom Friedman captured the zeitgeist with his argument that 'the world is flat', or that all competitors in the global economy have an equal opportunity to succeed. But if it was once possible to argue that (Western-led) politics and technology were creating a flat world, today they are combining to create a more lumpy, multipolar system.

Negotiations on the North American Free Trade Agreement offer a clear example. One interpretation of where talks are heading is towards a more regionally-ordered trading system. The proposed rules of origin standards, with minimum requirements on wages, are likely to increase pressure for more production within Nafta. The proposed terms may accelerate the onshoring of supply chains from Asia to North America for American consumption, particularly for activities that can use new technologies such as automation or 3D printing. Despite President Donald Trump's efforts to build his wall on the Mexican border, the conclusion is likely to be a more self-contained North American economic unit.

This regional focus is reinforced by Washington's withdrawal from the Trans-Pacific Partnership. This would have embedded the US in a broader set of economic arrangements. And the threat of US tariffs on imports from Europe would further promote a more regional focus.

The second development that speaks to growing fragmentation is pushback from Europe to the unilateral use of sanctions by the US. One recent example was Washington subjecting European firms to secondary sanctions if they continued doing business with Iran. The US could do this because of its economic weight and centrality to the global financial system.

Heiko Maas, Germany's foreign minister, recently floated an idea for a separate payments system that would be independent of the US. Although Chancellor Angela Merkel has distanced herself from these comments, there is some support in Europe. French Finance Minister Bruno Le Maire said at the end of August he wants 'Europe

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* This article first appeared in OMFIF Commentary on October 5, 2018.

* David Skilling is Director of the Landfall Strategy Group, a Singapore-based economic advisory firm.

to be a sovereign continent not a vassal, and that means having totally independent financing instruments that do not today exist'.

This is, at best, a long-term journey. The dollar dominates international transactions and comprises around two-thirds of global reserves. As with security arrangements, Europe cannot realistically create a financial system that is independent of the US in the short term. But the fact that this conversation is starting is instructive. It is also consistent with Beijing's preference for a more diversified global financial system that is less reliant on the dollar.

The third development highlights the growing intersection between economic and political relationships. The ambition of China's global positioning was apparent when President Xi Jinping announced at the beginning of September an additional $60bn of loans and financing for African countries.

But limitations are apparent. The Australian government found time between unseating another prime minister to ban – on national security grounds – Chinese corporations Huawei and ZTE from participating in the rollout of Australia's 5G network. The new Malaysian government has cancelled several Chinese infrastructure projects. In India, ministers continue to raise concerns about the extent of Beijing's influence in Sri Lanka, Pakistan and Bangladesh.

However, the growing intersection of international economics and politics that is clear in China's rise will reinforce a regional bias to activity, with an increasing share of international commerce being shaped by strategic relationships. Although there are some advantages to a more diversified global system, there will be frictions as global footprints of firms and countries restructure.

This will have a profound effect on markets and economies. Previous episodes of great power transition have led to gradual changes in global institutions from reserve currencies to international trading arrangements. US belligerence and poor quality policy-making are accelerating this process. Although the US remains central to the global system, competition is emerging.

China

Where is the Bottom*

By HONG HAO*

Amid a chorus call to "bottom fishing", the Chinese market has prominently violated its uptrend since its bottom in mid-2014. With more restrictions on property purchase to curb the property bubble and liquidity from PSL retrenched, it is difficult to concur with the consensus that the market has arrived at its eventual bottom.

Our doubts have been that market bottom calls based on the most publicly observable valuation multiples are too obvious to offer value, except probably for comforting the portfolios that have been hurt. A recent report prepared by a prominent academic reveals that the market leverage by stock pledge may have amounted to RMB 6 trillion, a similar level to that during the 2015 stock market bubble.

While sell-side sentiment is almost uniformly bullish, buy-side still has high levels of stock holdings and little cash to deploy for bottom fishing. The restriction to force liquidate such leverage even if it fails margin calls may have coaxed small retail investors to front run the large stockholders to sell first. As such, the selling pressure on the market is induced by factors beyond fundamentals. Even if the market is technically oversold, sentiment is low and valuation is cheaper, we continue to believe that any rebound will be transient. Investors should hold out for better entry points later, and should dodge the ambush selling from anywhere because of liquidity.

The Chinese property market is a clear bubble, and is limiting policy choices at this critical juncture. At a 40% down payment, the deposits of RMB 125 trillion held by Chinese households and corporates can buy property worth just above RMB 300 trillion – a figure that is consistent with our estimate of the value of China's property stock. This simple calculation shows that the valuation of Chinese property is stretched. We have seen the limits of monetary policy. Fiscal policies, such as large tax cuts, and re-planning the source of taxation to re-allocate social resources, should be applied to fill the blanks where monetary policy cannot.

Where is the Bottom?

*This article appeared in the author's WeChat public account (ID: Honghaochinastrategy) on July 3, 2018.

* Hong Hao, Senior Research Fellow of IMI, Managing Director and Head of Research, BOCOM International.

Shanghai Composite's significant uptrend violation. Amid a chorus call to "bottom fishing", the Shanghai Composite plunged through the lower bound of our trading range of 2800 forecasted last December ("Outlook 2018: View from the Peak" 20171204). More surprisingly, the SSE50 blue chip index, comprising the once so-called China's "Nifty Fifty" stocks, has prominently violated its rising trend line since its bottom in 2014, and is firmly below the 200-day moving average (Figure 1).

Figure 1: SSE50 blue chip index has violated its uptrend, and is breaking down

The property sector weighing on the market. News flow on the property sector has been particularly negative. PSL by CDB to fund shantytown reconstruction will change to physical resettlement based, instead of cash based. These loans, totally amounting to around RMB 5-6 trillion, have been an important driver of property price bubble, especially in the lower-tier cities.

There are also data showing that only 20% of the households who received cash for the shantytown reconstruction project had opted to buy new property. If so, this cash could have been an important source for the 2015 stock market bubble. Recently, Changsha has extended the holding period to five years after property purchase. Some cities have forbidden property purchase by companies. Other cities where property price has surged could follow suit with their own curbs, in an effort to cool property speculation.

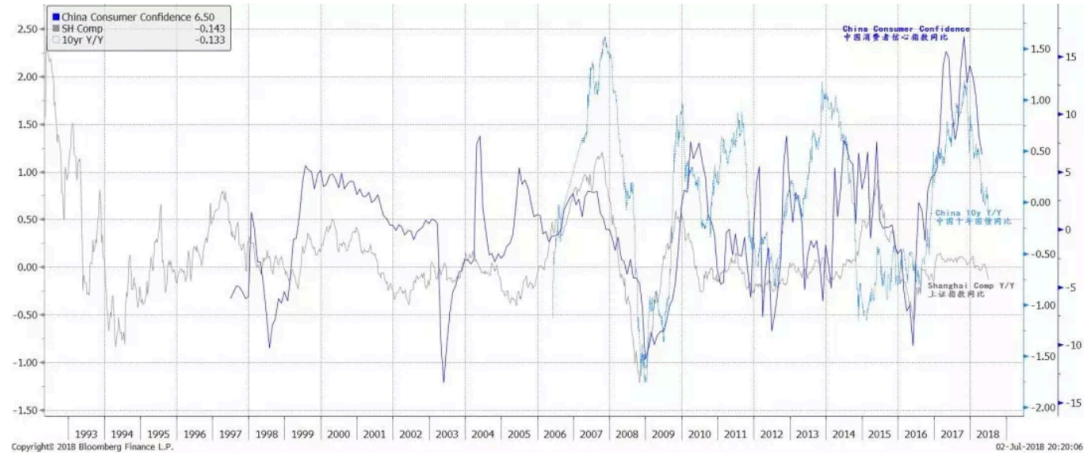
Once the expectation for further gain has turned, it is possible to see waves of property liquidations. Already in Tongzhou, a county neighboring Beijing, the list price of a property on sale has been revised down by 50%. And the mob was so furious that it surrounded the sales office to get even.

We estimated that the value of China's property stock to be between RMB 300-350 trillion. Assuming Chinese households and corporates apply its total deposit of RMB 125 trillion to pay for all the property inventory with a 40% down payment, the total value of such hypothetical transaction would be just above RMB 300 trillion. This back-of-envelope calculation suggests that Chinese property value is indeed stretched. And regulators must act decisively now.

The property bubble has started to erode consumer confidence, as seen in Figure 2. The latest consumption growth data and consumer loan data show that consumption,

one of the important pillars for Chinese growth in recent quarters, is decelerating fast. And consumer loans, too. The aftermath of the property bubble is palpable.

Figure 2: China's consumer confidence falling from record high, auguring falling bond yields and stocks



Structural liquidity issues with the market. Even so, the rapid deterioration of the Shanghai Composite, especially the SSE50 blue chip index, suggests that something beyond the weakening fundamentals is affecting the market. Since a few weeks ago when the Shanghai Composite was lingering above 3,000, consensus has been referring to the substantially cheapened valuation as the reason for a market bottom.

Our doubts have been that the sell-side sentiment is too bullish for an eventual market bottom. And the buy side, while cautious, still has substantial stock holdings in their portfolios and has little cash to deploy, as the market has been plunging too fast for many to react. Market bottom calls based on the most observable valuation multiples tend to be somewhat hasty.

Our sentiment model suggests that, while the market has substantially scaled back its risk appetite, it is not depressed to its extremes as seen in previous bottoms. For instance, the turnover rate of the SSE50 is still too fast at about its long-term average, and is inconsistent with the typical levels of an eventual market bottom (Figure 3). If the blue chips, which make up 50% of the total market capitalization, will be struggling to find a bottom, so will the overall market. Meanwhile, the Smart Money Index has plunged further to a level that tends to augur impending market crisis (Figure 4).

Figure 3: Turnover rate of SSE50 is still too fast to suggest a sustainable rebound

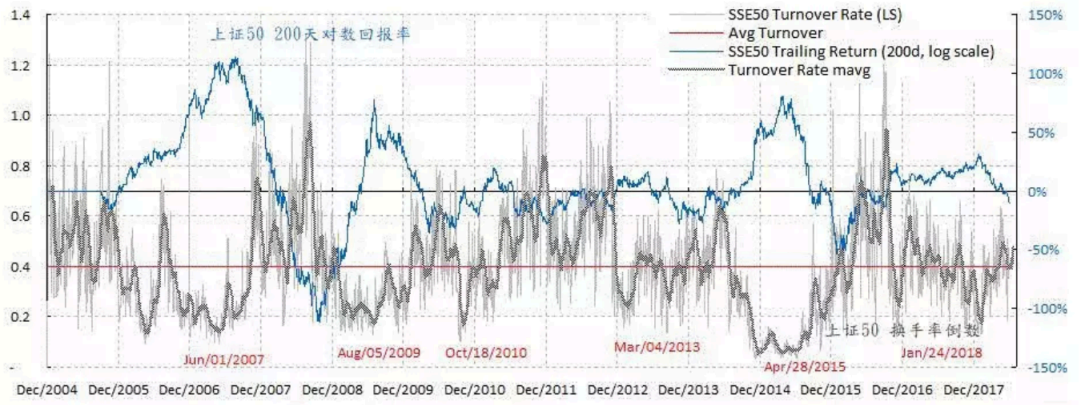
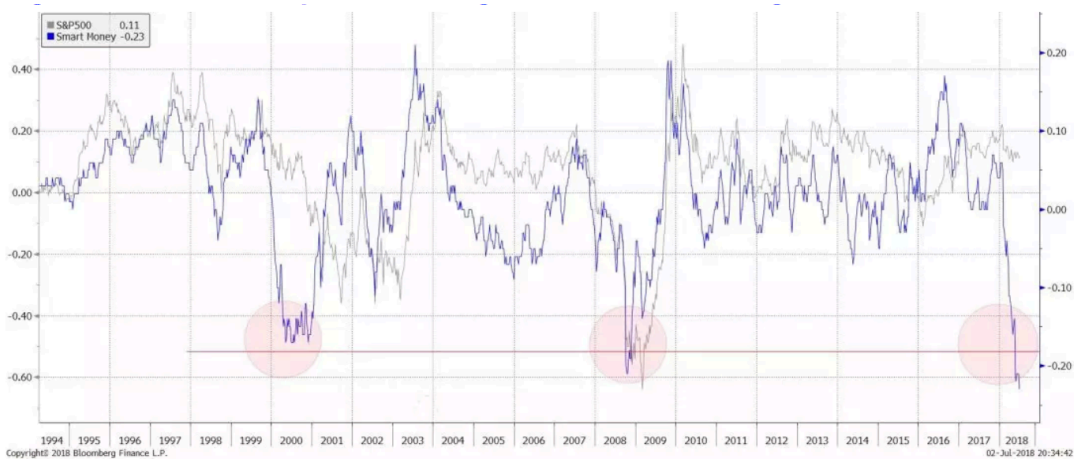


Figure 4: Smart money's continuing exodus is foreboding



Be patient for a better entry point later. As such, the sell-off is probably induced by trading structure. A recent report drafted by a prominent Chinese academic that warned of a potential financial crisis highlighted that the leverage in the stock market through stock pledge can amount to RMB 5-6 trillion, a similar level to its highs during the 2015 stock market bubble. Such observations seem to be consistent with the recent startling market movements. The concerns about stock market leverage can also explain why forced liquidation of loans backed by stock pledge was stopped by the authority at midnight a few weeks ago. Meanwhile, these trading restrictions may have coaxed the small retail investors to sell and front-run the large shareholders.

If so, even if the market is technically oversold, sentiment is low and valuation is cheaper, it is still too early to catch falling knives, as there will be further selling for structural liquidity reasons from anywhere. At times like these, technical rebounds will be fleeting, and investors should hold out for better entry points later.

China Economic Outlook—Third quarter*

By DONG JINYUE AND XIA LE*

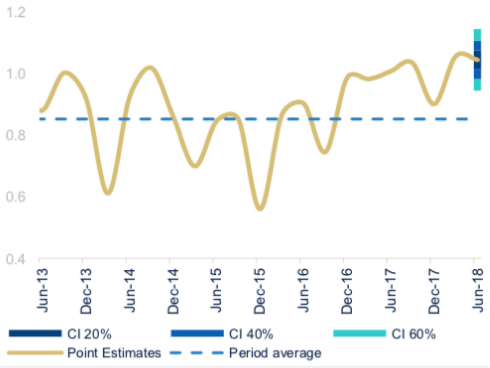
1. Robust growth but with certain signs of moderation and intensification of risks

The international economy continues to be subject to tensions of disparate forces between the good economic performance in recent quarters, now prolonged by the fiscal stimulus of the US economy and the stability of the Chinese economy, and several potentially negative factors that have been generated gradually in the first half of this year but which so far have not been directly reflected in activity. Both the Federal Reserve (Fed) and the European Central Bank (ECB) have taken a further step towards normalization of monetary policy, which suggests somewhat less accommodative conditions, although the increasing financial tensions that have been generated in emerging economies as a result of the appreciation of the dollar seem to correspond more to a reassessment of risk than to a systemic threat. Oil prices have stabilized after a marked increase so far this year. The main risk is protectionism, which has increased in recent weeks with the measures and countermeasures that have been announced, and whose effect on activity could manifest in the second half of the year.

Data available up to May suggest that global growth could have slowed slightly in the second quarter of the year (BBVA-GAIN: 1% quarterly after 1.1% in 1Q18) (see Chart 1.1) and show mixed signals for both areas and sectors. Although the pace of expansion remains solid, it is occurring in a less synchronized manner, with accelerating growth in the US that contrasts with certain signs of moderation in China and some emerging economies and in a more pronounced way in the Eurozone.

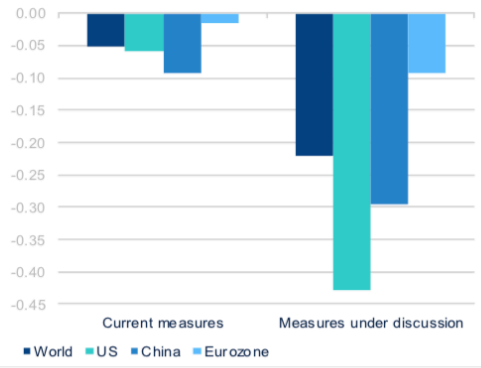
*This article first appeared in BBVA Research on July 20, 2018.
* Dong Jinyue, China Economist, BBVA. Xia Le, Senior Research Fellow of IMI, Chief Economist for Asia, BBVA.

Chart 1.1 World GDP growth
(QoQ, %)



Source: BBVA Research

Chart 1.2 Effect on GDP growth due to US tariff hikes and the response of other countries (2018-19, pp)



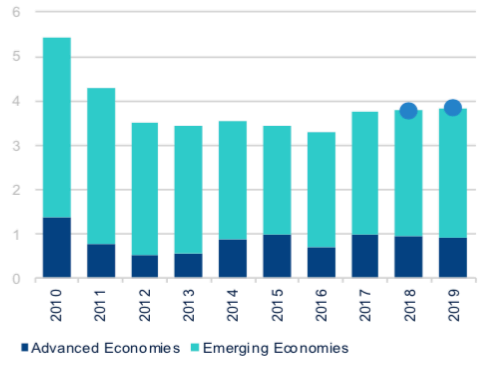
Source: BBVA Research

The increased growth of the US economy, driven by fiscal measures and the recovery of global trade at the beginning of the year, continues to sustain the strength of the global recovery. However, some of the supports to growth have been fading in the last few years, while uncertainty has increased.

Chart 1.3 Euro-dollar exchange rate and BBVA index of financial tensions in emerging markets

Source: BBVA Research with Bloomberg data

Chart 1.4 World GDP growth forecasts
(% YoY)



Source: BBVA Research

World growth forecasts remain unchanged, supported by solid US growth despite the slowdown in other areas

The global forecasts for the next two years remain at 3.8% (see Chart 1.4). Nevertheless, the lower degree of synchronization observed recently is reflected in a downward revision in the growth expected for 2018-19 for both the Eurozone and South America (mainly Argentina and Brazil), while we maintain the forecasts for the coming years in US and China, after recording a good economic performance in the first part of the year and with the fundamentals still being solid for domestic demand.

In the Eurozone, after the negative surprise in GDP growth in the first quarter, we now expect a faster convergence towards more moderate growth rates. In particular,

we revised the growth forecast for 2018 downwards by 0.3 pp to 2%, while we continue to expect a moderation of the cyclical momentum in 2019, reaching 1.7%. This downward revision in the forecasts is mainly explained by lower trade and higher inflation (due to the rise in the price of oil), to which we must add the growing political uncertainty. However, despite the above, domestic demand will continue to contribute to growth both this year and next, supported by employment growth, a still accommodative monetary policy, and a slightly expansive fiscal policy.

2. Growth moderation in Q2 amid trade war and domestic deleveraging

2018 Q2 GDP moderated to 6.7% y/y amid the trade war and domestic deleveraging, down from the previous reading at 6.8% y/y and in line with the market consensus. In particular, the outturns of trade, industrial production and investment are all below the market expectations and the previous readings. Growth headwinds are mainly from domestic deleveraging initiatives and trade war with the US externally. That being said, the growth is most likely to moderate through the rest of the year. Thus, we maintain our 2018 growth projection of 6.3% y/y, compared with the official target growth rate at 6.5% and the Bloomberg consensus at 6.5%.

Facing two battles at the same time, the authorities fine-tuned their previously tightening monetary policy in order to support growth. These fine-tuned policies included cutting the reserve requirement ratio, expanding the range of pledged assets for commercial banks to apply for Mid-term lending facilities (MLF) from the PBoC and delaying the release of new regulations for banks' wealth management products (WMPs). In addition, Chinese authorities also announced a series of new opening-up policies amid the trade war risk.

Fiscal policy will remain expansionary to offset the financial tightening and capacity reduction as well as the trade war. Several tax cut schemes were announced recently, including making interest payments on mortgage loans, and education as well as training and medical expenses tax deductible, lowering tax for manufacturing and some other industries, etc. However, the government announced to reduce fiscal budget deficit to a certain degree so that fiscal budget deficit to GDP ratio will be around 2.6%, which is 0.4% lower than the previous arrangement in 2017.

The trade-war between the US and China finally exploded, adding more uncertainties on China's economic growth. The US President Trump finally implemented a series of tariff on China's exports to the US and China also stroke back with levying tariff on imports from the US.

We predict that the China-US trade war will last for the following months until the mid-term election of the US because the political conflicts among the US top politicians play an important role in the length and the depth of this war. On the other hand, although the trade war between the two largest economies will not end soon, a full-blown China-US trade war is not our baseline scenario, in other words, we believe the trade war will be still at a manageable level.

Altogether, in our baseline scenario, we generally forecast a 0.2-0.3% GDP declining will be for China this year while a much less growth impact on the US which is almost ignorable. However, if the trade war escalated to a full-blown level, it will have much larger impact on the economy in both countries and have a negative spillover effect to other regions on the global value chain. Thus, we expect China and the US will eventually reach an agreement to avert a trade war between the two largest economies.

Moreover, China is expected to push forward deleveraging in over-capacity industries as well as in the financial sector. However, facing the two battles both domestically and externally; Chinese authorities also need to balance the policies to stimulate growth and to continue the domestic deleveraging. Other important items on China's reform agenda including SOE reforms, financial regulatory framework etc. to strengthen the domestic demand in the long term.

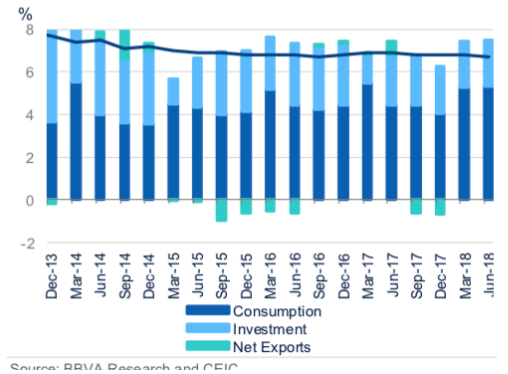
Q2 activity indicators point to a growth moderation

The 2018 Q2 GDP outturn moderated to 6.7% y/y, in line with the market expectation and below the previous quarter's reading at 6.8% y/y. Sequentially, GDP expanded at 1.8% q/q, compared with 1.6% q/q in the first quarter. By category, the contribution of consumption to GDP growth reached 5.34%, dominating the investment's contribution at 2.14% and net exports' at -0.67%. The net exports make a negative contribution to the total GDP growth amid the trade war with the US, indicating a deteriorate external balance. Altogether, it suggested the structural upgrading of growth is on the way. (Figure 2.1)

Our MICA model yields a monthly GDP estimate at 6.7% which moderated from its last month's prediction at 6.8%, basically in line with the Q2 GDP outturn. (Figure 2.2)

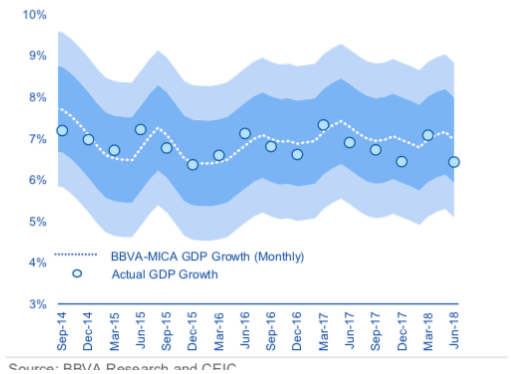
Q2 economic indicators were mostly below the market expectations and the previous readings. In particular, the outturns of trade, industrial production and investment moderated. The lackluster performance of Q2 economy indicated that growth headwinds remain in place, mainly from domestic deleveraging initiatives and trade war with the US. That being said, the growth is most likely to moderate through the rest of the year. Thus, we maintain our 2018 growth projection of 6.3% y/y, compared with the official target growth rate at 6.5% and the Bloomberg consensus at 6.5%.

Chart 2.1 Growth moderated in Q2, with consumption contributed most



Source: BBVA Research and CEIC

Chart 2.2 BBVA MICA model for monthly GDP forecasting



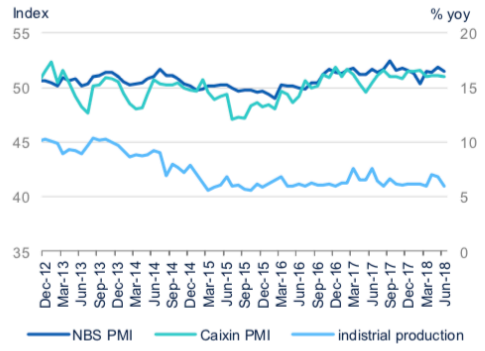
Source: BBVA Research and CEIC

On the supply side, activity indicators suggested a growth moderation in Q2. Industrial production slowed down significantly to 6% y/y from 6.8% y/y of the previous month (consensus: 6.5% y/y). Meanwhile, the different indicators of producers' sentiment of June also hinted growth moderation. China's official manufacturing PMI decreased to 51.5 in June from 51.9 in the previous month (Consensus: 51.6), while the Caixin China Manufacturing PMI, which includes a survey sample tilting toward SMEs and exporters, moderated to 51 in June (versus consensus 51.1) from 51.1 in the previous month (Figure 2.3). The slowdown of both the official PMI and Caixin PMI reflected headwinds to China's export sector amid the trade war with the US as well as the lackluster domestic demand.

The demand side was also subdued in June. Retail sales growth, although increased to 9% y/y from the previous month's reading of 8.5% y/y, still remained at a relatively low level compared with the H1 2018 and the performance of the previous year. (Figure 2.4) The slowdown was led by auto sales growth, which had a negative expansion at -7% y/y in June due to the expiration of fiscal subsidy for passenger car purchase. The silver lining is the rapid growth of online sales, surging 29.8% y/y in the first half of this year, substantially surpassing the aggregate retail sales growth at 9.4% in H1, indicating that the rising new economy leads growth.

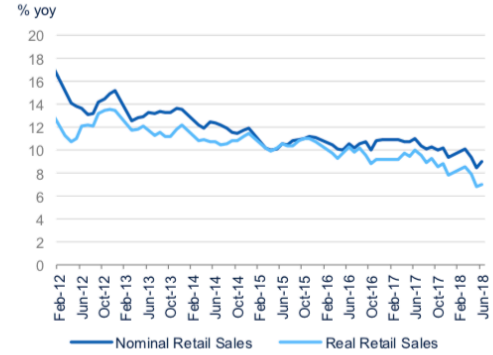
Meanwhile, fixed Asset Investment declined to 6% ytd y/y from 6.1% ytd y/y (consensus: 6% ytd y/y), indicating investment growth also moderated amid the external trade war and the domestic deleveraging measures. (Figure 2.5) In addition, the growth of public investment shrank significantly to 3% ytd y/y in June from 7.1% ytd y/y in the previous quarter, suggesting the deleveraging initiatives in financial sector also dragged on public FAI. On the other hand, private FAI also declined to 8.4% ytd y/y from 8.9% ytd y/y of the last quarter, implying a more passive sentiments among the private enterprises in the growth moderation. (Figure 2.6)

Chart 2.3 Both industrial production and PMIs suggested a growth moderation



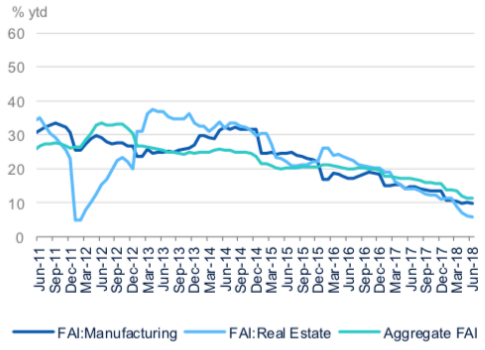
Source: BBVA Research and CEIC

Chart 2.4 Retail sales increased marginally but still stayed in a relatively low level



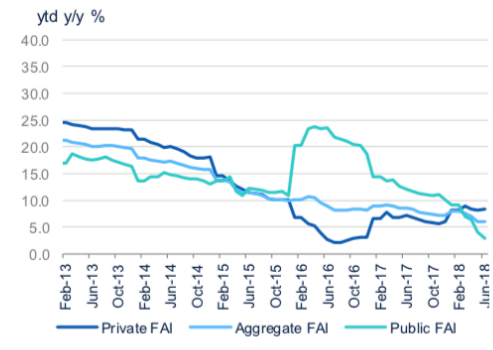
Source: BBVA Research and CEIC

Chart 2.5 FAI also moderated from the previous reading



Source: BBVA Research and CEIC

Chart 2.6 Public investment shrank significantly due to the deleveraging initiatives in financial and real sector



Source: BBVA Research and CEIC

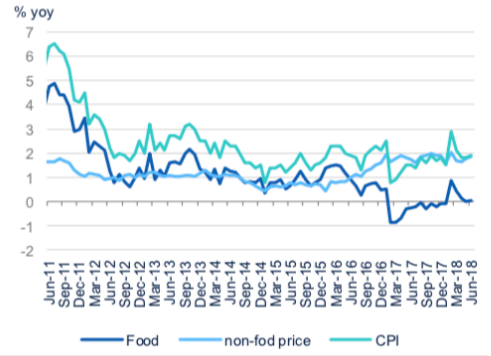
PPI increased again while CPI remained tame

Headline CPI inflation picked up marginally to 1.9% y/y in June from 1.8% in the previous month, still in the comparatively low territory which is in line with the market consensus. The low level of CPI is mainly due to the recent economic slowdown amid the external shock and domestic growth headwinds. In particular, the low CPI inflation was driven by low food prices growth which only increased by 0.3% y/y, although the non-food price growth reached 2.2% y/y in June. (Figure 2.7) From the positive perspective, low CPI growth provides much policy room for the authorities to fine-tune their monetary policy to support growth.

On the other hand, PPI increased significantly to 4.7% y/y in June from 4.1% in the previous month (Consensus: 4.5%), as the disruption from supply-side deleveraging continues which pushed up the upstream industrial prices. (Figure 2.8) That being said, the diverging pattern of CPI and PPI might last for the following months.

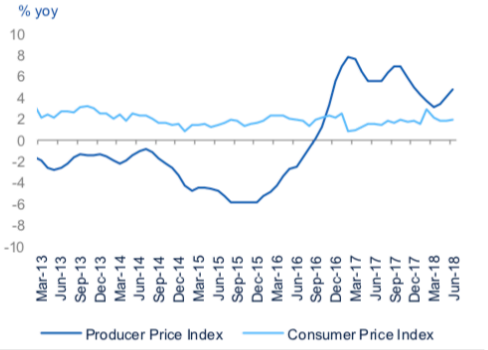
However, in the medium to long term, CPI is expected to trend up gradually after the food-prices rebound from the previous low level. Meanwhile, the PPI will gradually slow its pace as the supply-side reform dissipates. Thus, supply-side shocks caused by overcapacity elimination are likely to have diminishing marginal impact on price levels as investors have already factored it into their expectations.

Chart 2.7 CPI picked up marginally in June but still remained at a low level



Source: BBVA Research and CEIC

Chart 2.8 PPI and CPI has diverged in the recent months



Source: BBVA Research and CEIC

The authorities fine-tuned the previous tightening monetary policy amid the trade war and domestic deleveraging

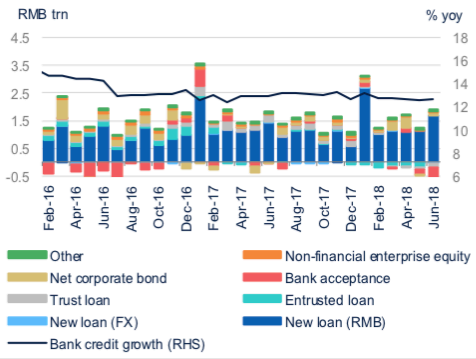
In front of the growth moderation amid the trade war and domestic deleveraging, the authorities fine-tuned their monetary policy to support the economic growth.

In particular, the growth of new loans and total social financing expanded in June: total social financing increased to RMB 1,180 billion (prior: RMB 760.8 billion; consensus: RMB 1,400 billion) in June and New yuan loans also expanded to RMB 1,840 bn (prior: RMB 1,150 billion; consensus: RMB 1,535 billion). (Figure 2.9) However, as the prudent monetary policy stance remains, M2 growth declined to 8% y/y from 8.3% y/y in the previously month (consensus: 8.4% YoY), which remains at a low level. (Figure 2.10)

The credit data in June also reflected the effect of financial sector deleveraging as banks were forced to move their off- balance-sheet back to the balance sheet. For instance, trust loan, entrusted loan and bank acceptance all dipped to a negative y/y growth. (Figure 2.9) Meanwhile, enterprises and household also had lower capital demand due to the ongoing corporate deleveraging and housing market tightening measures. We predict M2 growth will maintain at a moderated level in 2018 as the financial deleveraging continues this year.

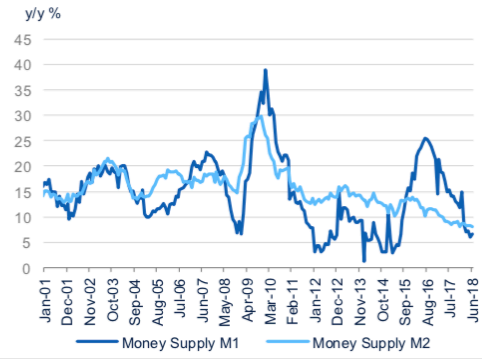
The authorities also took measures to fine-tune their previously tightening monetary policy as the authorities sought to ensure the market has enough liquidity to support growth. In particular, the PBoC cut Reserve Requirement Rate (RRR) to maintain the market liquidity recently. In addition, the PBoC also expanded the range of pledged assets for commercial banks to apply for Mid-term lending facilities (MLF) from the PBoC. Moreover, the authorities may delay the release of new regulations for banks' wealth management products (WMPs) as part of a broader push to curb financial sector risk because of recent market turmoil.

Chart 2.9 Shadow banking activities shrank



Source: BBVA Research and CEIC

Chart 2.10 M2 still remains at a low growth rate



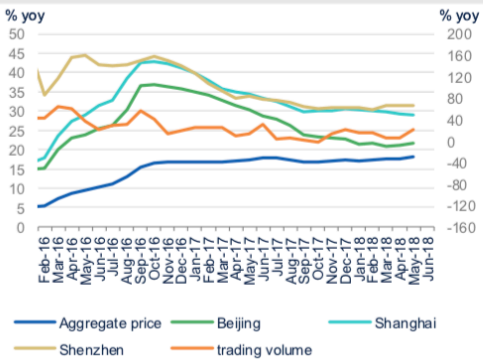
Source: BBVA Research and CEIC

Housing markets still overheating in big cities

Housing price in big cities tend to accelerate. Due to the government's intervention, the reported transaction prices cannot correctly trace the market situation. (Figure 2.11) On the other hand, there are still much more cities reporting housing price increasing than the cities reporting decreasing, mainly are smaller cities. (Figure 2.12) In particular, by categories, in June, housing prices in big cities were mostly stable, but still in a high territory, while the second-tier cities' price went up and the third-tier cities' still in the expansionary trend. Thus, the authorities, especially local government, consider taking more tightening measures to contain the further run-up in housing market.

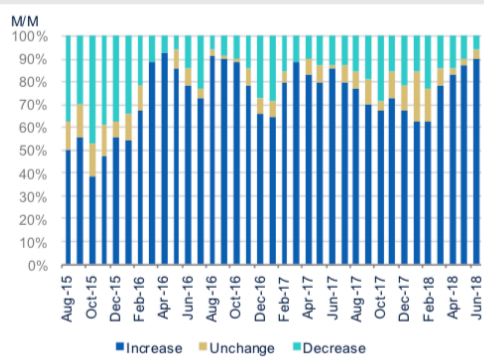
On top of imposing home purchase restrictions, the authorities also use financial tools to contain housing bubbles, such as increasing the interest rate of mortgage loans. Moreover, the authorities particularly forbid home buyers from borrowing short-term loans to pay for their down payment, in a bid to keep household leverage at a manageable level. Altogether, although the housing market tightening measures helped to ease housing bubble and maintain financial stability, we believe that housing market cooling down will drag on growth this year.

Chart 2.11 Housing prices in big cities still overheating…



Source: BBVA Research and CEIC

Chart 2.12 …while at nationwide level, still more cities reported housing price increasing



Source: BBVA Research and CEIC

Both exports and imports slowed down amid the trade war

The ongoing trade war has brought China's current account pressure as exports slowed its expansionary pace. In addition, the domestic growth moderation also weighs on imports. In particular, the growth of exports (in USD terms) declined to 11.3% y/y (versus consensus: 9.5% y/y) from the previous reading of 12.6% in May, while imports significantly dropped to a year-on-year growth of 14.1% from previously 26% y/y (versus consensus: 21.3% y/y). As a result, the balance of trade expanded to USD 41.61 billion in June from USD 24.23 billion in the previous month. (Figure 2.13)

Market participants believe that the reason that we did not see a sharp decreasing of exports is because exporters accelerated to send out their exported goods before the Trump administration implemented the first round of tariff on July 6th, which helped to hold the exports in June. However, the exploration of the trade war between China and the US has projected more uncertainties to the prospect of the external sector in the near future. The only silver line is that the recent depreciation of the RMB exchange rate might help to maintain the exports in the following months, although it has negative effects on importers.

External shock and domestic pressure weigh on the RMB exchange rate

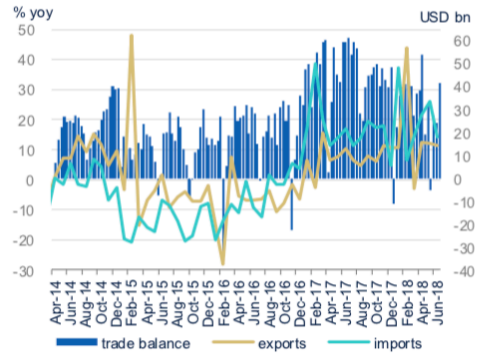
The RMB exchange rate experienced a sharp depreciation recently against the pickup of US Dollar index. Accumulatively, the RMB has depreciated by 6.5% against the USD its strongest level in March and by 3% since the beginning of this year. It is also noted that the RMB depreciation during this period is not only against the USD but also against the CFETS currency basket, which was introduced in November 2015 as a benchmark of the RMB exchange rate. (Figure 2.14)

In addition to the strong performance of the USD, the depreciation of the RMB exchange rate is mainly due to the exploration of the trade war with the US as well as the US interest rate hike. In addition, domestic growth slowdown also weighs on the exchange rate.

Some market participants believe that the current RMB depreciation should be one of the authorities' retaliatory measures for the US trade war. However, we do not consider the Yuan exchange rate as a suitable weapon for trade war. Its side effect could be too painful. As we witnessed in 2015-2016, a sharp currency depreciation could lead to large-scale capital outflows and pose material threats to the financial stability. We don't think the authorities will risk financial stability for retaliating the US punitive tariff. Moreover, at the current stage China has no appetite to escalate the trade war to a currency war with the US. It is in China's interest to keep this trade tension at a limited scale.

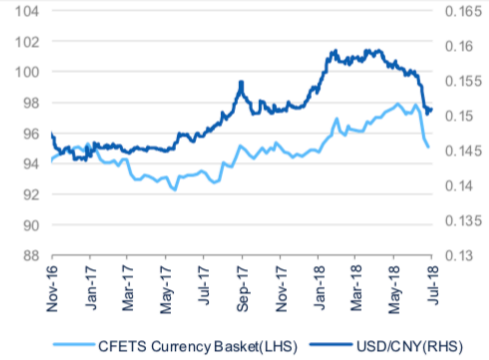
The PBoC has already taken efforts to intervene the FX market to maintain the exchange rate of RMB. We expect the Yuan exchange rate will maintain a weak trend in the coming months. But the authorities will ensure that it won't depreciate too sharply. The Yuan exchange rate could get strong support at the level of 6.75 in Q3. By the end of the year, it could rebound back to 6.50 when trade tension between China and the US eases.

Chart 2.13 Trade war added pressure to China's current account



Source: BBVA Research and CEIC

Chart 2.14 RMB exchange rate dipped sharply amid trade war and domestic growth slowdown



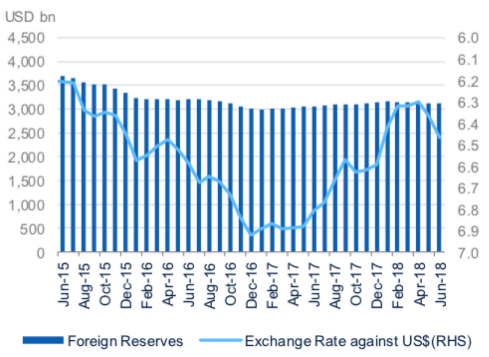
Source: BBVA Research and CEIC

Capital outflows accelerated in the run-up of the trade war

Foreign reserves marginally increased to USD 3,112.13 billion in June from USD 3,110.62 billion in the previous month. (Figure 2.15) Based on the trade balance, valuation effect and the foreign reserve data, we estimate that capital outflows amounted to USD 42.7 billion in June, compared with USD 62.5 billion in the previous month. (Figure 2.16)

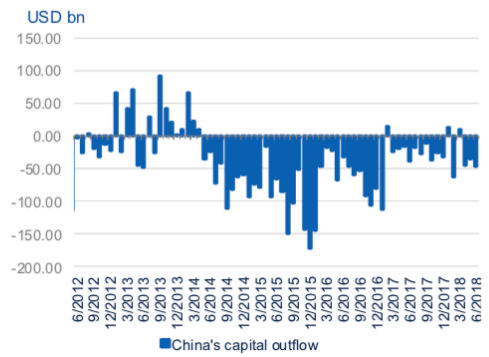
The depreciating RMB exchange rate will add more risks for capital outflows. First is because the depreciating RMB will lead to the diversification behavior of investors to allocate more of their assets to safe heaven assets, thus, capital flight is unavoidable. Second, the yuan slide is also together with the current account shrink amid the trade war risk at the current stage, further leading to capital outflow.

Chart 2.15 RMB to USD depreciated significantly in the recent months



Source: BBVA Research and CEIC

Chart 2.16 RMB depreciation added more uncertainties to capital outflows



Source: BBVA Research and CEIC

3. Trade war and domestic deleveraging: two battles at the same time

Intensified growth headwinds are likely to moderate growth

Due to the trade war and the domestic deleveraging, signs of growth moderation appeared in Q2, which is in line with our expectations. We maintain 2018 GDP growth projection at 6.3%, which is lower than the Bloomberg consensus at 6.5% and the official target of 6.5%.

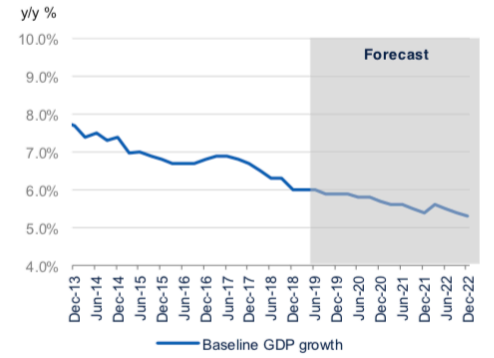
In particular, we predict that growth moderation will continue in the rest of this year due the two battles that Chinese authorities face. One is the continuing

domestic deleveraging, including monetary prudence stance and regulatory efforts to curb shadow banking activities and overheating property market, together with the de-capacity in the real sector. The other is the trade war with the US, as the starting of the trade war with the US will weigh on growth and the market sentiments in the following months.

Nevertheless, we anticipate that the authorities broadly maintain the policy mix this year over the concern of financial stability, in particular, a prudent monetary policy and a comparatively easing fiscal policy. On the other hand, the authorities also fine-tuned their monetary policy to support growth and to maintain sufficient liquidity in the market.

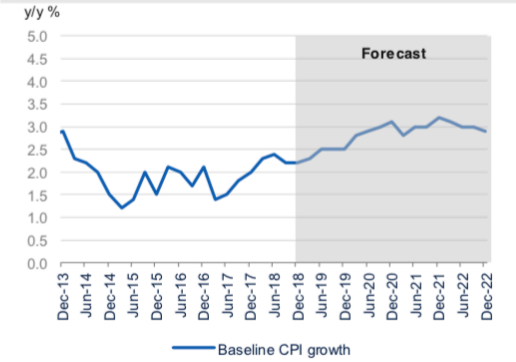
Regarding inflation, we maintain our 2018 projection of CPI at 2.2% in 2018 and 2.5% in 2019 (Bloomberg: 2.1% for 2018 and 2.2% for 2019). The ongoing growth slowdown and the concern of deflation might have some downside risk to our forecasts (Figure 3.2) Looking ahead, the CPI and PPI will finally converge in the long term. CPI is expected to trend up gradually after the food-prices rebound from the current low level. Meanwhile, the PPI will gradually slow its pace as the supply-side reform dissipates. That being said, supply-side shocks caused by overcapacity elimination are likely to have diminishing marginal impact on price levels as investors gradually factor it into their expectations.

Chart 3.1 We maintain our 2018 GDP forecast at 6.3% and 2019 GDP at 6%



Source: BBVA Research and CEIC

Chart 3.2 Some downside risks on our CPI predictions as the growth moderation continues



Source: BBVA Research and CEIC

Table 3.1 Economic indicators forecasting

	2016	2017	2018 (F)	2019 (F)	2020 (F)	2021 (F)
GDP (%, YoY)	6.7	6.9	6.3	6	5.8	5.5
Inflation (average, %)	2	1.7	2.2	2.5	3	3
Fiscal balance (% of GDP)	-3	-3	-2.6	-3	-3.5	-3.5
Current account (% of GDP)	2.5	1.4	1.3	1.3	1.2	1.2
Policy rate (%)	4.35	4.35	4.35	4.35	4.1	4.1
Exchange rate (CNY/USD)	6.95	6.5	6.5	6.55	6.6	6.7

Source: BBVA Research and CEIC

China-US trade war: a prolonged process but still manageable

The trade war with the US finally exploded on July 6th when the US actually imposed 25% tariff on China's imports with the total target of USD 34 billion while China retaliated back with the same tariff rate on the same amount of the US imports.

To retrospect, on May 20th, only ten days after the bilateral trade statement for "no trade war", the US decided to impose tariffs on about USD 50 billion in Chinese imports. After the US announcement, China retaliated by announcing to impose same rate of tariff on the same amount of imports from the US. Right after that, Trump threatened to impose another 10% on China's USD 200 billion goods, which marks the escalation of the trade war between China and the US. Apparently, it has made it impossible for China to implement a similar retaliatory measure since China's total exports to the US only amounted to USD 150 billion last year. To a certain extent, the Trump's move is drawing a new deadline for China and the US to reach an agreement.

We predict that the China-US trade war will last for the following months, especially it will be last at least until the mid-term election of the US because the political conflicts among the US top politicians play an important role in the length and the depth of this war. On the other hand, although the trade war between the two largest economies will not end soon, a full-blown China-US trade war is not our baseline scenario, in other words, we believe the trade war will be still at a manageable level.

Altogether, in our baseline scenario, we generally forecast a 0.2-0.3% GDP declining will be for China this year while a much less growth impact on the US which is almost ignorable. Moreover, based on our recent China Economic Watch: Reignited China-US trade war and its implication on global value chain, by calculating the value-added part of China's exports to the US using the OECD-WTO ViTA database, we estimate that among the USD 50 billion amount of China's exports to the US which are subject to Trump's tariff imposing in the first round, around USD 30 billion are value-added production in China (other USD 20 billion are from the upstream countries which have supply chain with China). This will lead to around 0.06% GDP (or 0.32% of total exports) decreasing, given the elasticity by categories of the exported goods provided by the World Bank database. Moreover, the additional USD 200 billion of Trump's second round announcement will lead to around 0.24% GDP decreasing based on this value-added methodology.

From China's perspective, after reviewing a number of methods which China could use in the escalating trade dispute with the US (please see our China Economic Watch: What will be China's weapon in the trade war arsenal?), we find that China's policy options to counter the US tariff measures are limited. We expect that the authorities will implement the methods such as restricting on US business in China, targeting service trade such as education and tourism as well as adopting the retaliatory tariff measure, but are unlikely to dump the US Treasury bond or guide currency depreciation. More importantly, with time going these retaliatory measures tend to have increasingly negative impact on China itself. For the positive side, the reality could make China actively seek for a solution through bilateral negotiation

rather than escalating confrontation with the US. We expect that the two sides will restart the negotiation soon after the initial stage of the trade-war.

Finally, as the seesaw battle between the US and China seems to have continued for several months starting from the beginning of the year, the market looks like to have priced in the effect of trade war already, leading to a less volatile financial markets after the trade war started. For instance, we did not see a sharp dip of the S&P stock index in July, so is the Done Jones Industrial Average index. However, the market reflection in China's stock market seems more significant as a larger stock market drop was found in China's Shanghai Stock Exchange Composite index, which is a 22.6% decreasing from this year's peak at the beginning of the year.

Monetary and fiscal policy are shifting to the easing side

The trade war with the US, together with the domestic deleveraging, makes Chinese authorities facing two battles at the same time. Amid the external and internal growth headwinds, economic activities slowed down in Q2, forcing the authorities to fine tune their previous tightening policy stance to support the economic growth. The fine-tuned policies include the following perspectives:

First, the authorities fine-tuned their tightening monetary policy stance to offset the external shock and domestic deleveraging. In particular, the PBoC cut Reserve Requirement Rate (RRR) to maintain the market liquidity recently. In addition, the PBoC also expanded the range of pledged assets for commercial banks to apply for Mid-term lending facilities (MLF) from the PBoC. More importantly, the PBoC did not follow the US FED to hike the interest rate, namely, to increase the DR-007, sending a signal of policy easing.

Second, the authorities also maintain expansionary fiscal policy stance. In particular, several tax cut schemes were announced recently, including: (i) Raising workers' monthly personal allowance to 5,000 yuan from 3,500 yuan; (ii) Making interest payments on mortgage loans, and education, training and medical expenses tax deductible. (iii) Starting from May 1, the tax rate will be lowered from 17% to 16% for manufacturing and some other industries, and from 11% to 10% for transportation, construction, basic telecommunication services, and farm produce.

Third, more opening-up policies are announced amid the trade war. Recently, China's National Development and Reform Commission (NDRC) announced the 2018 "negative list" for foreign investment. Compared to its 2017 version, the new negative list features a significant reduction in the restrictions of foreign investment. In particular, China's authorities dropped many restrictions of foreign investment in a number of sectors including finance, automotive, aviation etc. Moreover, China is actively cooperating with the EU for the bilateral investment, namely to seek to sign the Bilateral Investment Treaty (BIT) as well as to reform the rules of WTO. We expect that China will accelerate the progress of opening the market to other countries amid the trade war with the US.

Fourth, the authorities also temporarily implemented regulatory forbearance. In particular, China may delay the release of new regulations for banks' wealth management products (WMPs) as part of a broader push to curb financial sector risk because of recent market turmoil. The new rules were expected to be announced

between late June and early July, however, regulators have opted to hold off on releasing the new guidelines and wait for a

"while" because of the recent market volatility caused by increasing concerns over a protracted trade war.

Altogether, escalating trade war risk has forced the authorities to shift their monetary and fiscal policy to the easing side.

The recent RRR cut signaled that policy stance will shift back to neutral from the previous one with tightening bias. On the front of policy interest rate, we are afraid that the PBoC won't do any adjustment at the current stage under the newly established corridor system. In particular, an interest rate hike following the US will slow down the economy to a further extent while an interest rate cut might further depreciate RMB exchange rate and to stimulate shadow banking growth again. Thus, RRR cuts might be a better tool to maintain a sufficient liquidity in the market. In the meantime, we expect that the regulatory tightening will maintain to curb the shadow banking activities and contain financial risks.

From the perspective of fiscal policy, we expect more easing measures will be announced to offset the external shock and the domestic deleveraging. The authorities might finally add more deficits through the extra budget. Moreover, more tax cuts might be implemented later this year.

4. Growth risks intensified

Domestic deleveraging and the trade war with the US are the two battles Chinese authorities are facing at the current stage. Reflected by the Q2 growth moderation, it seems like the growth headwinds are intensifying now.

Domestically, the on-going deleveraging in the real economy and financial sector, with its original intention of mitigating the over-capacity and financial instability respectively, might drag on growth in the medium term. These policy measures mainly include supply-side deleveraging as well as cooling down the housing market and shadow banking.

Altogether, the authorities need to find a balance and choose an appropriate pace between pushing forward the deleveraging progress and maintaining a sustainable growth momentum. In this respect, market participants should guard against the risk of over-tightening stemming from the overconfidence of policymakers or the uncoordinated policy conduct among monetary, fiscal and supply-side policy initiatives.

Some other risks at the current stage also include the persisting financial risks. In particular, bond default risk is on the rise amid financial tightening. Until now, at least 15 corporate bond defaults this year, worth more than USD 2 billion. Additional bond defaults are likely among property developers and local-government financing vehicles which have relied on shadow banking vehicles for their funding.

Regarding the exploded trade war with the US, although the further rounds of negotiations have not been settled at the current stage, China has indeed taken some efforts to avoid the further escalation of the battle. For instance, China has shown their willingness to narrow its surplus against the US in the previous rounds of negotiation. China also announced that they are going to increase protection of

intellectual properties and set out to establish intellectual property courts around the country. Now it seems that China's authorities are ready to scrap their ambitious plan of "Made in China 2025" and even downplay the "One Belt One Road" initiatives.

Now China is trying to ally with the EU and Japan to fight against the US. Unfortunately, the EU has rejected China's demand to publish an anti-US joint statement in the forthcoming Sino-European Summit. According to the media report, the EU is sharing almost every US concern with China although they don't agree to US practice of unilaterally imposing tariff.

At the same time, China actively pushes for the signing of free trade agreement (FTA) and bilateral investment treaty (BIT) with EU and Japan. It is also pushing for the signing of Regional Comprehensive Economic Partnership (ASEAN 10+ China, Japan, South Korea, India, Australian, New Zealand). These initiatives are aimed to offset the shock from the trade war, which also provides China a way to end this trade war with the US gracefully.

That being said, if China can manage to sign FTAs and BITs with the EU and Japan, the market-access issues between China and the US will become much easier to solve, which can also lay a good ground for solving other differences between them. Certainly there will be more volatility along the way ahead even China decides to implement this policy. But that's the right way to end this trade war with the least cost.

Altogether, the two battles at the same time bring about more challenges to Chinese authorities in policy-making. How to balance the financial and industrial deleveraging and growth, as well as the policy fine-tuning to offset the external shock remains the key point in the following months. We believe that at the current stage, the authorities need to put the external risk at the first priority and maintain market sentiments through fine-tuning the previous tightening monetary policy stance.

The Chinese response to US tariffs will probably focus on trade and investment, including tariffs against US imports and further restrictions on US investment in China. A measured response may encourage other nations to tone down their concerns about Chinese trade subsidies or poor protection of intellectual property.

In terms of foreign exchange reserves, the views of Fan Gang, a member of the People's Bank of China and adviser to the State Administration of Foreign Exchange, a subsidiary of the central bank, are relevant. He has said that China should not buy more US debt but should instead buy real assets. From the Chinese perspective, this could be a good time to exhibit patience and skill in playing the long chess game.

China's International Investment Position*

By DAVID MARSH *

One of the themes in this year's RMB Internationalisation Report has been, regarding the international use of the Chinese currency, the increasing importance of financial settlements as opposed to the use of the renminbi in visible goods trade.

This is an area I shall dwell on in my paper. We should be reminded, too, that some of US President Donald Trump's actions in the trade and investment sphere, while undoubtedly risky for the world economy, may end up helping the renminbi on the world stage. Earlier this week in Singapore I heard Jack Lew, the former US Treasury secretary, saying that the US action abrogating the Iranian nuclear accord produced as one important side effect the visit of the Iranian president to Beijing for a discussion about, among other things, whether the renminbi could be used instead of the dollar in pricing oil.

We see here, not for the first time in Mr Trump's actions, examples of the Law of Unintended Consequences. Indeed, I sometimes wonder whether Mr Trump is following not so much an 'America first' but more a 'China first' policy. We heard earlier today, from Qi Bin in his talk on investment, of the English writer Charles Dickens, the author of the much-quoted epithet, 'Best of times, worst of times.'

There is a parallel with Trump, who said before his visit to the UK that Britain's suggested deal over leaving the European Union would kill any idea of a separate trade accord with the US. Only around 24 hours later, the president reversed his message by saying that a trade deal between Britain and the US was 'entirely possible'. Like Dickens, who wrote many of his novels in instalments in railway wagons and stagecoaches, Mr Trump makes it up as he goes along.

I would like to summarise the three main messages of my paper, on which I will then elaborate later. First, Mr Trump's actions are likely to strengthen the relationship between China and Europe. Second, in line with some of the findings in the Internalisation Report, I believe that China will become progressively more important as an international hub for both capital exports and capital imports, consistent with the renminbi taking on a more important role in world finance, with an increase in renminbi products for asset and wealth management and capital raising – what I call the 'renminbi-isation' of world capital markets. Third, China has sensibly been guided by self-interest in following a strategy of shifting its net foreign assets towards holdings of equities and equity-like instruments and away from other countries' government debt.

Here China has shown itself far more adept in recent years in managing the stewardship of foreign assets than Germany, which took over the position this year (from China, now No. 3) as the world's No. 2 net creditor country (with Japan remaining No. 1).

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*This article first appeared in OMFIF Commentary on July 14, 2018.

* David Marsh is Member of IMI International Committee and Chairman of OMFIF.

The figures in my paper are all taken from the OMFIF publication Global Public Investor 2018, published a few weeks ago, and now available free of charge on our website. The book records trends in asset management behaviour over the last year by a selection of 750 listed sovereign investors around the world, the bedrock of the analysis that we have now produced for the fifth year in a row.

One important finding is the widening of the gap between the net creditors' and net debtors' international investment positions – registering the disparities between all the countries that have built up debt among themselves over the years – to $32.7tn last year, the largest on record. The biggest debtor and creditor positions are recorded in Europe, showing how this region has become home to the largest macroeconomic imbalances in the world. This does not portend well for economic and monetary union in coming years.

Three European countries – Germany, Switzerland and Norway – markedly increased their net foreign assets. Germany leapfrogged ahead of China with net foreign assets rising to $2.2tn from $1.8tn.

US net foreign liabilities declined to $7.8tn from $8.3tn, but the US remains by far the world's leading debtor. The reason why the US has built up this large foreign debt is because the rest of the world trusts it with their money. There is a message here for China. As China seeks to expand the use of the renminbi as a reserve asset, the Chinese authorities will have to try to build the same depth, and the same level of trust and confidence, with regard to the Chinese capital markets, as the Americans have succeeded in doing – despite all their weaknesses and setbacks in the macroeconomic picture – over the past 70 years. That is the yardstick against which China's prowess will be judged.

One way to assess China's role in the international financial system is to examine the country's total international assets and liabilities, demonstrating the 'hub' function I referred to earlier. The figure has risen to $12tn in 2017 from $1.6tn in 2004, showing the growth in China's engagement with the rest of the world.

Everyone is aware of the increase in China's official reserves, from $600bn in 2004 to a peak $3.9tn in 2014, before declining to $3.1tn in 2016 and since then recovering to $3.2tn.

The People's Bank of China took a strategic decision a few years ago to economise on reserves, echoing a decision by the Bundesbank (at a much lower level of reserves) in the late 1990s after Germany entered monetary union. At the same time China as a deliberate act of policy has shifted more of its foreign assets into portfolio investment and direct foreign investment in equities, lowering its massive holdings of US treasury bills that in effect added up to a subsidy to the American taxpayer.

Arithmetically, nearly half of Germany's net foreign assets are made up of the Bundesbank' advances to weaker countries in economic and monetary union, via the European Central Bank, now above €975bn. These so-called Target-2 balances provide effectively an unlimited interest-free overdraft system for debtor countries, without any redemption schedule and not subject to any economic conditionality.

These Target-2 balances, inflated by the effects of the ECB's three-year-old quantitative easing programme, are now well above crisis levels of 2012.

They form the bedrock of Germany's overall net foreign assets that, according to Bundesbank figures, totalled €1.93tn at end-2017 against €1.7tn at end-2016. China in the last few years, correcting previous faulty policies, has chosen a different path. Financial historians may puzzle in future over which of the world's No. 2 and No.3 creditor nations have deployed its foreign reserves more wisely during the years since the financial crisis.

China Timid on Renminbi Expansion: Beijing Must Apply Bolder Capital Markets Strategy*

By HERBERT POENISCH*

Judging by the rhetoric of some large emerging markets such as China, the dollar's world reserve currency status should be challenged. However, as the latest data from the Bank for International Settlements show, this is far from happening. If Beijing wishes to accelerate the renminbi's internationalisation, it must revise its capital market strategy.

The BIS recently published the end-2017 cross-border claims and liabilities of Chinese resident banks as well as figures on the net issues and outstanding amounts of debt issued by Chinese residents and nationals on international markets. The data make clear that the dollar remains the major currency for cross-border lending and borrowing, as well as the most common currency for Chinese international bond issues. At the same time, lending in renminbi has declined, deposits in renminbi have increased slightly and issuing activity in renminbi has remained small.

The Belt and Road initiative, Beijing's prize cross-border infrastructure plan, creates opportunities for Chinese banks to lend in renminbi to project recipient countries. Borrowing by issuing debt securities in one's own currency has traditionally been how a country achieves reserve status, as happened with sterling and the dollar. The Belt and Road gives China's a way to advance the internationalisation of its currency by lending renminbi that recipients then spend on Chinese exports or investment and offering high quality debt securities denominated in renminbi.

Beijing has paid undue attention to the threat of capital outflows from China. While outflows were a worrying trend for China until 2016, this has since reversed and capital is returning to the country through banks and bond markets. Inflows, together with an appreciating renminbi, have boosted national pride, which proved especially beneficial in the run up to last October's Communist party congress. However, while restricting capital outflows may be suitable for small countries, it does not profit those that want their currency to reach global reserve status. As Japan showed in the 1980s, a timid approach leads to modest results.

What is required of a future reserve currency provider is to massively export its currency. This applies even more so to a current account surplus country, such as 1980s Japan and modern China. As the US has shown since the end of the second world war, the main instruments for currency internationalisation are boosting cross-border lending by banks and by massively issuing debt, both in the national currency. These methods, together with outward foreign direct investment, increase

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the use and holdings of the national currency by foreign project and trade partners as well as investors. While China's domestic bond market is the third-largest in the world, access by foreigners is still restricted to the qualified foreign institutional investor programme and nascent Bond Connect, closely related to the China-Hong Kong stock connects that aim to provide greater access to shares listed on the mainland.

Given China's economic clout and the markets' interest in Chinese investments, now is the best time for Beijing to apply a revised twin capital markets strategy. Missing this moment would perpetuate the dollar's global reserve status and impede the renminbi's development.

Are We on the Verge of a Chinese Credit Crunch?*

By DIEGO ZULUAGA*

If China were a Eurozone country, it would likely be regarded as the next victim of the bond vigilantes.

The People's Republic has more than doubled its stock of private credit relative to GDP in the last ten years, even as output grew at annual rates exceeding 6.5 per cent. Indeed, China accounts for fully one-third of the global increase in private debt since the financial crisis。

Only Ireland and Spain, at the height of their ill-fated housing booms, can rival the Chinese credit explosion in rapidity and scale.

Investors might be reassured if Chinese credit markets were free and transparent. But that is manifestly not the case. Lending is dominated by the "Big Four" state-owned banks that were spun off from the People's Bank of China in the 1980s, as market reforms got under way. They still account for 60 per cent of bank assets, most of which are loans to state-owned industrial enterprises, often extended according to political rather than business criteria.

The retail side doesn't look much better. Until October of 2015, bank deposit interest rates were capped. Such financial repression not only fattened bank profits at the expense of their depositors, but it also encouraged Chinese savers to reach for yield by buying houses, speculating in illiquid stocks of largely state-owned companies, and acquiring investment products in the country's burgeoning shadow banking sector. All three markets have of late shown signs of overheating.

If China were a Eurozone country, it would likely be regarded as the next victim of the bond vigilantes.

Not all is bad news. Non-performing loans, which in the wake of the 1997 Asian financial crisis represented an eye-popping 25 per cent of total loans, have been brought down to manageable levels through a mixture of public and private recapitalisation, and the purchase on favourable terms of toxic assets. But even here, Chinese taxpayers have had to pick up the tab for the bad decisions of state cronies.

And it hasn't been the astute management of Communist Party chiefs that has helped the country avoid a financial crash so far, but the breathtaking growth rates that China averaged between the early 1990s and 2008. When an economy is growing at 10 per cent per year, the weight of bad loans can halve in ten years, even with the absolute value of bad loans growing annually at 3 per cent.

But a number of things have changed since 2008. Firstly, Chinese growth seems to have permanently slowed. Official growth rates have hovered around 6.5 per cent since 2015, one-third below the pre-crisis norm.

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Even that may be an overestimate according to sceptics, who argue that local government statisticians have incentives to inflate output figures, and that the preponderance of state-owned enterprises whose production is only partly market-based makes assessing true value-added more difficult than it is in the West. Li Keqiang, a former Premier, himself distrusted official GDP statistics and advised analysts to use alternative measures, such as freight volumes and electricity generation.

A slower growth rate makes a given burden of bad loans harder to shoulder. If it is accompanied by a $20 trillion increase in the stock of private debt, as has happened in China since 2008, the chances to outgrow any large bad bets become even slimmer. Anecdotal evidence of empty apartment blocks in ghost cities, and of a factory slowdown as US tariffs start to bite, supports the case that this time may indeed be different from the past.

Yet there are reasons to be hopeful. The October 2015 interest-rate liberalisation made financial repression a thing of the past. Local governments, whose budget constraints were dramatically loosened in 2009 in a bid to stimulate the Chinese economy, have had to retrench as banks made lending terms stricter under pressure from the central government.

Increased foreign participation in China's financial sector, through direct stakes in banks and insurers, and greater links between mainland and foreign stock markets, will hopefully improve the corporate governance of firms.

All of them combined will make it less likely for credit to continue to flow to unprofitable firms, for asset bubbles to be stoked by interest-rate meddling, and for listed companies to be run for the benefit of insiders rather than that of shareholders.

Whether these measures came too late to save China from an extensive writedown of bad debts is an altogether different question. Both short-term factors, in the form of rising trade tensions, and the long-term prospect of rapid population ageing as a result of the Communist Party cataclysmic one-child policy (now thankfully defunct), will complicate dealing with the country's mounting debt pile.

China is a middle-income country — its GDP per capita still just one-seventh that of the United States — with rich-country indebtedness and demographic trends. There are large income differences between the richer eastern provinces, which liberalised first and have continued to do so rapidly, and the western regions which have lagged on market reform. But the point remains that China will soon grapple with problems that historically have confronted only more mature economies.

Nor should Europe and America be complacent, let alone gleeful, about Chinese difficulties. The People's Republic is now the world's largest economy, accounting for 18.7 per cent of global output at last count. Even if its links to the rest of the world are more tenuous than those of Western countries, a Chinese credit crunch will be felt further afield — and we will all suffer for it.

Beijing Won't 'Weaponise' the Renminbi: Aggressive Depreciation Would Hurt China's World Role

By ROBERT DOHNER*

As US-China trade tensions have become trade skirmishes, and now threaten to become a trade war, most of the actions have been on tariffs and goods trade. China has countered US tariffs on solar panels, steel, aluminium, industrial equipment and medical devices with its own increased duties on soya beans and other foods, agricultural products, and automobiles.

The developing trade conflict has taken place in an environment of very strong US economic performance while Chinese growth has been slowing. It has also coincided with a depreciating renminbi exchange rate. After strengthening in the first three months of the year, the Chinese currency has become the worst-performing in Asia, falling by 7.7% against the dollar, and 5% alone from mid June to late July. 'In China, their currency is falling like a rock,' US President Donald Trump tweeted on 19 July.

From a market perspective, renminbi weakness is easy to explain. US interest rates are rising, the dollar has strengthened generally, and there have been concerns about slowing growth and rising defaults within China. But renminbi depreciation has led to concerns that this is taking place with People's Bank of China encouragement and that China may 'weaponise' its exchange rate, opening up a new front in the trade conflict.

Yi Gang, governor of the People's Bank of China, responded on 3 July by repeating the central bank's long-standing policy that China will 'keep the exchange rate basically stable at a reasonable and balanced level.'

The renminbi has continued to weaken during July, but forebodings of a weaponised renminbi are misplaced. Markets may edge the renminbi exchange rate lower, possibly with PBoC acquiescence. But fall is very unlikely to come to push. For three reasons, China is very unlikely to actively weaken its exchange rate as an aggressive measure in a trade conflict with the US.

The first reason is that intentional renminbi depreciation has significant risks for domestic financial stability. Despite the PBoC's gradual efforts to introduce greater flexibility and market determination, the foreign exchange market remains acutely sensitive to perceptions of what the PBoC wants the exchange rate to be.

This was illustrated by the central bank's disastrous attempt to recalibrate exchange rate policy in August 2015, which led to a sharp depreciation and surge of capital flight from China. Even if China's large foreign exchange reserves and capital controls could stem the tide, the authorities' strong aversion to market turmoil

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and fear of loss of control over capital flight remain a strong discouragement to shifts in exchange rate policy.

If the trade conflict with the US intensified, this aversion would certainly grow. There would be a high premium on assuring the public and the markets that the Chinese economy is stable and the authorities are in control.

The second reason is that renminbi depreciation is a very blunt instrument. It affects all China's trade partners, not just the US. In fact, China tends to target carefully its use of trade and investment policy for sanctions purposes. Examples are restrictions on Philippine bananas (related to a dispute over the South China Sea) or on Chinese operations of South Korea's Lotte confectionary company (over deployment of the THAAD anti-missile defence system in South Korea). Not simply targeting the US, this year China has applied its retaliatory tariffs to products like soya beans from districts specifically with Republican congressmen and Republican support.

China's recent cuts in its global tariffs on automobiles and automobile parts, along with an increase in tariffs on these products from the US, are another illustration of the government's targeted approach. China faces a much larger direct trade exposure in the US market than the US does in China. However this should give little comfort to America, since Chinese authorities have ways to impose costs on the much larger operations of US firms in China. The measures include adverse or withheld administrative approvals, such as the one that scuttled chipmaker Qualcomm's bid for the Dutch chipmaker NXP.

The third reason why China is likely to forgo currency as a trade weapon is that it would undercut China's larger ambitions to exert global leadership and diminish US standing. Starting with President Xi Jinping's Davos speech in 2016, the country has tried to establish China's narrative as the preserver of open markets and the global architecture. During the trade dispute, China has sought to cast the US as the aggressor and China's actions as a measured response. It has tried to court other countries affected by US actions, particularly the European Union.

Adoption of a 'China first' exchange rate depreciation would revive suspicions of China's willingness to 'game' the international system. Still more important, it would risk squandering what China sees as its moment to claim the international stage.

Chinese Reform During a Trade War*

By ANDREW SHENG AND XIAO GENG*

China has only limited influence over the evolution of the rules-based world order. But, by upgrading its property-rights infrastructure, it can support shared prosperity and mutually beneficial engagement, potentially defusing some of the tensions that have lately been fueling instability worldwide.

HONG KONG – Last June, The Economist lamented that "Donald Trump is undermining the rules-based international order," as he seeks "short-term wins for America" at the cost of "long-term damage to the world." With Trump now escalating his trade war with China – and with both sides seeming to be girding for protracted competition over technological leadership – the threat is only growing.

For a long time, trade appeared to benefit everyone. This assumption underpinned a broad global consensus on trade rules, including the relatively consistent protection of property rights. China, for example, has managed to integrate itself into the global economy because its firms learned how to operate and compete within the framework established by the World Trade Organization.

But, as the Nobel laureate economist Joseph Stiglitz has repeatedly pointed out, the neoliberal obsession with unfettered markets failed to account for the distributive costs of efficiency gains. Inequality has risen sharply, spurring many populations to become increasingly disillusioned not just with the specific factors fueling it, but with openness and globalization in virtually all its forms, including immigration and free trade.

That is how Trump got elected. But the backlash is not exclusive to the US. The United Kingdom's vote to leave the European Union was driven by similar concerns, as has been the rise of right-wing populist political forces in many EU countries, from Italy to Poland. These political developments – and they are political, not economic – have spurred a process of re-writing, if not dismantling, the existing rules-based world order.

This is forcing profound transformation at the national and international levels. But, as Stiglitz and Harvard's David Kennedy wrote in the 2013 book Law and Economics with Chinese Characteristics, "markets are built upon a foundation of legal arrangements and stabilized by a regulatory framework." This means that addressing the distributive effects of market failures requires the construction of new judicial, administrative, and regulatory frameworks – a process that will take time.

China – a favorite target of those who are attacking the rules-based global order – is under particularly intense pressure to make changes. Because its market grew faster than its tax, regulatory, and judicial arrangements could evolve, the country

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was beset by rising income inequality, pollution, financial risks, and corruption – all of which must be addressed in the next phase of structural reforms.

What precisely those reforms should be, however, remains subject to heated debate among China's elites, policymakers, and disadvantaged groups, as well as foreign stakeholders. And as the trade war with the US continues to escalate, calls for policy clarity are growing more urgent.

China's entrepreneurs and its rapidly expanding middle class are concerned, first and foremost, about their property rights, including the security of their accumulated wealth, amid regulatory tightening with regard to taxation, finance, cross-border capital flows, and even the environment. Meanwhile, Chinese young people and low-income households worry about high and rising home prices, job insecurity, and the fast-growing market power of a few tech giants squeezing small and medium-size enterprises.

For their part, foreign businesses operating in China, as well as trade partners like the US, are focusing on inadequate protection of intellectual property rights, excessive government support of state-owned enterprises (SOEs), and an industrial policy geared toward technological upgrading. Policymaking in this area here would also need to account for the disruptive impact of new technologies on business models, supply chains, lifestyles, and even politics within China.

It is imperative that China's leaders mount a firm and decisive response to these divergent and sometimes even conflicting concerns. This means pursuing a set of bold reforms that not only bolster confidence, but also strengthen China's hand in negotiations with the US and foreign investors.

The first step for China should be to reaffirm the authorities' 2013 commitment to ensuring that markets play a decisive role in allocating resources. If this commitment is to be credible, however, China must follow up by creating a level playing field for market competition among foreign companies, private Chinese firms, and SOEs.

The good news is that far-reaching reforms can actually be easier to justify during periods of uncertainty, transition, or even crisis. Yet one important current factor could impede such action: risk-aversion on the part of local officials.

In the past, local-level experimentation and innovation have proved integral to China's progress, with competition among provinces, cities, and firms often helping the country to break out of bureaucratic and structural logjams. But, having watched as President Xi Jinping's anti-corruption campaign has taken down their colleagues and bosses, many local officials now hesitate to pursue daring initiatives.

Much as Deng Xiaoping did with his 1992 "south China tour," China's leaders today must redouble their efforts to unleash the "animal spirits" of domestic businesses, while spurring local governments to spearhead their own reforms. Although trading partners like the US may object to the state-led nature of this approach, the end result will be more stable and dynamic markets.

The key to success will be to strengthen the infrastructure of property-rights protection, including dispute-resolution mechanisms, the court system, and commercial and technological standards. To this end, the authorities would do well to look to the property-rights infrastructure in Hong Kong, the US, the UK, and

elsewhere in Europe, which has remained stable and robust, despite political and social upheaval.

China has only limited influence over the evolution – or even survival – of the rules-based world order. But, by bringing its property-rights arrangements into line with those of the advanced economies, it can support shared prosperity and mutually beneficial engagement, potentially defusing some of the tensions that have lately been fueling instability worldwide.

Monetary Policy

Argentina Should Scrap the Peso and Dollarize*

By STEVE H. HANKE*

On July 9th, Argentina will celebrate its 202nd birthday. The biggest spoiler during the festivities will be the beleaguered peso. It's not the first time the peso has been a spoiler. Since its founding, Argentina has been burdened with numerous economic crises. Most can be laid at the feet of domestic mismanagement and currency problems (read: currency collapses). To list but a few of these crises: 1876, 1890, 1914, 1930, 1952, 1958, 1967, 1975, 1985, 1989, 2001, and 2018(?).

By the time its 100th birthday rolled around, Argentina had experienced only three major economic crises. Alas, the next 102 years have been much more eventful, with eight currency crises, not counting 2018.

A noteworthy date is 1935. That's when the Central Bank of Argentina (BCRA) was established, and with that, serial monetary mismanagement ensued. The chart below tells the BCRA story. Before the BCRA, Argentina (the peso) held its own against the United States (the dollar). Indeed, from 1875 until 1935, the ratio of U.S. GDP per capita to that in Argentina averaged 1.28. So, on average, GDP per capita in the U.S. was 28% higher than it was in Argentina. In 1881, the U.S. relative position reached its maximum when the ratio was 1.75, and it reached a minimum in 1896, when the ratio was 0.85. That means that in 1896, Argentina's GDP per capita was actually higher than that in the U.S.

After the BCRA was founded, the relatively stable relationship between per capita income in the U.S. and Argentina broke down, with the dollar-based U.S. economy growing much more rapidly on a per capita basis than the peso-based Argentine economy. In 1935, GDP per capita in the U.S. was 28% higher than that in Argentina. By 2016, this rate ballooned to a whopping 181%.

As we move from the BCRA's founding in 1935 towards the present, commentary on the decade of the 1990s is required. That decade began with an inflationary bang. In 1989, the rate of inflation was 3,079%. 1989 also saw Carlos Menem take up residence in the Casa Rosada as Argentina's new President. Menem's manifesto was one of economic reform and liberalization, along the lines of the Chicago Boy's reforms of the 1970s and 80s in Chile.

When Mrs. Hanke and I first met Menem, shortly after he became President on July 8th, he expressed a clear vision of what he wanted to accomplish in the economic sphere. But, he was frustrated. His reforms were going nowhere.

I indicated that, while his campaigns to deregulate, privatize and slash export taxes were fine, they would go nowhere until he killed inflation. Slaying inflation

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was necessary for Menem, so that he could establish credibility and gain the public's confidence. Menem then asked, how would I stop inflation? I responded that a currency board was just what the doctor ordered. With that, the President said he was interested, and suggested that I write up a proposal.

I immediately began to work on a currency board blueprint with Kurt Schuler. While drafting the blueprint, I worked closely with Congressman José María Ibarbia and his colleagues (the so-called Alsogaray faction) in the Argentine Congress. In early 1991, the Hanke-Schuler currency board blueprint was published as a book by the Fundacion Republica in Buenos Aires: Banco Central o Caja de Conversion. Schuler and I were pleased to have José María Ibarbia write a preface for our book, and to have the Alsogaray faction on board. With that, Menem knew he would have support for a "currency board" in the Congress.

To put an end to hyperinflation, Menem — with his right-hand man, Minister of Economy Domingo Cavallo — established a new currency regime on April 1, 1991. They dubbed it a Convertibility System, an uncommon term for an unusual system. While Convertibility gave the superficial appearance of being a currency board, it was not a currency board. Never mind. Most economists never understood that the Convertibility System was not a currency board system.

Like currency board arrangements, the Convertibility System maintained a fixed exchange rate between the peso and its anchor currency, the U.S. dollar. That nominal anchor crushed hyperinflation and prevented inflation from rearing its ugly head. Indeed, the consumer price index at the end of 2001 was about where it was in 1994. By smashing inflation, Convertibility gave Menem the credibility he desperately needed to carry out his reforms.

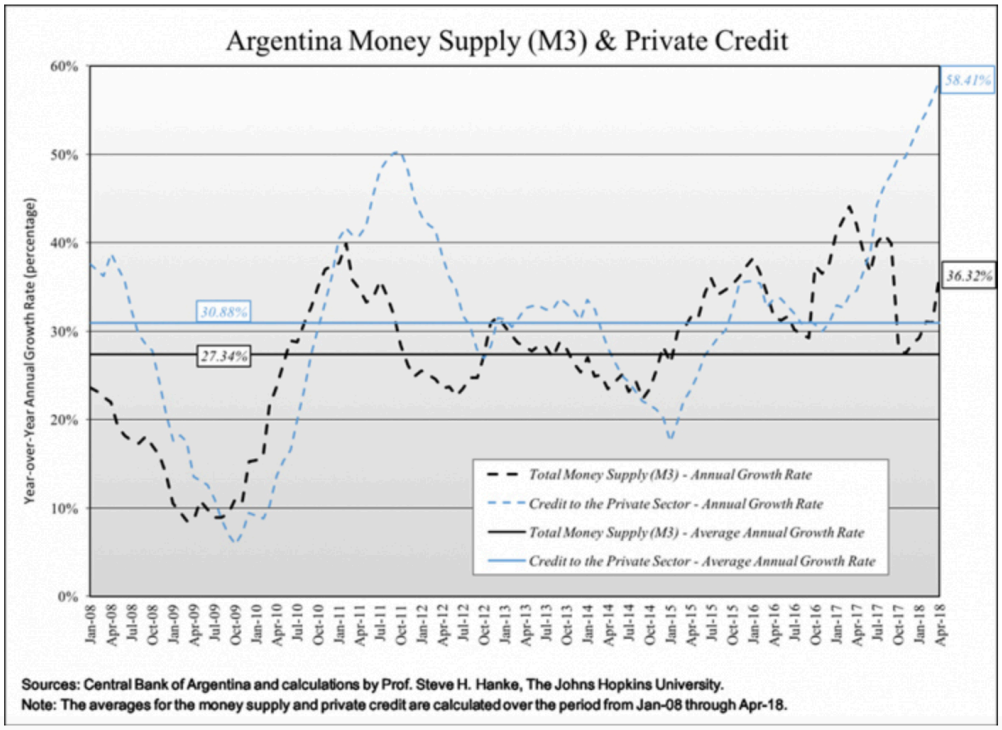
The Convertibility System was not trouble-free, however. Its deviations from currency board orthodoxy allowed it to behave more like a central bank than a true currency board. These deviations were significant, and prompted me to pen an op-ed "Argentina Should Abolish Its Central Bank." It was published in the Wall Street Journal on October 25, 1991. As I wrote then: "To lock in the Menem-Cavallo achievements and permanently remove skepticism from the Argentine monetary scene, Argentina should abolish its Central Bank and replace it with a currency board."

Alas, the Convertibility System, after killing a hyperinflation and ushering in a decade-long economic boom, met its Waterloo in 2001. Just as I had anticipated in my 1991 Wall Street Journal piece, the BCRA used Convertibility's deviations from currency board orthodoxy to engage in discretionary monetary policies. In the end, the BCRA did just what it had always done. It made a mess out of monetary policy and created a currency crisis.

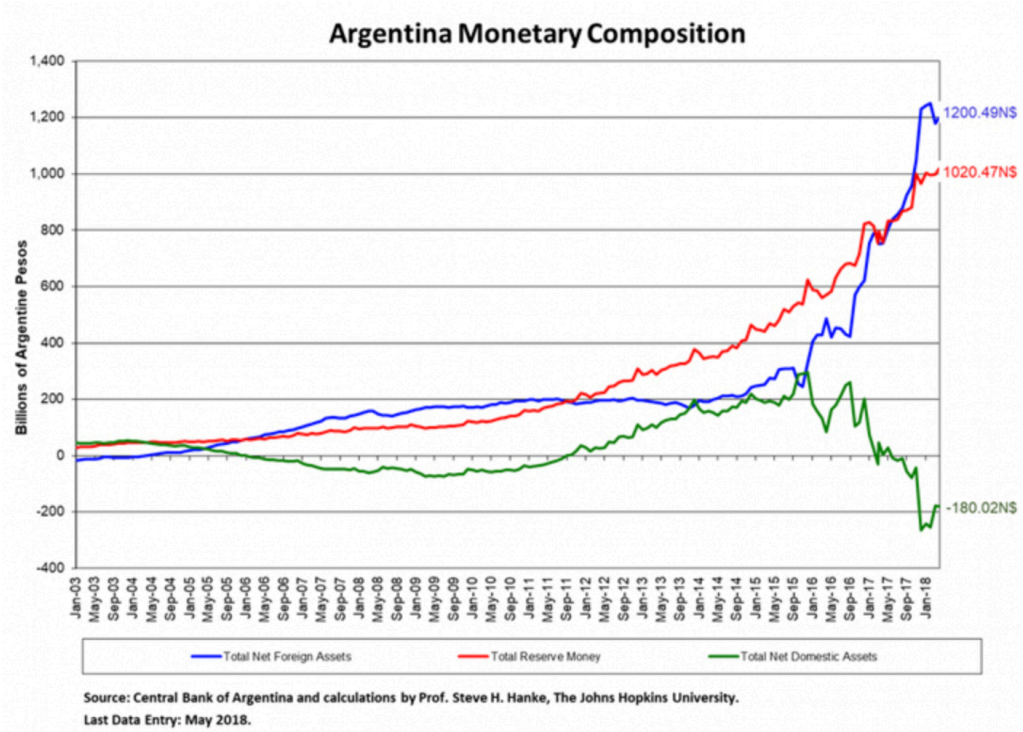
The BCRA's most recent monetary mishap is depicted by the plunge of the peso (see the chart below). The poor peso has lost 34.2% against the greenback since January 1st. That rout forced the Macri government to go hat-in-hand to the International Monetary Fund (IMF) for a bailout. Given the Argentine public's distrust, if not despise, of the IMF, President Macri's move was clearly a desperate

one. If the peso's travails weren't bad enough, now the Argentine public is saddled with the IMF, yet again.

Why the peso rout? To answer that question, just take a look at the chart below. Note the surge in the growth rate of Argentina's broad money since late 2017 and the explosion in private credit growth. These surging growth rates are not consistent with the objective of hitting Argentina's inflation target of 10-15%/yr. Nor are they consistent with a stable peso. Markets can figure out those inconsistences faster than you can snap your fingers. And they did.



Another aspect of the BCRA's monetary mischief is not so obvious, but it's every bit as real. The BCRA has been surreptitiously financing the government's deficit spending. It does this through the sterilization of increases in the net foreign asset component of Argentina's monetary base. This is done via the sale of bonds issued by the BCRA (LEBACS). The sterilization (and financing of the government's deficit) has been on a massive scale. In the January 2017—May 2018 period, the BCRA sterilized 50% of the total increase in the foreign asset component of the monetary base (see chart below). In consequence, the BCRA has been the largest source of finance for Argentina's sizable primary fiscal deficit. These monetary-fiscal shenanigans are a formula for a currency disaster.



To end Argentina's never-ending monetary nightmare, the BCRA, along with the peso, should be mothballed and put in a museum. The peso should be replaced with the U.S. dollar. Argentina should do officially what all Argentines do in times of trouble: dollarize. It's time for President Macri to face reality. He must drive a stake in the heart of Gradualism. Dollarization would do just that. And with that, confidence would be established; and as John Maynard Keynes put it: "The state of confidence, as they term it, is a matter to which practical men pay the closest and most anxious attention."

Powell Discounting External Risks: Gathering Storm Clouds Should Worry Federal Reserve*

By DESMOND LACHMAN*

Speaking in June at the annual European Central Bank forum in Portugal, Federal Reserve Chair Jay Powell stuck to his mantra that risks to the US economy are balanced and that US financial vulnerabilities remain moderate. He did so despite clearly gathering storm clouds in the global economy.

In assessing risks to the US economy, Powell should be asking two questions: how much damage would the US economy take if any of the external risks were to materialise, and how great is the probability that those risks will materialise?

Had Powell asked those two questions, he might not have remained as sanguine as he appears to be. Instead, he might have focused on the following three external risks and the threat they pose to the US and global economies.

The first is the deteriorating economic and political situation in Italy, the euro area's third largest economy and the world's third largest sovereign debt market. After the formation of an unstable populist government in Rome, whose policy agenda places it on a clear collision course with its European partners, the chances of an Italian crisis within the next six months have risen appreciably.

The new government is highly unlikely to adopt policies that would put the country on a faster growth path. Such measures are necessary to address Italy's serious public debt and banking sector problems. These troubles are compounded by the winding down of the ECB's asset purchase programme and signs of an overall European economic slowdown.

It would be an understatement to say that an Italian collapse would constitute a seismic shock to the US and global economies. The euro would not survive in its present form if Italy was forced to exit the arrangement. It is also difficult to imagine that an Italian default on its $2.5tn public debt would not set off a full-blown European banking crisis. That, in turn, would send shock waves throughout the global economy.

The second major external risk that Powell is downplaying is Sino-US trade tensions. President Donald Trump's administration has ratcheted up import tariffs on China, prompting a novel response from Beijing. Rather than imposing retaliatory tariffs against US companies, China is offering greater market access to their competitors in other parts of the world, portraying itself as a champion of trade openness and subverting Trumpian protectionism.

Circumstances are not helped by the dimming prospects of a successful conclusion to North American Free Trade Agreement negotiations. There besides,

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Trump is threatening Europe's car sector with punitive tariffs, and global financial markets continue to be riled by the risk of a global trade war amid a return to beggar-thy-neighbour policies.

The third risk is the possibility of an abrupt slowing of the Chinese economy, as well as of those of other large emerging markets. These countries are trying to operate in a less open global economy while also struggling with the consequences of US monetary policy normalisation. Emerging markets now constitute more than half of the global economy, according to the International Monetary Fund, and their debt levels are higher than they were on the eve of the 2008 Lehman Brothers bankruptcy. Moreover, the currencies of many emerging markets are weakening as capital flows dwindle in response to higher US interest rates.

In setting US monetary policy, Powell should of course focus on fulfilling the Fed's dual mandate of high employment and low inflation. However, by choosing to downplay external risks that have a reasonable chance of materialising and disrupting the US economy, he reduces the chances of the Fed delivering on its domestic mandate.

Finding Solutions to Target-2 Dilemma: Bundesbank Credit Holds EMU Together*

By MARCELLO MINENNA AND EDOARDO REVIGLIO*

Europe's monetary union rules that have generated a sharp increase in the Bundesbank's Target-2 claims on the European Central Bank provide a strong incentive for Germany to remain a euro member to safeguard its credit position.

Only a broad political agreement to change radically the mutual financing inherent in the treaties on economic and monetary union would give Germany room to reclaim part of its enormous Target-2 credit of €975bn at end-June.

Prof. Clemens Fuest, head of the Munich Ifo economic research institute, has proposed changing the legal framework with an exit mechanism that would supply the 'get-out' clause some Germans apparently desire – allowing the country's possible EMU escape with its credit intact.

However, considering that EMU debtor countries have a blocking share of votes, that proposal appears a political non-starter. The reasonable alternative would be to set up a risk-sharing framework to eliminate the risk of a country leaving. This would entail the completion of banking union, a sizeable European budget and a system of fiscal transfers.

Roberto Violi, senior director in the Banca d'Italia's risk management department, Giovanni Dosi and Andrea Roventini of the Sant'Anna School of Advanced Studies (a university centre of worldwide renown based in Pisa) and Marcello Minenna have proposed a technical mechanism to share gradually the risks of euro area public debt in a market perspective. Unfortunately, implementing such a plan will not be easy.

The Bundesbank's exposure towards other EMU central banks represents 50% of Germany's net international investment position. Some German economists believe these assets may be substantially irredeemable. The Target-2 balances of Italy and Spain reached record heights of €465bn and €393bn respectively in May. The June data will probably be even worse.

Target-2 has grown into a complex accounting system of debts and credits between national central banks that intermediate 90% of cross-border transactions between private banks. It has several advantages: minimum counterparty risk, quick settlement times and reduced costs.

Target-2 growth reflects imbalances in trade and capital flows Germany's average annual current account surplus of 7% of GDP over the past decade (although not all of this from intra-euro area transactions) has not been matched by a corresponding increase of banks' credits towards the rest of the euro area. Owing to higher

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post-2008 financial crisis risk perceptions, German banks' lending towards the euro area has declined.

The more recent build-up of southern European countries' Target-2 debts has stemmed from the ECB's €2tn-plus quantitative easing that started in March 2015. Italian and Spanish private investors have progressively sold more than half their government bond holdings to their national central banks and invested the proceeds in financial assets in northern countries, the UK and US.

The last three years have seen over €500bn in capital flight from southern economies. The ECB has played this down as healthy behaviour of investors seeking to improve returns and diversify risks. A less benevolent reason could be investors' search for a hedge against the redenomination risk that would arise from a member state's exit.

Renewed Target-2 divergence was not completely unexpected. Already in 2015 Paolo Savona, the renowned Italian economist who is now Europe minister in the Rome government, warned that the ECB's QE would drive capital flight from weaker countries and increase the German credit position.

In an eternally immutable euro area, it would be perfectly reasonable for Target-2 balances to be non-collectable, without expiry and without interest (as they are currently). In any standard scenario, these accounting entries would bear no risk at all.

But the scenario now – increasing political discord, with a eurosceptic government in Rome and a weakened administration in Berlin – is not standard. In the hopefully unlikely event of a euro exit, the departing national central bank would regain independent status. The Banca d'Italia, an ECB shareholder, would separate itself from ownership. In a normal transaction, the exiting shareholder would pay back (in euros) what is effectively an intra-group loan from the subsidiary.

The ECB has seemed to support this position in past official declarations. But, under current regulations, there is no legal tool that could force an exiting country to settle its debts in euros. If a debtor country departed, the Bundesbank would find it very difficult to collect even a small fraction of its Target-2 credit. A unilateral German exit would imply total loss of the credit. The same would happen if the euro area broke up entirely.

This uncompromising equation is part of the cement holding EMU together. Perpetually alive to any form of moral hazard, German economists find this position increasingly unpalatable. Pressure on the German government and the Bundesbank to mitigate the Target-2 dilemma may increase.

Central Banks Face 'Hot Breath' Over QE: US, Europe Both Under Pressure on Asset Purchases*

By DAVID MARSH*

Political constraints on the US Federal Reserve and the European Central Bank restarting large-scale asset purchases to combat a future recession will be much greater than after the 2008 financial crisis. That was a major conclusion of an OMFIF seminar in New York on 28 September linking past and present policy-makers from the US and Europe discussing 10 years of quantitative easing after the Lehman Brothers bankruptcy in September 2008.

Interest rates are unlikely to rise high enough during the current tightening cycle to quell any coming downturn simply with rate cuts. So there was general recognition that, on both sides of the Atlantic, QE would be part of central banks' future toolkit for dealing with the next economic dip.

The seminar, supported by The OMFIF Foundation, was attended by around 50 public and private sector participants.

Europe's predicament was deemed more vulnerable than that of the US because of the lack of a centralised political and financial entity as a counterparty to the ECB , which one former US economic official said had been the 'unsung hero' of the crisis. 'We are under close scrutiny,' one European official said, lamenting the lack of a broadly attractive universal 'safe asset' in a politically fragmented Europe.

The seminar heard general disquiet about continuing German constitutional court challenges to the ECB's QE policy, the rise of anti-euro political parties across the continent, and the weakening of German Chancellor Angela Merkel. European officials voiced concern about the eurosceptic Rome government's pre-seminar announcement of a higher-than-agreed budget deficit of 2.4% of GDP for the next three years.

Internationally, central banks faced a far greater need for political accountability. In America, 'the realities of political economy are now more binding than before the financial crisis,' according to one US participant. Suggesting the 'hot breath' of politicians was now 'on central bankers' shoulders', he added that leeway for purely technocratic solutions was constrained. 'How does the House financial services committee react when you tell them you need a $50bn cheque?'

On the other hand, despite President Donald Trump's 'financial excesses', the US was favoured by general demand for the dollar. 'The US is issuing debt as far as the eye can see – but there's a lot of demand for these safe assets... The rest of the world is ready to buy [them].'

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*This article first appeared in OMFIF Commentary on October 2, 2018.

*David Marsh is Member of IMI International Committee and Chairman of OMFIF.

Another European official termed as an 'understatement' that, in the European Union, 'zero political impetus' existed to enhance Europe's combined 'fiscal capacity'. This raised the worrying perspective that the ECB would be asked to do more in any future downturn, but with less political backing than when Mario Draghi, ECB president, declared in 2012 it would do 'whatever it takes' to save the euro. Doubts were expressed whether Draghi's successor, taking over in November 2019, would have the same clout.

Participants from all sides were clear that QE had fulfilled its main function of lowering financial market yields and forestalling a still worse downturn. 'I believed it would work and it did work,' said a former senior Fed official. Large-scale asset purchases had now been used by many 'respectable' central banks. 'It is not revolutionary – does raise activity – and I would do it again.' European officials cautioned that QE was part of a 'comprehensive framework' that included negative interest rates (not used so far in the US and still of doubtful viability in the future) and forward guidance on keeping rates low.

Ben Broadbent, deputy governor for monetary policy at the Bank of England, made a closing lunchtime speech comprehensively rebutting the widespread suggestion, made two years ago by UK Prime Minister Theresa May, that QE had unduly helped wealthier asset owners and increased inequality. Broadbent pointed out that equity and house prices remain in real terms comfortably below pre-crisis levels.

Another former US official said QE lowered return for savers and this influenced distribution of income. 'But it saved us from a repeat of the 1930s – I don't recall that was a time when everyone was linking arms and saying how good it was to have quality income.' The Fed's 'quantitative tightening' now under way with gradual shrinkage of its balance sheet through asset disposal, would have only a modest restrictive effect compared with $1.5tn of tax cuts and a similar volume of spending increases in coming years by the Trump administration, this participant said.

Another official noted that, because of 'intertwined' links with fiscal policy, QE had important implications for central bank independence. There was nervousness about sensitivities in Germany in particular. The burgeoning political debate in Germany over the Bundesbank's much-increased Target-2 claims on the ECB stood in sharp contrast to the position in France, where Target-2 attracted little or no attention, including among senior parliamentarians.

Merkel, Macron and Euro-CACs: Taming the Spectre Haunting Europe*

By MARK SOBEL*

Debt in Europe is very high. The chief debtors at the government level aside from Greece are Italy and Portugal, but France, Spain, and Belgium too have government debt close to or beyond 100% of GDP.

European debates rage about risk reduction v. risk sharing. Additionally, history is littered with sovereign debt restructurings; and history repeats itself.

Questions over private sector involvement in bearing the cost of high or unsustainable debt are inevitable. For Europe, this is an area of extraordinary sensitivity. Every step carries risks of political setbacks and market upsets, particularly in view of tensions displayed at the Brussels summit on 29 June over sharing the burdens of migration.

German Chancellor Angela Merkel and French President Emmanuel Macron added to this debate by introducing into their pre-summit 'Meseberg declaration' (named after their meeting in a Baroque palace near Berlin) this recondite sentence: 'To improve the existing framework promoting debt sustainability and to improve their effectiveness, we should start working on the possible introduction of euro-CACs (collective action clauses) with single-limb aggregation.'

Behind this bewildering phrase lurks a spectre haunting Europe: a spirited controversy between countries with low and high debt about what to do in the event private sector lenders head for the exit and subject indebted governments, needing European Stability Mechanism support, to an escalating spiral of distress and default.

CACs are written into sovereign bond contracts to allow a bond to be restructured under certain conditions, including that a large majority of the bondholders agrees to write-downs. This reflects the reality that, unlike in a national bankruptcy, international creditors cannot be constrained to bear losses in court; a global sovereign bankruptcy court does not exist, and probably never will, in view of national sovereignty.

The Meseberg CAC reference mirrors long-standing euro area reform battles. Germany and the Netherlands wish to impose 'automatic' write-downs on private sector holders of government debt for any country seeking support from the ESM, due to become the European Monetary Fund. France and Italy, however, fearing that would lead to higher spreads and market instability, say such action crosses a 'red line'.

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*This article first appeared in OMFIF Commentary on July 9, 2018.

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In principle, the Germans and Dutch are right – investors take risks to earn rewards and they should bear the consequences of their actions, rather than taxpayers. Market discipline is salubrious. Moral hazard is to be avoided. Unfortunately, the real world is not so simple. Imposing write-downs automatically on private holders in return for ESM support is a bad idea, for four reasons.

First, if a state faces illiquidity rather than insolvency, providing financial support and avoiding a restructuring is far less harmful to the country. But determining whether a country is illiquid or insolvent is not straightforward. Judgements about debt sustainability are subjective and many cases offer up shades of grey. One must assess the country's debt burdens and deficits, its potential growth rate, and its capacity to adjust and run primary surpluses. Responsible policy-makers should not push countries into insolvency.

Second, write-downs are often needed to eliminate a debt overhang. But they can be highly costly. Countries can lose access to credit markets for long periods. Large national balance sheet losses can emerge and decapitalise banks when they hold significant amounts of national sovereign bonds.

Third, automaticity can set off self-fulfilling market runs and contagion. Market participants, fearing an automatic restructuring in a country, would have every incentive to be the first mover and dump paper. Short-term positioning would be rewarded, buy-and-hold investors penalised. Market selling might then move to the next vulnerable country.

Fourth, the external climate matters. A restructuring of private sector holdings of Greek debt in May 2010 could have engendered massive contagion in global markets. By 2012, markets were able to accommodate it.

In 2010, Merkel and then French President Nicolas Sarkozy took a stroll on the beach in the French seaside town of Deauville. They decided losses could be imposed on private creditors of indebted European states, as a condition for the country receiving support from the European bail-out mechanism. Greek, Irish and Portuguese bond spreads immediately soared. Ireland and Portugal lost market access. European taxpayers did not save money. Future solutions over CACs must learn the lessons of Deauville.

FinTech

EU, China Should Embark on Silk Road of Fintech*

By BEN SHENGLIN*

Editor's Note: This article is part of Preview Policy Report for the 2018 China-EU Summit, which will be jointly published by China Watch Institute — the new think tank platform powered by China Daily — and Bruges-based EU-China Research Centre of the College of Europe.

Recently, some traditional champions of globalization and open-door policies seem to have turned their back on them: erecting new barriers, introducing new trade tariffs, imposing new investment restrictions, sidelining multilateral institutions, and undermining the global system on which the world relies to function and they themselves have helped build.

It is against this global backdrop of protectionism and unilateralism that the European Union and China have emerged as the two most staunch and important partners for globalization and multilateralism. There are no better areas than the digital economy and the Belt and Road Initiative that they could collaborate to enhance connectivity across the BRI region.

Digital finance

One of the most exciting developments in our era is the vital role of digital technologies. Thanks to its unique ecosystem, China has emerged as a leader in the digital economy.

At the core of the digital economy is digital finance, which is often used interchangeably with financial technologies. While the digital economy has been growing much faster than the average GDP, digital finance, by its nature, has the potential to growing even faster, and has been doing so, because financial products and services can be digitally delivered cheaper and faster, without the constraints of supply chains and physical infrastructure, which would take more money and time.

China's leadership in digital finance is probably even more significant. According to a recent study conducted by the Sinai Lab in the Academy of Internet Finance, Zhejiang University, three regions in China have emerged as global fintech hubs, alongside Silicon Valley and Greater New York in the US and Greater London in the UK.

*This article first appeared in The Bulletin published by OMFIF in May 2018.

* Ben Shenglin, Executive Director of IMI, Founding Dean of Zhejiang University Academy of Internet Finance

The Global FinTech Landscapes

The Silk Road

Many consider the vast region between the EU and China as falling into the parameters of BRI. The region represents not just a third of the nations in the world (and an even higher percentage of the global population), but also the biggest opportunity for the world to become a better place.

Many problems we face today either are happening within this diverse and difficult region, or are traceable, in their origin, to the region. Given its geographical proximity to Europe, solving the problems in this region means solving many of their problems at its doorsteps and reducing the problems inside Europe, such as migration and terrorism threats.

BRI, with its focus on improving connectivity through investments in digital and physical infrastructure in the region, is an opportunity that the European Union should not miss. Collaboration with China in BRI will inevitably include close partnership in the digital economy, for which Europe needs a catalyst to catch up.

The 10 Largest E-commerce Markets 2017 (Source: Business.com)

The Silk Road of digital finance

Many factors have contributed to China's leadership in fintech, among which is the large population whose financial service needs have been unmet by traditional mainstream financial service providers. With universal access, availability and affordability, fintech has proven to be the perfect solution to the unserved or underserved demand for financial services.

This demand-driven "China model" has already been replicated, with remarkable success, in some markets in this region with similar characteristics. Paytm in India is just one of such successes. Thanks to its strategic partnership with Ant Financial, a global fintech leader from China, Paytm has been able to expand its scope and scale so quickly that it now serves more than 250 million people in India, making it one of the largest payment platforms in the world.

EU-China fintech task force

As the saying goes, a single spark can start a prairie fire. The vast region is expected to join the fintech revolution, just as it has been sweeping China and India. It is in this context that the EU and China should consider setting up a EU-China fintech task force to coordinate their effort in promoting and guiding the development of digital finance in this region.

By joining hands with China, theEU will not only enhance connectivity across the region, but also enhance its influence in this region and its own prospects in the digital economy.

A nearby neighbor is more important than a faraway relative, according to a Chinese saying. With enhanced connectivity across the BRI region with a focus on the digital economy and fintech, the EU and China will transform their relationship from faraway relatives into nearby neighbors in the global village. Such a

partnership will be most welcome as the world battles protectionism and isolationism.

Renewed Interest in Central Bank Digital Currencies (CBDC)

By HERBERT POENISCH*

It has been reported in early October 2018 that the PBOC is recruiting digital experts for its Digital Currency research unit, indicating renewed interest in CBDC.

While all central banks have distanced themselves from private digital currencies (PDC), some of them even outlawing ICOs and PDC exchanges, the Bank for International Settlements (BIS) has expressed it most clearly: it (PDC) has become a combination of a bubble, a Ponzi scheme and an environmental disaster. A lot has been written about the pros and cons of PDC and no more will be added here.

However, central banks round the world which consider PDC an asset rather than money continue monitoring developments of PDC for possible threats to monetary and financial stability. Modern technology used for PDC offers challenges for central banks to create their own digital currencies, the CBDC.

This article explains what are central bank digital currencies, why would central banks explore and experiment with decentralized ledger technology (DLT) and what are the pros and cons of introducing CBDC. The conclusion is that there is no urgency to introduce CBDC but central banks are well advised to study and test CBDC.

1. What are central bank digital currencies (CBDC)

The taxonomy defines CBDC as an electronic form of central bank money that can be exchanged in a decentralized manner known as peer-to-peer, meaning that transactions occur directly between the payer and payee without the need for a central intermediary. It has four key properties: the central bank is the issuer which enjoys the trust of the population of a country or even beyond its borders; it is issued in electronic form, the accessibility can be universal, like cash or limited, such as bank reserves with the central bank and the transfer mechanism which can be centralized or decentralized.

Central banks have built up trust of the population over decades, some of them over centuries. It takes decades to build trust, seconds to ruin it and years to repair it. There is the misconception, particularly among young people that technology can create trust.

Central banks have been responsible for payment systems since the beginning, either running their own payment system, the centralized option or monitoring a decentralized payment system, thus ensuring the smooth operations and finality of money transfers.

While the limited access in electronic form with a decentralized transfer mechanism has been around for decades in the form of interbank market trading

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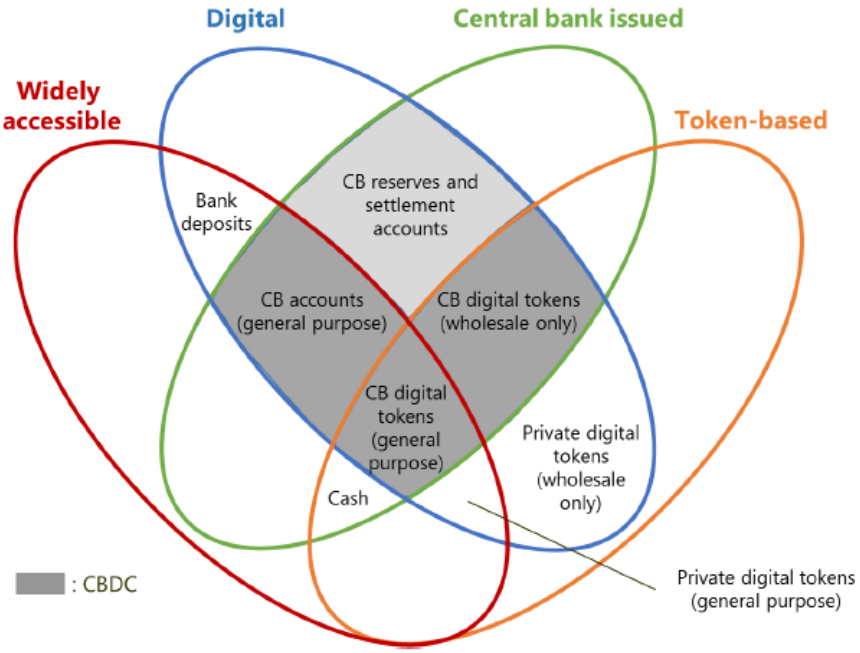
reserves at the central bank among commercial banks, the universal use by the population at large would be a new feature which has uncharted impact for monetary and financial stability.

The following graphs depict the properties of CBDC

First, what kind of CBDC would be available, either by tokens or accounts?

The money flower: a taxonomy of money — Graph 1



Notes: The Venn-diagram illustrates the four key properties of money: *issuer* (central bank or not); *form* (digital or physical); *accessibility* (widely or restricted) and *technology* (account-based or token-based). *CB* = central bank, *CBDC* = central bank digital currency (excluding digital central bank money already available to monetary counterparties and some non-monetary counterparties). *Private digital tokens (general purpose)* include crypto-assets and currencies, such as bitcoin and ethereum. *Bank deposits* are not widely accessible in all jurisdictions. For examples of how other forms of money may fit in the diagram, please refer to the source.

Source: Based on Bech and Garratt (2017).

Source: BIS CPMI and MC 2018

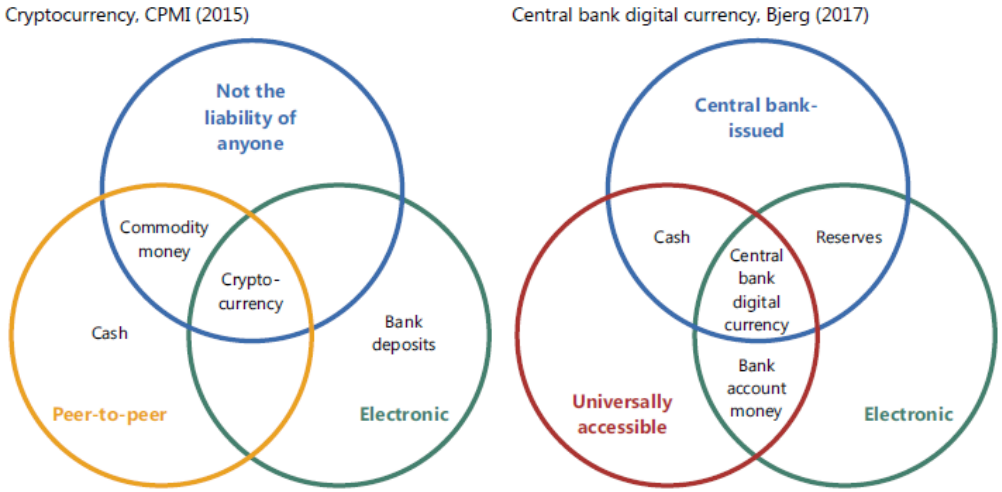
The CBDC can have two forms, universally accessible, called CBDC retail and the limited accessibility, called wholesale CBDC. In a cash based system, central banks do not accept deposits by the general public as deposit currency accounts (DCA). It is the commercial banks which rely on deposits from the public as major source of funding.

Limited experiments in retail CBDC (such as Fedcoin) have been launched, but none has been as widespread as to replace cash.

PDC has been praised as there is no authority in charge of the issue. It is up to a protocol, an algorithm and miners to create new issues. Underlying this thinking is the distrust by some in any authority. But again, technology in itself does not create trust. Users of PDC can remain anonymous, as can users of a token-based CBDC.

Second: differences between PDC and CBDC

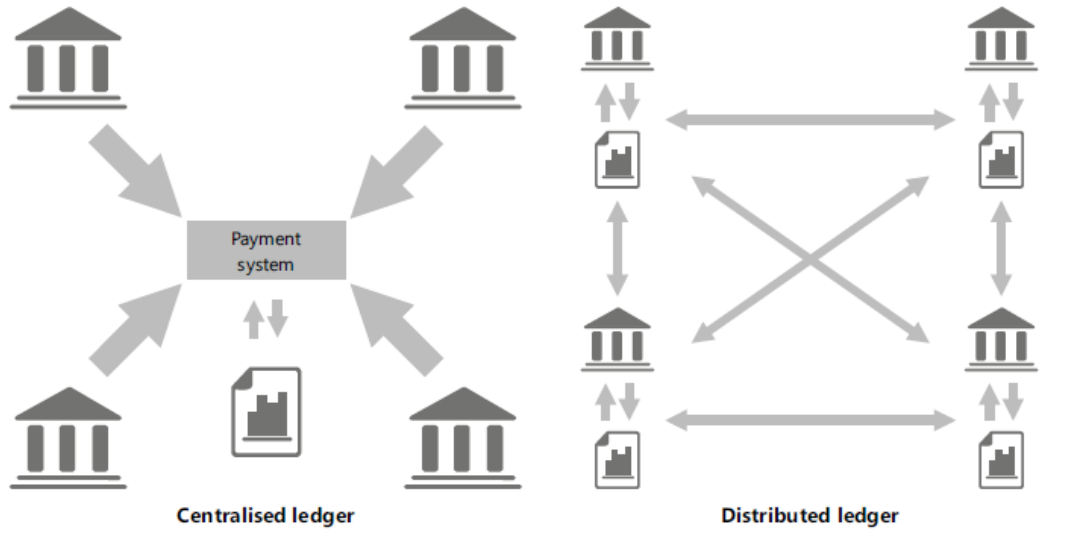
Two taxonomies of new forms of currency Graph 2



Source: Bech and Garrat, BIS QR September 2017

Third, difference between centralized ledger and DLT

Distributed ledger system Graph A

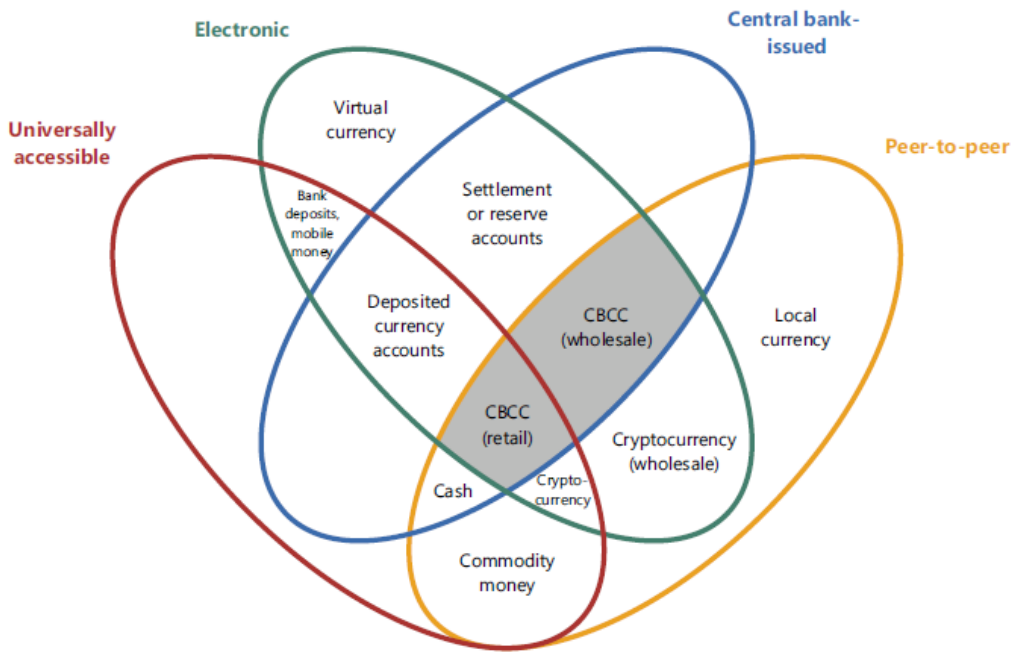


Source: Santander InnoVentures (2015).

Source: Bech and Garratt BIS QR, September 2017

How would CBDC or CBCC fit into the variety of monies available?

The money flower: a taxonomy of money Graph 3



Source: Bech and Garrett, BIS QR September 2017

2. Why would central banks introduce CBDC?

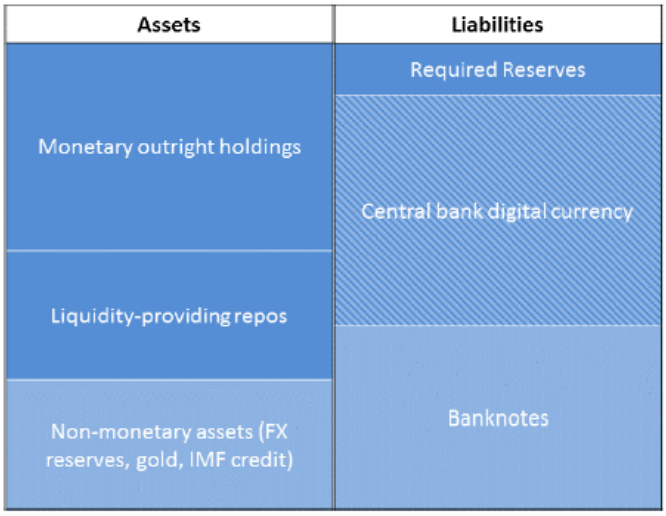
At present there is no urgency to introduce CBDC for retail purposes as the use of cash is on the rise, as well as the use of electronic means of payment provided by banks and private networks such as PayPal, Alipay, WeChatPay and others.They all use national currencies, they are linked to existing monetary policy frameworks and well supervised by national supervisors of payments systems as well as adhering to global best practices, such as the Principles for financial market infrastructures. All that has been added is the 24/7 immediate settlement of electronic means of payment, such as QR readers.

Even in countries such as Sweden where cash is disappearing fast, the providers of electronic payments, such credit cards have filled the gap without any crunch. Some proponents of CBDC argue that if payments were disrupted in the private sector, say due to technical problems, households and business could still make digital payments via CBDC, something important if cash had largely disappeared. However, such instances should not occur in a well supervised payment system and emergency measures, such as queing and liquidity injections by the central bank have served well until today.

Even in countries where private clearing (fast payments) are expanding rapidly, such as China, cash is still king, with cash withdrawals constant over the past years.. The Chinese authorities have to analyse why private electronic payments are doubling every year when cash withdrawals have not declined.

If central banks were to introduce CBDC they would have to provide the same convenience as cash, or even more. One of the key criteria is anonymity. The technology behind CBDC could allow central banks to provide a digital cash substitute with anonymity properties similar to those of cash. However, if the central bank choses to trace the users of CBDC for purposes of fraud, tax evasion and money laundering, the CBDC would be inferior to cash and thus not accepted by the population. Substitution between CBDC and cash as central bank liabilities would be an option for the public. The central bank has to guarantee a 1:1 exchange of CBDC and cash.

Central bank balance sheet with CBDC — Graph A3



Source: BIS CPMI and MC 2018

There is even less need for the introduction of wholesale CBDC. Wholesale electronic platforms with limited access to financial intermediaries and decentralized settlement, called the interbank market, such as real time gross settlement (RGTS) systems have been in place for decades and have served their purpose very well, for the transfer of large funds as well as for monetary policy purposes, such as injection of liquidity.

Thus there is no need to introduce CBDC, neither for wholesale nor for retail purposes.

The only real plan for introducing CBDC has been adopted by the Riksbank of Sweden, the so called e-koruna project. They cite the following basic purposes for introducing CBDC:

- The e-krona is not intended to replace cash, but only a complement
- The e-krona safeguards the public's access to central bank money when cash is no longer accepted.

- The main functions of the e-krona are as means of payment and means of saving
- The e-krona is intended for payments between consumers and companies. The interbank clearing system RIX would continue as of present.
- The e-krona shall be a direct claim by the general public on the Riksbank. It shall be accessible 24/7 in real time.
- The supply of e-koruna shall be determined by the demand for them.
- The e-krona will not carry interest.
- The Riksbank will be responsible for the issue, redemption and settlement of e-koruna.
- For the sake of verifying anti-money laundering regulations, the e-koruna will be only partly anonymous.

Apart from the advanced stage of Swedish e-koruna, other central banks, such as the PBOC continue to study the possible impact of the introduction of CBDC.

3. Pros and cons of introducing CBDC

This raises the old questions about the role of central bank money, the scope of direct access to central bank liabilities and the structure of financial institutions. Physical central bank money which is widely available has given universal access to central bank liabilities and provided financial intermediaries with the prime liquidity to expand their credit business via the money multiplier. This approach has served the public and the financial system well, setting a high bar for changing the current structure.

Although a general purpose CBDC might be an alternative to cash in some situations, a central bank introducing such a CBDC would have to ensure the fulfillment of anti-money laundering and counter terrorism financing (AML/CTF) requirements as well as satisfy the public policy requirements of other supervisory and tax regimes. While anonymity should be assured to compare CBDC with physical cash, central banks might be tempted to use the availability of data on holders of CBDC to investigate transactions under the umbrella of general surveillance.

Central banks run reputational risk if CBDC falls prey to cyber-attacks. Cyber threat, such as malware, and fraud feature among them. As cash is free of such risks, the public expects such absence of risks for any substitute to cash. The technology has not been tested, unlike PDC.

While the issuance of CBDC would probably not alter the basic mechanism of monetary implementation, although the availability of an interest-bearing central bank liabilities with universal access could function as a safe asset comparable in nature to short maturity government bills. Thus the central bank would be competing with commercial banks for funding. This in turn would mean a greater role for central banks in the financial system. It could move central banks into uncharted territory and could also lead to greater political interference.

Central banks issuing CBDC would have to expand their balance sheet as the demand for cash would not diminish overnight. On the asset side they would have to purchase more assets, leading to a shift in asset prices and interest rates.

The expanded role of central banks in the present financial structure would have implications for financial stability if financial intermediaries were drained of prime liquidity from the general public. This could be a challenge to the two-tier banking system.

The design of the CBDC might impact central bank's seigniorage. The present gains from unremunerated cash issue would change if CBDC were interest bearing.

The most pertinent financial stability risk is that it can facilitate a flight away from private financial institutions and markets to the central bank. In the ultimate case, if the public held CBDC rather than commercial bank liabilities, the central bank would have to provide larger lender of last resort facilities to banks in times of stress.

For currencies widely used for cross-border transactions, there will be international competition among safe haven currencies during times of generalized flight to safety. It will not be possible to exclude non-residents from holding CBDC.

Conclusion

While there is no urgency to issue CBDC, apart from the Swedish case, central banks are well advised to study and test the introduction of CBDC in a gradual manner, as a complement to cash for the digital savvy population rather than risk a disruption of the well-functioning present financial system.

How Innovation Drives Financial Inclusion*

By DIEGO ZULUAGA*

At a time when the world's two largest economies are engaged in a destructive quest to limit trade between people, any evidence of the benefits impact of globalisation cannot come soon enough.

Recently, we got just such an illustration in the form of the World Bank's Findex report on global financial inclusion. The report is a detailed survey of the banking, saving and borrowing patterns of households in 140 countries. It covers developed and developing nations, rich and poor, women and men, tracing progress in the expansion of access to financial services.

Ready availability of reliable banking and payments facilities is essential for human flourishing. Contrary to what one might think, it is not for the rich and highly educated that these services are most important. Small-scale farmers, migrant workers and budding entrepreneurs in frontier markets depend critically on cheap and transparent payments and credit systems, as they have few alternative employment options and usually have meagre funds of their own.

Without basic financial services, the way of life of these people would be compromised and their living standards would decline.

It is therefore an auspicious development that the six years between the first (2011) and third (2017) editions of the Findex report have seen significant increases in the percentage of the world's population with mobile money or bank accounts. Sixty-nine per cent of adults worldwide now use one or both of those services, compared to 51 per cent at the start of the decade.

Nowhere has the recent spread of financial services occurred most visibly than in emerging markets. While the share of adults owning accounts in these countries, at 63 per cent, remains far below their high-income counterparts, it stood at just 40 per cent six years ago. This rate of growth is remarkable even when compared to other measures of global development, such as the reduction of extreme poverty and the fight against communicable diseases, on which we have made great strides in recent decades.

One trend more than any other helps to explain the recent progress of financial inclusion, namely the expansion of mobile banking and payments.

The revolutionary effects of M-Pesa in Kenya are already relatively well-known. Since its introduction in 2007, this mobile money payments system has more than halved the cost of fund transfers and cut processing times from hours to a few minutes or seconds. M-Pesa has forced incumbent money transmitting services such as Western Union to slash their fees. It has also introduced millions of Kenyans to the formal finance sector, facilitating access to bank and savings accounts.

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*This article first appeared on CapX on June 27, 2018.

* Diego Zuluaga is a policy analyst at the Cato Institute's Center for Monetary and Financial Alternatives.

The extent to which other economies in sub-Saharan Africa have rushed to follow in Kenya's footsteps is often not fully recognised, yet the Findex report bears it out. Since 2011, half a dozen countries, including Ghana, Nigeria, Senegal and Tanzania, have more than 40 per cent of adults with a mobile money or bank account.

Financial technology is also having a marked impact on the emancipation of women in societies that have tended to be highly patriarchal.

Aside from considerations of empowerment and autonomy, there are obvious practical reasons to want women to have access to finance. As well as making up half the adult population, they are chiefly in charge of household decisions and the raising of children, so financially active and literate women have a positive impact on the wellbeing of those around them.

And women who own a bank account can save and build businesses independently from their husbands and fathers. In communities that are traditionally averse to enterprise, giving access to financial services to the few - including women - with entrepreneurial ambition can accelerate development.

The spread of innovative banking and payments provision gives cause for celebration. Yet, just as the developing world gallops towards financial inclusion, Western countries are making it harder for their own people to borrow, save and invest.

America provides perhaps the starkest illustration. As of 2015, 7 per cent of U.S. households, nine million of them, did not have a bank account. An additional 19.9 per cent were "underbanked" in that they had to resort to alternative (usually higher-cost) providers for credit and other banking services.

Experts disagree on the drivers behind the scale of America's unbanked problem. A paper published last week by the Kansas City Federal Reserve Bank finds that income, education, employment and race all predict one's likelihood of using basic banking services. Indeed, as Lisa Servon shows in her illuminating book The Unbanking of America, the poor and minorities often prefer to use alternative financial services because they find them more transparent, more accessible and even more respectful than banks are to them. But this convenience has a price, and it's sometimes steep.

The Kansas Fed researchers also find a strong correlation between internet connectivity and access to banking. While this relationship may reflect the general marginalisation of a fraction of the population who are poor, unbanked and unconnected, it points to the increasing importance of technology for securing access to financial services, even in mature markets.

But too often regulation stands in the way of innovation-led financial inclusion. The Federal Deposit Insurance Corporation, a key U.S. bank regulator, has dragged its feet since 2008 on issuing new bank licenses. Similarly, a promised nationwide charter that could lower barriers for new fintech platforms has been slow to materialise. Innovation in payments in the M-Pesa mould is hampered by disparate money transfer rules across the 50 states.

Poor people's access to banking is also hampered by a growing mire of anti-money laundering laws that threaten to turn ordinary citizens into felons, and by

rules aimed at protecting consumers that make serving some of them uneconomical for banks. In the UK, the Financial Conduct Authority's proposed cap on overdraft charges, which had been shelved but is now again under consideration, would almost certainly have this effect. Indeed, similar measures against payday loans have shut out hundreds of thousands of borrowers from that market.

Rich countries should take their lead from emerging markets and let innovation drive financial inclusion. Unless countries remove regulatory barriers to account ownership, they risk the poorest falling ever further behind. The political and social consequences of that would be dire.

FinTechs in China: With a Special Focus on Peer to Peer Lending

By CAROLINE STEM, MIKKO MAKINEN AND ZONGXIN QIAN*

Abstract

This paper studies the development of financial technology companies (FinTechs) in China. We describe the recent development of payment services and P2P lending and analyze empirically the determinants of P2P lending in different regions in China in 2014-2017. Our descriptive analysis shows that the surge in the number of the P2P platforms in China follows an inverted U-shaped phenomenon. However, the outstanding balances of P2P lenders is still increasing, while average yields of P2P lenders have sharply plunged. Our empirical findings indicate: (i) P2P lending is more extensive in region with more mobile phone subscriptions; (ii) outstanding balance of P2P lenders in region is negatively associated with the size of traditional banking sector; and (iii) the number of the P2P platforms in negatively related to the fixed assets investments in region, whereas average yield is a positively associated with the fixed assets investments.

Keywords: FinTechs; financial technology; P2P; peer to peer lending; China

1. Introduction

Digitalization in the banking sector got recently a new twist with the emergence of thousands of start-ups worldwide. These innovative financial technology companies, FinTechs, provide novel financial services, and some of these start-ups already grew to remarkable sizes like Alibaba, Amazon and Google. While a common perception is that business models of FinTech companies focus on payment services and lending, they also encompass personal financial advisory services, crowdfunding, virtual currencies, InsurTech, RegTech, BigData and security (e.g. cyber security). Moreover, FinTechs explore new business areas on a continuous basis, and some of these financial innovations may have the potential to disrupt the financial system as we know it. Traditional banks recognize this development in financial technology and have started their own digitalization projects.

It is also noteworthy that some of these new technologies seem to gain market shares in lending faster in emerging than in developed countries. One example is China, which is the country with most operating peer to peer (P2P) lending platforms (appr. 2,000) worldwide. In this paper, we provide an overview on FinTechs in China. We examine (i) why payment services and P2P lending are so popular in China and (ii) what are the determinants for the emergence of P2P lending platforms in different provinces in China.

This paper is organized as follows. Section 2 describes emergence of FinTechs globally. Section 3 provides a brief summary of China's financial system. In Section 4 we look at FinTechs in China, with a special focus on payment services and P2P lending. Section 5 analyzes empirically the determinants of P2P lending in Chinese regions. The final section concludes.

2. FinTechs development globally

The emergence of FinTechs is a global phenomenon. Data provided by CBInsight and KPMG show that investments in FinTechs gained traction since 2013 whereas most investments were made in Americas (especially the US). However, investments in the Asian region increased since 2014 significantly. More than half of the investments in 2016 in Asia can be traced back to one

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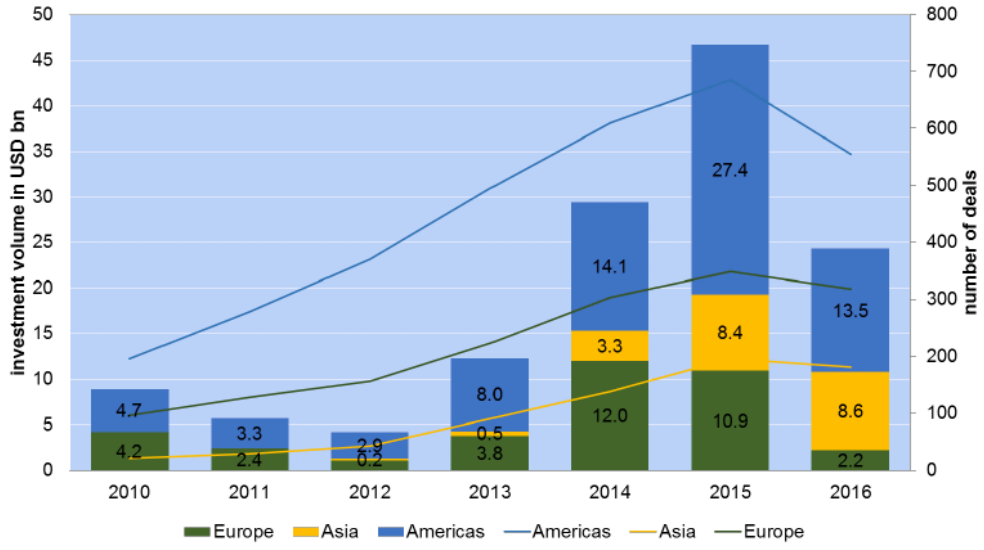
deal in China with Ant Financial (USD 4.5 bn), a subsidiary of Alibaba. Whereas investments in FinTechs slowed down in 2016 in Europe and Americas, investments in the Asian region remained on their high level.

Chart 1. Investments in FinTechs – Volume and number of deals



Source: KPMG, CBInsights.

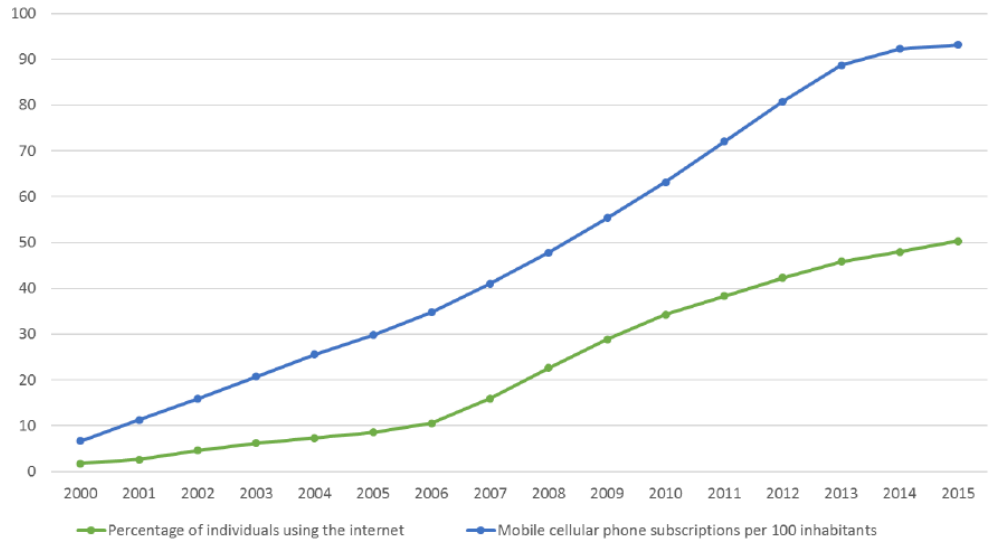
Nowadays a number of small financial technology companies offer financial services, which are usually provided by traditional banks. In contrast to traditional banks, however, FinTechs in most cases do not hold a banking license. Some FinTechs already rose to a critical size and started to offer additional financial services, which made it necessary for them to be licensed as a bank/credit institution (e.g. Alibaba in China and N26 in Germany). Still, most FinTechs are small start-ups arguing that they have a competitive advantage in comparison to traditional banks as they offer new and unique innovative financial services whereas at the same time they are much more flexible to adapt to new market situations in comparison to big traditional banks. In fact, in comparison to traditional banks FinTechs usually offer only one specific financial service. As a rule, FinTechs offer financial services that can be standardized and therefore provided with very low variable costs. (see also Stern, 2017)

While many newspaper articles and scientific studies regarding FinTechs focus on developed countries (e.g. the UK and the US), there are also remarkable developments in some emerging countries. As mentioned, China is the market with most peer to peer lending platforms, amounting to around 2,300 as of March 2017 with a lending volume of CNY 9,210 bn according to website wdzj.com. In Africa, Kenya is a country where two thirds of adults use their mobile phone to send and receive payments. They use services provided by telecommunication companies like e.g. M-Pesa. Consequently, there is also a discussion if FinTechs could bring a significant improvement with regard to financial inclusion in many especially emerging countries. (see, e.g., Stern (2017) on developments in CESEE region). A report by McKinsey Global Institute (2016) constitutes that FinTechs could also boost economic growth in emerging economies. For China they calculate a possible 4.2% increase in GDP until 2025 due to digital financial services.

However, all of these new financial services are based on the requirement that the customers have access to the Internet and/or possess a mobile phone. The next chart shows that half of China's population already uses the Internet. Mobile phone subscription stood at 93 per 100 inhabitants as of 2015. However, this figure does not mean than 90% of the people living in China own a mobile phone as one person may use more than one mobile phone. Nevertheless,

data from the World Bank Global Findex Survey indicate that 98% of respondents aged 15+ have access to a mobile phone or the Internet at home.

Chart 2. Adoption of internet and mobile phones



Source: International Telecommunications Union.

3. China's financial system

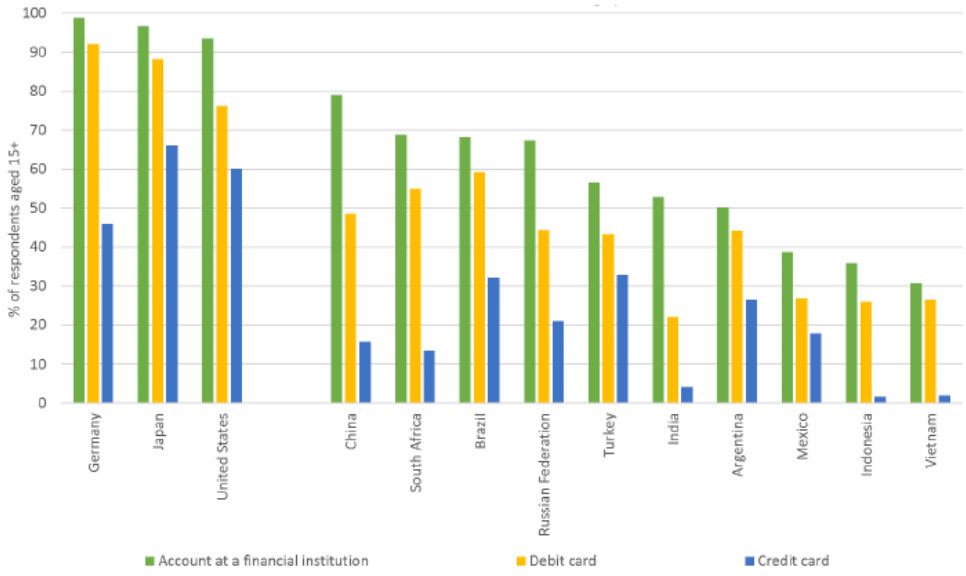
China's financial system is still dominated by a banking sector of which the main participants are big state-owned banks. By March 2017, the assets of five biggest commercial banks still account for 36% of the total assets of all banking institutions in China. Together with other 12 joint-stock banks, their assets account for 55% of the total assets of all banking institutions in China. China's total social financing amounts to RMB 2,120 billion by March 2017. RMB denominated bank loan accounts for 55% of the total social financing. Bank loan from big banks favors big state-owned enterprises and listed companies. Firth et al. (2008) find that the banks in China impose fewer restrictions on state-owned firms' capital expenditure, which leads to an overinvestment bias. As a result, in the past, the most successful part of China's financial system was actually the informal sector (Allen et al., 2005). Some of China's nonfinancial firms solve this issue by owning shares of the banks. Lu et al. (2012) find evidence that firms which hold shares in the banks have better access to bank loan. Actually, an obvious trend in China's financial sector is the integration between the industrial sector and the financial sector. Resolving financing problem is just one of the reasons for this trend. Other reasons include the searching for yield motive and diversification motive.

China has a separated regulatory system in which regulations on banking, securities and insurance are separated. Recent development of China's shadow banking sector is a result of regulatory arbitrage (Sheng and Soon, 2015). By cooperating with trust companies, securities companies and insurance companies, the Chinese banks circumvent various regulations which limit their loan supply. Many wealth management products and trust contracts are created to facilitate the regulatory arbitrage. The rapid growth of the shadow banking sector partly reflects the high credit demand in the real sector. However, due to the lack of regulations, the development of the shadow banking sector causes excessive risk taking and the accumulation of systemic risk. The informal sector has similar problems. Being aware of those risks, the Chinese

government decided to further reform its financial system in its 13th five year plan. Parts of that plan include the development of the financial market and new financial institutions, particularly smaller sized financial institutions which specialize in providing financial services to small firms and customers with limited collateral and financial records. The most noticeable trend in the development of China's financial market is the development of the corporate bond market. The unpaid balance of China's corporate bond increased by 210% from 2007 to 2016.

In terms of financial inclusion of private persons in China, the chart below gives a geographical comparison of the situation in China in comparison to other emerging and developed countries. About 80% of respondents in China indicated that they have an account at a financial institution, which is the highest value in comparison to other emerging countries displayed on the chart. However, less than half of the respondents indicated that they have a debit card and less than 20% possess a credit card. The emerging FinTechs in China may have the potential to change the Chinese financial sector significantly.

Chart 3. Financial inclusion tradional banking system



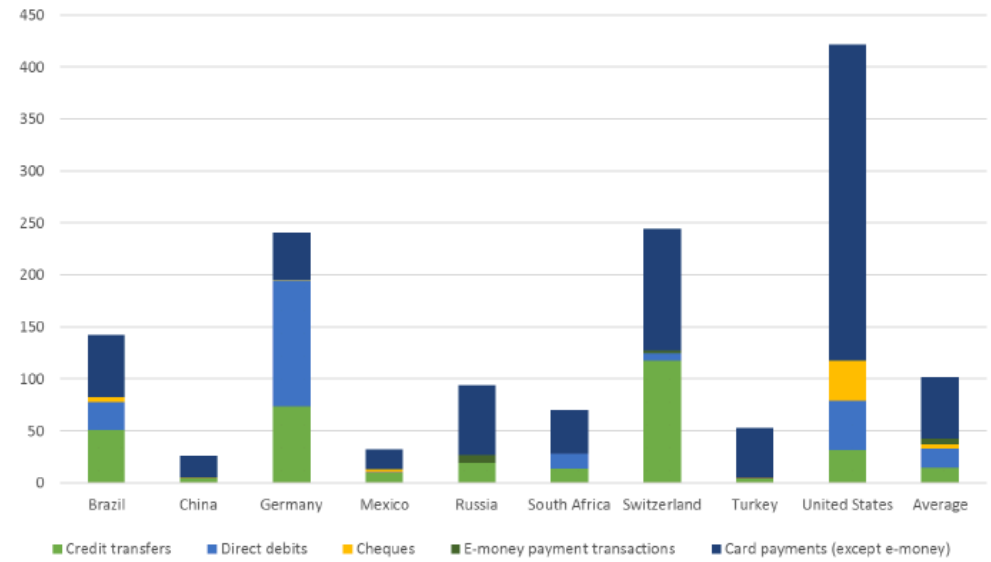
Source: Worldbank Findex Databasis.

4. FinTechs in China

Payment services

With regard to electronic payment services, we can differentiate between payment services, which need a bank account to be performed, and those, which work without the ownership of a bank account (mostly e-money). Most FinTech companies offer their services without requiring a bank account; payments are transferred via the Internet or mobile phone. However, there are also FinTechs offering faster transactions between bank accounts like instant payment services.

Chart 4. Number of transaction per inhabitant (as of 2015)

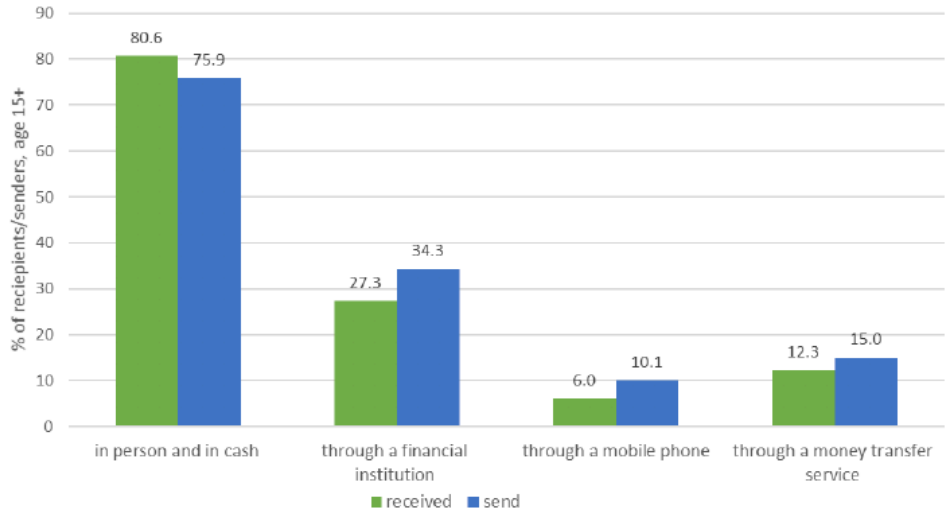


Source: BIS.

The chart above shows the number of electronic payments per capita by payment method in China and other countries. The chart indicates that traditional bank account based payment methods (i.e. credit transfers, direct debits and card payments) are not widespread in China. The BIS payment service database, however, does not include direct debits and e-money payment transactions for China.

According to the Peoples Bank of China annual report, 13.8 bn mobile payment transactions have been made in China as of 2015 (PBOC, 2016). This equals 10.1 transactions per inhabitant. Taking this number into account, China is the country with most mobile payment transactions per inhabitant in the chart above. Furthermore, data from the World Bank Findex database (see Demirguc-Kunt et al. (2014)) indicates that mobile payments are already becoming an alternative for sending remittances within China, 6.0% and 10.1% of respondents indicated that they received/send domestic remittances using a mobile phone, though the most popular way of sending remittances is still in person and in cash.

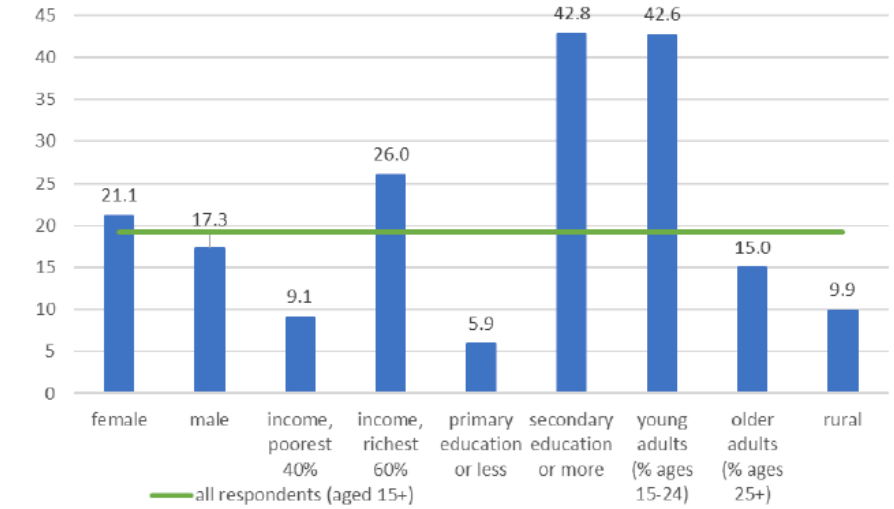
Chart 5. Most popular way of sending/receiving money in China is still in person and in cash (as of 2014)



Source: Worldbank Findex Databasis.

On the other side, the chart below shows, that the Internet is already widely used in China to pay bills or buy things. About 20% of all respondents indicated that they pay bills or buy things using the Internet. It is worth mentioning that when it comes to young adults or respondents who have secondary education or higher more than 40% indicate that they use the Internet to pay bills or buy things. All these data show that, mobile payments may become a real alternative to traditional payment methods where a bank account is required.

Chart 6. Internet is already widely used to pay bills or buy things (as of 2014)



* Percentage of respondents aged 15+ (if not indicated differently) answering that they used the internet to pay bills or buy things.
Source: Worldbank Findex Databasis.

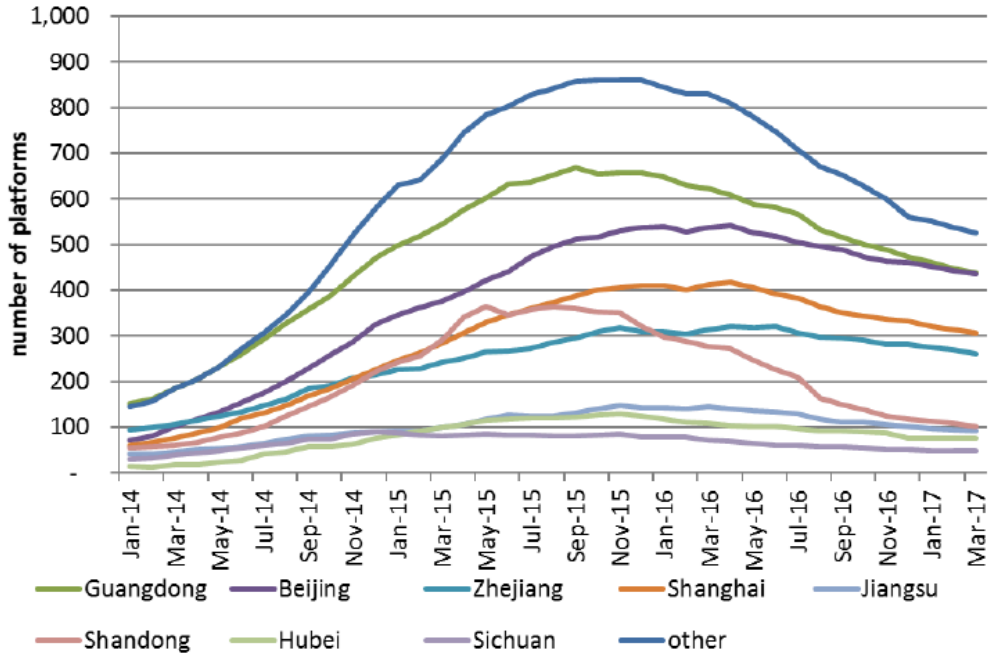
Peer to peer lending

Innovative forms of lending, offered by FinTechs, are very often in the form of so-called marketplace lending. This means that potential borrowers seeking for a loan apply via a platform (P2P lending platform) on the Internet. The platform rates the borrowers and assigns them to different categories based on their risk profile. The data used for this may be very traditional as normal banks would use (e.g. pay slip of the borrower) but can also be more innovative data like activities on social media sites. Once the borrower is accepted by the P2P lending platform, the borrowers' loan application is placed on the P2P lending platform and opened for potential investors to invest. Investors can be private or judicial persons. One individual investor can finance all or part of the loan. Usually, one investor only finances a small fraction of a loan. In contrast to traditional banks, the P2P lending platform does not bear the credit risk of the loan. The credit risk is borne by the investor(s).

This form of lending skyrocketed in China over the last years. The Chart below shows the number of operating P2P lending platforms in China since January 2014 for different provinces. The biggest expansion in the number of platform was until year-end 2015 up to 3,477 operating in the country. Most platforms were established in the provinces Guangdong, Beijing, Shanghai, Shandong and Zhejiang. Since year-end 2015 the total number of P2P lending platforms is decreasing. The sharpest decline can be observed in the province Shandong. Many of these platforms collapsed also because of fraudulent activities (e.g. Ponzi schemes). This is also the reason why stricter rules on P2P lenders were imposed in 2016. Moreover, also academics like Shen (2016) and Zhou et.al. (2016) find that more regulations in China's P2P lending market is necessary.

The new rules announced on P2P lending stipulate amongst other measures that individual borrowers can only get a loan of max. CNY 200,000 per platform and a maximum of CNY 1 million across all platforms. For legal persons caps of CNY 1 million and CNY 5 million apply.

Chart 7. Number of P2P lending platforms

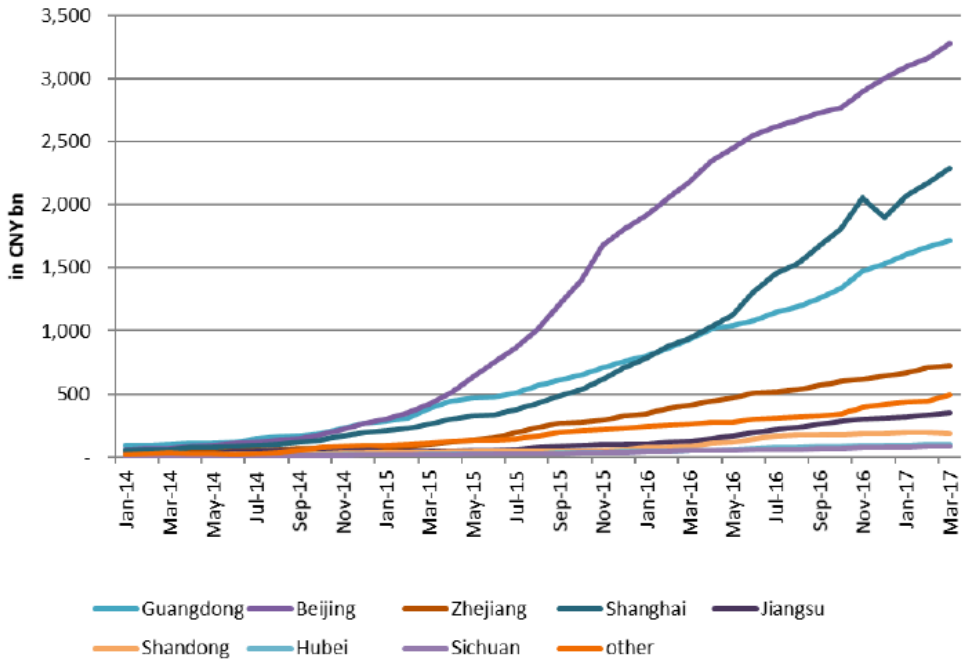


Source: wdzj.

Still, the development of outstanding loan balance of the P2P platforms in China is impressive. The volume increased from January 2014 to March 2017 by 29 times to CNY 9,210 bn (appx.

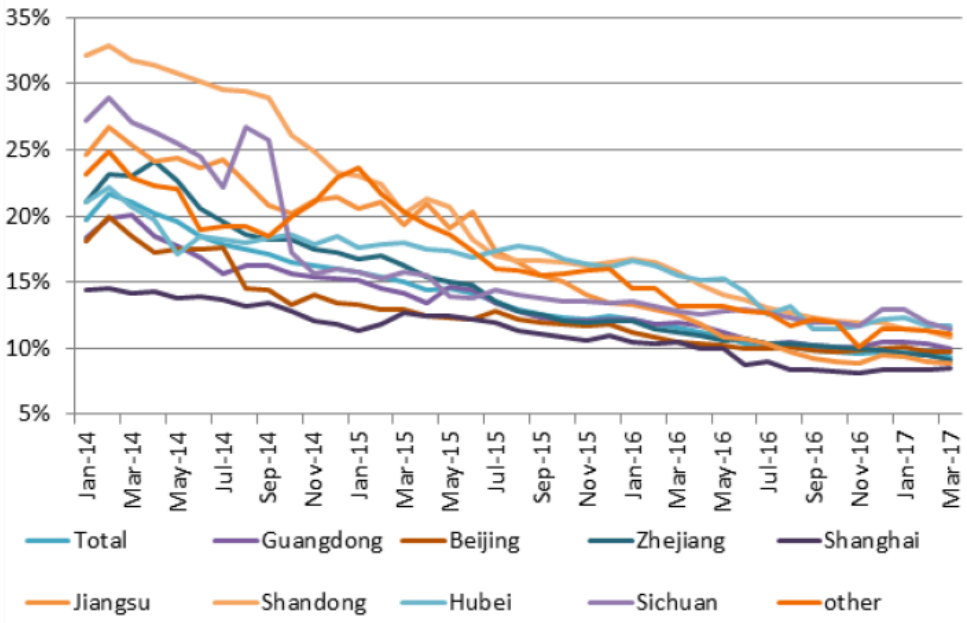
USD 1,340 bn). The leading provinces in terms of outstanding loan volume are Beijing, Shanghai and Guangdong.

Chart 8. Outstanding balance P2P lending platforms



Although the outstanding balance of P2P lenders is still increasing, the average yield of P2P loans is decreasing significantly. China's average yields decreased more than 50% since January 2014 down to 9.4% as of March 2017. It seems that provinces where many P2P lenders are operating experienced below average reductions of loan yields (e.g. Guangdong, Beijing and Shanghai). However, these provinces also have the lowest yields of all provinces. This may has to be seen in connection with the fact that in these provinces most P2P platforms are operating, causing enhanced competition, which reduces loan yields. The three provinces with the highest loan yields are Shandong, Hubei and Sichuan, which are also provinces where fewer P2P lending platforms are operating.

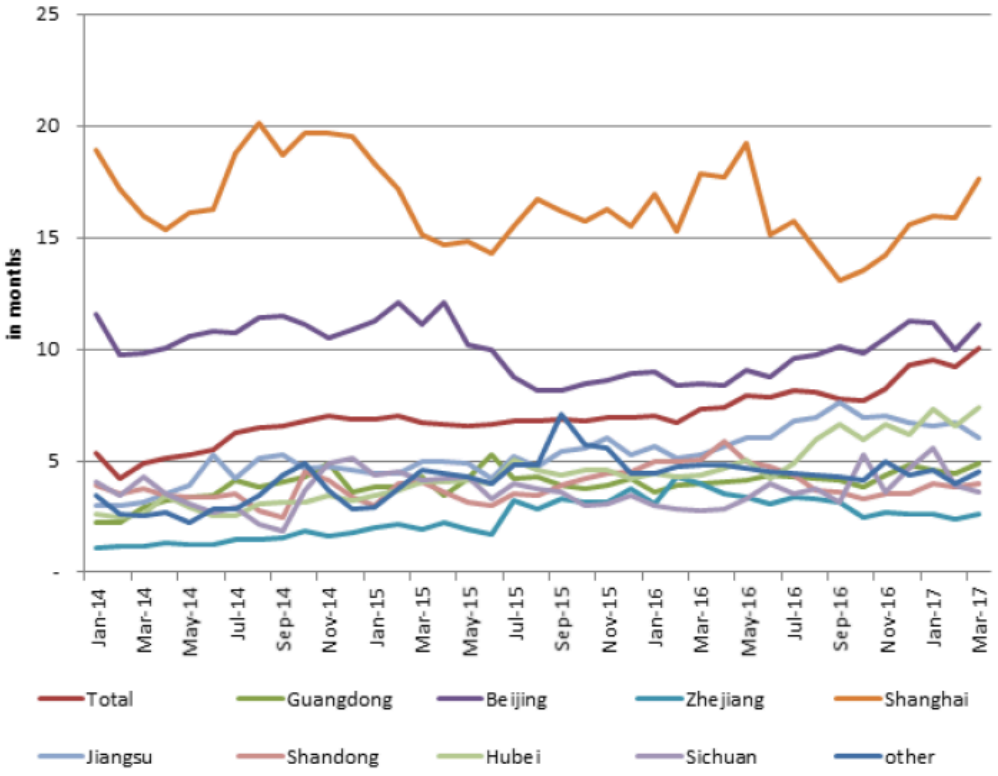
Chart 9. Average yield of P2P lending loans



Source: wdzj.

P2P loans have usually a relatively short duration. For example, on average China's P2P loans are ten months, whereas the term of the loans doubled since January 2014 (5.4 months). P2P loans have the longest duration in Shanghai (17.6 months as of March 2017) and Beijing (11.08 months as of March 2017), again the provinces with most P2P lending platforms operating. By contrast, loans of P2P lending platforms in the provinces Zhejiang and Sichuan are on average less than four months.

Chart 10. Average months loans outstanding



Source: wdzj.

All this data shows that there is an enormous dynamic in the development of P2P lending in China. However, in parallel we observe that developments between the provinces differ substantially. Based on the above data, we next analyze empirically the determinants of P2P lending across different provinces in China.

5. Empirical analysis: the determinants of P2P lending in China

Setup and data

This section analyses the determinants of the P2P lending in China. We base our analysis on the fact that there is a substantial regional disparity in China (e.g. Démurger 2001; Démurger et al. 2002; Wei 2007; Zhang and Zou 2012). We hypothesize that this social and economic heterogeneity across Chinese regions has, among other things, important bearings on the formation of P2P lending.

In analyzing the relationship between the P2P lending and regional characteristics in China, we focus on the three angles of P2P lending: the determinants of (i) the number of P2P platforms, (ii) the lenders' average yield from P2P loans, and (iii) the outstanding balance of P2P lenders. Due to availability of P2P lending data at wdjz.com, we focus on the following eight regions: Beijing, Shanghai, Guangdong, Zhejiang, Jiangsu, Shandong, Hubei and Sichuan.

Our regional explanatory variables are extracted from the CEIC database. The regional data at the CEIC database restricts our empirical analysis to 2013-2015. Due to relatively small sample size, we base our analysis on a pooled OLS regression model with time fixed effects.

Research hypotheses

Following previous research on the determinants of emerge of the financial technology (e.g. Haddad and Hornuf (2016)), we establish four hypothesis. First, we conjecture that the size of traditional banking sector3 in region can be either positively or negatively related to P2P firms'

formation in region. For one thing, a larger traditional banking sector provides an easier access to capital for P2P households and entrepreneurs to fund their business. In a similar vein, the larger traditional banking sector in a region, the better risk-absorbing capacity it has, which enhances incentives of the incumbent banks to fund novel P2P entrepreneurs. Also, as discussed in Section 2, assuming that P2P firms have a competitive edge with a more flexible operations and lower operating costs than traditional banks in region, the large banking sector in region may allure P2P entrepreneurs to compete with the incumbent banks. Contrast to this positive association view, traditional banking sector may also be negatively related to the P2P lending in region; for example, the growth of P2P lending is likely to erode the incumbent banks' returns from traditional banking business.

Hypothesis 1: P2P lending in region may be positively or negatively associated with the size of traditional banking sector in region.

Second, in several emerging countries the penetration of mobile money exceeds the number of bank accounts (GSMA 2015; PricewaterhouseCoopers 2016) as mobile and smart phone usage provides consumers with a direct access to digital banking services such as mobile payment and lending. As P2P platforms largely rely on advanced novel technologies, we hypothesize that the number of mobile phone subscriptions in region is positively associated with the P2P lending in region.

Hypothesis 2: P2P lending is more extensive in regions with more mobile phone subscriptions.

Third, in general the larger the population size in region, the more heterogeneity in labor supply in region. Empirical evidence supports the view that the size of the population is positively correlated with entrepreneurial supply in region; for example, the countries experiencing population growth have a larger share of entrepreneurs (ILO 1990). To take into account the effects of supply of labor on the potential number of P2P entrepreneurs, we hypothesize that the P2P formation in region is positively related to the population size in region.

Hypothesis 3: The number of P2P lending is positively related to the size of population in region.

Fourth, the importance of traditional manufacturing and construction industries in region may hinder the formation of novel P2P platforms. For example, the major share of investments in region absorbed into manufacturing and construction sectors can erode the available funding resources for the P2P entrepreneurs. Similarly, the size of fixed assets investments in region is a proxy for the importance of manufacturing and construction sectors in region. Hence, we hypothesize that the P2P lending is negatively related to the size of fixed assets investments in region.

Hypothesis 4: The number of P2P platforms is negatively related to the size of fixed assets investments in region.

Empirical results

Table 1 shows the estimation results for the determinants of P2P lending in China. We base our analyses on a pooled OLS regression model with time fixed effects and in all models we control for the level of economic development in region by including log(GDP per capita).

In column (1), where we use the log-log specification, we focus on the determinants of the number of P2P platforms in region. First, we do not find statistical support for our first hypothesis. The estimated coefficient on the association between the size traditional banking sector, measured by log(bank total assets/GDP), and the number of P2P platforms is negative but statistically clearly insignificant.

Concerning our second hypothesis, the number of mobile phone subscriptions in region is positively related to the number of P2P platforms in region at 5 % significance level. The

estimated coefficient suggests that a 1 % increase in the number of mobile phone subscriptions is estimated to correspond to a 2.7 % increase in the number of P2P platforms.

We do not find, however, support for our third hypothesis. While the estimated coefficient of the size of population is negative, it is visibly insignificant. Fourth, we do find that the magnitude of fixed assets investments in region is negatively significant (-0.94) at 1 % level. The coefficient suggests that a 1 % increase in the size of fixed assets investments in region is estimated to correspond to a 0.9 % decrease in the number of P2P platforms.

In column (2) of Table 1 we examine the determinants of outstanding balance of P2P lenders using the log-log specification. First, we find the estimated coefficient on the association between the size of traditional banking sector and the number of P2P platforms is -1.03 and is significant at 10% level. This supports our first hypothesis suggesting that the sizeable traditional banking sector in region would diminish the P2P lending in region.

Second, as in column (1), we continue to find that the number of mobile phone subscriptions in region is positively associated with the number of P2P platforms. The estimated coefficient (4.66) is significant at 1% level. This would suggests that a 1 % increase in the number of mobile phone subscriptions is estimated to correspond to a 4.7 % increase in the balance of P2P lenders.

Contrary to our third hypothesis, however, we find that the size of population is negatively related to the P2P lending at 5% level. This finding suggests that a 1 % increase in the size of population in region is estimated to correspond to a 3.1 % decrease in the balance of P2P lenders in region.

Fourth, we continue to find that the magnitude of fixed assets investments in region is negatively significant (-1.57) at 1 % level, suggesting that a 1 % increase in the size of fixed assets investments in region is associated with a 1.6 % decrease in the balance of P2P lenders in region.

Column (3) of Table 1 shows the estimation results for the lenders' average yield (%) from P2P loans. In contrast to columns (1) and (2), where we use the log-log model, in column (3) we use the linear-log model as our dependent variable is in percentages. While most of our explanatory variables are insignificant, we do find that the magnitude of fixed assets investments in region is significantly associated with the P2P lending in region. The positive coefficient (5.71) is significant at 1 % level.

Table 1. The determinants of P2P lending in China.

	(1) log(number of P2P platforms)	(2) log(outstanding balance of P2P lenders)	(3) Lenders' average yield from P2P loans (%)
log(bank total assets/GDP)	-0.78 (0.61)	-1.03 * (0.49)	4.17 (3.10)
log(mobile phone subscriptions)	2.74 ** (0.91)	4.66 *** (0.87)	-8.03 (5.67)
log(population)	-1.55 (1.09)	-3.10 ** (1.26)	6.28 (7.03)
log(fixed assets investments)	-0.94 *** (0.28)	-1.47 *** (0.20)	5.71 *** (1.41)
R^2	0.92	0.98	0.83
Observations	24	24	24

Notes: Table 1 shows the estimation results for the determinants of P2P lending in China using regional data in 2013-2015. All models also include a constant term, a proxy for the economic development of region (log(GDP per capita)) and time fixed effects. Standard errors in parentheses are clustered at regional level. Using non-clustered standard errors, the reported results in Table 1 are qualitatively similar. Significance levels: * 10 %; ** 5 %; *** 1 %, respectively.

6. Conclusions

China is a country where mobile payments and P2P lending are already very popular and are about to gain market shares rapidly. This paper shows that mobile payments are already a real alternative to other electronic payments and cash. The widespread usage of the Internet and mobile phones support this development.

When it comes to lending markets in China we can observe a very special situation where the financial market is dominated by large state owned banks. The undersupply of enterprises and private households with loans lead to the development of a shadow banking system. In this environment, P2P lending platforms started to mushroom in China. The number of platforms operating in the country peaked year-end 2015 with 3,477. Due to various reasons (e.g. fraud) numerous platforms failed. Consequently, the Chinese regulator imposed stricter rules on P2P lenders in 2016.

We test four hypotheses on the development of P2P lending in different regions across China. For the first hypothesis, P2P lending in region may be positively or negatively associated with the size of traditional banking sector in region, we could not find a statistically significant relationship for all dependent variables, except outstanding balance.

In contrast, we find for our second hypothesis (P2P lending is more extensive in regions with more mobile phone subscriptions) significant positive coefficients for the number of platforms and outstanding balance. However, the relationship is not statistically significant with regard to the average yield. Hypothesis number three is that P2P lending is positively related to the size of population in region. However, we only find a negative statistically significant relationship with regard to outstanding balance.

The fourth hypothesis constitutes that the number of P2P platforms is negatively related to the size of fixed assets investments in region. This relationship seems to be true for the number of lending platforms and the outstanding balance. However, the relationship is also statistically significant for the average yield but with a positive relationship.

We conclude from the above results that there is evidence that mobile phone subscriptions have a positive relationship with the number of P2P lending platforms and the outstanding balance. Moreover, fixed assets investments have a negative relationship with the number of platforms and outstanding balance. Indicating, that in regions with high manufacturing and construction sector the financing potential is already absorbed by these enterprises not leaving room for P2P lenders.

Surprisingly, the size of the population is not positively related with the number of P2P platforms. Quite the contrary, there is a negative relationship between the size of the population and the outstanding balance. Also the size of the traditional banking sector in the respective region has no statistically significant influence on the emergence of P2P lending platforms.

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A Regulatory Approach to Fintech: Guarding Against Emerging Risks Without Stifling Innovation*

By CHRISTINE LAGARDE*

In 1876, when Alexander Graham Bell was awarded a patent for the telephone, the only way to communicate rapidly over long distances was by telegraph. The dominant company in that market dismissed Bell's invention as a useless toy and rejected an opportunity to buy his patent. The rest, as they say, is history.

This anecdote illustrates the unpredictable nature of technological innovation. Today, some enthusiasts say crypto assets may represent the beginning of a similar breakthrough. Others condemn crypto assets as little more than a fad or a fraud. We should not dismiss them so lightly.

Crypto assets are just one example of how new technologies are being used to deliver financial services. Advances in artificial intelligence promise to extract more value from ever more abundant and ubiquitous data. Its applications in financial services include enhancing fraud protection and regulatory compliance, potentially expanding access to services and deepening financial inclusion.

Financial technology offers considerable promise, but it also poses risks. Consider distributed ledger technology, which underpins crypto assets. It can enable faster and cheaper transactions, store records securely and execute so-called smart contracts automatically. But the technology has also been used for illicit purposes.

Regulators face a difficult task. On the one hand, they must protect consumers and investors against fraud and combat tax evasion, money laundering and the financing of terrorism. They must also protect the integrity and stability of the financial system. On the other, they must beware of stifling innovation that benefits the public. By engaging with market participants at the centre of financial innovation, regulators can stay abreast of the benefits of new technologies and identify risks. Developing a forward-looking regulatory framework calls for creativity, flexibility, and new expertise.

The experience of the 2008 financial crisis and its aftermath yielded three important lessons. First, trust is the foundation of the financial system, but it is fragile and can be shaken easily. Second, risk accumulates in unexpected places. In the years before the crisis, financial instruments emerged that were poorly understood by investors, such as collateralised debt obligations. It is unclear whether a decentralised financial system will be more stable or less. There is a chance that emerging risks will go undetected as the role of traditional intermediaries diminishes. Third, in a globalised world, financial shocks quickly reverberate across borders. Responding to a crisis requires concerted action. And a global financial system may transmit shocks more quickly.

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So far, national authorities have reacted with varying degrees of regulatory stringency. If this uncoordinated response continues, activity will simply migrate towards more lightly regulated jurisdictions in a race to the bottom. Because crypto assets know no borders, a global approach is vital.

Such an approach is taking shape. The Financial Action Task Force has given guidance to its members on addressing money-laundering and terrorist-financing risks associated with crypto assets. The Financial Stability Board, which coordinates financial regulation for the G20 economies, is studying ways to monitor crypto assets.

The G20 agrees with the FSB's assessment that crypto assets do not pose a threat to stability, though they could pose a threat in the future. The G20 asked the FSB and other standard-setting bodies to continue their work on crypto assets and report on progress.

The International Monetary Fund can serve as a forum for the exchange of ideas and forging consensus. It is the job of the Fund to monitor the economies of its 189 members. That gives the IMF a unique global perspective.

We must understand innovative technologies, learn from them, and perhaps even adopt some of them to improve regulation, supervision and surveillance. In some cases, it will be enough to apply existing regulations. In others, new approaches may be required as risks emerge and as distinctions between entities and activities break down. One thing seems certain: we should not put off action until the answers become clear. Instead, we must begin to consider the regulatory framework of the future.

We must do so in a manner attuned to the rapid pace of change, and with the awareness that unexpected new opportunities and risks may emerge. One approach, undertaken in Hong Kong, Abu Dhabi and elsewhere, is to establish regulatory sandboxes where new financial technologies can be tested in a closely supervised environment.

Above all, we must keep an open mind about crypto assets and fintech, not only because of the risks they pose, but also because of their potential to improve our lives. When in doubt, think of Bell and his telephone.

Working Paper

Monetary Policy Transmission with Two Exchange Rates and a Single Currency: The Chinese Experience

By **QING HE, IIKKA KORHONEN AND ZONGXIN QIAN***

Abstract
In emerging market economies, transmission of monetary policy through the foreign exchange market is complicated by the coexistence of financial restrictions and arbitrages. Using China as an example, we show that the coexistence of exchange rate interventions, capital controls and an on-shore-offshore exchange rate differential makes the long run equilibrium in the currency market nonlinear. Disturbances to this nonlinear long run equilibrium could offset the impact of monetary policy actions on domestic price stability. Omitting such nonlinearity leads to biased inference on the effectiveness of monetary policy.

Keywords: CNY, CNH, monetary policy, capital controls
JEL Classification: E52, F31, F40

1. Introduction

Increased participation of emerging market countries in the global financial market has sparked strong interest among international macroeconomics researchers. Compared to developed economies, the issues of financial repression and vulnerability to international economic shocks loom larger in emerging market economies and complicate efforts of policymakers to transmit monetary policy via the exchange rate channel.

Frankel (2010) notes that the literature commonly distinguishes emerging market economies from advanced economies in terms of their imperfect financial sectors, capital controls and opportunities for international arbitrage. Unlike advanced economies, international financial market arbitrage is usually unobserved in emerging market countries. Without this data, it is challenging to understand these important, and potentially costly, issues.

The emergence of China's renminbi (RMB) offshore market provides a unique opportunity to explore this monetary policy challenge in an emergingcountry context. China's rapid economic growth amplifies its economic impact on the rest of the world and raises the importance of its currency in international transactions. The

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latest BIS triennial central bank survey (BIS, 2016) finds that the daily average turnover of RMB transactions increased from almost nothing in 2007 to $202 billion in April 2016. The survey further mentions that by April 2016 the RMB accounted for roughly 4% of global foreign exchange transactions, making it the world's eighth-most traded cur-rency.

This rising RMB transaction volume has created a huge offshore RMB market. However, due to the existence of capital controls and currency market interventions in the onshore RMB market, there are usually gaps between the offshore (CNH) rate and onshore RMB (CNY) rate. An arbitrage business thus sprung up has around the differentials in the CNY-CNH exchange rate. In this paper, we study China's monetary policy transmission in the context of the RMB, a currency with two exchange rates.[1]

How monetary policy actions feed through to inflation through the currency market is fairly well understood. An expansionary monetary policy depreciates the home currency, thereby increasing the domestic price of imported goods and promoting exports. Over time the lower exchange rate this transmission channel may not function properly if the government prevents the exchange rate from fully adjusting.

Moreover, when there an explicit or implicit exchange rate target as in the case of China, the impact of monetary policy on the currency market is at least partially sterilized, thus diminishing the expansionary or contractionary effect of the monetary policy action.

Macro-prudential policies in many emerging economies, including China, feature extensive use of capital controls. When monetary policy changes relative returns between the home currency and foreign currencies, limitations on capital flows restrict changes in the exchange rate and thereby stymy changes in output and price levels.

Barriers to capital mobility may create asset price differentials between the home country and international financial markets.[2] As emerging market countries integrate with the global financial market, arbitrage transactions increase as traders seek to avoid capital controls.

This constellation of potential issues is particularly relevant to China due to its coexisting offshore and onshore RMB markets. A shock to the offshore or onshore currency market generates arbitrage opportunities. The resulting arbitrage activity, in turn, causes both RMB exchange rates to shift. Such currency fluctuations are hard to anticipate and can push output and aggregate price levels away from central bank targets.

Moving from theory to the realworld Chinese context, we start our analysis by identifying the long-run equilibrium relationship of offshore and onshore RMB exchange rates, economic fundamentals, and capital control measures. Once we have identified the long-run equilibrium for the currency market, we explore China's

[1] Several papers discuss the dynamic relationship between offshore and onshore RMB exchange rates (e.g. Cheung and Rime, 2014; Owyong et al., 2015). However, no study explores the implications of this dynamic relationship on monetary policy transmission.

[2] For example, multiple listings of same stock in home countries and international financial market.

monetary policy transmission in the context of this long-run equilibrium relationship. We end with an examination of how disequilibrium shocks on the currency market influence inflation expectations and discuss whether the central bank monetary policy toolbox contains instruments to mitigate such impacts.

This study contributes to two strands of the literature.

First, papers on purchasing power parity, or PPP (e.g. Taylor and Taylor, 2004; Hong and Phillips, 2010) typically assume the long-run relationship between exchange rate and PPP fundamental to be linear. Where nonlinearity is considered, it is usually modeled as nonlinear adjustments to a linear long-run relationship. However, as discussed above, emerging market economies often impose capital controls. For a country with capital controls, the impact of changes in the fundamentals on the exchange rate may vary with the degree of capital account openness, and thus, the long- run relationship will be nonlinear. Hong and Phillips (2010) argue that a linear approximation to the nonlinear cointegration relationship is not meaningful due to the lack of constant means of the non-stationary time series that would permit calculation of the linear approximation.

Using the newly developed nonlinear cointegration test of Vogelsang and Wagner (2016), we formally identify a nonlinear long-run equilibrium relationship between the CNY-CNH ex-change rate differential, capital controls, and economic fundamentals implied by purchasing power parity (PPP). We further demonstrate that omitting nonlinearity fosters misleading conclusions about China's monetary policy transmission. Since many emerging market economies have capital control measures similar to China's, our results demonstrate the importance of capturing the non-linearity in the long-run equilibrium of their currency markets. This has obvious implications for the analysis of their monetary policy as well.

Second, we extend the empirical literature on monetary policy transmission in open economies, especially those in emerging market countries. Vector autoregression (VAR) models are widely applied in empirical monetary policy analyses. Eichenbaum and Evans (1995), Kim and Roubini (2000), Faust and Rogers (2003), Scholl and Uhlig (2008), Bjornland (2009), and Kim and Lim (2016) all use linear VAR models to study the responses of exchange rate to monetary policy shocks in open economies. However, these studies focus on short-run dynamics and do not explicitly identify long-run relationships between the exchange rate and PPP fundamental. As mentioned, disturbances to the long-run equilibrium in the currency market can lead to exchange rate fluctuations that affect central bank targets such as an inflation target.

The above-mentioned papers also fail to identify long-run equilibria in the currency market and are silent on the impact of disequilibrium shocks in the currency market. To overcome this, Chong et al. (2012) extend the local projection method of Jorda (2005) to a cointegrated system and show that impulse response analysis of shocks to the long-run equilibrium can be calculated even without imposing any structural restrictions on the VAR system. We extend and apply the method of Chong et al. (2012) to calculate the impulse responses of inflation expectations to a disturbance to the long-run relationship in the currency market.

Chong et al. (2012) focus on a linear cointegrated system, so their approach is best-suited to advanced economies where the relationship between the exchange rate and PPP fundamental are more likely to be linear. As discussed, the presence of capital controls could mean that the long-run equilibrium in the currency market is nonlinear in the Chinese context. For this reason, we extend the approach to allow for a nonlinear long-run equilibrium relationship in the currency market. We believe that this extension well suits monetary policy analysis of emerging market economies with capital controls.

Chong et al. (2012) also use a reduced-form vector error correction model (VECM) for empirical analysis. As they demonstrate, the reducedform VECM is adequate for identification of impulse responses to disturbances to the long-run equilibrium of a currency market. It is not suited, however, to calculation of impulse responses to monetary policy shocks. This is problematic as the literature suggests that identification of structural policy shocks is important for policy analysis and reduced-form VECM or VAR models usually generate misleading policy implications (e.g. Kuttner, 2001; Cochrane and Piazzesi, 2002; Bernanke and Kuttner, 2005).

To overcome this, we employ a combination of survey data and financial markets data to identify exogenous policy shocks. As suggested by earlier studies (Kuttner, 2001; Cochrane and Piazzesi, 2002; Bernanke and Kuttner, 2005), the use of survey data and financial markets data makes it possible to identify structural policy shocks.

As to policy implications, we find a nonlinear long-run relationship between the CNY-CNH exchange rate difference and the PPP fundamental. The impact of the economic fundamentals on the exchange rate changes with the degree of capital account openness. Specifically, an increase in expected inflation in China relative to the US should depreciate the RMB against the US dollar (USD) if the capital account in mainland China was fully open. As it is not, depreciation of the onshore RMB is less than the depreciation of the offshore RMB, so the increase in the onshore CNY exchange rate is less than that of the offshore CNH exchange rate. Thus, there is a negative relationship between the CNY-CNH difference and the PPP fundamental. This negative correlation is weaker when the capital account is more open as the reaction of CNY to economic fundamentals is closer to the CNH reaction.

Based on the identified long-run relationship between the RMB exchange rates, capital controls and inflation expectations, we can study the implications of the deviations from this long-run equilibrium relationship on inflation expectations. Using a modified version of the local projection methods of Chong et al. (2012), we calculate the impulse responses for inflation expectations to disturbances of the long-run relationship. We find that when the CNY exchange rate is high relative to its long-run equilibrium level, inflation expectations rise. Therefore, disequilibrium in the currency market affects central bank efforts to hit a price stability target.

Unsurprisingly, we also find that expansionary monetary policy raises inflation expectations. We do not find a significant impact of monetary policy on the equilibrium relationship in the currency market, so disequilibrium in the currency

market does not completely neuter the influence of Chinese monetary policy over inflation expectations, but the impacts of typical monetary policy surprises on inflation expectations are fairly modest.

When disequilibrium in the currency market causes undesired changes in inflation expectations, it is difficult to offset the impact of such a shock through countervailing monetary policy actions. Capital control measures or currency market interventions might even be needed to restore the currency market equilibrium and stabilize inflation expectations.

The rest of this article is structured as follows. Section 2 presents the institutional setting and policy measures of China's central bank and its counterpart in Hong Kong. Section 3 sets out the methodology and describes the data. Section 4 reviews our empirical results. Section 5 concludes.

2 The offshore RMB market and Chinese policy measures

2.1 The offshore RMB financial market

The pace of RMB internationalization accelerated after the 2008 financial crisis. To facilitate the external use of RMB, China launched a pilot scheme in mid-2009 to ease restrictions on cross-border trade settlements with RMB. The scheme created an RMB pool outside mainland China and helped develop an RMB offshore financial market.

An offshore delivery scheme for offshore RMB-linked products was rolled out in July 2010. The People's Bank of China (PBoC) and the Hong Kong Monetary Authority (HKMA) signed a supplementary memorandum of transactions of RMB products in Hong Kong on July 19, 2010. Hong Kong became the de facto prime offshore RMB center and the offshore market took off. The limitation to the Hong Kong market was soon lifted, allowing the creation of several offshore financial centers over the next five years.[3] The daily average turnover of RMB transactions increases from almost nothing to RMB 202 billion between 2007 and April 2016. By April 2016, RMB had become the world's eighth-most actively traded currency (BIS, 2016).

While the RMB is able to flow freely between offshore financial centers outside mainland China, the flow of RMB between mainland China and the offshore market is subject to restrictions. RMB transactions in the onshore Chinese foreign exchange market (CNY market) are regulated by the PBoC. In contrast, the offshore market (CNH) is essentially free. The offshore RMB floats freely and is accessible to all offshore participants. Thus, there are two quite distinct markets for the Chinese currency.

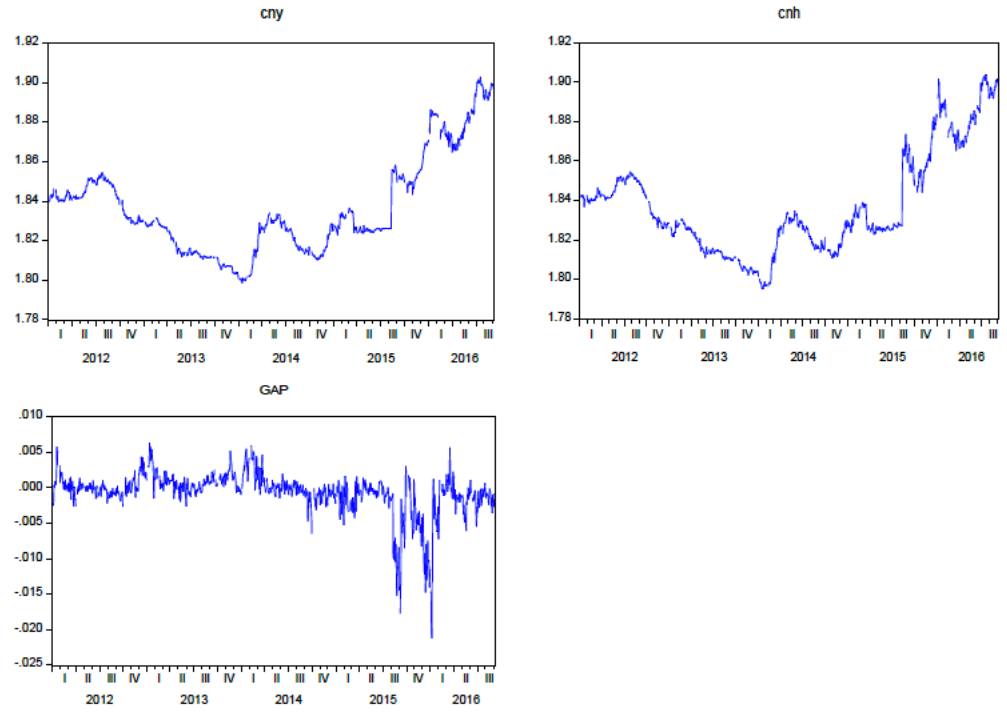
Figure 1 presents the time-series graphs of the logarithm of CNY, the logarithm of CNH, and the CNY-CNH difference since December 30, 2011, when the Chinese government began to set quotas for investment in the mainland capital market using offshore RMB. Already we can see that movements in CNH and CNY appear to have nonlinear trend components.

In the first half of the sample, there is a downward trend in both CNY and CNH rates. With strong expectations of RMB appreciation, the CNY exchange rate was

[3] Clearing centers that permit offshore RMB trade have been established in London, Singapore, Taipei, Frankfurt, and other financial hubs.

only allowed to vary in a narrow band on a daily basis. As a result, RMB appreciated gradually. Interestingly, even if there is no band imposed on the CNH market, we also observe a downward trend that implies arbitraging behaviors across markets closely linked to those two exchange rates.

Figure 1 Time series of exchange rates



Notes: CNY and CNH are log values. Gap is the difference between CNY and CNH.

In the second half of the sample, both CNY and CNH experienced an upward trend. Although CNY and CNH rates have broadly similar trends in their movements, there are persistent deviations between CNY and CNH rates. Here, we observe that the gap between CNY and CNH is positive on average when there is a downward trend, but negative on average when there is an upward trend. The CNY-CNH difference averages 0.00072 (in logarithm) in the first half of the sample and -0.00206 in the second half of the sample. This results from the differences in capital controls and foreign exchange market interventions between the onshore and offshore market.

In the onshore market, capital flows are subject to quotas and the regulated CNY is allowed to fluctuate in a narrow band that is adjusted daily. In the offshore market, capital movements are unrestricted and the CNH exchange rate fluctuates according to supply and demand. Thus, the CNH tends to appreciate more than the CNY in the face of appreciation expectations, which means that the CNY-CNH difference tends to be positive. The CNH exchange rate also increases more than the CNY when there are depreciation expectations, leading to a negative CNY-CNH difference.

2.2 Policy measures in China

The CNY exchange rate is determined by transactions in the China Foreign Exchange Trade System, which in effect is managed by the PBoC. At the start of each trading day, a reference CNY exchange rate is announced and the daily fluctuations of the CNY exchange rate are restricted to a narrow band around this reference rate. To integrate the two markets better, the daily trading band of CNY was widened to ±1% relative to the reference rate in April 2012. It was further widened to ±2% in March 2014.

The CNY reference exchange rate is a weighted average of major dealers' quotes. Dealers had limited flexibility in making quotes until August 11, 2015, when the PBoC reformed its process for setting the reference rate. The daily change of CNY exchange rate still has to lie within the ±2% band, however.

Over the years, the Chinese government has introduced schemes to gradually open up the capital account in a controlled manner. Some have affected the availability and demand of RMB in the offshore market. For example, the Qualified Foreign Institutional Investor (QFII) scheme, launched in December 2002, allowed qualified investors to convert foreign currency to RMB and invest in a number of mainland RMB-denominated financial instruments. The Qualified Domestic Institutional Investor (QDII) program, launched in 2006, allowed approved domestic financial institutions to invest in offshore financial products. Since December 2011, offshore RMB could be used for investments in mainland China through the RMB Qualified Foreign Institutional Investors (RQFII) program. Subject to an aggregate quota, approved non-residents can participate in the on-shore equity and bond market using offshore RMB. The RQFII quota was expanded in 2013. Compared to QFII and QDII, RQFII investments do not need to convert between RMB and foreign currencies. However, the investment opportunities granted by the RQFII scheme can affect the incentives for offshore market participants to hold RMB. Therefore, changes in the RQFII quotas can potentially affect the RMB exchange rates.

Figure 2 shows the time-series graphs of QFII, QDII, and RQFII. We also report the difference between the QDII and the QFII (NETQDII). This difference reflects the net capital outflow allowed when currency conversions between RMB and foreign currencies are needed. The net capital outflow allowed through the QDII (net of QFII) window has a nonlinear trend. Note the declining trend until the end of 2015, when the level of capital market openness through this window stabilizes. There are still small changes after 2015, but daily changes are relatively insignificant.

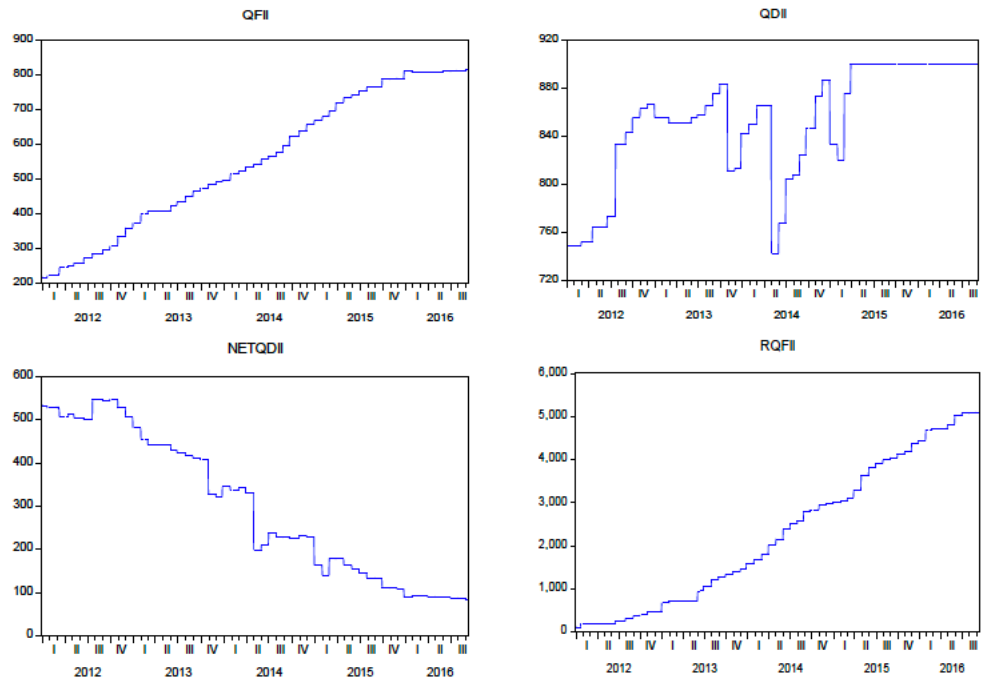
The initial declining trend in NETQDII was driven by the increasing trend in the QFII quota. Compared to QFII, the QDII quota fluctuated in a narrow range before 2015 without any apparent trend it. This likely reflects the prudent attitude of the State Administration of Foreign Exchange (SAFE) toward capital outflows. Since March 26, 2015, the QDII quota has remained constant.

Changes in the QFII quota have been quite small since 2016. The smaller changes in the quotas suggest that the Chinese government has become more conservative with respect to capital movements. Part of this relates to the stock market turmoil in

2015 and rising concerns over financial stability. There was also large depreciation pressure on CNH in January 2016.

The slowdown in capital account liberalization was also a reaction to the currency market movements. For RQFII, the growth of the quota accelerated after the second quarter of 2013. The RQFII had 169 institutional participants at the end of September 2016 with had an aggregate approved quota of RMB 511.34 billion.

Figure 2 Time series for the capital control quotas

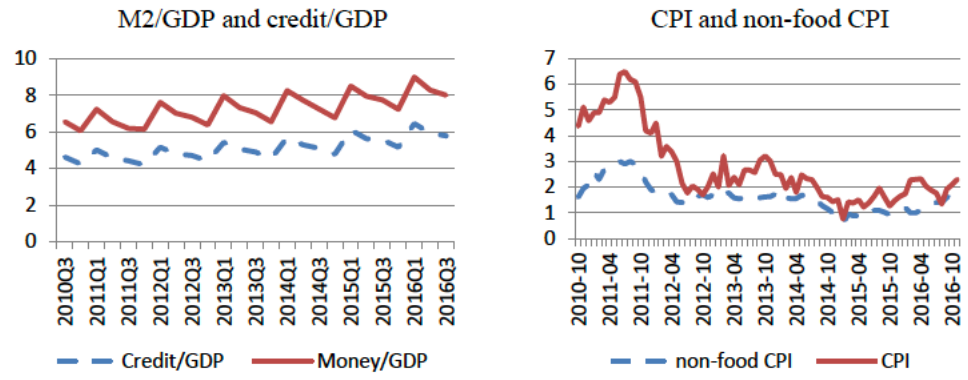


Notes: The units of QFII, QDII, and NETQDII are USD 100 million. The unit of RQFII is RMB 100 million.

These exchange rate and capital account policies may have also influenced domestic economic objectives. Figure 3 depicts the time series of China's consumer price index (CPI) inflation, money supply (M2)-to-GDP ratio, and credit-to-GDP ratio from the third quarter of 2010. Despite obvious seasonality, there is a distinct upward trend in both the money-supply-to-GDP and credit-to-GDP ratios.

Notably, the expansion of money and credit supply relative to the size of the economy does not fuel inflation. CPI inflation peaks in July 2011, and thereafter declines from 6.5% to below 3%. It is well recognized that China's CPI inflation rate is heavily affected by food prices. In the same period, the non-food CPI inflation rate fell below 2%. The producer price index (PPI) inflation was negative between March 2010 and August 2016, implying insufficient effective demand for manufacturing goods. Was disequilibrium in the currency market part of reason that China's monetary and credit expansion was so ineffective in fighting deflation?

Figure 3 Time series of China's CPI, money and credit growth



Notes: Data are from China's National Bureau of Statistics. Units for price indices are percentages.

3 Data and methodology

3.1 Data

Our sample covers from December 30, 2011 to March 31, 2016, i.e. a period in which daily data are available. Daily data are important for two reasons. First, the CNH exchange rate data starts from August 26, 2010. The RQFII quota data starts from December 30, 2011. Using monthly or quarterly sample generates small sample biases. Second, with daily data, we can precisely identify surprise macroeconomic news to market participants using the announcement date of the data.

Indeed, the use of monthly data could omit important policy impacts. For example, suppose a structural policy shock has significant positive impacts on the change of the exchange rate on a few days in a month while the impacts are not significant on the other days. A monthly-data analysis might indicate that policy had no impact on the exchange rate. In fact, positive responses of the exchange rate returns raise the level of the exchange rate.

Without subsequent declines in exchange rate returns, the level of the exchange rate pushes persistently higher over the course of the month. Very often, it is this level of the exchange rate that concerns the government. SAFE, for example, pays attention to exchange rate movements as currency depreciation may trigger capital flight. Here, it is the expectation on the prolonged period of higher exchange rate that matters.

We collect daily data of CNY, CNH, QFII, QDII, and RQFII quotas from the Wind data-base. To construct our policy surprise variables (explained in detail below), we collect survey data on macroeconomic forecasts in China from the Wind database.

3.2 Modeling the long-run equilibrium relationship

As is customary, we assume that the exchange rate between two currencies is determined by the long-run purchasing power parity (see e.g. Taylor and Taylor, 2004). More specifically, if CNY and CNH markets are fully integrated, we have

$$CNY_t = CNH_t = p_t^{CN} - p_t^{US}, \quad (1)$$

where CNY_t is the logarithm of the CNY exchange rate against dollar at time t, CNH_t is the logarithm of the CNH exchange rate, p_t^{CN} and p_t^{US} are respectively the log price level in China and the US.

However, due to capital controls and currency market interventions in mainland China, the CNY and CNH market are not fully integrated. More specifically, capital inflows to the mainland Chinese capital market are limited by the QFII and RQFII quotas. Capital outflows from the mainland Chinese capital market are limited by the QDII quota. In contrast, the capital market in Hong Kong is open to non-residents. Besides the QFII, QDII and RQFII, currency exchange under current account and foreign direct investment (FDI) account are more restricted in the CNY market (Funke et al., 2015). As discussed, the government also intervenes more in the CNY market. As a result, market reactions to fundamental economic news are more constraint in the CNY market compared to the CNH market. This creates a gap between the CNY and CNH exchange rate. For brevity, we call p_t^{CN}-p_t^{US} the PPP fundamental. When the PPP fundamental increases, both CNY and CNH exchange rates should increase. However, due to capital controls, CNY increases less than CNH, so the CNY-CNH difference decreases. However, this decrease in the difference is smaller with less constraints on capital movements in the CNY market. Therefore, we have the following nonlinear long-run relationship:

$$\begin{aligned} CNY_t - CNH_t &= a_0 + a_1(p_t^{CN} - p_t^{US}) + a_2 NETQDII_t + a_3 RQFII_t \\ &+ a_4 NETQDII_t * (p_t^{CN} - p_t^{US}) + a_5 RQFII_t * (p_t^{CN} - p_t^{US}) + e_t, \end{aligned} \quad (2)$$

where $NETQDII_t$ is the difference between QDII and QFII quota, which measures the net capital flow allowed when the foreign investors have to convert between RMB and USD, $RQFII_t$ is the RQFII quota, which measures the net capital inflow allowed when the investment currency is in RMB. Because the necessity for currency conversion could affect capital flows, we treat RQFII differently from QFII. As mentioned above, there are also capital control measures under the current account and FDI account. Compared to the NETQDII and RQFII, changes in these measures are less frequent. Their impact is be absorbed in the vector of deterministic terms a_0. Because the PPP fundamental can affect the CNY exchange rate even if capital flows through the capital market are not allowed, a_1 is not necessarily zero. Finally, e_t is the cointegration error.

Ideally, we would also control for QDII and QFII separately. However, QDII, QFII, and RQFII quotas are usually jointly determined by the SAFE's preferences over capital account openness, exchange rate stability, and other macroeconomic concerns. Therefore, these measures are highly collinear. This, controlling the three capital control measures separately on the right-hand side (RHS) causes identification problems.

Indeed, we encounter a matrix singularity problem when all three measures are put on the RHS. To circumvent this problem, we use QDII and QFII to construct the net capital outflow quota, NETQDII. We also regress RQFII on NETQDII and use the residual as the orthogonalized proxy of RQFII. These steps help us better identify the coefficient of NETQDII and RQFII. However, our results from the impulse response analysis are robust if we do not use regression to orthogonalize RQFII.[4]

Chinese inflation data are only reported at a monthly frequency. However, market participants update their inflation expectations more frequently as most have to trade more frequently than monthly. Hence, we use market-implied inflation expectations in our daily-data model. For the US, we use the treasury inflation protected securities (TIPS)-implied 5-year inflation expectations which are directly available from the FRED database. There is no TIPS market in China, of course, so we estimate the market inflation expectations using the term structure model of Rudebusch and Wu (2008). We use their yields-only model for the obvious reason that the macroeconomic information in their macro-finance model is not available at a daily frequency. Yao and Tan (2011) show that inflation expectations derived from this term structure model match survey-based inflation expectations data in China quite well at the monthly frequency. The Chinese term structure data are ob-tained from the China Central Depository & Clearing Co., Ltd.

Substituting $p_t^{CN} - p_t^{US}$ by the difference between the estimated inflation expectations of China and the US, $INFDIFF_t$, we obtain the following model:

$$CNY_t = CNH_t + a_0 + a_1 INFDIFF_t + a_2 NETQDII_t + a_3 RQFII_t + a_4 NETQDII_t * INFDIFF_t + a_5 RQFII_t * INFDIFF_t + e_t. \quad (3)$$

The model in equation (3) can also be justified from economic theory. In sticky-price models (Dornbusch, 1976; Frankel, 1979) of exchange rate determination, expected relative inflation rate affects the current-period exchange rate.

Notice also in equation (3) that we restrict the coefficient of CNH in the model to 1. This has two advantages. First, the estimated model has clearer economic interpretation. It tells the impact of a change in the PPP fundamental or capital control measures on the CNY-CNH exchange rate difference. Second, from a theoretical perspective, the right-hand side variables determine both CNY and CNH. Without this restriction, the model suffers serious multicollinearity problems. Of course, the CNH is collinear with all the determinants of RMB exchange rates, so identification of the coefficients is problematic. Even if we can still produce estimated coefficients, the economic interpretation of those coefficients is unclear.

As shown by Hong and Phillips (2010) and Vogelsang and Wagner (2016), the existence of nonlinear terms in the cointegration relationship is difficult to test due to the potential endogeneity of the regressors in the cointegrating equation. Moreover, the error serial correlation requires bias corrections to the standard test

[4] Additional results are available upon request.

statistics to allow for asymptotic chi-squared inference. Vogelsang and Wagner (2016) propose a Ramsey test that has an asymptotic chi-squared distribution based on their Integrated Modified OLS (IM-OLS) estimator (Vogelsang and Wagner, 2014). Therefore, a Wald-type test can be applied. More specifically, consider the cointegrating regression as follows:

$$\begin{aligned} y_t &= X_t'\beta + u_t, \\ X_t &= X_{t-1} + v_t \end{aligned} \tag{4}$$

where the error terms u_t and v_t fulfill a functional central limit theorem, and are potentially correlated with each other. Obviously, when u_t and v_t are correlated, the regressors are endogenous.

Vogelsang and Wagner (2016) show that the OLS estimator of the following equation is consistent and has a zero mean Gaussian mixture limiting distribution.

$$SY_t = SX_t'\beta + SM_t'\gamma + X_t'\alpha + w_t, \tag{5}$$

where $SY_t = \sum_{j=1}^{t} y_j$, $SX_t = \sum_{j=1}^{t} X_j$, SM_t is similarly defined as a partial sum of the cross products of elements in X_t . w_t is the error term.

After estimating equation (5), chi-squared tests can be applied to test the significance of β and γ . Obviously, when the null hypothesis of $\gamma = 0$ is rejected, we can conclude that the long-run equilibrium relationship is nonlinear. We apply this IM-OLS test to our model (3) in the empirical analysis.

3.3 Impulse response analysis

Chong *et al.* (2012) suggest that if a cointegration relationship is found in the data, we can calculate the impulse responses of the economic system with the following two local projections.

$$\begin{aligned} e_{t+h} &= A_1^h e_t + \Phi_1^h \Delta Y_t + \ldots + \Phi_p^h \Delta Y_{t-p+1} + \eta_{t+h}, \\ \Delta Y_{t+h} &= B_1^h e_t + \Psi_1^h \Delta Y_t + \ldots + \Psi_p^h \Delta Y_{t-p+1} + \varepsilon_{t+h}, \end{aligned} \tag{6}$$

where h=1,…,H is the forecast horizon. Specifically, the first equation in (6) describes linear projections of the h-step-ahead equilibrium errors on the current equilibrium error and the current and past values of the endogenous variables. The second equation in (6) describes linear projections of the h-step-ahead values of the endogenous variables on the same set of variables. η_{t+h} and ε_{t+h} are error terms.

Jorda (2005) introduces the local projection method as an alternative way to calculate impulse response functions using VAR. This method consistently estimates

the impulse responses of a system of stationary variables. Its advantage over traditional VAR is that it requires no specific model specification and thus avoids potential specification errors.

The two local projections in (6) are extensions of the Jorda (2005) approach to non-stationary dynamic systems. One nice property of the local projection system in (6) is that the h-step impulse responses of endogenous variables to a disturbance to the long-run equilibrium relationship can be simply calculated as $B_1^h + \Psi_1^h \beta$, where β is the vector of cointegration coefficients. The impulse responses to the shocks in ε_{t+1} are $B_1^h \beta' + \Psi_1^h$. To control for the nonlinearity, the interaction term $NETQDII_t * INFDIFF$ is added to the right-hand side of the local projection systems in (6).

In the typical exchange rate model presented in Chong et al. (2012), the interest rate difference between two countries is added to ΔYt to capture the uncovered interest rate parity (UIP) effect. In this context, impulse response functions (IRFs) to interest rates may be interpreted as the impact of interest rate policy. However, the error terms in the reduced-form system (6) are not structural. In other words, they might be a combination of deeper structural economic shocks. Therefore, the economic interpretation of the IRFs is difficult.

Moreover, Cochrane and Piazzesi (2002) point out that market participants may have anticipated current changes in interest rates. In such case, current exchange rates already contain information on anticipated interest rate changes and no further responses to interest rate changes should be seen in exchange rates. To overcome this, we substitute the usual interest rates in the exchange rate models with two surprise monetary policy measures.

The US monetary policy shock is estimated as the difference between the announced changes in the federal funds rate and anticipated changes implied by the futures market for federal funds. Kuttner (2001) as well as Bernanke and Kuttner (2005) provide a detailed explanation of how this variable is constructed.

As there is no futures market for Chinese interbank funds, we use survey data to construct our surprise monetary policy indicator of China. It is widely acknowledged that quantity-based policies have traditionally been used much more than interest rate policy in China (see e.g. He et al., 2013; Cheung et al., 2016; He et al., 2016), and that money supply and credit supply are closely monitored and regulated by the central bank. The Wind database surveys the major financial institutions in China on key macroeconomic variables including M2 growth and the flow of credit supply on a monthly basis. Hence, we can construct the money supply shock and credit supply shock by the difference between the realized data and the median survey of the forecasts. Since the PBoC has better control over credit supply than the money aggregate, we use the credit supply shock in our benchmark model. However, our results are robust if we use the M2 shock as the monetary policy indicator.

In addition to the two monetary policy variables, we also control for two surprise indicators of real activities. Scotti (2016) demonstrates that an aggregate index of surprise news on real activities significantly affects asset prices. We use his US

surprise index, Ussurp, as a control variable in our model. There is no aggregate index of surprise news on real activities in China. We use the difference between realized industry production and survey median forecast of industry production, Industry_cn, instead. Data on Ussurp is from Scotti (2016). The survey median forecast of China's industrial production is taken from the Wind database.

In summary, our extended system of local projections is as follow:

$$e_{t+h} = A_1^h e_t + \Phi_1^h \Delta Y_t^{ex} + \ldots + \Phi_p^h \Delta Y_{t-p+1}^{ex} + \eta_{t+h}, \tag{7}$$

$$\Delta Y_{t+h} = B_1^h e_t + \Psi_1^h \Delta Y_t^{ex} + \ldots + \Psi_p^h \Delta Y_{t-p+1}^{ex} + \varepsilon_{t+h},$$

$$\Delta Y_{t+h} = \left(\Delta CNY_{t+h},\ \Delta CNH_{t+h},\ \Delta INFDIFF_{t+h},\ \Delta NETQDII_{t+h},\ \Delta RQFII_{t+h}\right)',$$

$$\Delta Y_t^{ex} = \left(\Delta Y_t',\ \Delta INFDIFF_t * NETQDII_t, Credit\_cn, Interest\_us, Industry\_cn, Ussurp\right)'.$$

Here, we use *Credit_cn* and *Interest_us* to denote the surprise credit supply in China and surprise federal funds rate (FFR) change in the US. Since the surprise variables are exogenous by construction, we do not need to put them on the left-hand side of the equations.

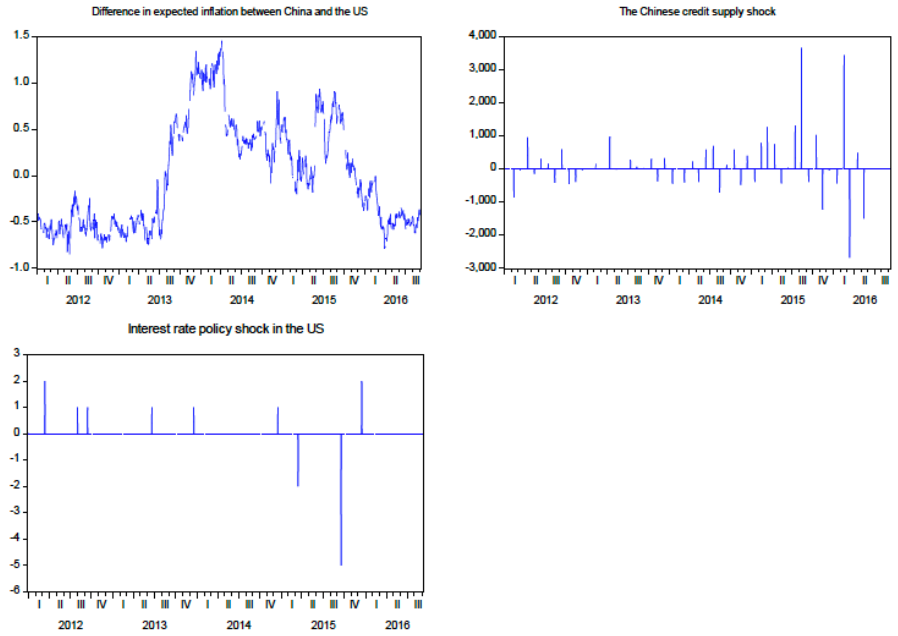
4 Empirical findings

4.1 The expected inflation difference and surprise policy variables

The upper-left panel of Figure 4 plots the time series of $INFDIFF_t$. The expected inflation difference between China and the US in the first half of the sample was, on average, negative (-0.09 percent). This implies that the exchange rate should decrease. However, the average expected inflation difference turned positive (0.10 percent) in the second half of the sample. This relatively high inflation expectation in China should lead to a higher exchange rate. However, due to the exchange rate and capital account regulations, the adjustment is a gradual process. Therefore, we observe downward trends in in the CNY and CNH exchange rates in the first half of the sample and upward trends in the second half of the sample. This reasoning is consistent with the time series plots of the CNY and CNH exchange rates in Figure 2.

Figure 4 also shows the time series plots of the Chinese credit supply shock and US interest rate policy shock.

Figure 4 Expected inflation difference and policy shocks



Notes: The unit of INFDIFF is percentage. Policy shocks data are based on authors' calculations. The unit of the Chinese credit supply shock is RMB 100 million. The unit of the US interest rate policy shock is basis point.

4.2 Long-run equilibrium relationship

Before performing the cointegration test, it is necessary to test whether the variables in model (3) are truly I(1) variables. Table 1 summarizes the unit root test results. The unit root hypothesis is clearly not rejected for all the level variables in model (3). On the other hand, the first differences are shown to be I(0) variables. Therefore, it is suitable to perform a cointegration test for model (3). We remove quadratic deterministic trends from CNY, CNH, NETQDII, and RQFII before our cointegration analysis.

Table 1 Unit root test results

	CNY	CNH	NETQFII	RQFII	INFDIFF
Level	–0.7669	–1.5545	–2.6308	–2.8331	–1.4497
First difference	–29.23***	–30.61***	–24.14***	–31.19***	–30.46***
Trend in test	Yes	Yes	Yes	Yes	No

Notes: The test is the augmented Dicky-Fuller test. The null hypothesis assumes a unit root. The lag length of the test is selected by the Schwarz information criterion. We denote statistical significance at the 1%, 5%, 10% percent by ***, **, *, respectively. The row "Level" corresponds to the test t-statistics for the level of the variables. The row "First difference" corresponds to the test t-statistics for the first difference of the variables. The row "Trend in test" tells whether the test includes a deterministic trend. All tests include an intercept.

Using the nonlinear cointegration technique of Vogelsang and Wagner (2016), we identify the following long-run relationship:[5]

$$CNY_t = CNH_t - \underbrace{0.0017}_{(p=0.0104)} INFDIFF_t - \underbrace{0.0588}_{(p=0.1054)} NETQDII_t - \underbrace{0.0963}_{(p=0.8270)} RQFII_t + \underbrace{0.3392}_{(p=0.0030)} NETQDII_t * INFDIFF_t. \quad (8)$$

5

The p-values in the parentheses under the estimated coefficients are those of the tests of the zero-coefficient null hypothesis. The interaction term between RQFII and INFDIFF is not significant when included. Moreover, RQFII*INFDIFF is not only correlated to the level variables, RQFII and INFDIFF, but also correlated to the other interaction term. Therefore, the addition of this variable also makes the multi-collinearity problem more serious. As a result, all individual coefficients appear to be insignificant when two interaction terms are added. Therefore, we report the estimated model without RQFII*INFDIFF.

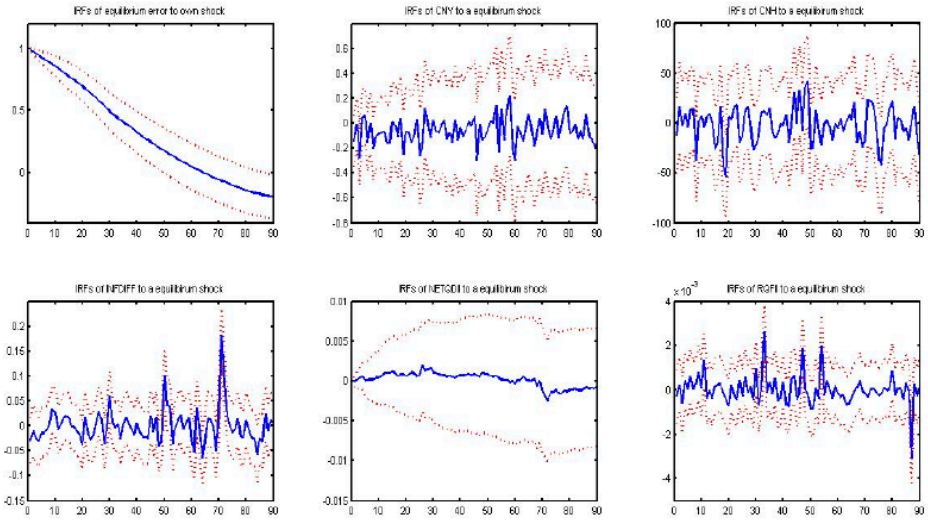
As expected, an increase in the expected inflation difference raises RMB exchange rates, but, because of capital controls the CNY less. Thus, INFDIFF has a negative sign.

4.3 The impact of a disturbance to the long-run equilibrium relationship

Figures 5 and 6 present the impulse response functions, or IRFs, of the error correction term and first differences of CNY, CNH, INFDIFF, NETQDII, and RQFII to a one-unit shock to the equilibrium relationship. Figure 5 presents IRFs up to 90 days. To facilitate our reading of the more immediate responses, we separately report the IRFs up to 30 days in Figure 6.

[5] To make the coefficients of the quotas visible within four digits, we have changed the units of the NETQDII and RQFII quotas to USD 10,000 and RMB 10,000, respectively.

Figure 5 Impulse responses to disequilibrium error (90 days)

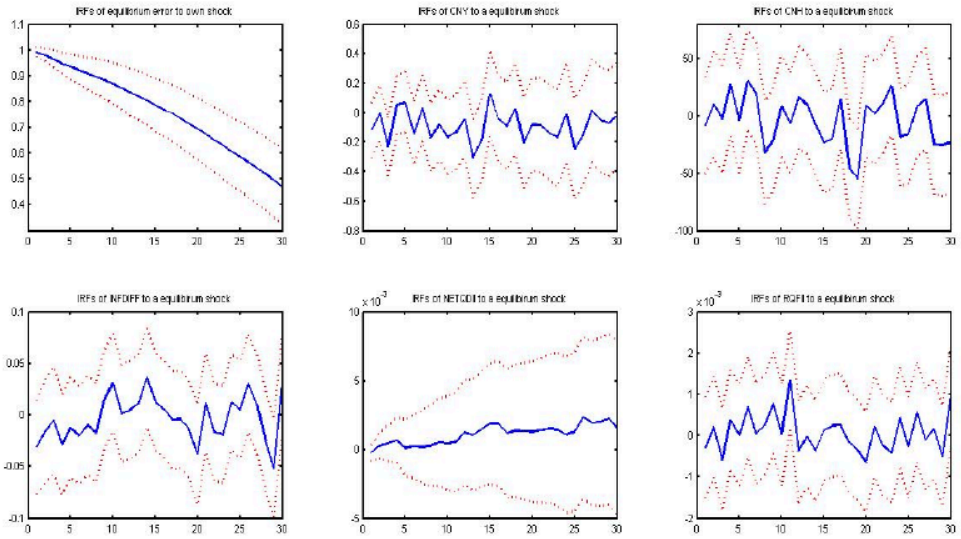


Notes: ECT denotes the disequilibrium error term, CNY, CNH, INFDIFF, NETQDII, and RQFII are first differences. The variable on the horizontal axis is the number of days after the shock. The variables on the vertical axis are the responses. The dashed lines are the 95% intervals.

The first observation is that a temporary shock to the long-run relationship has a very persistent impact. The IRF of the error correction term does not converge within 90 days. This is consistent with the literature (Taylor and Taylor, 2004; Chong et al., 2012).

Second, disequilibrium on the currency market seems to have little impact on the inflation expectations in the first month following a disequilibrium shock. The impulse responses are not significantly different from zero on most days in that month. However, the shock significantly raises inflation expectations within a quarter. More specifically, our indicator of expected inflation difference rises by 0.1 percent on day 50 and 0.18 percent on day 71 after a 1-percent over-depreciation of the CNY. Note that there are no subsequent significant drops in the first difference of INFDIFF. Therefore, the level of inflation expectations in China has been persistently higher than the before-shock periods after those two days.

Figure 6 Impulse responses to the disequilibrium error (30 days)



Notes: ECT denotes the disequilibrium error term, CNY, CNH, INFDIFF, NETQDII, and RQFII are first differences. The variable on the horizontal axis is the number of days after the shock. The variables on the vertical axis are the responses. The dashed lines are the 95% intervals.

Movements in expected inflation are helpful for the restoration of the long-run equilibrium. The disequilibrium shock makes the CNY exchange rate overly high relative to the level implied by the fundamentals. Rising inflation expectations close the gap.

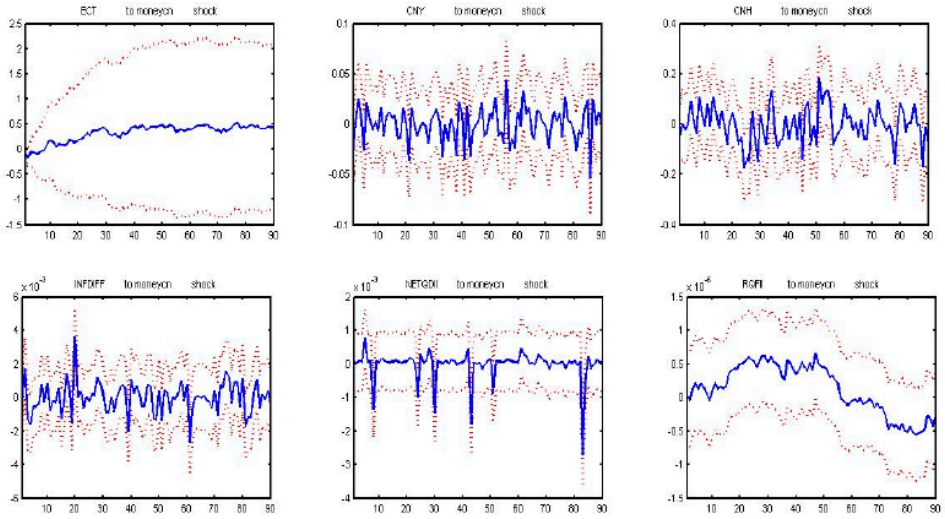
In contrast, there are no notable significant responses of the exchange rates to the disequilibrium shock. Note that the IRFs of CNH have large magnitudes, but the intervals are also very wide and almost always cover zero except on day 18 and 19. On those two days, the upper bounds of the 95% confidence interval are negative, which implies that CNH appreciates on those two days. These responses push in the "wrong" direction; the shock makes the CNY exchange rate excessively high relative to the CNH, so the CNH exchange rate must rise as well to restore equilibrium. Therefore, the equilibrium is obviously not restored by the movements in the CNH.

The IRFs of CNY are also mostly insignificant except on day 3 when the upper bound of the 95% confidence interval is negative. This implies that the CNY appreciates on that day. Because the equilibrium error overdepreciates, the CNY relative to the level implied by the long-run equilibrium relationship, CNY appreciation corrects the error. However, the magnitude of the response is small (range of -0.4947% to -0.0690%).

4.4 Impact of a surprise credit expansion

Figures 7 and 8 summarize the IRFs of equilibrium error and endogenous variables to a one-unit increase in the credit supply in China up to 90 and 30 days, respectively.

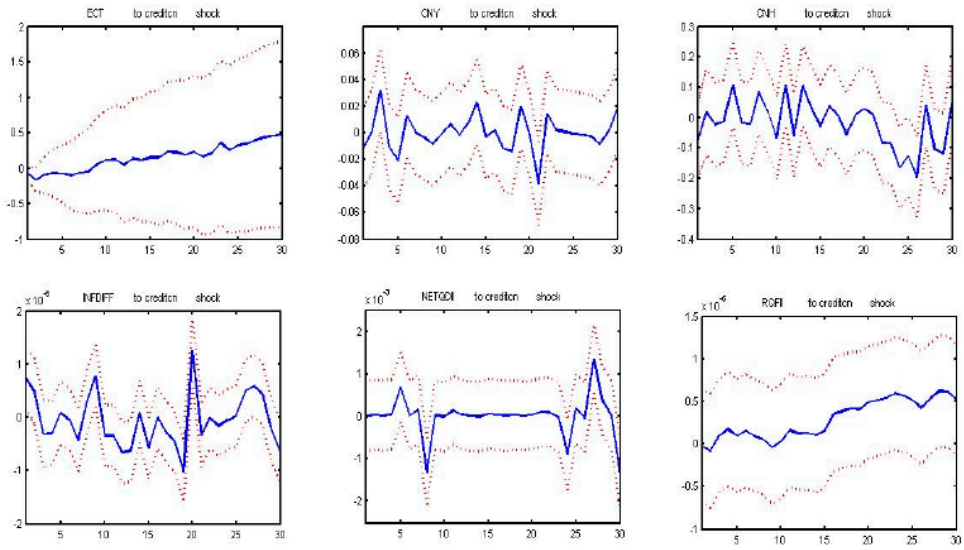
Figure 7 Impulse responses to a one-unit shock of credit supply in China (90 days)



Notes: ECT denotes the disequilibrium error term, CNY, CNH, INFDIFF, NETQDII, and RQFII are first differences. The variable on the horizontal axis is the number of days after the shock. The variables on the vertical axis are the responses. The dashed lines are the 95% intervals.

Obviously, the expansionary credit shock has no significant impact on the equilibrium error. Hence, there is no evidence that credit policies in China contribute to currency market disequilibrium. Moreover, the credit shock effectively raises inflation expectations. The impact responses are largest on day 20 and 81. On day 20 and 81 after a RMB 1 trillion increase in the credit supply, inflation expectations in China (relative to the US) are raised by 0.0182 percent and 0.0189 percent, respectively. The magnitudes of these impacts are small, but persistent. Note that the IRFs are in first differences. Without significant negative IRFs after those two days, the level of inflation expectations is persistently higher.

Figure 8 Impulse responses to a one-unit shock of credit supply in China (30 days)



Notes: ECT denotes the disequilibrium error term, CNY, CNH, INFDIFF, NETQDII and RQFII are first differences. The variable on the horizontal axis is the number of days after the shock. The variables on the vertical axis are the responses. The dashed lines are the 95% intervals.

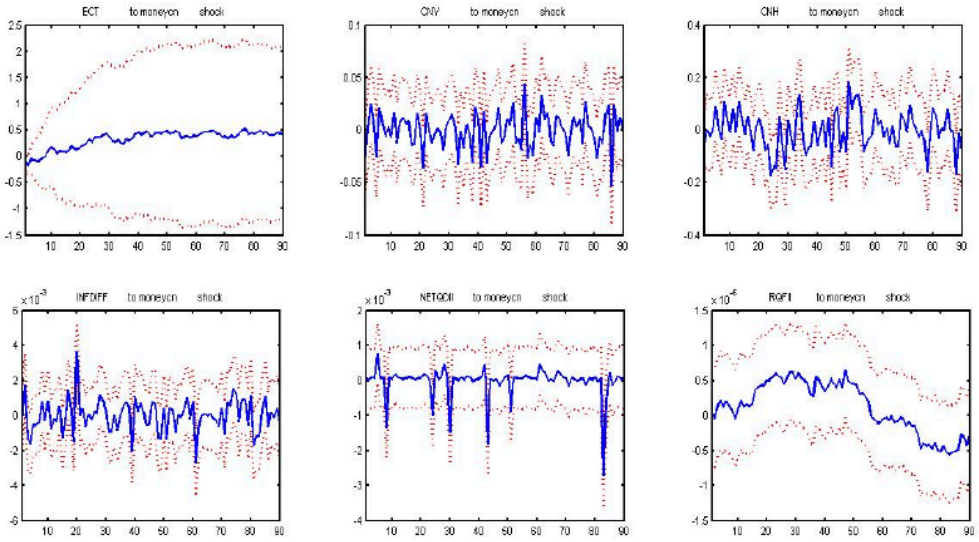
These findings suggest that disequilibrium in the currency market does not have a significant impact on the transmission of credit policy shocks to inflation expectations. They do not mean that disequilibrium in the currency market does not affect the central bank's ability to maintain price stability. As we found in the previous subsection, a one-percentage-point over-depreciation of CNY can create daily changes in inflation expectations to a scale about ten times larger than an RMB 1 trillion credit surprise. Although monthly credit increase in China can be larger than RMB 1 trillion, creating a surprise credit supply is far more difficult because the market can anticipate a large part of the credit supply. The largest Chinese credit supply shock in our sample is RMB 365.68 billion (Figure 4). This means that a moderate shock to the equilibrium of the currency market can easily negate the impact of a large-scale credit policy on the inflation expectations.

This finding helps us understand the phenomenon shown in Figure 3. Despite the persistent increase in money and credit supply, China's inflation rate remains low. Currency market disequilibrium seems to have defanged expansionary monetary and credit policy.

4.5 Robustness of the impulse responses functions

Previously, we used credit supply as the monetary policy variable for China. In this subsection, we show that our qualitative results on monetary policy transmission are unchanged if shocks to aggregate money supply growth rate are used. Figures 9 reports the IRFs of the equilibrium error and endogenous variables to a one-unit increase in the M2 growth rate in China up to 90 days. (To save space, we do not separately report the IRFs of the first 30 days for the robustness tests).

Figure 9 Impulse responses to a one-unit shock of money supply in China (90 days)



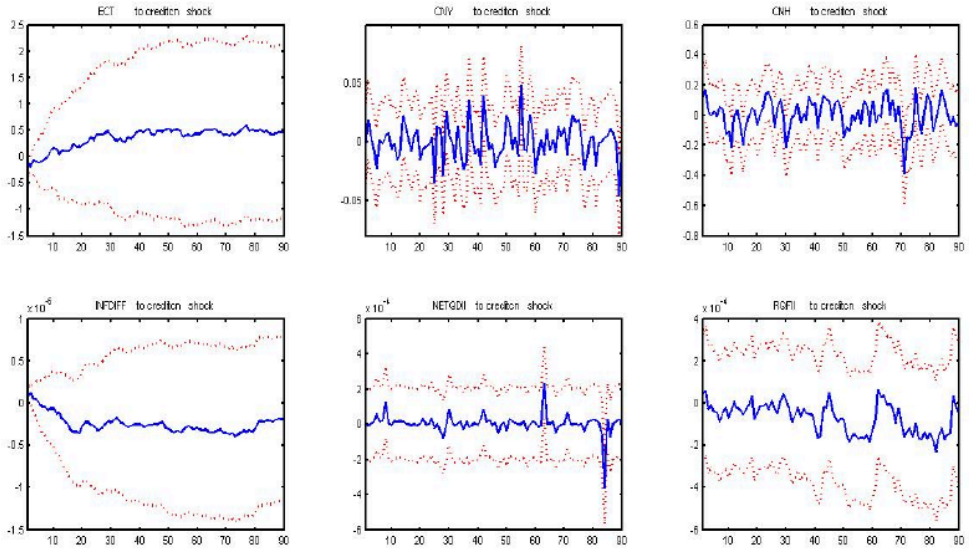
Notes: ECT denotes the disequilibrium error term. CNY, CNH, INFDIFF, NETQDII, and RQFII are first differences. The variable on the horizontal axis is the number of days after the shock. The variables on the vertical axis are the responses. The dashed lines are the 95% intervals.

A surprise increase in the money growth rate leads to a significant increase in inflation expectations on day 20. By contrast, no significant IRFs of the exchange rates are found. Therefore, monetary policy is effective in shaping inflation expectations and does not bring significant distortions to the currency market. However, as what we found earlier, the responses to inflation expectations are rather small. The largest response of inflation expectations to a one-percent money growth shock is only 0.006 percent.

4.6 The importance of nonlinearity

As we set forth in the introduction, most empirical studies on the long-run relationship between the exchange rate and PPP fundamental assume a linear relationship. For a country with capital controls like China, the potential nonlinear relationship could affect the qualitative results of policy analysis and lead to faulty inferences and bad policy decisions. Figure 10 reports the IRFs of the equilibrium error and endogenous variables to a one-unit increase in the credit supply in China up to 90 days in a linear model. These IRFs suggest that a credit supply shock has no impact on the inflation expectations in China, a clearly false finding in light of the above discussion.

Figure 10 Impulse responses to a one-unit shock of credit supply in China (linear model



Notes: ECT denotes the disequilibrium error term. CNY, CNH, INFDIFF, NETQDII, and RQFII are first differences. The variable on the horizontal axis is the number of days after the shock. The variables on the vertical axis are the responses. The dashed lines are the 95% intervals.

5 Conclusions

With rapid development of RMB as an international currency, China has sought since 2010 to foster offshore RMB markets for financial transactions among non-residents. Even as the offshore CNH market rapidly developed, a persistent difference between CNY and CNH rates has generated massive speculation and complicated the aggregate environment in which the PBoC applies its policy instruments.

We have shown here that there are nonlinear long-run relationships between the onshore and offshore RMB exchange rates and expected inflation. This nonlinearity is caused by China's capital control policies and currency market regulations. Policymakers should be aware that traditional analyses fail to capture this nonlinearity and, if the problem is ignored, could lead to inappropriate conclusions about the transmission of monetary policy shocks to inflation expectations.

Based on the identified long-run relationship, we calculate the impulse responses of inflation expectations to a disturbance to the long-run relationship. It shows that disequilibrium in the currency market can affect the price stability target of the central bank. More specifically, although monetary policy shocks in China can still effectively change inflation expectations, the magnitudes of these effects are quite small. Discretionary monetary policy might fail to fight deflation and recession when the currency market is in disequilibrium, however. This is because the impact of a moderate-size equilibrium error in the currency market on inflation expectations is much larger than the impact of a typical surprise credit supply or money shock. Therefore, measures have to be taken to maintain currency market equilibrium if the central bank wants its policy instrument to manage inflation expectations effectively.

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- The US negotiation strategy of trade agreements
- Possibility of the escalation from a trade war to a hot war
- Political and economic effects on both domestic and foreign policy
- The effectiveness of trade barriers
- The Future of WTO

Submission Guidelines

The deadline for submission is 31 December 2018.

Papers should be submitted to the Special Issue Editor Terence Tai Leung Chong <chong2064@cuhk.edu.hk> and at the same time through the Editorial Manager System. The detailed submission guideline and reference style are available here.

It is highly appreciated if you could kindly forward this Call for Papers to friends, colleagues and other people whom you think may have an interest in this topic. For any enquiries please contact the Editorial Office at <journal@ruc.edu.cn>.

IMI News

- On June 9th, Macro-Finance Salon (No.96) organized by IMI was successfully held in conference room 701 in Mingde Main Building. The Investment Director and Chief Economist of the Deepwater Capital Sun Mingchun delivered a speech entitled “A Decade After the Global Financial Crisis: What’s the Next Crisis?”
- On July 5th, 2018 International Monetary Forum • Panel 3 (Closed Meeting) was held at RENMIN UNVERSITY OF CHINA by the School of Finance and China Financial Policy Research Center; organized by International Monetary Institute. The theme of the successful panel was “Macro Policies’ International Coordination Amid Structural Transformation”.
- The International Monetary Forum 2018 took place in the Renmin University of China (RUC), Beijing, from July 14 to 15. In the afternoon of July 14, a thematic session was held on “Free Trade and Financial Reforms in the Context of the “Belt and Road” Initiative”, where participants discussed hot topics on financial reform and opportunities for renminbi internationalization. Moderated by the deputy dean of the School of Finance of RUC, Zhao Xijun, the session was dedicated as the annual summit of the Cross-border Financial 50 Forum and co-hosted by RUC International Monetary Institute (IMI) and the Modern Bankers magazine.
- The 2018 International Monetary Forum was held at Renmin University of China from July 14 to 15. As one of the themes of the Forum, the session of "Financial De-Leverage and Systemic Risk Prevention" was held to discuss hot topics such as financial de-leverage and systemic financial risk prevention system on the morning of July 15. The forum was presided over by the Qu Qiang, director of the Financial Policy Research Center of Renmin University of China. Wang Guogang, member of the Chinese Academy of Social Sciences, and Liu Qingsong, researcher at the China Securities Regulatory Commission, delivered a keynote speech.
- On the afternoon of July 15, the "2018 International Monetary Forum: Fintech Session" was held at Yifu Hall, Renmin University of China, organized jointly by the International Monetary Institute, Renmin University of China (IMI) and the China Fintech 50 Forum (CFT50), co-organized by Shanghai OneConnect Technology Co., LTD. The theme of the session was “Fintech and the Development of the Real Economy”.
- Co-hosted by the School of Finance of RUC and China Financial Policy Center and sponsored by IMI, the 2018 International Monetary Forum and the press conference of “RMB Internationalization Report 2018” was held at Renmin University of China on July 14th. Hundreds of renowned European, American and Asian experts and scholars from the financial management departments, research institutes and financial institutions attended the meeting. Zhuang Yumin, dean of the School of Finance and director-general of IMI, delivered an opening speech.
- On September 6th, the 2018 SinoPac Forum sponsored by Bank SinoPac and the IMI of Renmin University of China was held in the Headquarters of SinoPac Financial Holdings Co., Ltd.
- On September 7, 2018, Macro-Finance Salon (No. 97) organized by the International Monetary Research Institute (IMI) of Renmin University of China was successfully held in Room 602 of Beijing Cultural Building. Abebe Selassie, Director of Africa Department, IMF, delivered a keynote speech titled “Africa: Improving Growth Potential”.
- On Sep. 10th, Macro-Finance Salon (No.98) jointly organized by IMI and the School of Finance of Renmin University of China was successfully held in conference room 801 in

Mingde Main Building. Chen Xingli, the visiting fellow at East Asian Research Institute at the National University of Singapore, delivered a speech themed on “US Trade War with China and China’s Economic New Normal”.

- On September 12, 2018, the ninth conference to translate the IMF History Book Series was held at Renmin University of China. The conference was attended by the head of translation, former deputy director of the State Administration of Foreign Exchange, Wei benhua; the former director of the international division of the People's Bank of China, Zhang Zhixiang; vice president of Chinese Finance Press, Cheng Jianguo; the director of foreign cooperation book editing department, He Wei; dean of the School of Economics and Finance of Renmin University, Zhuang Yumin; deputy director of the International Monetary Institute, Song Ke; and the project leader for each volume. The meeting was chaired by Mr. Zhang Jie, director of the International Monetary Institute at Renmin University.
- On September 26th, Academy of Internet Finance (AIF) of Zhejiang University, International Monetary Institute (IMI) of Renmin University of China and Institute of Financial Research (IFR) of Zhejiang University held the Global Bank Internationalization Report Conference in Beijing for the fourth consecutive year, releasing the “2018 Global Bank Internationalization Report”.
- On Sep. 30th, Macro-Finance Salon (No.99) jointly organized by IMI and the School of Finance of Renmin University of China was successfully held in conference room 701 in Mingde Main Building. The Founder and Chairman of the China Chengxin International Credit Rating Co., Ltd. (“CCXI”), Mao Zhenhua, delivered a keynote speech entitled “Chinese Economy in the Context of the Evolving US-China Relation”.

Call for Papers

International Monetary Review

International Monetary Review is an internal academic magazine sponsored by International Monetary Institute. Following the principle of including both Chinese and western merits with precise and practical academic spirit, International Monetary Review focuses on the cutting-edge theoretical researches in internationalization of RMB, reform of international monetary system, regional monetary and financial cooperation, China's international financial strategies, and other macro-financial theories and policies.
We welcome submissions by scholars, experts and practitioners in financial industry. Papers and articles should center on key financial issues and follow academic standard and scientific methodology. We welcome quality articles based on data analysis and theoretical model and other insightful articles with standard writing.

Prepare your article

General rule: Submitted manuscripts should be double-spaced texts in 10.5 point font, and formatted for paper of standard size with margins of at least 20mm on all sides. Pages should be numbered, and an abstract (of no more than 200 words), as well as keywords and complete author affiliations, should be included in the paper in the title page. A regular article should not exceed 50 pages.
Mathematics: Equations must be identified by consecutive Arabic numbers in parentheses on the right. Expressions should be aligned and compound subscripts and superscripts clearly marked if there is any potential for confusion.
Figures: Figures must be of professional quality and ready for reproduction. They should be numbered consecutively. Black-and-white versions of figures are required for printing purposes, but color figures can also be supplied for online dissemination.
Tables: Tables should be numbered consecutively throughout the article. Each table must include a descriptive title and headings to columns. Gather general footnotes to tables as "Note:" or "Notes:", and use a, b, c, etc., for specific footnotes. Asterisks * and/or ** indicate significance at the 5 percent and 1 percent levels, respectively, if used.

Reference style

Please follow the EPS Style Guide when preparing your article.
http://eps.ruc.edu.cn/UserFiles/File/EPS%20Style%20Guide.pdf

Further considerations

- Manuscript has been spell-checked and grammar-checked
- References are in the correct format for this journal
- All references mentioned in the reference list are cited in the text, and vice versa
- Permission has been obtained for use of copyrighted material from other sources

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