

Three Studies on China's Capital Market Development

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China's economy has developed astonishingly since the reforms of 1978. In forty years, it has become the world's second largest economy and the largest exporter. It is also on its way to becoming the world's largest consumption market. Yet, per capita income in the United States remains 6.05 and 3.69 times what it is in China, in nominal and PPP (purchasing power parity) terms respectively according to the International Monetary Fund (IMF). China still has much room for further growth.

Its future development hinges on having a reliable mechanism to guide efficient and effective resource allocation across geographic locations, industries and firms. China is aware that efficient capital markets carry out this vitally important function, as other advanced economies have demonstrated. It has thus put in enormous effort to develop its own capital markets since the launch of reforms, with huge progress, especially in the past decade. China's capital system now broadly resembles that of advanced countries.³

Appearances can be misleading. The same market instruments and arrangements in China and the West may have different economic content, each serving its own purpose. It is very important to appreciate these differences, in order to understand China's current developmental journey.

ABFER's May 2021 conference featured several research papers that provide provocative results and relevant insights. This report is a digest of three of these studies.

The first looks at China's non-performing loans. While China has adopted the mechanism of allowing banks to sell non-performing loans to asset management companies to restore the health of their balance sheets, the study reports curious transaction patterns of non-performing loans between banks and a large national asset management company. These observations raise questions about the economics beneath the handling of non-performing loans in China.

The second paper examines Chinese-issued foreign bonds. The authors explore the characteristics of Chinese non-financial corporations which issue U.S. dollar bonds and how they might have used the proceeds from the loans. Their results reveal that inter-corporation financial intermediation in China is still prevalent, particularly in sectors where the government discourages domestic lending.

The third paper examines the impact of fintech platforms on China's mutual fund industry. It provides a set of empirical regularities in the mutual funds market. Their evolution coincides and may even be caused by the rapid development of platform trading.

Together, these papers showcase pertinent considerations relating to the development of China's capital system.

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² I would like to acknowledge the tremendous contributions to this digest by the authors of the summarized research papers and Ms Shi Ning Teh.

³ See, e.g., "The Handbook of China's Financial System" Amstad, Sun and Xiong (eds), Princeton University Press, 2020.

Asset Management Companies: Resolving Banks' Non-Performing Loans or Merely Hiding Them?

Condensed from "Hidden Non-Performing Loans in China" Charoenwong, Miao, and Ruan, 2021

Financial markets pool savings and direct funds to invest in risky projects. In addition to conducting risk re-distribution and sharing, these markets should also manage failed projects transparently and rationally. Banks play the most significant and central role in China's financial markets. How its banks manage non-performing loans (NPLs) is thus critically important. Indeed, that is the case for all capital market systems: an efficient bankruptcy treatment induces sensible financing.

Banks have to recognize and make provisions for bad debt. Zombie firms hanging on to bad debt stall efficient capital allocation, reducing banks' ability to make loans to finance new projects. Bank regulators will typically want banks to maintain a provision for bad debt, recognize and write off bad debt, and maintain a prudent loan to reserve ratio.

Advanced banking systems have designated financial institutions to buy and resolve non-performing loans (NPLs) from banks. Also known as the asset management company model, this has served as a means to resolve financial crises since the 1980s. China has adopted this model.

In 1999, Premier Zhu Rongji led the State Council to establish four national AMCs to absorb the recently established (1995) state-owned banks' NPLs. Fast forward to 2012, in the wake of the global financial crisis, the Chinese government allowed the establishment of local AMCs to combat the distressed debt problem. Initially, each province could establish only one local AMC. Additionally, AMCs were not allowed to sell the NPLs they acquired to any other entities. The only resolution permitted was debt restructuring.

In 2016, a regulatory amendment relaxed the entry restriction to two local AMCs per province and allowed local AMCs to sell their inventory of NPLs to other entities (CBRC, 2016). By the end of 2019, China had 59 local AMCs with at least one AMC in each province. Local governments directly monitor the local AMCs, which have to be certified by the Chinese Banking and Insurance Regulatory Commission (CBIRC). In contrast, national AMCs are deemed non-depository banking institutions and are directly regulated by the CBIRC.

The expectation is that an AMC buys bad debt from banks at a discount, and banks recognize the losses. The AMC then restructures the bad debt, such as by scraping residual value or selling off what it can salvage.

The CBRIC allows Chinese banks to use their internal risk models to classify the loans in one of five categories: normal, special mention, sub-standard, doubtful, and loss. Loans that fall in the last three categories are collectively considered NPLs. This treatment differs from international standards, which classify NPLs as loans that are at least 90 days past due. The Chinese definition allows internal judgment and likely results in inadequate recognition of NPLs.

Charoenwong, Miao, and Ruan (2021) present curious observations using data from a large local AMC from 2014 to 2019. The dataset contains transactions with all of the Big 4 state-owned banks, 8 of the 12 joint-stock banks, and over 70 urban commercial banks. The transactions amounted to over US\$23 billion and are possibly representative of China's wider NPL resolution market. The NPLs in the authors' sample have an average delinquency of 52 months (minimum delinquency of 11 months and maximum delinquency of 98 months).

Within the sample, the authors find that, contrary to expectations, NPL sale prices are not correlated with measures of loan quality. Furthermore, NPLs originating from less capitalized banks have lower haircuts. The NPL sales were bunched in the week immediately prior to quarterly regulatory reporting, and banks that breached loan quality regulations before were more likely to sell NPLs. After

NPL sales, banks made more loans, raised capital ratios, and were less likely to violate the capital requirement rules again the year after.

The authors also find that the banks funded over 90 percent of the transactions either as direct loans to the AMC or through indirect financing. The AMC re-sells (at regular intervals of 6, 12, 18, 24, and 36 months) more than 70 percent of the NPL packages bought from banks to third parties at a resale premium of 0.15% to 3%. These third parties are all non-state-owned, private firms located in the same city as the bank, and are largely manufacturing firms. Over 95 percent of third parties are the bank's own borrowers. Therefore, the bank remains somewhat exposed to the NPLs.

These observations raise some unsettling questions. At face value, one naturally speculates that the transactions may not be an above-the-table recognition of financial losses due to NPLs.

First, one would wonder, what do these NPLs represent? Second, might they be important special loans for policy purposes? Third, is the set of observations from the AMC in the authors' sample unique or systemic? In either case, why would the provincial governments and CBIRC allow these arrangements to take place? Fourth, if the set of observations is systemic, given that over US\$300 billion of NPLs were transferred in 2019, would there be a "hidden NPLs" problem that might have significant implications for China's financial stability? After all, reported NPLs in China amount to 4 to 9 trillion RMB (about US\$0.6-1.2 trillion) in 2020.

Corporate Foreign Bond Issuance and Interfirm Lending: A Non-Regulated Space For Speculative Activities for Firms in Risky Sectors

Condensed from "Corporate foreign bond issuance and interfirm loans in China" Huang, Panizza, and Portes, 2021

Capable and reliable corporations can float bonds in international capital markets directly. Indeed, one sign of development is that leading domestic corporations can tap into global capital markets and foreign investors have the appetite and confidence to lend to them. Capital market globalization has many known benefits. For example, it allows globalized risk re-distribution and allocation of capital to where good risk-adjusted returns are. Yet, a pre-condition to reap the benefits is an adequate understanding of borrowers' behavior.

Huang, Panizza, and Portes (2021) examine the patterns of international U.S. dollar bond issuances by non-financial corporations (NFCs) in China. The authors manually match bond-level and firm-level data over 2005-2015 to analyze Chinese NFCs that have issued international bonds. Their data show that bond issuances by the group remained well below \$200 billion until 2010 and then started increasing rapidly in 2012 and surpassed \$900 billion in 2016. Dollar-denominated issuance increased dramatically from \$9 billion in 2008 to over \$230 billion in 2016. The authors match these issuers with listed Chinese corporation registration records. The resulting sample consists of 4,454 bonds from 1,353 NFC issuers. About 85 percent of these bonds are denominated in RMB. The remaining 15 percent (557 bonds and 238 issuers) are denominated in U.S. dollars.

Their work shows some expected and some very noteworthy patterns.

First, these U.S. dollar bond issuances from China NFCs are larger and more profitable than other Chinese NFCs, as expected.

Second, these dollar borrowers are in "risky" sectors where access to bank lending is constrained. (China's Ministry of Industry and Information Technology defines some industries as risky, including the real estate sector and those deemed to have excess capacity.)

Third, the likelihood of these NFCs issuing U.S. dollar bonds increases as the positive gap between local private sector borrowing and foreign interest rates increases. The gap also raises the likelihood of high leverage firms issuing U.S. dollar bonds.

Fourth, interestingly, these borrowers do not statistically have more positive foreign exposures, as, e.g., exporters might be expected to. Hence, the borrowers are not raising funds to match the currency denomination of their assets and liabilities.⁴

Fifth, these dollar loans are not associated with higher fixed capital investment by borrowers.

Sixth, compared to other listed firms, dollar borrowers in risky sectors engage more intensively in lending to other NFCs in the same sector. Note also that domestic firms with lower profitability also engage more in the same activities.

Seven, the authors show that these inter-corporation loan arrangements often occur between firms in the same sector and in the same city; information proximity is a likely explanation. Furthermore, the lenders with lower operational profits provide more such loans.

These results characterize Chinese corporations' engagements in financial intermediation and policy arbitrage.

First, Chinese firms with financial resources engage in inter-firm intermediation, as was first documented in Allen, Qian, and Qian (2005) for China using much earlier data⁵. This paper shows that the same phenomenon continues, particularly in industries that the government stipulates as risky. In China, private sector firms, especially those in risky sectors, have difficulty accessing loans from state-owned banks, which are still major fund providers.

Second, access to the international capital market expands the boundaries of this form of inter-firm intermediation. These activities intensify the further the domestic interest rate is above foreign borrowing rates and the tighter the domestic policy-driven credit constraint is. The paper provides corroborative evidence. China had a policy change in 2009/2010 – it tightened access to domestic credit for firms in government-stipulated risky sectors. The authors find that the change in regulation led to a large increase in the correlation between dollar bond issuances and inter-firm lending for firms in these risky sectors.

We would likely find similar observations in all capital markets, with varying degrees of prevalence. However, several important questions arise. Is inter-corporation financial intermediation particularly prevalent in China? Does that reflect any peculiar credit constraints among China's private sector firms? Are foreign lenders adequately informed of their borrowers' corporate behavior?

The Economic Impact of Fintech Platforms on the Asset Management Industry

Condensed from "FinTech Platforms and Mutual Fund Distribution" Hong, Lu, and Pan, 2021

Chinese households have accumulated significant wealth in the past two decades. Chen (2019) reported that China's household wealth grew 17.2 times over the two decades from 2000 to 2019. Its total household wealth now ranks second only to the U.S.⁶.

Chinese households no doubt seek out returns on their savings. Both the market and the government have responded; savers' investment choices have expanded well beyond bank savings accounts or bank-offered asset management products. One development is the permission granted to fintech platforms to host direct trading of many financial products. Accordingly, the Chinese government allowed platform trading. In February 2012, China Securities Regulatory Commission (CSRC) announced that tech firms independent of fund families, banks, and brokers can distribute mutual funds.

⁴ (International trade is often invoiced and transacted in the U.S. Dollar, see Gourinchas, Pierre-Olivier, 2019 "The Dollar Hegemon? Evidence and Implications for Policymakers" Ch. 7 of the Asian Monetary Policy Forum: Insights for Central Banking, (Davis, Steven J., Robinson, Edward S., and Yeung, Bernard (eds) World Scientific, Aug 2021, <https://doi.org/10.1142/12323>)

⁵ Allen, Franklin, Qian, Jun and Qian Meijun, "Law, finance, and economic growth in China," *Journal of Financial Economics*, 2005, vol. 77, issue 1, 57-116.

⁶ Chen Ting (2019), Credit Suisse Research Institute, Oct 23, 2019, Global Wealth Report

China is not the only country that permits platform trading. A simple search of "platform trading" on the internet yields 20 entries. Indeed, multiple countries have allowed digital platforms to feature apps that allow members to trade many financial products: stocks, ETFs, bonds, mutual funds, commodities, futures, options, and forex, etc.

The interesting contrast is that many Chinese already have virtual transaction and e-wallet experiences. Doing e-trading is a simple step forward. At the same time, China's household investors used to have only limited investment alternatives and services. Consequently, the sheer number of platform traders and the proportion of investors using fintech platforms in China out-pace all countries globally.

By 2014, a year after the 2012 policy change, top platforms in China like Tiantian and Ant Financial (now called Ant Group) had covered almost the entire universe of mutual funds in China, including equity, bond, mixed, index, and money market funds. By the end of 2018, about a third of the sales of funds took place on fintech platforms. Thus, China's experiences are particularly worthy of attention.

Hong, Lu, and Pan (2021) study mutual funds in China from 2008 to 2017, a period that strides the policy change year of 2012. They find some very noteworthy empirical patterns.

First, the total number of funds steadily increased from fewer than 200 in 2008 to close to 3000 by 2019. In particular, the aggregate number of bond funds increased substantially after 2015. While their numbers rose, however, the average fund size declined.

Second, although the flow level remained stable, the cross-sectional difference in fund flow increased significantly following the entrance of platform trading.⁷

Third, money tended to flow more intensively towards the top-performing funds after platform trading was permitted. The authors sort equity mutual fund performance into ten deciles based on the past year's raw returns. The average flow per quarter towards top decile funds increased from 1.88% to 19.65% after platform trading emerged. (In comparison, the U.S. average fund flow is steadily about 6% per quarter in the same period, 2008 to 2017.⁸) The difference between the average flow to the top and bottom deciles increased four times from 5.06% to 23.29% after platform trading was allowed. However, the cross-decile variation in returns, measured by the difference between the top- and bottom-decile funds' returns, remained stable. The post-platform top- and bottom-decile difference in average returns was 3.89%, 1.65 times its pre-platform difference of 2.35%.

Fourth, again focusing on equity mutual funds, the extra flow to the top-decile equity funds was on average 6.99% per quarter before they joined the platforms but increased to 16.96% after joining platforms.

Fifth, using data from a platform called Howbuy, the authors show that the market share of the top 10 percent equity mutual funds is close to 50 percent. This market share substantially exceeds that of the top 10 percent funds aggregated across all distribution channels. Interestingly, the high flow difference appears only for the top 10 percent funds' performance, not the rest.

Sixth, the authors show that funds tend to take on more market risk to bolster their expected performance when they are closer to the top performance rank. Accordingly, high-performance funds co-move more with the market if flows to funds are more performance sensitive.

Seventh, the authors' results apply less well to bond funds; bond funds' clients are mostly institutional investors.

⁷ The quarterly flows of funds is defined as "total ending RMB value – beginning value plus interest earned"/beginning value.

⁸ Platform trading was also available in the US in the period. However, the Chinese platforms have more comprehensive information display and user interfacing.

The authors suggest that widely accessible platform trading may be a driver for performance chasing in the mutual fund business. The low transaction costs of platform trading attract ordinary investors, many of whom are non-sophisticated and rely heavily on screen-displayed comparisons of fund performance in making their fund investment decisions. Screen displays show only about ten funds at a time.

There will be a long debate on causality. Does platform trading cause performance chasing and thus disrupt the business behavior of fund managers? Or, does performance chasing reflect underlying social changes? The huge increase in household savings seeking returns accompanies China's massive growth. Naturally, there is pressure to allow platform trading of funds to overcome entry barriers, which the government permits. In this context, platform trading, the composition of platform traders, and the disruption to the fund industry are coincidental. However, once the government has allowed platform trading to meet needs, platforms facilitate rigorous self-selection. Funds and traders gravitate to each other on platforms, and mutually reinforcing self-selecting behaviors generate the reported observations. It is challenging to fathom the economic implications. The jury is still out on the impact on resource allocation, financial stability, and savers' welfare. The paper provides a very useful leading effort. The Chinese experiences are worthy of attention and further investigation.

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This Digest summarizes selected papers presented in the **ABFER 8th Annual Conference** which was held virtually in May 2021. Past issues of the Digests are available [here](#). More information on the conference can be found [here](#).

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