BROOKINGS

Report

China's payments u-turn: Government over technology

Aaron Klein Monday, November 29, 2021

China has been at the forefront of a technological revolution in payments in both its private and public sectors. China's tech firms succeeded in replacing the bank-based magnetic striped card world with a tech-based QR code system. Then the People's Bank of China (PBOC) launched its central bank digital currency, followed by a series of government actions that appear designed to steer the Chinese system away from these tech firms. What is going on in Chinese payments is a fascinating battle of private sector innovation versus government control and big-tech versus big-banks, putting the usually staid and boring world of payment systems into the spotlight allowing for examination of broader narratives about the future of China and how it is playing the global economic game. It also offers insight into how the Federal Reserve plans to approach digital payments in America.

The Chinese payment wars stand in sharp contrast to the standard analysis of the global economic game. In the standard model, the United States is the advanced incumbent economy while China is playing economic catch-up. China is simultaneously modernizing its own domestic system to resemble western economies while at various levels integrating into the broader global financial system. The story in payments begins along this common narrative. The U.S. created and essentially dominates global retail payments through a magnetic stripe card-based interface running through the global banking system. This system has its roots in a series of inventions from roughly 50 years ago in New York, which began as a set of solutions for restaurants and frequent customers who were unable to access cash over the weekend and sought an alternative to the paper-based check payment system. These 'Diners Cards' eventually transformed into a series of plastic cards, building

a set of payment rails that process more than 130 billion transactions a year in the United States, which is more than 350 million transactions per day. To put that in perspective, the peak number of daily transactions in Bitcoin is estimated around 400,000.

Magnetic striped cards came to dominate the world of retail payments in developed economies. At an earlier point in its economic development, China attempted to emulate and graft onto this system, with multiple banks introducing their own sets of magnetic stripes and cards including Union Pay as the most prominent example. Founded in 2002, Union Pay's prevalence rose sharply to achieve over 3.5 billion cards in circulation in just a decade and volume that was roughly half of what Visa was processing in the mid 2010s.

The story diverges with Chinese technology companies, WeChat and Alibaba, who appreciated the inherent inefficiencies in the card-based system: the interchange fees, design apparatus of cards and card readers, and the costs borne by merchants. Chinese merchants, particularly small ones, lacked interest in such a costly system. Exploiting these opportunities, the two tech firms created a QR code digital wallet scan-based system, which essentially leapfrogged the debit magnetic cards. The new system was faster and more efficient than debit magnetic cards, producing a host of direct and indirect benefits for those two companies as well as for broader society. This innovation allowed China to leapfrog the magnetic striped card system that dominates much of the western world's retail payment system.

China's new payment system exploded from inception to dominance in under a decade. With over a billion users on each platform, the power of network incentives has been unleashed. The new payment system has replaced cards and cash at registers, changed how families give gifts, and even evolved the way how beggars ask for money, with QR codes replacing tin cups.

This is a powerful example of Chinese innovation, competition, and adoption. It appears, at least to outside observers, to be highly organic and internally driven, not a product of central planning or committees. For example, the two companies diverged in the origin of their payment systems. WeChat Pay is based on a social media platform (for Americans think Facebook) and is heavily engaged in person-to-person payments. WeChat Pay first rolled out as a service to facilitate personal funds in the form of 'Red Envelopes'

(traditional gifts of cash) around the Lunar New Year in 2014. WeChat Pay proposed digitizing this exchange, which given their person-to-person social media network, was clearly synergistic. The popularity of Red Envelope exchanges seeded many customers' WeChat Pay accounts with initial funds. WeChat launched the Red Packet digital payment idea in 2014, and 16 million packets were sent. The next year, 1 billion packets were sent. By 2016, it was over 8 billion and in 2017, 46 billion.

Alipay's origin differs. Alipay is a payment platform developed by Chinese tech conglomerate Alibaba with roots in digital commerce (think Amazon) and hence more likely to be used for business purposes. Internet commerce requires electronic payment systems, which were integrated with credit and debit cards. The lack of such a system in China incentivized Alibaba to develop Alipay to support its Taobao online shopping platform. With Alipay's main competitor, UnionPay, having only recently launched and not having gained many customers, the payment market was wide open. Alibaba offers incentives for merchants to use Alipay for purchases throughout their platform. They offer feeless purchases for both parties, preferential placement on digital platforms for merchants, and the ease of payment integration into business processing. Those differences provide economic benefits of lower costs and potentially greater transaction volumes that are not widely available in the bifurcated credit/debit card system.

There are potential drawbacks to this integrated model, including the lack of fees to provide services customers want with payments – such as interest-free grace periods of credit – and anti-competitive concerns of integrating business platforms and social networks with payment platforms.

With this technological advance, China had many of the ingredients necessary to challenge the existing retail payments system and seemed poised to leap into the global payments contest, which is in desperate need of an advance from the 50-year-old plastic cards that seem woefully out of place in the digital environment.

However, it appears that China has not chosen to do this, instead making a u-turn and now heading in the other direction. Rather than aggressively expanding the system and opening it to a broader network in the way that the American card-based system did,

China has taken a series of measures to slow the tech companies, enhance the government's role, and possibly bring payments back into a bank-centric system.

China's government intervened with the creation of a central bank digital currency. This digital yuan uses much of the same infrastructure as the Ali and WeChat pay systems: digital wallets, QR codes, scanners, etc. Just this month PBOC Governor Yi Gang stated a goal of "interoperability with existing payment tools" for the digital yuan.

The digital yuan is currently running in more than 10 regions of China with more than 150 million users. It was first launched in Shenzhen, the home city of Tencent (the company that runs WeChat Pay). It does not take a skilled U.S.-China international diplomat with a keen understanding of history to understand that deciding to roll out the digital yuan in the hometown of the payment giant sends a clear message. If the U.S. government started its own online bookstore/retailer and happened to choose the city of Seattle, the message would be globally clear.

Couple this with Alibaba's aborted initial public offering of its financial arm Ant and the sweeping set of problems cited by government officials and regulators and there is a message that China is pausing any potential for global expansion of the Alipay and WeChat payment systems. To the contrary, what seems to be happening is that rather than exporting Chinese-based digital wallets in hopes of becoming as ubiquitous as the Visa, MasterCard and American Express networks are currently, there is instead a desire to reorient the internal Chinese system to be focused on a central bank digital currency run through digital wallets more directly tied to the Chinese banking system.

Now, it is plausible that this change ultimately sets up a digital yuan using very similar technological rails of QR codes, first piloted by Ali and WeChat that would in fact be analogous to history repeating. The original American charge card, Diners Club, coordinated between restaurants (merchants) and consumers, not banks. This model ultimately lost the race. MasterCard is itself a consortium of financial institutions with a very different history than Visa, which was born from Bank of America, and American Express which began as a closed loop payment system and today is part of a bank holding company.

Previously, it seemed plausible that a digital wallet from Alipay or linked to the WeChat network could be a global phenomenon spreading far beyond China in the phones and pockets of billions of people worldwide. That now feels very unlikely. Instead, digital Chinese wallets through Chinese banks appear where China is headed. That model seems an unlikely mode to facilitate international commerce throughout Europe, or even Africa, let alone to challenge the United States for domestic market share. Though Alipay and WeChat are accepted in the United States in retail stores, they are almost exclusively used by Chinese individuals, not by Americans.

This begs the question: when China does make technological advances in globally competitive industries such as payments, is China's ultimate goal to export this technology and create a network for global commerce? Or is it ultimately an internal process where the benefits and costs will be felt by Chinese nationals and control will be maintained by the Chinese government? Gunpowder was invited in China centuries before the formula came to Europe who used it very differently.

From an American perspective, there's a bit of a sigh of a relief because China had built a better mousetrap in many respects. It is also a shot in the arm for the Federal Reserve, which has devoted significant resources to considering launching its own central bank digital currency. China was not the only entity pushing the Federal Reserve. Facebook's original announcement of launching a digital currency (then called Libra, now known as Diem) was another key moment energizing the Fed to consider alternatives. The Fed's consideration of a central bank digital currency has been heavily impacted by the payments actions proposed by both China and Facebook. This helps explain how the same Federal Reserve that failed to adopt a real-time payment in the U.S. despite the European Union, United Kingdom, Japan, Mexico, and many more countries adopting such a system years and decades earlier is now devoting significant attention to creating a new central bank digital currency. Whether the Fed launches a new digital currency or not, is years away. In the meantime, low income consumers still pay billions as a result of the Fed's failure to modernize its payment system. By my estimate more than $100 billion has already been taken as a result of the Fed's failure to act when the United Kingdom transitioned more than a decade ago. It marks one the largest failures of policy that contributes to income inequality and needless inequity in America in my lifetime.

In conclusion, whereas it is currently unclear whether the Federal Reserve will launch a central bank digital currency, it appears that China is committed to a path of a digital yuan. It seems likely that such a move will also favor moving payments more broadly back into its banking system, away from its two technological companies. However, the technological system of QR codes and digital wallets appears likely to remain in China regardless of who operates the system.
