



PAYSYS **REPORT**

Issue 1 – February 2019

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The world's largest payment systems come from China: the UnionPay card system and the mobile payment schemes Alipay and WeChat Pay. In the Chinese platform economy, the business model of the two mobile schemes is closely interlinked with the UP card system. The traditional payment instruments of the bank account are increasingly receding into the background. Even though some figures are very questionable, China is showing the contours of a new payment world in which data collection plays an important role.

2. Alipay's e-money license in Europe

In Europe, the Chinese mobile payment scheme Alipay made recently a regulatory upgrade from payment institution to e-money institution. The scheme doesn't need the upgrade for taking over the acquiring services from external card acquirer. What could be the agenda of the new e-money institution Alipay Europe Ltd. S.A., authorized in Luxembourg?

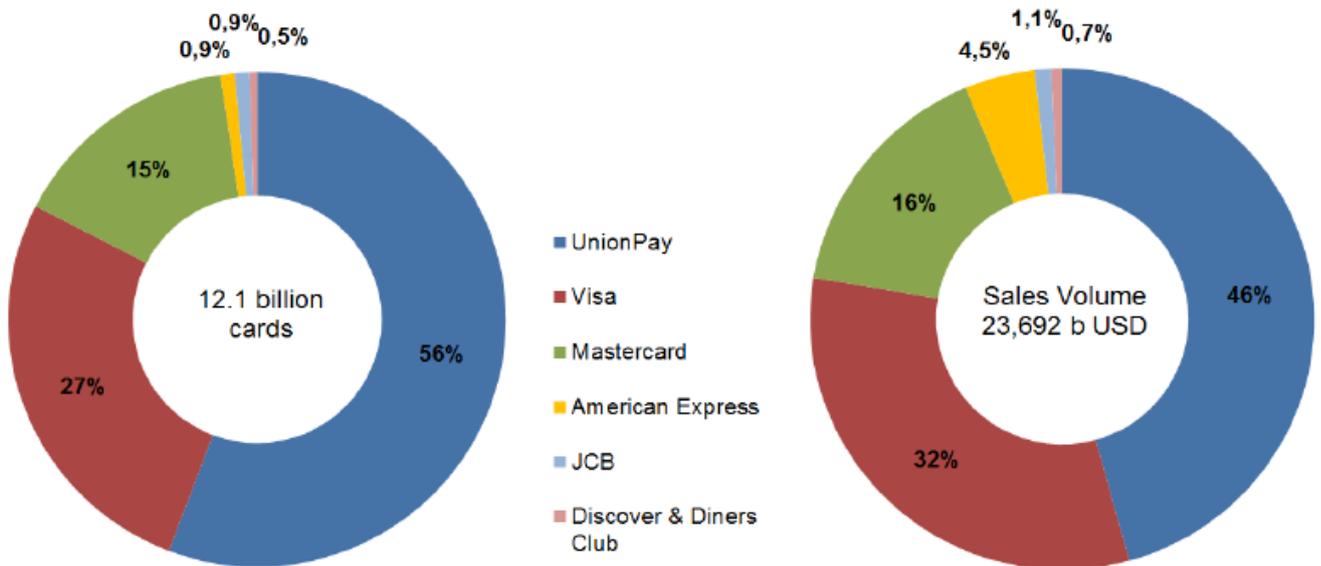
UnionPay: Card Champion of the World

(hg)¹ The Chinese card giant UnionPay (former CUP China Union Pay) is still the unbeaten number one of the international card schemes (ICS) that are accepted worldwide. More than 7.4 billion cards were issued at the end of last year. Based on cards issued in 2017 its market share in the ICS league is 56% (see figure). Bringing cards to the people is relatively easy, especially for a monopolist. For the business model, the use of cards for payments is crucial. However, UP does not do badly here either. With USD 1,677, the annual sales value per card is somewhat lower than its competitors, but the scheme remains the world leader with a market share of 46% (2017). Chinese consumers are still

relatively credit shy. About 9% of the UP cards are revolving credit cards or dual cards (debit & credit). The outstanding balance of credit using UP cards is growing, however at a moderate rate.

The state-owned card scheme founded in 2002 has been pursuing a consistent expansion strategy outside China through its subsidiary UP International (UPI) since 2012. It has claimed the issuance of more than 100 m. cards outside of China. In Europe, 3.3 m. retailers are now accepting UP cards (worldwide acceptance: 23 m. retailers in 168 countries).

International Card Schemes – Market Shares (2017)



Sources: Annual Reports, Nilson Report, PBOC

Our Comment:

Based on the official central bank figures of the People’s Bank of China (PBOC), published in the Red Book of the Bank for International Settlements (BIS), card payments must be very popular in China and strongly growing (about 30% in 2017 and 2018). With nearly 1.4 billion inhabitants everything seems to be huge in China. In order to understand the importance of card payments, it is helpful to break down the figures in relation to GDP per capita and to compare these with the figures of other countries and areas with high card use:

Value of card payments (including e-money transactions) as a percentage of GDP (2017):

- China: 90% (excl. e-money)
- USA: 30%
- UK: 37%
- Euro area: 16%

(source: Red Book Statistics of the BIS, complemented by ECB Blue Book figures)²

Apparently, China seems to be the country where card payments dominate in the daily spending of consumers, even if the PBOC/BIS-figures are dubious (see

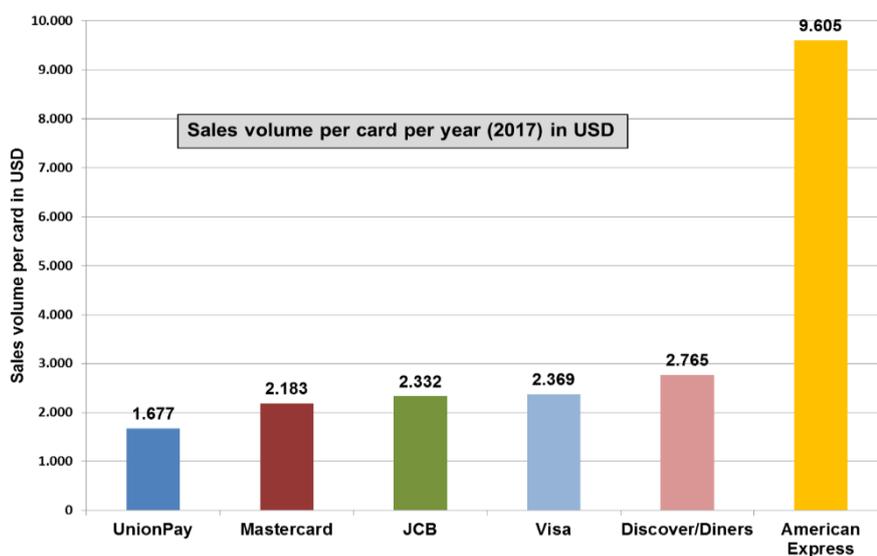
“strange anomalies in Chinese card business” below). It leaves other countries like the USA and UK far behind. These figures contradict the popular so-called “leapfrog”-hypothesis of many market observers, who say China is going directly from cash to digital mobile payments, leapfrogging plastic cards.

Mastercard and Visa waiting in line

It will be hard for the “American” ICS to enter this mature market monopolized by the state-owned UnionPay. The World Trade Organisation (WTO) urged its member China in 2012 to terminate discrimination against foreign payment providers and to open its card market to other card schemes.

Up to now, Mastercard and Visa have not been allowed to clear and settle card transactions in local currency (renminbi/yuan) through their processing systems. As regulator, the PBOC set the conditions to set up a bank card clearing company in 2017 and both card schemes applied for access.

The Financial Times reported recently that both applications are still in the queue.³ The trade dispute between the USA and China is currently not exactly conducive to further opening up of the market. However, Chinese banks may issue Mastercard and Visa cards, co-badged with UP in order to reach higher ac-



Sources: Annual Reports, Nilson Report, PBOC

ceptance outside of China.

No competition?

Despite its monopoly in domestic card payments, UP has strong competition from the two local giants in mobile payment Alipay and WeChat Pay (Tenpay). UP developed its own payment app for mobile payments, which is QR code based like its competitors' apps. In the meantime, UP cards can be loaded in the container apps of Samsung Pay and Apple Pay. Recently UP announced 120 million registered card holders, which is still far behind its competitors Alipay and WeChat, each having 700 to 800 million registered users.

Apple Pay, Google Pay, Samsung Pay & Co are "container solutions" as digital wallets containing virtual payment cards or other payment instruments, replacing the leather wallet of the payer. If I select a Visa card in my container app, the mobile payment is a transaction based on the rules and regulations of Visa. The merchant should have a contract with its acquirer for accepting Visa.

In contrast to these technical wallets, Alipay and WeChat Pay are dedicated payment schemes, like PayPal, UP, American Express, Mastercard, Amazon Pay etc. The merchant must have a separate acceptance contract with the acquirer of the scheme. It's important to keep this crucial difference in mind.

Contrary to container apps, proprietary payment schemes have to solve the network dilemma in the two-sided market of payers and payees. Both payment systems are born out of huge platforms. Alipay originated from the ecommerce platforms owned by Alibaba, like PayPal from eBay. WeChat is a social platform, like Facebook or WhatsApp with nearly 1 billion users.

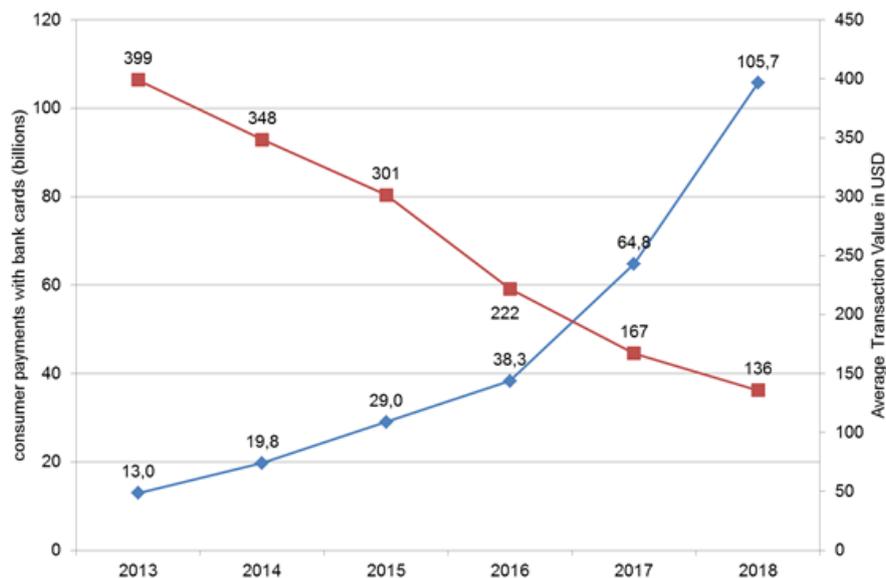
Like PayPal, both Chinese schemes are account-based

closed loops. Both users (payer and payee) have a payment account where credits can be generated. Funds can be cashed into or out of traditional bank accounts. According to European regulation the scheme would need a license at least as an e-money-institution.

If the account of the payer is zero, its purchase must be funded somehow. There are several funding options. The payer makes a credit transfer from their bank account (push transaction) or the amount is "pulled" by the scheme via the debit or credit card linked to the account.⁴

Card payments dominate in the daily spending of Chinese consumers, even if the PBOC-figures are dubious.

Alipay offers a further funding option via an interest free bridging loan for a limited amount and fixed payment period (like a charge card). However, at the end of the day the account overdraft should be cleared by funds



coming in from the banking system. As a matter of fact, most of the accounts are funded by the UP bank card.

Symbiosis or parasite?

Alipay and WeChat Pay payments are mainly fueled by UP cards. It is probably a kind of symbiosis. Transactions are funded directly or aggregated for a certain credit period by a card transaction, debiting the bank account. The huge success and popularity of the mobile payments scheme is mirrored by the extremely high growth rates (over 60%) of UP sales transactions in 2017 and 2018.

By using Alipay/WeChat for daily transactions (supermarket, taxi, restaurant), the average transaction value (ATV) of UP cards decreased sharply during the same period (see figure).

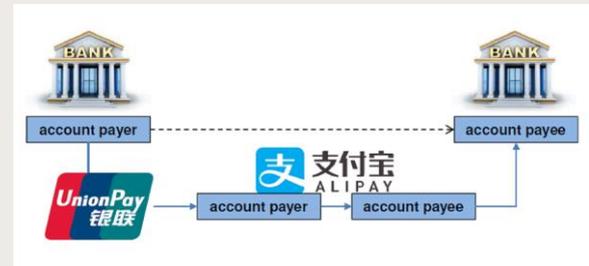
Not all the funds coming into the account circuit via UP cards (or credit transfer) are cashed out after the transaction by payees to their bank account. Alipay offers saving options (e.g. money market accounts) and users could be happy to have positive balances in their accounts. Deposits at Alipay are estimated at approx. 250 billion USD (2017), accounting for 1.6% of deposits previously held at traditional banks.⁵

The data of the transaction is probably the driver behind the business model.

Deposits or data?

One can rightly ask oneself whether the detour via UnionPay and Alipay/WeChat is efficient. Instead of

one transfer from bank to bank, three transactions and two more PSPs are now involved (see figure).



In the past, competition between banks and non-bank PSPs for customer deposits may have played an important role. Who has the funds? For non-banks, who cannot use the deposits for granting credits, the possession of funds is not decisive in a low or zero interest world.

Beside the transaction fee, the data of the transaction is probably the driver behind the business model. In the payment chain, only Alipay and Co. could have full access to the data behind the transaction (content, place, value and timing). Especially in Chinese surveillance capitalism this data is valuable raw material.

P.S.: I am a heavy user of PayPal. The transactions are funded by my charge card, which is not issued by the bank where I hold my bank account. My bank only sees a considerable monthly payment to my card issuer. Nothing else. My card issuer sees a little bit more: transactions to PayPal labeled with unclear abbreviations of the payees. Only PayPal has the full data of the transaction.

A few days ago, I allowed an AISP (Account Information Service Provider) access to my bank account. But the information recovered by the AiSP must have been disappointing.

Strange anomalies in Chinese card business⁶

A Chinese inhabitant has on average 5.3 cards, of these 4.8 are debit cards.

To have more than one credit card (like American consumers with 4.2 cards) could make sense, because each card will give you an additional credit line. What could be the reason to have a bundle of debit cards?

China seems to be worldwide the country with the highest debit card penetration. According to local market observers, many cards are probably inactive. The debit card is closely linked to the bank account (same number). If somebody loses a card, it is more convenient to open a new account than to wait for a new card. Therefore, Chinese consumers usually have several payment accounts even in rural areas. Since 2016 the number of accounts has been restricted by state regulation to two accounts per person (one bank account and one payment account at a non-bank PSP).

Not only sales transactions are linked to the UP scheme

According to the PBOC, several payment transactions are linked to the bank-issued cards of UnionPay (in percentage of total value):

- depositing cash (6.7%)
- cash withdrawals (6.5%)
- "transfer transactions" or "e-money" (75.5%)
- consumer sales transactions (11.2%)

The total value of these card transactions was 629 trillion CNY (93 trillion USD) in 2017. We see a huge volume of mysterious "transfer transactions" by bank cards. These are obviously not consumer payment transactions (sales). In the BIS statistics these transactions are interpreted as being "e-money", according to the BIS definition something like prepaid cards or other prepaid instruments. The Chinese e-money volume would be round about 600 times that of the Euro area. Each Chinese inhabitant obviously generated an average of 60,000 USD (!) with e-money in 2017. The volume is 6.8 times the total Chinese GDP...

Something must have gone wrong in the statistical bureau of the Chinese state party. It is definitely not comparable with the e-money figures reported by the BIS for other countries. Therefore, we don't take these phantom figures into account in our analysis of the UP card scheme.

Over 200% of consumer spending per inhabitant is generated by consumer card sales transactions

The consumer sales volume by UP cards (excluding "e-money") seems to be a sound figure compared to other countries:

- China: 7,791 (excl. e-money)
- USA: 17,944
- UK: 14,714
- Euro area: 5,956

Value of card payments (including e-money transactions) in USD per inhabitant (2017):
(source: Red Book Statistics of the BIS, complemented by ECB Blue Book figures)

However, the household expenditure per capita in China was only 3,618 USD.⁷ More than 200% should have been paid by card. Strange results!

These figures are inconsistent. How to solve this mystery? An explanation could be the dominance of commercial cards in the UP card scheme. However, the PBOC names "consumer spending" in relation to these figures in its latest report (2018). The Chinese love to give each other money on New Year's Day, increasingly as mobile payments. This leads indirectly to card sales, but the GDP remains unchanged. However, it does not seem to be sufficient as an explanation.

Another striking feature is the high average transaction value (ATV) of a UP sales card transaction (167 USD) compared to other countries (approx. 50 to 55 USD in the USA, UK and Eurozone).

In its Annual Report Visa refrains from mentioning the worldwide market share of UP in contrast to the other ICS. One reason is that Visa does not see UP as a competitor. Visa also says that "*we are uncertain how UnionPay reports certain volumes*". We'll go along with that.

Alipay's e-money license in Europe

(hg) The Chinese mobile payment scheme Alipay has begun to set foot in Europe. The Luxembourg minister of finance Pierre Gramegna announced its authorization as an e-money-institution by the local supervisor CSSF on 14 January 2018. He says: *"Alipay's presence is a welcome addition to Luxembourg's financial ecosystem and will further consolidate its position as a leading European hub for Fintech and e-commerce. It will considerably contribute to the strengthening ties between Europe and China."* Alipay

(UK) has already had a license from the British FCA as payment institution since October 2017. The relocation from the UK to Luxembourg is probably the outcome of the continuing uncertainty for PSPs licensed in the UK over using their passports for offering payment services in the EU after a no-deal Brexit. However, Alipay has made a regulatory upgrade from payment institution to e-money institution. The reason for this upgrade was not commented on by Alipay or Pierre Gramegna.

Our Comment:

In autumn 2018, Alipay's European boss Roland Palmer announced that with its mobile payment app it does not want to open up competition with Apple Pay and Google Pay in Europe. Alipay just wants to offer their beloved mobile payment method to the growing stream of Chinese tourists everywhere in the tourist hotspots. However, Alipay is a mobile payment scheme in contrast to the mobile container solutions of Apple and Google (see our comments in the previous article on UnionPay). Alipay (and WeChat Pay) have gained acceptance at European merchants today through cooperation with traditional card acquirers like BNP Paribas, Ingenico, Wirecard, Concardis etc.

It is much more convenient for the merchant to have an acceptance contract with its own card acquirer than an additional contract with Alipay.com Co. Ltd. in China. It is remarkable that the entity Alipay UK Ltd. does not offer these acquiring services despite its license as payment institution, which enables acquiring services Europe-wide.

By using external acquirers, Alipay loses its status as a closed-loop e-money scheme and becomes a 4-party system outside China. Up to now, Alipay transactions could only be made by consumers with a UP card and/or a bank account in China.

What could be the reason behind the regulatory upgrade made by Alipay in Europe? What further steps could Alipay take in Europe? The scheme does not need an e-money license for offering acquiring services, today provided by external card acquirers.

It is still a mystery why Amazon went for authorization as an e-money institution

After the announcement of the e-money license, many market observers wondered what Alipay's next steps could be. Several observers suspect an entry into payment services such as Account Information Ser-

vices (AIS) and Payment Initiation Services (PIS) according to the PSD2. But a license as a payment institution would be sufficient for these kind of payment services. Others bet on trade financing for merchants accepting Alipay. However, for these services a bank license would be necessary.

Maybe it is going the same way as Amazon Pay.

It is still a mystery why Amazon went for authorization as an e-money institution (like Alipay also authorized by the CSSF in Luxembourg). The Amazon Gift card comes to mind spontaneously. The prepaid card can be used for payments at third-party merchants on the Amazon platform. However, it is not regulated as e-money by the CFFS (regulators in other EU Member States would probably disagree).

For its payment services on the Amazon platform, Amazon Payments Europe explicitly does not use the e-money license either. Unlike a PayPal-account, Amazon-account of the payer cannot be topped up.⁸

According to its business terms and conditions, Amazon clearly only considers the accounts of merchants who accept Amazon Pay as a payment instrument outside the platform as e-money accounts. As long as these accounts cannot be used for further payments and serve as pure clearing accounts, no e-money would be involved. However, Amazon Pay considers these accounts as e-money accounts.

Maybe Alipay just wants to play it safe, copying the Amazon Pay model. It would be the end of its present role as external card acquirer.

Until now, Alipay activities in Europe are restricted to the acquiring business. However, a copy of the Chinese Alipay scheme in Europe would require at least an authorization as e-money institution.

Next steps could be:

- Like PayPal, the scheme would have the option to offer consumers and merchants payment accounts for mobile payments.
- It could consider entering the mobile P2P payment market too.
- According to Art. 6 Par. 1 (b) of the second E-Money Directive, Alipay would be able to grant credit related to its payment services for payers through the interim financing of sales for a specific period, just like it does today in China.
- In the long term, Alipay could be the forerunner for Alibaba's expansion plans to establish its e-commerce platform in competition with Amazon in Europe as well.

We will monitor the next steps closely.



Last but not least, it is interesting to see how far the tentacles of the Chinese octopus go when a merchant accepts Alipay in Europe. The merchant agrees not to sell any software services that could endanger Alibaba. Also, the merchant may not offer "reactionary" documents. Reactionary according to the interpretation of the Chinese Communist Party? In addition, the transaction data is transferred to Alipay.com Co. Ltd. in China. Questionable whether this practice is in conformity with the European data protection regulations.

Notes

- 1 Thanks to Zennon Kapron of the consultancy Kapronasia in Shanghai and to Jimmy Chu (Geneva) for helpful comments towards understanding the Chinese payment market.
- 2 <https://stats.bis.org/statx/toc/CPMI.html>
- 3 <https://www.ft.com/content/8dee4b22-13ef-11e9-a581-4ff78404524e>
- 4 It is not known if the schemes are offering direct debit as a funding option. Direct debit is not very popular in China.
- 5 See: <https://www.bloomberg.com/graphics/2018-payment-systems-china-usa/>
- 6 Source of the figures are BIS Red Book statistics for China (input from PBOC) and payment statistics, directly published by the PBOC: China Payment System Development Report 2016 (<http://www.pbc.gov.cn/english/130739/3661514/3662217/3662236/index.html>) and Payment System Report Q3 2018 (<http://www.pbc.gov.cn/english/130730/3660709/3660738/3669108/index.html>). The figures for 2018 are estimated forecasts on the basis of the published figures for the third quarter 2018.
- 7 <https://www.ceicdata.com/en/indicator/china/annual-household-expenditure-per-capita>
- 8 E-money would be created when a consumer topped up their Amazon account. Amazon is offering this option, however, it avoids the issuance of e-money by a detour. You can only load your Amazon account through the acquisition of a virtual Amazon gift card.

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