

Payment systems in China

The payment systems used in China are evolving rapidly. Alongside traditional paper-based instruments, a number of electronic clearing systems are in use or in development. The China National Advanced Payment System went live across China in 2005. This year, a Bulk Electronic Payment System is due to be implemented using the same infrastructure. In this article, we provide a guide to the systems currently in use and the anticipated future developments.

A work in progress

A wide range of domestic payment instruments and systems are currently being used in China. On the one hand, a number of paper-based instruments are still in use, many of which can only be used to process local payments. Cash is also still commonly used for local payments. Indeed, until fairly recently, it was still used for inter-city payments, requiring the physical transfer of bags of cash across China.

On the other hand, inter-city electronic payments have been revolutionised by the sophisticated proprietary systems developed by the state-owned commercial banks, and more recently, by the country-wide implementation of the China National Advanced Payment System (CNAPS). Further developments are expected later this year, when the Bulk Electronic Payment System (BEPS) is due to be rolled out nationwide, using the CNAPS infrastructure. Ranging from the old-fashioned to the highly sophisticated, China's payment systems are certainly a work in progress, but they are moving inexorably forwards.

The simplest way to categorise payments in China is into local and inter-city payments, as the systems used to clear each type of payment are quite separate.

Local payments

Many of the payment mechanisms in China can only be used within a particular city or clearing area. These mechanisms usually involve the clearing of funds using the local clearing house (LCH) or the bank's own system. There are more than 2,300 People's Bank of China (PBOC)-owned LCHs in China. Payments processed by LCHs are cleared on a 'debit first, credit second' basis and predominantly use paper-based instruments.

Corporate cheques

Cheques can only be used for local payments. They have to be manually signed and imprinted with the company's finance seal ('chopped'). Consequently, they must be prepared by the company issuing payment – this task cannot be outsourced to a bank. Once the cheque has been presented to the bank, funds are available within 48 hours. When a cheque has been issued, it is only valid for ten days, so this form of payment is not in widespread use.

中国的支付系统

中国使用的支付系统正在迅速地发展演变。除了传统的纸质工具之外，许多电子清算系统也已付诸使用或正在开发。2005年，中国国家现代化支付系统(China National Advanced Payment System-CNAPS)开始在中国全面推出。今年，小额批量电子支付系统(Bulk Electronic Payment System-BEPS)将利用CNAPS的基础设施进行安装。在本文中，我们会简单介绍目前正在应用的系统，并且将展望未来年的发展。

一件半成品

目前，中国所使用的国内支付工具和系统多种多样。一方面，一些纸质工具仍在使用，其中许多只能用来处理本地支付，现金也仍然在本地支付中普遍使用。实际上，不久前现金还在用于异地支付，这就需要把成袋的现金在中国境内转移。

而另一方面，国有商业银行开发的复杂的自有系统，以及最近CNAPS在全国范围内的安装，都为异地电子支付带来了重大变革。今年晚些时候，BEPS将使用CNAPS的基础设施在全国铺开，这将使电子支付进一步发展。既有老式工具、又有高度复杂的系统，中国的支付系统无疑还是一件半成品，但它正以不可阻挡之势向前发展。

将中国的支付系统进行分类，最简单的方法就是分为本地支付和异地支付，因为用于清算每种支付的系统是相互独立的。

本地支付

中国的许多支付机制只能在某个特定的城市或清算区域内使用。这些机制通常包括使用本地清算所(LCH)或银行自己的系统来清算资金。中国人民银行(PBOC)在全国拥有2,300多家本地清算所。本地清算所基于“借方优先于贷方”的原则对支付进行清算，并主要使用纸质工具。

公司支票

支票只能用于本地支付。它们必须手工签发，并加盖公司的财务章(“盖戳”)。因此，支票必须由支付款项的公司开具，也就是说这项工作不能外包给银行。支票一经送交银行，48小时内就可以提款。一张支票开出之后，有效期只有10天，因此这种支付形式的应用并不广泛。

Cashier's orders

Cashier's orders are issued by the bank and are valid for one month from the date of issue. The specified amount is paid unconditionally and on the spot when the order is presented at the beneficiary's bank. Like cheques, cashier's orders can only be used within the issuer's clearing area and are not suitable for inter-city payments.

Local transfers

The most commonly used local payment instrument is the local transfer, also known as a 'giro payment' or 'credit voucher'. Clients fill out transfer slips and pass them to the remitting bank, either manually or electronically. The bank passes the vouchers to the LCH for clearing. Alternatively, transfers between branches of the same bank may be carried out using the bank's internal clearing system.

The length of the processing period depends on the time of day that the slip is submitted as some areas have two clearing cycles each day (at 10.30 and 16.30). When this is the case, if the payment is cleared in the morning, payment will be received that afternoon. If it is cleared in the afternoon, the beneficiary will receive payment the following day.

Drafts

Drafts are paper-based instruments which are issued by the drawee's bank and passed to the beneficiary, who presents the draft to their own bank for collection. They can be used for local payments or for inter-city payments. Local draft payments may take as little as two days to clear, but inter-city drafts can take up to two weeks.

Inter-city payments

Other than drafts, the instruments used to process intracity payments are not generally valid for inter-city payments. Instead, a range of electronic payment systems has been developed for the processing of non-local transactions.

Early inter-city payment systems

Prior to the development of CNAPS, two systems were used to process inter-city payments: Electronic Interbank System (EIS) and National Interbank System (NIS). Neither of these had widespread geographic coverage.

NIS was used to process inter-city inter-bank transfers. Processing was done on a manual basis and was labour intensive, as payment instructions had to be sent between banks in writing or by cable. This system has been superseded by the electronic systems.

EIS (known in Chinese as 'Linkage Between Sky and Earth') was an electronic precursor of the new CNAPS, developed in 1989 by PBOC, which used satellite technology to send payment instructions to a national clearing centre. Funds were cleared in real-time between participants. However, there were only 1924 participants, so a transfer to a non-participant had to be relayed by a participant. Depending on the time taken to do this, funds would be received by a non-participant either on the same day or next day. Banks were not able to interface with the old system directly, so a high level of manual intervention was required from the banks.

EIS was later re-named as the China National Automated Payment System. It has now been fully replaced by the new CNAPS.

Commercial banks' proprietary systems

China's 'big four' domestic commercial banks (Agricultural Bank of China, Bank of China, China Construction Bank and Industrial and Commercial Bank of China) have developed their own clearing systems, which are used to process inter-city payments. Payments between different branches of the same bank may be cleared in as little as three hours, depending on the size and location of the branches in question.

银行本票

银行本票由银行签发，自签发之日起有效期为一个月。当本票被送到收款方银行时，银行就会无条件地当场支付指定数额的款项。就像支票一样，银行本票也只能在签发方的清算区域内使用，而不适用于异地支付。

本地转账

应用最普遍的本地支付工具就是本地转账，也被称为“转账支付”或“贷方传票”。客户填写转账凭单，然后将其通过人工或电子的方式交给汇款银行，银行再将凭单转到清算所将其结清。或者在同一家银行的分支之间进行转账，也可以使用该行的内部清算系统。

处理时间的长短取决于凭单在一天中的提交时间，因为某些地区每天有两个清算周期（10:30和16:30）。在这种情况下，如果支付在早晨结清，那么当天下午就可以收到。如果是在下午结清，那么收款方就会在第二天收到款项。

汇票

汇票是一种纸质工具，由付款方银行签发并转给收款方，收款方再将其提交给自己的银行托收。汇票可用于本地或异地支付。本地汇票支付最短可在两天内结清，但异地支付最长可能需要两个星期。

异地支付

除了汇票之外，用于处理同城支付的工具通常不能用于异地支付。因此，多种电子支付系统被开发出来用于处理非本地交易。

早期的异地支付系统

在CNAPS被开发之前，用于处理异地支付的有两个系统：电子跨行系统（EIS）和全国跨行系统（NIS）。这两种系统的地理覆盖都不够广泛。

NIS用于处理异地跨行转账。处理过程以手工方式完成，属劳动密集型，因为支付指令必须以书面的形式或通过电报在银行之间传送。这一系统已经被电子系统取代。

EIS（中文所说的“天地对接系统”）是中国国家现代化支付系统的前身，于1989年由中国人民银行开发。它使用卫星技术将支付指令发送给一处国家清算中心，资金在系统参与者之间进行实时清算。然而，该系统的参与者只有1,924个，因此针对非参与者的转账必须经由一个参与者来进行中转。根据中转时间不同，非参与者可能在当日或隔日收到款项。银行无法直接同旧的系统对接，因此就需要进行大量的人工干预。

EIS后来被更名为中国国家自动化支付系统，现在已完全被中国国家现代化支付系统所取代。

商业银行的自有系统

中国的四大有商业银行（中国农业银行、中国银行、中国建设银行和中国工商银行）都开发了它们自己的清算系统，用于处理异地支付业务。同一家银行不同分支之间的支付清算最短只需3小时，具体取决于这些分支的规模和地点。

In order to benefit from the payment and collection capabilities of the big four's clearing systems, several of the foreign banks operating in China have formed strategic alliances with one or more of the state-owned commercial banks. The Chinese banks benefit from this arrangement by receiving a transaction fee for each payment processed. The foreign banks are also required to keep some clearing funds in their nostro account with the Chinese bank, providing additional deposit funds. This arrangement has so far proved very useful both for the foreign banks wishing to improve their clearing capabilities and for the domestic banks who benefit financially from the agreement. However, as CNAPS becomes more established, the foreign banks may well have less need for the proprietary systems.

CNAPS

CNAPS replaced the earlier version of the system – which was, rather confusingly, also known as CNAPS. However, the earlier version was called the China National Automated Payment System, while the new system is called the China National Advanced Payment System.

“As a market practice, customers are not required to provide the beneficiary bank’s clearing code for a CNAPS payment. Nor do they have a convenient channel for obtaining such information. Therefore the paying bank needs to locate the beneficiary bank’s clearing code, based on the Chinese name and address provided by the payer, before they can release a payment into CNAPS. When the volume of payments increases, this becomes a bottleneck, slowing down the end-to-end process.”

Luke Lu, Payments Product Manager at Citigroup

CNAPS is an electronic inter-bank clearing system constructed and owned by PBOC. It was previously referred to as the Modern Payment System (MPS). CNAPS enables faster payments than previous systems and in the future may also form the basis of a credit checking system, using its databases of financial information. Implementation of the system across China has been carried out gradually. CNAPS was launched in 32 cities in January 2003 and was rolled out across China in June 2005, at which point 8,694 banks in 324 cities in China were connected. The CNAPS infrastructure consists of one National Processing Centre (NPC), which is based in Beijing, and 32 City Clearing Processing Centres (CCPCs) in Shenzhen and 31 provincial capitals. The other cities are able to access CNAPS via their CCPCs.

The use of bank codes in the clearing system has proved a challenge for banks clearing high volumes of inter-bank payments through CNAPS; “As a market practice, customers are not required to provide the beneficiary bank’s clearing code for a CNAPS payment,” explains Luke Lu, Payments Product Manager at Citigroup. “Nor do they have a convenient channel for obtaining such information. Therefore the paying bank needs to locate the beneficiary bank’s clearing code, based on the Chinese name and address provided by the payer, before they can release a payment into CNAPS. When the volume of payments increases, this becomes a bottleneck, slowing down the end-to-end process.”

CNAPS now comprises two payment systems: a High-Value Payment System (HVPS) and a Bulk Electronic Payment System (BEPS).

HVPS

HVPS is intended to process transactions of over RMB20,000, but in reality, banks also route smaller value payments to HVPS as the low value clearing system is not yet in full operation (see below). HVPS is now in operation across China and banks have increasingly been using this system to process their payments. HVPS operates on a gross settlement basis, clearing each payment as it is processed. The paying bank’s account is debited and the receiving bank’s account credited at the same time.

Once BEPS goes live nationwide, it will still be possible for urgent low value payments to be processed using HVPS. However, it is likely that the fee for this will be higher.

为有效利用四大国有商业银行清算系统的支付和收款能力，在中国开展业务的一些外资银行已经同它们中的一家或数家结成了战略联盟。中资银行通过对每笔支付交易收取手续费从联盟中获益。外资银行还需要在中资银行中开设同业账户，并保留一定的清算资金，提供额外的存款资金。到目前为止，这种安排对双方都非常有利：外资银行可以提高自己的清算能力，而中资银行又可以从财务上获益。但是，随着CNAPS的日益成熟，外资银行对中资银行自有系统的需要很可能会减少。

CNAPS

CNAPS有两个版本，二者非常容易混淆。早期的版本叫做中国国家自动化支付系统，而新系统叫做中国国家现代化支付系统。

“作为一种市场惯例，客户在使用CNAPS进行支付时不需要提供收款银行的清算代码。而且他们也并没有一个方便的渠道来获取此类信息。因此，付款银行在向CNAPS发放一笔款项之前，需要根据付款方提供的中文名称和地址来确定收款银行的清算代码。随着支付量的增加，这种做法就形成了瓶颈，减缓了端到端流程的速度。”

——花旗集团支付产品经理Luke Lu

CNAPS是由中国人民银行构建并拥有的电子跨行清算系统，先前曾被称为现代化支付系统（MPS）。CNAPS的支付速度高于原来的系统，而且将来还可以使用自己的金融信息数据库，成为征信系统的基础。该系统已经逐步在全国范围内安装。CNAPS于2003年1月在32座城市中率先推出，2005年6月在中国全面铺开，将324座城市中的8,694家银行连接起来。CNAPS的基础设施包括一个位于北京的国家处理中心（NPC）以及32个城市处理中心（CCPCs），位于深圳和31个省座城市。其它城市可以通过自己的城市处理中心连接到CNAPS。

对于那些通过CNAPS进行大额资金清算跨行支付的银行来说，在清算系统中使用银行代码是一项挑战：“作为一种市场惯例，客户在使用CNAPS进行支付时不需要提供收款银行的清算代码，”花旗集团支付产品经理Luke Lu解释说，“而且他们也并没有一个方便的渠道来获取此类信息。因此，付款银行在向CNAPS发放一笔款项之前，需要根据付款方提供的中文名称和地址来确定收款银行的清算代码。随着支付量的增加，这种做法就形成了瓶颈，减缓了端到端流程的速度。”

CNAPS现在包括两个支付系统：一个大额实时支付系统（HVPS），一个小额批量电子支付系统（BEPS）。

HVPS

HVPS原本是用于处理20,000元人民币以上的交易，但实际上，银行也将其用于金额较小的支付行为，因为小额清算系统尚未全面投入使用（见下段）。目前，HVPS已经在全国范围内运作起来，银行正越来越多地使用这一系统来处理自己的支付业务。HVPS在全额结算的基础上进行运作，每笔支付处理后即结清。付款银行的账户被借记，同时收款银行的账户被贷记。

BEPS在全国实施后，仍然可以使用HVPS来处理紧急的小额支付。不过，这项业务的费用会高一些。

BEPS

BEPS is currently being implemented across China, a process which will be greatly accelerated by its use of the CNAPS infrastructure which is already in position. Unlike CNAPS, BEPS is designed to process low value payments below RMB20,000 and has already gone live in Tianjin, Xiamen and Beijing. It is due to be rolled out across the rest of China in June 2006, although this is subject to the performance of the trial run in the above pilot cities.

Using this system, funds are settled on a bilateral netting basis (ie netting between two parties). Payments to the same receiving bank are batched together and delivered to the clearing system. The payment information is delivered to the receiving bank in real-time, but the funds are settled between the paying bank and receiving bank at the end of each clearing session.

“BEPS is a netting system, but it settles intraday (three times a day right now), not like a normal ACH, that settles end of day, so basically a payment cleared through BEPS can have same-day value. This is why I think it’s more efficient than ACH systems in other countries.”

Luke Lu, Payments Product Manager at Citigroup

BEPS works in a similar way to Automated Clearing House (ACH) systems in other countries. However, there are differences, as Lu explains. “BEPS is a netting system, but it settles intraday (three times a day right now), not like a normal ACH, that settles end of day, so basically a payment cleared through BEPS can have same-day value. This is why I think it’s more efficient than ACH systems in other countries.” The main advantages this system will bring include a greatly decreased processing cost as payments are processed in batches rather than individually, and the netting mechanism itself incurs lower costs. Intracity payments will also be more efficient, as banks will be asked to route intracity payments through BEPS once it has been rolled out to the cities in which they operate.

BEPS has the functionality to support direct debit payments. However, so far this is not operational as this functionality requires a high level of performance from the participating banks’ systems, and the central bank has not yet issued any industry guidelines relating to cross-bank direct debits. It is therefore expected that cross-bank direct debits will not go live until mid 2007.

Looking forward

This is an exciting time for payment systems in China. The HVPS functionality of CNAPS has been received well and is already being used by all the major banks, while the launch of BEPS later this year will further streamline the payments infrastructure. As BEPS will be used to process local as well as inter-city payments, the reliance on paper-based instruments will be significantly reduced.

However, the widespread adoption of CNAPS may take some adjusting by the big four banks who have already invested a great deal of funds in developing their proprietary systems. Rather than switching to CNAPS, it is likely that the big four will continue to use their proprietary systems as far as possible, linking to CNAPS when necessary.

Using electronic RTGS and ACH inter-bank clearing systems, may prove more difficult for the domestic banks than the foreign banks, who are more accustomed to such systems. However, some new functions brought by the system, like direct debit from an individual’s account, will not be open to foreign banks before December 2006, which is when the foreign banks will be allowed to compete directly with domestic banks according to the terms of China’s WTO agreement. This has given the domestic banks time to ensure a smooth transition well in advance of this date.

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BEPS

BEPS目前正在全中国范围内安装,使用早已就位的CNAPS基础设施将会大大加快安装进程。和CNAPS不同的是, BEPS用于处理低于20,000元人民币的小额支付业务,并已经在天津、厦门和北京安装使用。该系统预计于2006年6月在中国其它地区全面铺开,不过这要视它在上述试点城市试运行的效果而定。

在该系统下,资金是以双边净额(也就是双方之间的净额)为基础结算的。付给同一家收款银行的款项被集中批量交付给清算系统。支付信息会实时到达收款银行,但资金要到每个清算周期结束时才能在付款银行和收款银行之间结清。

“BEPS是一个净额结算系统,但它是当日结算的(目前每天结算三次),而不是像通常的自动化清算所那样,在每天结束时才结算,因此从根本上说,通过BEPS清算的支付具有即日付款优势。所以我认为,它比其它国家的自动化清算所系统效率更高。”

——花旗集团支付产品经理Luke Lu

BEPS的工作方式与其它国家的自动化清算所(ACH)系统类似。但根据Luke Lu的解释,二者之间也有区别。“BEPS是一个净额结算系统,但它是当日结算的(目前每天结算三次),而不是像通常的自动化清算所那样,在每天结束时才结算,因此从根本上说,通过BEPS清算的支付具有即日付款优势。所以我认为,它比其它国家的自动化清算所系统效率更高。”这一系统将带来的主要优势包括处理成本的显著降低,因为付款是成批处理而不是逐笔处理,而且净额结算机制本身产生的成本也比较低。同城支付的效率也将提高,因为BEPS在银行所在的城市安装实施后,银行就要通过该系统来处理同城支付。

BEPS具有支持直接转账支付的功能。但是,这项功能目前尚未实现,因为它需要相关银行系统的高效运作,而且中央银行尚未颁布任何涉及跨行直接转账的行业指导方针。因此,跨行直接转账预计在2007年中期之前不会实现。

展望未来

对于中国的支付系统来说,这是一个令人兴奋的时代。CNAPS的HVPS功能广受好评,并早已在所有的大型银行中应用,而将在今年晚些时候推出的BEPS更会进一步精简支付系统的基础设施。由于BEPS将被用于处理本地和异地支付,对纸质工具的依赖程度就会大大降低。

然而,在开发自有系统方面业已投入巨资的四大国有商业银行可能还需要做出一些调整,才能使CNAPS得到广泛的应用。四大银行目前还不会切换到CNAPS,相反,它们很可能会继续尽可能长时间地使用自有系统,直到必要时才同CNAPS连接。

在使用电子实时全额结算系统(RTGS)和自动化清算所(ACH)跨行清算系统方面,中资银行可能会比外资银行遇到更大的困难,因为外资银行更习惯使用这些系统。但是,该系统带来的一些新功能,例如从个人账户中直接转账支付,在2006年12月之前不会对外资银行开放。根据中国与世贸组织达成的协议条款,到2006年12月,外资银行将获准同中资银行直接展开竞争。这给中资银行留出了时间,确保在那一天到来之前提早实现平稳过渡。

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