



MARKET INFRASTRUCTURE

Promoting a sound financial market infrastructure in Hong Kong is a key goal of the HKMA. A comprehensive review of the financial infrastructure of Hong Kong was conducted in the first half of 2005 to develop a safe and efficient multi-currency, multi-dimensional clearing and settlement platform. The Treasury Markets Association has been established by merging the Treasury Markets Forum with the ACI – The Financial Markets Association of Hong Kong to provide a solid structure for developing the treasury markets of Hong Kong.

OBJECTIVES

One of the HKMA's major policy objectives is to promote the development of a safe and efficient financial market infrastructure. This serves two inter-related purposes: helping to maintain financial and monetary stability and supporting Hong Kong's status as an international financial centre. Robust and effective clearing and settlement systems are important in nurturing the competitiveness of Hong Kong's financial sector. The HKMA pays particular attention to these systems for the safe and efficient transfer of funds and securities within Hong Kong and between Hong Kong and other financial centres, in particular the Mainland.

REVIEW OF 2005

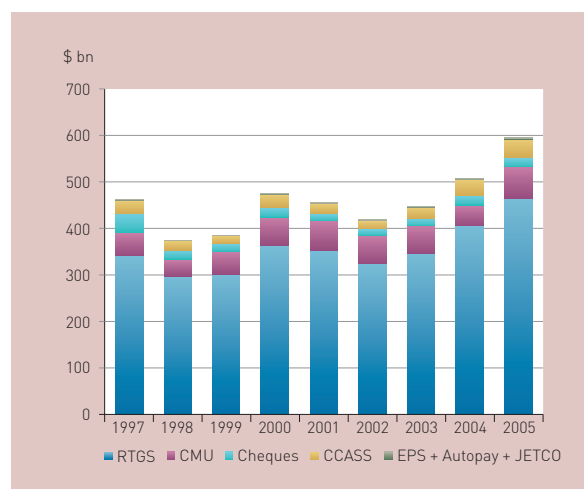
Hong Kong dollar interbank payment system

The Clearing House Automated Transfer System (CHATS), which operates on a real time gross settlement (RTGS) basis, is responsible for clearing all the Hong Kong dollar interbank payments. It has a direct link with the Central Moneymarkets Unit (CMU, the debt securities clearing and settlement system operated by the HKMA) to provide both real-time and end-of-day delivery-versus-payment settlement for transactions involving securities lodged with the CMU. The system

operator of CHATS is Hong Kong Interbank Clearing Limited (HKICL), a company established in 1995 and owned equally by the HKMA and the Hong Kong Association of Banks. In 2005, HKICL processed a daily average value of \$467 billion in CHATS transactions (16,006 items in volume), and \$26.8 billion in CMU transactions (156 items in volume).

Apart from settling large-value payments, CHATS also handles four daily bulk clearings for the money settlement of stock market transactions, cheques and auto-debit, low-value bulk electronic payment items (EPS and auto-credit), and low-value ATM transfers (Chart 1).

Chart 1. Hong Kong dollar payment system daily average turnover

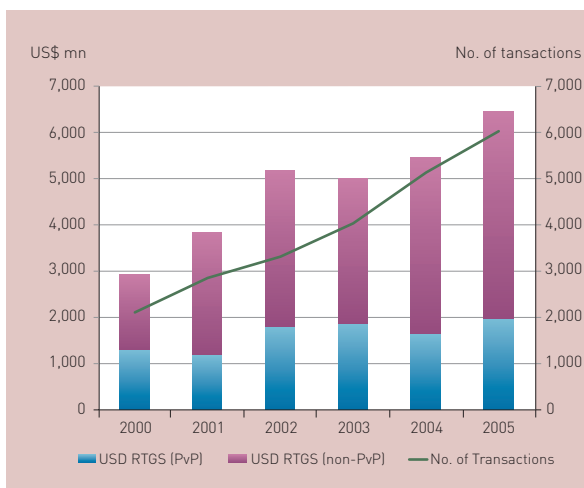


During the year, banks made good use of their Exchange Fund Bills and Notes to obtain interest-free intraday liquidity through intraday repo with the HKMA for settling their interbank payments. On average, \$41 billion worth of intraday repo transactions were carried out daily to facilitate payment flows. This represented 41% of the \$99.7 billion Exchange Fund paper held by banks in December 2005.

US dollar RTGS system

Launched in 2000, the US dollar RTGS system has been operating efficiently. The settlement institution for the US dollar RTGS system is The Hongkong and Shanghai Banking Corporation (HSBC), with HKICL as system operator. In April 2005, HSBC was re-appointed as the settlement institution for a second five-year period. At the end of 2005, there were 68 direct and 162 indirect participants in the system, including 116 indirect participants from outside Hong Kong. In 2005, the system handled more than 6,000 transactions a day with a total value of US\$6.43 billion (Chart 2). An average of more than 5,000 US dollar cheques was processed daily, with a total value of US\$173 million.

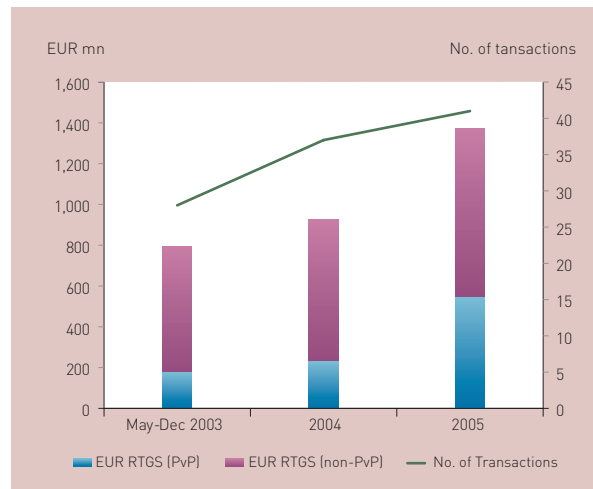
Chart 2. US dollar payment system daily average turnover



Euro RTGS system

The euro RTGS system was launched in 2003. The settlement institution for the euro clearing system is Standard Chartered Bank (Hong Kong) Limited, also with HKICL as system operator. At the end of 2005, there were 23 direct and 22 indirect participants in the system, including 11 indirect participants from outside Hong Kong. In 2005, the system handled on average 41 transactions a day with a total value of €1,374 million (Chart 3).

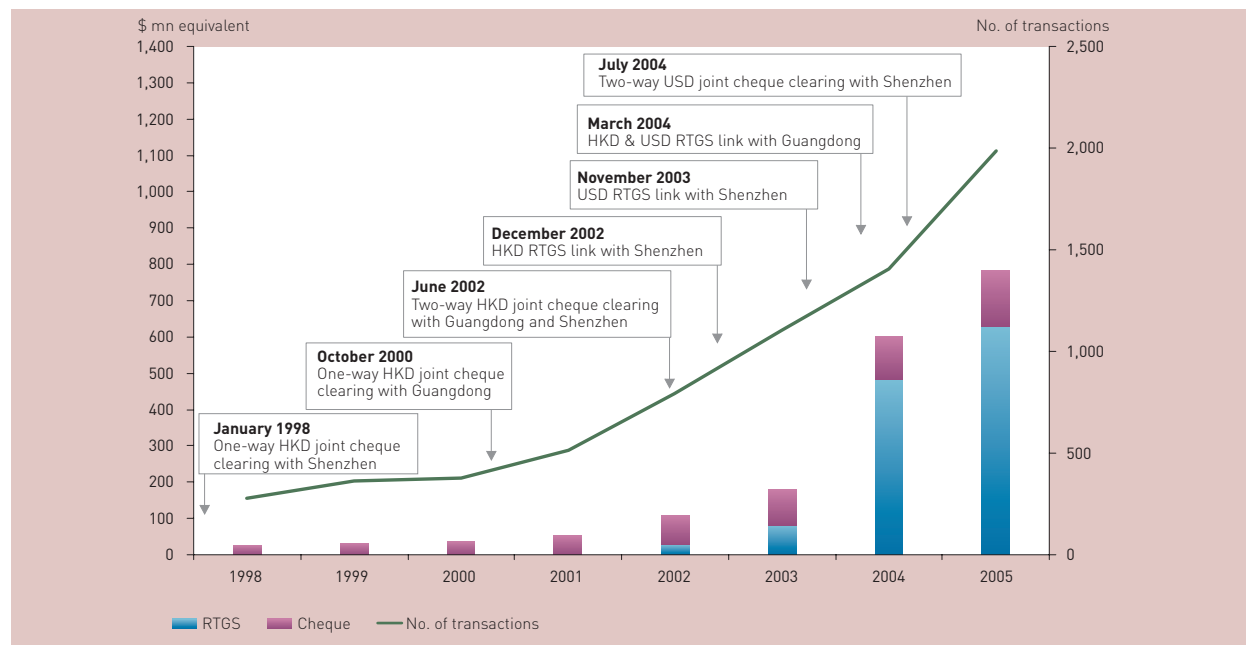
Chart 3. Euro payment system daily average turnover



Payment links with the Mainland

In response to the increasing demand for cross-border payment services, the HKMA has been working closely with the Mainland authorities to establish cross-border payment links since 1998. The development of these payment links is shown in Chart 4. The use of these links has been rising gradually over the years with the increasing economic integration between Hong Kong and the Mainland. The average daily turnover of the links amounted to the equivalent of around \$790 million in 2005 (Chart 4).

Chart 4. Daily average turnover in cross-border links



In 2005, the RTGS system links with Shenzhen and Guangdong Province handled more than 16,000 transactions, with a total value of over \$150 billion. With these links, payments in Hong Kong dollars and US dollars between banks in Hong Kong, Shenzhen and Guangdong Province are settled more effectively and safely.

The cross-border two-way joint cheque clearing facilities cleared around 441,000 Hong Kong dollar and US dollar cheques, with a value of \$36 billion in 2005. The facilities shortened the clearing time for cheques drawn on banks in Hong Kong which were presented in Shenzhen and Guangdong Province, and vice versa.

Debt settlement systems

The CMU provides an efficient clearing, settlement and depository service for both Hong Kong dollar and other international debt securities. Since its establishment in

1990, the CMU has developed links with regional and international central securities depositories. Through these links, overseas investors can hold and settle securities lodged with the CMU efficiently. It also facilitates Hong Kong investors to hold and settle foreign securities held with the relevant regional and international central securities depositories. In addition to facilitating cross-border holdings and trading of international securities, the CMU offers Hong Kong and Asian investors a one-stop service to clear, settle and hold domestic and international securities.

In 2005, the CMU processed a daily average value of \$26.8 billion (156 items in volume) in CMU secondary market transactions. Among the debt securities lodged with the CMU at the end of the year, the outstanding amount of Exchange Fund Bills and Notes (EFBN) was \$126.7 billion and the outstanding amount of other securities was equivalent to \$253.9 billion.

Financial infrastructure review

The HKMA conducted a comprehensive review of Hong Kong's financial infrastructure in the first half of the year. The objective was to establish a coherent development strategy and implementation plan to build a safe and efficient financial infrastructure based on a multi-currency, multi-dimensional platform. The review considered key trends in global financial infrastructure, including new international standards, globalisation and cross-border financial integration, and covered the financial infrastructure related to payment systems, bond market development and integration with the clearing and settlement systems in Mainland China.

In conducting the review, the HKMA analysed global directions, examined current system usage, benchmarked with international best practices, conducted market discussions, identified major challenges and opportunities, and formulated specific action plans to further develop and promote the clearing and settlement systems. The report of the review and its recommendations, in the form of an implementation plan, were endorsed by the Financial Infrastructure Sub-Committee of the Exchange Fund Advisory Committee in July.

In terms of system development, the review has identified development directions in three main areas – payment systems, the bond market and Mainland-related development needs.

For the **payment system infrastructure**, the goal is to build a safe and efficient multi-currency payment platform to expedite settlement of domestic and international financial transactions to enhance the efficiency of financial intermediation. This can be achieved through expanding the existing links of the three RTGS systems (for Hong Kong dollar, US dollar and euro) with other payment systems in the region and the Mainland. This will help provide one-stop clearing and

settlement services to investors in Hong Kong, the Mainland and the region, and develop Hong Kong into a payment and clearing centre in the region.

For the **bond market infrastructure**, a safe and effective multi-currency bond clearing and settlement platform should be established to facilitate domestic and international financial intermediation. Future challenges will be met by improving the existing infrastructure to support multi-currency bond products, capturing Mainland opportunities and improving Hong Kong's potential as a debt clearing, settlement and custodian centre in the region.

As far as **Mainland-related financial infrastructure** is concerned, the review has identified the need for Hong Kong to develop itself into a conduit to facilitate financial intermediation between the Mainland and the rest of the world. In the near term, the strategy is to prepare Hong Kong for launching the financial infrastructure required to support further expansion of renminbi banking business in Hong Kong. In the long term, the strategy is to develop an infrastructure platform in Hong Kong to serve as a financial intermediation channel for Mainland investors.

In taking forward the recommendations identified in the review, two major areas of work have been identified – project development and business development. Steps have been taken since the second half of 2005 to implement the recommendations.

Project development

Migration to SWIFTNet – this is a major project to replace the existing proprietary platform for the various RTGS systems and the CMU by an open platform to improve the compatibility of the systems with other common clearing and settlement systems. Proposals from prospective vendors have been received. If project

approval by the HKMA and the Hong Kong Association of Banks is obtained, the migration to SWIFTNet is expected to take place in the first quarter of 2008.

Renminbi settlement system – this system is required to cater for the expanded renminbi business, including the new renminbi cheque business announced in October 2005. It is an automated system bearing some of the features of an RTGS system, and can be developed into a fully fledged RTGS system within a short time to cater for further expansion of renminbi business in Hong Kong. The renminbi settlement system commenced operations in March 2006.

RTGS Liquidity Optimiser – this is a new device to settle interbank payment instructions queued in the RTGS system more efficiently by multilateral offsetting deals every 30 minutes. Each of the transactions settled is still on “gross” or “deal by deal” basis. The optimiser helps to remove payment queues and reduce the amount of intraday repo with the HKMA. The device was launched in January 2006 and has been operating smoothly.

CMU Bond Price Bulletin – this is a web-based platform (www.cmu.org.hk) to provide retail investors with easily accessible bond information and indicative prices quoted by individual banks. This website will help promote retail investors’ participation in the secondary market. The website was launched in January 2006.

CMU functional improvements – these include

- processing DvP and collateralisation for Exchange Fund Bills and Notes simultaneously to achieve better liquidity management and greater use of real-time DvP to reduce settlement risk
- establishing an Internet-based CMU front-end enquiry system.

Business development

Expanding system links – in order to develop Hong Kong into a payment and clearing hub for the region, the review has identified the need to explore opportunities for linking the various RTGS systems and the CMU with similar systems in the region, focusing particularly on the greater China region. The HKMA has entered into a Memorandum of Understanding with Bank Negara Malaysia for the establishment of a link between the ringgit RTGS system in Malaysia and the US dollar RTGS system in Hong Kong. This is aimed at eliminating the settlement risk of ringgit/US dollar foreign exchange transactions through PvP settlement in the Asian time zone. The link is expected to go live by the end of 2006.



Executive Director (Monetary Management and Infrastructure) Eddie Yue and Ms Nor Shamsiah Yunus, Assistant Governor of Bank Negara Malaysia sign a Memorandum of Understanding on 8 December 2005.

Promoting system use – while it is important to build state-of-the-art clearing and settlement systems and expand links with other systems in the region, the review found that it is equally important to devise a marketing programme to promote these systems and links. The HKMA has therefore established a comprehensive marketing programme to promote system usage through seminars and visits to potential users in Hong Kong and the Greater China region. In 2005, five seminars were arranged and over 80 marketing calls were made.

Oversight of clearing and settlement systems

The Clearing and Settlement Systems Ordinance (CSSO), which came into force in November 2004, empowers the Monetary Authority to designate and oversee clearing and settlement systems that are material to the monetary or financial stability of Hong Kong or to the functioning of Hong Kong as an international financial centre. The purpose of the CSSO is to promote the general safety and efficiency of designated clearing and settlement systems including the Central Moneymarkets Unit, the Hong Kong dollar Clearing House Automated Transfer System (CHATS), the Continuous Linked Settlement (CLS) System, the US dollar CHATS and euro CHATS. The CLS system is operated by CLS Bank, which is regulated by its home supervisor, the Federal Reserve Bank of New York with oversight primarily done through the international co-operative oversight arrangement. The HKMA exercises continuous oversight of the other four designated systems through off-site reviews, on-site examinations and meetings with management.

By the end of 2005, the HKMA had completed its first-year oversight cycle. All designated systems were found to be in compliance with the safety and efficiency requirements under the CSSO.

Independent tribunal and committee

An independent Clearing and Settlement Systems Appeals Tribunal was established under the Ordinance to hear appeals by any party aggrieved by a decision of the Monetary Authority on designation and related matters. Since the establishment of the Tribunal there have been no appeals.

In addition, an independent Process Review Committee was established on 1 December 2004 to review processes and procedures adopted by the HKMA in applying standards set under the CSSO to systems in which the

HKMA has a legal or beneficial interest. An *Internal Operating Manual* setting out the procedures adopted by the HKMA for evaluating the designated systems' compliance with the oversight standards has been developed. The Committee used the procedures in the *Manual* as the benchmark to assess whether the HKMA had applied the same set of procedures to all designated systems. Quarterly reports, together with a set of management reports summarising the HKMA's oversight activities, were produced for review by the Committee.

The Process Review Committee held three meetings in 2005 and reviewed four quarterly reports and 21 accompanying oversight activities management reports of the designated systems. The Committee concluded that it was not aware of cases where the HKMA had not followed duly the internal operational procedures, or where the HKMA had not been procedurally fair in carrying out its oversight activities across different designated systems. The Committee's first Annual Report, which can be accessed through the HKMA's website, was submitted to the Financial Secretary in accordance with its terms of reference.

Oversight of retail payment systems

Retail payment systems handle large volumes of transactions of relatively low value. Compared with those of real time gross settlement systems, the retail payment systems generally carry little, if any, systemic risk. The HKMA encourages the industry to adopt a self-regulatory approach through the issuance of, and compliance with, relevant codes of practice. In August 2005, the HKMA endorsed a *Code of Practice for Multi-purpose Stored-value Card Operation*, which is a non-statutory code issued voluntarily by the system operator of the Octopus card. The Code was issued to promote general safety and efficiency in the operation of the multi-purpose stored-value card and to foster public confidence in the system.



Debt market development

Gross issuance of Hong Kong dollar debt increased by 7% to \$402 billion in 2005. In particular, issuance by overseas borrowers (other than Multilateral Development Banks (MDB)) grew by 33% to \$105 billion. Issuance by the Exchange Fund, authorized institutions and local corporations also increased, while that by MDB and statutory bodies and government-owned corporations declined.

The value of outstanding Hong Kong dollar debt rose by 9% to \$664 billion at the end of 2005. Non-MDB overseas borrowers remained the largest issuers, with outstanding debts reaching \$256 billion. In 2005, authorized institutions' total outstanding debts increased by 8% to \$153 billion, possibly reflecting tighter liquidity conditions and increased demand for external funds.

Exchange Fund Bills and Notes programme

The HKMA continued to promote the liquidity and credibility of the benchmark Hong Kong dollar yield curve in 2005. This is achieved by the issuance of more 5, 7 and 10-year EFN, while reducing the issuance of 91-day bills. An increase in the supply of longer-term EFN meets the market demand for quality paper and is conducive to the development of a more efficient and credible long-term Hong Kong dollar benchmark yield curve. The HKMA also conducted regular reviews of the performance of individual market makers, published the daily fixings of prices and yields of EFBN, and monitored the performance of contributors for the fixings, as part of its continuing effort to promote bond market development.

In May 2005, the HKMA re-launched, with certain refinements, the scheme to promote retail investment in the EFN. The number of retail EFN distributors increased from three to seven. The selection of EFN issues for offer to retail investors has become more

flexible with market conditions and distributors' advice being taken into consideration. Retail bids are allotted at the lowest price, or the highest yield accepted at the competitive-bid tender. Since the re-launch, two retail EFN issues have been offered and both were well received by retail investors.

 > [Financial Infrastructure > Debt Market Development](#)

Treasury Markets Forum

The TMF has made significant progress in promoting the development of the treasury markets of Hong Kong. In response to increased demand for renminbi hedging tools following reform of the renminbi exchange rate formation regime in July 2005, the TMF announced in September the launch of the retail renminbi non-deliverable forward contracts. To make it easier for small and medium-sized companies and other retail customers to access the product, the TMF published a standard document setting out the offer terms for the contract, including the settlement arrangements. By the end of the year, 16 banks had joined the programme and launched the product to their customers.

The TMF worked continually with the ACI – The Financial Markets Association of Hong Kong (ACIHK) in 2005 to promote membership of the ACIHK to treasury market practitioners. By the end of 2005, ACIHK membership increased to more than 2,000, from around 1,800 a year previously. The TMF co-operated with other industry bodies in organising functions to keep market participants abreast of the latest market and product developments, including a two-day Professional Repo Market Course in October and a three-day Global Government Bond Conference in November. Both events were organised for the first time in Asia and were well received. The TMF also participated in the Hong Kong Financial Services Expo in Shanghai for the second year to promote Hong Kong's treasury markets to the Mainland.

The TMF continued to work on a number of market-related issues in 2005, such as non-deliverable forward documentation, review of interest-adjustment rates, review of Hong Kong Dollar interest rate swap fixing and the setting up of a USD/HKD fixing.

Establishment of the Treasury Markets Association

Consolidating the success achieved by the TMF, the Treasury Markets Association (TMA) was formed by merging the TMF with ACIHK in December 2005. The TMA is incorporated as a company by guarantee under the Companies Ordinance, which gives the TMA a more solid institutional structure to promote the professionalism and competitiveness of the treasury markets in Hong Kong. The new organisation has two types of members – institutional members, including financial institutions, brokers and corporates involved in the treasury markets; and individual members, who are practitioners in the treasury markets. The participation of both institutional and individual members allows the TMA to bring together forces within the industry to promote the treasury markets and improve Hong Kong's status as an international financial centre.

The management of the TMA is entrusted to the Executive Board of TMA, which is chaired by Mr Y K Choi, Deputy Chief Executive of the HKMA, and comprises representatives from institutional members, individual members and the HKMA. The Association has also established a Council to provide strategic advice to the Executive Board on matters relating to the TMA. Mr Joseph Yam, Chief Executive of the HKMA, has been invited to be the Honorary President of the Council. Senior executives in the banking and treasury industries and prominent academics serve as Council members. The Executive Board has set up five committees to assist it in carrying out its work. They are the Codes and Standards Committee, the Market and Product

Development Committee, the Professional Membership Committee, the Publicity and Communications Committee and the Finance and Administration Committee.

PLANS FOR 2006 AND BEYOND

The HKMA will continue to focus its efforts on ensuring the safe and efficient operations of the various RTGS systems and the CMU for maintaining the stability and integrity of the financial system in Hong Kong. It will continue to implement the recommendations identified in the financial infrastructure review and build a safe and efficient multi-currency, multi-dimensional financial infrastructure platform.

The HKMA will continue to explore opportunities for PvP links between Hong Kong's US dollar RTGS system and those of other Asian currencies. Setting up DvP links between Asia's debt clearing and settlement systems and the US dollar RTGS system in Hong Kong is also part of the expansion plan. To promote Hong Kong's infrastructure network, the HKMA will work closely with strategic partners, such as settlement institutions, central banks and industry associations to launch various marketing activities. These will be monitored and progress reports will be submitted regularly to the Financial Infrastructure Sub-Committee of the Exchange Fund Advisory Committee.

As an overseer of designated systems under the Clearing and Settlement Systems Ordinance, the HKMA will be involved in promoting the safety and efficiency of these systems through continual compliance monitoring. In addition to the large-value interbank payment items, the HKMA plans to extend its oversight in 2006 to include small-value interbank payment items such as paper cheques, so that all interbank payments will be brought under the statutory oversight regime.

As part of the informal oversight framework of retail payment systems, the HKMA plans to work with the credit card industry to develop a code of practice for credit card scheme operators in Hong Kong. It will continue to monitor developments in the payment industry in Hong Kong and, where necessary, refine its oversight framework.

With the aim of developing the domestic debt market, a review of the market will be undertaken in 2006. As part of that exercise, the HKMA will review the EFBN programme to consider ways to further improve market liquidity of these instruments.

The refined retail EFN scheme will continue to operate in 2006, under which selective EFN issues will be opened for non-competitive tender by retail investors. The programme will be reviewed in mid-2006 after the first year's operation of the re-launch.

The HKMA will continue to work closely with the Treasury Markets Association to develop Hong Kong's treasury markets.