

Market Infrastructure

One of the HKMA's key policy objectives is to enhance the efficiency, integrity and development of Hong Kong's financial infrastructure, particularly payment and settlement arrangements. An efficient and robust financial infrastructure is essential to Hong Kong's functioning as an international financial centre. The long-term aim is for Hong Kong to be a leading centre of financial intermediation, where all types of financial transactions, initiated from whatever location or time zone and in whatever currency, whether at the wholesale or retail level, can be executed and settled in real time.



OBJECTIVES

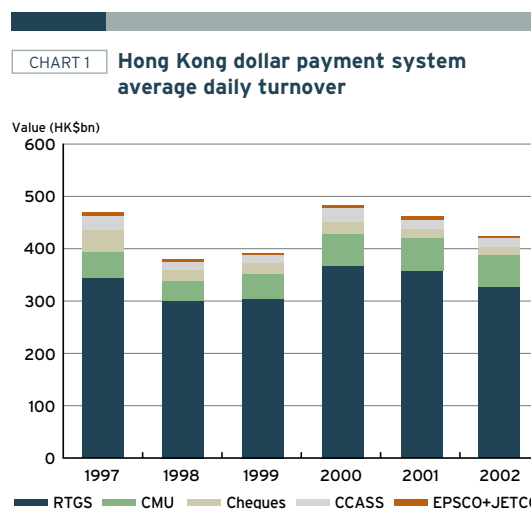
The HKMA is committed to promoting an efficient, safe and reliable financial infrastructure, which is an essential ingredient of any leading international financial centre. Since the development of market infrastructure often involves considerable lead time, the HKMA places emphasis not only on ensuring the resilience and efficiency of Hong Kong's existing payment and settlement systems, but also on developing infrastructure to accommodate and where possible anticipate the changing needs of Hong Kong and the region. The HKMA also pays special attention to fostering the development of the local and regional debt markets, including cross-border transfers of funds and securities.

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ACHIEVEMENTS

Hong Kong dollar payment system

Hong Kong's Real Time Gross Settlement (RTGS) system, introduced in 1996, continues to provide efficient and reliable settlement for Hong Kong dollar interbank payments. In 2002 the RTGS system had an average daily throughput of 13,426 CHATS¹ transactions (totalling \$327 billion in value), 151 Central Moneymarkets Unit² (CMU) secondary market transactions (\$22.9 billion in value) and 426 intraday repo transactions (\$37.2 billion in value). The system also provided smooth operation for the four daily bulk clearings - the net settlement of stock market transactions (CCASS), low-value bulk electronic payment items (EPSCO), paper cheques and low-value ATM transfers (JETCO) (Chart 1).



US dollar clearing system

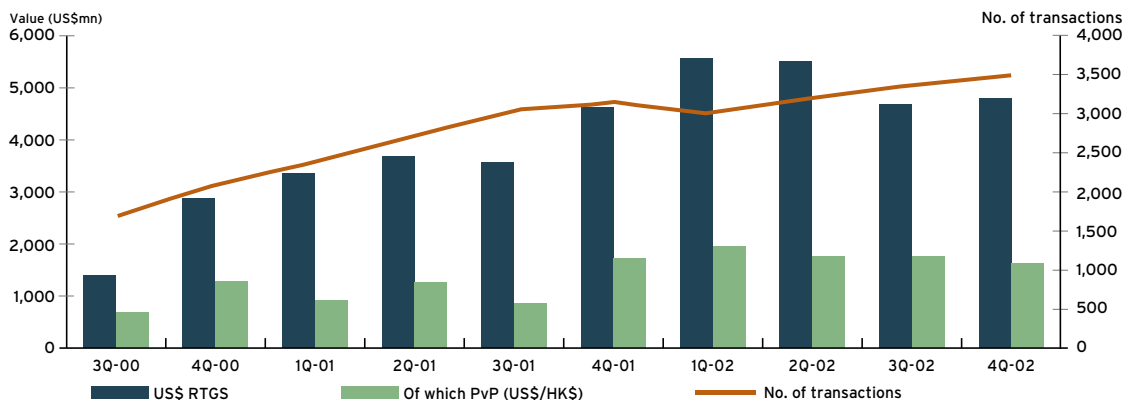
Hong Kong's US dollar clearing system was introduced in August 2000 to facilitate the efficient settlement of US dollar transactions in Hong Kong during Asian business hours. The HKMA appointed The Hongkong and Shanghai Banking Corporation Limited to be the settlement institution for a franchise period of five years, from 1 August 2000, with Hong Kong Interbank Clearing Limited (HKICL) as the operator for both the Hong Kong dollar and US dollar interbank clearing systems.

Since its full implementation in December 2000, the US dollar clearing system has operated efficiently and has received wide acclaim. During 2002 there were 64 direct and 148 indirect participants in the system, including 100 indirect participants from overseas. Despite the slowdown in the local economy, the turnover of the system has been growing steadily, assisted by promotional efforts by the HKMA, both locally

¹ The Clearing House Automated Transfer System (CHATS) is a computer-based system designed for large-value interbank payment under the RTGS system.

² The Central Moneymarkets Unit (CMU) is a clearing and custodial system operated by the HKMA for Exchange Fund Bills and Notes and for private sector debt paper.

CHART 2 US dollar RTGS turnover (daily average)



and in the region. In the fourth quarter of 2002, the US dollar RTGS system handled an average of 3,500 transactions daily, with a total value of over US\$4.8 billion (Chart 2).

The seamless interface between the Hong Kong dollar and US dollar clearing systems enables payment versus payment (PvP) settlement for US dollar/Hong Kong dollar foreign exchange transactions. Hong Kong created a landmark in world financial history on 25 September 2000 when it performed the first electronic settlement of a foreign exchange PvP transaction. Use of PvP has become increasingly popular in Hong Kong, accounting for about a third of the US dollar RTGS turnover by value in Hong Kong in 2002.

The PvP procedure eliminates Herstatt risk³ by ensuring that the two legs of a foreign exchange transaction are settled simultaneously. Thus the constraint of bilateral counterparty trading limits becomes much less of an issue with the elimination of Herstatt risk. Liquidity management is also improved, as the traded currencies can be recycled immediately in the respective clearing systems. In particular, small

and medium-sized banks may find themselves less handicapped by counterparty credit limits and better able to participate actively in the foreign exchange market.

Hong Kong's US dollar clearing system allows customers to open US dollar current accounts with banks in Hong Kong. The cheques drawn against these accounts are settled on the day following their presentation in Hong Kong. In December 2002 an average of more than 1,500 US dollar cheques were processed each day, with a daily value totalling over US\$51 million.

By means of a seamless interface with the US dollar RTGS system, the CMU provides settlement of US dollar-denominated debt instruments on a delivery-versus-payment (DvP) basis. At the end of 2002, the outstanding amount of US dollar debt instruments lodged with the CMU reached US\$1.7 billion.

³ Herstatt risk is the settlement risk arising from settlement of the two legs of a foreign exchange transaction in different time zones.

Euro clearing system

With a view to improving settlement efficiency and reducing settlement risk in the Asian time zone, the HKMA plans to introduce a euro RTGS system in April 2003. The HKMA appointed the Standard Chartered Bank in July 2002 as the settlement institution for the euro clearing system. Patterned on the Hong Kong dollar and US dollar RTGS systems, the euro RTGS system will offer a similar range of advanced and sophisticated clearing functions. These include RTGS payment facilities for euro, and Pvp settlement for euro/US dollar and euro/Hong Kong dollar foreign exchange transactions. The system will also maintain a seamless interface



Signing ceremony for the appointment of Standard Chartered Bank as the settlement institution for the euro clearing system in July 2002.

with the CMU to cater for the DvP settlement of euro-denominated debt securities and repo facilities (Chart 3).

CHART 3 Clearing facilities for multiple currencies

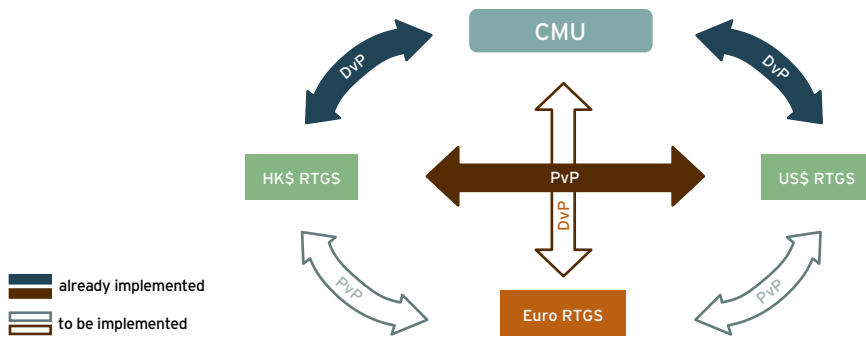
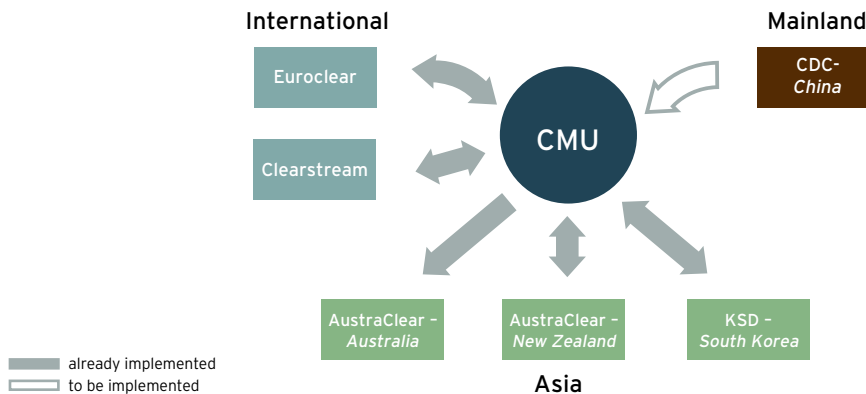


CHART 4 International linkages of the CMU



CMU system enhancements and external linkages

The CMU provides regional investors with an efficient clearing and depository service for domestic and international debt securities. Since its establishment in 1990, the CMU has developed enhancements and external linkages with regional and international central securities depositories, and is well positioned to assume a more global dimension as an international settlement hub.

The one-way in-bound links from Euroclear and Clearstream (formerly Cedel) to the CMU, which were established in 1994, were extended to two-way links in November 2002 and January 2003 respectively. These new links enable investors in Hong Kong and other parts of Asia to hold and settle international securities directly through the CMU Members (most of which are banks in Hong Kong) in a safe and secure, DvP environment. In addition to facilitating cross-border holding and trading in international securities, the CMU offers Hong Kong and Asian investors a single-window service to clear, hold and settle domestic and international securities through CMU Members.

In addition to international links, the CMU introduced in December 2002 a more convenient and cost-effective means to deal in US Treasuries. This new service provides an indirect link from the CMU to the Fedwire Book-Entry Securities Transfer System in the US, enabling investors to clear and settle US Treasuries on a real-time DvP basis during Hong Kong hours.

In January 2002 the HKMA and China Government Securities Depository Trust & Clearing Co. Ltd. (CDC) agreed in principle to

establish a link between the CMU and CDC's Government Securities Book-Entry System (GSBS). This will facilitate authorized financial institutions on the Mainland to clear, settle and hold CMU eligible securities. Through the link, Mainland investors will be able to access the CMU's efficient, secure and robust settlement service, thereby reducing their settlement cost and risk in cross-border debt securities transactions. With the synergy from the new GSBS, Euroclear and Clearstream links, Mainland financial institutions with proper authorization can hold and settle bonds issued in Hong Kong and other international debt securities through a single window. This will be more cost-effective and efficient.

In October 2002 BondsInHongKong Limited (BIHK), which operates a front-end electronic trading platform for debt securities in Hong Kong, was granted a licence by the HKMA to interface the BIHK system with that of the CMU to promote better risk management in post-trade processing. The system interface with the CMU will facilitate straight-through processing (STP) for over-the-counter debt securities transactions routed from the BIHK platform. This STP facility will streamline the settlement process and enhance settlement efficiency in Hong Kong's debt market.

By implementing these new links and services, the HKMA has turned the CMU into a more comprehensive securities clearing and settlement platform. Regional investors can also use the CMU service to settle their cross-border transactions in an efficient, robust and secure environment.

Joint clearing facility for Hong Kong dollar cheques presented in Mainland cities

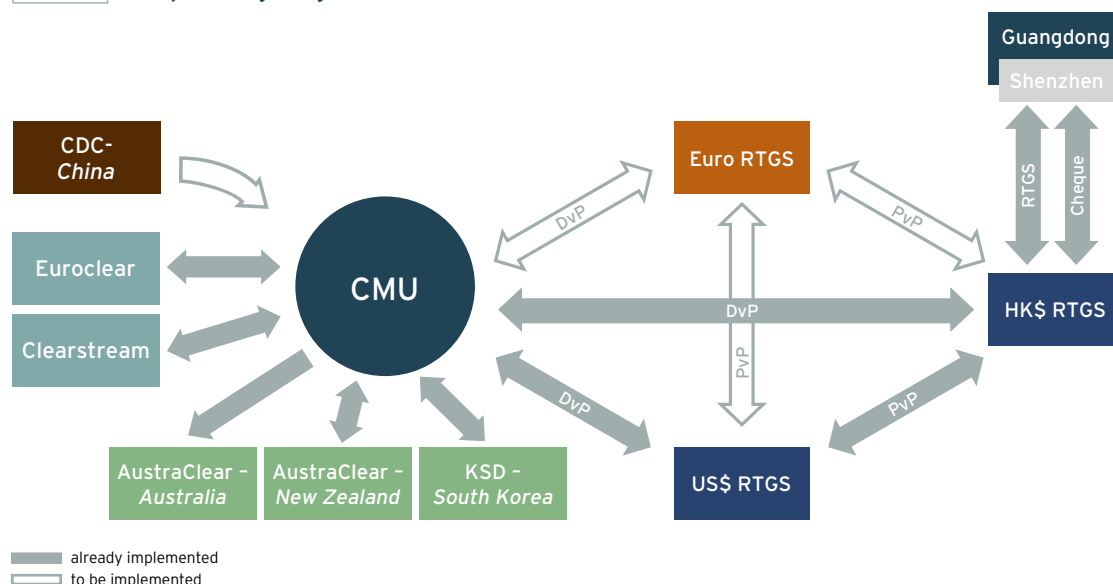
The joint clearing facility for Hong Kong dollar cheques, agreed between the HKMA and the People's Bank of China (PBoC) Guangzhou Branch, was introduced in September 2000 to speed up the processing of Hong Kong dollar cheques drawn on banks in Hong Kong and presented in Guangdong. This followed a similar cheque clearing facility established between Hong Kong and Shenzhen in January 1998. In September 2001 the agreement was extended to cover cashiers' orders and demand drafts.

In June 2002 the facility was further extended to clear Hong Kong dollar cheques drawn on banks in Guangdong, including Shenzhen, and presented in Hong Kong. Under the new

arrangement, the time required for clearing has been reduced to two working days. In 2002, about 183,000 cheques, with a total value of \$18.3 billion, were cleared through the two joint clearing facilities.

With a view to expediting Hong Kong dollar payments between banks in Hong Kong and Shenzhen, PBoC Shenzhen and the HKMA have developed a scheme for the Shenzhen Financial Electronic Settlement Center (SFESC) to operate a Hong Kong dollar RTGS system in Shenzhen with effect from December 2002. The scheme, which marked another milestone in developing our cross-border financial infrastructure, allows banks in Hong Kong and Shenzhen to make Hong Kong dollar RTGS payments to each other.

CHART 5 A map of Hong Kong's financial infrastructure



Review of retail payment systems in Hong Kong

The HKMA continues to implement the recommendations of the 2001 comprehensive review of retail payment systems in Hong Kong, which examined the accessibility, costs, pricing, efficiency, competition and risks associated with such systems. The review found that Hong Kong was well served by a variety of retail payment channels, including cash, cheques, credit cards, debit cards and stored value cards. While the review did not detect any significant factors adversely affecting the systemic stability of payment systems, it did identify certain policy issues and made recommendations for the enhancement of sectoral efficiency and transparency:

- **Cash** - it notes that a review of the design and security of banknotes is progressing well, paving the way for launching a new generation of banknotes.
- **Cheques** - there is merit in extending the existing Hong Kong dollar joint cheque clearing service in Shenzhen and Guangdong cities to US dollar cheques issued by banks in Hong Kong. This will enable US dollar cheques presented in Mainland China to be cleared in Hong Kong on the next working day.
- **Credit and debit cards** - an appropriate framework is needed to foster greater transparency in fee-setting for credit and debit cards.
- **Stored value cards** - the promotion of competition in the use of multi-purpose stored value card schemes is supported. It is recommended that the definition of "stored value card" be broadened to cover new non-card payment devices, such as digital cash.
- **E-payment and e-legal tender** - to facilitate e-trading, there are benefits in a wider availability of cost-efficient facilities for e-payments settled across inter-bank accounts. At an appropriate time, the HKMA may launch a study on e-legal tender in view of changes in market demand, both within and outside Hong Kong.

The review suggested a progressive approach to improving the regulatory framework. It favoured a self-regulatory approach, under which the market would draw up codes of practices and monitor their compliance, with the HKMA facilitating and overseeing the overall process. With the endorsement of the Exchange Fund Advisory Committee and the Government, the HKMA is implementing the recommendations in phases. The HKMA is working with representatives of credit cards, debit cards and multi-purpose stored value cards to develop appropriate codes of practices. We are also closely monitoring the development of e-money, and its impact on real money and seignorage.

Measures to further enhance the settlement efficiency of money settlement for CCASS items

The HKMA has been working with the Securities and Futures Commission (SFC) and Hong Kong Exchanges and Clearing Limited (HKEx) to follow up recommendations put forward by the Steering Committee on the Enhancement of the Financial Infrastructure. The HKMA chaired a working group, set up in March 2001, to explore the feasibility of improving the DvP arrangement for share transactions under the Central Clearing and Settlement System (CCASS). The working group, with members from the SFC, HKEx and HKICL, has made specific recommendations to improve the DvP settlement process for CCASS, which are being followed up by the HKEx.

IMF Financial Sector Assessment Program (FSAP)

The International Monetary Fund (IMF) conducted an FSAP examination for Hong Kong in December 2002. In the area of payment systems, the study mission recommended explicit statutory backing for the oversight duties currently undertaken by the HKMA. The IMF also recommended, as a matter of priority, appropriate legislation should be introduced to ensure finality of settlement and to provide undoubted support to netting systems, warning that the uncertainty of unwinding of transactions under insolvency law could undermine the fundamental concept of payment finality.

Debt market development in Hong Kong

New issuance of Hong Kong dollar debt rose moderately by 3% to \$396 billion in 2002 and the total outstanding debt increased by 8% to \$532 billion at the end of 2002. Strong private sector issuance more than offset the slowdown in the issuance by the Exchange Fund (to abide by the Currency Board principle), statutory bodies/government-owned corporations and multilateral development banks. Strong investor demand has supported an increase in the issuance of long-dated private sector debt in Hong Kong. Low interest rates induced demand for structured products offering yield enhancement features such as step-up coupons and call options.

The retail bond market developed significantly as volatile stock markets and record low nominal bank deposit rates stimulated an appetite for investment alternatives. It is estimated that in 2002 companies and financial institutions raised more than

\$18 billion through Hong Kong dollar retail bonds and certificates of deposit, representing 5% of the total Hong Kong dollar debt issuance. The continued development of electronic trading platform has also helped to promote transparency and efficiency in the bond market.

Exchange Fund Bills and Notes Programme

The HKMA continued to adjust the maturity distribution of the Exchange Fund Bills and Notes (EFBN) portfolio. Reduction in the issuance of 91-day Exchange Fund Bills was matched by corresponding increases in the issuance of two-year and three-year Exchange Fund Notes (EFN). The increase in the issue size of two-year EFN from \$600 million to \$1,200 million was completed in November 2002. While the plan has helped to reduce the heavy concentration of issuance at the short end of the EFBN yield curve, the change was most notable in the six-month to two-year segment due to the time decay factor and the less frequent issuance and smaller issue size of longer date EFN.

The HKMA continued to monitor the performance of the EFBN market makers (MMs) through a quarterly performance review scheme. This has been effective in promoting active participation in both the primary and secondary markets, resulting in significant improvements to the overall performance of the MMs during the year. All MMs were able to fulfil all the objective criteria in the first three quarters of 2002, while only a few MMs fell short of individual criterion by negligible margins in the fourth quarter. The average daily turnover of EFN remained steady at about \$2.6 billion in 2002, compared with \$2.5 billion in 2001.

To streamline the EFBN programme, the HKMA started to re-open existing five-year EFN for the rollover of maturing three-year EFN in October 2002. The first re-opened issue was well received by the market and recorded an over-subscription rate of 3.88 times. Major MMs reported improved liquidity in the re-opened issue, as reflected in a narrower bid-ask spread for the issue.

The HKMA EFBN fixings scheme was officially launched on 16 December 2002 after consultation with market participants. The Hong Kong Capital Markets Association, the Hong Kong Foreign Exchange and Money Market Practices Committee, the Exchange Fund Bills and Notes Market Committee and Market Regulations Sub-Committee unanimously supported the introduction of the fixings to provide more transparency in EFBN prices. The availability of a set of official fixings for benchmark EFBN will help develop the Hong Kong dollar debt securities market.

[» What's New » Daily Updates » Exchange Fund Bills and Notes Fixings](#)

PLANS FOR 2003

To further reduce settlement risk and improve efficiency in the clearing and settlement systems, the HKMA will continue to upgrade and fine-tune the existing market infrastructure. We shall continue to work with the US dollar settlement institution to promote the US dollar clearing system and the development of associated US dollar denominated products. While preparing for the launch of the euro clearing system, we shall also continue to explore the possibilities of providing similar facilities for other currencies.

The increasing importance of external links to Hong Kong's financial infrastructure has brought about the need for a universally applicable communication platform. With a view to fostering system inter-operability, the HKMA, in conjunction with the Hong Kong Association of Banks, will study the feasibility of a wider application of the SWIFT platform in Hong Kong's clearing and settlement systems. The HKMA will also continue to oversee the banking industry's project relating to a new system of cheque imaging and truncation, designed to replace physical paper cheques with electronic images throughout the clearing cycle.

The HKMA will continue with the phased implementation of the recommendations identified in the review of retail payment systems in Hong Kong. We shall also continue working with the SFC and the HKEx to improve securities settlement in Hong Kong and to provide straight-through processing for both institutional and retail investors.

An efficient and robust payment and settlement infrastructure is essential to Hong Kong's role as an international financial centre. Such an infrastructure should be able to support both domestic and international financial activities and also serve as a link between Mainland China and the global financial markets. The HKMA intends to develop Hong Kong into a regional clearing centre for multi-currency funds settlement and a regional settlement hub for international debt securities.

The HKMA will follow up on the recommendations of the IMF FSAP mission. Accordingly, it will seek legislative provision for clearing and settlement system oversight and for settlement finality in Hong Kong's important payment systems. This will help strengthen Hong Kong's position as an international financial centre.

In view of the positive response towards the re-opening of five-year EFN, the HKMA will examine the possibility of extending the re-opening scheme to other EFN issues.

With the market makers (MMs) performance review mechanism proving to be effective in promoting more active participation of MMs in the EFBN market, the HKMA will examine the need to promulgate a set of objective criteria for evaluating Recognised Dealers' applications to become MMs. This would further improve the transparency and credibility of the market-making scheme of EFBN. In a bid to strengthen our ties with the MMs and to more efficiently solicit views and comments on debt market development, the HKMA will also make more use of the EFBN Market Committee and its Sub-Committee on Market Regulation as a forum for consultation to complement informal contacts with the market.

Development of the local debt market will continue through encouragement of market participants and relevant parties to increase activities in both the primary and secondary markets. The HKMA will also put more focus on the development of the retail bond market by utilising the EFBN programme, improving the distribution channel, raising retail investors' awareness about EFN and allowing retail investors to participate in EFN tenders through non-competitive bids.

