Bank of Canada Adopts Polymer

The Canadian Government has announced in its federal budget that the Bank of Canada will issue new notes on a 'polymer substrate' in 2011. The Bank of Canada followed up with an official statement, saying that the new series will incorporate innovative security features to significantly increase their protection against counterfeiting. It also stated that the polymer material will last longer than the cotton paper currently in use, resulting in lower overall production costs and reduced environmental impact.

The Bank has given no further details but it is understood that it intends to adopt Securency’s Guardian® substrate for all the denominations in its new series. Around 550 million Canadian notes are printed per year, representing an annual requirement of some 550 tonnes of substrate.

It is also understood the decision was made after an extensive evaluation of different security features and substrates, including various perception

Toppan Launches New OVDs for Banknotes

The Japanese printing giant Toppan has announced Asterium - a new optically variable feature that heralds its intention to become a major force among banknote security component suppliers.

Toppan specialises in securities and cards, commercial printing, publishing, packaging, industrial materials, electronics, and semiconductor solutions. It also offers diffractive optically variable devices, manufacturing its first hologram in 1975 and now producing these exclusively with electron beam technology. The company’s flagship holographic product to date has been the Crystagram, which is in use in a number of high security applications including five denominations for two Asian currencies in both stripe and patch format. The high resolution Crystagrams provide exceptionally bright colours and images changes when rotated, and it is the experience of this technology that has led to the development of a new range of banknote features that will be launched this year.

The first of these, Asterium, is so named because of its similarity to a bright star appearing on the black background of the night sky, or the characteristic lumi-
Models for cash circulation vary widely from country to country. At one end of the spectrum are those countries where the central banks have outsourced the sorting, processing and recirculation of currency to third parties, seeing these as non-core activities that are performed more efficiently and cost-effectively by the private sector. In other countries, central banks see maintaining direct control over these functions as essential to guaranteeing and the quality and security of currency in circulation and meeting public demand. Yet others fall on the spectrum somewhere between these two models.

As described in the July 2009 issue of Currency News, we will be examining periodically these different models for cash circulation. In the first such feature, in that issue, we looked at Norway, an example of a country where the central bank has removed itself from all aspects of circulation, destruction of unfit notes included. In this issue, we look at China – where the model is diametrically opposite, with the central bank continuing to maintain control over the processing, distribution and destruction of vast amounts of cash in a rapidly growing economy in the world’s largest country.

As the world’s third largest economy and with the largest population - it comes as no surprise that China circulates the world’s largest number of banknotes and coins – 360 billion, worth a total of 3.8 trillion Renminbi (RMB) or US$439 billion in 2008. This number is 147 times higher than it was in 1978, when the country’s economic liberalisation began. China also has by far the largest safety reserves of cash, covering at least two years of currency demand – a level that is 12 times higher than in developed Western nations.

The circulation of this massive volume of cash places a heavy load on the People’s Bank of China (PBOC), responsible for the currency’s production, distribution, recycling, and eventual destruction. It also weighs heavily on the country’s commercial banks, since they are responsible for the secure transportation, storage and inventory control of cash, once they receive it from the PBOC.

In order to ‘lighten the load’, for itself and commercial banks, and to strengthen certain areas of the cash circulation system, the PBOC is focusing primarily on the reverse logistics of the system - the sorting, recycling and destroying of notes and coins returned from the commercial banks – since this area carries the greatest challenges.

The RMB Supply Chain

The printing and minting of the Chinese currency is carried out by the state-owned China Banknote Printing and Minting Corporation (CBPMC), which forwards all banknotes and coins it produces at its six printworks and three mints to the national treasury vault (including 15 key vaults) of the PBOC. From there they pass to sub-vaults at the provincial level, and then to central distribution centres at the city level, as well as smaller, local centres at the county level. It is from these distribution centres that commercial banks receive their cash. It is also to these centres that the banks return cash received from customers. All returned cash is sorted, and unfit and counterfeit notes and coins are removed for subsequent destruction by the central distribution centre or the sub-vault (see Figure 1).

There is no reverse flow of currency back to the national treasury vault.

For the physical movement of notes and coins throughout the entire supply chain, the PBOC and commercial banks use either independent armoured car companies or their own secure transport personnel. In 2004, there were at least 130 professional armoured car services in China, most of which handle transport only, and do not have their own storage vault. Since these services do not extend to rural areas, the commercial banks or financial institutions (for example, rural credit unions) must cover these areas themselves.

Important Challenges

The current supply chain raises important challenges for both the PBOC and commercial banks. Not only is the volume of currency circulating in China the highest in the world, but the percentage of returned currency is also high - an average of 68% of issued currency per year.

The reason this figure is so high is threefold. First, the ratio of unfit notes is large – about 30% of issued currency per year – therefore large volumes must be returned to the PBOC for sorting.

Second, commercial banks need to take off their books, and out of their limited storage space, any cash which is not earning them interest – whether fit or unfit. What’s more, they are paid interest by the PBOC for any returned cash.

And third, there is in any case a quota on just how much cash a commercial bank can store. Once the quota has been exceeded, the cash must be returned, whether fit or unfit.
This huge volume of returned currency must be sorted and then cleaned or destroyed by the PBOC, which makes it a laborious and costly process - and one that is not a central bank core function.

Risks and Logistics
Since the security of cash transport is often in the hands of various independent armoured car companies across the country, and not the PBOC, the risk of transporting cash is higher than it would be if there was a standardised process involving a single, qualified secure transport service.

And whereas the PBOC’s resources are tied up in managing the logistics of the Renminbi circulation, so are those of the commercial banks.

As a result of each bank being responsible for its own cash storage, inventory control, and secure transportation to local branches, up to one third of employees are tied up in these activities which, again, are not part of their core function.

Involving Third Parties
As identified in studies conducted by the PBOC and academics**, the introduction of a centralised, qualified third party serving both the PBOC and commercial banks would carry the logistics load of the currency supply chain - especially that of reverse logistics - thereby relieving the PBOC and the banks of this non-core, but onerous function. It would also lead to standardised processes that would lower circulation costs, lower the risk of transporting cash, and improve the overall efficiency of the supply chain.

As such a company would operate with contracts with commercial banks, to provide not just secure transportation, but a fully integrated service comprised of:
- Replenishing cash reserves – transporting, distributing, security;
- Managing banknote quality – cleaning and disinfecting;
- Replenishing external ATMs

Although the PBOC would keep the business of destroying unfit cash, it would hand over all other activities relating to returned currency to the cash logistics service company.

The area of the RMB supply chain structure that would be managed by the third party company is highlighted in red in Figure 2.

![Figure 2: the part of the RMB cash cycle (in red) that could be managed by third parties](image)

As the RMB continues to grow in importance in the global financial arena, the effectiveness of its cash circulation system will impact not only China, but the entire world. And when the time arrives for the RMB to be fully convertible, the impact will be even greater, with even larger cash volumes to produce and circulate.

It is for this reason that Chinese government officials and academics are working together now to identify the best solution for strengthening the world’s largest cash circulation system.

** This article is based on ‘China’s Renminbi Currency Logistics Network: A Brief Introduction’ - a report authored by Reginald Smith of New York’s Bouchet-Franklin Institute together with Nan Zhu and Long Wang, both of Southwestern University of Finance and Economics in Chengdu, China. Smith and Zhu also gave a presentation on the subject at the Asian High Security Printing Conference in Beijing last October.

### People in the News

- The second longest-serving governor of the Central Bank of Argentina, Martín Redrado, has been replaced following a dispute with the country’s President, Cristina Kirchner, in which he blocked her attempts to use central banks reserves to pay off some of the country’s debts. He was dismissed in January, but successful obtained a court injunction over both his dismissal and the presidential decree ordering the transfer of funds. His reinstatement was, however, short-lived, and he has now resigned. His interim replacement is Mercedes Marcó del Pont whose appointment, despite opposition in Congress, is expected to be ratified shortly.

- Rodrigo Bolaños Zamora, who was President of the Banco Central de Costa Rica in the mid-1990s, is to step back into the same role in the middle of June, replacing Francisco de Paula Gutiérrez who is stepping down.

- The Bank of Canada has announced the appointments of Tiff Macklem as Senior Deputy Governor with responsibility for the Bank’s operations, and Jean Boivin as Deputy Governor.

- Dr Perks Lígoya has been appointed as Governor of the Reserve Bank of Malawi. He replaces Mr Victor Mbewe.

- Sönke Bandixen, CEO of Orell Füssli, has left the company by mutual agreement due to what it terms ‘diverse views on strategic issues’. The search for a successor has been initiated. The Chairman of the Board of directors, Klaus Oesch, is acting as interim CEO until his successor has been found.