CYBER-BANKING AND ITS IMPLICATIONS FOR HONG KONG *

Hong Kong is at the forefront of some of the innovations in electronic banking such as the recently launched smart cards. Developments of these products, unless regulated, may bring about risks to the banking and payment systems as well as implications for monetary policy. It is the responsibility of regulators such as the HKMA to address these possible risks and provide a regulatory framework.

Introduction

Recently, there is much talk of the benefits and commercial opportunities which electronic banking and the internet have to offer. This paper is not going to refute that view, but in the typically cautious fashion of regulators it will also be trying to draw attention to some of the risks of the new developments and describing how the Hong Kong Monetary Authority (HKMA) is trying to cope with these risks.

The developments should be viewed in terms of Hong Kong's position as an international financial centre and the importance of the banking industry. Hong Kong of course has a thriving local banking community of its own, but it is also the home to over 300 banks from 40 different countries. The nature and size of the presence of these foreign banks varies – many of them are simply single branches, carrying on business of a wholesale or offshore nature. But some of the foreign banks have been in Hong Kong for many years and operate significant retail operations through large branch networks. The names of Bank of China, Citibank and Standard Chartered spring to mind in this context. The significance of this international presence is not only that it provides competition that helps to keep the local banks on their toes, but also that it provides a channel through which new ideas and banking products can flow into Hong Kong.

It is no surprise therefore to find Hong Kong at the forefront of some of the innovations in electronic banking which are being discussed at this conference. It is not certain whether new products such as smart cards will take off in Hong Kong, as opposed to other test marketing grounds. But what can be said is that if smart cards and other similar products are not a success in a financially aware, affluent and geographically concentrated community such as Hong Kong, it is difficult to see them being a success anywhere. China may also prove to be a fertile market for somewhat different reasons, in particular its ability to leap the generations of existing products and go straight into smart cards and the fact that its existing heavy reliance on cash provides a particular incentive to switch to electronic money.

This paper, however, will not indulge too much in crystal-ball gazing. Rather, it concentrates on developments which are already in the market at the moment in Hong Kong and provides the HKMA's perspective on these.

Electronic money

There are of course many manifestations of electronic banking products. Broadly speaking, however, they fall into two main categories: electronic money and electronic delivery channels which provide a means by which banks can distribute their services to their customers and enable their customers to access their accounts. There will be something on this second topic later in this paper, but the main subject will be electronic money since that is where the main regulatory focus is at the moment, particularly in Hong Kong.

Electronic money is itself not a totally homogeneous product, but generally speaking it has the characteristic that consumers pay conventional funds to an "issuer" of electronic money in return for storing the value of those funds on a computer device held by the consumer. The consumer can then use that electronic value to make purchases of goods and services. The issuer of the electronic money can earn interest on the investment of the funds received. In return the

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issuer incurs a liability to make good claims on it by holders of electronic value such as merchants who have accepted electronic money in return for goods and services.

The computer device on which the electronic value is stored could be either a card with a chip on it – in other words, a smart card – or a personal computer. In the latter case the electronic money, in its present state of development, would take the form of "digital cash" or "cyber cash" which would be used for making low denomination purchases over the internet. While there is some interest in bringing such a product to Hong Kong, there are no schemes in operation here at present. Moreover, while events may turn out differently, it seems that digital cash is intrinsically less likely to be a mass market product than smart cards. Many people hold a bank account and may make use of smart cards issued by banks as a substitute for cash for small purchases. Also, a substantial proportion of the population of Hong Kong travels on the mass transit rail system and in the near future will pay for that service with a smart card. They may, if the HKMA allows it, use that card to purchase other goods and services. But only a relatively small number of such users will have the ability or inclination to surf the internet. This may change over time, but like most other banking regulators we believe that the most immediate issue which confronts the HKMA is how to deal with smart cards.

Smart cards

This does not mean that all smart cards or to use a more appropriate terminology 'stored value cards" fall within the province of the banking regulator. The principal concern is with "multi-purpose cards" which can be used to purchase a wide range of goods and services and thus embody a high degree of "moneyness". "Single purpose cards" on the other hand can only be used to purchase goods and services provided by the issuer of the card. They fall therefore into the category of advance payments of which there are already plenty of examples, for example in video shops. All that smart cards are doing in this case is changing the medium of payment rather than the basic concept. Of course the dividing line between multi-purpose and single purpose cards is not absolutely clear-cut: some cards which fall within the definition of multi-purpose may actually be quite limited in scope, while a single purpose card issued by a supermarket chain can be used to buy a wide range of goods and services, supplied by that chain. However, the fact remains that the supermarket is not acting as a financial intermediary: it is not providing a means of payment that can be used to buy goods and services supplied by anyone else and this is sufficient to take the card in question out of our jurisdiction.

Multi-purpose cards

The HKMA does however consider that multi-purpose cards fall firmly within its jurisdiction, and the paper will now go on to explain why this is. To some extent this is self-evident. Going back to the definition of electronic money given earlier, one can see that an issuer of a multi-purpose card is taking money from the public, and investing it, in return for providing a means of payment in electronic form. There is an obvious analogy here with the taking of demand deposits or the issue of bank notes, and the HKMA considers that electronic money in the form of multi-purpose cards raises similar questions to those which arise in relation to its conventional counterparts.

Broadly speaking, these questions fall into three main categories:

- what are the risks to the payments system?
- what are the risks to card-holders?
- what are the implications for monetary policy?

The paper goes on to discuss each of these with particular reference to Hong Kong.

Risks to the payment system

The traditional concern of central banks is to maintain the stability of the payments system in its various forms and thereby promote the stability of the banking system as a whole. This is why the HKMA is currently developing, in cooperation with the banking industry, a new Real Time Gross Settlement system in order to minimise the settlement risk which banks run in making payments between themselves. It is also important however that the retail payment system, that is the various means whereby consumers pay for goods and services, is also sound. Electronic money has the potential to substitute to a significant degree for other means of making retail payments such as cash and cheques. If so, there is the risk that problems with one issuer of electronic money or loss of confidence in a particular card, for example because of counterfeiting or fraud, could spread to other card schemes through the familiar process of contagion which causes runs on banks. There is also the possibility that the integrity of the payment system could be damaged if multi-purpose cards opened up new opportunities for money laundering.

Risks to cardholders

Default of an electronic card issuer would also result in losses for cardholders and merchants owed money by the issuer. Even if the amount of loss suffered by individual cardholders was quite small, for example because the maximum amount that can be stored on a particular card is relatively low, the aggregate impact could be sufficient to undermine confidence in other cards giving rise to the systemic consequences already mentioned. Thus, by protecting cardholders the system is also protected. In addition, however, there is a more general issue of consumer protection in the sense that, even if the amount of money that can be lost in individual cases is low, cardholders should be given sufficient information about their rights and obligations in respect of electronic money products to be able to make informed choices. This is an area which is of particular interest to the Consumer Council in Hong Kong.

Implications for monetary policy

Multi-purpose cards have the potential to affect monetary policy for example by leading to shifts in the velocity of circulation which might temporarily at least alter the relationship between the money supply and nominal GNP. This is not a major concern in Hong Kong since the HKMA does not try to control or target the money supply in its monetary policy operations. That said, it does have an interest in compiling accurate statistics for the money supply for the purposes of economic analysis and HKMA would therefore need to consider how electronic money should be captured in the definitions of money supply.

There is however a more significant policy issue to be addressed in Hong Kong. The objective of monetary policy in Hong Kong is focused exclusively on maintaining the exchange rate link with the US dollar. This is reinforced by the currency board system whereby the issue of bank notes is fully backed by US dollars. When the note-issuing banks wish to issue more bank notes they must hand over to the Exchange Fund US dollars at a fixed rate of HK$7.80 to US$1.

To maintain the integrity of the currency board system, the HKMA believes that electronic money which embodies a high degree of moneyness should also be appropriately backed. This could be done by requiring such electronic money to be backed by Exchange Fund Bills and Notes which are liquid and risk free HK dollar assets. As the proceeds from the sale of Exchange Fund paper will be invested by the Fund in foreign currency assets (mainly US dollars), this will be consistent with the backing requirements of the currency board arrangements.

A further implication for the Exchange Fund is that, under the existing arrangements, the seigniorage, or profits from bank notes, accrues exclusively to the Exchange Fund. To the extent that electronic money replaces bank notes, therefore, the profits of the note issue will be reduced. However, there are a host of factors which affect the demand for bank notes and it is difficult to quantify how great the impact from electronic money might be. The HKMA will therefore need to monitor the situation as the market develops. What can be said is that at this stage the HKMA does not see the potential loss of seigniorage as a reason to stand in the way of the development of electronic money in Hong Kong. In a sense, this may be part of the price which we have to pay for allowing innovation to occur.

The regulatory framework

In the light of these considerations, a regulatory framework needs to address two broad sets of questions:

- who should be allowed to issue multi-purpose cards? In particular, should non-banks be allowed to do so?
- how can the potential risks to the payment system and cardholders be minimised, for example by ensuring that issuers are financially sound, the card itself is secure and the assets backing the electronic value are properly invested?

However, in deciding the appropriate policy response a prior question is whether now is the right time to regulate or whether it is better to wait until the shape of the electronic banking market is rather more clear. Opinion on this falls broadly into two camps. On the one hand there are the US regulators who believe that developments in this area need to be monitored carefully but who take the view that to regulate too soon runs the risk of stifling the development of electronic money. In the words of Federal Reserve Board Governor Edward Kelley speaking at the Cyberpayments conference in Dallas in June of this year:

> *"Heavy-handed preemptive attempts at regulating these products and the competitive process before significant social risks have been demonstrated would likely handicap innovation for no good reason."*

The US attitude appears to imply an acceptance of privately issued electronic currency. The European Union central banks, on the other hand, have taken the view that only banks should be allowed to issue multi-purpose cards and that, where necessary, regulation to ensure this should be undertaken sooner rather than later. This is based partly on the practical consideration that delay may make it more difficult to object to inappropriate developments at a later stage because by that time heavy investments in systems and technology will already have been made. There are also grounds of principle for regulating: it seems somewhat illogical to regulate the issue of conventional bank notes and the taking of conventional deposits but not their electronic equivalents. Related to this point, it seems unfair on competitive grounds that non-bank issuers of electronic money should not be subject to some form of regulation. On this basis, the fact that significant social risks from electronic money may take some time to emerge, does not remove the rationale for regulating now.

The approach towards regulation in Hong Kong

The HKMA leans more towards the European point of view. In part, this is based on the grounds of principle just described but it also reflects the view that in a highly concentrated and financially aware market such as Hong Kong, the various multi-purpose card schemes could perhaps achieve critical mass more quickly than in a much larger and more diverse market such as the United States. The HKMA is also having to address the fact that a number of non-banks are planning to issue multi-purpose cards in Hong Kong and it needs therefore to develop a policy response to this. If some legislation is not introduced at this stage, the argument as to whether and to what extent non-banks should be allowed to issue multi-purpose cards may effectively go by default.

Hong Kong is therefore among those jurisdictions which is planning to regulate the issue of multi-purpose cards. The vehicle for this is through an amendment to the Banking Ordinance which governs the taking of deposits in Hong Kong. However, in going down this route, the HKMA is conscious of the need to adopt a flexible approach so as not to stand in the way of innovation and increased efficiency in the retail payments system. The HKMA fully accepts Governor Kelley's argument that heavy-handed regulation would be inappropriate.

By way of background, it should be explained that the Banking Ordinance establishes a three-tier structure for those institutions which are authorised to take deposits in Hong Kong. Only fully licensed banks are able to take deposits, including demand deposits, without restriction and to participate in the clearing system. Restricted licence banks and deposit-taking companies are not allowed to take demand deposits or to clear cheques.

The Banking (Amendment) Bill 1996

The main features of the 1996 Banking (Amendment) Bill are set out briefly below. However, the Bill is still undergoing scrutiny by a Committee of the Legislative Council and it cannot be guaranteed that it will see the light of day in its current form. It is hoped however that the basic provisions will remain more or less intact. These are as follows:

- the Bill deals only with the issue of multi-purpose stored value cards. It does not attempt to regulate other forms of electronic money, such as digital cash;
- the Bill provides that only fully licensed banks will be allowed to issue multi-purpose cards which are unrestricted in

terms of the goods and services they can buy. This recognises that at present in Hong Kong only banks can participate in the cheque clearing system and offer current accounts;

- non-bank companies will however be able to apply for authorisation as a deposit-taking company for the principal purpose of issuing or facilitating the issue of multi-purpose cards. Such an application would have to be made through a special purpose vehicle;
- It is envisaged that two types of entity might apply for authorisation through this route: service providers such as transport or telecom companies which wish to issue multi-purpose cards for the main purpose of charging for the services which they offer; and the originators of electronic value in schemes such as Mondex;
- cards issued by special purpose vehicles owned by non-banks will be more limited in scope than those issued by banks. In general such cards should have a core use which is related to the business of the owners of the vehicle. The HKMA may however be prepared to accept a limited range of ancillary or incidental uses for the cards provided that these are agreed with the HKMA in advance;
- there is provision in the Bill for the HKMA to be able to exempt certain cards from the provisions of the Ordinance. The HKMA envisages that this right could be exercised in relation to cards issued by non-banks where the risk to the payment system and to cardholders is relatively low. This might apply, for example, in relation to cards where the maximum amount that can be stored on the card is limited to, say, $1000 or less.

Whether the HKMA authorises or exempts cards issued by non-banks it shall want to be assured that the issuer is financially sound and that the card scheme itself is sound in terms of chip security and risk management.

The HKMA believes that the legislative and regulatory framework it is in the process of devising will enable electronic banking, in the form of stored value cards, to develop in a sound manner in Hong Kong. It is however not the end of the story – it is recognised that we are only at the beginning of the life-cycle of this product and that further steps in building the framework may need to be taken as the market develops.

Electronic delivery channels

Moving on to the implications for regulators of the development of electronic delivery channels, the innovations in this area take a number of forms some of which are simply an enhancement of existing means by which banks and their customers communicate with one another – New types of ATM, telephone banking and home banking by computer using software provided by the bank fall within this category. These developments do have the potential to alter the way in which customers interact with their banks. In particular, if successful, they will further reduce the need for customers to visit bank branches and thus will reduce the importance of the conventional branch network. However, the distribution network, whether in electronic or "bricks and mortar" form, would still be within the control of the banks themselves.

The question is however whether the development of open computer networks such as the internet have the potential to alter more fundamentally the bank-customer relationship. It is relevant to recall Marshall McLuhan's famous dictum from the 1960s that the "medium is the message", by which he meant that electronic media such as television were creating a "global village" in which the means of communication has a greater impact than the information itself. Of course, there is a lot of hype about the internet but the medium does indeed have the potential to alter behaviour, in banking and in many other areas. At its most basic, the internet provides just another means for banks to communicate with their customers and to advertise their services by setting up their own websites. A number of banks in Hong Kong have already done this. However, there is also a risk that the internet may weaken the direct customer relationship to the extent that access providers, such as telecom companies and software companies, who control the channels of communication interpose themselves between the customer and the bank. Such providers will not necessarily act as banks themselves. However, through their own websites or via on-line services, they will offer the means for customers to browse a range of banking and financial services and to pick and choose which products they wish to buy. The banks may then be reduced to providers of commodities with the high value added activity being conducted elsewhere.

The implications of these possible developments are greater for the banks than the regulators and probably lie some way down the future. However, the banks would be unwise to be unduly complacent. While they control the customer franchise at present, this could come under threat if they fail to offer the degree and quality of service which customers increasingly expect from their banks.

Risks in internet banking

There is however one aspect of internet banking which does require the early attention of regulators. As already mentioned a number of banks in Hong Kong have already set up websites on which they advertise their services. In due course these may be extended to allow on-line banking transactions. Where institutions authorised under the Banking Ordinance are providing these facilities, this is not of concern to the HKMA although we would expect the banks to ensure that communications between themselves and their customers are secure. However, the global nature of the internet means that banks situated abroad, or indeed virtual banks which exist only in cyberspace, may set up websites which can be accessed by customers worldwide. Among other things, such banks may use this as a means of soliciting deposits, including from customers in Hong Kong.

This raises the legal question of whether this would amount to the issue of an advertisement in Hong Kong containing an invitation to members of the public to make deposits. If so, it would be a breach of section 92 of the Banking Ordinance unless the information specified in the Fifth Schedule of the Ordinance was contained in the advertisement. However, even if an offence has been committed, the HKMA would need to consider what action, if any, could be taken against an issuer of an advertisement based outside Hong Kong and whether the service provider in Hong Kong has any responsibility in the matter. These are interesting legal problems the HKMA is currently studying. In the meantime, there is a practical piece of advice to the public in Hong Kong, which is to be very careful about sending money to any bank which advertises on the internet and which is based in a jurisdiction where the degree of regulation is in doubt. Of course, a prior question to be determined by the customer is whether the bank really exists in the first place, or whether it exists for a legitimate purpose.

This paper should not however end on too cautionary or downbeat a note. Electronic banking and internet banking do bring new challenges and perhaps new risks for banks, consumers and regulators. But they also bring new opportunities to improve the efficiency of the payment system and the quality of banking services. The HKMA's task, as regulator, is to provide an environment in which this potential can be safely realized and that is the objective which we have set ourselves in Hong Kong.