Mortgage Corporation Proposal

Hong Kong Monetary Authority
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CONTENTS

Executive Summary

(a) In response to a recommendation of the Informal Group on Secondary Mortgage Market, the Hong Kong Monetary Authority (HKMA) has initiated a study on the proposal to set up a mortgage corporation in Hong Kong. The main findings of the study are as follows:

(i) the establishment of a mortgage corporation will entail significant benefits to Hong Kong in terms of promoting home ownership, improving banking and monetary stability and facilitating the development of the local debt market;

(ii) the preconditions are met for the setting up of a mortgage corporation in Hong Kong. These preconditions include a strong primary mortgage market, a well-developed legal system, a stable macroeconomic environment and supportive government policies in respect of encouraging prudent mortgage lending and promoting home ownership;

(iii) there are four main types of risks involved in the operation of the corporation, namely the credit risk, the interest rate risk, the prepayment risk and the operational risk. These risks can be managed by introducing prudent risk management mechanisms and measures; and

(iv) initial government ownership of the corporation will significantly facilitate its recognition and acceptance by the market. The favourable funding cost entailed by the government backing would enable the corporation to operate profitably under prudent principles.

(b) We propose that the mortgage corporation would have the following framework:

(i) Ownership: 100% owned by the Government through the Exchange Fund

(ii) Capital base: HK$1 bn

(iii) Structure of the corporation: Limited company registered under the Companies Ordinance, with participation from the public and private sectors on the Board of Directors.

(iv) Business strategy: Business scope to be expanded in phases, starting with the purchase of mortgage loans for retained portfolio, followed by the issue of mortgage-backed securities.

CHAPTER 1
INTRODUCTION

1.1 The Financial Secretary announced in the Budget Speech on 6 March 1996 that the Hong Kong Monetary Authority (HKMA) is studying a proposal to set up a mortgage corporation in Hong Kong. This report discusses the main findings of the HKMA study on the proposal, and sets out a proposed framework for the mortgage corporation.

Background of the Study

1.2 The secondary mortgage market[1] started to develop in Hong Kong in 1994 when some banks packaged their mortgage loans into mortgage-backed securities (MBS) for sale to investors in the capital markets. To study the issues involved in market development, an Informal Group on Secondary Mortgage Market comprising active participants in the market was convened by the HKMA in February 1994 (see membership list at Annex A). In its report published in July 1995, the Group considered that there were fertile grounds for the development of the secondary mortgage market in Hong Kong, in view of the large pool of residential mortgages outstanding and the growing demand for mortgages along with rising home ownership. The Group further considered that the establishment of a mortgage corporation operating under prudent and profit-oriented principles would be the most effective avenue to develop the market.

1.3 To follow up on the recommendation of the Informal Group, the HKMA has initiated a study on the mortgage corporation proposal. In considering whether this proposal should be supported, we have critically examined the following issues:

(i) What benefits will a mortgage corporation bring to Hong Kong?

(ii) Is the setting up of a mortgage corporation commercially viable and technically feasible?

(iii) What types of risks are involved in the operation of the mortgage corporation? Are they manageable?

1.4 With a view to obtaining an in-depth understanding of the operation of mortgage corporations, HKMA officials visited the three major mortgage corporations in the USA, namely the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac) and the Government National Mortgage Association (Ginnie Mae). A visit was also made to Cagamas Berhad in Malaysia, the most established mortgage corporation in Asia. In addition, the HKMA has engaged Fannie Mae, the largest and most profitable among the US mortgage corporations, to provide consultancy support for the study.

CHAPTER 2
WHAT IS A MORTGAGE CORPORATION?

2.1 A mortgage corporation typically carries out one or both of the following types of business:

(a) it purchases residential mortgage loans for its own portfolio and funds its mortgage purchases through the issue of unsecured debt securities; and

(b) it packages the mortgage loans from its own portfolio or from loan originators into mortgage-backed securities (MBS), usually with a guarantee on the timely payment of principal and interest on these securities. (The two types of operations are illustrated in Diagram 2.1.)

<u>Diagram 2.1</u>

<u>Operations of a mortgage corporation</u>

(a) Purchase of mortgages for retained portfolio

Mortgage loan Mortgages Mortgage Unsecured Investors

Originators Corporation debt paper

Cash Cash

Benefits:

*new capital *earning the spread *safe and liquid

*servicing fee between mortgage investment

yield and funding cost

(b) Packaging mortgages into MBS and providing guarantee for timely

payment of principal and interest

MBS

Mortgage loan Mortgages Mortgage with timely Investors

Originators Corporation payment

guarantee

Cash Cash

Benefits:

*new capital *packaging and *safe and liquid

*servicing fee guarantee fee investment

CHAPTER 3
WHAT BENEFITS CAN A MORTGAGE CORPORATION BRING TO HONG KONG?

(a) Contribution to home financing

3.1 An important starting point to evaluate the mortgage corporation proposal is to examine the contribution that such a corporation can make in mobilising funds for home financing. It has sometimes been argued that there is no need for such a corporation since there is ample liquidity in the banking sector at present, as evidenced by a tighter spread between the mortgage yield and the best lending rate (BLR) and the emergence of a number of new mortgage products. It thus appears that the demand for mortgages can be readily met by the banking sector.

3.2 We believe, however, that it is inappropriate to assess the mortgage corporation proposal on the basis of short-term liquidity conditions in the banking sector. We need to look into the long-term trends and the structural issues involved in the mechanism for home financing.

3.3 As Hong Kong people become more affluent as a result of their hard work and dedication, there is rising aspiration for home ownership. As can be seen from Table 3.1, the number of private residential units more than doubled within a time span of 15 years from 1980 to 1995, thereby pushing the ratio of owner-occupied households from 26.5% to 45.2%. As a consequence, the demand for home financing has also increased phenomenally. During the same period, outstanding mortgage loans increased by almost 30 times from 11.7 bn to $348 ten, i.e. at an annual average growth rate of 25%. As the demand for home financing has been growing faster than the growth in nominal GDP and overall domestic bank loans, the ratios of outstanding residential mortgage loans to GDP and domestic loans have risen to 31.3% and 22.1% ,respectively (Table 3.2).

Table 3.1: Supply of Private Residential Units

	Per Capital GDP (HK$)	**Total private residential units***	**Ratio of Owner-occupied Households#**
1980	28,006	485,678	26.5
1985	49,788	657,732	32.8
1990	102,121	879,071	42.6
1995	179,552	1,087,165	45.2

* including private housing units and those under Home Ownership Scheme and Private Sector Participation Scheme

Source: General Household Survey, Census and Statistics Department

Table 3.2 : residential Mortgage Loans

	Outstanding residential mortgage loans (HK$ bn)	**As a % of GDP**	**As a% of total domestic loans**
1980	11.7	8.3	9.9
1985	37.2	13.7	13.8
1990	145.8	25.0	18.9
1995	347.9	31.3	22.1

3.4 Hong Kong's experience is in fact quite similar to that of the developed economies, such as the USA and the UK, both of which have demonstrated a positive relationship between per capita GDP and outstanding residential mortgage loans. In the USA, the ratio of outstanding residential mortgage loans to GDP is 50%. The corresponding ratio in the UK is just under 60%. Both are significantly higher than that of Hong Kong (Diagram 3.1).

Diagram 3.1

Hong Kong, USA & UK

Mortgage Debt Outstanding and GDP Per Capita

(Table missed)

3.5 It is difficult to be precise or accurate in projecting the future demand for residential mortgages. But it is obvious that the demand for mortgage funds will continue to be underpinned by an expected steady increase in the supply of private housing units. As a core strategy to promote home ownership, it is the target of the government to facilitate the production of 195,000 private residential flats in the next six years (1996-2001). In addition, the Housing Authority projects that the supply of flats under the Home Ownership Scheme (HOS) and the Private Sector Participation Scheme (PSPS) would amount to 166,020 units during the same period[2]. These estimates suggest that the combined annual production of private residential" units and the HOS/PSPS flats will be 60,000 units. While the government has not decided on the production target beyond 2001, a mathematical projection using 60,000 new units per annum would mean a total supply of 600,000 new units in the next ten years, an increase of 55% compared with the present stock[3]. Using the crude estimation shown in Table 3.3, the maximum potential demand for mortgage loans arising from the take-up of these new flats would be $931.5 bn (at 1995 prices). Action is in hand to assess land supply and flat requirement beyond 2001 in the context of the current review of the Long Term Housing Strategy. However, there are clear indications that there will continue to be an enormous demand for home financing although there are many factors affecting the actual supply and prices of new housing units.

Table 3.3: Projection of Demand for Residential Mortgages

	Production (1996-2005) (units)	**Assumed average sale price ($mn)**	**Demand for mortagages# (HK$ bn, 1995 price)**
Private residential flats	325,000	3	682.5
HOS/PSPS flats	276,700	1	249.0
# the assumed loan to valuation ratios are as follows:			
private residential units 70%			
HOS/PSPS flats 90%			

3.6 For reasons to be discussed more fully in paras. 3.13-3.15, the banking system is unlikely to be able to meet the potential demand without increasing its concentration and liquidity risks beyond a prudent level. Diagram 3.2 presents a possible approach in assessing quantitatively the likely gap between the potential demand and the amount of mortgage loans that the banking system would be able to provide. As an alternative method to project the demand for residential mortgage loans, assuming that such demand rises to 50% of GDP by the year 2005 (a level which has already been attained by the USA and the UK in the early 1990s), loan demand in absolute terms would increase from $347.9 bn at end 1995 to around $1,970 bn in 2005[4] (or $871 bn at 1995 prices [5]). If we further assume that the banking sector increases the supply of mortgage loans at a rate in line with the growth of nominal GDP in order to avoid increasing the concentration risk of mortgage lending, loan supply would increase to $1,183 bn in 2005 (or $523 bn at 1995 prices). A potential gap of $788 bn (or $348 bn at 1995 prices) thus appears.

Diagram 3.2

Potential Demand-Supply Gap

in Home Financing

(Diagram missed)

Working assumptions:

1. Nominal GDP growth :13.5% p.a.

2. Supply of mortgage loans by banks remains constant at 30% of nominal GDP

3. Demand for mortgages rises from 30% of GDP in 1995 to 50% in 2005

3.7 The disequilibrium in the demand and supply for residential mortgage loans will no doubt trigger off adjustments in the market. One form of adjustments is the entry of more banking institutions to provide the mortgage funds. There is however a structural constraint in relying solely on the banking institutions to provide long-term mortgage funds, as their funding sources are mainly of short-term nature.

3.8 It is likely that the gap in supply and demand would be closed mainly through a rise in residential mortgage interest rates. We did have this experience not long ago. Along with the rapid increase in the demand for mortgage loans in the early 1990s when the property market was booming, the mortgage rate edged up from 100-150 bp over BLR in 1990 to 130-210 bp over BLR in 1994. A significant rise in the mortgage rate would adversely affect the affordability of potential home buyers and is therefore not conducive to the promotion of home ownership.

3.9 A robust solution to meet the expected shortfall in the supply of mortgage funds is to channel long-term savings, such as pension and insurance funds to the mortgage loan borrowers. However, these suppliers of long-term funds are not natural investors in the primary mortgage market because of the illiquidity of individual mortgages. As a wholesale institution, a mortgage corporation can play a strategic role in the intermediation of these long term funds in an efficient and safe manner. As such, it facilitates the growth of a deep and liquid secondary mortgage market that will help to promote home ownership. In the USA, for example, the mortgage corporations (Fannie Mae, Freddie Mac and Ginnie Mae) have together intermediated almost 50% of residential mortgage funds through the issue of MBS and purchase of residential loans from the loan originators. These MBS are sold mainly to institutional and individual investors who are attracted by the high quality, yield and liquidity of the paper. It is difficult to envisage how the level of home ownership in the USA could be as high as 64% without the mortgage corporations.

3.10 The advantages of the mortgage corporation to the home buyers are apparent. It will help to ensure the availability of mortgage funds, which will in turn alleviate potential upward pressure on the mortgage interest rate. Over the long term, a lowering of mortgage rate may be possible because the improved liquidity of residential mortgage loans will allow a reduction in the risk premium on such loans. Besides, as discussed in para. 3.17, the mortgage corporation will help stimulate the introduction of new mortgage products such as fixed rate mortgage loans.

3.11 It has sometimes been suggested that the introduction of a mortgage corporation would increase the supply of funds for mortgages and therefore raise the price of property. The price of housing is a function of both demand and supply. There is considerable real demand for housing and in Hong Kong, prices have also been determined by the supply constraints. Both the government and the private sector developers are committed to increase the supply of housing to meet demand. Setting up a mortgage corporation is one mechanism that deals with the efficiency of the financial market, not the efficiency of housing supply.

(b) Banking stability

3.12 Residential mortgage loans in Hong Kong are of very high credit quality by any standards, given their low loan to valuation ratio (53.3% on average according to a survey conducted by the HKMA in September 1994) and a very low default/delinquency rate (Table 3.4). Besides, the overwhelming majority (96%) of mortgage loans are on floating rate terms while the bulk of authorised institutions' funding is also on floating rate terms. Thus, the interest rate risk incurred by the banking system is relatively small under normal circumstances.

Table 3.4 : Delinquent/default loans as a percentage of total mortgage loans

No. of days from payment due date	**Hong Kong (September**	**USA (1994)**

	1994)				
		Fannie Mae		**Freddie Mac**	
		Single-family	**Multi-family**	**Single-family**	**Multii-family**
more than 60 days	0.43%		1.21%		3.3%
More than 90 days	0.13%	0.57%*		0.57%*	

*Based on number of loans (the other figures are based on the dollar amount)

3.13 There are nevertheless other more significant risks associated with mortgage lending, namely the funding risk arising from maturity mismatch, the liquidity risk and the concentration risk. On average, mortgage loans have a contractual life of 15.2 years (September 1994). With prepayment, the actual average life of mortgage loans is in fact shorter and varies in accordance with the prevailing conditions in the property market. But it is still much longer than the average maturity of funding, which takes the forms mainly of customer deposits and interbank borrowings of short-term nature, mostly less than three months. There is thus a significant maturity mismatch (Diagram 3.3). If the actual maturity of the residential mortgage loans is lengthened due to an unexpected decline in prepayment rate, or if the funding sources become more volatile, banks will be exposed to the funding risk. This risk can be substantially reduced if the mortgages can be liquidated quickly. However, there is only limited development in the secondary mortgage market at present. A mortgage corporation can play an important role in reducing the funding and liquidity risks of mortgage lending as it provides an effective avenue for authorized institutions to unload the mortgage loans as and when needed. Authorized institutions will also have the choice of holding liquid MBS instead of illiquid mortgage loans with some reduction in yield.

Diagram 3.3 Balance Sheet of the Banking System (As at end-1995)

HK$ Liabilities		**HK$ Assets**	
Customer Deposits	$1,122 bn	**Mortgage Loans**	$ 348 bn
less than or equal to 3 months	(95.2%)	average contractual life :	15.2 yrs*
more than 3 months	(4.8%)	average seasoning :	1.9 yrs
Interbank Deposits	$ 637 bn		
less than or equal to 3 months	(93.1%)		
more than 3 months	(6.9%)		
Other Liabilities	$ 341 bn	**Other Assets**	$1,711 bn

* September 1994 figure; average actual life of mortgage loans is shorter (see para.3. 13).

3.14 Turning to the concentration risk, as mentioned in para. 3.3, the share of residential mortgage loans in the total domestic loan portfolio rose from 9.9% to 22.1% in the past 15 years. Including loans for property development and investment, property-related loans as a whole account now for 39% of total domestic loans. This is by no means a low level by international comparison. While the loan default rate for residential mortgages is low a high concentration of mortgage lending involves a sectoral risk. In abnormal conditions (see the example in para. 3.16), the quality of the loan book as a whole will be adversely affected. The greater the proportion, the higher the risk. Similarly, there is a business risk if banks become too reliant on income from one line of business and competitive conditions in that market change adversely.

3.15 The banks themselves do recognize the liquidity; funding and concentration risks involved. That is why it is not unusual for banks themselves to ration their mortgage lending once self-imposed balance sheet limits are reached. In other words, the risks are not purely the concerns of the supervisors. Banks themselves would not be willing to expand the proportion of property loans in their balance sheet indefinitely.

(c) Monetary stability

3.16 Under the linked exchange rate system, the interest rate in Hong Kong tracks closely the US interest rate. Given the open nature of our economy, volatility in capital flows may occasionally give rise to interest rate fluctuations. Such fluctuations would have an impact on borrowers with floating rate debt. The biggest liability item for an average household in Hong Kong is probably the residential mortgage. It is estimated that roughly 40% of the private residential units in Hong Kong have outstanding mortgages and 96% of residential mortgages are on floating rate basis. In the event of a sharp rise in interest rate, mortgage rates may increase. This will have implications on the cash flow of home owners, who are the main borrowers, with a potential impact on the property market and consequently the banking system. This reflects the pain tolerance level of Hong Kong people and the economy to possible interest rate shocks.

3.17 A mortgage corporation can encourage the origination of fixed rate mortgage loans. It may use the fixed rate funds borrowed from the debt market to purchase fixed rate mortgage loans originated by authorized institutions. The mortgage corporation is free from interest rate risk as the fixed rate liabilities arising from its debt securities is matched by fixed rate receivables from the mortgage loans[6].

3.18 Borrowers of fixed rate loans are insulated from short-term volatility in interest rate movements. To the extent that a larger proportion of mortgages are arranged on fixed rate terms, the pain tolerance level of the economy as a whole in the event of a sharp rise in interest rates will be enhanced. This will contribute to the resilience of our monetary system. Holders of fixed rate debt securities will, however, suffer a capital loss because of the interest rate hike. Nevertheless, many of them are long-term investors who are in a better position to weather the short-term volatility in interest rate. The interest rate risks are therefore spread more evenly in the economy.

(d) Development of debt market

3.19 The mortgage corporation plays a crucial role in developing the debt market through supplying paper either in the form of unsecured debt securities or MBS. In the USA, for instance, unsecured debt securities issued by the three key mortgage corporations (i.e. Fannie Mae, Freddie Mac and Ginnie Mae) amounted to US$349 bn at end 1994, while MBS guaranteed by these corporations stood at US$1,436 bn at end 1994. By comparison, the outstanding amount of US Treasuries was around US$3,126 ten. In other words, the mortgage market is the second most important debt market in the USA.

3.20 The experience of Hong Kong in the last two years suggests that efforts by individual institutions to securitize mortgages have not been entirely successful. The heterogeneity of issuers and the lack of conformity of the underlying pool of mortgages have kept many potential investors away from the MBS market. There is little, if any, liquidity in this paper. A mortgage corporation can play a major role in improving market efficiency and stimulating the development of the secondary mortgage market. It packages mortgage loans into standardized MBS, which are comparatively easier to understand and trade. It will also be a well accepted issuer in its own right. In developing Hong Kong's debt market, the supply of high quality and liquid securities is as important as the demand by institutional investors. The rapid growth in the size of the insurance and pension funds, aided by the Mandatory Provident Fund Scheme, will certainly increase the appetite for high quality HK$ debt securities. The development of a deep and liquid secondary mortgage market in turn would enhance Hong Kong's status and reputation as an international financial centre.

Impact on residential property market

3.21 By helping authorized institutions to reduce the liquidity and concentration risks in mortgage lending and by mobilizing funds from investors in the capital markets, the supply of funds for home mortgages is expected to increase. However, this factor by itself is unlikely to give a strong boost to property prices. In the first place, availability of mortgage finance is only one of the factors affecting the underlying demand for housing. There are a host of other factors such as household formation, income level, general property market conditions, interest rate etc. affecting the demand for housing. Secondly, it would be prudent for the banking system to continue to exercise restraint on mortgage loan exposure in order to avoid excessive concentration and liquidity risks. In fact, a mortgage corporation will also help establish prudent origination standards as only mortgage loans of reasonable quality would be purchased by the corporation. As a prudent commercial institution, a mortgage corporation would be cautious in protecting itself from being exposed to any property bubbles. Thirdly, the purchase of mortgages by the mortgage corporation would probably be fairly gradual and staggered, at least in the initial period of its operation. This means that a sudden flood in the supply of funds for mortgages is unlikely to occur in practice.

3.22 Over the longer term, if the mortgage corporation succeeds in facilitating the supply of mortgage funds from long term investors, thereby enabling more potential home buyers to acquire flats, it would be commensurate with the Government's objective of encouraging home ownership. It is reckoned that there is still substantial scope for lifting the home ownership ratio, as well as for attaining progressively better housing in the long run.

CHAPTER 4

FINDINGS OF THE FANNIE MAE STUDY

4.1 The Fannie Mae consultant team paid a two-week visit to Hong Kong in early February during which in-depth discussions were held with HKMA officials and major mortgage lenders. Their overall assessment of the mortgage corporation proposal is as follows:

(i)the establishment of a mortgage corporation in Hong Kong is both

feasible and beneficial as a long-term goal;

(ii) Hong Kong is in an enviable position compared to many other economies as the development of the secondary mortgage market is driven by a long-term vision, not in reaction to a crisis in the housing market or credit system; and

(iii) preconditions are met for setting up a mortgage corporation in Hong Kong -

there is a strong primary mortgage market based upon a robust banking sector, with active volume of business, high quality mortgage loans, fairly standardised lending standards and well-developed technological capabilities;

there is a well-developed legal framework to protect interest in residential mortgages and ensure transferability of such interest;

macroeconomic environment is stable;

government policies in promoting home ownership and encouraging prudent mortgage lending by authorized institutions are helpful to the development of the secondary mortgage market.

4.2 The consultants have also provided detailed advice on the proposed framework of the mortgage corporation and the risk management issues, which will be discussed in subsequent chapters.

CHAPTER 5

PROPOSED FRAMEWORK OF THE
MORTGAGE CORPORATION

5.1 Drawing on the findings of the Fannie Mae consultants, which are broadly consistent with HKMA's analysis, we set out below a possible framework for the mortgage corporation.

(a) Ownership

5.2 It appears that some form of government support is crucial to the acceptance of the mortgage corporation by the market at the initial stage. This is evident in the success stories behind Ginnie Mae, Fannie Mae, Freddie Mac and

Cagamas, all of which owe their success to their government or quasi-government agency status. A key issue is whether the mortgage corporation should be wholly Government owned, wholly privately owned or a Government private sector joint venture. Although the concept of a wholly privately owned mortgage corporation has been publicized, we are not aware of any concrete plan from the private sector.

5.3 A joint venture with the private sector raises several interesting issues. If the joint venture is with a particular group of shareholders, there could be concerns as to why that group would be favoured over the others. If the shareholders comprise the authorized institutions, there may be conflict of interest as these institutions would also be the major sellers of mortgages. There may also be a supervisory concern as ownership of securitization vehicle might inhibit a "clean break" in respect of mortgages sold to it. There might be a "moral responsibility" to make good losses on the mortgages. (That is why banks are not allowed to have an ownership stake in special purpose vehicles which they use to securitize mortgages on an individual basis.) A joint venture with the private sector would also involve a complicated question of division of shares among the shareholders. Moreover, if the private sector as a whole has a majority ownership, the mortgage corporation may no longer be perceived by the market as being government sponsored. This may have implications for the funding cost of the corporation and the acceptance of its debt securities by the market.

5.4 It seems appropriate to set up the mortgage corporation initially as a wholly government owned corporation. The Fannie Mae consultants also consider this as the most expeditious way to "jump-start" a secondary mortgage market. They highlight the following advantages of initial government ownership:

(i) the high credit standing will enable the corporation to raise funds at favourable rates;

(ii) mortgage loan originators will be provided the assurance that the corporation has strong staying power and hence will serve as a steady and reliable avenue for them.