A Busy Year for the Hong Kong Mortgage Corporation

by Pamela Lamoreaux

Undoubtedly, in the history of the Hong Kong Mortgage Corporation (HKMC), 1997/1998 will be remembered not only as our first year of operation, but as a year of significant progress and milestones met. While proud of these accomplishments, the Corporation is not resting on its laurels, but is facing the current economic turbulence "head-on."

The current environment of high interest rates, declining property values and a slowdown in the growth of the economy makes this task particularly challenging. However, the HKMC is here for the long-term, and while Hong Kong may be going through a painful period, we have an optimistic outlook for the future growth of the secondary mortgage market, and believe the HKMC has an important role to play in both the near- and long-term.

This article will cover the following topics:

- History and Structure of the HKMC
- Why does Hong Kong Need a Secondary Mortgage Market?
- HKMC's Business Plan
- Funding Sources of the HKMC
- Risk Management

Pamela Lamoreaux is Executive Vice President and Chief Operating Officer of the Hong Kong Mortgage Corporation Limited.

HISTORY AND STRUCTURE OF THE HKMC

History

The timeline on the following page shows important milestones in the creation of the HKMC up to the point we purchased our first block of mortgages in November 1997.

Structure

The framework of the HKMC is as follows:

Ownership. Initially 100% owned by the SAR Government through the Exchange Fund.

Capital. HK$ 1 billion

CAR. 5% Capital to Asset Ratio (Maximum mortgage portfolio retained of HK$20 billion)

Status. Limited public company registered under the Companies Ordinance. The Corporation was granted status as a "Public Sector Entity" in July 1997. This provides for a favorable risk weighting of 20% on debt securities issued.

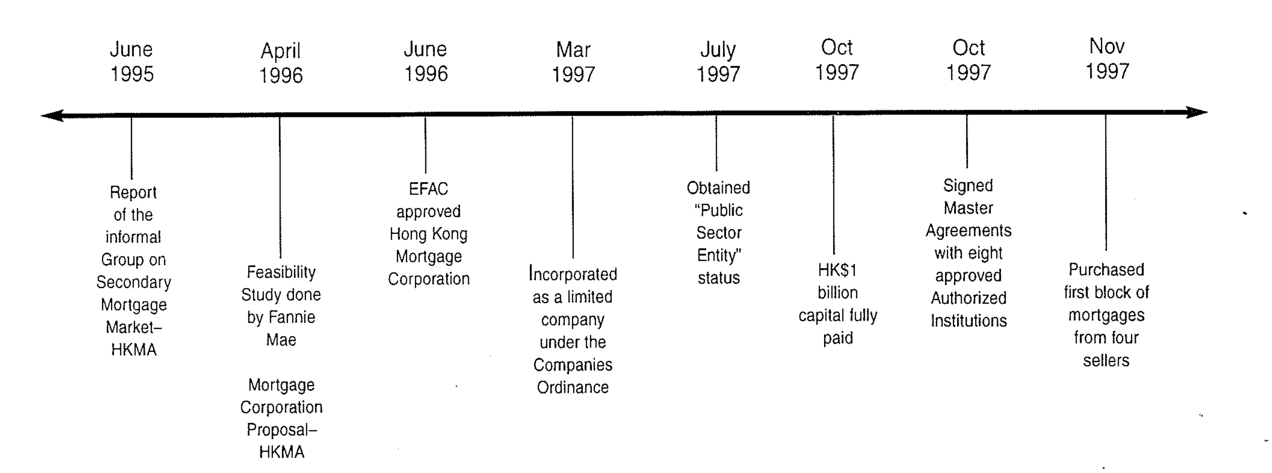
The Financial Secretary for Hong Kong is the Chairman of the Board, with the Chief Executive of the Hong Kong Monetary Authority (HKMA) as the Deputy Chairman. The Board of Directors, including two Executive Directors, is made up of 15 members drawn from the public and private sectors (with over one-half of the total members coming from the private sector).

WHY DOES HONG KONG NEED A SECONDARY MORTGAGE MARKET?

Housing is a key ingredient in the political, social and economic well being of any government. For this reason many countries throughout the world are considering developing liquidity facilities of some sort to enhance their current housing finance systems. In 1994, when the creation of a mortgage corporation was first being discussed, Hong Kong was taking a pro-active approach. Unlike many countries, at that time Hong Kong was not reacting to a crisis in the banking sector, or adverse macroeconomic conditions. On the contrary, Hong Kong enjoyed sound economic fundamentals and a primary mortgage market that was running smoothly. The impetus came primarily from a belief that the future supply of housing finance would not be able to meet the expected demand, as well as a desire to support the development of the capital market.

At that time, the HKMA had estimated the potential shortfall in housing finance in the year 2005 to be about HK$711 billion as reflected in Figure 2.

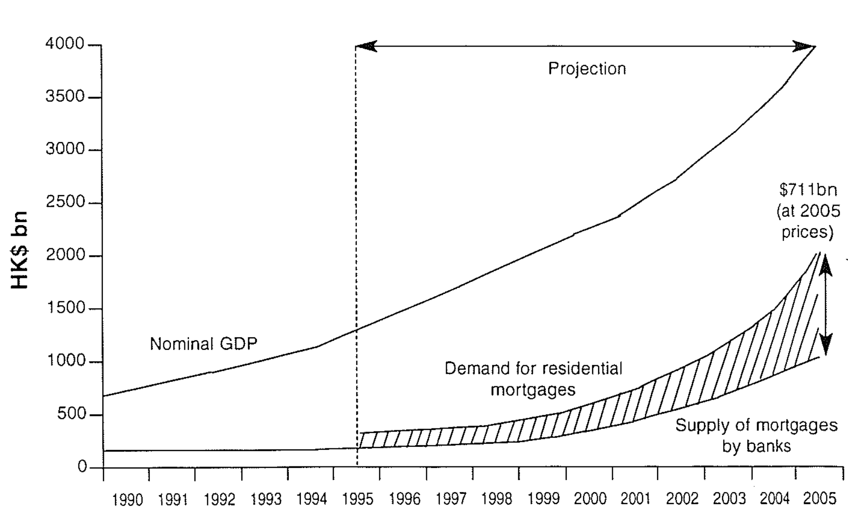
Figure 1. History of the HKMC



Admittedly, in light of current market conditions, some of the assumptions used in this calculation need to be revised. However, while the amount of the shortage may be different, it still seems a certainty that the banks will not be able to meet the demand for mortgage financing at some point in the future. For simplicity, an assumption was made that housing debt as a percentage of GDP will grow from 30% to 50%. We recognize this is aggressive, even if the government achieves its target of 70% home-ownership by the year 2007. Other factors would be considered, such as house price movements relative to inflation and population demographics.

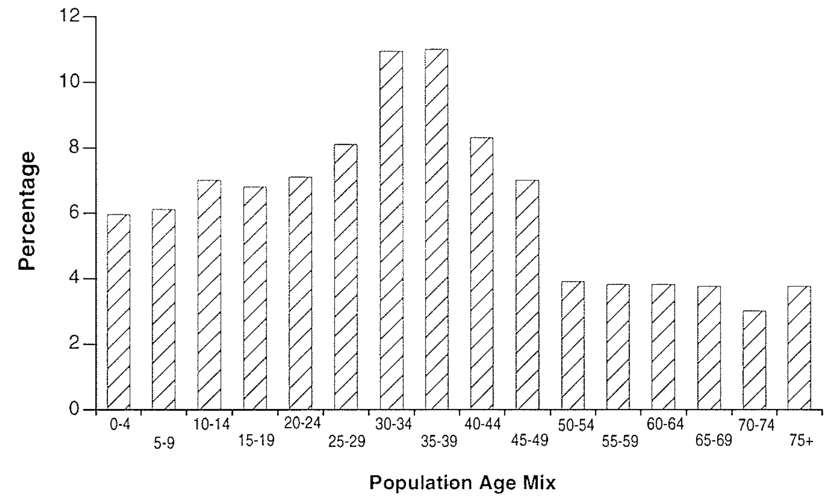
Population growth is also a major factor in determining demand. Recent figures show the growth rate at about 3%, up steadily from a low of only 0.3% in early 1990. The age mix also bodes well for an increased demand in housing. As shown in Figure 3, the largest single age groups are the 35–39 and 30–34, the groups most likely to experience salary increases and have growing

Figure 2. Potential Demand/Supply Gap Housing Finance



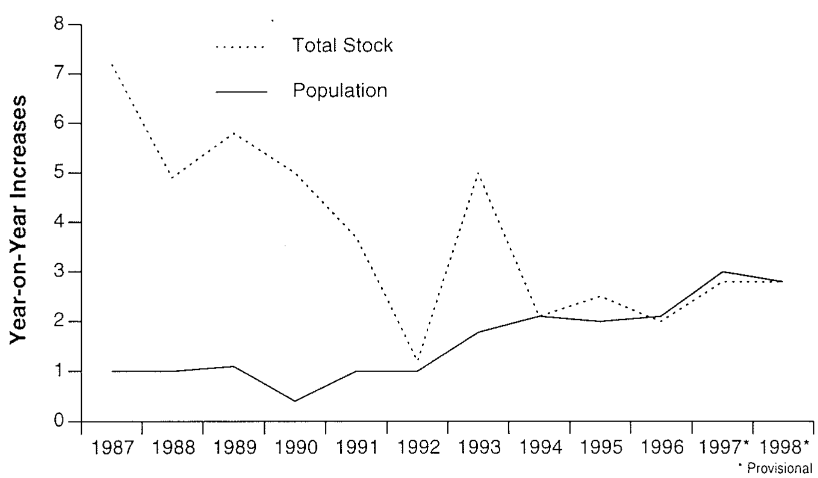
ASSUMPTIONS:
1. Nominal GDP growth: 13.5%
2. Supply of mortgage loans remains constant at 31% of nominal GDP.
3. Demand for mortgages rises from 30% of GDP in 1995 to 50% in 2005.

Figure 3. Population Age Mix (% to Total)



Source: *ABN AMRO*, "Demand and Supply of HK Property Market," 22 December 1997

Figure 4. Stock of Housing vs. Population Growth: Percentage Increases in Total Stock of Housing Units and Population, Hong Kong 1987–1998



Source: C.Y. Leung & Company, Limited

children that may need more space. This "upwardly mobile" group is likely to be trading up to larger and more expensive housing.

Figure 4 shows that the stock of housing is projected to fall short of, or just match the year-on-year projected population growth for 1997 and 1998.

Certainly, the 35–40% drop in property prices over the past several months will have a dampening effect on demand. However, this correction in the markets should allow for the residential property market to be supported by genuine end-users, whose prime consideration will be affordability and availability of housing finance.

Besides addressing the potential shortfall in the supply of funds for housing finance, there were several other important considerations directly supporting the development of the secondary mortgage market in Hong Kong. They included:

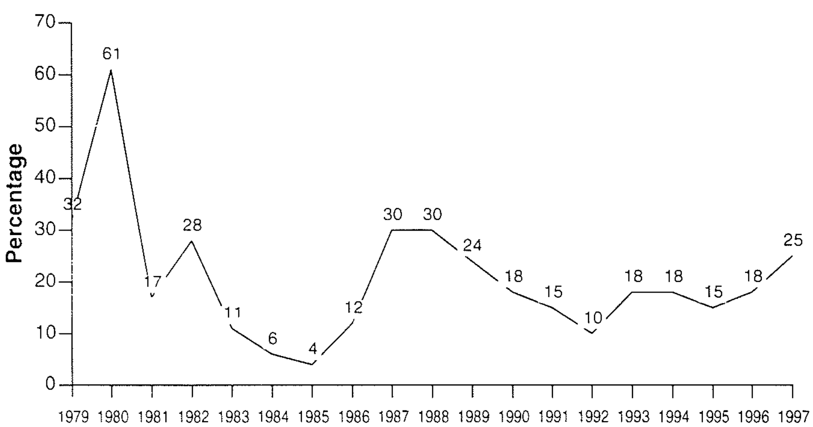
- the overall size of the residential mortgage market;
- liquidity risks of the banks;
- concentration risk of the banks; and
- pre-conditions were met.

Size of the Mortgage Market

The size of the residential mortgage market as of March 1998 is approximately HK$436 billion. This number represents the totals as reported to the HKMA by 33 Authorized Institutions that represent about 90% of all of the mortgage lending done in Hong Kong.

For the past few years the percentage of growth from year to year has been growing steadily (too steadily from the perspective of the regulators and others). In the first half of

Figure 5. Mortgage Portfolio Growth—Percentage, 1979–1997



Source HKMA and NatWest

1997 the growth was 26%. The total growth for the year was 25% only because of the economic downturn in the second half of 1997. otherwise the mortgage portfolios of the banks may have grown by 50% or more. The table above shows the percentage of growth since 1979.

Ostensibly a small mortgage market when compared to some other countries, there is still an adequate supply of fairly standardized, high quality assets to support the creation of a mortgage corporation.

Liquidity of the Banks

The balance sheets of the 33 most active banks in Hong Kong at the end of 1996 reflected the following mismatch in the duration of their assets and liabilities:

Table 1. Liquidity Risks of Banks

Assets		*Liabilities*	
As of May 1998		As of May 1998	
Residential Mortgage Loans	HK$436 bn	Customer Deposits:	HK$1,491 bn
Average Contractual Life	19 years	3 months:	95%
Actual Average Life	4-5 years	3 months	5%
		Interbank Deposits	HK$688 mn
		3 months	96%
		3 months	4%

Source: Hong Kong Monetary Authority

The recent cutback in credit lines by international banks in Asia, including Hong Kong, and the deflation of assets have put considerable pressure on the liquidity of the banks, making them rely even more on interbank lending. The recent volatility of the interbank rates (HIBOR) which is used to fund the liability side of the balance sheet, and the Best Lending Rate or Prime Rate as the index for pricing their assets has exacerbated the liquidity problem.

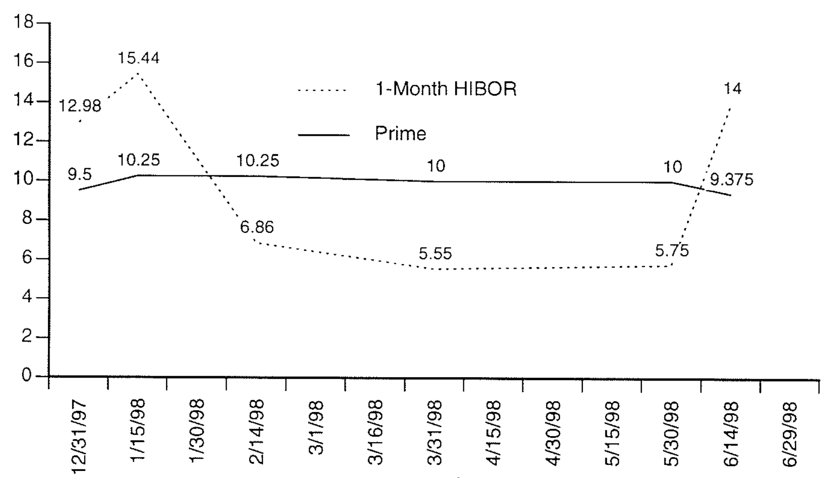
For banks that are approved seller/servicers for the HKMC, their mortgage portfolio becomes a valuable source of liquidity. They have another option in managing their balance sheet: they can choose to sell a portion of their eligible mortgages to the HKMC and receive the funds in about 15 business days after submitting the necessary loan-level information. In addition, to further enhance the liquidity of their portfolios, the HKMC has developed a Forward Commitment Facility, in which it commits to purchase an agreed upon amount of floating-rate mortgages over a specified period of time (up to 12 months) at a specified price.

Concentration Risk

In 1994, the HKMA issued guidelines stating that an institution's property exposure (which includes residential mortgages and lending for various types of property development and investment) should not exceed the overall industry average of about 40%, otherwise the institution should be attempting to stabilize or reduce that percentage.

While the HKMA announced earlier this year that this guideline was no longer necessary, in light of the current economic turbulence and property price downturn it is still prudent for the banks to manage this risk appropriately. This applies particularly to those local banks whose property exposure is also high

Figure 6. HIBOR vs. Prime Rate



in relation to their capital base (although the HKMA has not set any formal guideline in this regard at this time).

In 1998, for many banks the runoff of the mortgage portfolio is generally higher than new mortgages being originated. Ways a bank can reduce its overall property exposure include mortgage securitization, private placement deals, selling mortgages to other banks, and of course selling mortgages to the HKMC.

Other Pre-Conditions

In addition to the reasons stated above, the following factors supported the overall viability of establishing a mortgage corporation in Hong Kong:

- Suitable legal structure in place for enforceable title, transfer of ownership, assignability, and repossession (foreclosure) of the property.
- Strong regulatory framework.
- Well-capitalized and well-run financial institutions.
- Fairly standard mortgage product (floating rate) and documentation (legal charge).

HKMC'S BUSINESS PLAN

The mission of the HKMC is to promote the development of the secondary mortgage market by: (1) improving banking and monetary stability; (2) developing the local debt market; and (3) promoting homeownership.

The business of the HKMC is being developed in two phases. Phase I is completely operational at this time. Phase II will be operational in early 1999, depending on operational and strategic issues.

Phase I: The HKMC will purchase mortgages for cash from approved seller/servicers and issue unsecured debt to meet its funding needs.

Phase II: The HKMC will package its own mortgages, and pools of mortgages created by approved seller/servicers into MBS and provide a guarantee for the timely payment of interest and principal to the investors.

Figure 7 illustrates the existing and future businesses of the HKMC.

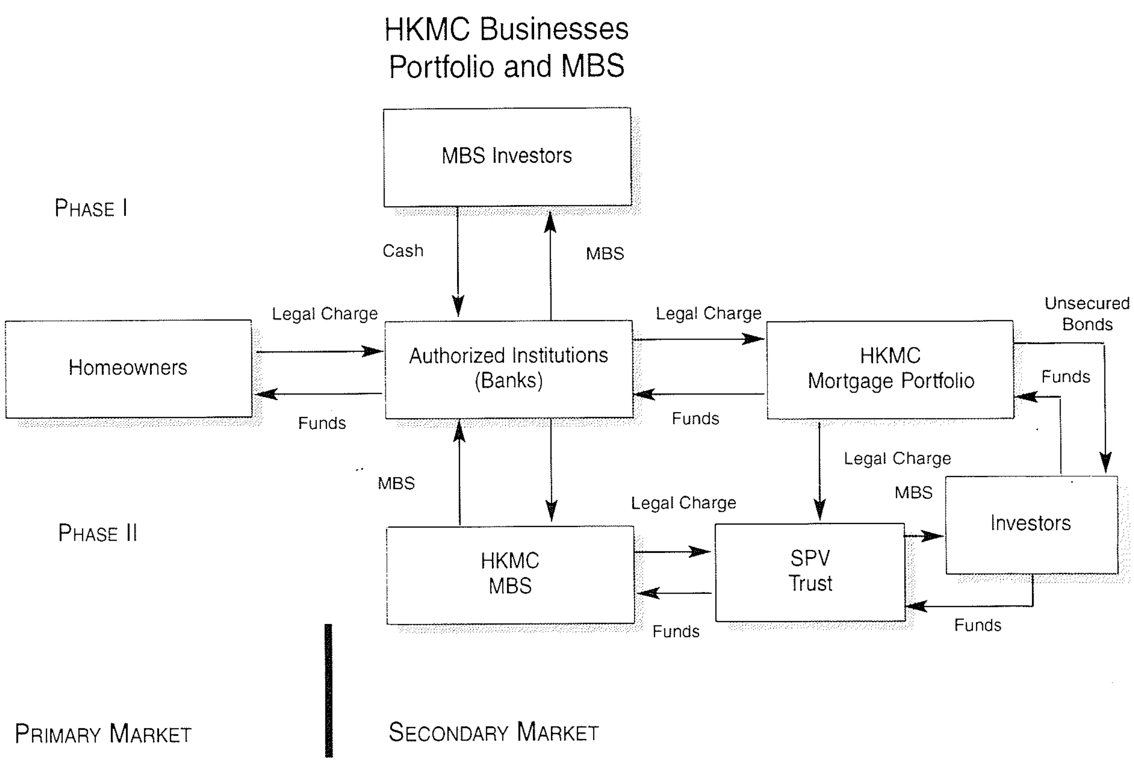
Mortgage Purchase Program

The HKMC currently has 23 approved seller/servicers with several more in process. We will have at least 30 banks approved by the end of the year. At this time, 16 of the approved sellers are actively selling mortgages to the HKMC. By selling qualified mortgages on a voluntary basis, the sellers are able to reduce the concentration and liquidity risks associated with mortgage lending. In addition, by continuing to service the mortgages for the HKMC, they retain the relationship with the customer for cross-selling opportunities, and earn recurring servicing fee income. The servicing fee earned is the spread between the gross mortgage rate on the mortgage and the net required yield passed through to the HKMC on a monthly basis.

The business target for purchasing mortgages in 1998 is HK$10–15 billion. As of now, the Corporation has committed to purchase HK$6 billion of fixed- and floating-rate mortgages. In addition the approved seller/ servicers have indicated an interest to commit to about HK$14 billion using the Forward Commitment Facility for purchase over the next 12 months, so we are well on our way to meeting our business target for the year.

The mortgages purchased must comply with purchasing criteria established by the HKMC, with the most recent criteria shown in Figure 8.

Figure 7. Businesses of the HKMC



The HKMC purchases floating rate and fixed rate mortgages (see Figure 9). Historically, Hong Kong has done 90% or more of its mortgages as floating rate, with the Best-Lending Rate administered by the Banks. In 1998, the HKMC accomplished one of its key objectives identified in the planning stage, which was to develop new products such as fixed-rate or convertible mortgages. In early 1998, we launched a fixed-rate pilot scheme with two banks, to provide home buyers with greater product choice and help insulate them from fluctuations in interest rates.

The main features of the pilot scheme are as follows:

- Period: six months from March 18 to September 18, 1998
- Size: initially HK$500 mn, has been expanded by another HK$ 900 mn
- Participating banks: Dao Heng and Chase Manhattan
- Fixed rate and term: 10.50% p.a. for three years. Rate will be changed from time to time at the discretion of the HKMC.
- At re-fixing date, borrower has option to select another fixed-rate period or convert to a floating-rate mortgage
- Purchasing criteria: same as for floating-rate mortgages, except as identified in Figure 8.
- Prepayment fee: generally 3% / 2% / 1% respectively for each of the three fixed-rate years

The HKMC is quite encouraged by the results. Since its inception in March, the

Figure 8. Purchasing Criteria

Criteria	*Floating Rate*	*Fixed Rate*
Maximum Loan Size		
At Time of Sale	HK$5.0 mn	N/A
At Time of Origination	HK$8.0 mn	HK$4.0 mn
Loan-to-Value Ratio (at origination)	70%	70%
Debt-to-Income Ratio	50%	50%
Original Term to Maturity		
Minimum	N/A	10 Years
Maximum	30 Years	25 Years
Seasoning	6 Months	0
Maximum Sum of Term of Loan and Age of Property	40 years	40 years
Occupancy	Owner Occupied	Owner Occupied

program has been well received by the public and about HK$1 billion has been approved in principle by the two banks. After September, it is anticipated the fixed-rate mortgage pilot scheme will be expanded by additional funding and the number of participating banks will be increased.

Support the Development of the Capital Market

The objectives to build up our mortgage portfolio and to support the development of the capital markets go hand-in-hand. In order to meet our purchasing targets we must issue debt or raise capital in some way. There are several important ways that the HKMC will support the development of the local debt market, such as:

Figure 9. Product Types

List of HKMC Mortgage Products

Mortgage Product Code	*Gross Mortgage Rate Index*	*Amortization Type*	*Interest Computation Basis*	*Gross Mortgage Rate Change Option*
PADI	Prime	Fully Amortizing	Daily	Fixed Installment with Variable Term
PAMI			Monthly	
PADT			Daily	Fixed Remaining Term with Variable Installment
PAMT			Monthly	
FARDI	N/A Fixed Rate		Daily	N/A Fixed Installment During Term
FARMI			Monthly	

- Provide consistent supply of high quality unsecured debt securities currently, and MBS in the future, which should enhance liquidity;
- Disseminate empirical data on a routine basis to potential investors on the quality and attributes of the Hong Kong mortgage markets (i.e., interest rates, prepayment data, delinquency information, property price trends);
- Make transitions less complicated for investors. They will only need to be comfortable with the strength and integrity of the HKMC instead of knowing all issuers in the market. The HKMC should issue more standardized paper, also aiding the investors' understanding of the product;
- Allow Hong Kong to compete more effectively in international markets with more standardization of the documentation, underwriting and servicing procedures and relevant disclosure information;
- Educate investors about Hong Kong markets and help to differentiate mortgage products from other instruments in the market; and
- Introduce new products, e.g., fixed-rate loans.

Operating Systems

In order to handle the complexities associated with a mortgage corporation and to manage its operations, the HKMC has developed various operating systems, such as:

1. Loan Information Processing System (LIPS)—for capturing and managing data of mortgage loans, used for commitment, purchasing and servicing processes;
2. Mortgage Electronic System (MORE) – process for approved sellers to validate and encrypt particulars of the mortgages to be sold to the HKMC;

3. Infinity System and Treasury Management System (TMS)—used for day-to-day treasury operation and settlement; and

4. Oracle Financial – for accounting and financial control management.

FUNDING SOURCES OF THE HKMC

The current capital-to-asset ratio of the HKMC would allow for a mortgage portfolio of up to HK$20 billion. We have the following sources of funding at this time:

- Capital
- Bank lines
- Tender Note Issuance Program (NIP): HK$20 billion
- Debt Issuance Program (DIP): HK $20 billion
- Revolving Credit Facility with Exchange Fund: HK$10 billion

Figure 10 shows the utilization of each of these funding sources as of this time.

The specifics of the Tender Note Issuance Program are outlined in Table 2.

The Liquidity Adjustment Facility (LAF) was introduced in 1992, and is the Hong Kong version of a discount window. It operates after the close of the HK dollar interbank market. Banks who find themselves having a negative balance in the clearing accounts may approach the HKMA for liquidity assistance in the form of repurchase agreements (Repos) involving eligible securities.

Revolving Credit Facility

In January 1998 the HKMC entered into an agreement with the HKMA through which the Exchange Fund provided a HK$10 billion revolving credit facility. This facility demonstrates the support of the Hong Kong SAR Government, and provides a fall-back source of short-term funds to bridge the gap between funding mortgages on a regular basis and issuing corporate debt under adverse market conditions.

Figure 10. Utilization of Funding Sources

Source Type	*Date Issued*	*Details of Issue*	*Total Amount of Funds*
Capital	11/97	n/a	HK$ 650 mn
NIP	3/12/98	3-Year Fixed Rate	HK$ 500 mn
NIP	4/2/98		HK$ 500 mn
NIP	5/28/98	2-Year Fixed Rate	HK$ 500 mn
Bank Lines	Various	n/a	HK$ 1 bn

Table 2. Tender Note Issuance Program (NIP)

Issuer	HKMC
Arranger, Agent and Operator	HKMA
Dealers	Financial Institutions appointed by HKMA as Market Makers (31 MMs) and Recognised Dealers (over 150 RDs)
Trustee	Bermuda Trust (Far East) Limited
Notes Distribution	MMs and RDs will be invited, from time to time, through the tender process similar to the Exchange Fund paper managed by the HKMA, to submit tender(s) to subscribe for the HKMC's Notes.
Currency	HK Dollar
Program Size	HK$ 20 billion
Maturities	1 month to 10 years (generally 3-5 years)
Type of Note	Unsecured Fixed Rate Notes, Floating Rate Notes, and Zero Coupon Notes may be offered
LAF Eligibility	The HKMC's Notes issued under the NIP will be eligible for Liquidity Adjustment Facility and fungible with the Exchange Fund Bills and Notes

Debt Issuance Program (DIP)

The HK$20 billion DIP was launched in June with five primary dealers and 12 selling institutions. While the NIP is targeted at financial institutions more interested in liquidity than yield, this new product is geared toward institutional investors (insurance companies, pension plans), and is structured more like a standard underwritten approach, which should produce a higher yield for slightly less liquidity. This product is also HK dollar-denominated and will be LAF eligible. There have been no issues under the DIP to date.

Future Funding Sources

In addition to the existing funding sources we are developing other tools, such as:

1. Medium-Term Note Program (MTN). This will be developed at a later stage, once the HKMC has obtained a credit rating. The size of the program will be determined later, but it will be a multi-currency program to allow for greater flexibility in tapping other markets in meeting our funding needs.

2. MBS – at a later stage (early 1999) the HKMC will develop an MBS Program.

RISK MANAGEMENT

Sound risk management is integral to the operation of the HKMC and an essential factor in meeting its business and profitability targets. By establishing a solid framework and developing various tools, the HKMC can effectively manage the risks associated with a mortgage corporation, and grow in a prudent and commercial manner so as to achieve its corporate goals.

In broad terms, the risk management policies of the HKMC include:

1. Analysing current aspects of its business and counterparty relationships to measure performance, profitability and other factors;

2. Establishing and enforcing sound underwriting and servicing standards;

3. Ensuring compliance with capital adequacy and other regulatory guidelines; and

4. Monitoring the sensitivity of the mortgage portfolio to changes in the economic conditions.

Table 3. Risk Management Tools

Tool	*Objective*
1. Current Loan-to-Value (CLTV) Ratio Model	The HKMC has developed an automated valuation system to calculate the current LTV for each mortgage in its portfolio. Our purchasing guidelines stipulate a maximum LTV at origination. By running this analysis on a monthly basis, the HKMC can determine whether it may be necessary to recommend changes to the purchasing criteria, or to recommend other actions that may be required if the property value falls below the outstanding loan amount. This analysis can be run prior to, or after settlement.
2. Stress Test and Sensitivity Analysis Model	To assess the impact on the HKMC's operating performance and financial position arising from deterioration in the macroeconomic factors which would result in a drop in the property price and an increase in the default rate. The model is run using actual or projected, current or historical data captured on the real interest rate, unemployment rate, affordability index, and GDP Growth Rate.
3. Due Diligence Loan File Review	A post-purchase review is conducted on a statistical sampling of loans purchased to ensure that the loans comply with the Mortgage Conditions, Purchasing Criteria and other stipulations.

For each risk identified, the HKMC has taken steps to mitigate, monitor and measure the risks. The objective is to provide the appropriate controls and an "early warning" system to management, allowing the HKMC to react quickly and to make any necessary changes to existing policies or strategies, if warranted.

Various Tools

Table 3 outlines the objective of several of the more important tools we have developed.

Current Profile of Mortgage Portfolio

Banks in Hong Kong have long enjoyed low delinquency and default (over 90 days) rates on their residential mortgage portfolios. This has been attributable to appreciating property prices, positive macroeconomic factors and cultural distinctions. It has been said "you do not lend to an individual in Hong Kong, you lend to a family." As at the end of September 1997, the problem assets (overdue for more than three months and rescheduled) were only 1.83% of the total loans outstanding.

Understandably, there is concern that the current situation of high interest rates and rising unemployment will cause delinquency rates to increase. For a 25-year term mortgage of HK$1.5 million, an interest rate increase of 9.75% to 11.50% would cause the mortgage payment to increase by 14% a month, which is a significant increase for the average borrower.

There is always a time lag between the slowdown in the economy and the impact to the banking sector. However, as of this writing, the HKMC has only one mortgage in its portfolio from 31-60 days delinquent, and no mortgages over 60 days delinquent. We purchased our first block of mortgages in November 1997.

Table 4 shows the pertinent characteristics of our portfolio as of 31 July 1998.

Table 4. HKMC Portfolio Characteristics (as of 7/31/98)

HKMC Portfolio Characteristics as of 7/31/98	
Number of Loans	3,637
Outstanding Principal	HK$ 4.7 billion
LTV at Origination	64%
Current LTV	60%
Debt-to-Income Ratio	38%
Prepayment Rate (month)	0.94%
Delinquencies > 30 Days	
# Loans	1
% OPB	0.04%

While we are quite pleased with the performance of our portfolio to date, we monitor the performance on a daily basis. The loan-level detail we obtain at the time we purchase the mortgage, and the monthly loan-level servicing reports we receive from each seller/servicer, allows the HKMC to do frequent analysis and up-to-date reporting of its portfolio.

WAY FORWARD

Unquestionably, the single biggest contributor to the continued growth and development of the housing finance system and capital markets in Hong Kong is the improvement in the overall economic health of the region. Hong Kong is well known for its resiliency. The HKMC, in tandem with other initiatives, can provide positive measures in the interim. This has been a year of tremendous growth for the HKMC, but it is only just the beginning!