2016 was full of surprises and black swan events. The global financial markets were highly volatile and turbulent. Market concerns over a hard landing of the Mainland economy and global economic slowdown in early 2016 prompted global equity markets to fall sharply. The result of the Brexit referendum in June and the outcome of the US presidential election in November also took the market completely by surprise. Despite such a difficult investment environment, the Exchange Fund recorded an overall investment return of 2% in 2016, thanks to a series of defensive measures deployed by the HKMA over the years that have enhanced the resilience of the Exchange Fund.

THE EXCHANGE FUND

The Exchange Fund's primary objective, as laid down in the Exchange Fund Ordinance, is to affect, either directly or indirectly, the exchange value of the currency of Hong Kong. The Fund may also be used to maintain the stability and integrity of Hong Kong's monetary and financial systems to help maintain Hong Kong as an international financial centre. The Exchange Fund is under the control of the Financial Secretary and may be invested in securities or other assets he considers appropriate, after consulting the Exchange Fund Advisory Committee (EFAC).

MANAGEMENT OF THE EXCHANGE FUND

Investment objectives and portfolio structure

EFAC has set the following investment objectives for the Exchange Fund:

- (a) to preserve capital;
- (b) to ensure that the entire Monetary Base, at all times, is fully backed by highly liquid US dollar-denominated assets;
- (c) to ensure that sufficient liquidity is available for the purposes of maintaining monetary and financial stability; and
- (d) subject to (a)–(c), to achieve an investment return that will help preserve the long-term purchasing power of the Fund.

These objectives take full account of the statutory purposes of the Exchange Fund, and are incorporated into the portfolio structure and the target asset mix of the Fund. Broadly speaking, the Exchange Fund has two major portfolios: the Backing Portfolio (BP) and the Investment Portfolio (IP). The BP holds highly liquid US dollardenominated assets to provide full backing to the Monetary Base as required under the Currency Board arrangements. The IP is invested primarily in the bond and equity markets of the member countries of the Organisation for Economic Cooperation and Development to preserve the value and long-term purchasing power of the assets. The long-term target bond-to-equity mix for the two portfolios as a whole is 71:29. In terms of target currency mix, 91% of the assets are allocated to the US dollar and the Hong Kong dollar, and the remaining 9% to other currencies¹.

To better manage risks and enhance returns in the medium and long term, the HKMA has been diversifying part of the Exchange Fund's investment, in a prudent and incremental manner, into a wider variety of asset classes, including emerging market and Mainland bonds and equities, private equity and overseas investment properties. Emerging market and Mainland bonds and equities are held under the IP, while private equity and real estate investments are held under the Long-Term Growth Portfolio (LTGP). The cap for the market value of investments under the LTGP is set at one-third of the accumulated surplus of the Exchange Fund, with further capacity arising from the allocation of a part of the Future Fund to long-term assets.

The Strategic Portfolio, established in 2007 to hold shares in Hong Kong Exchanges and Clearing Limited that were acquired by the Government for the account of the Exchange Fund for strategic purposes, is not included in the assessment of the Fund's investment performance because of the unique nature of this Portfolio.

The target currency mix has taken into account the impact of a measure approved by EFAC to reduce the non-US dollar/Hong Kong dollar holdings of the Exchange Fund during the year.

Placements with the Exchange Fund

The Exchange Fund accepts placements by fiscal reserves, Government funds and statutory bodies from time to time, with the interest rate generally linked with the performance of the IP² with the exception of the Future Fund whose interest rate is linked with both the IP and the LTGP depending on the portfolio mix. As at the end of 2016, the portfolio mix of the Future Fund between the IP and the LTGP was 80:20. The portion linked with the LTGP is expected to be gradually built up to around 50% of the Future Fund placement by the end of 2018.

The investment process

The investment process of the Exchange Fund is underpinned by decisions on two types of asset allocation: the strategic asset allocation and the tactical asset allocation. The strategic asset allocation, reflected in the investment benchmark, represents the long-term optimal asset allocation given the investment objectives of the Exchange Fund. Guided by the strategic allocation, assets are tactically allocated in an attempt to achieve an excess return over the benchmark. This means the actual allocation is often different from the benchmark, or strategic, allocation. The differences between the actual and the benchmark allocations are known as "tactical deviations". While the benchmark and the limits for tactical deviations are determined by the Financial Secretary in consultation with EFAC, tactical decisions are made by the HKMA under delegated authority. Within the limits allowed for tactical deviations, portfolio managers may take positions to take advantage of short-term market movements.

Investment management

Direct investment

HKMA staff in the Reserves Management Department directly manage the investment of about 74% of the Exchange Fund, which includes the entire BP and part of the IP. This part of the IP includes a set of portfolios invested in global fixedincome markets and various derivative overlay portfolios implementing macro risk management strategies for the Fund.

Use of external managers

In addition to managing assets internally, the HKMA employs external fund managers to manage about 26% of the Exchange Fund's assets, including all of its listed equity portfolios and other specialised assets. The purpose of appointing external managers is to tap the best investment expertise available in the market to capture a diverse mix of investment styles, and transfer knowledge and information from the market to in-house professionals.

Expenditure relating to the use of external managers includes fund management and custodian fees, transaction costs, and withholding and other taxes. The expenditure is primarily determined by market factors, and may fluctuate from year to year.

The HKMA supports the Principles of Responsible Ownership (Principles) issued by the Securities and Futures Commission on 7 March 2016, which are voluntary and assist investors to determine how best to meet their ownership responsibilities in relation to their investments in Hong Kong-listed companies. For the management of the Exchange Fund, the HKMA has encouraged the appointed external fund managers for its Hong Kong equity portfolio to adopt the Principles in managing the investments.

Risk management and compliance

The high volatility of the financial markets in recent years has highlighted the importance of risk management. Stringent controls and investment guidelines have been established for both internally and externally managed portfolios, and compliance with guidelines and regulations is closely monitored. Risk-control tools are deployed to assess market risks under both normal and adverse market conditions. The HKMA also conducts detailed performance attribution analyses to make the best use of the investment skills of both internal and external managers.

² The rate is the average annual investment return of the IP for the past six years or the average annual yield of three-year Government Bond for the previous year subject to a minimum of zero percent, whichever is the higher.

PERFORMANCE OF THE EXCHANGE FUND

The financial markets in 2016

The global financial markets were highly volatile and turbulent in 2016. In the equity markets, market concerns over a hard landing of the Mainland economy and a slowdown in the global economic growth in January prompted the Hong Kong and other major equity markets to fall sharply. It was not until mid-February that the equity markets were stabilised. However, the result of the Brexit referendum in June and the outcome of the US presidential election in November took the market completely by surprise. That said, the equity markets only experienced short-lived setbacks and quickly recovered lost ground. For the year as a whole, the global equity markets performed well in general.

In the bond markets, sovereign bond markets performed quite well in the first half of 2016, on the back of safe haven demand arising from concerns about global growth slowdown and disinflation exacerbated by a further drop in commodity prices in the first quarter, uncertainties arising from the Brexit referendum and expectations of continued accommodative central bank policies in the second quarter. In particular, the 10-year US Treasury yield fell to a record low of 1.36% in July. However, in the second half of the year, with the heightened expectations of US interest rate hikes, in particular after the US presidential election, US Treasury yields shot up. Yields of other major sovereign bonds also rose, though by a smaller extent.

In the currency markets, the US dollar continued to strengthen in 2016, with the US dollar index rising to its highest level in 14 years. The continued US dollar strength was supported by the widening interest rate gap between the US and other major economies. While the yen appreciated by about 3% against the US dollar in 2016, the euro depreciated by around 3% against the US dollar. The British pound also weakened by 16% against the US dollar during the year, posting its biggest fall since 2008, on the lingering uncertainties over the result of the Brexit referendum.

The performance of major currency, bond and equity markets in 2016 is shown in Table 1.

Table 1 2016 market returns	
Currencies	
Appreciation (+)/depreciation (–) against US dollar	
Euro	-2.9%
Yen	+3.1%
Bond markets	
Relevant US Government Bond (1–30 years) Index	+1.1%
Equity markets ¹	
Standard & Poor's 500 Index	+9.5%
Hang Seng Index	+0.4%
1. Market performance on equities is based on index price change during the year.	

The Exchange Fund's performance

Despite the highly volatile financial markets, the Exchange Fund recorded an investment income of HK\$68.1 billion in 2016. This comprised gains of HK\$28.6 billion on overseas equities, HK\$5.3 billion on Hong Kong equities, HK\$33.1 billion on bonds, and HK\$16.9 billion on other investments held by the investment holding subsidiaries of the Fund, as well as a negative currency translation effect of HK\$15.8 billion on non-Hong Kong dollar assets. The negative currency translation effect was unavoidable when translating the Fund's non-US dollar investments into Hong Kong dollars amid the sharp strengthening of the US dollar last year. Separately, the Strategic Portfolio recorded a valuation loss of HK\$0.7 billion.

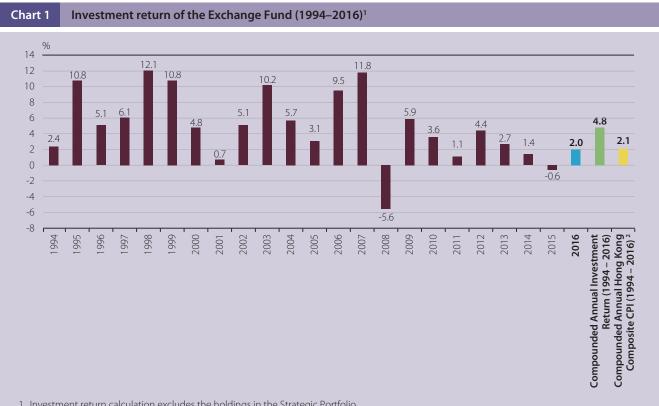
The total assets of the Exchange Fund reached HK\$3,618.7 billion at the end of 2016. The market value of investments under the LTGP totalled HK\$181.8 billion, made up of HK\$116.8 billion in private equity and HK\$65 billion in real estate, with outstanding investment commitments amounted to HK\$133.8 billion.

The investment return of the Exchange Fund (excluding the Strategic Portfolio) in 2016 was 2%, despite a very challenging investment environment. The LTGP recorded an annualised internal rate of return of about 12% since its inception in 2009.

In view of the worsening external investment environment, the HKMA has deployed a series of defensive measures over the past years, which include shortening the duration of bond portfolios, increasing cash holdings and significantly reducing assets denominated in currencies other than the US dollar and the Hong Kong dollar. It has also quickened the pace of investment diversification, especially through investments under the LTGP. These moves have enhanced the resilience of the Exchange Fund against market fluctuations.

The annual return of the Fund from 1994 to 2016 is set out in Chart 1. Table 2 shows the 2016 investment return and the average investment returns of the Fund over several different time horizons. The average return was 0.9% over the past three years, 2.0% over the past five years, 2.6% over the past ten years and 4.8% since 1994.³ Table 3 shows the currency mix of the Fund's assets on 31 December 2016.

Averages over different time horizons are calculated on an annually compounded basis.



1. Investment return calculation excludes the holdings in the Strategic Portfolio.

2. Composite Consumer Price Index is calculated based on the 2014/2015-based series.

Table 2 Investment return of the Exchange Fund in Hong Kong dollar terms¹

	Investment return ^{2&3}
2016	2.0%
3-year average (2014–2016)	0.9%
5-year average (2012–2016)	2.0%
10-year average (2007–2016)	2.6%
Average since 1994	4.8%

1. The investment returns for 2001 to 2003 are in US dollar terms.

2. Investment return calculation excludes the holdings in the Strategic Portfolio.

3. Averages over different time horizons are calculated on an annually compounded basis.

Table 3 Currency mix of the Exchange Fund's assets on 31 December 2016 (including forward transactions) **HK\$ billion** % US dollar 3,050.2 84.3 Hong Kong dollar 286.9 7.9 Others¹ 281.6 7.8 Total 3,618.7 100.0

1. Other currencies included mainly euro, renminbi, pound sterling and Japanese yen.