



MAS

*Monetary Authority of Singapore*

ANNUAL REPORT 2016/17

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# CHAIRMAN'S STATEMENT

**“The global economy is doing better. The Singapore economy too should grow at a slightly firmer pace this year.”**

It has been an eventful year. Internationally, we have seen important political shifts in several advanced economies, and new uncertainties emerged in multilateral cooperation. Domestically, we have taken decisive and unprecedented actions to preserve the integrity of our financial system.

The global economy is doing better. Growth has gradually strengthened across the advanced economies, while the emerging world is holding steady. The Singapore economy too should grow at a slightly firmer pace this year. Inflation, having been negative for much of 2016, has picked up alongside higher energy prices. It is likely to edge up further, though remaining below 2% on average for 2017.

Our monetary policy has been shaped in that context. We have kept the trade-weighted exchange rate band on the zero appreciation path, first put in place in April 2016, which should be adequate to ensure medium-term price stability.

On the macroprudential policy front, MAS eased the rules on vehicle financing, as inflationary pressures have receded since the loan restrictions were introduced in 2013. However, our key property market measures remain necessary for a stable and sustainable residential property market and to encourage household financial prudence.

MAS' oversight of the financial sector in the last two years has been marked by major enforcement actions to uphold Singapore's reputation as a clean and trusted centre. We have worked in partnership with the Commercial Affairs Department (CAD) and the Attorney-General's Chambers (AGC) to investigate transactions related to 1MDB that flowed through some financial institutions in Singapore, and cooperated with regulatory authorities abroad to uncover a large and complex international web of money laundering. MAS took tough, unprecedented measures – closing two merchant banks, fining eight banks and issuing prohibition orders or notices of intention on seven individuals who broke our laws and anti-money laundering regulations. Four of these individuals have also been convicted of criminal offences. Singapore has moved faster than other jurisdictions in this major international episode, and taken a much wider range of enforcement actions.

Separately, following three years of extensive joint investigations with CAD, charges were brought against the masterminds behind the largest stock market manipulation case in our history. With the establishment of the new Anti-Money Laundering and Enforcement Departments in MAS, we will sharpen our surveillance of the financial sector and further enhance our enforcement capabilities.

We continue to build on Singapore's strengths as a dynamic financial hub. Consistent with the Committee on the Future Economy's recommendations, MAS is strengthening enterprise financing for growth companies, by enhancing the venture capital ecosystem, and relaxing rules on finance companies in support of start-ups and SMEs. MAS has been amongst the first to introduce a regulatory sandbox to enable FinTech start-ups and financial institutions to experiment with new technologies without posing major risks. The inaugural Singapore FinTech Festival in November 2016 reflected the considerable momentum in Singapore's emergence as a FinTech hub. The formation of a new Data Analytics Group (DAG) within MAS also reflects our focus on advancing the digital economy. DAG will partner industry to enhance data collection, technological capabilities and analytics expertise, so as to transform the way we do our work, both within MAS and across the financial sector.

As the financial landscape sees disruption globally, MAS has stepped up efforts to facilitate reskilling, strengthen the Singaporean core and ensure a future-ready, globally competitive financial workforce. The Financial Sector Tripartite Committee has ramped up initiatives to proactively manage retrenchments and facilitate redeployment of Singaporean finance professionals to areas seeing job growth.

On the consumer protection front, the Credit Bureau Act and amendments to the Securities and Futures Act were passed in Parliament to safeguard consumer interests, enhance their access to their credit information and better protect investors. A series of public education campaigns were also rolled out over the past year to promote the prudent use of credit and informed investing.

We commemorate 50 years of Singapore's Currency Interchangeability Agreement with Brunei this July. The Agreement has shown resilience, through the shocks to the international monetary system in the 1970s and the Asian and Global Financial Crises. It reflects the continuing, strong relationship between our two countries, and cooperation between MAS and the Autoriti Monetari Brunei Darussalam.

Finally, I thank all MAS staff, our partners and financial industry players for their unwavering support and contributions to Singapore's development as a respected and progressive international financial centre.



**Tharman Shanmugaratnam**  
Chairman

**“We continue to build on Singapore’s strengths as a dynamic financial hub. MAS is strengthening enterprise financing for growth companies and enabling FinTech start-ups and financial institutions to experiment with new technologies.”**

# HIGHLIGHTS of the YEAR

## REINFORCING OUR AML/CFT REGIME



- The Financial Action Task Force recognised our strong legal and regulatory framework and robust supervision of our financial sector

## PROMOTING FINANCING FOR ENTERPRISE DEVELOPMENT



- Faster approvals and lower requirements for venture capital managers
- Changes to finance company regulations to enhance their ability to finance small and medium-sized enterprises

## SERVING THE PUBLIC, PROTECTING CONSUMERS



- More than 40,000 invested in over S\$1.1 billion in Singapore Savings Bonds (SSB)
- Opened three new SSB online application channels
- New Credit Bureau Act introduced stronger safeguards for sensitive consumer credit information
- Securities and Futures Act amended to provide better protection to retail investors, enhance our capital markets and strengthen MAS' enforcement powers

## UPHOLDING SINGAPORE'S REPUTATION AS A CLEAN AND TRUSTED FINANCIAL CENTRE



- Closed Falcon Private Bank for serious failures in anti-money laundering (AML) controls and improper conduct by senior management at Swiss Head Office and local branch
- Fined eight banks for 1MDB-related breaches of AML regulations
- Issued prohibition orders (POs) ranging from ten years to lifetime against four individuals and served notice of intention to issue POs against three other individuals, all of whom were involved in 1MDB-related breaches
- An ex-remisier was convicted for spoofing in the first criminal prosecution arising from the MAS-Commercial Affairs Department joint investigation arrangement
- Two former traders and an ex-remisier were charged with 333 charges in Singapore's first front-running case prosecuted under the insider trading provisions in the Securities and Futures Act
- Three key individuals behind the penny stock crash were charged in November 2016



## ENHANCING MAS' CAPABILITIES IN DATA ANALYTICS

- Data Analytics Group established to position MAS and the financial sector for the digital economy of the future



## MANAGEMENT OF LIQUIDITY

- MAS Overnight Renminbi (RMB) Liquidity Facility enhanced to provide market participants with more certainty on cost and availability of RMB funds
- Bilateral local currency swap agreement signed with the Bank of Japan to provide Japanese Yen to Singapore financial institutions in support of their cross-border operations



## DEVELOPING A SMART FINANCIAL CENTRE

- Singapore FinTech Festival: More than 13,000 participants from over 60 countries
- Introduced open architecture, efficient infrastructure and a safe experiment framework with the
  - API playbook
  - Guidelines for cloud technology
  - FinTech regulatory sandbox
- Proposed an activity-based payments framework for all payments services and a payments council

# Anchor of Economic and Financial Stability

“From the surveillance of external and domestic economic developments to modelling the intricacies of the Singapore economy, it is rewarding to know that my work contributes to robust monetary policymaking.”

**Neha Varma**  
Senior Economist,  
Economic Analysis Department



# ANCHOR OF ECONOMIC AND FINANCIAL STABILITY



## THE ECONOMY

### **The Global Economy in 2016: Resilient But Uninspiring**

The global economy began 2016 on a sluggish footing, but signs of a revival became more apparent as the year progressed, alongside a recovery in commodity prices. In the event, global GDP growth for 2016 came in at a broadly similar pace as the previous year. Reassuringly, there was some resilience to the subdued, albeit stable pace of expansion, even amid elevated policy uncertainty from two major political shocks—the Brexit referendum outcome in the UK and the result of the US presidential elections. For the open economies in the region, lacklustre global investment and trade flows continued to hinder their export-reliant industries, although the tech cycle turned up in the later part of the year. Nevertheless, domestic demand was steady, supported by firm employment conditions. In terms of policy settings, a more optimal balance between fiscal and monetary policy provided some support to growth across the major regions of the world.

To understand Asian growth dynamics better, MAS delved deeper into the shifts in the region's trade patterns. In a study that featured in the October 2016 *Macroeconomic Review*, MAS found significant shifts in Asia's configuration of production and trade activities in the last two decades, that reflected the relative position of countries within global value chains. While the East Asian economies had evolved since the early 2000s to become upstream suppliers to China's downstream manufacturing firms, China's export profile has more recently exhibited significant catch-up. This has occurred alongside growing domestic production capabilities, and concomitantly, a reduced dependence on imports of intermediate inputs.

For the rest of 2017, MAS will be keeping close watch on the sustainability of the cyclical upswing which began in late 2016, and continued into the first quarter of 2017. Asian economies will need to adjust to a tightening of financial conditions as well as a turnaround in global inflation. Headline inflation has picked up since late 2016, and is set to trend higher this year reflecting supply-side cost increases such as the turnaround in commodity prices.

### The Singapore Economy in 2016: Steady But Modest Growth

MAS' expectations for both GDP growth and CPI inflation at the beginning of 2016 were realised.



**Economic growth** kept to a **modest pace** and came in at **2%**, within the forecast range of **1–3%**.



**Economic momentum** in the **domestic economy** picked up **discernibly in Q4 of 2016**, as **manufacturing** and **trade-related services** responded favourably to the turnaround in global trade, which included **semiconductors** and **selected commodities**.



Meanwhile, activity in the **domestic-oriented sector** remained **sluggish in 2016**, amid **weakness** in the **construction** and **retail industries**, as consumer sentiment stayed cautious.

Given the unevenness in global growth, MAS mapped the distribution of performances across key global markets with Singapore's own industry and export outturns. This in turn prompted a forward-looking assessment of global corporates, drawing information from various sources, including micro datasets. Based on this analysis, MAS considered the extent to which the Singapore economy could take advantage of the opportunities presented by global developments, including in the high-tech space, which will be boosted by digitisation and automation.

In 2017, the Singapore economy should continue to grow at 1-3%. MAS is maintaining close surveillance of the gathering momentum in global manufacturing and trade, as well as their positive spillover effects on domestic income and spending. The unevenness in performance among domestic corporates also warrants close monitoring.



# 1–3%

**economic growth**  
expected in 2017

## ANCHOR OF ECONOMIC AND FINANCIAL STABILITY



**MAS Core Inflation**  
is projected to average

**1–2%**

in 2017.

### **Inflation Picked Up Slightly**

Mirroring developments on the external front, Singapore's CPI All-Items inflation turned positive in November 2016, after registering 24 months of negative readings, reflecting the pickup in global commodity markets and the diminishing impact of budgetary and other one-off measures. For the year as a whole, CPI-All Items inflation was –0.5%, unchanged from 2015, while MAS Core Inflation, which excludes the cost of accommodation and private road transport, rose gradually over the course of 2016, to come in at an average of 0.9%, compared to 0.5% in 2015. These inflation outcomes were in line with projections made at the time of the April 2016 *Monetary Policy Statement*.

CPI All-Items inflation rose further to 0.6% in Q1 2017, compared to 0.0% in the previous quarter, while MAS Core Inflation edged up to 1.3% from 1.2%. The pickup in inflation largely reflected the higher prices of oil-related items, as global oil prices rose from their 2016 trough, while domestic sources of inflation remained fairly muted. Overall, the inflationary environment will continue to be relatively steady with MAS Core Inflation projected at 1–2% and CPI-All Items inflation at 0.5–1.5% for the whole of 2017. The projected pickup in inflation from last year will largely reflect the contribution of energy-related components and the impact of administrative price increases, rather than generalised demand-induced price pressures.

### **Global Policy Uncertainty Presents Financial Risks**

Global financial markets were resilient in the face of economic and financial uncertainties in China and unexpected political events in the US and Europe in 2016. While a number of Asian currencies came under pressure amid uncertainty over Asia's trade and growth prospects and expectations of faster-than-expected US interest rate hikes, capital outflow from Asia and corresponding pressure on Asian currencies has since eased.

Looking ahead, anti-globalisation sentiment could heighten global political risk. Furthermore, potential shifts towards more protectionist policies, and diverging monetary policies among the advanced economies, could portend weaker global growth and greater market volatility. These, coupled with the US rate normalisation, could exert pressure on debt servicing capacities of some corporates and households in Asia, including Singapore.

## **MONETARY POLICY**

The formulation of monetary policy was guided by MAS' analysis of the medium-term optimal path for the exchange rate. There were two key considerations. First, the assessment of wage-inflation dynamics and the projected output gap for the economy suggested that the generally low and stable inflation environment could persist. Second, MAS' model simulations showed that the cumulative effects of the measured easing moves since January 2015 would continue to provide some support to GDP growth.

Accordingly, MAS adopted a zero percent rate of appreciation of the Nominal Effective Exchange Rate (S\$NEER) policy band in April 2016, in light of the continued subdued outlook for inflation and growth. Subsequently, in October 2016, MAS signalled that the neutral policy stance was needed for an extended period in order to ensure medium-term price stability. The policy stance was reaffirmed in April 2017 in view of the largely unchanged outlook. Chart 1 traces the evolution of monetary policy in recent years.

## MACROPRUDENTIAL POLICY



The **Singapore residential property market** continues to **moderate**, with prices falling at a gradual pace following **a series of macroprudential measures introduced since 2009**.

Nonetheless, transactions increased in 2016 compared with 2015, due to healthy sales at project launches and better matching of price expectations between buyers and sellers in the resale market. This trend has continued into Q1 2017, on the back of low interest rates and continued income growth.

The government has therefore determined that the current set of property market measures remain necessary to promote a sustainable residential property market and financial prudence among households. Calibrated adjustments were made to the Seller's Stamp Duty (SSD)<sup>1</sup> and Total Debt Servicing Ratio (TDSR) framework<sup>2</sup> in March 2017 to address specific feedback and market conditions.

## MANAGEMENT OF LIQUIDITY

### Enhancing the MAS Overnight RMB Liquidity Facility

MAS enhanced the MAS Overnight RMB Liquidity Facility in 2016 to provide market participants with more certainty on the cost and availability of RMB funds. Instead of running an auction, MAS now sets the cost of borrowing RMB funds upfront, which assures market participants of an allocation at that pre-determined price.

### BOJ-MAS Bilateral Local Currency Swap Agreement

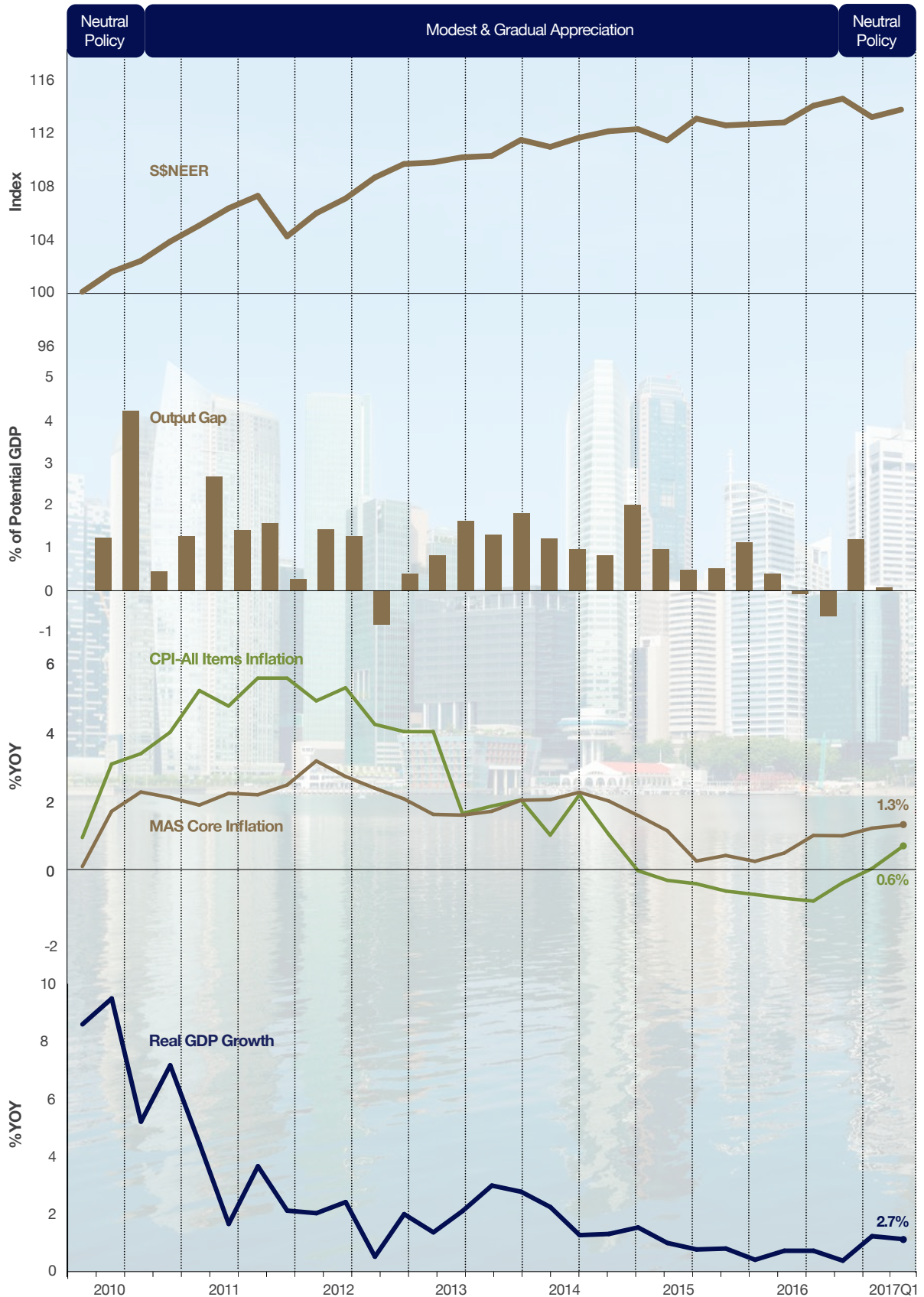
The Bank of Japan (BOJ) and MAS established a bilateral local currency swap agreement in November 2016. The agreement enables MAS to provide JPY liquidity to eligible Singapore financial institutions in support of their cross-border operations.

<sup>1</sup> As the number of property sales within the four-year SSD holding period window has fallen significantly since the introduction of the SSD, the SSD holding period was reduced from four to three years and the SSD rates lowered by four percentage points for each tier.

<sup>2</sup> In response to feedback that the TDSR framework had limited some borrowers' flexibility to monetise their properties in their retirement years, MAS decided not to apply the TDSR framework to mortgage equity withdrawal loans with LTV ratios of 50% and below.

# ANCHOR OF ECONOMIC AND FINANCIAL STABILITY

Chart 1: Key Macroeconomic Variables and the Monetary Policy Stance



## MANAGEMENT OF OFFICIAL FOREIGN RESERVES



As at 31 March 2017, MAS held **S\$362.8 billion (US\$259.6 billion)** of **official foreign reserves (OFR)** on its balance sheet.

MAS invests the OFR conservatively in a well-diversified portfolio of cash, bonds and equities that seeks to achieve good long-term returns. The portfolio is diversified across advanced and emerging market economies, with investment-grade bonds in the advanced economies comprising the largest allocation in the portfolio. About three-quarters of the OFR are denominated in the G4 currencies i.e. USD, EUR, JPY and GBP. Within the G4 currencies, the USD forms the bulk. Diversification across markets, assets and currencies helps to enhance the resilience of MAS' portfolio across various market conditions.

In MAS' financial statements, the OFR are accounted for on a lower of cost and market valuation basis. A valuation provision is made against investment gain when the market value of an OFR asset falls below cost. An unrealised gain is not recognised when the market value of an OFR asset rises above cost.

MAS' financial results are reported in SGD. The reported value of the OFR hence depends on the exchange rate movements of the SGD vis-à-vis the foreign currencies in which the reserves are held. Such currency movements will result in translation effects in MAS' financial statements. These translation effects have no impact on the international purchasing power of the OFR, and hence do not affect MAS' ability to conduct exchange rate policy or provide a buffer in the event of a sharp deterioration in Singapore's balance of payments. Accordingly, it would not be meaningful to hedge against the SGD to mitigate currency translation effects.

### Investment Performance

Chart 2 shows the investment performance of the OFR for the last five financial years. The gains/losses of OFR<sup>3</sup>, as represented by the blue bars in Chart 2, comprise two components – investment gains/losses (dark yellow bars) and currency translation effects (white bars).

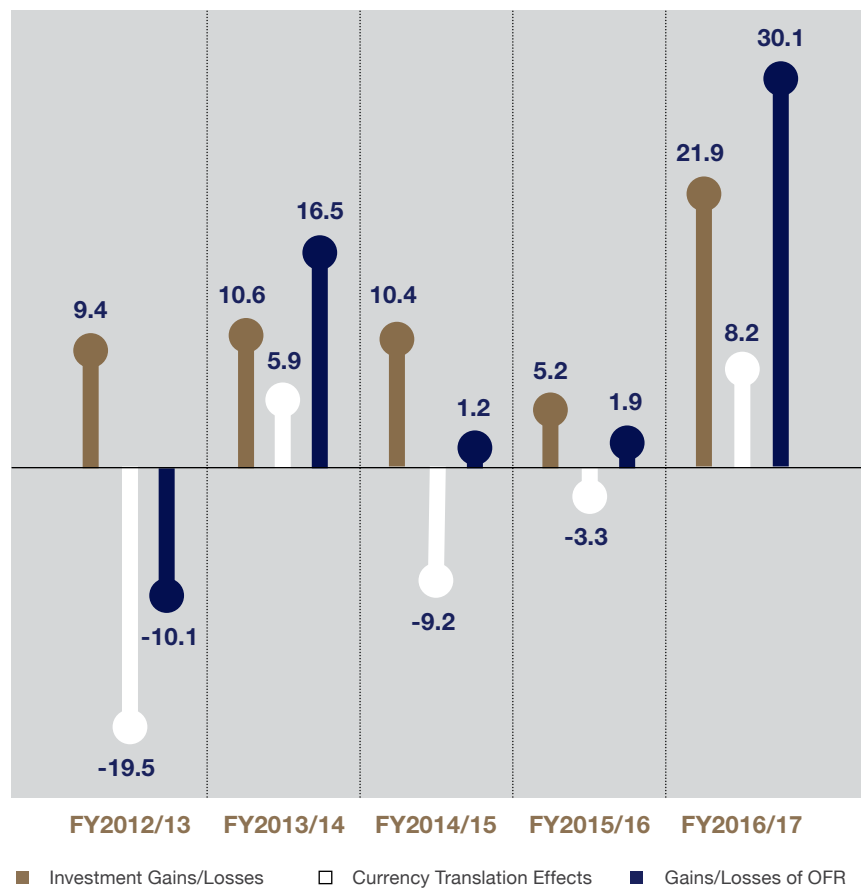
Holding the SGD exchange rate constant to strip out currency translation effects, the OFR recorded an investment gain of S\$21.9 billion in FY2016/17. As in previous years, the investment gain was mainly from interest income and realised capital gains from OFR investments. The increase in investment gains for FY2016/17 was due to higher interest and dividend income, higher realised capital gains and lower valuation provisions made as global markets rose over the period. Investment gains over the last five financial years averaged S\$11.5 billion per annum.

<sup>3</sup> Gross of investment, interest and other expenses.

## ANCHOR OF ECONOMIC AND FINANCIAL STABILITY

Positive currency translation effects<sup>4</sup> in FY2016/17 added to the gains of OFR. This was due mainly to the depreciation of the SGD against the USD and the JPY over the financial year. The exchange rate movements of the SGD against the G4 currencies for the last five financial years are shown in Table 1.

**Chart 2: Gains/Losses of the OFR (S\$ Billion)**



**Table 1: Exchange Rate Movements of SGD Against G4 Currencies (%)**

SGD <sup>5</sup> vs.	FY2012/13	FY2013/14	FY2014/15	FY2015/16	FY2016/17
USD	1.4	-1.4	-8.3	1.9	-3.6
EUR	5.3	-8.3	17.6	-4.0	2.7
JPY	16.0	7.9	6.7	-4.5	-4.5
GBP	6.6	-10.1	3.0	5.2	10.8

<sup>4</sup> The currency translation effect in MAS' financial statements depends on the exchange rate movements of the SGD against the currencies in which the OFR assets are invested in, which are primarily denominated in the G4 currencies. However, MAS' monetary policy is centered on the management of the SGD against a basket of currencies of Singapore's major trading partners.

<sup>5</sup> Positive figures represent an appreciation of the SGD, while negative figures represent a depreciation of the SGD against the foreign currency over the financial year.

# Robust, Trusted and Dynamic Financial Centre

“I have met diverse groups of people through my work at MAS, from start-up owners seeking a corporate licence, to CEOs presenting their companies’ strategic profiles for the year, and even an elderly gentleman seeking help to cash in a deposit slip from a now-defunct bank.”

**Chan Wei Sze**  
Assistant Director,  
Capital Markets Intermediaries Department



# ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE



In January 2017, the **Securities and Futures (Amendment) Bill 2016** was passed in Parliament.

## ROBUST FINANCIAL CENTRE

### Amendments to the Securities and Futures Act

The wide-ranging amendments to the Securities and Futures Act (SFA) were made along four key areas:



**Enhancing regulatory safeguards for investors**, by bringing certain non-conventional investment products within MAS' regulatory perimeter, and providing accredited investors the choice of benefitting from the full range of regulatory safeguards applicable to retail investors.



**Improving credibility and transparency of capital markets**, with a new regulatory framework for financial benchmarks and the introduction of short-selling disclosure requirements for listed securities.



**Strengthening the enforcement regime against market misconduct**, through enhancements to the civil penalty regime and other amendments that clarify how certain market misconduct offences will be prosecuted.



**Completing legislative reforms for over-the-counter (OTC) derivatives regulation**, by empowering MAS to introduce a mandatory platform trading regime and regulate OTC derivatives intermediaries and trading platforms.



Financial penalties of  
**S\$29.1  
million**

in aggregate were imposed on BSI Bank, Falcon Private Bank, DBS, UBS, Standard Chartered Bank, Coutts, UOB and Credit Suisse for severe breaches of AML regulations.

## Enforcement Actions

### 1MDB-Related Reviews

MAS took regulatory actions against eight financial institutions (FIs) for anti-money laundering (AML) control lapses related to 1MDB. After directing the closure of BSI Bank in June 2016, MAS withdrew its approval for Falcon Private Bank to operate as a merchant bank in Singapore in October 2016 due to serious failures in AML controls and improper conduct by senior management. Financial penalties of S\$29.1 million in aggregate were imposed on BSI Bank, Falcon Private Bank, DBS, UBS, Standard Chartered Bank, Coutts, UOB and Credit Suisse for severe breaches of AML regulations. Several bank staff were also referred to the Public Prosecutor to evaluate whether they have committed criminal offences.

MAS issued a 10-year prohibition order (PO) in March 2017 against Mr Tim Leissner, a former director of Goldman Sachs (Singapore) Pte, for making

false statements. In May 2017, MAS issued POs against three individuals who were convicted for various 1MDB-related offences. Lifetime bans were imposed on two individuals - Mr Jens Fred Sturzenegger, former branch manager of Falcon Private Bank Ltd, and Mr Yak Yew Chee, a former BSI Bank Limited employee. A 15-year PO was issued against another former BSI Bank Limited employee, Ms Seah Mei Ying (formerly known as Ms Yvonne Seah Yew Foong).

In May 2017, MAS also served notice of its intention to issue POs against three individuals in connection with the valuation of PetroSaudi Oil Services Limited. The three individuals are Mr Ang Wee Keng Kelvin, former representative of Maybank Kim Eng Securities Pte Ltd, Mr Kevin Scully, Chief Executive Officer of NRA Capital Pte Ltd (NRA), and Mr Lee Chee Waiy, former Head of Research of NRA.

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[For more information, please refer to our press releases:](#)

### **Significant Cases**

In 2016, criminal charges were brought in a number of significant cases, including the largest securities fraud case in Singapore's history. More details of these cases are set out below. MAS will continue to deepen our enforcement expertise to deal with the evolving nature of financial crime.

- Extensive investigations by MAS and the Commercial Affairs Department (CAD) into the penny stock crash in October 2013 led to the prosecution (in November 2016) of three individuals behind Singapore's largest market manipulation case. The three individuals had exploited over 180 trading accounts to manipulate the market for three securities counters.
- 
- In August 2016, following investigations by MAS, two former traders in a fund management company and an ex-remisier were charged with 333 insider trading charges in Singapore's first front-running case prosecuted under the insider trading provisions in the SFA. They had traded ahead of the fund management company, based on price-sensitive inside information on the company's intended trades on various counters.
  - In March 2017, an ex-remisier was sentenced to a total of 16 weeks' imprisonment in the first criminal prosecution arising from the MAS-CAD joint investigation arrangement. He had manipulated the stock prices of listed companies by spoofing orders for the stocks, in order to buy or sell contracts for differences in these companies' shares at prices he wanted.
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## ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE

### ***Civil Penalty Actions***

MAS also took civil penalty actions against errant entities and individuals for insider trading, false trading and unauthorised share trading, reflecting MAS' firm stance against deceptive actions and our resolve to stamp out such misconduct from our markets.

- In May 2016, MAS was paid a civil penalty of S\$316,000, as well as legal costs and disbursements, by a company and its sole director and shareholder, for insider trading in the shares of a listed company. The individual was also the Chief Financial Officer of the listed company.
- In February 2017, two individuals were found to have contravened the SFA following a trial in the State Courts. Each individual was ordered to pay MAS a civil penalty of S\$100,000, as well as legal costs and disbursements. Both individuals were found to have engaged in false trading in the shares of a listed company. One of them was also found to have engaged in unauthorised trading using the account of a third individual, who paid MAS a civil penalty of S\$50,000 in a separate out-of-court settlement in January 2013.
- In March 2017, MAS obtained a civil penalty of S\$125,000, as well as legal costs and disbursements, from a divorced couple for unauthorised trading, following a trial in the State Courts.

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[For more information on these cases, please refer to our press releases:](#)

These actions, together with the strengthening of our enforcement functions under a new Enforcement Department, send a strong signal of our commitment to uphold Singapore's reputation as a clean and trusted financial centre. We will continue to enhance our surveillance capabilities through the use of data analytics and other technology, so as to deter any criminal behavior and poor controls in the industry. Our aim is to ensure that any wrongdoing is swiftly detected, thoroughly investigated and firmly dealt with.

### ***Supervisory Actions***

MAS takes a serious view of the trading disruption, which occurred on the Singapore Exchange's (SGX) securities market on 14 July 2016. In March 2017, MAS directed SGX to implement remedial measures, including recommendations by the Securities Industry Working Group (IWG), to improve SGX's and industry participants' processes. The IWG, comprising brokerage firms, independent experts and SGX, recommended improvements in areas such as restoration of corrupt data, market recovery procedures and incident communication. As such improvements will involve changes to brokerage firms' systems or processes, SGX will contribute S\$1.5 million to co-fund brokerage firms' costs to strengthen overall market operational resilience.

## Banking

### *Enhancing Risk Management of Outsourcing Arrangements*

MAS issued new guidelines on outsourcing arrangements in July 2016. Besides promoting sound risk management practices for outsourcing arrangements, the revised guidelines set out MAS' expectations on the use of cloud computing services by FIs, and place greater emphasis on safeguarding customer information.

### *Enhancing the Resolution Regime*

In May 2017, MAS introduced in Parliament amendments to the MAS Act to strengthen our ability to resolve distressed FIs in an orderly manner.

These include powers to:



Require FIs to **address deficiencies in their recovery plans and remove impediments to resolvability**;



**Temporarily stay early termination or acceleration rights** to facilitate the implementation of resolution measures; and



**Allocate losses by writing down or converting to equity** unsecured subordinated creditor claims of a FI.

We will also be establishing:



**Resolution funding arrangements** to meet the costs of implementing resolution measures;



**A framework for MAS to recognise actions taken by foreign resolution authorities** on FIs in Singapore; and



**A framework to grant creditors a right to compensation**, where they do not receive under resolution at least what they would have received in a liquidation.

## Insurance

### *Review of Risk-Based Capital Framework for Insurers*

MAS took another significant step in its ongoing efforts to update its Risk-Based Capital (RBC) framework for insurers, by seeking feedback and performing a second quantitative impact study on its updated proposals in the second half of 2016. MAS is finalising the framework and will remain closely engaged with relevant stakeholders to ensure that the RBC framework remains relevant to the industry's needs and is in line with international standards as well as best practices, while enhancing protection for policyholders.



The revised RBC requirements will also make it more conducive for insurers to offer **long-term insurance products** to policyholders, and policyholders will benefit from **better product pricing and asset allocation decisions** by insurers.

## ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE

### **Review of Policy Owners' Protection Scheme**

MAS conducted a review of the Policy Owners' Protection Scheme (PPF) culminating in a public consultation in April 2017. The PPF Scheme provides compensation to policy owners for all life insurance policies and certain general insurance policies<sup>6</sup> in the event of any licensed direct life or general insurer defaults. To ensure that the scheme remains relevant to the evolving market, MAS has incorporated the feedback from the Singapore Deposit Insurance Corporation and PPF scheme members in the proposals.

MAS' proposals for the PPF include:



**Definition of a "personal" insurance policy as one that is owned by an individual.** This will allow claims on damage to properties owned and used by individuals to be protected under the scheme, even if these properties are sometimes used for commercial purposes. Examples of such properties include



**privately owned cars used for hire and reward**



**and home offices.**

This recognises the **growing trend of individuals using their personal properties for commercial purposes**, who nonetheless deserve protection under the scheme.



**Exclusion of certain high value property damage claims from protection under the scheme.**

The proposed caps, which will fully cover more than **99%** of the claims, will **help keep levies and insurance premiums affordable** for the scheme members and consumers respectively.

### **Promoting Enterprise Financing**

#### **Simplified Regulatory Framework for Venture Capital Managers**

In February 2017, MAS issued a public consultation on a simplified regulatory framework for managers of venture capital (VC) funds. The proposed framework seeks to strengthen Singapore's VC ecosystem and enhance start-ups' access to funding.

<sup>6</sup> "Certain general insurance policies" refer to accident and health policies, insurance that are required by law, and Singapore policies of specified personal lines, such as personal motor and personal property (structure and contents) insurance.

Managers of VC funds that meet certain requirements:



Can enjoy a **simplified admission process**;



**Will not be required to comply** with capital, experience and ongoing business conduct requirements; and



Will be subject to all other regulatory safeguards for asset managers to maintain the **integrity and reputation of the VC industry**.

#### **Enhancing Finance Companies' Roles as SME Lenders**

In February 2017, MAS announced changes to the prudential requirements of finance companies to strengthen their resilience and enhance their ability to provide financing to small and medium-sized enterprises (SMEs). In addition, MAS would now allow the foreign takeover of finance companies if such strategic partnerships result in innovative business models that strengthen SME financing.

#### **Faster Authorisation for Capital Market Intermediaries and Fund Managers**

MAS has made enhancements to the authorisation process for capital market intermediaries and fund managers during the year. In 2015 and 2016, MAS received a total of 99 and 119 applications respectively for licences and registrations from capital market intermediaries and fund managers.



**Average processing time** for applications approved in 2015 and 2016:

**5.8 months** (1H 2015) → **3.2 months** (2H 2016)

Since January 2017, MAS has also formed dedicated authorisation teams as part of our efforts to continually improve our processes for reviewing applications for licences and registrations.

## ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE

Here's what participants in the annual industry-wide stress test exercise had to say:

**“The annual Industry-Wide Stress Test is a useful exercise for both banks and MAS to understand the systemic risks present in financial markets.”**

– Mr Chan Kok Seong, Managing Director and Chief Risk Officer, UOB Group

**“The annual Industry-Wide Stress Test exercise helps us to better understand the risk profiles of our businesses and their attendant exposures. This enables us to refine our business and portfolio positions, and in turn bolsters our ability to restore our financial strength in a timely manner during a crisis.”**

– Mr Darren Tan, Chief Financial Officer of OCBC Bank

### Industry-Wide Stress Test

MAS conducts an annual industry-wide stress test exercise, as part of macroprudential surveillance and risk management for the financial sector. In the 2016 exercise, the stress scenario assumed a protracted slowdown of China's economy and recession among major advanced economies, with negative spillovers to emerging Asia. Banks also had to assume sovereign rating downgrades, Asian bank defaults, as well as counterparty failures and downgrades in the oil and gas sector. The stress test results showed that Singapore's financial system remained resilient under severe shocks.

### Strengthening Cybersecurity

MAS and key FIs participated in cybersecurity exercises at both the sectoral and national levels. These exercises tested MAS' and FIs' responses and operational readiness under various plausible cyber-attack scenarios. They will help strengthen the cyber resilience of our financial sector.



*Participants in discussion on the simulated cyber-attacks and their response strategies.*

### Over-The-Counter (OTC) Derivatives Reforms

MAS remains fully committed to meeting the G20 and Financial Stability Board's (FSB) reform objectives and has continued to make good progress in implementing the reforms. In December 2016, MAS published guidelines on margin requirements for non-centrally cleared OTC derivatives.

MAS has also been focused on ensuring that the necessary infrastructure is in place to support the smooth functioning of cross-border trades in the global OTC derivatives markets.

- In December 2016, the SGX Derivatives Trading Limited, SGX Securities Trading Limited and ICE Futures Singapore were recognised by the European Commission as third country markets equivalent to those markets regulated under the European Union, allowing non-financial European entities to trade derivatives on these markets without having to count them towards their thresholds for OTC derivatives exposures.
- In April 2017, MAS consulted on the proposed regulations for market operators, aimed at ensuring our framework continues to be in line with international practices and provides our market participants with access to trading infrastructure internationally.

### Formation of Corporate Governance Council

In February 2017, MAS formed the Corporate Governance Council to review the Code of Corporate Governance (CG Code). The Council comprises representatives from various stakeholder groups to provide a broad and diverse perspective on corporate governance issues. As part of the review, the Council will also consider how the “comply-or-explain” regime under the CG Code can be made more effective, and propose mechanisms to monitor the progress made by listed companies in strengthening their corporate governance practices.

## TRUSTED FINANCIAL CENTRE

### Preventing Money Laundering and Terrorism Financing

#### *Focus of AML/CFT Thematic Inspections*

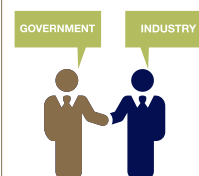
The new Anti-Money Laundering (AML) Department has sharpened MAS’ supervisory focus on FIs which pose higher money laundering and terrorism financing (ML/TF) risks. The onsite inspections that the department conducts probe deeply into FIs’ governance, risk culture, systems and controls to effect positive change and strengthen the resilience of the financial sector to ML/TF risks.

#### *FATF’s Assessment of Singapore’s AML/CFT Regime*

In September 2016, the Financial Action Task Force (FATF) published its assessment report of Singapore’s AML/CFT regime. The report recognised that Singapore has a strong legal and regulatory AML/CFT framework and robust supervision of our financial sector. In addition to validating our strengths, the assessment was useful in identifying areas for improvement, which MAS and other agencies have been working on. Legislative changes were introduced recently to enhance the transparency of companies and trusts, by requiring companies and trustees to hold accurate information on beneficial owners.

#### *AML/CFT Industry Partnership*

MAS and CAD are collaborating with the industry to strengthen our collective understanding of ML/TF risks and typologies through the creation of an industry partnership. The AML/CFT Industry Partnership (ACIP), established in April 2017, brings together stakeholders from industry and government and provides a dedicated platform to discuss key transnational illicit finance risks confronting Singapore’s financial and non-financial sectors. The ACIP will develop products for the broader industry to aid in strengthening the understanding and mitigation of these risks.



MAS and CAD jointly established the **ACIP** to bring the industry and government together to **combat illicit finance**.

## ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE



As of 5 April 2017,  
Singapore has signed

**21** bilateral  
AEOI agreements.

### Implementation of Common Reporting Standard

Singapore has enacted domestic legislation to effect the automatic exchange of financial account information (AEOI) based on the internationally agreed Common Reporting Standard (CRS). With effect from 1 January 2017, Singapore-based FIs (SGFIs) are required to implement processes and systems to collect and retain financial account information for all account holders. From 2018 onwards, SGFIs will need to transmit to the Inland Revenue Authority of Singapore (IRAS) such financial account information for tax residents of Singapore's AEOI partners. IRAS will subsequently exchange the reported information with Singapore's AEOI partners.

Our AEOI arrangements are subject to:

- Partners having a robust framework of law to maintain the confidentiality of information exchanged and confine its use for tax purposes;
- AEOI being implemented among all key financial centres to create a level playing field; and
- Reciprocity in terms of the scope of information exchanged between jurisdictions.

### Establishment of New MASNET Platform

A new MASNET platform was launched in October 2016 with enhanced security features and a new suite of services to improve FIs' usage experience and business efficiency.



**Common login** to  
all MASNET services



**Streamlined data  
exchange** between  
participants



**One-stop portal** for  
all circulars and  
announcements



**Improved account  
management  
processes**

## DYNAMIC FINANCIAL CENTRE

### Establishment of Data Analytics Group Within MAS

A new Data Analytics Group (DAG) was formed within MAS in March 2017, as part of MAS' efforts to build strong capabilities in data analytics, sharpen our risk surveillance, enhance our supervision of FIs, and improve efficiency in regulatory compliance for FIs.

Dr David Roi Hardoon, appointed as MAS' Chief Data Officer, will spearhead these efforts.



#### Data Governance

- Implementing policies, sharing best practices and institutionalising processes to facilitate the collection and use of data



#### Tools

- Utilising a suite of data analytics tools, such as machine learning and network analysis algorithms, to gather valuable insights from the financial industry



#### Infrastructure

- Exploring the use of cloud technology and reusable tools, such as code libraries, to facilitate analysis



#### Skillsets

- Building up of data analytics competences within MAS and the financial industry

## ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE

### Strengthening Markets and Deepening Financial Ecosystem

#### *Capital Markets*

MAS introduced the Asian and green bond grants in 2017 to attract new Asian and green bonds issuers to Singapore's bond market, and strengthen Singapore's value proposition as Asia's leading bond centre. The Asian bond grant co-funds issuance-related expenses for first-time Asian issuers of up to S\$400,000. Green bond issuers can tap on the green bond grant to offset up to S\$100,000 of costs relating to the external review required of a green bond.

#### *Foreign Exchange and Derivatives*

Singapore remains the largest foreign exchange (FX) centre in Asia-Pacific and third largest globally after London and New York, according to the 2016 Triennial Central Bank Survey of the global FX and OTC derivatives markets by the Bank for International Settlements.

Listed derivatives trading on SGX and ICE Futures Singapore were supported by FX and commodities futures trading. Singapore continues to be the leading centre for cleared iron ore derivatives, accounting for over 90% of the international market.

#### *Asset Management*

MAS enlarged its external fund manager programme to encourage fund managers to deepen their presence in Singapore. MAS also launched a public consultation on a new corporate and regulatory framework – Singapore Variable Capital Company (S-VACC) – for the incorporation and domiciliation of investment funds in Singapore. The S-VACC aims to offer a flexible and efficient platform for fund managers to co-locate fund domiciliation with their substantive fund management activities in Singapore, and further deepen the asset servicing ecosystem.

#### *Insurance*

MAS partnered the Nanyang Technological University (NTU) to launch the Natural Catastrophe Data Analytics Exchange and the Cyber Risk Management Project in 2016 to develop high quality definitions, databases and models required to enhance the provision of insurance against natural catastrophe and cyber risks in Singapore and Asia.

## Singapore's Growing Financial Markets



### Capital markets

- Singapore's outstanding corporate debt grew by **3.3%** in 2016. Total debt issuance reached **S\$186 billion** in 2016, an increase of **7.3%** from 2015.
- SGX had **17 new listings** in 2016, raising S\$2.4 billion, which is four times of the S\$0.6 billion raised in 2015. The listings in 2016 also added **S\$6.0 billion market capitalisation** to SGX.



### Foreign exchange and derivatives

- **Average daily trading in Singapore's FX market reached US\$517 billion in April 2016**, up 35% from US\$383 billion in April 2013.
- **Singapore's share of global FX turnover rose to 7.9%** from 5.7%.
- **Trading of FX futures grew 49.7%** to reach 6.3 million contracts in 2016.
- **Commodity futures trading more than doubled to reach 15.7 million contracts.**



### Asset management

- **Singapore's asset management industry grew by 7% in 2016** with managed assets amounting to **S\$2.7 trillion**.
- This was driven by **strong growth in the alternatives sector** including private equity, venture capital, hedge fund, real estate and real estate investment trust, which expanded by **17%**.
- **Around 78% of total assets were sourced from outside Singapore**, reflecting our key role in serving regional and international investors.

## ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE

### A World-Class FinTech Hub



Ravi Menon, Managing Director, MAS, kicked off the FinTech Conference with an update on Singapore's progress as a global FinTech Hub and the initiatives MAS had implemented to bring about Singapore's transformation into a Smart Financial Centre.



#### The Singapore FinTech Festival 2016

attracted more than

# 13,000

participants from

# 60

countries.

Riding on the **success** of the event, a **second run of the Singapore FinTech Festival** will be organised over the week of



—



#### Singapore FinTech Festival 2016

MAS organised the inaugural Singapore FinTech Festival in partnership with The Association of Banks in Singapore (ABS) in November 2016. The Festival featured conferences on FinTech, Technology Risk, and RegTech; a Global FinTech Hackcelerator; a FinTech Awards; and an innovation lab crawl. The Festival not only received wide and positive coverage in mainstream and social media, but also ignited keen global interest in Singapore's growing FinTech hub.



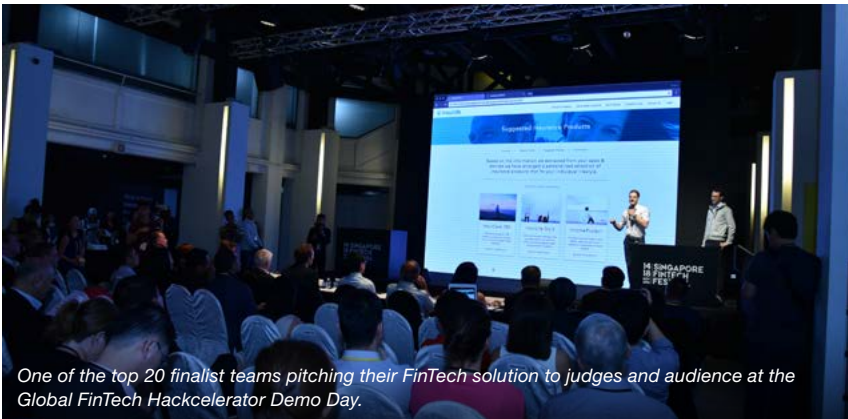
Mr Ong Ye Kung (fourth from left), Minister for Education (Higher Education & Skills) and MAS Board Member, and Chief FinTech Officer Sopnendu Mohanty (second from right) in discussions with polytechnic students at the Singapore FinTech Festival.



The Fintech Festival featured the latest applications of technology in financial services.



*Mr Tharman Shanmugaratnam, Deputy Prime Minister and MAS Chairman, with winners of the MAS FinTech Awards.*



*One of the top 20 finalist teams pitching their FinTech solution to judges and audience at the Global FinTech Hackcelerator Demo Day.*

### **Opening of MAS Innovation Lab**

In August 2016, the MAS Innovation Lab, named “Looking Glass @ MAS”, was launched. Located in the MAS building, the lab provides a platform for the FinTech community to connect, collaborate, and co-create with one another. It allows MAS to experiment FinTech solutions with FIs, start-ups, and technology vendors; facilitate consultations for start-ups by industry experts on areas of interest such as legal, regulation, and business-related matters; and provide a venue for relevant training sessions and networking activities for the FinTech community.



*Opening of the Looking Glass @ MAS.*

# ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE

### Establishing a Network of Collaboration

To enhance Singapore’s attractiveness as a regional hub for foreign startups, MAS signed nine cooperation agreements (CAs) with the following regulators and authorities on FinTech in FY2016/2017.



UK’s Financial  
Conduct Authority



Australian Securities  
and Investment  
Commission



Switzerland’s Financial  
Market Supervisory  
Authority



Korea’s Financial  
Services Commission



Government of  
Andhra Pradesh



France’s Autorité de  
Contrôle Prudentiel et  
de Résolution



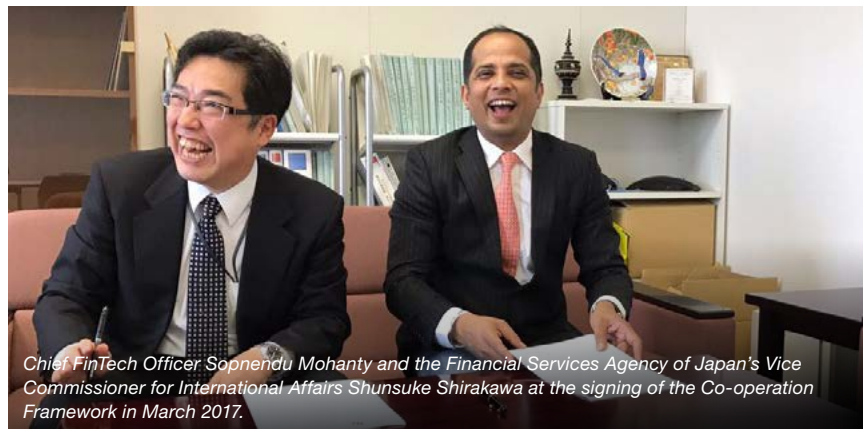
France’s Autorité des  
Marchés Financiers



Abu Dhabi Global  
Market



Japan’s Financial  
Services Agency



Chief FinTech Officer Sopnendu Mohanty and the Financial Services Agency of Japan’s Vice Commissioner for International Affairs Shunsuke Shirakawa at the signing of the Co-operation Framework in March 2017.

MAS has received sandbox applications for innovations covering:



FX Risk  
Management



Remittance



Payments



Insurance  
Brokering



Retail  
Investment



Trading

### FinTech Regulatory Sandbox

In June 2016, MAS launched a regulatory sandbox for FIs as well as FinTech players to test their innovations. The sandbox allows experiments to take place, even where it is not possible at the outset to anticipate every risk or meet every regulatory requirement. Further, the sandbox provides an environment where if an experiment fails, it fails safely and cheaply within controlled boundaries, without widespread adverse consequences.

### Finance-As-A-Service API Playbook

On 16 November 2016, the API Playbook co-created by ABS and MAS was launched at the FinTech Festival to guide industry stakeholders in their implementation of Application Programming Interfaces (APIs). To support efficient data sharing and interoperability, the Playbook recommends

standards for data exchange, information security and high-level key technical requirements for each of the APIs. The Playbook also sets expectations on API governance structure and risk management practices that should underpin an API-based financial ecosystem.

#### ***Distributed Ledger Interbank Payments Proof-of-Concept***

MAS launched a proof-of-concept project with a consortium of FIs to use distributed ledger technology and smart contracts to make financial transactions and processes more transparent, resilient and at lower cost. Lessons learnt from the project will guide MAS and the industry in the development of better solutions for cross border payments, securities trading, and settlement of assets using distributed ledger technology. A trial on interbank payments was completed in December 2016.

#### ***Proposed Payments Framework***

In August 2016, MAS consulted on a proposed activity-based framework for all payments services and the establishment of a payments council to enhance collaboration between users and payment providers. The proposed framework will provide for the licensing, regulation and supervision of all payments service providers. These will include stored value facility holders, remittance companies, and virtual currency intermediaries.

#### ***Developing a Know-Your-Customer Utility***

MAS is working closely with local and foreign banks, and other Singapore government agencies to pilot an industry Know-Your-Customer (KYC) utility for financial services, leveraging on trusted, government-verified data sources, such as MyInfo. KYC is a critical process for the financial services industry that has become increasingly resource-intensive. A KYC utility could potentially offer:

- Efficiencies of scale and improved productivity as a centralised hub for KYC processes;
- Better customer experience by reducing the need for customers to provide similar information to multiple FIs during on-boarding;
- Broader adoption of quality monitoring and screening capabilities across the industry;
- Harmonising and enhancing KYC procedures across participating FIs; and
- Freeing up FI resources to focus on other more complex aspects of the Customer Due Diligence process.



The Playbook features a list of over

# 400 APIs

that the financial services industry can consider publishing, selected based on their **potential to transform the financial ecosystem.**

## ROBUST, TRUSTED AND DYNAMIC FINANCIAL CENTRE



In 2016, the **financial sector** created a net total of

**2,800** jobs.

### Strengthening the Singapore Core in Financial Services

In 2016, the financial sector created a net total of 2,800 jobs in growth areas such as technology, compliance, risk management, insurance, and asset and wealth management.

#### *SkillsFuture and Talent Development Initiatives*



#### **MAS' Asian Finance Leaders Scheme (AFLS)**

provides co-funding for leadership programmes, including the Singapore Management University-Temasek Management Services' Asian Financial Leaders Programme (AFLP) and the National University of Singapore's Asia Leaders in Financial Institutions (AFLI). These programmes aim to equip Singaporeans aspiring to take on regional or global leadership roles in FIs. The pioneer batches in 2016 comprised senior participants from more than 20 FIs.



As part of a comprehensive suite of competency raising initiatives, the inaugural **SkillsFuture Study Awards** for the financial sector were launched in 2016, with **73 financial sector professionals** receiving the awards. For 2017, we will be granting the awards to about **170 professionals**.



To build a pipeline of job-ready graduates, MAS is working closely with the institutes of higher learning to develop curricula in finance-related growth areas. For example, NTU has launched a new Risk Management and Insurance specialisation undergraduate programme in August 2016. Ngee Ann Polytechnic will launch the first **SkillsFuture Earn and Learn Programme (ELP)** in consumer banking in the second half of 2017.

### Facilitating Redeployment

With the ongoing restructuring in the financial sector, MAS has stepped up efforts to proactively manage retrenchments and facilitate redeployment. The Financial Industry Career Advisory Centre (FiCAC) was launched in April 2016 to provide guidance to those keen to join the financial industry and those looking to move to new jobs within the industry. FiCAC has reached out to over 1,200 professionals in the past one year, through industry talks covering job opportunities and training support, career coaching and career fairs. MAS is working with the National Trades Union Congress, Workforce Singapore and Employment and Employability Institute to strengthen FiCAC's catchment and outreach, advisory service and job-matching capability.



In 2016, the **Financial Sector Tripartite Committee** extended its coverage beyond the banking community, to include the **asset management and insurance sectors**. The Committee will continue to focus on initiatives to foster a financial workforce that can **meet the changing needs of the financial industry**.



In March 2017, FiCAC organised a **Financial Services Week**, which featured industry expert series talks, industry mentoring sessions, a career preparatory workshop and career fair.



The launch of company-initiated **Professional Conversion Programme** in March 2017 provided employers the **flexibility to customise the training roadmap for new hires**, and **redeploy their existing staff** who are at risk of job redundancy into jobs in growth areas.



FiCAC has reached out to over

**1,200**

professionals since its launch in April 2016.

# Serving the Public, Engaging Stakeholders

“Over the years, MAS, through MoneySENSE, has taken steps to better reach out to the public through more innovative and compelling communications. The “Beware! Investment Scams” campaign reflects our ever-evolving approach to financial education, and I hope this empowers all Singaporeans to make informed financial decisions in their everyday lives.”

**Wayne Tan,**  
Assistant Director,  
Corporate Finance & Consumer Department



# SERVING THE PUBLIC, ENGAGING STAKEHOLDERS

## SERVING THE PUBLIC

### Managing Dollars and Cents

As at 31 March 2017, total currency in circulation was S\$44.0 billion (see Chart 3), an increase of 11.9% from a year ago. S\$56.6 billion of notes and coins were issued to banks and S\$51.9 billion were returned for the financial year.

Chart 3: Total Currency in Circulation (S\$ Billion)

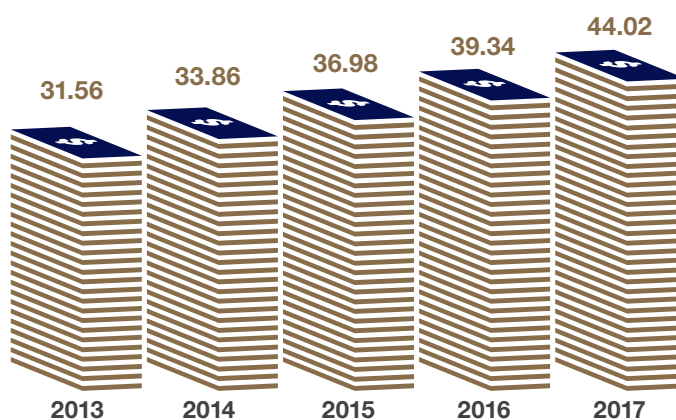


Table 2: Total Currency in Circulation (S\$ Billion)

	2013	2014	2015	2016	2017
Notes	30.27	32.52	35.59	37.89	42.52
Coins	1.29	1.34	1.39	1.45	1.50
<b>Total</b>	<b>31.56</b>	<b>33.86</b>	<b>36.98</b>	<b>39.34</b>	<b>44.02</b>



Singapore Botanic Gardens UNESCO  
World Heritage Site Commemorative Coin



2017 Year of Rooster Silver Proof Colour Coin

MAS issued the Singapore Botanic Gardens UNESCO World Heritage Site Commemorative Coin in November 2016 to celebrate the inscription of the Singapore Botanic Gardens into the list of UNESCO World Heritage Sites. MAS also issued the Year of the Rooster Coins, which were the inaugural issue of the Singapore Fourth Chinese Almanac Coin Series, in January 2017.

To mark the 50th anniversary of the Singapore-Brunei Currency Interchangeability Agreement, MAS and the Autoriti Monetari Brunei Darussalam will each issue a commemorative \$50 polymer note in July 2017.



### Singapore Savings Bonds

MAS launched the Singapore Savings Bonds (SSB) programme in 2015 to expand retail investors' access to low-cost investment products. With the introduction of additional online application channels in February 2017, investors are now able to apply through both ATMs and the internet banking channels of the three local banks. Public response to the SSB has been encouraging and MAS will continue to raise awareness of SSB as a safe and flexible way to save for the long term.



As of 31 March 2017, the **Singapore Savings Bonds** programme has exceeded

**\$S\$1.1 billion**

in outstanding amount  
with more than

**40,000** investors.

## SERVING THE PUBLIC, ENGAGING STAKEHOLDERS

### MoneySENSE

#### ***Beware! Investment Scams***

MoneySENSE and the Securities Investors Association (Singapore) [SIAS] conducted the “Beware! Investment Scams” campaign between April and July 2017.

The public education campaign, comprising an experiential learning phase and an education phase, was designed to let consumers experience first-hand how a typical investment scam tries to attract potential investors. When consumers expressed interest to find out more, it was revealed that they could have fallen for an investment scam.

The usual red flags of such investment scams were highlighted to consumers on the “investment website”. Consumers were alerted to how to better spot these, and understand how to protect themselves when investing. Consumers were also directed to the “Beware! Investment Scams” education website.

The “Beware! Investment Scams” campaign had **three simple calls-to-action**:



The campaign was conducted through print and digital media. Online outreach was via a website and an educational video featuring investment-scam smart “Aunty Soh”, played by popular artiste Hossan Leong.

*Advertisements for “SantaQuay Resorts” and “Brilliant Ingots Investments”, two investment schemes designed for the Beware! Investment Scams campaign. [Click on the advertisements above to find out more.](#)*

*Aunty Soh, played by Hossan Leong, reiterating our campaign’s three-step call-to-action. [Click on the photo to watch the video.](#)*

SIAS and MoneySENSE also collaborated with the Singapore Police Force and National Crime Prevention Council on an episode of info-drama series Crimewatch, which featured investment scams.



Educational ad placed in print media.

*Crimewatch's re-enactment of the UK Primeland investment scam from some years back. Click on the photo to watch the video.*

**Institute of Financial Literacy**

Since the launch of the MoneySENSE-Singapore Polytechnic Institute for Financial Literacy (IFL) in 2012, the IFL has conducted over 3,400 talks and workshops.

Topics covered at IFL's workshops included:



**Basic money management**



**Personal investing**



**Buying a home**



**Planning for retirement**

**“Good content structure. Trainers know their content well. Enjoyed the IFL workshop!”**

– Mr Andrew Neo, Course Participant

In 2016, the IFL worked with the Next Age Institute (a collaboration between the National University of Singapore [NUS] and Washington University in St. Louis) to develop Singapore’s curriculum on Financial Capability and Asset Building (FCAB). The Singapore FCAB will equip social workers in their work to assist low income vulnerable families in managing household finances and accessing appropriate services. The Singapore FCAB will also be used for social work education at NUS.

Key statistics of the IFL since its launch in May 2012:



IFL's total outreach:  
**110,000**



**3,400**  
workshops conducted



**700**  
social workers trained

## SERVING THE PUBLIC, ENGAGING STAKEHOLDERS



UOB Deputy Chairman and CEO Mr Wee Ee Cheong speaking to students at the My Money @ Campus seminar.

**“ My Money @ Campus has provided me a holistic understanding of the various financial instruments that I can leverage to manage my future income and finances. With deeper knowledge of exchange-traded funds, bonds and equities, I can now make more informed decisions on how to allocate my savings!”**

– Mr Loh Yuan Yi, final year student,  
Nanyang Business School

### **My Money Seminars**

A full house crowd of 600 people attended the My Money Seminar held in October 2016. Speakers from ABS, IFL and SIAS spoke on topics relating to the theme – Investing in Uncertain Times. A speaker from the Office of the Public Guardian spoke on how a Lasting Power of Attorney could help with managing personal welfare and financial matters in the event of mental incapacity.

A campus edition in February 2017 at NTU featured Mr Wee Ee Cheong, Deputy Chairman and CEO, United Overseas Bank, who shared his personal views with the students on how they can build their financial knowledge for the future.



Full house turnout at the My Money Seminar.

### **Launch of Datasets as APIs**

MAS published exchange rates, domestic interest rates and all 38 sets of data from MAS' Monthly Statistical Bulletin as APIs, providing FIs and application service providers opportunities to serve their customers better. MAS intends to progressively publish more datasets as APIs.

### Examples of how APIs can help:



**FIs** that use MAS' data for monitoring and research to facilitate decision making can use these APIs to **minimise costly manual data entry**.



**Application service providers** can create applications to extract exchange rates to **help companies compute and file tax returns**.



**Researchers** can automate the extraction of MAS' data **for analysis more easily and quickly**.

## PROTECTING CONSUMERS

### Review of Digital Offering of Life Insurance Products and Advisory Services

In November 2016, MAS announced that all life insurance products can be sold online without advice, subject to safeguards. MAS subsequently issued guidelines in March 2017 setting out measures financial advisers and insurers should put in place to safeguard consumer interests.

#### These include:



Providing clear disclosures to consumers on key policy information and how consumers can make claims and lodge complaints against financial advisers or insurers; and



Making available tools and calculators so that consumers can determine if their chosen policies are affordable and suitable for their needs.

In June 2017, MAS consulted on proposals to facilitate the provision of digital advisory services.

MAS is proposing to allow:

- digital advisers that operate as fund managers to offer their services to retail investors even if they do not meet the track record requirement;
- financial advisers to assist their clients to execute their investment transactions and re-balance their investment portfolios in collective investment schemes, without the need for additional licensing under the SFA; and
- digital advisers to seek exemption from the regulatory requirement to collect the full suite of information on the financial circumstances of a client, such as income level and financial commitments, if they can satisfactorily mitigate the risks of providing inadequate advice based on limited client information.

## SERVING THE PUBLIC, ENGAGING STAKEHOLDERS

The consultation paper also sets out the conditions that digital advisers must meet to qualify for such flexibility, and MAS' expectations on the management oversight and governance of algorithms.

### **Implementation of Credit Bureau Act**

In November 2016, Parliament passed the Credit Bureau Act, which empowers MAS to license and regulate credit bureaus that use and disclose bank customer data. The regulatory framework imposes obligations on licensed credit bureaus and their approved members to safeguard the confidentiality, security and integrity of bank customer data. The framework also allows consumers to obtain a free copy of their credit reports within 30 days of a credit approval or rejection.

## **PARTNERING ACADEMIA**

### **MAS Term Professorship in Economics and Finance**

Since 2009, MAS has sponsored a Term Professorship in Economics and Finance at the National University of Singapore (NUS), where top scholars from prestigious universities are appointed to teach and conduct research. It aims to strengthen Singapore's financial and economic research infrastructure and contribute to a vibrant research community and culture at our local universities. Term Professors also meet with MAS' senior management and conduct discussions with MAS staff.

In 2016, Professors Steven Davis (Booth School of Business, University of Chicago) and Alan Krueger (Princeton University) were appointed Term Professors. Apart from engaging faculty members and students at NUS, Professor Davis discussed labour market issues and productivity trends with senior management and staff at MAS. He also delivered a public lecture titled "Measuring Economic Policy Uncertainty", at which he presented a novel index to quantify policy-related economic uncertainty. Professor Krueger participated in a discussion on "Growth in the Face of Headwinds: What to Do?" at the Asian Bureau of Finance and Economic Research (ABFER) Industry Panel and Roundtable held in May 2016.

Other scholars who visited MAS under the Eminent Visitor Programme included Professor Stephen Cecchetti (Brandeis University Business School), and Professor Lawrence Christiano (Northwestern University), who advised MAS on econometric model development.

In addition to Professors Davis and Christiano, MAS also invited other academics to contribute articles to its *Macroeconomic Review*. In the April 2016 issue, Professors Bernard Yeung (NUS Business School) and Randall Morck (University of Alberta Business School) wrote about "Corporate Governance and the Finance Sector: An Asian Perspective". In the October 2016 issue, Professor Wong Poh Kam (NUS Business School) contributed an article on "Economic Growth Through Innovation and Entrepreneurship", while Associate Professor Davin Chor from NUS collaborated with MAS staff to document the evolving pattern of production and trade networks in Asia.

**Asian Monetary Policy Forum**

The Asian Monetary Policy Forum (AMPF) convened for a third year in Singapore in May 2016, in conjunction with the annual conference of the ABFER. It was jointly organised by the University of Chicago Booth School of Business, NUS Business School and MAS.

The conference line-up included prominent speakers such as Dr. Zhu Min (then Deputy Managing Director of the IMF), Professor Kenneth Rogoff (Harvard University), and Professor Olivier Blanchard (C. Fred Bergsten Senior Fellow at the Peterson Institute for International Economics and former Chief Economist of the IMF). Professor Blanchard delivered the commissioned paper on “Currency Wars, Coordination and Capital Controls”, which explored the interaction between macroeconomic policies in advanced and emerging economies, and the scope for international policy coordination. A highlight of the forum was the lunchtime dialogue with Mr Tharman Shanmugaratnam, Deputy Prime Minister, Coordinating Minister for Economic and Social Policies and Chairman of MAS, who spoke about the importance of sound social policies in building a cohesive society, and the economic challenges facing Singapore. The forum ended with a discussion by a high-level panel, which included MAS Managing Director Ravi Menon, on the economic challenges and policy issues confronting Asia.

# Valued Partner on the International Front

“From Cebu to Cairo, our work does not just revolve around travelling for meetings but also having deep discussions with colleagues across MAS, to shape our contributions over a gamut of international monetary and financial markets issues. On a personal note, I’m two countries away before I can proudly claim that I have travelled to all ASEAN countries!”

**Naeem Aljunied,**  
Assistant Director,  
International Department



# VALUED PARTNER ON THE INTERNATIONAL FRONT

## INTERNATIONAL AND REGIONAL FORUMS

### International Forums

MAS management and staff are active in the various international organisations and standard setting bodies, such as the International Monetary Fund (IMF), Financial Stability Board (FSB), Bank for International Settlements (BIS), Basel Committee on Banking Supervision (BCBS), International Association of Insurance Supervisors (IAIS), Committee on Payments and Market Infrastructures (CPMI), International Organisation of Securities Commissions (IOSCO), Financial Action Task Force (FATF), and OECD International Network for Financial Education.

### *MAS Chairmanships on International Forums*



- Managing Director Ravi Menon completed his second term as Chair of the FSB Standing Committee on Standards Implementation in March 2017.
- In November 2016, Deputy Managing Director Jacqueline Loh was appointed Chair of the Markets Committee of the BIS.
- MAS chairs the IOSCO Asia-Pacific Regional Committee Working Group on Cross-Border Issues.
- MAS co-chairs the Colleges Working Group, a subgroup of the Supervision and Implementation Group of the BCBS. The Colleges Working Group develops guidance on good practices to enhance the effectiveness of supervisory colleges.
- MAS co-chaired the CPMI-IOSCO Working Group on Cyber Resilience, which developed the first international guidance on cyber resilience for financial market infrastructures, published in June 2016.

### Regional Platforms

Regionally, MAS also actively participates in major groupings to strengthen cooperation and integration. These include committees under the Association of Southeast Asian Nations (ASEAN), ASEAN+3, Executives' Meeting of East Asia-Pacific Central Banks (EMEAP), and South East Asian Central Banks (SEACEN).

### **MAS Chairmanships on Regional Forums**

At EMEAP, MAS is the Deputy Co-Chair of the Working Group for Payment and Settlement Systems, and leads the Interest Group on Recovery and Resolution under the Working Group on Banking Supervision.

MAS co-chairs the ASEAN Working Committee on Financial Services Liberalisation (WC-FSL). The WC-FSL oversees ASEAN's financial services liberalisation, including the negotiation of ASEAN and ASEAN+ Free Trade Agreements (FTAs).

MAS also co-chairs the ASEAN Insurance Forum (AIFo). The AIFo brings together the WC-FSL and the ASEAN Insurance Regulators' Meeting to facilitate the integration of ASEAN's insurance sector.

### **International Assessments and Peer Reviews**

MAS received a 'Compliant' rating under the Basel Committee's Regulatory Consistency Assessment Programme (RCAP) on Singapore's liquidity coverage ratio regulations in November 2016. The rating confirmed that Singapore meets all minimum provisions of the Basel liquidity coverage ratio standards.

### **Strengthening Global Financial Safety Net**

In July 2016, Parliament approved amendments to the Bretton Woods Agreements Act to allow MAS to enter into arrangements with the IMF to give grants or other financial assistance on behalf of the Government of Singapore.

The ASEAN+3 Macroeconomic Research Office (AMRO), headquartered in Singapore, was formally accorded the legal status of an international organisation on 9 February 2016. AMRO provides the macroeconomic surveillance of the region to support the effective decision-making for the Chiang Mai Initiative Multilateralisation (CMIM)<sup>7</sup>. As host country, Singapore is fully committed to supporting AMRO and contributing to regional financial stability.

## **DIALOGUE AND COOPERATION**

### **Engagements with Our Counterparts**

MAS values the regular exchange of views with our counterparts, and welcomes opportunities to strengthen cooperation.

MAS has established a network of collaboration with like-minded jurisdictions. Ten MOUs and FinTech cooperation agreements (CAs) were signed with fellow regulators and authorities since March 2016.

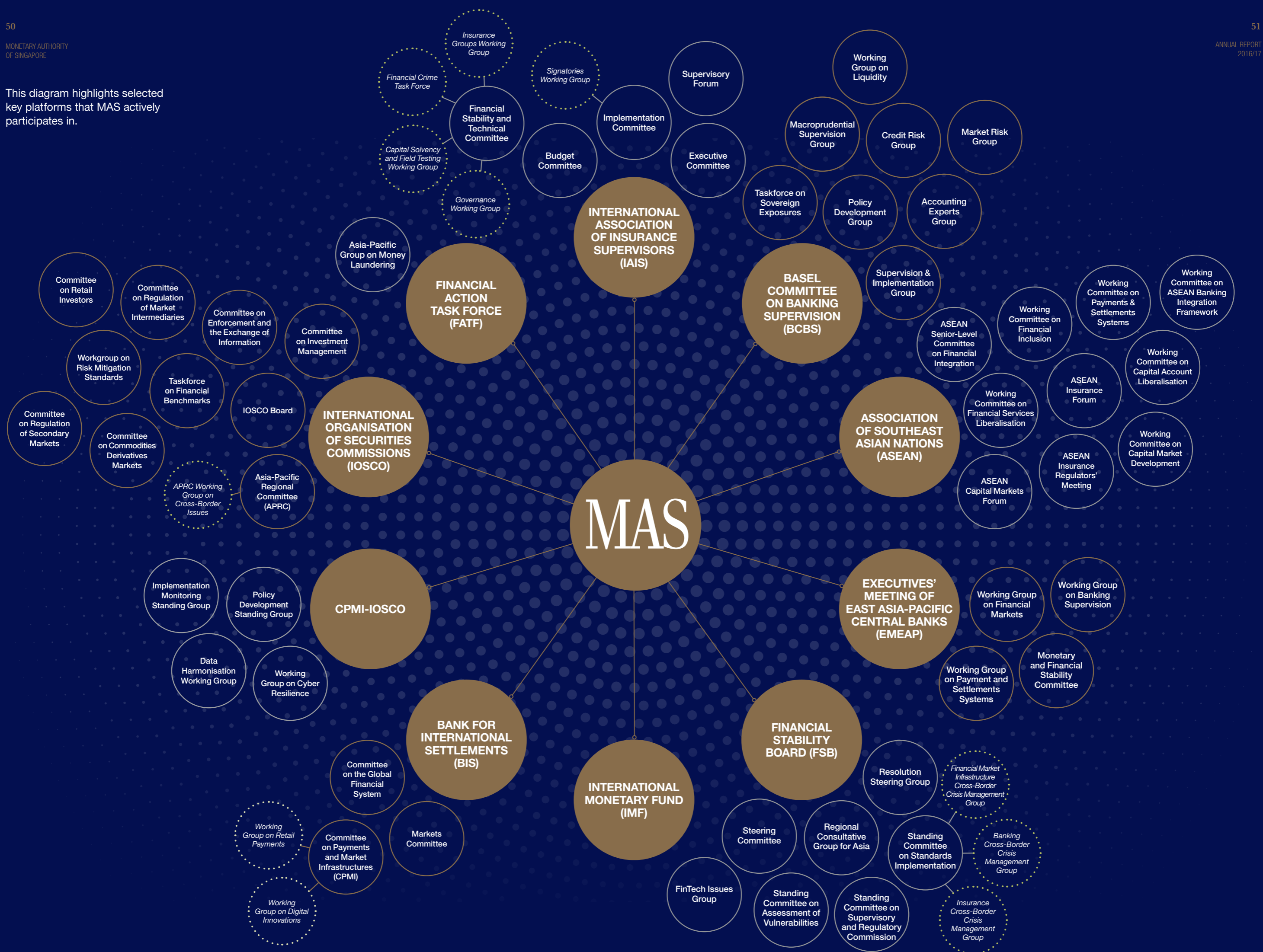


# 10

**MOUs and FinTech CAs**  
were signed with fellow  
regulators and authorities  
since March 2016.

<sup>7</sup> The CMIM is a US\$240 billion currency swap agreement established in 2010 among the Finance Ministries and Central Banks of the ASEAN member states, China, Japan and Korea (ASEAN+3 member states), to provide financial support in times of liquidity need.

This diagram highlights selected key platforms that MAS actively participates in.



## VALUED PARTNER ON THE INTERNATIONAL FRONT

### ***Singapore-China (Chongqing) Financial Conference***

The Singapore-China (Chongqing) Financial Conference (SCFC) was held in Chongqing, China in July 2016, supported by MAS and the Chongqing Financial Affairs Office. Managing Director Ravi Menon and Chongqing Vice Mayor Liu Guiping delivered the keynote speeches during the conference. The conference attracted over 400 attendees, representing 139 financial institutions and 113 corporates from Singapore and Chongqing. In conjunction with the conference, 28 agreements were signed, with deals exceeding US\$1.6 billion.

### ***Second Singapore-Shanghai Financial Forum***

The Second Singapore-Shanghai Financial Forum (SSFF) was held in Shanghai in November 2016. Jointly organised by the Shanghai Municipal Financial Services Office (FSO) and MAS, the SSFF serves as a regular platform to deepen financial cooperation between Singapore and Shanghai. Around 180 senior-level industry representatives attended the event and Singapore participants shared that the SSFF was a good platform to link up with Shanghai financial institutions.

The successful conclusion of both events reflects strong financial cooperation between Singapore and China, while demonstrating strong industry interest to collaborate and explore new opportunities.

### ***Symposium on Asian Banking and Finance***

MAS co-hosted with the Federal Reserve Bank of San Francisco the second edition of the Symposium on Asian Banking and Finance in San Francisco in June 2016.

### ***EU – Asia-Pacific Forum on Financial Regulation***

In October 2016, MAS, as chair of the IOSCO Asia-Pacific Regional Committee Working Group on Cross-Border Issues, hosted the inaugural EU – Asia-Pacific Forum on Financial Regulation. The Forum sought to enhance information exchange between authorities from the EU and the Asia-Pacific region on cross-border cooperation, and was well attended by representatives from the EU and Asia-Pacific authorities.

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### ***Asian Forum of Insurance Regulators***

MAS hosted the 12th Asian Forum of Insurance Regulators (AFIR) Annual Meeting and Conference in Singapore in March 2017. This event brought together 61 delegates from 27 jurisdictions, international organisations and multilateral bodies for two days of constructive discussions on issues affecting insurance regulation across Asia.



*Delegates at the AFIR Annual Meeting and Conference 2017 in deep discussion.*

### **Regional and Bilateral Training Programmes**

The MAS Academy organised 18 regional and bilateral training programmes for over 400 regulators and central bankers from Asia, the Middle East, Africa and Europe. Regional programmes included the ASEAN Financial Regulators' Executive Programme; IT Supervision Workshop; Banking Supervisors' Training Programme; and Regional Leadership Programme for Securities Regulators.

MAS also partnered organisations such as the Financial Stability Institute; SEACEN Research and Training Centre; and IMF-Singapore Training Institute to host seminars and contribute speakers to learning programmes.

# One MAS: Integrated and Cohesive

“As we drive efforts to position the financial sector for the future, MAS is also transforming the way we work. While change is exciting and energising, it may be unsettling and challenging for some. This is the focus of our change management efforts – to put people at the centre of change.”

**Shermaine Tay,**  
Assistant Director,  
Corporate Planning and Communications Department



# ONE MAS: INTEGRATED AND COHESIVE

## ENHANCING CAPABILITIES, PROCESSES AND PRODUCTIVITY



### Strengthening Cybersecurity

MAS put in place **new cybersecurity measures** to protect our IT systems. This includes the set-up of a 24x7 Security Operations Centre to monitor threats against MAS and the financial sector.



In line with government-wide initiatives, core MAS IT systems have been separated from the internet. To better **prepare staff in response and recovery** in case of a cyber breach, drills and exercises were also planned and conducted regularly.

Learning events in cybersecurity were also organised to raise awareness and increase capabilities in cyber threats detection and response.



### Enhancing Staff Competencies in New Areas

To further strengthen organisational capabilities in data analytics,

**16** learning events with **680** learning places

were organised in 2016.



### Improving Work Processes

**Ten cross-departmental teams** participated in the inaugural **Ideation Challenge** in September 2016 to **generate innovative solutions to streamline work processes** and **enhance productivity** in our day-to-day work.

Streamlined procurement processes during the year will enable savings of **more than 2,000 man-hours in a year**.



Participants at the Ideation Challenge in active discussion on their ideas to improve work processes.

## CONTROLS AND OPERATIONS



### Working with Our Stakeholders to Enhance MAS' Control Environment

During the year, we conducted an extensive range of **risk-focused audits** and **strengthened MAS' internal operations** in the areas of **risk management, control and governance process, and information security**.

We **refined our audit risk methodology** for a more **risk-focused approach** towards **audit planning**, and **developed** a new **co-sourcing framework** to **augment our audit expertise and resources**.

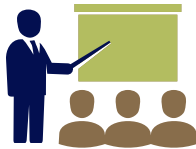


### Security and Fire Safety

MAS received the **National Safety and Security Watch Group Award** for the **fourth time, in recognition of our proactive efforts to ensure safety and security at our premises**.

We will explore greater use of technology to enhance the safety and security practices within MAS' premises.

## PEOPLE DEVELOPMENT



### Investing in Staff

MAS continues to invest strongly in its people to **develop talent** and **build a strong management bench strength**.



To date, **90%** of our leaders have completed the **360-degree survey** to gain insights into their key strengths and development areas.

## ONE MAS: INTEGRATED AND COHESIVE



### Awards and Recognition

**14** MAS staff received the **National Day Awards** in recognition of their contributions and service to the nation.

**217** MAS staff received the **Service Appreciation Awards** for their years of dedicated service with MAS.



MAS colleagues, who have contributed much to the MAS family, at the National Day Awards.

## PROMOTING ENVIRONMENTAL SUSTAINABILITY



MAS continued to be one of the **top 10 performing Government Offices** in the annual Building Energy Benchmarking exercise run by Building Construction Authority (BCA) in 2016. The exercise measures MAS' energy consumption and the result is **testament to our continual efforts in reducing our carbon footprint** in the environment.

## CORPORATE SOCIAL RESPONSIBILITY



MAS gives back to our society through initiatives driven by the **MAS Recreation Club (MASRC)**. Over the past year, our staff actively volunteered their time and effort in helping out our adopted beneficiaries – **Lions Befrienders, Grace Orchard School and Care Community Services Society**.



### National Day Celebration 2016

MAS was privileged to host senior citizens from **Care Community Services Society** at our **National Day Celebration 2016**. Armed with ukuleles and bells, the seniors took to the stage to put up a special performance of evergreen local classics such as Bengawan Solo and Ye Lai Xiang, to the delight of the staff in attendance.



### Community Service Day

In conjunction with the MAS Carnival last April, MAS held its **Community Service Day**, with a bazaar featuring food and game stalls to raise funds for our adopted beneficiaries. Pioneer generation seniors from **Lions Befrienders** attended the carnival, and gamely took part in fun races with our staff.



### Commemoration of Total Defence Day

The youth were not forgotten from our activities, with MASRC organising a **visit** to the **Singapore Discovery Centre** and **Army Museum** for **teenage students from Grace Orchard School** to **commemorate Total Defence Day**.



### Helping the Less Fortunate

During the festive period, MAS staff also helped to spread seasonal cheer to the less fortunate through their participation in the annual **Share-A-Gift initiative by Boys' Brigade** during Christmas, and the spring cleaning of homes for the elderly from **Lions Befrienders** during the Chinese New Year.



Senior citizens from Care Community Services Society took to the stage at our National Day Celebration 2016.



Pitching in to get the homes of the Lions Befrienders' elderly ready for Chinese New Year.

## ONE MAS: INTEGRATED AND COHESIVE

### BUILDING A STRONG MAS FAMILY

MAS staff had a fun-filled year, with the 44th and 45th MASRC organising a variety of events to suit everyone's preferences.

### MAS CARNIVAL

Over

**300**  
participants



ran, swam and speed-walked their way to victory, while the rest of the MAS family cheered them on, at the MAS Carnival held in April 2016 at the Toa Payoh Sports Centre.



Seniors from Lions Befrienders joined us for a day of fun and games at the MAS Carnival.



### MAS ANNUAL DINNER

In September 2016, about

**1,000** colleagues  
and guests

came together for the **Annual Dinner under the theme of Heroes**, with tables dressed to themes such as Pokemon Go and Ghostbusters. The Heroes theme continued for the rest of the year, as management members took turns to discuss their **personal heroes** and **inspirations** in the weekly staff newsletter, **MASLink**.

## 40TH INTER-CENTRAL BANK GAMES



Team MAS took its sporting talent regional at the **40th Inter-Central Bank Games** held in Bali, Indonesia. Our colleagues competed against our regional counterparts in **Badminton, Bowling, Table Tennis, Scrabble** and **Volleyball**.



## KIDZ@WORK

Apart from the sporting pursuits, **MASRC** activities also kept the extended MAS family in mind.

Over **150 children** joined their parents in the office for the annual **Kidz@Work** event in **December 2016**. The little ones filled the corridors of MAS Building with laughter as they were entertained by exciting performances, balloons, cotton candy and game booths.

## MAS FAMILY DAY

MAS staff also had a chance to relive their childhood memories at the **MAS Family Day**, held at **Marina Barrage** in **March 2017**. Together with their families, our staff tried their hand at **traditional kite making**, feasted on **old-school snacks**, and played **classic games**.





# GLOSSARY

<b>AEOI</b>	Automatic Exchange of Information
<b>AML/CFT</b>	Anti-Money Laundering and Countering the Financing of Terrorism
<b>AMRO</b>	ASEAN+3 Macroeconomic Research Office
<b>API</b>	Application Programming Interface
<b>ASEAN</b>	Association of Southeast Asian Nations
<b>ASEAN+3</b>	ASEAN plus China, Japan and South Korea
<b>BCBS</b>	Basel Committee on Banking Supervision
<b>CA</b>	Cooperation Agreement
<b>CPMI</b>	Committee on Payments and Market Infrastructures
<b>CPI</b>	Consumer Price Index
<b>EUR</b>	Euro
<b>FATF</b>	Financial Action Task Force
<b>FinTech</b>	Financial Technology
<b>FSB</b>	Financial Stability Board
<b>FY</b>	Financial Year
<b>G20</b>	Group of Twenty
<b>GBP</b>	British Pound
<b>GDP</b>	Gross Domestic Product
<b>IOSCO</b>	International Organisation of Securities Commissions
<b>JPY</b>	Japanese Yen
<b>MOU</b>	Memorandum of Understanding
<b>OTC</b>	Over-the-Counter
<b>PFMI</b>	Principles for Financial Market Infrastructure
<b>RMB</b>	Renminbi
<b>S\$NEER</b>	Nominal Effective Exchange Rate
<b>SGD</b>	Singapore Dollar
<b>SGX</b>	Singapore Exchange
<b>USD</b>	United States Dollar
<b>y-o-y</b>	Year-on-Year



