

4 Macroeconomic Policy

Supporting Medium-Term Sustainable Growth

In October 2015, MAS reduced the slope of the S\$NEER policy band slightly, while keeping it on a modest and gradual appreciation path. This measured adjustment took into account the weaker-than-envisaged growth outlook for the Singapore economy, even as MAS Core Inflation is expected to pick up gradually over the course of 2016. Together with the policy easing in January 2015, the October policy move will be supportive of economic growth into 2016, while ensuring price stability over the medium term.

On the fiscal front, Budget 2015 sought to further advance the aim of economic restructuring by focusing on value creation, while continuing to provide a base level of support to help companies improve efficiency. Major commitments were also made to invest in physical infrastructure to meet Singapore's future economic and social needs, as well as to develop human capital through the SkillsFuture initiative. In addition, the government is enhancing retirement adequacy and strengthening social mobility.

Overall, the macroeconomic policy mix—a continuation of the modest and gradual appreciation path for the exchange rate policy band and a moderately expansionary fiscal policy stance—is assessed to be appropriate, given the expected growth and inflation dynamics in the economy.

4.1 Monetary Policy

Appreciation Rate Of The S\$NEER Policy Band Reduced Slightly

Since the last policy review in April 2015, prospects for the global economy, in particular that for the region, have dimmed. Against this backdrop, the Singapore economy should grow at a modest pace in 2015 and 2016. At the same time, the outlook for inflation remains benign, although MAS Core Inflation is expected to pick up gradually over the course of 2016 towards its historical average. MAS retained the modest and gradual appreciation path for the S\$NEER policy band, but reduced its slope in October 2015. This policy stance was deemed to be an appropriate response to cyclical developments and will contribute to price stability over the medium term.

The rate of appreciation of the S\$NEER policy band was reduced in October 2015.

Global oil prices peaked in June 2014, and began falling in a sustained fashion towards the end of that year amid significant increases in supply and weaker prospects for global demand. Meanwhile, the pass-through of accumulated wage costs to consumer prices was weaker than expected, notwithstanding the tight labour market. These developments were expected to persist for the rest of 2015: oil prices would average significantly below the US\$93¹ recorded in 2014, while the extent of cost pass-through would be restrained by the moderate economic growth environment.

As the outlook for MAS Core Inflation and CPI-All Items inflation had downshifted significantly, MAS reduced the rate of appreciation of the S\$NEER policy band in an off-cycle move in January this year. This adjustment to the policy stance was deemed to be consistent with the lower inflation forecasts and was also appropriate for ensuring medium-term price stability. In the April 2015 monetary policy review, MAS maintained the policy stance adopted in January, as the projections for GDP growth and inflation had not altered fundamentally.

Since the last policy review in April, global growth has moderated slightly more than previously anticipated. While GDP growth in the US rebounded in Q2 2015 as the improving labour market bolstered private consumption, the pace

of expansion in the Eurozone and Japan remained relatively muted, given soft private investment and weak exports, respectively. In China, financial market volatility in August, arising from the sharp correction in the stock markets, as well as uncertainty over the exchange rate fixing mechanism, weighed on the economy. At the same time, incoming data on fixed asset investment, industrial production and exports confirmed the economy's slowing growth momentum.

Looking ahead, the G3 economies as a whole are expected to expand at a modest pace, with the US leading the recovery. However, China's slowdown will dampen growth prospects for the externally-oriented and commodity exporting countries in the rest of Asia. Intra-Asian trade flows could stay constrained, and forward-looking indicators, such as the inventory and new orders components of the Purchasing Managers' Indices, are pointing to a subdued outlook for industrial production in several economies. Overall, the prospects for global growth have softened compared to the last *Review*.

Activity in Singapore's trade-related sectors has been buffeted by weaker external demand and structural reconfigurations in some manufacturing clusters. The drags exerted by the external-oriented sectors have only been partly offset by expansions in the domestic-oriented sectors. Overall, Singapore's GDP grew by only 0.1% q-o-q SAAR in Q3 2015, after contracting by 2.5% in Q2.

¹ Based on the West Texas Intermediate benchmark.

For 2015 as a whole, the domestic economy is expected to grow at a modest pace of around 2–2.5%, with risks tilted towards the downside. As the cyclical headwinds could persist into early next year, the economy is likely to expand at a broadly similar pace in 2016. Against this backdrop, the level of activity in the economy is projected to keep close to its potential path for the year as a whole. (Chart 4.1)

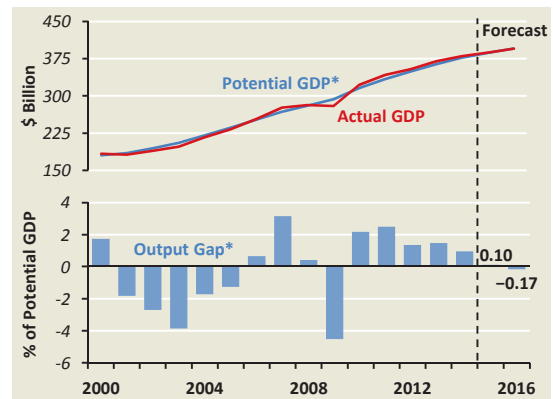
Imported inflation is expected to be subdued, as commodity prices, such as those for oil, may only edge up in 2016, amid soft global demand and ample supply. On the domestic front, while the overall tightness in the labour market appears to have eased slightly, underlying wage cost pressures remain in specific segments. However, their pass-through to consumer prices will be fairly mild given the subdued growth environment. Meanwhile, the disinflationary effects of low oil prices, Budget measures and SG50 promotions, will fade from late 2015. Taking into account all these factors, MAS Core Inflation will rise gradually over the course of 2016 towards its historical average of close to 2%. For the year as a whole, MAS Core Inflation is forecast at around 0.5% in 2015 and 0.5–1.5% in 2016.

Imputed rentals on owner-occupied accommodation are likely to moderate further as more completed housing units come on-stream. Private road transport costs are projected to ease as well, in line with the expected increase in COE supply given a larger number of vehicles due to be de-registered. Reflecting these factors, CPI-All Items inflation is forecast to come in at around –0.5% in 2015 and –0.5–0.5% in 2016.

In view of the softer-than-anticipated outlook for GDP growth and inflation, MAS reduced slightly the rate of appreciation of the S\$NEER policy band in October 2015, but kept the width of the policy band, as well as the level at which it was centred, unchanged.

This policy stance will provide support to the domestic economy, complementing the January 2015 reduction in the slope of the S\$NEER policy band. Indeed, EPG's econometric simulations suggest that the effects of the latter will continue to filter through to the economy over 2016.

Chart 4.1
Real GDP and the Output Gap



* EPG, MAS estimates.

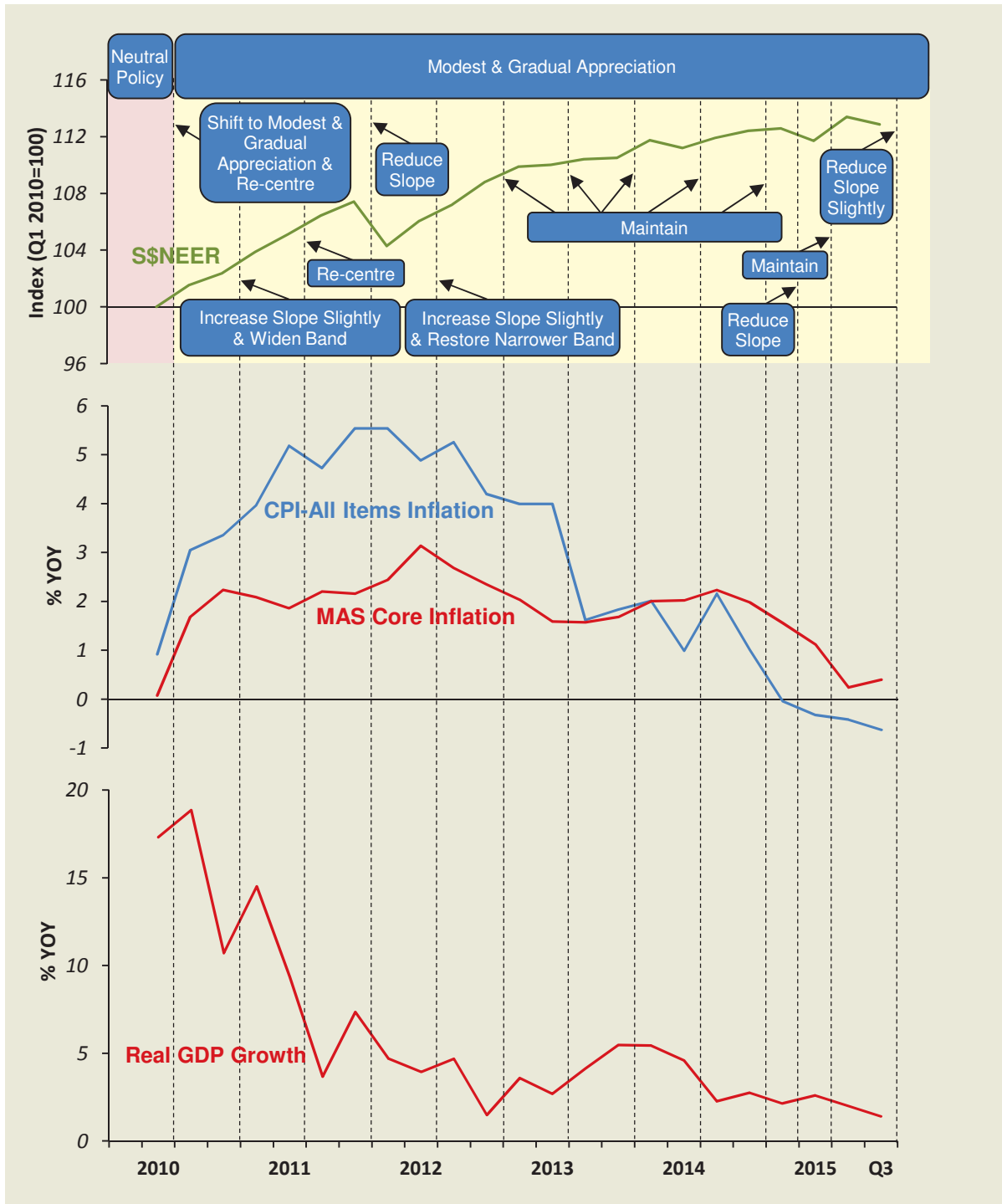
Note: EPG's estimate of Singapore's output gap is derived from a weighted average of three methods—a structural vector autoregression approach using the Blanchard-Quah decomposition, the Friedman variable span smoother and a simple univariate Hodrick-Prescott filter.

An even stronger policy easing in the most recent October review, including flattening the slope of the S\$NEER policy band, was clearly unwarranted, as the Singapore economy was neither experiencing an outright retraction in economic activity nor widespread price declines. Under the current policy setting, the output gap is projected to close in 2015–16, compared to the positive outturns over the preceding five years, before widening again to slightly above zero in 2017. The calibrated October move will keep the level of real GDP close to its potential over the medium term and thus help to promote price stability.

EPG's estimates suggest that this optimal middle path between maintaining the policy status quo and adopting an even looser policy stance minimises macroeconomic volatility while promoting medium-term price stability. The measured policy move in October will therefore lead to comparatively more favourable growth and inflation outcomes for the Singapore economy.

Chart 4.2 traces the longer-term evolution of monetary policy in relation to growth and inflation developments in the Singapore economy. With the lingering risks in the external environment amid an intensification of domestic restructuring efforts, MAS will continue to monitor the impact of external and domestic developments on Singapore's GDP growth and inflation.

Chart 4.2
Key Macroeconomic Variables and Changes in the Monetary Policy Stance



Exchange rate movements have been volatile since April 2015.

The S\$NEER has been volatile since April this year, experiencing both appreciating and depreciating spurts over the period. It strengthened following the April 2015 monetary policy announcement, but weakened from mid-July. Since then, it has largely fluctuated in the lower half of the S\$NEER policy band. (Chart 4.3)

In terms of bilateral exchange rates, the S\$ strengthened against the US\$ following the April 2015 MPS, as market expectations for MAS to further ease monetary policy did not materialise, while soft US economic data suggested that the Federal Reserve could delay the hike in the US Federal funds rate. However, stronger macroeconomic data and hawkish statements from US Federal Reserve officials subsequently resulted in depreciating pressures on the S\$ and the regional currencies. At the same time, Asian currencies, including the S\$, weakened against the other major reserve currencies as risk aversion rose in the wake of concerns over China’s economic slowdown, the corrections in its stock market, and the adjustment to its exchange rate.

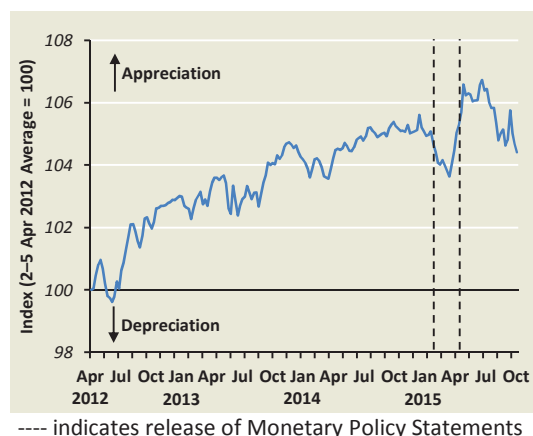
Over the last six months (the week of 10 April to the week of 23 October 2015), the S\$ generally depreciated against the major reserve currencies. It weakened by 5.7% against the euro, 1.9% against the US\$, and 1.7% against the Japanese yen. In comparison, the S\$ strengthened against the currencies of commodity exporters, namely, the A\$, Malaysian ringgit, and Indonesian rupiah. (Chart 4.4)

The CPI-deflated S\$REER remained below its peak in Q1 2013.

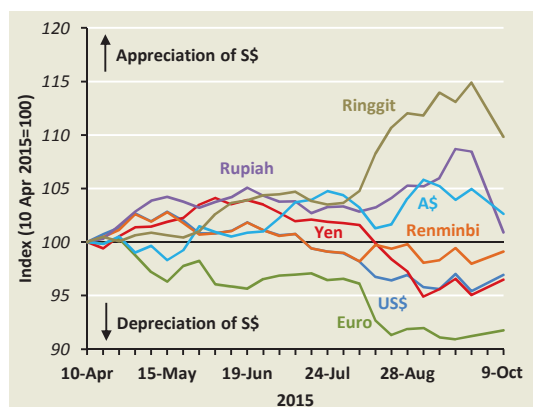
The S\$ real effective exchange rate (S\$REER) is a measure of the prices of goods and services in Singapore relative to its trading partners, expressed in terms of a common exchange rate index. Using the CPI as the deflator, the S\$REER depreciated by 1.0% between Q1 2013 and Q2 2015. (Chart 4.5)

Although the S\$NEER strengthened in line with the modest and gradual appreciation stance of MAS’ monetary policy, domestic CPI-All Items inflation rose at a much slower pace compared to inflation in

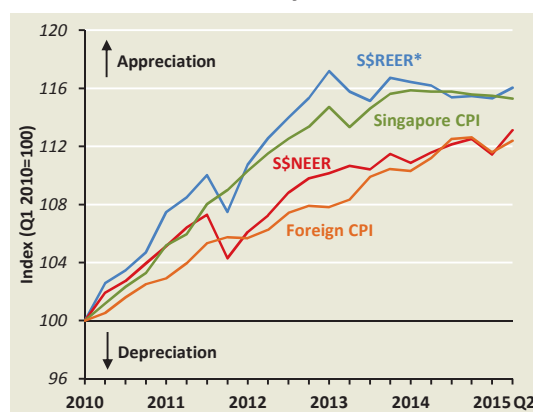
**Chart 4.3
S\$NEER**



**Chart 4.4
Singapore’s Bilateral Exchange Rates**



**Chart 4.5
Components of the S\$REER
Deflated by the CPI**



* EPG, MAS estimates.

Singapore's major trading partners. The fall in relative prices was due to a moderation in MAS Core Inflation, as well as a decline in the cost of private road transport and imputed rentals on owner-occupied accommodation.

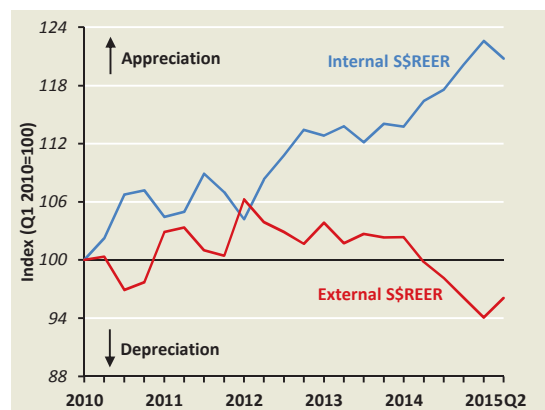
The depreciation of the S\$REER was due to the fall in the price of tradable goods in Singapore.

The S\$REER can be decomposed into external and internal components. The external S\$REER is derived by deflating the S\$NEER by the domestic price of tradable goods relative to the foreign price, in terms of a common reference currency. The internal S\$REER refers to the price of non-tradables relative to tradables in the domestic market compared to abroad.

From this perspective, the depreciation in the S\$REER since Q1 2013 was entirely due to the external S\$REER, which fell by 7.5%. (Chart 4.6) Although the price of tradables² in Singapore's major trading partners fell by 1.0% between Q1 2013 and Q2 2015, prices in the domestic economy fell by 10.8%, primarily due to a softening in the prices of mineral fuels and chemicals & chemical products. (Chart 4.7) The fall in the relative price of tradables outweighed the modest appreciation of the S\$NEER, resulting in the depreciation of the external S\$REER.

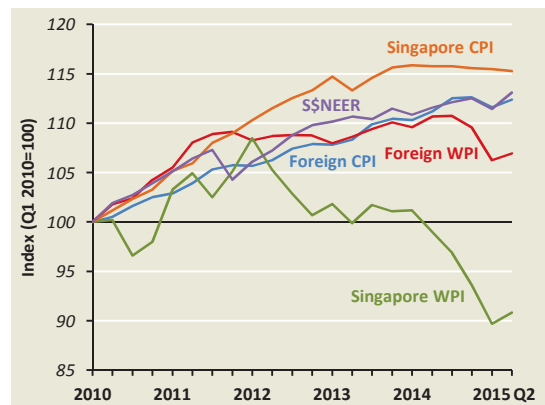
In comparison, the internal S\$REER has strengthened since Q1 2013. Although the price of non-tradables fell in Singapore, the decline in the domestic price of tradables was steeper. On balance, the relative price of non-tradables to tradables in Singapore rose compared with that abroad.

Chart 4.6
External and Internal S\$REER



Source: EPG, MAS estimates

Chart 4.7
Components of the External and Internal S\$REER



² The Wholesale Price Index is a reasonable proxy for the price of tradables as it encompasses a wide range of exportables and importables and is closely associated with producer prices. For Singapore, we use the Manufactured Product Price Index as a proxy for the domestic price of tradable goods.

Liquidity conditions have loosened since August 2015.

Overall liquidity conditions in the economy are reflected by changes in the Domestic Liquidity Indicator (DLI), which captures movements in the S\$NEER and the three-month S\$ SIBOR. Between April and July this year, domestic liquidity conditions tightened compared to the previous three months, largely due to the strengthening S\$NEER. However, the DLI eased from August to September as the depreciation of the S\$NEER exceeded the effect of higher domestic interest rates on domestic liquidity. (Chart 4.8)

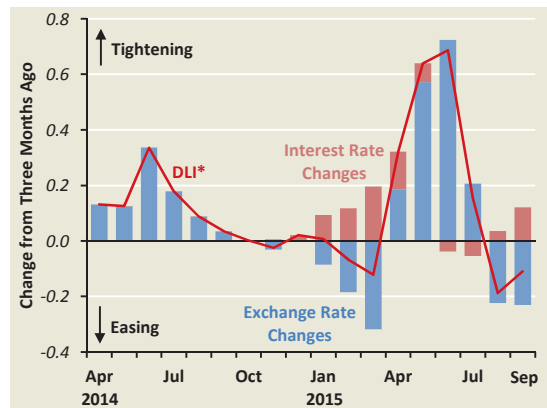
Domestic interbank rates have generally risen since the beginning of 2015.

The three-month S\$ SIBOR has been at a slight premium over the three-month US\$ LIBOR since September 2012. (Chart 4.9) This premium widened to an average of 75 bps in Aug–Sep 2015, from an average of 56 bps in the first seven months of the year.

The US\$ LIBOR inched up to 0.33% in Aug–Sep from an average of 0.28% in Jan–Jul 2015. The S\$ SIBOR rose sharply to 1.01% in March before easing to 0.86% on average in the subsequent few months, following the release of the April MPS as well as reduced market expectations of a US Federal funds rate hike. However, the S\$ SIBOR spiked again to over 1% in August, as stronger US data and the shocks emanating from China led financial markets to re-price S\$ interest rates to incorporate expectations of further US\$ strength against the S\$. By September 2015, the S\$ SIBOR had risen to 1.14%, its highest level since October 2008. More recently, it has eased to around 1%. Meanwhile, the three-month S\$ Swap Offer Rate, which tends to be more responsive to liquidity conditions, rose sharply to 1.41% in August 2015, before pulling back slightly in September.

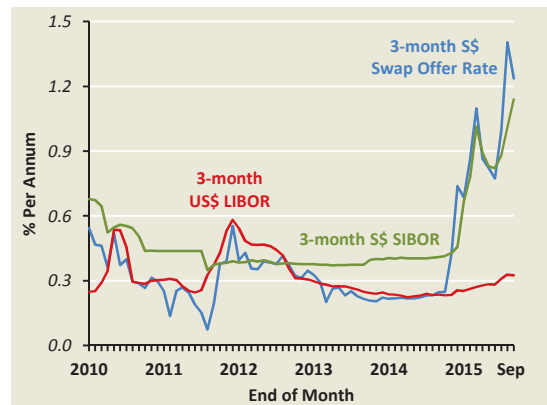
Amid the general step-up in domestic interbank rates in recent months, savings and fixed deposit rates have risen, but to a lesser degree. The savings deposit rate and 12-month fixed deposit rate inched up to an average of 0.14% and 0.34%, respectively, in Aug–Sep. (Chart 4.10) Notwithstanding these low board rates, banks have been offering significantly higher

**Chart 4.8
Domestic Liquidity Indicator**



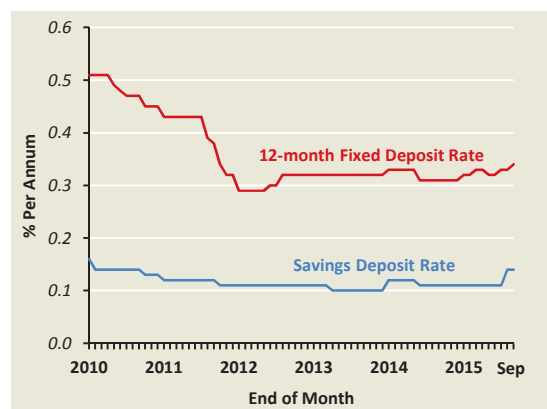
* EPG, MAS estimates.

**Chart 4.9
Interest Rates**



Source: ABS Benchmarks Administration Co Pte Ltd and ICE Benchmark Administration Ltd

**Chart 4.10
Deposit Rates**



Note: Each line represents the simple average of the top 10 banks' deposit rates.

promotional rates on deposit accounts.³ In terms of lending, the effective interest rate on floating rate mortgages continued to rise, as these were largely priced off the S\$ SIBOR.

Growth in the broader monetary aggregates continued to ease.

Growth in M1 troughed at 0.8% y-o-y in May 2015 and picked up over Jun–Aug. (Chart 4.11) Demand deposit growth turned from negative in May to slightly positive in the following three months, while growth in currency in active circulation (CIAC) remained firm. (Chart 4.12)

Meanwhile, growth in the broader monetary aggregates, M2 and M3, moderated from their recent peaks in May 2015. This was largely driven by fluctuations in fixed deposits, which recorded growth as high as 9% y-o-y in May, but turned negative in August. In comparison, growth in savings and other deposits eased relative to the first six months of the year, but remained positive at an average of 4.1% in Jul–Aug.

Credit growth has picked up slightly in recent months.

Credit growth was on a broad downtrend over the first five months of the year, with the stock of outstanding DBU non-bank loans contracting by 0.1% y-o-y in May 2015. (Chart 4.13) This was entirely due to falling business loans, given the lacklustre demand for credit from some trade-related sectors, such as manufacturing and commerce, and non-bank financial institutions. In comparison, consumer loans continued to expand but at a slower pace of 3.6% y-o-y.

From Jun–Aug, however, the pace of overall credit growth picked up slightly. Total DBU non-bank loans grew by an average of 1.7% y-o-y over this period, with business and consumer loans increasing by 0.5% and 3.7%, respectively.

Chart 4.11
Money Supply

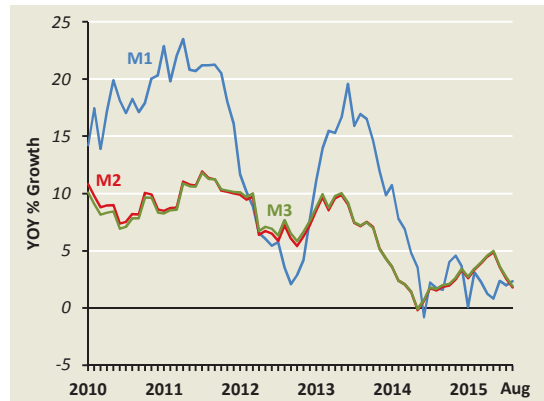


Chart 4.12
Components of the Money Supply

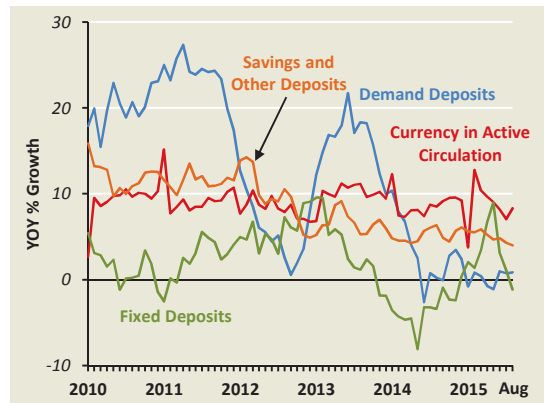
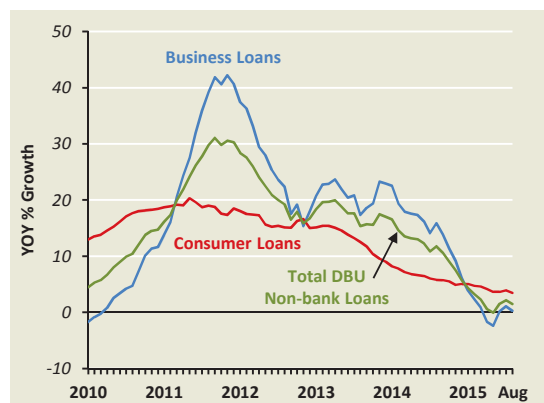


Chart 4.13
DBU Non-bank Loans



³ For example, Standard Chartered was offering up to 1.55% for fresh funds held in 6-month fixed deposits, while UOB was offering 1.60% for fresh 13-month fixed deposits.

4.2 Fiscal Policy

Investing In The Economy's Future And Strengthening Social Security

To prepare the economy for the next phase of development, Budget 2015 committed significant resources to long-term investment in infrastructure and human capital development. It also built on past budget measures to further strengthen Singapore's social safety net. The SkillsFuture initiative and the Silver Support Scheme aim to foster lifelong learning and provide retirement assurance for the low-income elderly, respectively. On the whole, the fiscal policy stance for CY2015 is projected to be expansionary compared to CY2014.

Budget 2015 continued to lay the foundations for sustainable and inclusive growth.

Budget 2015 continued to support the restructuring of the Singapore economy by recalibrating some of the existing measures and incentives, and also introducing new initiatives to prepare firms and workers for Singapore's next phase of development. The Transition Support Package (TSP)⁴ was extended for two years, but at lower support levels, and the schedule of planned foreign worker levy hikes for 2015 was deferred to 2016. This was in order to give firms more time to cope with rising costs, as they push ahead with efforts to enhance productivity. Budget 2015 also marked a more targeted approach towards restructuring by emphasising the need for value creation and innovation. The new measures introduced in this Budget focused on strengthening firms' and workers' capabilities as well as helping businesses to increase scale and internationalise. A pioneering initiative in this regard was SkillsFuture, which is aimed at fostering skills deepening and continuous learning through life. Meanwhile, significant commitments were made to meet Singapore's long-term infrastructure requirements. These include the development of the new Changi Airport Terminal 5, and the continued expansion of healthcare and public transport facilities.

Budget 2015 made an important stride in augmenting Singapore's social security system by introducing the Silver Support Scheme. The Scheme provides an income supplement to the bottom 20–30% of elderly Singaporeans based on their lifetime income, extent of family support and housing type. It complements the Workfare Income Supplement Scheme which provides systematic top-ups to the wages of the bottom 20–30% of Singaporean workers. To help Singaporeans build their retirement savings, this Budget also announced a higher CPF salary ceiling for all residents and raised employer contribution rates for older workers. Taken as a whole, Budget 2015 has built on previous measures to foster a fairer and more inclusive society. The major planks of Singapore's social security system across all groups, including the young, elderly, low- and middle-income and disabled, continued to be strengthened significantly. The measures, introduced progressively in recent budgets, have sought to enhance every aspect of life, from work to retirement, education to healthcare, and have thereby laid the foundation for a stronger social compact, entrenching a system that mitigates inequalities while maintaining the spirit of personal and collective responsibility.

⁴ The TSP comprises the Wage Credit Scheme (WCS), Corporate Income Tax (CIT) Rebate, and Productivity and Innovation Credit (PIC) Bonus. The WCS was extended for two years to 2016 and 2017, with the government co-funding 20% of wage increases given to Singaporean employees earning a gross monthly wage of \$4,000 and below, compared to 40% previously. Similarly, the CIT Rebate was extended for Years of Assessment (YA) 2016 and 2017 at the same rate of 30% of tax payable, but up to a lower cap of \$20,000 instead of \$30,000 per YA. The PIC Bonus expires in YA2015 as planned.

Over the longer term, government expenditure is expected to rise due to higher spending on healthcare, transport and other critical infrastructure. There is also a need to invest more heavily in human capital development to secure Singapore's economic future. Accordingly, Budget 2015 took steps to strengthen government revenues by raising the personal income tax rates of top income earners and including Temasek's expected returns in the Net Investment Returns (NIR) framework.⁵ These measures will help preserve the fiscal sustainability of Singapore's economic and social strategies and, in turn, underpin the economy's long-term growth.

The fiscal stance is estimated to be slightly expansionary in 2015.

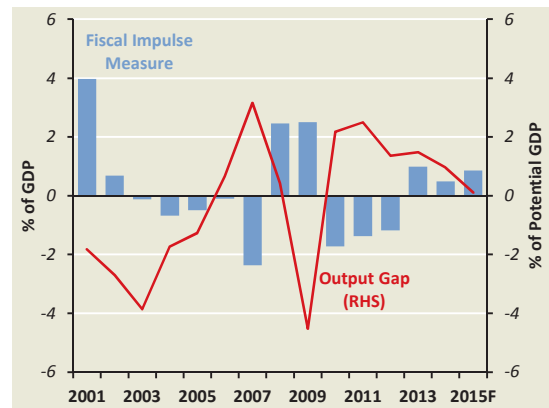
The Fiscal Impulse (FI) measure indicates the short-term stimulus to aggregate demand arising from fiscal policy changes. It is projected to be 0.9% of GDP in CY2015, suggesting a moderately expansionary fiscal policy stance relative to the previous year. (Chart 4.14) This is consistent with the closing of the output gap in the economy, and largely reflects the higher expenditure associated with social and economic spending as well as infrastructure investment. The investments in physical infrastructure, ICT and human capital will serve to raise the economy's potential output over the longer term, beyond the short-term cyclical boost to the economy.

Government operating revenue increased in H1 2015.

The following provides an overview of the government's budgetary position in the first half of CY2015 compared to the same period last year.

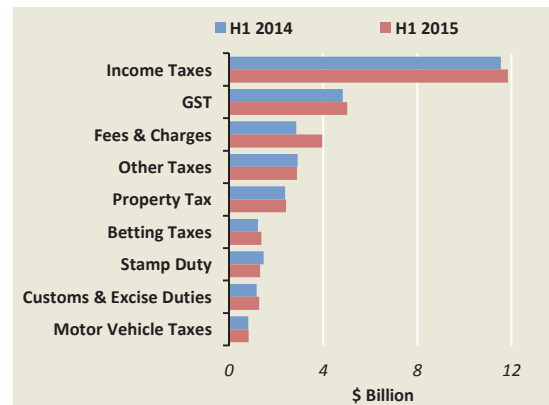
Operating revenue rose slightly from \$29.4 billion in H1 2014 to \$31.2 billion (15.8% of GDP) in H1 2015, partly bolstered by the \$1.1 billion increase in "fees & charges", which largely comprise COE receipts. (Chart 4.15) While COE premiums remained relatively stable compared to the same period last year, the number of new vehicle registrations rose, supporting an overall increase in COE receipts of \$0.9 billion. (Chart 4.16) The government also collected \$11.9 billion in income

**Chart 4.14
Fiscal Impulse Measure**

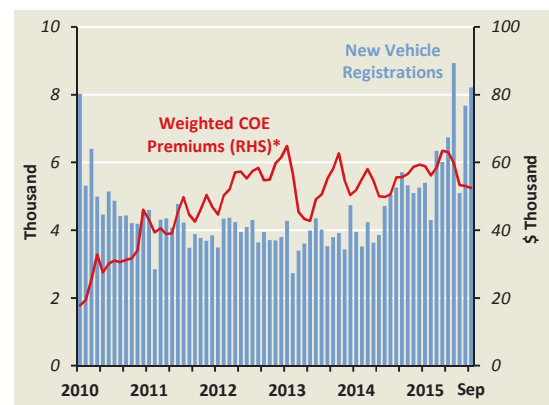


Source: EPG, MAS estimates

**Chart 4.15
Selected Components of Operating Revenue**



**Chart 4.16
COE Premiums and
New Vehicle Registrations**



* Weighted by the COE quota of each category.

⁵ The previous NIR framework allowed the Government to spend up to 50% of the expected long-term real returns (including capital gains) from the net assets managed by GIC and MAS. Temasek was on the Net Investment Income (NII) framework.

taxes, which was \$0.3 billion more than that in the first half of last year. Both corporate and personal income tax receipts rose while GST collections showed only a small increase as private consumption growth, especially in discretionary retail items, remained relatively weak.

In comparison, receipts from stamp duties decreased slightly by \$0.1 billion in H1 2015 compared to the same period a year ago. Muted activity in the housing market, as reflected by low transaction volumes, continued to weigh on stamp duty receipts. (Chart 4.17)

Operating and development expenditure rose in line with commitments in recent budgets.

On a year-ago basis, total government expenditure rose by \$3.1 billion to \$30.7 billion (15.5% of GDP) in H1 2015. Operating expenditure accounted for \$1.2 billion of the total increase in expenditure, largely due to higher spending on security and external relations as well as social development.⁶ (Chart 4.18)

Within social development, operating expenditures by the Ministry of Health and Ministry of Social & Family Development increased by \$0.4 billion and \$0.3 billion, respectively. The former was in line with the upward trajectory of public expenditure on health and aged-care services given the ageing of the resident population, while the latter could be attributed to higher expenditure on early childhood education. As a proportion of GDP, healthcare operating expenditure by the government has risen from 0.7% of GDP in CY2007 to 1.4% in 2014. (Chart 4.19)

In contrast, the Ministry of Education recorded a \$0.2 billion decline in operating expenses in H1 2015 compared to H1 2014. This was primarily due to the one-off provision of a seed endowment grant in H1 2014 to the Singapore Institute of Technology.

Chart 4.17
Residential Price Index and Property Transaction Volumes

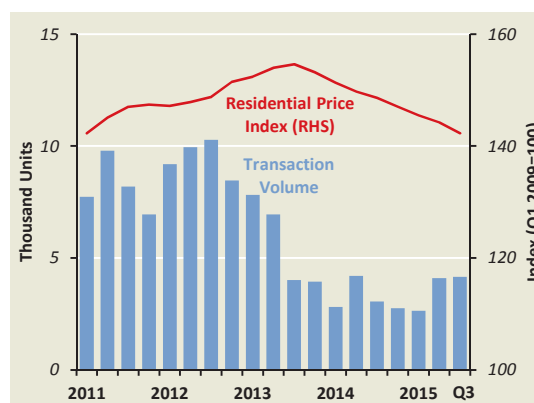


Chart 4.18
Selected Components of Operating Expenditure

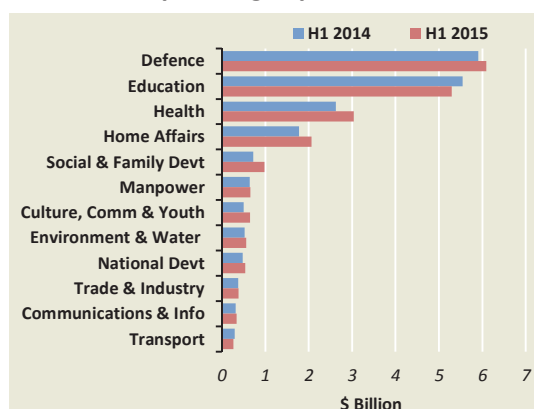
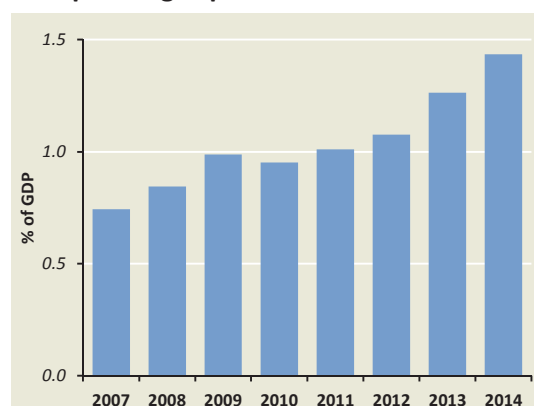


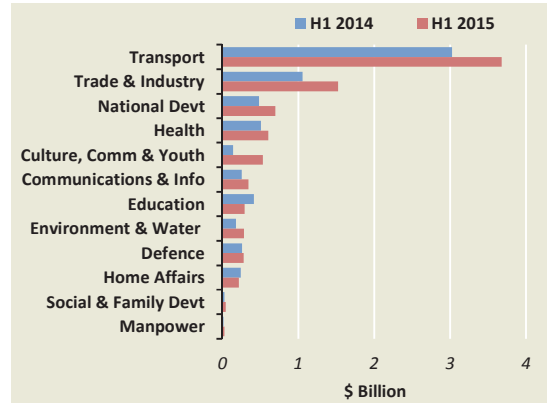
Chart 4.19
Operating Expenditure on Healthcare



⁶ Security and external relations include the activities carried out by the Ministry of Defence, Ministry of Home Affairs and Ministry of Foreign Affairs. Social development encompasses the Ministry of Education, Ministry of Health, Ministry of Social and Family Development, Ministry of Culture, Community and Youth, Ministry of Communications and Information, Ministry of Environment and Water Resources, Ministry of National Development, and the Ministry of Manpower (Financial Security for Singaporeans Programme).

In terms of development expenditure, a considerable \$1.8 billion more was incurred in H1 2015 compared to the first half of 2014. The economic⁷ and social development sectors saw the biggest increases in development expenditures over this period. (Chart 4.20) Specifically, development spending by the Ministry of Transport rose on the back of planned expenditures related to the development of the new airport facilities at Changi East as well as rail transport projects, such as the Tuas West Extension and the Thomson-East Coast Line. Meanwhile, JTC’s land and infrastructure projects as well as the development of Tampines Town Hub represented major components of development expenditure by the Ministry of Trade & Industry and Ministry of Culture, Community & Youth, respectively.

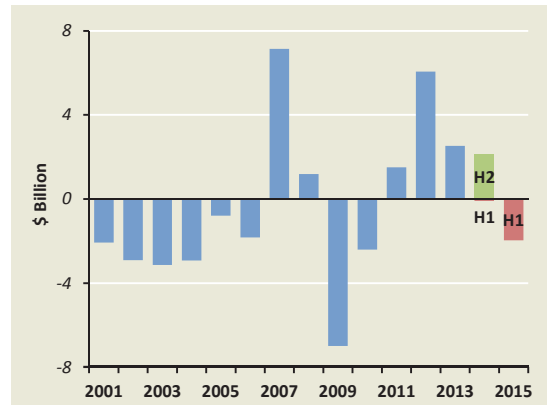
Chart 4.20
Selected Components of Development Expenditure



The government’s primary surplus fell, while its basic balance was in deficit in the first half of CY2015.

As the increase in total expenditure exceeded that of operating revenue, the government’s primary balance fell to \$0.5 billion in H1 2015, compared to \$1.7 billion in H1 2014. Over the same period, special transfers, excluding top-ups to endowment and trust funds, rose by \$0.7 billion, reflecting the larger disbursement of pay-outs from the Wage Credit Scheme. Accordingly, the basic balance, which is the primary balance less special transfers, excluding top-ups to endowment and trust funds, recorded a deficit of \$2.0 billion in H1 2015 compared to the almost neutral position in the first half of the preceding year. (Chart 4.21)

Chart 4.21
Government’s Basic Balance



⁷ Economic development includes the activities of the Ministry of Transport, Ministry of Trade & Industry, Ministry of Manpower (excluding Financial Security Programme) and expenditure under Info-Communications and Media Development.

Box C Review of MAS Money Market Operations in FY2014/15^{1/}

This Box reviews MAS' money market operations in FY2014/15. Money market operations are undertaken to manage liquidity within the banking system, and are distinct from the implementation of exchange rate policy. More information is available in the monograph on "Monetary Policy Operations in Singapore" published in March 2013.

A description of money market operations is provided, followed by a review of banks' demand for cash balances with MAS and the behaviour of autonomous money market factors in FY2014/15. Finally, the composition of money market operations carried out during this period is examined.

Money Market Operations in Singapore

The open-economy trilemma posits that a country that maintains an open capital account cannot simultaneously manage its exchange rate and domestic interest rates. Thus, Singapore's open capital account and exchange rate-centred monetary policy imply that its domestic interest rates and money supply are necessarily endogenous. MAS' money market operations are therefore not targeted at any level of interest rate or money supply; instead, they are aimed at ensuring that there is sufficient liquidity in the banking system to meet banks' demand for reserve and settlement balances.

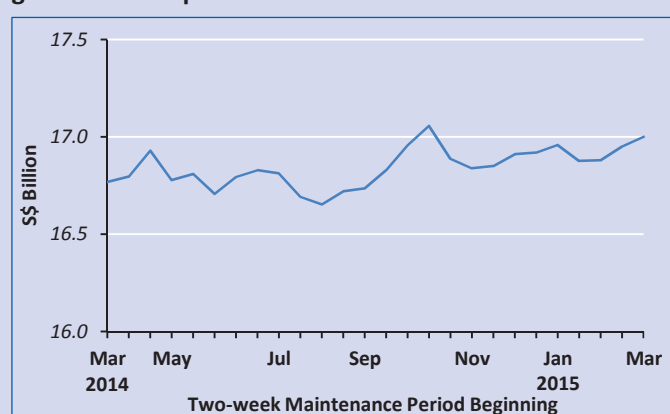
Money market operations are conducted daily by the Monetary & Domestic Markets Management Department at MAS. The amount of liquidity required in the banking system is estimated by taking into consideration the banking sector's demand for funds and the net liquidity impact of autonomous money market factors. After carrying out money market transactions, MAS monitors market and liquidity conditions throughout the day.

Banks' Demand for Cash Balances

Banks in Singapore hold cash balances with MAS to meet reserve requirements and for settlement purposes. They are required to maintain with MAS a Minimum Cash Balance (MCB) equivalent to 3% of their liabilities base on a two-week average basis. This forms a base demand for cash balances. The total demand for reserve balances could vary across periods as banks also hold excess cash balances to make large payments (settlement purposes), or as high-quality liquid assets (regulatory purposes). Since the GFC, there has been a tendency for banks to hold slightly more liquidity in the form of central bank reserves.

In FY2014/15, banks' demand for balances to meet reserve requirements rose in tandem with the growing liabilities base. (Chart C1)

Chart C1
Average Reserve Requirements over Two-week Maintenance Periods

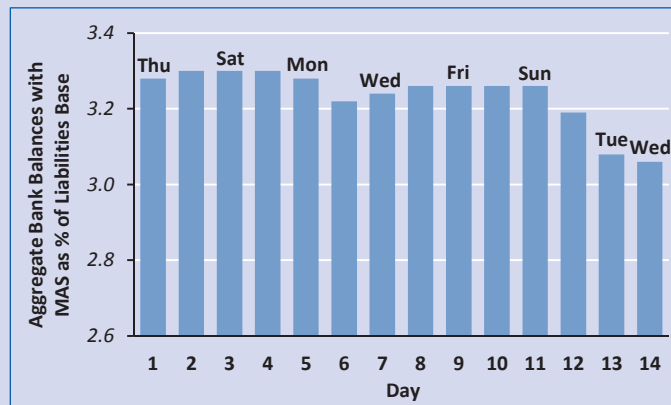


^{1/} This Box is contributed by the Monetary & Domestic Markets Management Department of MAS.

Although banks are required to keep an average MCB ratio of 3% over the two-week maintenance period, their daily effective MCB ratios may fluctuate between 2% and 4% of their liabilities base, providing them with more flexibility in their liquidity management. Hence, there may be day-to-day variations in banks' demand for cash balances within each maintenance period.

Chart C2 shows the daily fluctuations in cash balances within an average maintenance period in FY2014/15. Banks tend to maintain higher cash balances during the start of a maintenance period so as to avoid being caught short of cash towards the end of the period. Hence, the daily cash balances required by the banking system during the last few days of a maintenance period are usually lower.

Chart C2
Daily Effective Cash Balances as % of Liabilities Base over a Typical Two-week Maintenance Period in FY2014/15

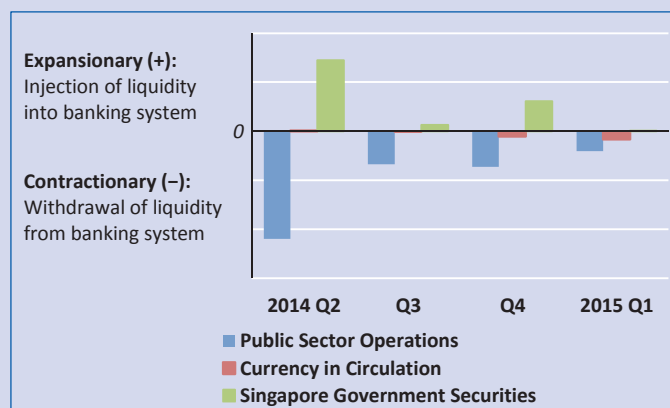


Money Market Factors

Chart C3 shows the liquidity impact of the autonomous money market factors, which include, (i) public sector operations; (ii) currency in circulation; (iii) Singapore Government Securities (SGS) and Treasury Bills (T-bills) issuance, redemption and coupon payments, over FY2014/15. Public sector operations include the Government's and CPF Board's net transfers of funds between their accounts with MAS and their deposits with commercial banks.

In FY2014/15, the liquidity impact of the autonomous money market factors was net contractionary, largely due to the withdrawal of funds by public sector operations, which more than offset the expansionary impact arising from SGS issuance and redemption. The liquidity impact of currency in circulation was negligible.

Chart C3
Liquidity Impact of Autonomous Money Market Factors



Composition of Money Market Operations

MAS relied on four instruments to inject liquidity into, and withdraw liquidity from, the banking system in FY2014/15, namely, (i) FX swaps; (ii) SGS repos; (iii) clean borrowings; and (iv) MAS Bills. Since MAS Bills were introduced in 2011, they have grown in importance as an instrument for money market operations, with the total outstanding issuance rising to S\$92.1 billion in FY2014/15, up from S\$74.4 billion in FY2013/14. Chart C4 compares the composition of instruments between FY2013/14 and FY2014/15.

Chart C4
Distribution of Money Market Operations by Instrument

