2018/SVL/HK/05

AMRO Annual Consultation Report

Hong Kong, China - 2018

The ASEAN+3 Macroeconomic Research Office (AMRO)

November 2018

Acknowledgments

1. This Annual Consultation Report on Hong Kong, China has been prepared in accordance with the functions of AMRO to monitor, assess and report its members' macroeconomic status and financial soundness and to identify the relevant risks and vulnerabilities, and assist them in the timely formulation of policy recommendation to mitigate such risks (Article 3(a) and (b) of AMRO Agreement).

2. This Report is drafted on the basis of the Annual Consultation Visit of AMRO to Hong Kong, China from August 06 – 10, 2018 (Article 5 (b) of AMRO Agreement). The AMRO Mission team was headed by Dr Chaipat Poonpatpibul, Group Head and Lead Economist. Members include Dr Simon Liu Xinyi (Economist), Mr Yang-Hyeon Yang (Senior Economist), Dr Jerry Huang Xianguo (Economist), and Mr Edmond Choo Chiang Yong (Research Analyst). AMRO Director Dr Junhong Chang and Chief Economist Dr Hoe Ee Khor also participated in key policy meetings with the authorities. This AMRO Annual Consultation Report on Hong Kong, China for 2018 was peer reviewed by Matthew Yiu (Group Head and Lead Economist) and Ruperto Majuca (Senior Specialist); and approved by Dr Hoe Ee Khor, AMRO Chief Economist.

3. The analysis in this Report is based on information available up to 30 October 2018.

4. By making any designation of or reference to a particular territory or geographical area, or by using the term "member" or "country" in this Report, AMRO does not intend to make any judgements as to the legal or other status of any territory or area.

5. No part of this material may be disclosed unless so approved under the AMRO Agreement.

6. On behalf of AMRO, the Mission team wishes to thank the Hong Kong, China authorities for their comments on this Report, as well as their excellent meeting arrangements and hospitality during our visit.

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Executive Summary

1. **Hong Kong's[1] economy grew strongly in H1 2018, supported largely by strong domestic private consumption and robust external demand.** Private consumption has been buoyant on the back of tight labor market conditions and property price appreciation. The pick-up in exports was broad-based and boosted by a sharp rise in inbound tourism.

2. **Going forward, growth is expected to moderate due to the escalating trade conflict between China and the U.S., a moderation of growth in China and tightening financial conditions**. Growth is projected to be 3.8 percent in 2018 and 2.7 percent in 2019.

3. **Inflation remains contained, but inflationary pressure has increased**. Inflation increased to 2.5 percent in Q3 2018, and is projected to be 2.6 percent in 2018 before increasing marginally to 2.7 percent in 2019 due to a tight labor market, and increasing housing and oil prices, although demand may soften. In the labor market, the low unemployment rate declined further to 2.8 percent in Q3 2018, and nominal wage growth increased to 3.8 percent yoy in June 2018.

4. **The HKD HIBOR has been rising and catching up with the USD LIBOR.** In April, May and August 2018, the weak-side of the Convertibility Undertaking was triggered many times, with the HKMA buying HKD103.5 billion upon requests from banks, to maintain the stability of the HKD exchange rate. These operations were in line with the mechanism under the Linked Exchange Rate System (LERS). The LERS remains sound due to HKMA's ample reserves, and the economy's strong fundamentals.

5. **In 2018, credit growth has moderated after the strong growth seen in 2017; and the banking sector continues to be sound.** Banks remain very well-capitalized. The classified loan ratio was low at 0.6 percent as of June 2018. Banks are also highly liquid, as reflected in their high liquidity coverage ratios.

6. **Residential property prices increased rapidly in H1 2018, albeit with signs of moderation since Q3 2018.** Despite the expectation of interest rate hikes and strong macro-prudential measures, residential property prices have been rising rapidly in the past two years, reflecting limited supply and strong demand. The price remains elevated, despite of a recent correction from its peak in July 2018.

7. **The fiscal balance has remained in surplus and contributed to the accumulation of fiscal reserves in FY 2017/18.** Revenue collection outperformed budget estimates, mainly due to higher-than-expected revenue from land premiums and stamp duties. The fiscal surplus reached 5.6 percent of GDP in FY 2017/18 and the fiscal reserves reached a historic high.

8. **The economy is exposed to significant downside risks from external factors, most of which have heightened:**

    - **A further escalation of the U.S.-China trade conflict.** Should the U.S. impose higher tariffs on all imports of Chinese goods, and China were to retaliate**,** the spillover effects on Hong Kong could be very significant as up to 1.0 percentage point could be shaved off Hong Kong's GDP in 2020, based on our estimates. The

[1] For brevity, "Hong Kong, China" is referred as "Hong Kong" in the text.

effects would be even more significant if the trade conflict were to adversely affect business confidence.

- **A faster-than-expected pace of the Fed rate hike**. A faster-than-expected Fed rate hike could lead to a sharp rise in HKD interest rates, which will increase the debt-servicing burdens for households and corporates.

- **A sharp slowdown in China and possible capital outflows**. The trade conflict with the U.S. and deleveraging of debt could potentially lead to a sharp slowdown in China and this could affect Hong Kong through weaker demand and sentiments. A sharp RMB depreciation may trigger risk aversion and capital outflows from China, and lead to volatility in Hong Kong's capital markets.

9. **Domestic risks mainly stem from the property market, which has been exuberant reflecting limited supply and low interest rates.** Should the aforementioned external risks have a larger impact on Hong Kong, there could be a sharp correction in the residential property market. This could then weaken private consumption and growth.

10. **While current macro-prudential and demand-side management measures should be maintained, concerted efforts to increase housing supply should remain a priority.** Restraining Hong Kong's property boom has continued to be a key challenge. In June 2018, six new initiatives were announced to increase the supply of subsidized housing units and enhance affordability, and to encourage more timely supply of private flats. It is critical that the government makes concerted efforts to increase the supply of affordable housing in order to meet strong public demand for homes.

11. **The government has fiscal space to support growth if the economy is significantly affected by worsening external conditions.** In the event the economy were to weaken more than expected, further fiscal measures can be deployed to support the economy through higher public investment and financial support for lower-income groups.

12. **Efforts on employing fiscal resources to enhance growth potential and to cope with an aging population, while ensuring the health of the public finance, are commendable.** The FY 2018/19 budget aims to support medium- to long-term growth and prioritizes education and social welfare. Strong fiscal reserves will provide a necessary buffer during cyclical downturns and help the economy cope with population aging.

13. **We commend initiatives by the HKMA and other government agencies in facilitating the development of fintech and smart banking.** Such coordinated efforts demonstrate the strong intention of the government to enhance the efficiency of the financial sector and financial inclusion through new digital technology. Further efforts on this front are encouraged to bolster the role of Hong Kong as a major international financial center.

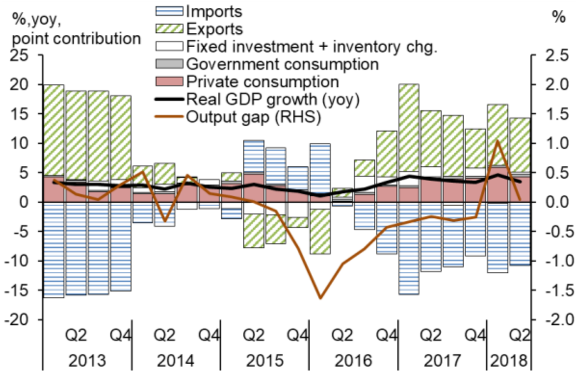
14. **Hong Kong should continue to play a pivotal role in facilitating China's further opening up.** Among many initiatives of Hong Kong authorities, the HKMA has set up the Infrastructure Financing Facilitation Office as a platform to facilitate infrastructure investments and their financing by working with a cluster of key stakeholders. Hong Kong can also contribute to the internationalization of the RMB and the liberalization of the Chinese financial markets by leveraging on its financial and professional expertise.

A. Recent Developments and Outlook

A.1 Real Sector Developments and Outlook

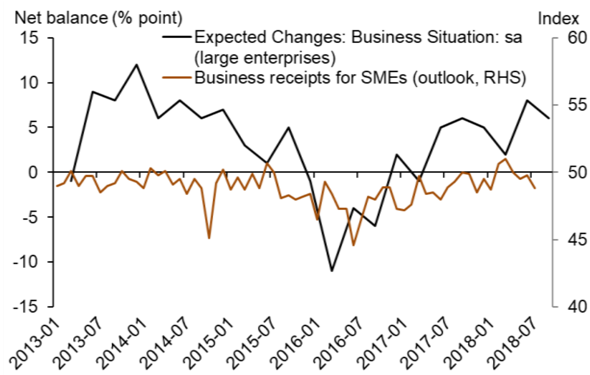
1. **Hong Kong's economy grew strongly in H1 2018, supported by domestic private consumption and external demand.** After a robust 3.8 percent growth in 2017, GDP growth remained strong at 4.0 percent yoy in H1 2018 (Figure 1). Private consumption has been buoyant on the back of growing wage income and the continued appreciation in property prices. Meanwhile, the pick-up in exports of goods and services has been sustained and broad-based, and bolstered by a sharp rise in inbound tourism. The business sentiment of large enterprises has improved further and SMEs have also been less cautious compared to the 2016-2017 period (Figure 2).

Figure 1. Real GDP Growth and Output Gap



Source: CEIC, AMRO staff estimates

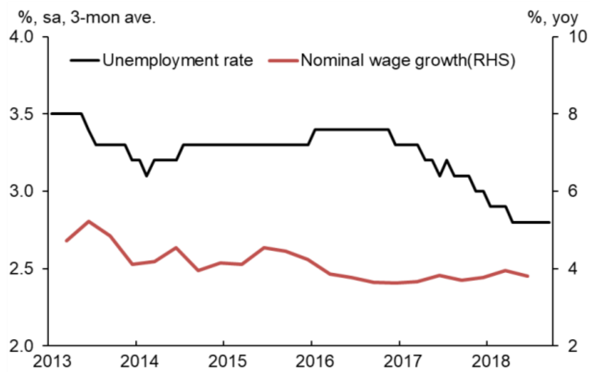
Figure 2. Business Sentiment, Large Enterprises and SMEs[2]



Source: Census and Statistics Department (C&SD), CEIC

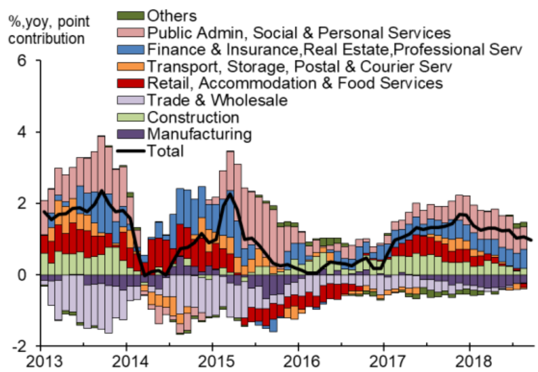
2. **Going forward, growth is expected to moderate slightly.** While resilient private consumption will continue to support growth in 2018 and 2019, headwinds are increasing due to the escalating trade conflict between China and the U.S., the growth moderation in China, and the tightening financial conditions with the Fed rate hikes. Against this backdrop, we project 3.8 and 2.7 percent growth in 2018 and 2019 respectively.

Figure 3. Unemployment Rate and Nominal Wage Growth



Source: CEIC

Figure 4. Employment Growth



Source: CEIC

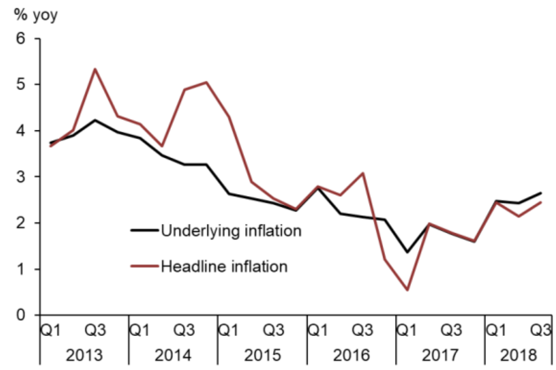
3. **Labor market conditions have remained tight.** The seasonally-adjusted unemployment rate edged down further to 2.8 percent in Q3 2018 (Figure 3), the lowest level

[2] The black line is representative of large enterprises. The red line shows a diffusion index compiled by C&SD on a monthly basis to gauge the general direction of change in the views of SMEs on their business receipts versus the preceding month.

recorded since early 1998. Total employment growth went up by 1.5 percent yoy in Q3 2018, led by strong hiring in the public administration, social and personal services sector, and the financial and business services sector (Figure 4). Nominal wage and real wage growth has been stable. At the same time, productivity improvement has kept labor cost pressure at bay as real GDP growth has outpaced employment growth by about 2.4 percent in H1 2018.

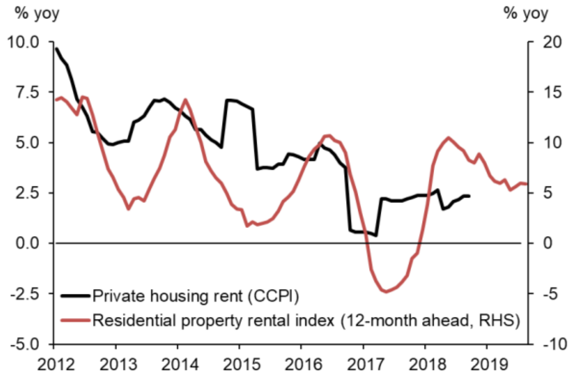
4. **While inflation remains contained, inflationary pressure has risen due to higher wages and rising private housing rents.** Inflation increased from 1.5 percent in 2017 to 2.5 percent in Q3 2018 (Figure 5), reflecting strong economic growth. In the coming quarters, while growth may soften, the labor market will remain tight and private housing rental market will tighten further due to continued feed-through of residential rentals (Figure 6). Moreover, there is upward pressure from the higher world oil prices. Therefore, inflation is projected to edge higher to 2.6 and 2.7 percent in 2018 and 2019 respectively.

Figure 5. Inflation



Source: CEIC

Figure 6. Private Housing Price Inflation



Note: The red line reflects the change in fresh-letting residential rentals.

Source: CEIC

Authorities' Views

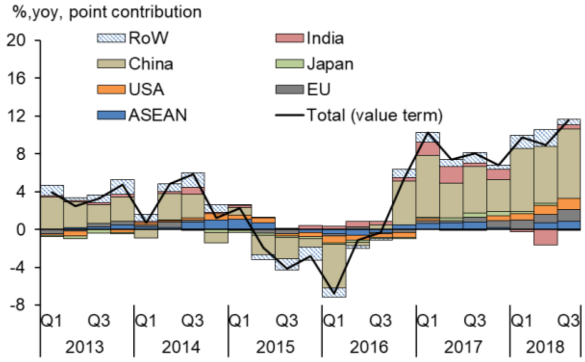
5. **The Hong Kong economy sustained strong growth in the second quarter, but the economic outlook is subject to increasing downside risks.** The global economy has lost some momentum of late. The US-China trade conflicts have weighed on global economic sentiment, with possible repercussions on global trade and investment activities. Besides, the further tightening of financial conditions across advanced economies, particularly in the US, is another risk factor. Local inflation may still be subject to some mild upward pressure in the rest of the year.

A.2 External Sector and the Balance of Payments

6. **A sustainted recovery in external demand has benefited Hong Kong's exports.** Goods exports grew by 9.2 percent in the first three quarters of 2018, led by strong demand from China (Figure 7). Exports to the U.S. picked up further due to above-trend GDP growth of the U.S. and possibly due to traders' front-loading of shipments ahead of possible higher tariffs. The sustained recovery in global trade and cargo flows has continued to benefit Hong Kong's services exports, including transportation services (Figure 8). Moreover, inbound tourism continues to record double-digit growth. Higher demand for financial services, such

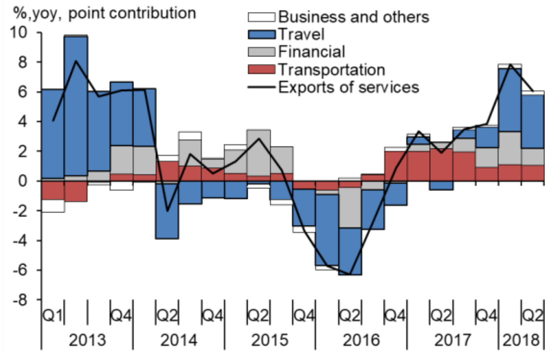
as borrowing by Chinese firms, has provided additional impetus to Hong Kong's services exports.

Figure 7. Goods Exports by Destination



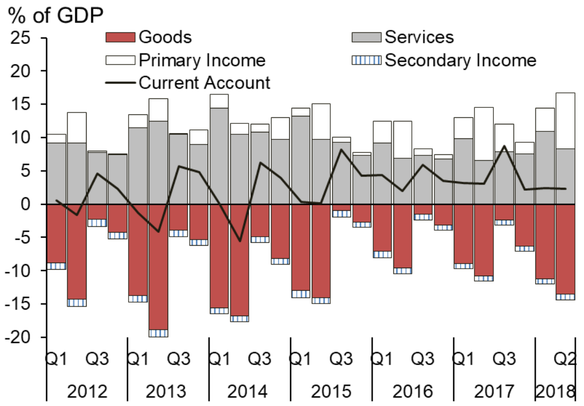
Source: CEIC, AMRO staff estimates

Figure 8. Real Services Exports by Category



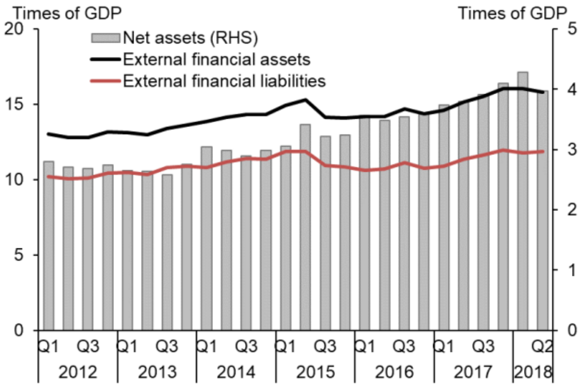
Source: CEIC

Figure 9. The Current Account



Source: CEIC, AMRO staff estimates

Figure 10. International Investment Position



Source: CEIC, AMRO staff estimates

7. **The overall external position remained strong in H1 2018.** The current account has been in surplus every quarter since Q3 2014, due to strong services trade and the primary income accounts (Figure 9). As an international financial center, the financial account (excluding reserve assets) has remained volatile. Meanwhile, the net international investment position declined from a peak to 4.0 times of GDP as of Q2 2018 – still a very strong position (Figure 10), mainly due to a large surplus in portfolio investment, especially through equity and investment fund shares.

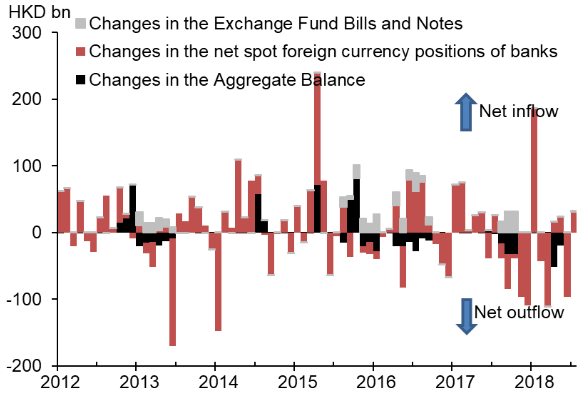
A.3 Monetary Condition and Financial Sector

8. **Since H2 2017, Hong Kong has experienced capital outflows and the HKMA has bought HKD many times since April 2018 in support of the HKD.** From the GFC until H1 2017, there were strong capital inflows to Hong Kong. The trend reversed in H2 2017 (Figure 11), partly due to higher U.S. interest rates. As a result, the HKD had weakened and has been hovering on the weak side of the convertibility zone. The weak-side Convertibility Undertaking was triggered 27 times in April, May and August 2018[3], whereby the HKMA bought HKD103.5 billion upon requests from banks, to maintain the stability of the HKD exchange rate (Figure 14), in line with the mechanism under the Linked Exchange Rate System (LERS).

[3] In the first three quarters of 2018, the weak-side Convertibility Undertaking was triggered 13 times in April, 6 times in May and 8 times in August.

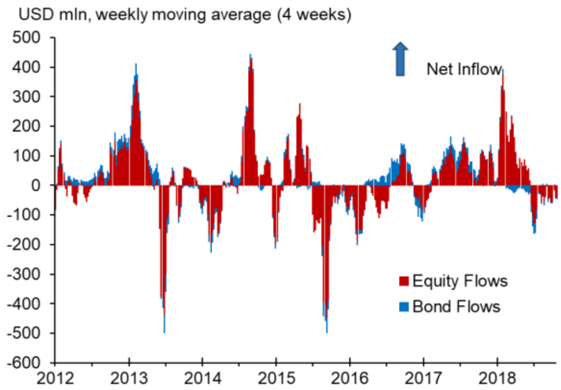
Correspondingly, the Aggregate Balance has declined. Overall outflows have been modest compared to the massive inflows seen in previous years. By type of assets, weekly market survey data show modest outflows in both the equity as well as bond markets since June 2018 amid a correction in the stock market and heightened risk aversion towards emerging markets in general (Figure 12).

Figure 11. Fund Flow Indicators



Source: CEIC, AMRO staff estimates

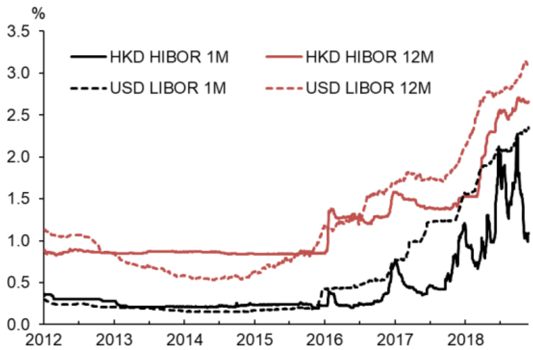
Figure 12. EPFR Fund Flows



Source: EPFR

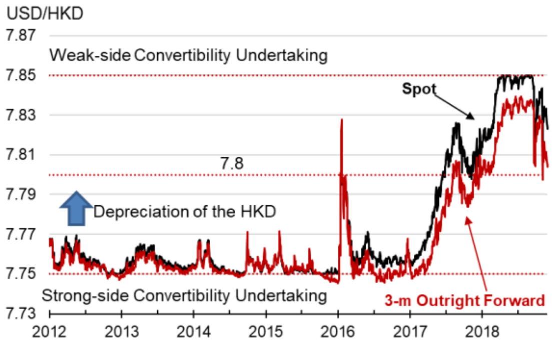
9. **The HKD HIBOR has been rising and catching up with the USD LIBOR.** Prior to April 2018, due to abundant HKD liquidity, the HIBOR did not rise much despite U.S. Fed rate hikes, which triggered arbitrage trade[4] and a weakening of the HKD. Since April 2018, however, with a declining Aggregate Balance, the HKD HIBOR has been catching up with USD LIBOR (Figure 13). The convergence of interest rates has discouraged arbitrage and HKD appreciated in late September 2018 (Figure 14).

Figure 13. Interbank Interest Rates



Source: CEIC, AMRO staff estimates

Figure 14. USD/HKD Exchange Rate



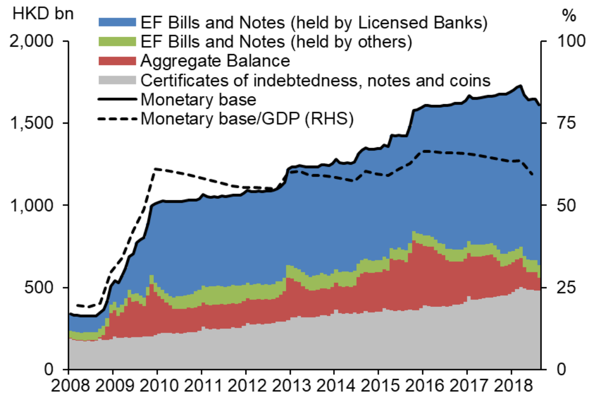
Source: CEIC, AMRO staff estimates

10. **The Linked Exchange Rate System remains sound.** Hong Kong continues to show strong commitment to the currency board arrangement. Foreign reserve assets of USD426.4 billion at September 2018 are adequate to cope with the unwinding of capital inflows. The banking system is strong and liquid too. The labor market is flexible, while fiscal policy is prudent and disciplined. Unlike the experience during the Asia Financial Crisis, the outright forward exchange rate has recently priced in the appreciation of the HKD against the USD (Figure 14), suggesting market confidence in the HKD.

[4] Under the Linked Exchange Rate System, funds tend to flow to the currency with relatively higher interest rate to reap the arbitrage profits, and the interest rate differential is the expected rate of return of the arbitrage.

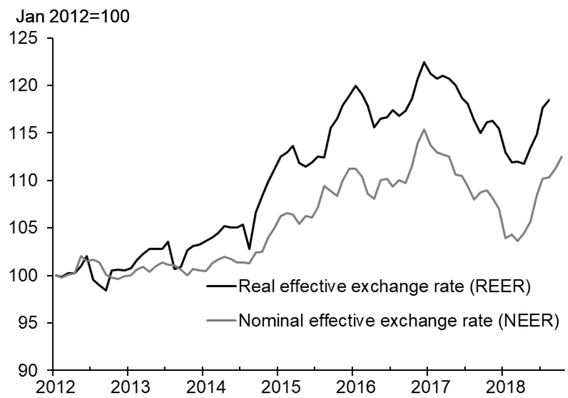
11. **Despite the ongoing Fed rate hikes and the strength of the USD, Hong Kong's monetary conditions have remained accommodative.** Although the monetary base decreased by 4.5 percent during the first three quarters of 2018, it remained sizeable at HKD1,612 billion at the end of September 2018. HIBOR rates have risen, but the yields of 5-year and 10-year U.S. Treasuries have remained at slightly above 3 percent, implying a moderate level of HKD interest rates in the coming years. Therefore, medium- and long-term interest rates will also likely remain low for Hong Kong. Nonetheless, since Q2 2018, with the USD strengthening against most major currencies, particularly the RMB, the HKD trade-weighted NEER has rebounded by 8.6 percent since March 2018, and this has tightened the monetary condition somewhat.

Figure 15. Monetary Base



Source: CEIC, AMRO staff estimates

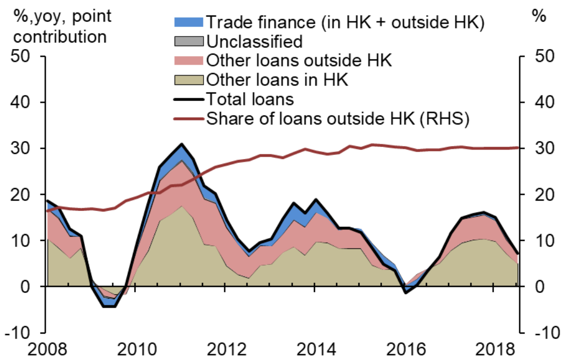
Figure 16. Effective Exchange Rate



Source: CEIC, AMRO staff estimates

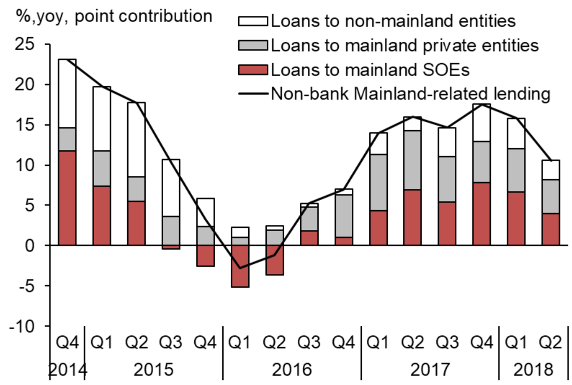
12. **Credit growth has moderated in 2018 following strong growth in 2017, while the banking sector continues to be sound.** Credit grew strongly by 16.1 percent yoy in 2017 but slowed to 7.2 percent in September 2018 (Figure 17). The expansion in domestic loans was mainly backed by improved economic activities and partly underpinned by low interest rates. The further increase in foreign loans was mainly due to mainland-related lending to all types of entities (Figure 18).

Figure 17. Loan Growth



Source: CEIC, AMRO staff estimates

Figure 18. Non-bank Mainland-related Lending

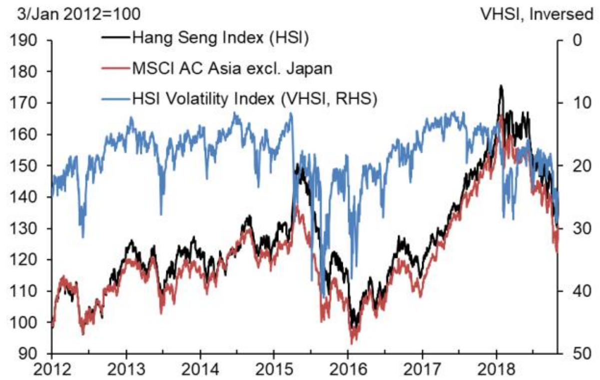


Source: CEIC, AMRO staff estimates

13. **Hong Kong is pushing the frontier in fintech, and the authorities, including the HKMA, have been making concerted efforts to this end.** Investment in fintech in Hong Kong has been increasing rapidly over the past few years in various sub-sectors, and government fiscal funds have provided financial support. Financial regulations have also been

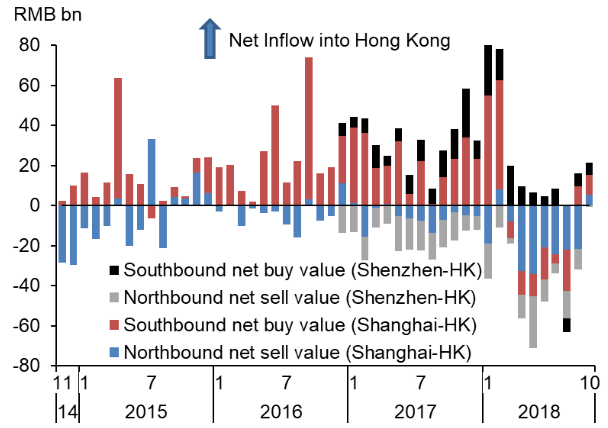
progressing correspondingly. For example, the HKMA has revised the Guideline on Authorization of Virtual Banks to further facilitate the introduction of virtual banks, with the objective of providing new customer experience and promoting financial inclusion and fintech development. At the same time, by tackling data sharing mechanisms through adopting an Open Application Programming Interface framework, the authorities are encouraging more collaboration in banking, and, in turn, creating a more stimulating environment for fintech which benefits consumers (see Selected Issue 2 for a further discussion).

Figure 19. Stock Market Indices



Source: CEIC, AMRO staff estimates

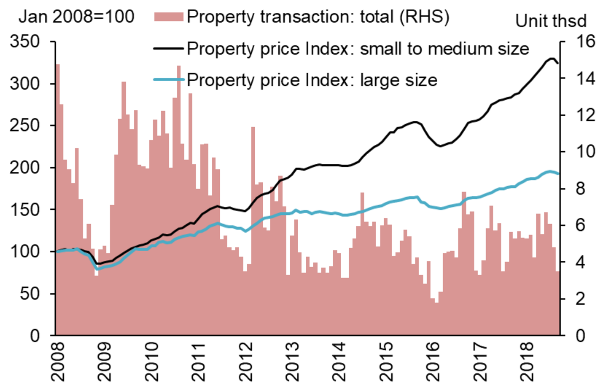
Figure 20. Capital Flows via the Shanghai-Hong Kong and Shenzhen-Hong Kong Stock Connects



Source: CEIC, AMRO staff estimates

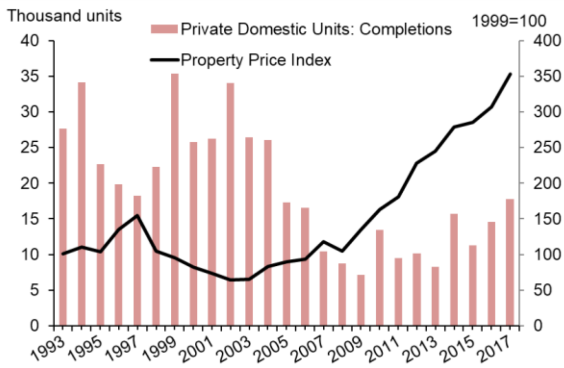
14. **The Hang Seng index has fallen from its January 2018 all-time high, in tandem with the correction in other emerging Asia markets, and volatility has increased (Figure 19)**. The euphoria around emerging markets ended in Q1 2018 and since then, the stock markets have seen a correction with heightened tensions stemming from the U.S.-China trade conflict, turbulence in some troubled emerging economies, and expectation of weaker China's growth. Concurrently, volatility has increased, albeit still below the high levels seen in August 2015 and January 2016. Bolstered by A-shares' inclusion in major stock indices and bargain hunting behavior, northbound flows to mainland have outpaced southbound for most of 2018, reversing the trend in 2017 (Figure 20).

Figure 21. Residential Property Price Index and Transaction Volume



Source: Rating and Valuation Department, CEIC

Figure 22. Residential Supply versus Market Price

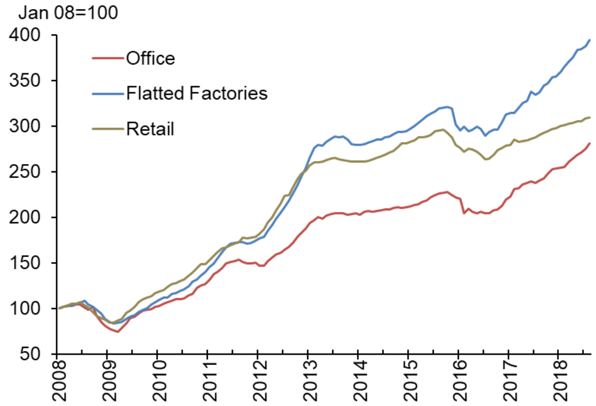


Source: Rating and Valuation Department, CEIC

15. **The residential property market remained buoyant in H1 2018 amid robust economic growth and ample HKD liquidity, reflecting limited supply and strong demand.** Despite strict demand-side management measures, flat prices have increased rapidly, especially for small- and medium-sized flats (Figure 21), due to limited supply and strong demand (Figure 22). Transaction volume also recovered after a decline following the stamp duty hike in November 2016 (Figure 21), with primary market transactions soaring by 81 percent qoq in Q2 2018, as developers sped up the launch of new projects amidst favorable market conditions.

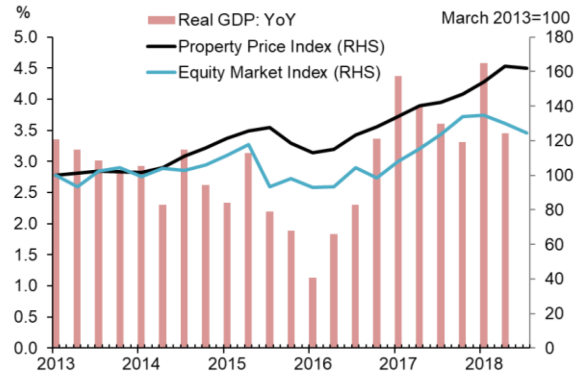
16. **Office and other types of property markets also remained buoyant.** The prices of office properties and other properties also increased sharply in H1 2018 (Figure 23). Office vacancy rate in the Central/Admiralty was still low at 1.9 percent in Q2 2018, according to Colliers, due to the paucity of new supply and strong demand from Chinese companies.

Figure 23. Property Index by Type



Source: Rating and Valuation Department, CEIC

Figure 24. GDP Growth, Equity Price and Property Price



Source: Rating and Valuation Department, CEIC

17. **Going forward, the residential property market may start to stabilize with the expected moderation in GDP growth and higher interest rates.** Empirically, Hong Kong's residential property price has been highly correlated with GDP growth and equity prices (Figure 24). With GDP growth moderating from the high level in Q1 2018, a recent correction in equity prices and increased supply in the pipeline,[5] the supply-demand imbalance will ease. In addition, in September 2018, following an interest rate hike by the Fed, all banks in Hong Kong raised their prime rates, which is often used to price mortgage. As the prime rates and HIBOR are likely to rise further in the coming quarters with the U.S. interest rate hikes, Hong Kong's mortgage rates are likely to rise further. Hence, the property market may start to cool down. In September 2018, the property price index fell by 1.5 percent from its peak in July 2018. Moreover, in October 2018, high-frequency Centa-City Leading Index suggested a further decline in price.

Authorities' Views

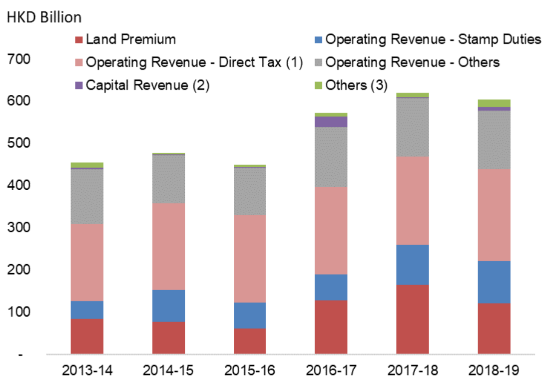
[5] The government projected first-hand private flat supply in the coming three to four years stayed at high around 93,000 units as estimated at the end of September 2018.

18. **Financial market's selling of Hong Kong dollar for the US dollar is a normal and inevitable process.** Mainly driven by increased carry trade activities, the Hong Kong dollar spot exchange rate has eased gradually since March. As the monetary policy normalisation continues in the US, Hong Kong dollar interest rates will inevitably be on a rising trend. Financial market's selling of Hong Kong dollar for US dollar is a normal and inevitable process for Hong Kong dollar interest rate normalisation under the Linked Exchange Rate System. The Hong Kong equity market progressively came under pressure as trade conflicts escalated and monetary normalisation picked up further pace. However, looking ahead, although the outlook remains highly uncertain, attractive valuations may trigger bargain hunting activities, especially if the market corrects further from current levels.

A.4 Fiscal Sector

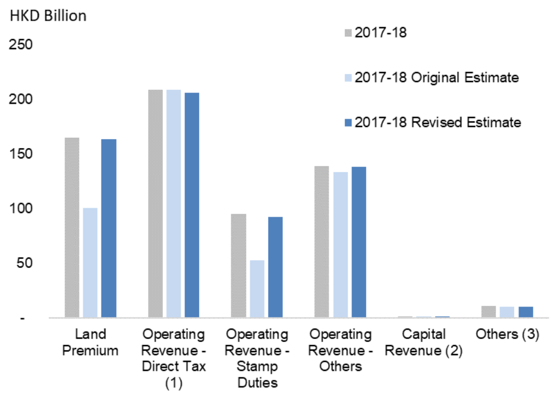
19. **Revenue collection was better than budget estimates due to the buoyant property market, while expenditure disbursement was lower than the budget target.** Revenue from land premium continued to increase further in FY 2017/18 mainly due to rising real estate prices (Figure 25). Operating revenue remained strong due to a further increase in stamp duties. Overall revenue growth at 8.2 percent yoy in FY 2017/18 was higher than the nominal GDP growth rate and the amount of revenue at HKD619.8 billion was much higher than the initial budget (Figure 26). Consolidated expenditure in FY2017/18 grew by 1.9 percent yoy, below the budgeted growth of 6.4 percent. This was due to both slower disbursement of social welfare services-related capital and operating expenditure.

Figure 25. Revenue Components



Note: 2018-19 refers to budget original estimate.
(1) Operating Revenue - Direct Tax: Include the receipt on profits tax, personal assessment, property tax and salaries tax.
(2) Capital Revenue: Represent the capital revenue under General Revenue Account (GRA).
(3) Others: Include all capital revenue other than land premium and capital revenue under GRA.
Source: Financial Services and the Treasury Bureau

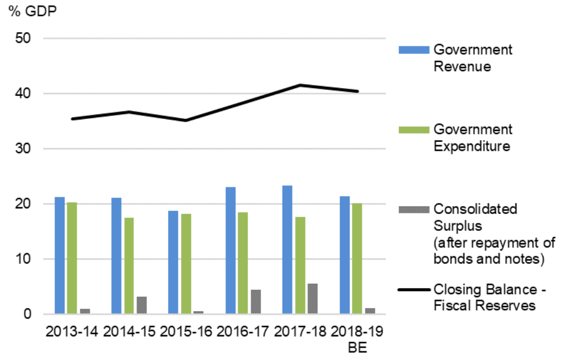
Figure 26. Revenue Estimates and Actuals for FY2017/18



Note: Please refer to the note of Figure 25.
Source: Financial Services and the Treasury Bureau

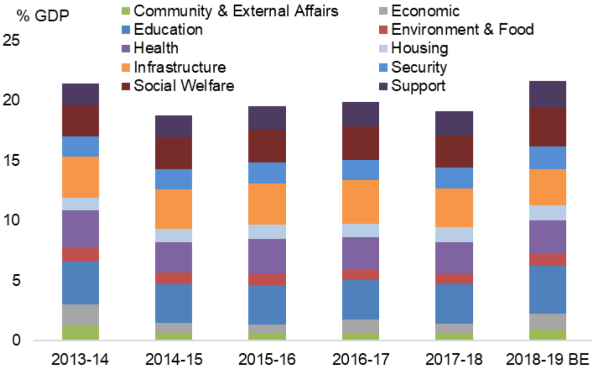
20. **The government's financial position continues to be strong as the fiscal surplus contributed to a further accumulation of fiscal reserves in FY 2017/18 (Figure 27).** As revenue grew faster than expenditure, the fiscal surplus reached 5.6 percent of GDP in FY 2017/18. The fiscal reserves reached HKD 1,060.5 billion or 39.9 percent of GDP in July 2018. On the other hand, the outstanding commitment—mainly to future capital investment—at the start of FY2018/19 stood at 64.1 percent of total fiscal reserves.

Figure 27. Fiscal Balance and Fiscal Reserves



Note: We use the calendar year GDP in the calculation.
2018-19 refers to budget original estimate.
Source: Financial Services and the Treasury Bureau

Figure 28. Public Expenditure by Policy Area Group



Note: We use the calendar year GDP in the calculation.
2018-19 refers to budget original estimate.
Public expenditure includes government expenditure, expenditure by trading funds and the Housing Authority. The nominal GDP is assumed to grow 5.0 percent in FY2018/19.
Source: Financial Service and the Treasury Bureau

21. **The FY 2018/19 budget aims to utilize the fiscal resources to support medium-to-long term growth and prioritizes education and social welfare.** The highlights of the new budget—announced in Feb 2018—include facilitating new growth opportunities and diversifying the economy, investing in human capital and increase land supply, pushing forward tax reform to keep a competitive tax regime and improving healthcare and social support. Total public spending on education and social welfare are budgeted to increase significantly (Figure 28). With regard to revenue reform, a two-tier profits tax rates regime, aiming to support SMEs and start-ups and keep Hong Kong competitive on the tax front has been in effect since 1 April 2018 (Table 1).

Table 1: Summary of the Two-Tier Profits Tax Rate Regime

Regime	**Taxable Profits**	**Tax rates (incorporated)**	**Tax rates (unincorporated)**
New	0 - HKD2 million	8.25 percent	7.5 percent
	>2 million	16.5 percent	15 percent
Old	*>0*	*16.5 percent*	*15 percent*

Source: Financial Services and the Treasury Bureau

22. **A lower fiscal surplus is projected in the new budget.** The new budget anticipates continuing growth in tax revenue but has a more conservative estimate of land premiums compared to the previous year. The full effect of the expected tax loss due to the new tax regime will only be realized in FY2019/20. Direct tax is estimated to grow faster than in the previous year in light of strong growth prospects. The overall budget balance is expected to register a mild surplus (Figure 27). Notwithstanding the lower surplus, the budget reiterated the importance of maintaining sound fiscal reserves to support Hong Kong's role as a financial center.

B. Risks, Vulnerabilities and Challenges

23. **Our baseline projection of growth could be affected by various risk factors.** The near-term risks arise mainly from external sources, in particular the U.S.-China trade conflict. The domestic risk factor is a possible sharp correction in the property markets. The long-term challenges are supply-side constraints in land and labor, which could limit Hong Kong's growth potential.

B.1 Near-term Risks to the Macro Outlook

24. **The economy is exposed to significant downside risks from external factors, most of which have heightened.** Table 2 summarizes our view that external risks have increased and the most serious risk, in terms of both likelihood and impact, is the U.S.-China trade conflict. On the domestic front, the risk from a sharp housing market correction has increased further as housing prices have risen to a higher level.

Table 2. Risks by Sectors

Risks		Likelihood			Potential Impact
		2016	2017	2018-19	
Domestic	A sharp correction in the housing market				Medium
External	Faster-than-expected U.S. monetary tightening				Medium
	U.S.-China trade conflict				High
	Economic slowdown in China				High

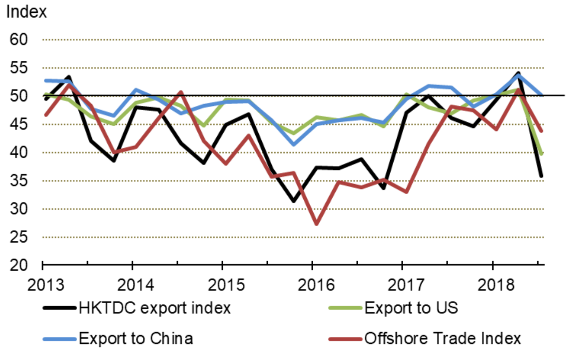
Low likelihood	Low to Medium	Medium	High likelihood

Source: AMRO staff estimates

25. **Hong Kong is highly susceptible to a further escalation of the U.S.-China trade conflict.** The significant adverse impact will be largely through Hong Kong's large and growing trade-related services, including offshore trade and non-trade services exports, of which a significant portion of demand comes from China and the U.S.. The worsening market sentiments will also have a large impact. Hong Kong exporters are becoming more pessimistic in the near-term future, as the HKTDC Export Index plunged from 54.1 in Q2 2018 to just 35.8 in Q3 2018 (Figure 29). Based on our estimate, in the worst-case scenario, U.S. tariffs together with retaliatory measures from China[6] will have a sizable impact on Hong Kong through various channels, and could shave off about 1.0 percentage point from GDP in 2020 (please refer to Selected Issue A for further analysis). The effect could be more significant if the trade conflict materially affects financial market sentiment. In addition, there does not appear to be any prospect of an imminent resolution to the trade conflict. Through the multiple channels, as summarized in Selected Issue A, it could lower Hong Kong's growth for an extended period of time.

[6] The baseline scenario includes a 25 percent tariffs by the U.S. on USD50bn of Chinese exports, a 10 percent tariffs by the U.S. on USD200bn of Chinese exports, together with a 25 percent tariffs by China on USD50bn of U.S. exports, a 10 percent tariffs by the China on USD60bn of U.S. exports. The worst case scenario includes a 25 percent tariffs imposed by both side on all goods. The simulation results were generated by employing the Oxford Economics model.

Figure 29. The HKTDC Export Index



Source: The Hong Kong Trade Development Council (HKTDC)

26. **The Chinese economy may slow sharply due to the effects of the trade conflict and deleveraging and that will have a significant impact on Hong Kong**. Our simulations of the trade conflict indicates that Hong Kong's GDP could be reduced by 0.3-1.0 percentage point in the event of a further escalation of the current state of the trade conflict. In addition, China is still in the process of deleveraging the economy. Its debt-cutting efforts have stabilized the high debt-to-GDP ratio since 2017, but it has also held back infrastructure investment. To support growth, the Chinese authorities have recently taken measures to fine-tune the pace of deleveraging – by allowing local governments to speed up the issuance of special bonds to fund infrastructure projects, for example. This demonstrates that the deleveraging process may be bumpy and lengthy. If not well handled, it could lead to a sharp slowdown in China's economy, which could in turn affect Hong Kong through weaker demand and sentiment.

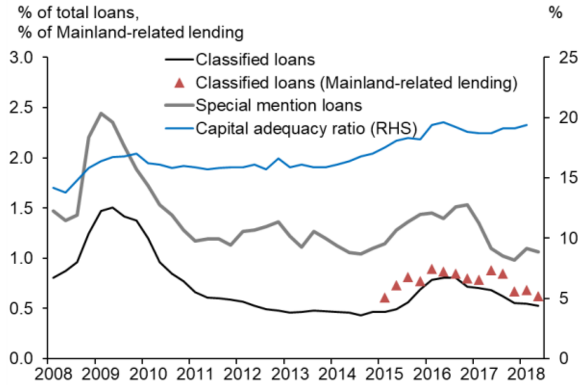
27. **Hong Kong is also sensitive to an unexpected increase in the pace of the Fed's normalization process**. If inflation in the U.S. were to spike up, the pace of U.S. policy tightening may turn out to be much faster-than-expected. This could lead to a rapid rise in HKD interest rates, which would increase the debt-servicing burden for some segments of borrowers, especially new mortgage borrowers. With an assumption that HIBOR will increase sharply by 200 bps, the overall outstanding mortgage debt services ratio (OMDSR) will increase significantly from the current 12.0 percent to about 14.3 percent.[7] Moreover, for households with new mortgages, their mortgage payment as a share of disposable income will increase sharply from 35.0 percent at present to about 43.4 percent, potentially dampening their consumption. The faster-than-expected Fed rate hike could also lead to a renewed bout of financial market volatility in emerging markets, which will heighten risk premium and depress Hong Kong's equity and credit market activities.

28. **Overall, the banking sector will likely remain sound in the face of tightening global financial market conditions.** Banks remain very well-capitalized, and the capital adequacy ratio stood at 19.4 percent in June 2018 (Figure 30). The classified loan ratio,

[7] For an average household, we assume that OMDSR is 12% (according to HKMA paper "Measuring the effect of mortgage debt service burden on consumption"), the remaining tenor of mortgage is 20 years, and the current mortgage rate is 2.5 percent. For households with new mortgages, we assume that OMDSR is 35%, the remaining tenor of mortgage is 25 years, and the current mortgage rate is 2.5 percent.

including mainland-related loans, was just 0.6 percent.[8] Banks are also highly liquid, with their average liquidity coverage ratios (LCRs) continuing to be the highest in the region (Table 3). Meanwhile, the USD loan-to-deposit ratio remained well below 100 in Hong Kong, indicating a strong USD liquidity profile.

Figure 30. Banks' Asset Quality and Capital Adequacy



Source: CEIC

Table 3. Average LCR of Listed Banks

Domicile	No. of observations	Average LCR (latest)
Hong Kong*	4	158
Indonesia	1	145
Singapore	3	142
China	26	137
Japan	3	134
Malaysia	1	133
Total	**38**	**140**

Note: the four banks in Hong Kong are: HSBC Holdings PLC, Bank of China (Hong Kong) Limited, Standard Chartered PLC and Hang Seng Bank Limited. A simple average is used to calculate the average LCR for each domicile. This is based on Q2 2018 data.
Source: Reuters, AMRO staff estimates

29. **As a financial center, cybersecurity threats may potentially cause substantial economic loss for Hong Kong**. Banks in Hong Kong have so far had very few incidents of serious cyberattacks, and it is difficult to quantify the impact of cybersecurity threats, but the potential economic loss in Hong Kong can be substantial, according to a survey-based study.[9] The HKMA has been implementing the Cybersecurity Fortification Initiative since 2016, which helps enhance cyber resilience of the banking system through three pillars: (i) a risk-based framework for banks to assess and test resilience against cyberattacks;[10] (ii) a platform for banks to share intelligence relating to cyberattacks; and (iii) a certification and professional development programme for cybersecurity professionals.

30. **Capital outflows from China coud lead to financial market volatility in Hong Kong.** Since April 2018, while the RMB has depreciated significantly, capital outflows from China have been modest. The Hang Seng Index saw a relatively modest correction, compared to much sharper corrections during the past episodes of RMB depreciation. Offshore RMB interest rates have remained low and stable.[11] Moving forward, Hong Kong authorities should remain vigilant, as a sharp depreciation of the RMB may increase China's capital outflow pressure and lead to volatility in capital markets in Hong Kong.

[8] Hong Kong banks have started using the HKFRS 9, which uses new forward-looking impairment methodology with the concept of "expected credit loss" instead of the previous "incurred credit loss" model. The low classified loan ratio hence indicates that banks are expecting low credit loss in the future.

[9] Frost & Sullivan, 2018, "Understanding the Cybersecurity Threat Landscape in Asia Pacific: Securing the Modern Enterprise in a Digital World". The study involved a survey of 1,300 business and IT decision makers. The study reveals that 23% of organizations surveyed in Hong Kong have either experienced a cybersecurity incident. Frost & Sullivan has created an economic loss model based on macro-economic data and insights shared by the survey respondents. In addition to financial losses, cybersecurity incidents are also undermining Hong Kong organizations' ability to capture future opportunities in today's digital economy.

[10] The resilience assessment framework, called Cyber Resilience Assessment Framework (C-RAF), has been implemented since December 2016. In June 2018, after accounting for the industry's feedback, the HKMA started to implement the C-RAF in two more phases.

[11] This is also in part due to some new measures announced by the PBC on May 2018, according to which offshore RMB business clearing banks and participating banks can tap RMB liquidity from the onshore market to support offshore RMB business development.

31. **Domestic risks stem mainly from the exuberant property market, reflecting the limited supply of properties and low interest rate environment.** With prices surging over the past several years, flat prices in August 2018 exceeded the September 2015 peak by 29 percent, and the price-to-rent ratio had risen to multi-year high in July 2018. Hence, there is a growing risk of a sharp property market correction, in particular with the ongoing external headwinds, which will weaken household balance-sheets.[12] Given the LERS system, Hong Kong is not able to use the exchange rate to absorb external shocks, but has to adjust through price movements. In the worst-case scenario, a sharp fall property prices will lead to a deflationary spiral of the broader economy. While the impact on the financial system may be limited, especially due to the prudent loan-to-value ratio (LTV) cap, it may have a material impact on growth. A study by HKMA shows that in the past crisis, a wealth and balance-sheet effect accounted for half of the decline in private consumption.[13]

Authorities' Views

32. **A number of downside risks could adversely impact growth prospect.** An unexpected increase in the pace of the Fed's monetary policy normalization and the possibility of simultaneous tightening by major central banks, the authorities pointed out that the "deemed repatriation" provision under the newly-passed U.S. tax reform could also reduce off-shore USD liquidity, though the impact is likely to be manageable based on past experience. Any sharper-than-expected tightening in global monetary conditions could pose risks to growth and asset markets. The U.S. government's shift towards more protectionist trade policies could trigger global protectionist sentiment and derail the region's export recovery. The US-China trade conflicts would affect the Hong Kong economy directly through the trade channel, and also indirectly through dampening global economic and financial activities as well as sentiment. The Government has been maintaining close liaison with the trade and has taken a number of initiatives to assist them in market development and risk diversification, and will stay vigilant to developments.

B.2 Longer-term Challenges and Vulnerabilities

33. **Land is one of the main supply-side constraints for Hong Kong that must be addressed in order to enhance the economy's growth potential.** Hong Kong is densely populated and has the highest property prices in the region, due to the hilly terrain and legislative constraints that prevent the government from increasing land supply. Only 7 per cent of Hong Kong's land has been zoned for housing, and almost half of it is taken up by low-density rural homes that cannot be easily developed. While 18 land supply options have been tabled for discussion, they all involve competing interests – such as those of the environmentalists and developers – that must be traded off against each other. Hence, given that the government land reserve is limited, increasing land supply is difficult. Hong Kong

[12] According to "LCQ20: Young people acquiring properties with support from parents" by the Hong Kong Government, based on a recent survey, 45 percent of young respondents intend to acquire properties through the mode of "hinging on father's deed". Some of the parents have remortgaged or topping up the mortgages of their self-occupied properties, and used the proceeds to support the young people. While the number of such families is limited, these young households and their parents are especially susceptible to a sharp price correction.

[13] HKMA (2001), "The property market and the macro-economy".

should take initiatives to enhance its long-term growth potential, leverage on the Greater Bay Area development and be more decisive in taking measures to tackle the obstacles in increasing land supply.

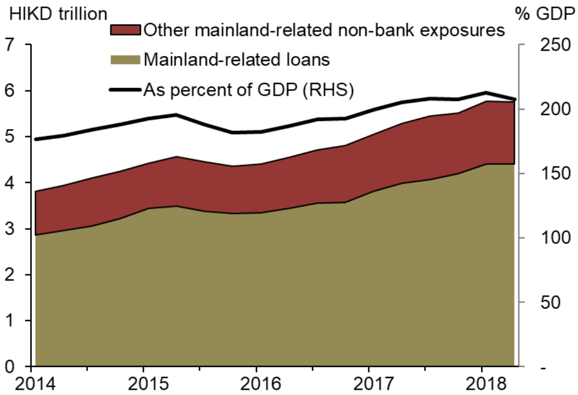
34. **Labor is another key supply-side constraint for Hong Kong.** Due to longer life expectancy and a low fertility rate, Hong Kong's population has been aging since early 2000s. The median age increased from 37 in mid-2001 to 44 in mid-2017. The trend of population aging is expected to be more apparent in the years ahead. The labor force of 3.99 million in 2018 is probably close to the peak. Economic growth will increasingly be constrained by the aging population and stagnation of labor supply.

C. Policy Discussions and Recommendations

C.1 Surveilance of Mainland-related Lending

35. **The authorities should continue to monitor closely bank lending to banks and corporations in China.** Lending to mainland-related entities has exceeded 200 percent of Hong Kong's GDP (Figure 31). The regulations have been strict and lending has been prudent, as indicated by the low classified loan ratio at 0.6 percent. However, the large exposures indicate that any deterioration of Chinese borrowers' credit profiles may have a significant impact on Hong Kong's banking system, because (i) China's corporate debt level is high and the deleveraging process is potentially lengthy and bumpy; (ii) the trade conflict is hurting China's exporters. Although a large portion of the lending to China is by foreign-owned entities and may not pose direct risk to Hong Kong local banks, a sharp credit loss of the foreign-owned entities can also have spillover effects on the financial system, as they are often the trading counterparty of other financial institutions in Hong Kong, including local banks. Their credit loss would also have an impact on the local economy, as they may wind down their operations in Hong Kong and the repercussion of counterparty credit risk may reduce other firms' financial activities in Hong Kong.

Figure 31. Hong Kong's Financial Exposure to China



Source: CEIC, AMRO staff calculations

C.2 Macro-prudential Policy and Increasing Housing Supply

36. **While macro-prudential and demand-side management measures remain important, greater efforts towards increasing housing supply should remain a priority.**

The government's several rounds of demand-side management measures,[14] as well as the HKMA's macro-prudential measures[15] to prevent further exuberance in the housing market, have helped to contain and stabilize the growth of household debt and housing prices to a certain extent. As part of its Long Term Housing Strategy, the Hong Kong government has stepped up efforts to provide more affordable housing and to build a housing ladder of homeownership for families in different income brackets. In June 2018, the government's six new initiatives, including the "Special Rates" on vacant first-hand private residential units, were announced. These are constructive and should be implemented in a well-coordinated manner (Box A). The total housing supply target for the ten-year period from 2018-19 to 2027-28 is 460,000 units, of which 60 percent will be public housing[16] and the rest private housing. Given this challenging target, it is critical that the government continues to take decisive actions to increase the supply of affordable housing in order to meet the strong demand. Encouragingly, in October 2018, the government unveiled a policy blueprint proposal, to push ahead with the housing and land supply initiatives[17], including building a new metropolis on reclaimed land that would potentially house more than a million people.

Box A. Hong Kong Government's Six Initiatives on Housing (June 2018)

The Hong Kong government introduced new housing initiatives to promote home ownership to address the housing problem. On 29 June 2018, Chief Executive Carrie Lam announced new measures to meet three objectives: i) making subsidized housing more affordable; ii) increasing supply of subsidized housing; and iii) encouraging more timely supply of new private flats by developers. These new initiatives are as follows:

- **Revising the pricing policy for Subsidized Sale Flats (SSFs):** The authorities modified the pricing mechanism of flats of the subsidized Home Ownership Scheme (HOS), such that they are more affordable to lower- to middle-income households. Based on the revised affordability test under the new pricing mechanism announced on 29 June 2018, HOS flats in the Sale of HOS Flats 2018 will be sold at only 52 percent of the "assessed market value", lower than the previous 70 percent. The actual discount for each of the future HOS sale exercises will be determined by applying the affordability test to the assessed market value of flats in different locations.
- **Inviting the Urban Renewal Authority (URA) to assign its project as the Starter Homes (SH) pilot project:** The authorities invited the URA to assign its Ma Tau Wai Road project to be a "Starter Homes" (SH) pilot project. SH aims to help the higher-income (the upper

[14] According to the assessment of the Hong Kong Government, demand-side management measures introduced since November 2010 have been effective. They include: i) Special Stamp Duty; ii) Buyer's Stamp Duty; iii) Doubled ad valorem Stamp Duty; and iv) New Residential Stamp Duty.

[15] HKMA has launched a total of eight rounds of counter-cyclical macro-prudential measures since October 2009 to tighten property mortgages, with a view to strengthen the resilience of banks and borrowers in coping with impact of a fall in property prices. The measures include: i) limiting the maximum loan tenor for all new property to 30 years; ii) Requiring banks to apply more prudent criteria for assessing repayment ability of mortgage applicants; iii) Requiring banks to share mortgage data; and iv) Limiting the maximum loan-to-value ratios and the debt servicing ratio for property mortgages of higher risks.

[16] According to the government's ten-year housing supply target (2018-19 to 2027-28), the 280,000 public housing units consist of 200,000 public rental housing units and 80,000 subsidized sale flat units

[17] The Task Force launched a five-month public engagement exercise in April 2018. It aims to enhance the public's understanding of the basic information of 18 land supply options, and to discuss the benefits and disadvantages. These options include longer-term housing solutions such as resuming and developing large areas of agricultural land and brownfield sites in the New Territories, and undertaking additional reclamation. On September 2018, the Task Force submitted its preliminary observations drawn from the Public Engagement Exercise.

income limit for SH is 30 percent above the HOS limit) families who are not eligible for the HOS and cannot afford private housing. The discount for SH units should be 10 to 20 percent less than the preceding HOS sale exercise.

- **Reallocating private housing sites for public housing**: A total of nine private housing sites (of 10,600 flats capacity) have been reallocated.
- **Assisting the community to facilitate transitional housing projects and the use of vacant government sites**: The authorities formed a task force (under the Transport and Housing Bureau) to help push ahead temporary housing projects launched by community groups, with a view to alleviate the hardship faced by inadequately housed families on the public rental housing waiting list.
- **Introducing the "Special Rates" on vacant first-hand private residential units:** The authorities plan to impose "Special Rates" (roughly equal to 5 percent of the property value, or twice the average rental yield of 2.5 percent) on first-hand private residential units which have been left vacant for six months or more over the last 12-month period to encourage the more timely supply of new private flats. To this end, the government plans to introduce an Amendment Bill to the Legislative Council during the 2018-19 legislative year.
- **Amending the Lands Department Consent Scheme to improve sales practices**: The authorities require developers to offer for sale no less than 20 percent of total number of flats at each turn of sale. The requirement has already been implemented.

These new initiatives are commendable in view of the importance of addressing the housing shortage in Hong Kong. They will help allocate more land resources to public housing and make it more affordable to a wider income spectrum. Furthermore, the timely implementation of new measures could be helpful to a certain extent in moderating the price of residential property, which deviates from economic fundamentals and could be a potential risk.

C.3 Maintaining Fiscal Prudence While Actively Supporting Growth

37. **The government has fiscal space to support growth if the economy is more adversely affected by worsening external conditions.** With a positive output gap and full-employment situation, Hong Kong does not need additional stimulus measures now. However, in case the economy is more adversely affected by worsening external conditions, further fiscal measures can be prudently deployed to support the economy through financial support to the lower-income groups and public investment.

38. **Efforts on employing fiscal resources to enhance growth potential and cope with aging population, while ensuring the health of the public finance, are commendable.** AMRO commends the authorities' efforts in directing more resources towards overcoming supply-side constraints, and diversifying the economy. For instance, implementing a two-tier profits tax rate regime and increasing the tax deduction for R&D expenditure will support small firms including start-ups, and will encourage more innovation. On the other hand, maintaining strong fiscal reserves will provide a necessary buffer during cyclical downturns and to support an aging population. Moving forward, Hong Kong government should continue to rein in cost overruns of major infrastructure projects, and the government should consider a feasible plan for revenue reforms to address a structural deficit in the long term.[18] The future large scale reclamation of land will be taken forward in phases and the projects costs will spread over a

[18] According to long-term fiscal planning projections conducted by the Hong Kong government in 2014, a structural fiscal deficit will appear in around FY2029/30.

number of years, and hence, the pace and expenditures of land reclamation should be carefully calibrated, such that Hong Kong remain fiscally prudent.

C.4 Supporting China's Opening Up and and Enhancing its Role as an International Financial Center

39. **Hong Kong should continue to enhance its role in facilitating the Belt and Road Initiative (BRI).** Hong Kong will continue to benefit from China's continued opening up, including through BRI facilitation. The HKMA has set up the Infrastructure Financing Facilitation Office (IFFO) as a platform to facilitate infrastructure investments and their financing by working with a cluster of key stakeholders, including multilateral development banks (MDBs), policy banks, commercial banks, other financial investors, project developers and professional services providers. As these stakeholders have capabilities to arrange investment and financing for a wide range of projects at different stages, strengthening the IFFO's role in helping connect and enhance cooperation between MDBs and policy banks with the private side can be a boost to the BRI. In addition, Hong Kong's debt capital markets will be a valuable venue for these entities including MDB and policy banks to issue bonds.

40. **Hong Kong can also contribute to RMB internationalization and Chinese financial market liberalization by leveraging on its financial and professional expertise.** This will reinforce Hong Kong's position as one of the world's leading financial centers and, in tandem, will contribute to China's further opening-up and reform. The Stock Connect and Bond Connect, which leverage on Hong Kong's worldwide connections and infrastructure, have continued to gain traction. In May 2018, the People's Bank of China announced a series of measures[19] to further enhance cross-border fund flow management, which will facilitate Hong Kong's development as the global offshore RMB business hub.

41. **The Greater Bay Area development can become another growth engine for Hong Kong.** Hong Kong could support regional economic development and enhance the role and function of the Greater Bay Area in China's two-way opening-up, and closer collaborations with neighboring cities will provide another impetus for growth. The economies of Hong Kong and ten other cities of the Greater Bay Area were worth a total of USD1.5 trillion in 2017, covering an area of 56,000 square km and with an estimated population of 70 million. The Greater Bay Area can exploit each city's strength, including Hong Kong's role an international financial center, and promote synergy between cities. The west side of the Greater Bay Area in particular is now better connected to Hong Kong through the Hong Kong–Zhuhai–Macao bridge.

42. **We commend the initiatives taken by the HKMA and other government agencies in facilitating the development of fintech and implementing various initiatives to enable smart banking.** Such coordinated efforts demonstrate a strong intention to increase the efficiency of the financial sector and enhance financial inclusion through new technology. The

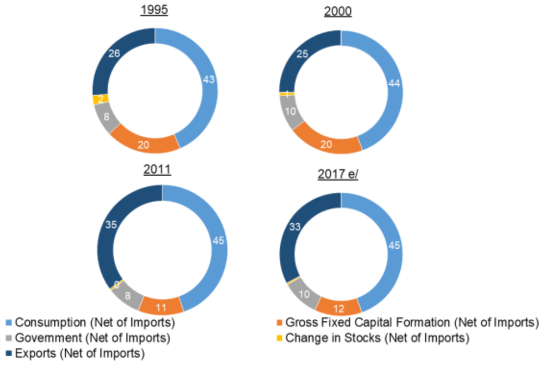
[19] See the HKMA press release for a summary https://www.info.gov.hk/gia/general/201805/18/P2018051800764.htm.

HKMA's Fintech Supervisory Sandbox, which allows banks and partnering tech firms to conduct fintech trials and obtain supervisory feedback along the way, is one notable example. Further efforts on this front are encouraged to bolster the role of Hong Kong as a top international financial center.

Appendix 1. Selected Figures for Major Economic Indicators

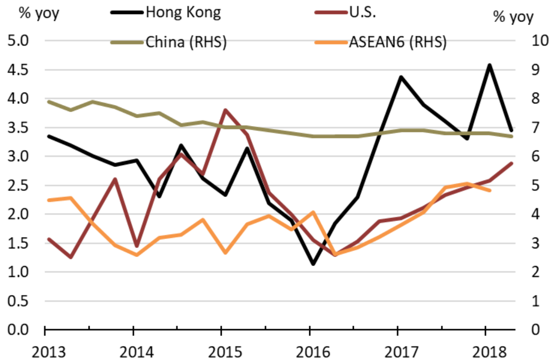
Figure 1.1. Real Sector

In value-added terms, consumption's share continued to be the largest and stable, followed by exports.



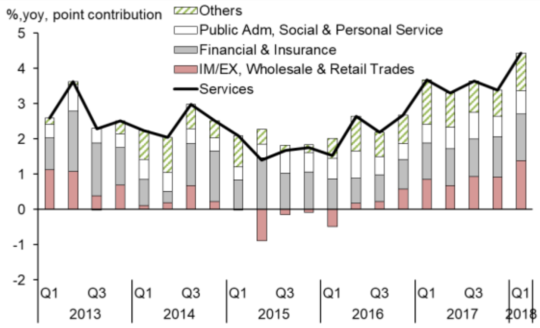
Source: CEIC, OECD TiVA, AMRO staff calculations

The pick-up in growth since 2016 has been bolstered by a recovery in trading partners' growth.



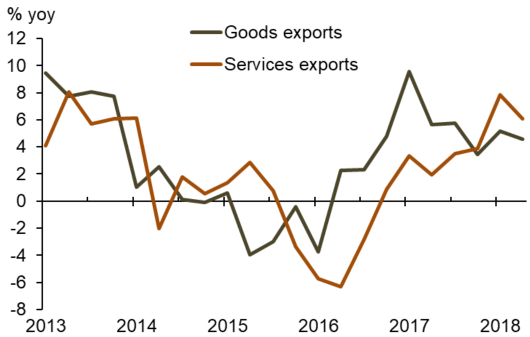
Source: CEIC

Growth in services has been largely driven by external-oriented sectors.



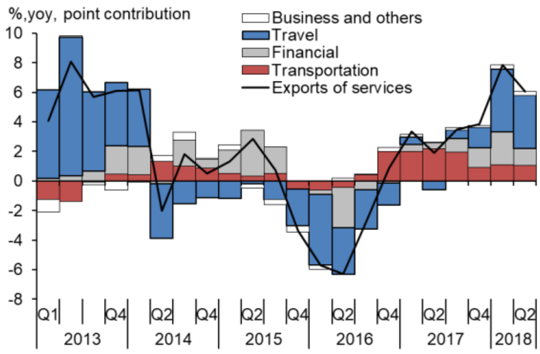
Source: CEIC, AMRO staff calculations

After lagging behind, services exports have started to move in tandem with good exports



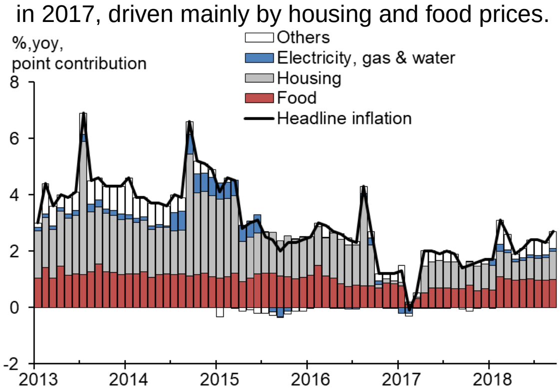
Source: CEIC

Travel has rebounded strongly, and financial services exports have also been strong.



Source: CEIC, AMRO staff calculations

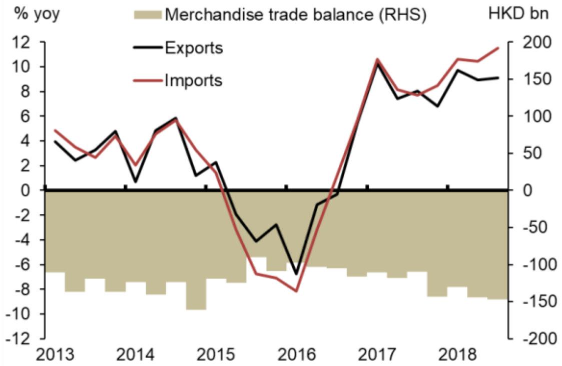
Inflation has been edging up slowly from the trough in 2017, driven mainly by housing and food prices.



Source: CEIC, AMRO staff calculations

Figure 1.2. External Sector

Goods exports and imports have been strong and have yet to be impacted by the U.S.-China trade conflict.

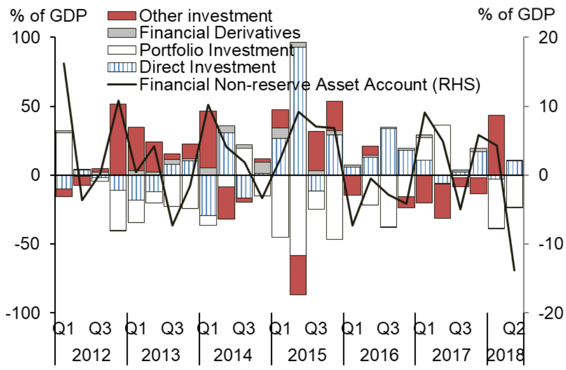


Source: CEIC

The share of re-exports between China and the U.S. has declined.

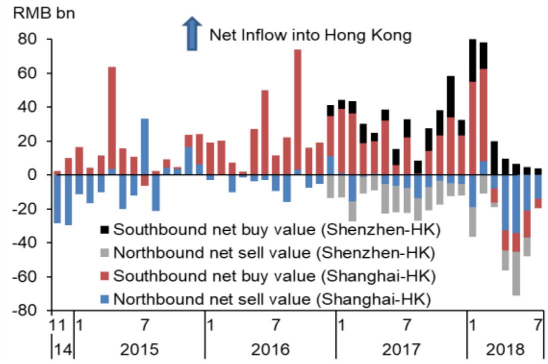
Source: CEIC

As a financial center, all components of the financial accounts have been volatile.



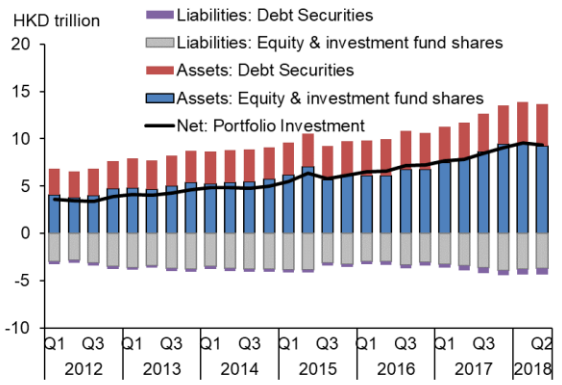
Source: CEIC, AMRO staff calculations

International investors have shown great interest in China's stock markets, in spite of the falling price.



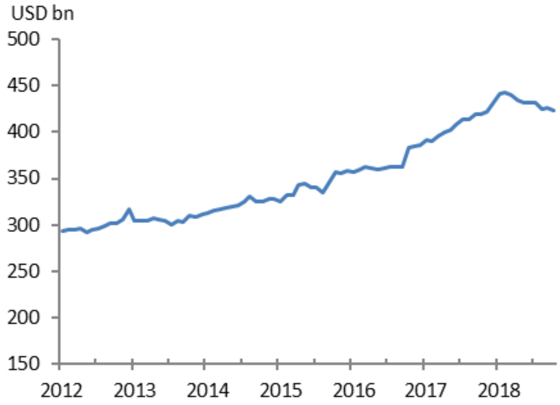
Source: CEIC

Hong Kong's net portfolio investment assets have been sizable and continued to increase.



Source: CEIC

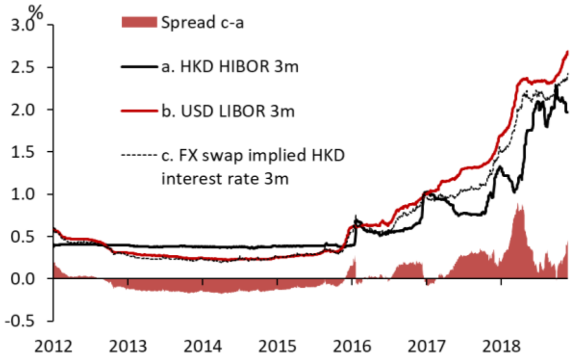
Official reserves came down slightly from the record high due to a strong USD and emerging market volatility.



Source: CEIC

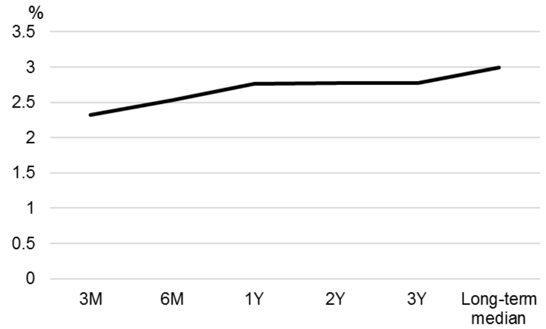
Figure 1.3. Monetary and Financial Sector

Under the LERS, HKD HIBOR and the FX swap implied HKD interest rate will catch up gradually with the USD LIBOR, which will rise with the federal funds rate.



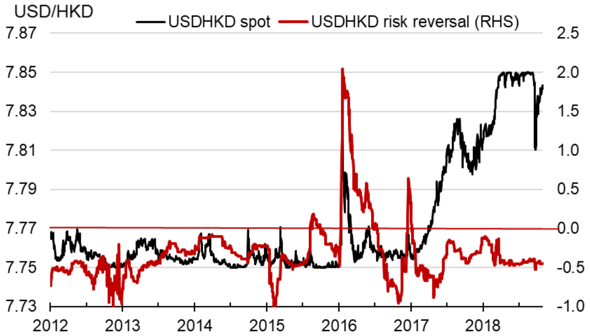
Source: Wind

The Federal Funds rate will likely rise modestly in the coming years.



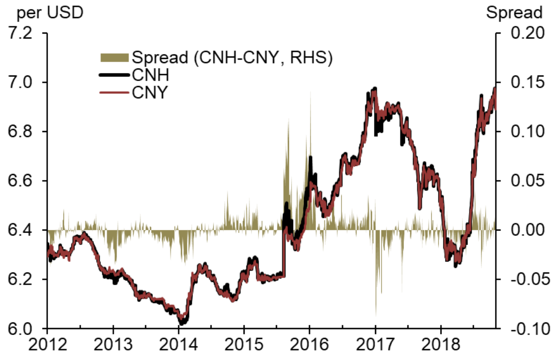
Note: The long-term median is the median projection by the Federal Open Market Committee. Interest rates of other tenors are implied by the financial markets.
Source: Wind

The higher USD interest rate puts some pressure on the HKD spot FX rate, but the FX option market has priced in a slight appreciation of the HKD.



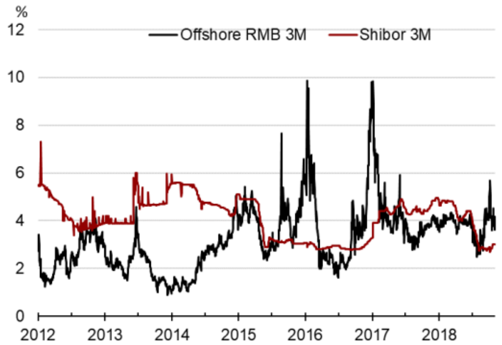
Note: Risk reversal is the implied volatility for USDHKD Call Options minus that of Put Options
Source: Wind

As in 2015 and 2016, the RMB has recently weakened against the USD.



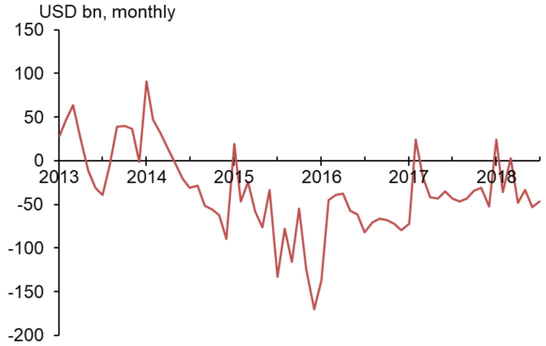
Source: Wind

In contrast to the 2015 and 2016 episodes, the offshore RMB interest rate has remained low.



Source: Wind

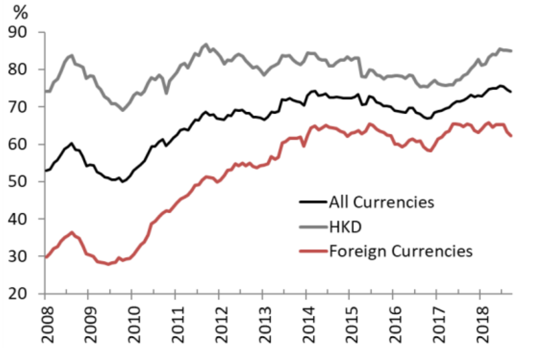
In contrast to the 2015 and 2016 episodes, hot money outflow has been modest recently.



Note: The capital flow is estimated as the FX purchase by the PBC + change in FX deposits as total flows into China – China's trade position (exports - imports) – China's FDI balance (FDI to China – China's ODI overseas).
Source: CEIC, Wind

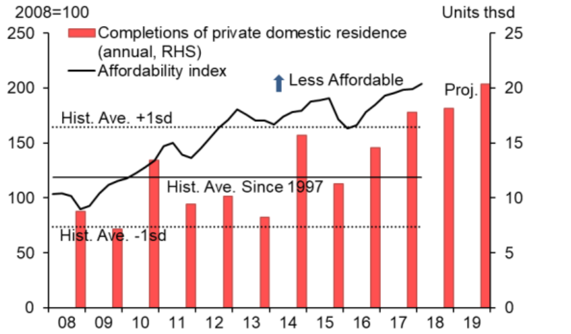
Figure 1.4. Banking and Household Debt

Banks' loan-to-deposit ratio has risen, especially for the HKD.



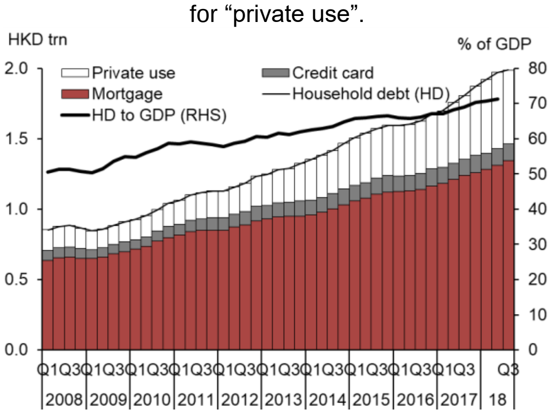
Source: CEIC

Housing has become less affordable, but the supply-demand imbalance will ease somewhat with increasing supply.



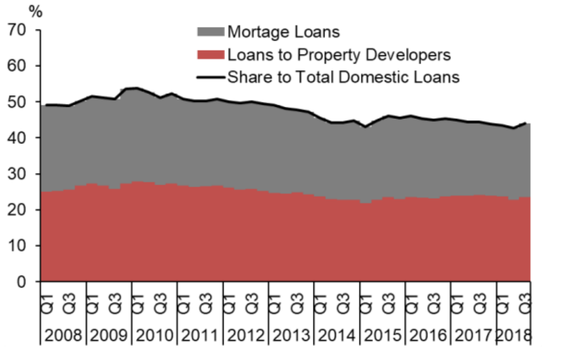
Source: CEIC

The household debt-to-GDP ratio remained at historically high levels, due to mortgages and loans for "private use".



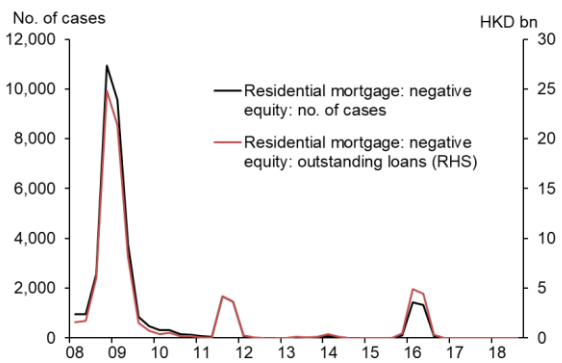
Note: "Private use" includes general purpose loans granted to individuals such as instalment loans, revolving loans and overdrafts.
Source: CEIC

The share of property-related loans has always been high, and most of them are in HKD.



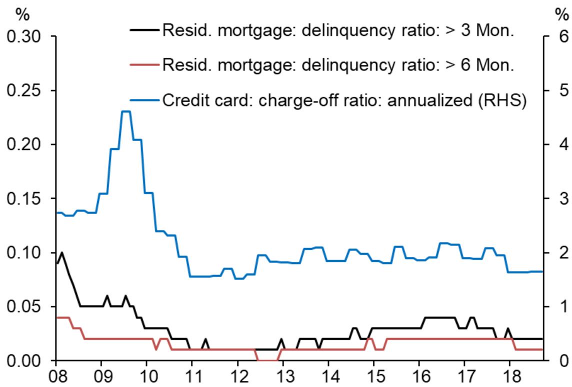
Source: CEIC

Mortgage loan quality is sound. The number of negative equity cases in residential mortgages remained quite low.



Source: CEIC, AMRO staff calculations

Although leading indicators of household default remained contained, the impact of the interest rate increase should be closely monitored.



Source: CEIC

Appendix 2. Selected Economic Indicators for Hong Kong

	2013	2014	2015	2016	2017	2018	2019
						Projection	
Real Sector and Prices	(In yoy percent change unless specified)						
Real GDP	3.1	2.8	2.4	2.2	3.8	3.8	2.7
Private consumption	4.6	3.3	4.8	2.0	5.5	5.8	4.4
Government consumption	2.7	3.1	3.4	3.3	3.4	3.5	3.5
Gross domestic fixed capital formation	2.6	-0.1	-3.2	-0.1	3.5	3.7	2.5
Exports	7.8	1.0	-1.4	0.7	5.5	5.5	3.4
Goods	8.2	0.8	-1.7	1.6	5.9	-	-
Services	6.0	1.6	0.3	-3.5	3.2	-	-
Imports	8.3	1.0	-1.8	0.9	6.3	6.1	3.9
Goods	9.9	1.5	-2.7	0.7	7.0	-	-
Services	-2.1	-2.2	5.0	2.0	1.9	-	-
GDP deflator	1.8	2.9	3.6	1.7	2.9	3.5	3.3
Labor Market							
Unemployment rate (In percent, period average)	3.4	3.3	3.3	3.4	3.1	-	-
Prices							
Headline inflation (Period average)	4.3	4.4	3.0	2.4	1.5	2.4	2.5
Underlying inflation (Period average)	4.0	3.5	2.3	2.3	1.7	-	-
External Sector	(In billions of USD unless specified)						
Current account balance (In percent of GDP)	1.5	1.4	3.3	4.0	4.3	3.3	2.8
Trade balance (In percent of GDP)	0.6	0.2	2.4	2.3	0.9	-	-
Exports, fob	459	474	466	463	498	-	-
Imports, cif	524	545	523	517	559	-	-
Overall balance of payments	7.5	17.9	36.4	1.1	32.1	-	-
(In percent of GDP)	2.7	6.2	11.8	0.4	9.4	-	-
Gross official reserves excluding net forward position	311	328	359	386	432	-	-
(In months of retained imports of goods)	26.2	26.4	32.1	36.0	36.8	-	-
Total external debt	1,161	1,301	1,300	1,357	1,564	-	-
Short-term external debt (% of international reserves)	277	283	251	237	243	-	-
Fiscal Sector (General Government)	(In percent of FY GDP)						
Revenue	21.3	21.2	18.8	23.0	23.3	21.4	21.4
Expenditure	20.3	17.5	18.2	18.6	17.7	20.2	19.8
Consolidated budget balance	1.0	3.6	0.6	4.5	5.6	1.2	1.5
Public debt	0.5	0.1	0.1	0.1	0.1	0.1	-
Monetary and Financial Sector	(In yoy percent change unless specified)						
Total loans	16.0	12.7	3.5	6.5	16.1	-	-
Total loans (In percent of GDP)	302.0	322.0	314.2	322.1	350.0	-	-
Loan to deposit ratio (In percent)	70.3	72.2	70.1	68.4	73.0	-	-
Classified loan ratio (In percent)	0.48	0.46	0.69	0.72	0.56	-	-
Capital adequacy ratio (In percent)	15.9	16.8	18.3	19.2	19.1	-	-
Three-month Hibor (In percent, end of period)	0.4	0.4	0.4	1.0	1.3		
Memorandum Items							
Exchange rate (LCY per USD, average)	7.76	7.75	7.75	7.76	7.79		
GDP in billions of HKD	2,138.3	2,260.0	2,398.3	2,490.8	2,661.0	2,855.2	3,026.5
GDP in billions of USD	275.7	291.5	309.4	320.9	341.4	-	-
GDP per capita (USD)	38,404	40,316	42,431	43,739	46,189	-	-
Asset prices							
Hang Seng Index (end of period, 1964=100)	23,306	23,605	21,914	22,001	29,919	-	-
(% yoy)	2.9	1.3	-7.2	0.4	36.0	-	-
Residential property prices (end of period, 1999=100)	245	278	285	307	353	-	-
(% yoy)	7.7	13.5	2.4	7.9	14.7	-	-

Note: Inflation is computed from the 2014/15-based series.
Source: Hong Kong authorities, AMRO staff estimates

Appendix 3. Balance of Payments

	2013	2014	2015	2016	2017
	(In percent of GDP)				
Current account	1.5	1.4	3.3	4.0	4.3
Goods	-10.1	-11.1	-7.4	-5.2	-7.0
Exports	183.6	176.4	162.2	156.3	157.5
Imports	193.7	187.5	169.6	161.5	164.5
Services	10.7	11.3	9.8	7.5	7.9
Exports	38.0	36.7	33.7	30.7	30.5
Imports	27.3	25.4	23.9	23.2	22.6
Primary income	1.9	2.1	1.9	2.5	4.2
Secondary income	-1.0	-0.9	-0.9	-0.8	-0.8
Capital and financial account	-4.0	-3.3	-5.4	-4.1	-5.8
Capital account	-0.1	0.0	0.0	0.0	0.0
Financial account	-4.0	-3.2	-5.4	-4.0	-5.8
Financial non-reserve assets	-1.3	2.9	6.4	-3.7	3.6
Direct investment, net	-2.4	-3.8	33.1	18.0	6.3
Portfolio investment, net	-18.1	-2.8	-40.5	-18.9	11.5
Financial derivatives, net	2.6	5.2	4.1	1.5	1.5
Other investment, net	16.6	4.3	9.6	-4.3	-15.6
Reserve assets	-2.7	-6.2	-11.8	-0.4	-9.4
Net errors and omissions	2.5	1.9	2.0	0.1	1.5
Overall Balance of Payments	2.7	6.2	11.8	0.4	9.4

Source: Hong Kong authorities, AMRO staff estimates

Appendix 4. Statement of Central/ General Government Operations

	2013-14	2014-15	2015-16	2016-17	2017-18
	(In billions of HKD)				
Opening Balance	**734**	**756**	**829**	**843**	**954**
Consolidated Revenue	**455**	**479**	**450**	**573**	**620**
General Revenue [Note (a)]	359	396	384	436	444
Operating Revenue	355	394	382	412	443
Direct Tax (Note (b))	184	205	206	207	209
Stamp Duties [Note (c)]	42	75	63	62	95
Others	130	114	113	143	139
Capital Revenue [Note (d)]	3	2	3	24	2
Land Premium	84	78	61	128	165
Others [Note (e)]	12	5	5	9	11
Consolidated Expenditure	**434**	**396**	**436**	**462**	**471**
Operating Expenditure	338	316	347	353	371
Capital Expenditure	96	80	88	109	100
Consolidated Budget Balance [Note (f)]	**22**	**73**	**14**	**111**	**149**
Closing Balance	**756**	**829**	**843**	**954**	**1103**
	(In percent of GDP)				
Opening Balance	34.3	33.4	34.5	33.8	35.9
Consolidated Revenue	21.3	21.2	18.8	23.0	23.3
General Revenue	16.8	17.5	16.0	17.5	16.7
Operating Revenue	16.6	17.4	15.9	16.5	16.6
Direct Tax	8.6	9.1	8.6	8.3	7.8
Stamp Duties [Note (c)]	1.9	3.3	2.6	2.5	3.6
Others	6.1	5.0	4.7	5.7	5.2
Capital Revenue	0.2	0.1	0.1	1.0	0.1
Land Premium	3.9	3.4	2.5	5.1	6.2
Others	0.6	0.2	0.2	0.4	0.4
Consolidated Expenditure	20.3	17.5	18.2	18.6	17.7
Operating Expenditure	15.8	14.0	14.5	14.2	13.9
Capital Expenditure	4.5	3.5	3.7	4.4	3.8
Consolidated Surplus [Note (f)]	1.0	3.2	0.6	4.5	5.6
Closing Balance	35.3	36.7	35.1	38.3	41.4
Memorandum Items:					
GDP in billions of HKD (Calendar Year)	2,138	2,260	2,398	2,491	2,661

Notes: (a) General Revenue: Include Operating Revenue and capital revenue under the General Revenue Account (GRA).
(b) Operating Revenue - Direct Tax: Include the receipt on profits tax, personal assessment, property tax and salaries tax.
(c) Stamp Duties: 2017-18 figure is estimated.
(d) Capital Revenue: Represent the capital revenue under GRA.
(e) Others :Include all capital revenue other than land premium and capital revenue under GRA.
(f) There was a repayment of bonds and notes in FY 2014-15 surplus after repayment.

Source: Hong Kong authorities, AMRO staff estimates

Appendix 5. Monetary Survey

	2013	2014	2015	2016	2017
	(In percent of change, period end)				
Total money supply					
M1	9.7	13.1	15.4	12.3	9.8
M2	12.4	9.5	5.5	7.7	10.0
M3	12.4	9.6	5.5	7.7	10.0
HKD money supply					
M1	8.6	11.6	12.2	14.0	11.8
M2	5.7	9.0	10.3	8.9	11.6
M3	5.7	9.0	10.4	8.9	11.6
Deposit					
Total	10.7	9.7	6.7	9.1	8.7
HKD	5.1	9.3	10.7	9.3	11.6
Foreign currency	16.2	10.1	3.1	8.8	5.9
Loans and advances					
Total	16.0	12.7	3.5	6.5	16.1
HKD	8.2	10.9	3.8	7.9	19.7
Foreign currency	27.6	14.9	3.2	4.8	11.6
Interest rates	(In percent, period average)				
Discount window base rate	0.50	0.50	0.51	0.76	1.35
HKD HIBOR: 1 month	0.21	0.22	0.23	0.30	0.55
HKD HIBOR: 3 month	0.38	0.37	0.39	0.60	0.90
Composite interest rate	0.30	0.41	0.29	0.26	0.33
HSBC's best lending rate	5.00	5.00	5.00	5.00	5.00

Source: Hong Kong authorities, AMRO staff estimates

Appendix 6. Data Adequacy for Surveillance Purposes: A Preliminary Assessment

Criteria/ Key Indicators for Surveillance	Data availability[i]	Reporting frequency/ timeliness[ii]	Data quality[iii]	Consistency[iv]	Others, if any[v]
National account	Yearly and quarterly data are available (for expenditure, production and income approach)	Quarterly, within 1.5 months after the end of the reference quarter (for preliminary data)	-	-	-
Balance of payments (BOP) and external position	Monthly BOP data are available in detail	Quarterly, within three months after the end of the reference period	-	-	-
Central government budget/ external debt	Monthly central government public finance data are available, while quarterly external debt data available in detail	Budget: Monthly, within one month after the end of the reference period External debt: Same as the BOP	-	-	-
Inflation, money supply and credit growth	Monthly inflation, money supply and credit growth data are available	Monthly data are released within one month after the reference period	-	-	-
Financial sector soundness indicators	Available	Financial Soundness Indicators (FSIs) are available from the IMF website Quarterly, within three months after the end of the reference quarter	-	-	-
Housing market indicators	Available	Monthly data are released within one month after the end of the reference period	-	-	-

Notes:
(i) Data availability refers to whether official data are available for public access by any means.
(ii) Reporting frequency refers to the periodicity that the available data are published. Timeliness refers to how up-to-date the published data are relatively with the publication date.
(iii) Data quality refers to the accuracy and reliability of the available data given the data methodologies are taken into account.
(iv) Consistency refers to both internal consistency within the data series itself and its horizontal consistency with other data series of either same or different categories.
(v) Other criteria might also apply, if relevant. Examples include but are not limited to potential areas of improvement for data adequacy.

Source: AMRO staff compilations. This preliminary assessment will form the “Supplementary Data Adequacy Assessment" in the EPRD Matrix.

Annexes: Selected Issues

1. The Impact of U.S.-China Trade Conflict on Hong Kong

1. **This study analyses the possible transmission channels of spillovers from the U.S.-China trade conflict on Hong Kong and identifies measures to cushion the impact.** Through Hong Kong's merchandise trade linkages, we first analyse how the decline in trade between the U.S. and China will directly affect Hong Kong, and we found the impact to be limited. However, the impact through the indirect channels will likely be significant. These indirect channels include a decline in global trade, business confidence, slower growth in China and greater financial market volatility. The study will conclude with some plausible measures to cushion the potential impact of this trade conflict.

2. **Hong Kong is highly susceptible to an escalation of the trade conflict between the U.S. and China, as they are its top two trade partners.** In 2017, China and the U.S. accounted 62.9 percent of Hong Kong's total exports, comprising largely of re-exports[20] between the two economies, as well as other countries' trade with these two economies. A sizable share of the trade will be affected by the higher tariffs. In term of both goods and services trade, the size of Hong Kong's trade with these two economies was about twice of Hong Kong's GDP. Therefore, trade barriers such as import tariffs will weigh on Hong Kong's exports and related services. We analyze the potential channels of spillover on Hong Kong as follows:

Channel 1: Re-exports of trade between China and the U.S. through Hong Kong. Trade between the U.S. and China will decline, and hence, reduce Hong Kong's re-exports to these two economies.

Channel 2: Hong Kong's participation in GVCs. As a result of the disruption of GVCs, trade between China and the rest of world will decline, which will hurt Hong Kong's economy through its participation in GVCs.

Channel 3: Hong Kong's exports of trade-related services. As a result of the decline in trade between China (and the U.S.) and the rest of world, demand for Hong Kong's trade-related services will fall.

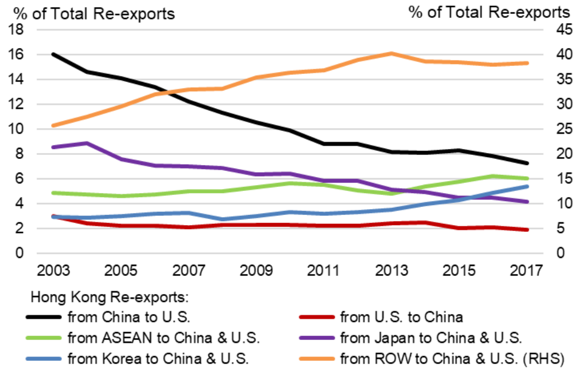
Channel 4: Hong Kong's exports of other services. Weaker growth in China, the U.S. and other trader partners will hurt Hong Kong's exports of other services, aside from those directly linked to goods trade.

Channel 5: Financial market sentiment. Financial market volatility and capital outflows from emerging markets will dampen financial sector activities in Hong Kong, and lead to a negative wealth effect.

[20] Re-exports are products, which are imported into Hong Kong and then re-exported without having undergone any manufacturing process that changes the shape, nature, form or utility of the product permanently.

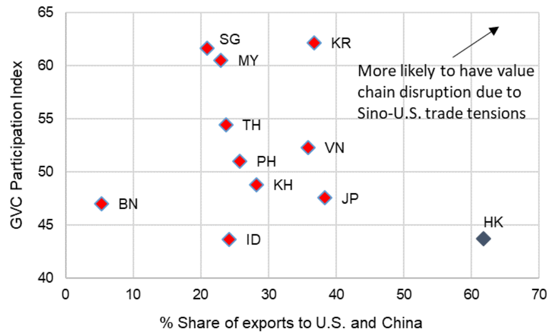
3. **The impact due to weaker re-exports of trade between China and the U.S. through Hong Kong (Channel 1) is limited, as Hong Kong is intermediating a relatively modest volume of trade between the two countries, while intermediating a much larger volume between these two economies and the rest of world.** In 2017, around 8.3 percent of China's exports to the U.S. and 6.1 per cent of China's imports from the U.S. were routed through Hong Kong, and these accounted for only 9.1 percent of Hong Kong's total exports. This is much lower than the amount of trade between these two economies and other countries through Hong Kong (Figure A1.1). Hence, the impact through Channel 1 will likely be limited.

Figure A1.1. Re-exports by Selected Economies of Origin and Destinations



Note: ASEAN here refers to Malaysia, the Philippines, Singapore and Thailand.
Source: Census and Statistics Department

Figure A1.2. Comparison of Exposures to US-China Trade Tensions



Source: National Authorities, UN Comtrade, OECD TiVA database

4. **The impact on GDP through Hong Kong's participation in GVCs (Channel 2) is low.** Notwithstanding its high trade connectivity with the U.S. and China, the impact on growth stemming from Hong Kong's participation in GVC is unlikely to be significant (Figure A1.2), as Hong Kong is not a major manufacturer of intermediate goods. Nevertheless, the impact on GNP could be large, given that Hong Kong corporates have sizable overseas investments in GVC-related activities.

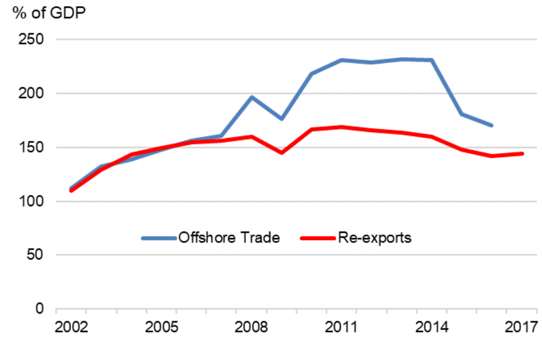
5. **The impact through Hong Kong's exports of trade-related services (Channel 3) could be considerable.** As the world's manufacturing powerhouse, China is at the center of global GVCs. It imports a sizable amount of intermediate goods, a large share of which is processed for exports. Trade conflicts with the U.S. will weaken China's demand for intermediate goods, disrupting GVCs. For example, in 2017, Hong Kong's exports in a single product—electronic integrated circuits (SITC code = 7764)—amounted to USD111.4 billion, of which 88.8 percent went to China. Trade conflicts will hence dampen the demand for Hong Kong's trade-related services in intermediating these intermediate goods.

6. **The impact through Channel 3 will be even larger if offshore trade were taken into account.** The amount of Hong Kong's offshore trade services is also large (Figure A1.3), although in terms of contribution to GDP, offshore trade is lower than re-exports due to its lower mark-up. Offshore trade, which comprises of both "merchanting" and "merchandising" [21] for

[21] Offshore trade covers the services of both "merchanting" and "merchandising" for offshore transactions. Merchanting refers to services associated with the trading of goods that are purchased from and sold to parties outside Hong Kong without the goods ever entering and leaving Hong Kong. It also includes the sale of goods that are manufactured through subcontract processing arrangements to parties outside Hong Kong without the goods entering and leaving Hong Kong. Merchandising (or purchasing) services for offshore transactions are defined as the services of arranging

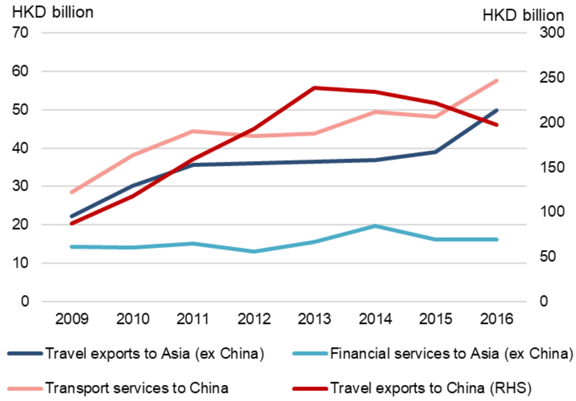
offshore transactions, has accelerated as Hong Kong exporters have shifted to intermediating trade without the goods entering and leaving Hong Kong. With well-established expertise and extensive sourcing networks, some Hong Kong corporates are managing supply chains for all kinds of business. These activities will be disrupted by the trade conflict.

Figure A1.3. Re-exports and Offshore Trade (% of GDP)



Source: Census and Statistics Department

Figure A1.4. Services VA Exports to Asia and the U.S.



Note: 2015 and 2016 data for ASIA (ex. China) are AMRO estimates.
Source: Census and Statistics Department, AMRO staff calculations

7. **The impact through Hong Kong's exports of non-trade (in goods) related services (Channel 4) could be large, as China, the U.S. and other economies in the GVCs are the most important sources of external demand for Hong Kong's services exports.** China and the U.S. are the top destinations for Hong Kong's services exports, in particular China (Figure A1.4). A slowdown in these two economies will hence dampen demand for Hong Kong's services.

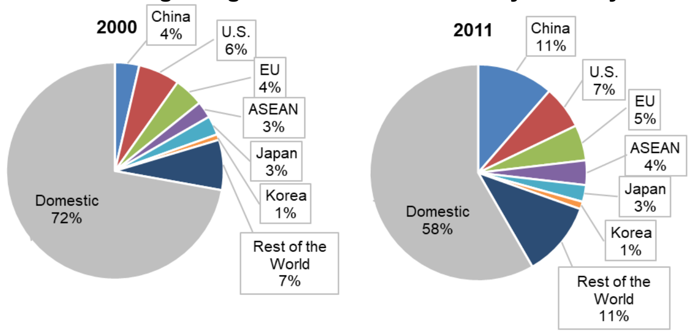
8. **A decline in global trade activities and slower trading partner growth could weigh on the external-oriented services sector, including jobs**, particularly those related to merchanting, transportation (and logistics), financial intermediation (trade finance and treasury operations) and real estate services. According to the latest available OECD TiVA data, the services sector[22] created USD227 billion of value-add for Hong Kong's economy in 2011, of which only 58 percent was consumed domestically. In terms of value-added external demand, China and the U.S. made up a very sizable 43 percent (Figure A1.5). In addition, according to official data, the tradable services sectors[23] contributed 51 percent of GDP and employed around 1.4 million workers in 2017. About 37 percent of jobs are estimated to be potentially affected by an escalation to an outright trade conflict between the two economies according to our estimate.

the purchase/ sales of goods on behalf of buyers/ sellers outside Hong Kong. Unlike in merchanting, the Hong Kong company, in its capacity as an agent, does not take ownership of the goods involved. According to official data, the margins for merchanting and merchandising were 6.5 and 7.1 percent respectively in 2016. Over 89 percent of exports of services relating to offshore trade were from merchanting.

[22] Excludes construction activities.

[23] Includes sectors for wholesale and retail trade, transport and storage, financial intermediation, real estate activities and R&D and other business activities.

Figure A1.5. Share of Hong Kong's Services Sector VA by Country of Final Demand



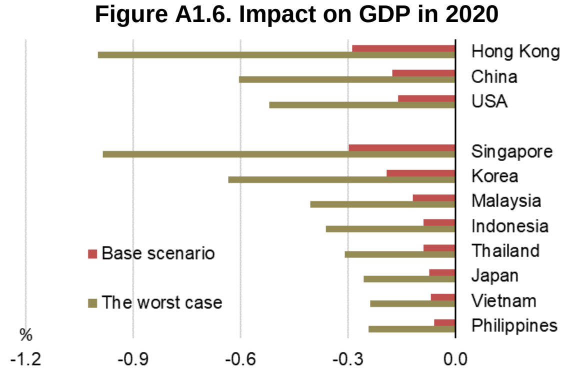
Source: OECD TiVA Database

9. **The impact through market sentiment (Channel 5) is potentially the largest, as dampened sentiments can increase financial market volatility. However, this impact is difficult to quantify.** Business sentiment in Hong Kong is already softening with corporates citing concerns over global trade tensions and slower growth in China. Consumer sentiment and private consumption may also weaken as a result. The correction of stock prices and higher interest rates may dampen financial activities such as securities trading, fund raising, investment banking, property market activities and wealth management.

Model Simulation

10. **This study employs models developed by Oxford Economics for sensitivity analysis.** We consider a baseline scenario[24] and the worst-case scenario[25] to study their respective impact on regional economies including Hong Kong. We consider only tariff adjustments, and we do not directly impose shocks on confidence, as the latter is very subjective. Higher tariffs will reduce world trade, in particular in this region; and to a certain extent, it will discourage investment too, particularly in China. Hong Kong, China, Singapore and Korea are the most susceptible to the higher tariffs (Figure A1.6). The model is hence able to capture only Channel 1, 3 and 4. In 2020, Hong Kong's GDP will be 0.3 percent lower in the baseline scenario and 1.0 percent lower in the worst-case scenario.

Figure A1.6. Impact on GDP in 2020



Source: Source: Oxford Economics, AMRO staff calculations

[24] The US imposes a 25 percent higher tariff on 50 billion USD of Chinese exports, and a 10 percent higher tariff on 200 billion USD of Chinese exports. China imposes a 25 percent higher tariff on 50 billion USD of U.S. exports, and a 10 percent higher tariff on 60 billion USD of U.S. exports.
[25] The US imposes a 25 percent higher tariff on all Chinese exports. China imposes a 25 percent higher tariff on all U.S. exports.

Policy Discussion

11. **The Hong Kong government should monitor the trade situation closely and take measures to mitigate the impact of the trade conflict.** As a small and open economy, Hong Kong should adapt to the changing economic conditions. As the outcome of the trade conflict is uncertain, the authorities should continue to monitor developments and share the latest information and assessments with companies, especially traders and exporters. The authorities could also take some preemptive measures, such as by providing advisory services and targeted fiscal support to the affected sectors.

12. **The government should continue to diversify its trading partners, in particular to ASEAN.** Hong Kong's export destinations have diversified over the years with an increasing share going to ASEAN. The ASEAN-Hong Kong FTA, which will come into effect in 2019, will help counter some negative spillovers from the trade conflict. Hong Kong firms will be able to take advantage of cheaper labor and a growing consumer base in ASEAN, and also the potential relocation of industries due to the trade conflict, from China to ASEAN.

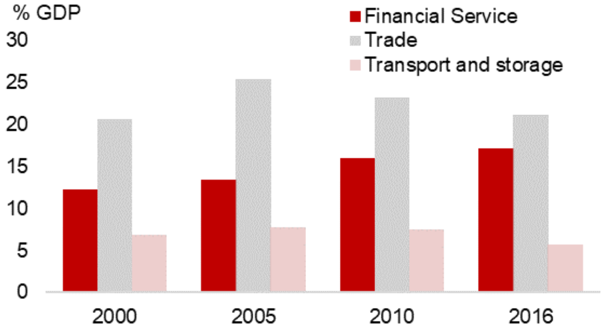
13. **The government should develop other engines of growth, including initiatives to increase regional connectivity—these can provide a buffer against rising trade protectionism.** Over the longer term, authorities could leverage on large-scale Mainland initiatives such as the Belt and Road Initiative, the Greater Bay Area project to strengthen Hong Kong's role in providing world-class services. The authorities' continued focus on tourism promotion and a wide range of services to meet the growing final demand of an expanding middle class in China and ASEAN is also commendable.

2. Transforming to a Digital Financial Center – Progress in Hong Kong

Background and Recent Developments

14. **As a key global financial services center, it is imperative that Hong Kong enhances its competitiveness by supporting fintech.** Fintech enables financial institutions to provide better customer services and choices, to price risks more accurately, and to lower costs. In the banking sector, for instance, fintech has brought substantial changes in new customer attainment, deposit taking and loan underwriting. Fintech adoption will reduce the cost of financial services, which—according to empirical studies (Bazot 2015; Philippon 2012 and 2018)—has not made much progress in the past decades in the advanced economies. Fintech has also been progressively used in payment remittances, insurance and other financial services, disrupting some areas of services, while boosting other areas.

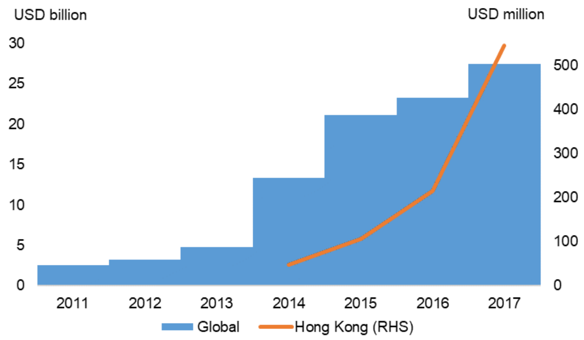
Figure A2.1. Financial Services as a % of Hong Kong's GDP



Source: Census and Statistics Department

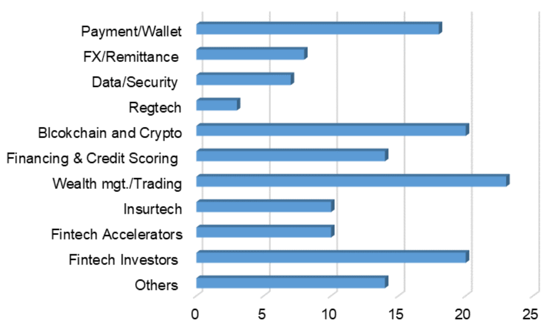
15. **The development and adoption of fintech, and more broadly of new technology and innovation, will also likely have an impact on the Hong Kong economy, which is highly dependent on financial services.** The financial services industry makes up about a fifth of Hong Kong's economy in 2017, and its share has been continuously rising over the past two decades (Figure A2.1). The contribution of technological progress—based on the joint efforts of both the private sector as well as policy makers—will significantly enhance the productivity and growth potential in the financial sector.

Figure A2.2. Fintech Investment in Hong Kong



Source: Accenture, CB insights, Investment HK

Figure A2.3. Fintech Ecosystem (Number of Companies in Sub-sectors)



Note: as of end-2017.
Source: " Let's Talk Payment", Investment HK

16. **Investment in various fintech sub-sectors in Hong Kong has been increasing rapidly over the past few years.** Hong Kong's fintech investment grew annually at 127 percent on average during 2015-2017 (Figure A2.2), higher than the global average. In terms of value, investments have been made in not only payments and lending but also other areas such as data and security, remittances and insurance, creating a more balanced ecosystem (Figure A2.3). In light of the rapidly developing market infrastructure, the authorities are prioritizing cybersecurity and blockchain, among others.

17. **Mindful of the importance of the fintech to the Hong Kong economy, the authorities have been making concerted efforts in facilitation, financial support and legal alignment.** [26] Financial support through government fiscal funding has been increasingly directed to innovation and technology including fintech development, as elaborated in the new government budget in FY2018/19. Financial regulations have also been progressing in keeping with the rapidly changing landscape of financial services. For instance, to ensure the safety and soundness of evolving retail payment products and services and foster their innovation, the Clearing and Settlement Systems Ordinance was amended in 2015 to become the Payment Systems and Stored Value Facilities Ordinance, which established a regulatory regime for Stored Value Facilities (SVF). The usage of SVF such as e -Wallets has expanded afterwards. This has led to the fast development of e-Wallets in 2017 and 2018. In 2017, the HKMA announced seven initiatives to enable Hong Kong to provide smart banking services – these included an enhanced sandbox allowing banks and technology firms to seek regulatory feedback from the HKMA at an earlier stage and providing a single point of entry for pilot trials of cross-sector fintech products, a revised guideline facilitating the introduction of virtual banks in Hong Kong, Open Application Programming Interface (API) to improve collaboration between banks and tech firms, and cross-border collaboration, among others.[27]

18. **Introducing virtual banking will provide new customer experience and promote financial inclusion and fintech development.** The HKMA has revised the Guideline on Authorization of Virtual Banks, which allows for banking operations primarily through the internet or other forms of electronic channels instead of physical branches. The HKMA believes that virtual banks could help support underserved customers including SMEs and some segment of retail customers, and enhance customer experience. In response to the potential competition from newcomers, traditional banks will likely accelerate technology adoption and strengthen collaboration with fintech start-ups for digital transformation – to improve both internal operations and external customer services. Currently, the HKMA is processing license applications, and virtual banks will likely become a reality in 2019.

19. **At the same time, by tackling data sharing mechanisms through adopting an Open API framework, the authorities are encouraging more collaboration in banking, and, in**

[26] In terms of facilitation, various initiatives have been put in place through the Hong Kong Government Financial Services and the Treasury Bureau, the Fintech Division of Invest HK (the government department for Foreign Direct Investment), the Fintech Facilitation Office of the HKMA which involves both fintech promotion and banking supervision capacity, as well as the Fintech Contact Point of Securities & Futures Commission.

[27] With regards to the sandbox, 33 new fintech products have been tested in the supervisory sandbox, out of which 25 have been completed as of June 2018.Other initiatives include faster payment systems, the "banking made easy" initiative, and enhanced research and talent development, which were unveiled in a keynote speech delivered by Norman Chan, Chief Executive of the HKMA.

turn, creating a more stimulating environment for fintech which benefits consumers. The HKMA published the Open API Framework in July 2018, which strikes a balance between promoting innovation and controlling risks. It is expected that the deployment of Open API Phase I by banks will take place by early 2019, followed by Phase II in later 2019.[28] Financial data held by banks could be obtained by third parties to develop related applications and provide services. This will not only help overcome constraints in data faced by fintech start-ups but also benefit the development of the fintech ecosystem as a whole. Traditional banks could also benefit from stronger collaboration with fintech companies.

20. **Distributed ledger technology (DLT)-based applications and cross-border fintech-related collaboration have progressed steadily in 2018.** The DLT trade finance Proof-of-Concept (PoC) work led by the HKMA has started to showcase a commercial application. Riding on the fruitful results of the PoC, the eTradeConnect platform was launched in September, digitizing trade documents and automating processes based on Hyperledger Fabric, a blockchain-based infrastructure. The underlying protocol enables a highly scalable platform with identified participants to execute smart contracts without necessarily trusting each other. With the agreement between the HKMA and the Monetary Authority of Singapore (MAS), the platform will be able to connect with its counterpart in Singapore to test its cross-border usage. Similarly a project has started to connect eTradeConnect with we.trade, a European trade finance platform backed by 14 major European banks. According to the HKMA whitepaper on DLT, in addition to trade finance, two other uses—digital identity management and mortgage loan—have also been examined. Other studies such as the issuance of DLT-based Central Bank Digital Currency (CBDC) in the interbank market were also carried out.

Policy Discussion

21. **Tech-driven transformation of financial services will be more demanding on regulation and supervision, requiring the authorities to stay up to date with market developments, and to use technologies in regulation and supervision.** The full digitization of financial business flows and automation with 24/7 service time and real-time integration into clients' economic activities—while improving overall economic efficiency—could lead to greater sophistication, stronger interlinkages, and potentially larger systemic risks. On the one hand, stronger inter-agency coordination could help avoid regulatory arbitrage; but on the other hand, tech-enhanced monitoring of regulatory compliance and real-time supervision could enable the healthy development of the financial sector.

22. **Fintech development and regulation in Hong Kong will need to maintain balance between managing risks and encouraging innovation.** Risks to financial stability and data security in relation to fintech development cannot be underestimated. The capacity of financial institutions and regulation need to keep up with the fintech innovations, otherwise, innovations need to be contained. The HKMA has emphasized the risk-based and tech-neutral principles in

[28] As a showcase to the public and to promote data dissemination, the HKMA also announced the launch of Open API to access HKMA public data on its official website on 23 July 2018.

its supervisory role while facilitating the development of fintech. Each fintech business model and associated specific risks need to be well-understood, and proper supervisory requirements should be enforced to mitigate risks. Frequent interactions and engagement with the private sector by the authorities is commended as they will allow both sides to understand related risks better and also to facilitate developments. Such a practical approach will also support further efforts to update the regulatory and supervisory framework.

23. **While adhering to the free-market principle of minimal government intervention, the authorities have played an active role in public education and communication about risks associated with new investment instruments.** The evolution of fintech has been associated with the creation of cryptocurrencies such as Bitcoin and other digital tokens, which have attracted a growing number of individual investors, and more recently some institutional investors as well, including from Hong Kong.[29] On one hand, fintech business applications—taking advantages of crypto technologies and underlying networks—such as money transfer have been generally encouraged, conditional on proper Know Your Customer (KYC) procedures and oversight. On the other hand, while leaving the decision to individual investors, the Hong Kong authorities have been conducting fintech literacy campaigns and cautioned the public about the risks of such new instruments.

[29] On the other hand, there are also new fintech business models using crypto as a payment layer for cross-border settlements, especially for remittances, which effectively lower the operational costs compared to banks.