4. Balance of Payments 31
5. Indicators of External Vulnerability 32
6. Financial Soundness Indicators 33

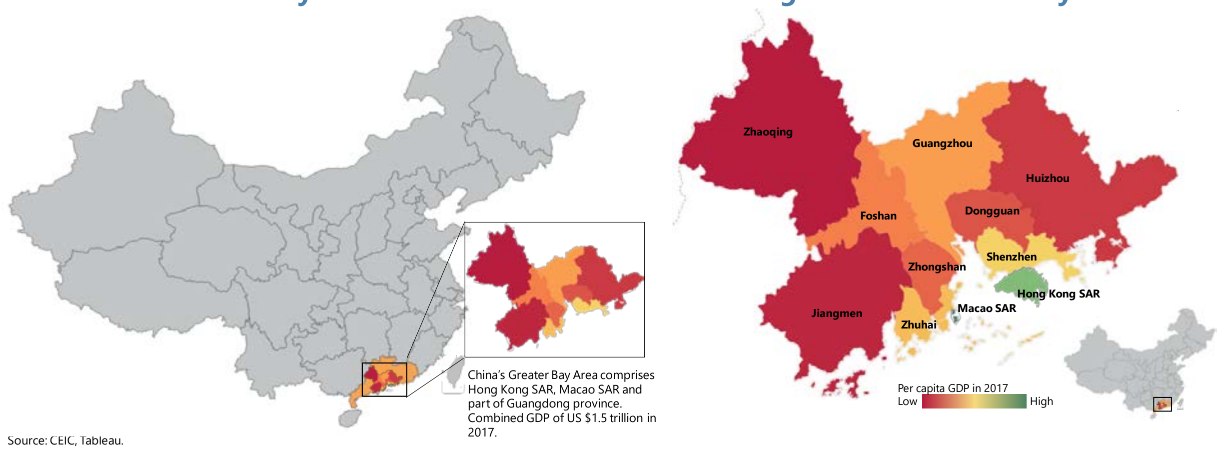
ANNEXES

I. Risk Assessment Matrix 34
II. Medium and Long-Term Fiscal Framework and Sovereign Wealth Fund: Some Case Studies 35
III. Inequality: Trends and Drivers 38
IV. External Sector Debt Sustainability Analysis 41
V. Real Estate Market in Macao SAR: Overvaluation, Policies, and Affordability 45
VI. External Sector Assessment 50
VII. Key 2011 FSAP Recommendations 53
VIII. Main Recommendations of the 2016 Article IV Consultation Discussions 55

CONTEXT AND RECENT DEVELOPMENTS

1. **Macao SAR is the largest casino center in the world and gaming tourism drives its growth.** This small open economy has grown rapidly since its return to Chinese sovereignty in 1999 that brought a de jure gaming monopoly within China. In addition, the 2002 liberalization of the gaming sector attracted external investment and foreign competition, while the 2003 liberalization of tourist travel policies by China increased visitors. Over this expansive period, prudent macroeconomic policies have endowed the economy with large fiscal and foreign reserve buffers—standing at 121 and 40 percent of GDP respectively in 2017—with zero public debt. Macao SAR is part of the "Greater Bay Area" (GBA) plans for regional cooperation, linking it with Hong Kong SAR and the Mainland's Guangdong province.

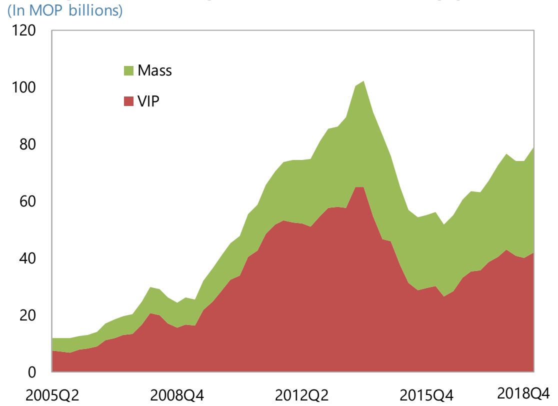
China Greater Bay Area's combined GDP is twice as big as San Francisco Bay Area's



Source: CEIC, Tableau.

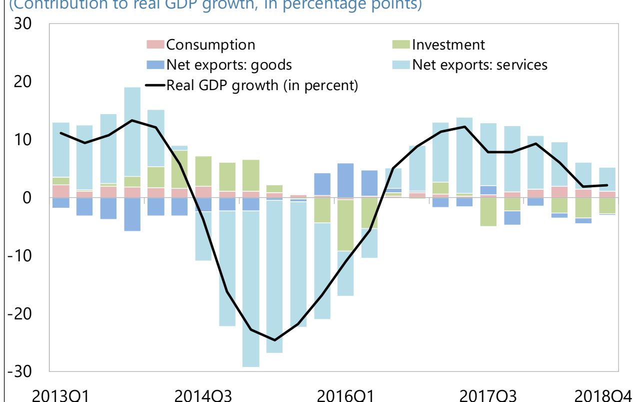
2. **The economy returned to expansion in mid-2016.** Gaming and tourism revenue returned to strong growth in 2017 and early 2018, after negative growth over 2014-16 following developments in Mainland China that reduced external demand from high-spending (VIP) visitors. (VIP gaming revenue, as opposed to "mass," is derived from high-spending gamers.) The 2014-16 decline broadly mirrored developments in luxury spending elsewhere in the region (including in

Gaming revenue strengthened since 2017 driving growth
(In MOP billions)



Source: CEIC.

Growth moderated in the second half of 2018
(Contribution to real GDP growth, in percentage points)

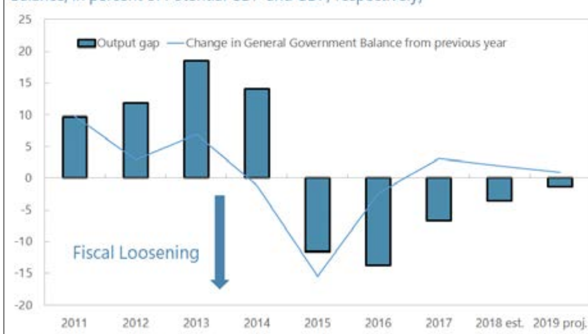


Sources: CEIC; and IMF staff calculations.

Hong Kong SAR) and followed the anticorruption campaign on the Mainland. Growth moderated in the second half of 2018, including from weaker investment and reduced VIP gaming linked to Mainland's deleveraging effort and U.S.-China trade tensions. Growth recorded 4.7 percent in 2018 (from 9.7 percent in 2017). Inflation picked up over 2018 driven by housing, food, and energy prices. Credit continued to expand over 2018, while the lending interest rate slightly increased. Property prices recovered with the economic rebound, but they were flat in the second half of 2018. Unemployment remains low.

3. Recent policies:

Fiscal surplus increased since 2017 (Output gap and change in GG Balance, in percent of Potential GDP and GDP, respectively)



Sources: IMF staff estimates.

- *Fiscal.* As the economy rebounded, the fiscal surplus increased in 2017 and 2018.

- *Housing.* Measures were recently introduced to contain housing market risks, though loan-to-value limits for young first-time homebuyers were increased to help affordability.

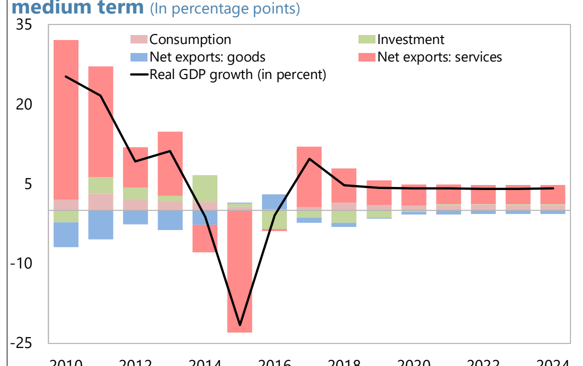
- *Diversification efforts continue.* Gaming and junket activities (i.e. VIP support and financing business, Box 1) still amount to almost half of GDP. The recently developed reclaimed land in Cotai and the newly opened Hong Kong–Zhuhai–Macao Bridge (HZMB) are supporting mass-market gaming and non-gaming tourism. To support financial sector development and diversification, the authorities have started facilitating banks' involvement with issuance and local distribution of bonds from Mainland local governments and SOEs.

- *Overall*, recent policies broadly align with past staff advice (Annex VIII).

OUTLOOK AND RISKS

4. Over the medium term, the economy will likely expand moderately, with surpluses in the fiscal and external current accounts. Progress with diversification efforts towards mass and non-gaming tourism, together with the important China gaming monopoly, are expected to deliver continued growth in the coming years.

The economy is expected to moderately expand over the medium term (In percentage points)



Sources: CEIC and IMF staff estimates.

- *Growth* is projected at 4.3 percent in 2019 and to remain solid over the medium term at about 4 percent. While the outlook is more subdued than historical averages, it is also less volatile. The main driver of medium-term growth is tourism, with mass gaming and non-gaming tourism further expanding, but more

subdued VIP gaming growth, in line with authorities' diversification efforts towards more stable sources of growth. Investment is anticipated to remain weak, though improving over the medium term, partly due to the upcoming new gaming licenses. Unemployment is expected to remain low as the significant presence of foreign workers (under limited-term contracts) provides labor market flexibility.

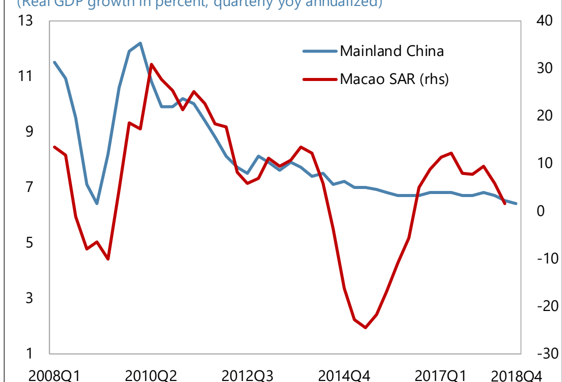
- *Fiscal*. More moderate growth in gaming will deliver less buoyant tax revenue, while social spending is expected to grow over time due to ageing and social pressures. Overall, fiscal surpluses (in percent of GDP) are expected to continue in the medium term, though of smaller magnitude.

- *Balance of Payments*. Private and public savings are expected to decrease due to moderation in gaming revenues. Overall, current account surpluses are expected to continue, delivering further accumulation of foreign assets by the private and public sectors.

5. Risks are tilted to the downside with the economy being particularly vulnerable to risks originating in Mainland China (Annex I):

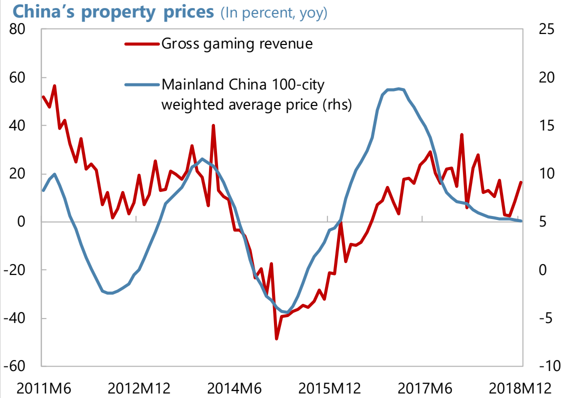
- *Mainland China*. Macao SAR's small and open economy is highly vulnerable to economic, financial and policy developments in the Mainland. With most tourists coming from the Mainland, any policy that undermines their spending power abroad would negatively affect growth. The introduction of gambling in the Mainland or weaker than expected growth in the Mainland would also negatively affect growth. Main channels include shocks to gaming revenue, reduced investment, and banking sector exposures to Mainland.

Macao SAR's growth is highly affected by Mainland's growth
(Real GDP growth in percent, quarterly yoy annualized)



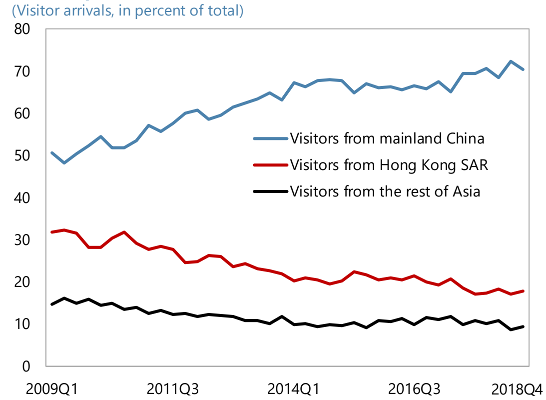
Source: CEIC, Haver Analytics.

VIP and mass gaming are highly correlated with mainland China's property prices (In percent, yoy)



Source: Haver Analytics.

Over 70 percent of visitors come from Mainland
(Visitor arrivals, in percent of total)



Source: Haver Analytics.

- *U.S.-China trade tensions*. Worsening of trade tensions between the U.S. and the Mainland could significantly impact Macao SAR, including via a fall in tourism inflows from the Mainland and reduced investment by the three U.S. casino operators. In addition, banking sector's investments linked to global trade, including the Mainland's, would be affected.

- *Sharp tightening of global financial conditions with unexpected Fed hikes*. Given the indirect exchange rate peg to the U.S. dollar, the pataca would appreciate relative to the renminbi possibly reducing Macao SAR's competitiveness and weakening gaming spending per visitor, though gaming revenue has been resilient to exchange rate movements. In addition, sharp increases in the cost of credit would reduce investment projects, potentially slow banks' balance sheet growth, and it may abruptly cool the housing market.

- *Increased competition in the gaming industry*. Emerging gaming centers in Asia could start diverting Mainland tourists from Macao SAR (i.e. Singapore, Philippines, Japan, Vietnam, South Korea).

- *On the upside:* faster diversification progress and further land reclamation could boost sustainable growth by widening non-gaming tourism options and helping housing affordability.

6. **Authorities' Views.** The authorities broadly agreed with staff's baseline outlook. They confirmed that the China gaming monopoly will remain with Macao SAR for the foreseeable future and they shared the view that VIP-driven growth will be lower going forward but also more stable, including due to progress with diversification and an enhanced AML/CFT framework. They broadly agreed with highlighted risks, with U.S.-China trade tensions as one of the key factors, acknowledging the multiple exposures to China shocks. They highlighted Macao SAR's reduced external vulnerabilities due to strong fiscal and foreign reserve buffers, a resilient banking sector, and the lack of domestic money or capital market instruments. They pointed out Macao SAR's advantage as a "domestic tourism destination to Mainland China" shielded itself from increased competition from Asia. On the upside, they highlighted diversification potential from recent regional cooperation efforts (i.e. GBA), and the new high-speed Guangdong rail and the HZMB Bridge as boosting Macao SAR's attractiveness to the Mainland and international tourists.

FISCAL POLICY

A. Medium/Long-Term Fiscal Framework Including the Sovereign Wealth Fund

7. **A comprehensive reform agenda to support prudent and efficient medium/long-term fiscal policymaking is needed.** Macao SAR would benefit from a medium/long-term fiscal framework (MLTFF) for efficient use of gaming-dependent fiscal resources. Even though fiscal space is ample, with large fiscal reserves and no public debt, fiscal policy decisions are rather discretionary while following the conservative Basic Law mandate of balanced budgets. In addition to infrastructure development needs and social spending considerations, a key long-term spending pressure stems from the projected fast increase in the old-age dependency ratio that will boost pension and healthcare

spending (with official projections showing a tripling in the number of old-age pensioners between 2021 and 2056).

8. A MLTFF will help increase efficiency in the use of fiscal reserves while helping ensure long-term fiscal sustainability and intergenerational equity in an aging society. Key pillars of the framework are a medium/long-term fiscal strategy and medium/long-term orientation within the annual budget process. This approach would entail developing (i) a medium/long-term macroeconomic framework, which would provide realistic multiyear projections of key economic variables; (ii) a MLTFF that would provide clear multiyear targets on aggregate fiscal variables; and (iii) a medium/long-term budget or expenditure framework, which would translate the overall budget envelope into a set of multiyear expenditure ceilings for main spending ministries. In the context of recent rapid accumulation of fiscal reserves with no public debt, the fiscal reserve-to-GDP ratio could be used as one possible fiscal anchor—though a view on optimal reserves would need to be formed—while any chosen anchor should be consistent with the MLTFF. The MLTFF should incorporate a counter-cyclical framework (discussed below) that can be layered over the fiscal targets from the MLTFF to account for needed cyclical adjustments. The authorities should start with producing a long-term fiscal sustainability report—Australia and New Zealand's can serve as a model.

9. The authorities should ensure that their planned Sovereign Wealth Fund (SWF) is integrated into the MLTFF (Annex II). The authorities plan to establish a SWF in 2019 with the objectives of furthering Macao SAR's development and enhancing its stability and fiscal buffers. Key considerations should include: integration of SWF within the MLTFF and annual budget including through clear but flexible inflow/outflow rules, and clear management guidelines and accountability following best practice as outlined in the "Santiago Principles" (designed by the International Working Group of Sovereign Wealth Funds).

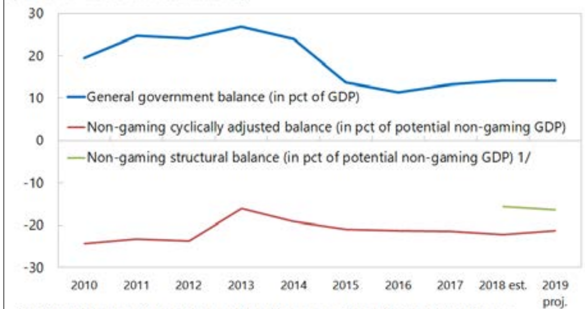
10. Authorities' Views. The authorities are not using an explicit medium/long-term fiscal framework to ground fiscal budget decisions. However, they may consider the cross-country cases and best-practice examples provided by staff. Regarding the planned Macao Investment and Development Fund (MIDF), the authorities took note of staff's recommendation that the fund is integrated within a MLTFF and stated that a new independent public company is to lead the MIDF, following the Santiago principles.

B. Near-Term Fiscal Policy

11. An explicit counter-cyclical fiscal framework would also improve near-term budget preparation. Given the large output volatility due to external conditions affecting gaming, and given the substantial fiscal space, the economy can benefit from a more formal framework for counter-cyclical fiscal policy to smooth sharp private demand fluctuations. In recent years fiscal policy tended to be counter-cyclical, but an explicit counter-cyclical framework within budget preparation, including macro projections and improved estimates for fiscal outcomes, will help improve the calibration of the desirable discretionary fiscal response. Importantly, the counter-cyclical framework should be integrated with the MLTFF discussed above.

12. The projected 2019 fiscal policy stance is appropriate and could be made more expansionary if driven by priority spending under a medium/long-term fiscal plan. Overall fiscal tightening is projected for 2019 as the anticipated expansion of spending across several categories (including social spending) is more than compensated by a significant reduction in capital spending (partly due to one-off completion of projects). However, the fiscal policy stance—measured by the non-gaming structural balance in percent of potential non-gaming GDP—is appropriately supportive in light of a closing but still-negative output gap in 2019. Moreover, additional fiscal loosening in 2019 could be appropriate if driven by properly-targeted priority infrastructure and social spending (including education to boost needed human capital) that is desirable from a long-term perspective under the MLTFF.

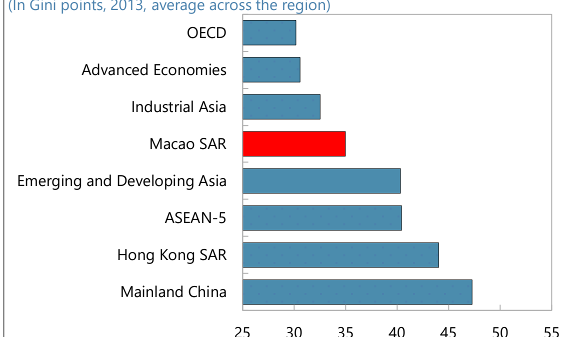
Overall fiscal tightening is expected for 2019 due to lower capex, but structural balance shows a supportive stance
(General Government Balance)



1/ Estimated by removing capital expenditure from non-gaming cyclically adjusted balance
Source: IMF staff estimates.

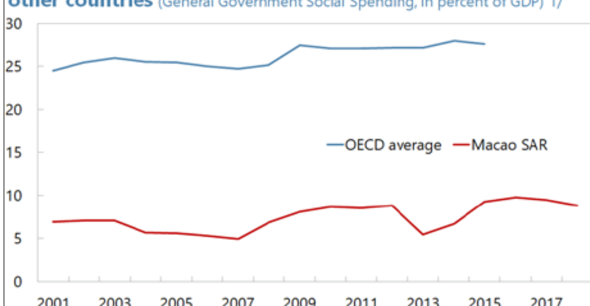
13. Social spending considerations. Because of its rapid growth, Macao SAR's income per capita is one of the highest in the world. However, inequality is higher than the OECD average (Annex III). It is desirable to consider boosting targeted social spending to alleviate distributional concerns. Yet the largest social protection program (i.e. Wealth Partaking Scheme) is not targeted (Box 2). Housing affordability has been eroded, and the government should advance its efforts to increase access to housing for the vulnerable. Health and education spending are also comparatively low, suggesting that there is room to boost them in a targeted manner.

Inequality is higher than the OECD average
(In Gini points, 2013, average across the region)



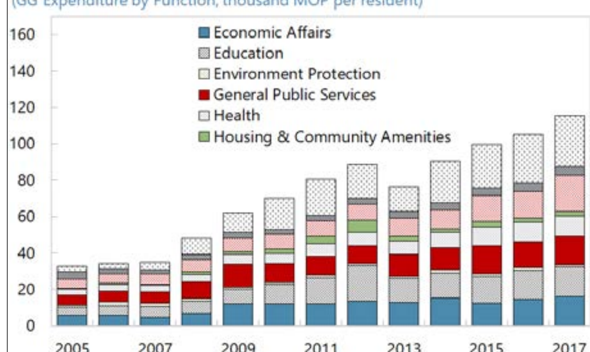
Sources: SWIID Version 5.0; IMF WEO database; and IMF staff calculations.
Note: ASEAN = Association of Southeast Asian nations; OECD = Organization for Economic Co-operation and Development. Data shown is disposable income gini index except for Macao SAR (gross income Gini).

Social spending-to-GDP ratio is low when compared with other countries (General Government Social Spending, in percent of GDP) 1/



1/ Social Spending = Social Protection + Health + Housing + Education
Source: Government Finance Statistics.

Per capita spending has been increasing
(GG Expenditure by Function, thousand MOP per resident)



Source: Government Finance Statistics.

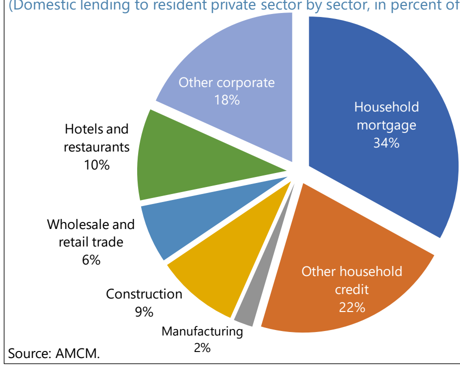
14. Authorities' Views. The authorities took note of staff's proposal for a more formal counter-cyclical fiscal policy framework. They stated that the completion of large capital projects is driving the decline of the 2019 capital expenditure budget, while current expenditure is expected to grow based on the 2019 budget. The authorities shared the view that additional targeted spending to support diversification and social inclusion should be calibrated. Nevertheless, the authorities believed that the principle of keeping expenditure within its means to avoid deficits as stipulated by the Macao SAR Basic Law has served as an important policy anchor to safeguard Macao's fiscal sustainability. To foster inclusion, the authorities noted that they are considering expanding the minimum wage to more sectors.

FINANCIAL SECTOR POLICIES AND HOUSING

15. Balance sheets of the banking system continue to suggest that the sector remains sound, but ongoing attention to large short-term foreign liabilities and to the quality and liquidity of foreign assets is needed. Foreign banks are the bulk of the financial system—with 24 foreign branches and subsidiaries, and 4 local banks. The large scale of the banking system (about 400 percent of GDP in total assets) calls for continued supervisory caution. However, several factors moderate risks on the domestic and external side of the balance sheet.

Domestic real estate is over 40 percent of domestic lending to residents and over 10 percent of bank's assets

(Domestic lending to resident private sector by sector, in percent of total, 2018Q4)



Source: AMCM.

- *Domestic* operations remain strong regarding liquidity and asset quality, helped by moderate private sector leverage. Exposures to gaming remain large, though balance sheets of gaming operators remain strong.
- The *external* side of the banking sector balance sheet shows large foreign liabilities, over 65 percent short-term, increasing funding risks (Annex IV). Moderating this risk, banks' foreign assets far exceed liabilities, which increases banks' ability to fund potential withdrawals—as long as the quality and liquidity of assets allow it. In addition, about 30 percent of the foreign liabilities of Macao SAR's banks are due to related foreign banks—and the foreign banks provide some backing to the local branches. Regarding risks to foreign assets, given the significant bank exposure to the Mainland (about 30 percent of external assets), recent efforts by the Monetary Authority of Macao (AMCM) and People's Bank of China (PBOC) to strengthen financial supervisory and regulatory cooperation, with plans to set up an information exchange framework, are welcome.

Balance Sheet of the Banking Sector

(In USD billions)	2018
Total Assets	222
Domestic Assets	82
o/w credit to private sector	63
Foreign assets	139
Claims on banks 1/	61
Claims on nonbanks	78
Total Liabilities	222
Domestic Liabilities	136
Private sector deposits	79
Public sector deposits	30
Interbank liabilities	5
Capital accounts, other non-monetary liabilities, sundry, and notes	22
Foreign Liabilities	86
Liabilities to banks 2/	38
Short term	31
Medium to long term	7
Liabilities to nonbanks	30
Unallocated items	18

Memo:
1/ Related parties' share is 53 percent in 2018.
2/ Related parties' share is 71 percent in 2018.
Source: AMCM.

16. The AMCM could further strengthen the framework for sound Fintech adoption. Measures could be taken to further increase cyber resilience in financial institutions and Fintech firms, to promote RegTech to reduce regulatory costs, and incentivize Fintech firms to participate in a regulatory sandbox. Enhanced cross-border supervisory collaboration could help prevent regulatory arbitrage and avoidance. Recent financial regulation cooperation efforts by the AMCM and PBOC, including to coordinate work on Fintech and mobile payment regulation in Macao SAR, provide an opportunity for progress.

17. Steps to strengthen the AML/CFT framework are welcome and should be sustained. The AML/CFT framework was assessed in 2016 under the 2012 revised international standard. The assessment recognized Macao SAR's progress in enhancing AML/CFT framework, including on preventive measures and supervision of the gaming sector, while noting the need for more improvements. Since the assessment, Macao SAR has further strengthened AML/CFT requirements in the gaming sector. Although it has intensified efforts to limit the number of junket promoters (Box 1), this needs to be complemented by strengthening the regulatory framework for market entry in line with the 2017 assessment. The oversight of junket promoters' AML/CFT measures also needs strengthening. Ongoing efforts to enhance the sanctions regime—to hold casinos accountable for breaches of the junkets associated with them—should be taken forward. Macao SAR introduced a regulatory framework for monitoring cross-border movement of cash and bearer negotiable instruments in 2017 and is encouraged to ensure its effective implementation.

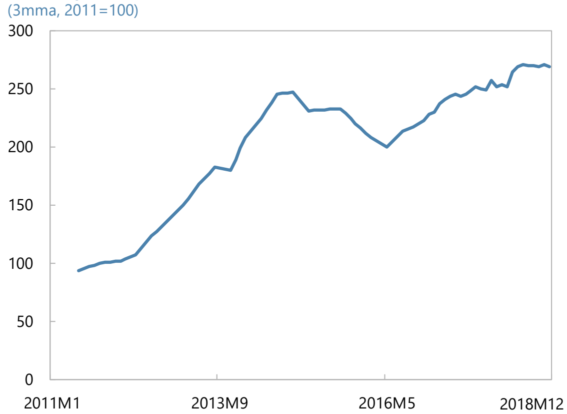
18. Authorities' Views.

- *Financial system.* The authorities highlighted the strength of the financial system with ample liquidity and sound asset quality. They noted continuous supervision of short-term foreign liabilities where they see contained funding risks due to the prominent funding from related foreign banks. With almost 70 percent of banks' external assets in Hong Kong SAR and the Mainland, and almost 5 percent in BRI countries, they highlighted recent efforts to strengthen financial supervision and regulation cooperation across jurisdictions. The authorities reported on satisfactory results from regular stress tests on banks' assets, including from shocks to the real estate portfolio and the Mainland exposure. They noted that the AMCM established a Fintech team, and is considering digitizing reporting and supervisory processes, and introducing a regulatory sandbox.
- *AML/CFT.* They stressed the progress in strengthening the AML/CFT framework, including in the gaming sector, as reported by the 2017 report on international standards. The authorities are aware of the risks associated with junket promoters, including money laundering, and have taken steps to mitigate them including by limiting the number of junkets. They indicated that they are working on further steps, including strengthening the regulatory framework for market entry, intensifying AML/CFT oversight, and enhancing the sanction regime (for junkets' compliance with AML/CFT requirements) to reinforce joint liability between a casino and its junket promoters.

A. Housing

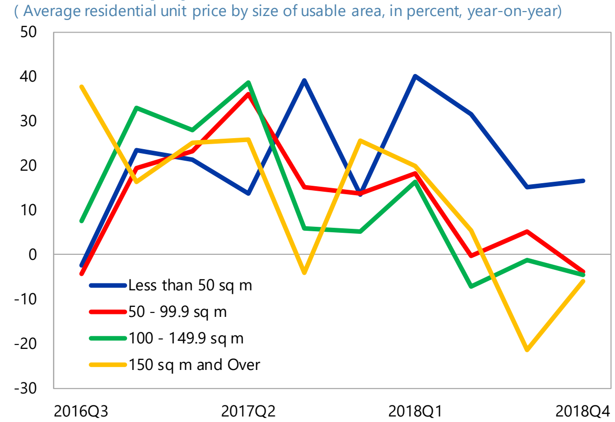
19. The housing market has strongly recovered with the economic rebound that started in mid-2016, but the market appears to have cooled in the second half of 2018. After falling between mid-2014 and mid-2016, the residential property price index recovered fully between mid-2016 and mid-2018 (in real terms), though it stayed flat in the second half of 2018. Even though residential property prices remained below trend in 2018, they appear to remain somewhat overvalued, for smaller units in particular (Annex V).

Property prices moderated in recent months
(3mma, 2011=100)



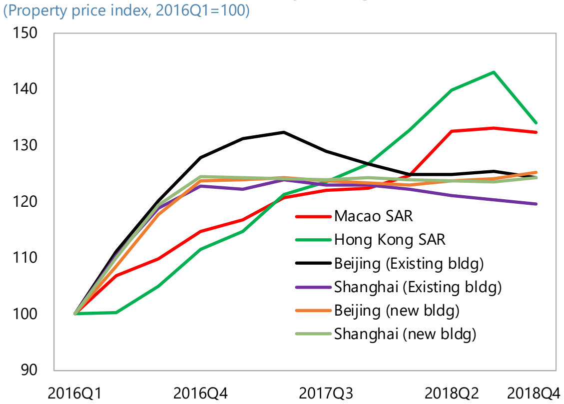
Source: DSEC and IMF staff estimates.

Prices of small properties continued to increase
(Average residential unit price by size of usable area, in percent, year-on-year)

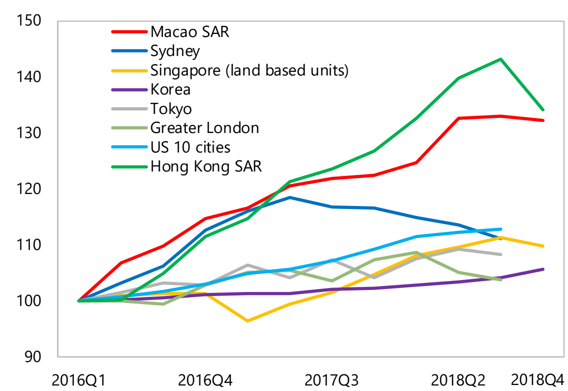


Source: CEIC.

Macao SAR's residential property price growth is in line with that in other cities in mainland, but higher than in other countries
(Property price index, 2016Q1=100)



Source: Haver Analytics.



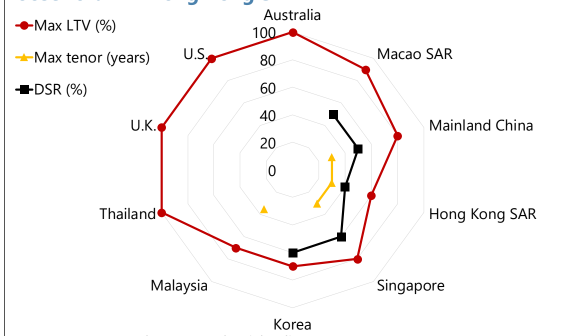
Source: Haver Analytics.

20. The current housing macroprudential stance and related fiscal measures appear broadly appropriate. Measures were put in place in 2017 and 2018:

- New measures were introduced to mitigate housing market risks via containment of demand. The loan-to-value limit for non-first-time homebuyers was tightened in May 2017. In February 2018, property tax exemptions on vacant properties were removed and a special stamp duty tax on the purchase of non-first residential property was introduced.

- On the other hand, the AMCM eased loan-to-value limits for young first-time homebuyers to help affordability in February 2018 that may have unintentionally boosted demand and prices in this segment.

Macroprudential measures in Macao SAR are somewhat looser than in Hong Kong SAR



Source: IMF's Annual Macroprudential Policy Survey.
Note: Tighter policy measures are closer to the center.

Systemic risks in the housing market appear broadly contained. The authorities should continue monitoring residential property prices and the effects of recent housing market measures, as they may usually play out with a lag. Further actions should take into account evolving market conditions, including the recent growth deceleration and leveling off in residential property prices. In the event that residential property prices resume strong growth and may pose a risk to financial stability, the authorities could consider tightening macroprudential and/or fiscal-based measures.

Most Macroprudential and Housing Fiscal Measures Were Recently Tightened

1/ In Jun 2013, a new regulation for title transfer of uncompleted units was introduced. Real estate agency law, land law, the urban planning law and the cultural heritage protection law were also promulgated.
2/ "Non-resident" refers to individuals without Macao SAR identity card.
Source: CEIC, DSEC, Haver Analytics and IMF staff estimates.

21. **The residency-based LTV is classified as a capital flow management measure and macroprudential measure (CFM/MPM) under the IMF's Institutional View on capital flows (IV), and the authorities are encouraged to replace the residency-based differentiation feature of the LTV.** The residency-based LTV was introduced in response to the surge of residential

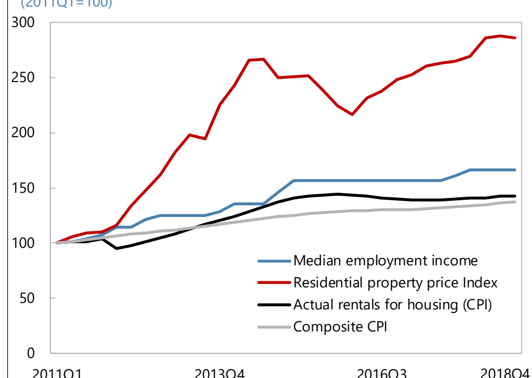
property transactions by nonresidents during the housing market boom in 2010-2011. The main objective was to put in place a preventive measure to strengthen banks' risk management considering the spike in nonresident NPLs during the Asian Financial Crisis. In 2017, to curb financial stability risks from strong growth in residential property prices, the AMCM tightened LTV for residents and nonresidents simultaneously.

- To attain the same policy objective without differentiating between residents and nonresidents, the authorities could examine whether they can protect against greater credit risk from lending to nonresidents through the existing multi-tiered-LTV structure but without the residency-based feature or by linking the differentiation in LTV limits directly to banks' risk assessment of loans and borrowers, supported by additional measures such as enhancing information requirements and enforcement across borders and requiring banks to take into account country transfer or legal risk in their risk assessment. Further strengthening supervisory capacity of banks' mortgage lending, broadly in line with FSAP recommendations (Annex VII), will be important to help ensure that these alternative measures are feasible.

22. A broader set of policies should support housing affordability, where continued efforts to boost housing supply will be key. The apparent cooling of the housing market is welcome and may contribute to improving housing affordability. However, remaining affordability concerns should be addressed by a broader set of supply policies:

- Planning, zoning, and other reforms affect supply and prices only with long lags, and underlying demand for housing is expected to remain robust. Housing supply reforms should, therefore, not be delayed. Building on the government's recent efforts to boost housing supply, plans should advance regulatory policy within a transparent framework that supports private sector supply and boosts well-targeted public housing supply, including via higher infrastructure spending.

Housing prices have grown faster than wage and inflation
(2011Q1=100)



Source: CEIC, Haver Analytics and IMF staff estimates.

- A coordinated government strategy to foster public and private housing supply, including an urban planning framework and urban renewal plan, would help guide reform efforts. While completing needed environmental, design, transportation and other assessments, procedures should be expedited.

23. Authorities' Views.

- *Housing market and policies*. The authorities agreed that the housing market cooled in 2018 but remained somewhat overvalued. They noted that they stand ready to take further actions dependent on market conditions. They considered that the 2018 LTV loosening (for young first-time homebuyers) was effective in increasing credit for this group, but acknowledged its

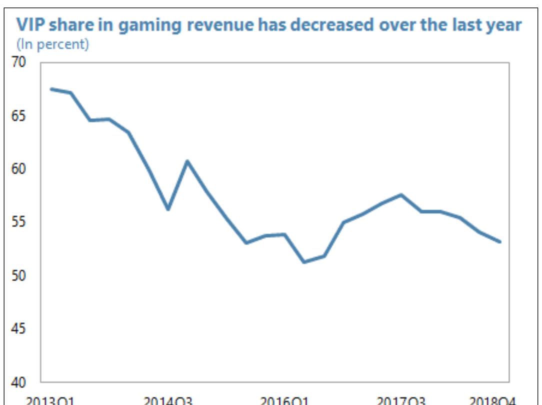
contribution to higher prices in the small-property segment. On the residency-based LTV, they took note of the recommendation to replace the differentiation between residents and nonresidents with alternative measures. They highlighted that the objectives of the LTV framework are to strengthen banks' risk management, curb investment/speculation motives, and moderate risks to the financial sector. They explained that the LTV framework is key for Macao SAR's stability in light of its open capital account and large spillovers from its real estate sector. They highlighted that the 2017 LTV tightening was not aimed at nonresidents as it was done for both residents and nonresidents. They may consider other alternative measures as suggested when appropriate.

- *Housing affordability*. They agreed that boosting housing supply is key to address affordability concerns. In terms of public housing, they noted that ongoing projects will satisfy public housing needs by 2026 (by when they plan to add 50,000 public housing units) and they will carry on research analysis on public housing demand (including post-2026). They also noted measures under consideration to make public housing more targeted to the vulnerable. They explained that there are authorities which coordinate the strategy on public and private housing and noted that a draft master plan (to be completed in 2019) will support private housing development.

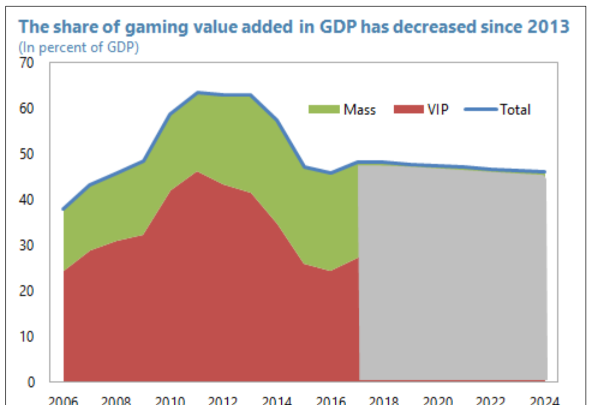
DIVERSIFYING SOURCES OF GROWTH

24. The authorities have wide-ranging plans to enhance growth resilience by diversifying away from VIP gaming. The authorities are focusing on three areas:

- *From high-end VIP to mass-market gaming*
- *From gaming tourism to non-gaming tourism*
- *Bolstering the growth of the financial sector*



Source: CEIC.

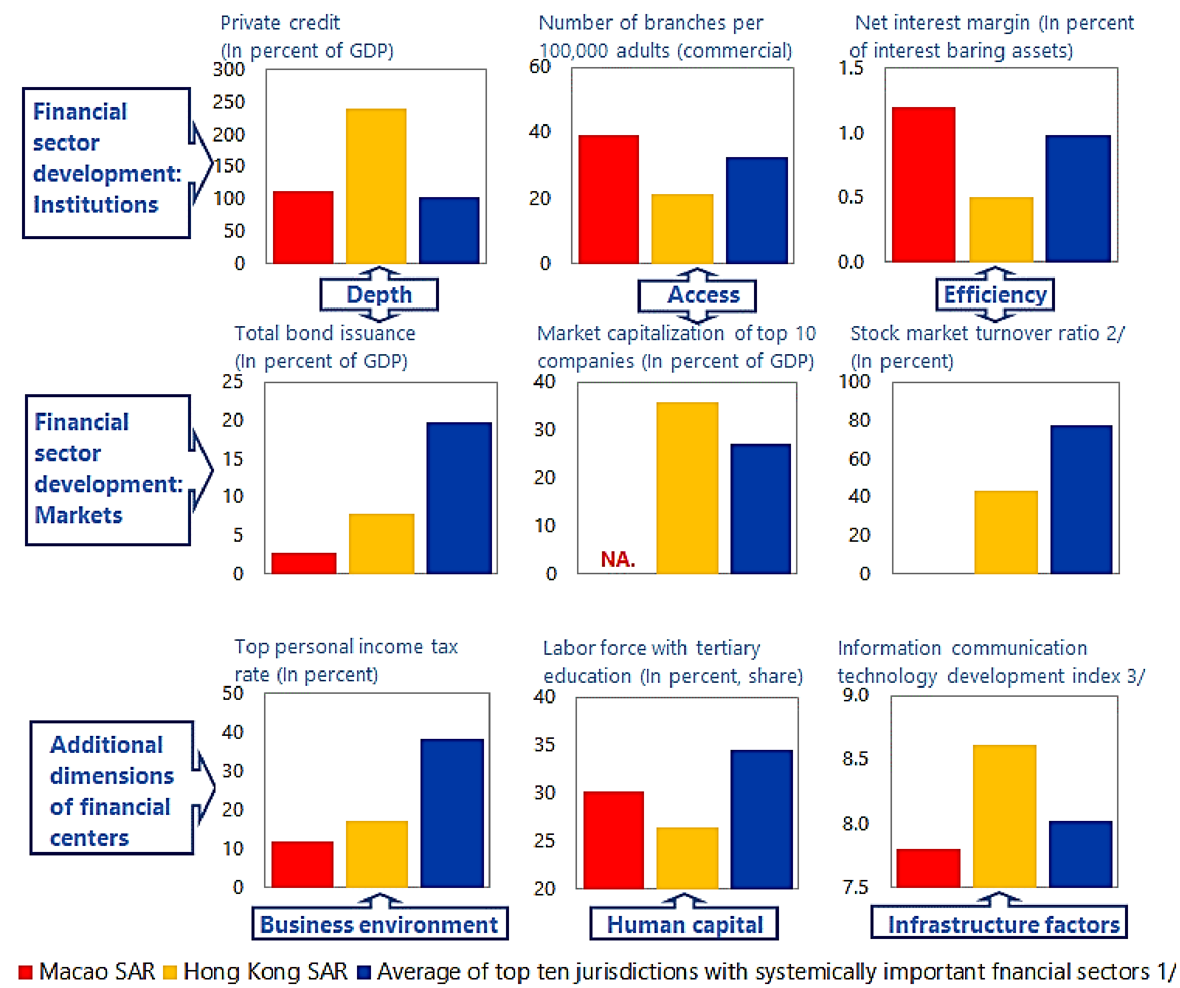


Source: CEIC, DSEC and IMF staff estimates.

Some progress has been made in these areas, evidenced by a decrease in the VIP share of gaming (from 66 percent in 2013 to 49 percent in January). There is evidence of growth in non-gaming tourism, including due to the new HZMB Bridge. The authorities are also focusing on financial sector development—presently relatively low—through several channels: (i) financial intermediation between China and Portuguese-speaking countries (PSCs), (ii) financial partnerships with Mainland

bond issuances, (iii) more financial services including financial leasing and wealth management, and (iv) participation in the Belt and Road Initiative (BRI).

Macao SAR's Financial Sector Development Lags Compared with Other Financial Centers



1/ The assessment is based on two key features of a country's financial sector: size and interconnectedness with financial sectors in other countries.
2/ Calculated as value traded in percent of total stock market capitalization.
3/ Measures information communication technology development from three dimensions: readiness (infrastructure and access), usage (intensity), and capability (skills).
Source: 2013 IMF FSAP Board Paper, IMF financial development index (Svirydzenka, 2016), OECD, World Bank Finstats database, WDI, UN ICT index.

25. **Diversification policies should be guided by careful study of Macao SAR's comparative advantage.** Guiding principles should include:

- *Incentives for new concessions:* With all six gaming concessions expiring in 2022, the authorities have the opportunity to further advance their growth strategy and should craft the new regulations with stronger incentives for operators to expand non-VIP tourism.

- *Infrastructure upgrades:* To accommodate the higher number of tourists under a mass-market and non-gaming model, infrastructure plans should advance in order to ease supply-side bottlenecks. Some of these areas are expanded entertainment, convention and exhibition options, hotels and retail, including via integrated resorts and family-oriented facilities.

- *Financial sector policies:* The China-PSCs niche is a natural area for financial sector growth, but potential gains hinge on the extent to which Mainland's bilateral relationships reach PSCs. New investments in the Mainland should aim to diversify portfolio and risks, including, for example, among different Mainland issuers or regions. If expansion of financial services contributes to developing an offshore financial center, high standards for transparency of legal persons and trusts should be ensured. Policies should foster a highly educated workforce, ensuring that the educational system delivers the skills for financial services provision, and attract foreign talent as needed. Careful analysis of specific potential growth areas for Macao SAR and high project quality and transparency would be important regarding BRI participation.

Hong Kong-Zhuhai-Macao Bridge (HZMB)

World's longest sea-crossing bridge connecting the Greater Bay Area (55 km).

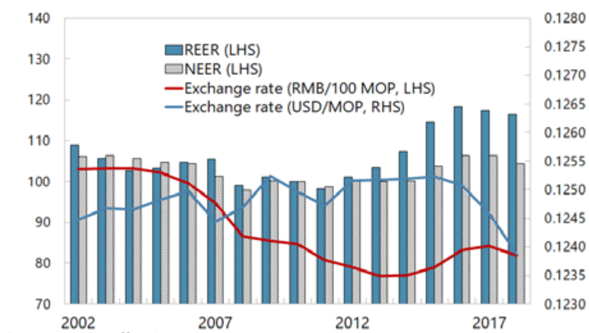
Source: Transport and Housing Bureau of Hong Kong SAR.

26. Authorities' Views. The authorities agreed with the guiding diversification principles proposed by staff and highlighted recent progress that will support Macao SAR's success. They noted that within the recently unveiled GBA plans for regional cooperation, Macao SAR has the role of promoting cooperation with PSCs and promoting its example as a multicultural Chinese city that is a World Centre of Tourism and Leisure. They noted large potential gains from plans to facilitate the movement of people and goods inside GBA. They noted that the tourism industry development master plan was completed in 2017, and that MICE events (meetings, incentives, conferences, and exhibitions) grew five-fold between 2002 and 2017 (gross value added of MICE activities constituted 0.9 percent of total 2017 gross value added). They highlighted growth potential in the Chinese medicine sector (with exports to PSCs), with the progressive development of "Guangdong-Macao Cooperation Industrial Park" in Hengqin. They also highlighted that the recent investment agreement, as well as the economic and technical cooperation agreement under CEPA (Closer Economic Partnership Arrangement) with the Mainland are expected to boost FDI and trade in goods and services.

EXTERNAL SECTOR STABILITY

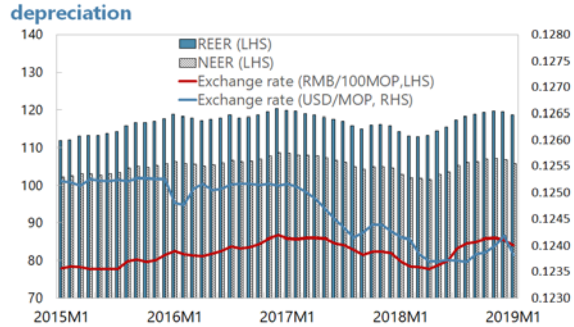
27. **Macao SAR's external position is assessed as substantially stronger than medium-term fundamentals and desirable policies, and infrastructure investment and social spending should be boosted** (Annex VI). The current account (CA) surplus is estimated at 35 percent of GDP in 2018, down from a peak of 41 percent in 2011, but higher than the 25 percent in 2015. Under the assumption that the gaming monopoly is not temporary, the CA is assessed as substantially stronger than fundamentals and desirable policies. The real effective exchange rate depreciated by 1 percent annually in 2017 and in 2018, but it appreciated on a monthly basis since July 2018 in line with renminbi depreciation, standing at a level assessed to be broadly consistent with fundamentals and desirable policies. Overall, structural distortions including bottlenecks to investment and policies that cause excessive savings, such as low social spending—and not the exchange rate—are assessed as the reasons that prevent the external balance from adjusting to equilibrium.

Annual REER depreciated in 2017 and 2018



Sources: IMF staff estimates.
Note: REER and NEER equal to 100 in 2010. An increase in each series indicates pataca appreciation.

REER appreciated since July 2018 in line with renminbi depreciation



Sources: Haver Analytics and IMF staff estimates.
Note: REER and NEER equal to 100 in 2010. An increase in each series indicates pataca appreciation.

28. **The peg to the Hong Kong dollar continues to serve Macao SAR well.** The pataca has been pegged to the Hong Kong dollar since 1977 and set at 1.03 patacas per Hong Kong dollar since 1983. The peg has provided a credible nominal anchor, as inflation expectations remain broadly anchored. This success is largely driven by steady application of the necessary supportive policies of prudent fiscal policy, flexible labor markets, liquid and well-capitalized banking sector, and adequate reserve coverage. Continuation of these policies will maintain the support to the exchange rate regime.

29. **Authorities' Views.** The authorities took note of staff's CA assessment and agreed with the recommended boost in infrastructure investment (to support diversification plans) and public social spending to help deliver a CA in line with the level consistent with fundamentals and desirable policies. They acknowledged bottlenecks to investment due to land scarcity while noting continuous reclamation efforts. They continue to view the currency board as critical for the stability of the economy. They agreed that the policy framework continues to provide the needed credibility for the exchange rate regime to be a lasting nominal anchor.

STAFF APPRAISAL

30. **Macao SAR returned to expansion since mid-2016 and is expected to expand moderately—at about 4 percent—over the medium term.** Gaming and tourism revenue returned to strong growth in 2017 and early 2018. Growth moderated in the second half of 2018, including due to spillovers from Mainland's deleveraging effort and U.S.-China trade tensions. Over the medium term, the economy is expected to grow moderately at about 4 percent. The outlook is driven by tourism and more subdued VIP gaming growth in line with diversification efforts towards more stable sources of growth. Risks are tilted to the downside, mainly emanating from Mainland China. Prudent macroeconomic policies and high reserves provide strong buffers against shocks.

31. **A comprehensive reform agenda to support prudent and efficient medium/long-term fiscal policymaking is needed.** A MLTFF will help increase efficiency in the use of fiscal reserves while helping ensure long-term fiscal sustainability and intergenerational equity in an aging society. The authorities should start with producing a long-term fiscal sustainability report and should ensure that their planned SWF is integrated into the MLTFF.

32. **The projected 2019 fiscal policy stance is appropriately supportive in light of the recent growth deceleration.** Accounting for the one-off completion of capital projects in 2018, the policy stance is appropriately supportive. However, an explicit counter-cyclical fiscal framework—integrated with the MLTFF—is needed to improve near-term budget preparation and smooth domestic demand. The 2019 policy stance could be made more expansionary if driven by priority spending under a medium/long-term fiscal plan. This priority spending would include properly-targeted priority infrastructure and social spending (including education spending to boost needed human capital) to support the diversification agenda and foster inclusion.

33. **The financial sector remains sound.** However, the large scale of the banking system calls for continued supervisory caution. Large short-term foreign liabilities warrant ongoing attention, while strengthened supervisory and regulatory cooperation across jurisdictions over the quality and liquidity of foreign assets is welcome. The AMCM could further strengthen the framework for sound Fintech adoption. Steps to strengthen the AML/CFT framework, particularly for the gaming sector, should be sustained. Efforts to limit the number of junket promoters need to be complemented by strengthening the regulatory framework for their market entry, and strengthening the oversight of AML/CFT measures in this sector. In addition, ongoing efforts to enhance the sanctions regime—to hold casinos accountable for breaches of the junkets associated with them—should be taken forward.

34. **The current housing macroprudential stance and related fiscal measures appear broadly appropriate.** With new measures in place in 2017 and 2018, systemic risks in the housing market appear broadly contained. Further actions should take into account evolving market conditions, including the recent growth deceleration and leveling off in residential property prices. In the event that residential property prices resume strong growth and may pose a risk to financial stability, the authorities could consider tightening macroprudential and/or fiscal-based measures.

The authorities are encouraged to replace the residency-based differentiation in the LTV framework with alternative measures. Housing affordability concerns should be addressed by a broad set of supply policies including advancing regulatory policy within a transparent framework that supports private sector supply and boosts well-targeted public housing supply, including via higher infrastructure spending.

35. Diversification policies should be guided by careful study of Macao SAR's comparative advantage. Guiding principles include: (i) new regulations for gaming concessions should support diversification with stronger incentives for non-VIP tourism expansion, (ii) infrastructure plans should advance to ease supply-side bottlenecks and support a higher number of tourists under a mass-gaming and non-gaming model, and (iii) in support of financial sector development plans, policies should foster a highly educated workforce, ensuring that the educational system delivers the skills for financial services provision, and attract foreign talent as needed.

36. Macao SAR's external position is assessed as substantially stronger than medium-term fundamentals and desirable policies, and infrastructure investment and social spending should be boosted to reduce external imbalances. The exchange rate peg continues to serve Macao SAR well and should be maintained including via prudent fiscal policy, sound financial sector, and adequate reserves.

37. It is proposed that the next Article IV consultation discussions take place on the standard 24-month cycle.

Box 1. Junket Finance in Macao SAR[1]

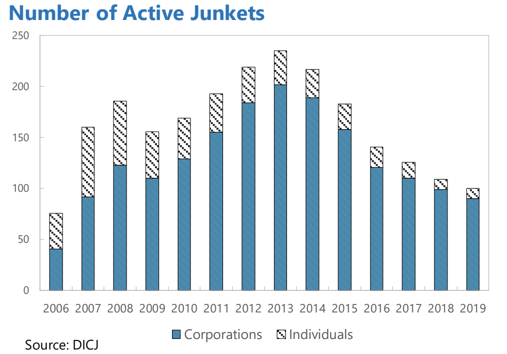
VIP gaming plays a big role in Macao SAR's economy. For example, in 2017, the value added from gaming and junket activities was close to 50 percent of GDP, and the game of VIP Baccarat alone accounted for around 55 percent of all gross gaming revenue.

VIP gaming activities are mostly facilitated by junket promoters ("junkets"). Junkets provide complementary facilities to VIP patrons including transportation, accommodation, meals, entertainment, and financing. In exchange for attracting VIP patrons to Macao SAR's casinos, junkets are remunerated by casinos. Junkets are locally incorporated companies or local legal persons, and need an annually-renewed license from the Gaming Inspection and Coordination Bureau (DICJ).

A key service provided by junkets is the extension of credit to VIP patrons. The extension of credit to VIP patrons is mainly to facilitate patrons to gamble without bringing large amounts of cash to Macao SAR. By law, junket gaming credit is extended in the form of unconvertible casino chips. When VIP patrons gamble and win, they collect chips that are convertible to cash, and when they lose, the junket credit becomes collectible debt.

Junkets have been subject to anti-money laundering and combating financing of terrorism (AML/CFT) obligations since 2006. Under the regulations, casinos are liable to ensure compliance with AML/CFT obligations of their associated junkets. Requirements were strengthened in 2016 to align the framework with the revised international standard. In recent years there have been more instances of revocation of junket licenses by DICJ. However effective implementation of existing measures remains a challenge.

Number of Active Junkets



Source: DICJ

Stock Market Performance of Two Listed Junkets

(Both series = 100 for 1/1/2009)

Source: Thomson Reuters

Following changes in business environment and strengthened regulation, the junket industry has consolidated over the last six years. Peaking in 2013 with 235 approved licenses, the number of junkets has declined to 100 in 2019.[2] In parallel, several junkets have shown poor performance in the stock market. In line with the consolidation in the sector, the market share of the top five junkets has increased from 65 percent in 2014 to 80 percent in 2018.[3]

As the economy diversifies away from VIP gaming, the junket segment is expected to contract further. Staff projects the observed decline in the number of junkets to continue under the government diversification plans where economic activity is expected to move towards mass-market gaming and non-gaming tourism, and away from VIP gaming.

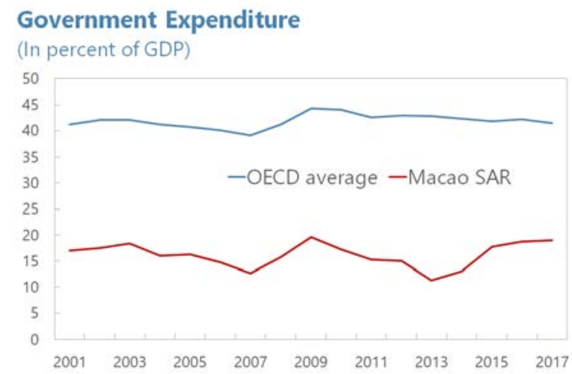
[1] Prepared by Sakai Ando (STA).

[2] End-January figures for each year as published in "Approved Licensed Junket Promoter List."

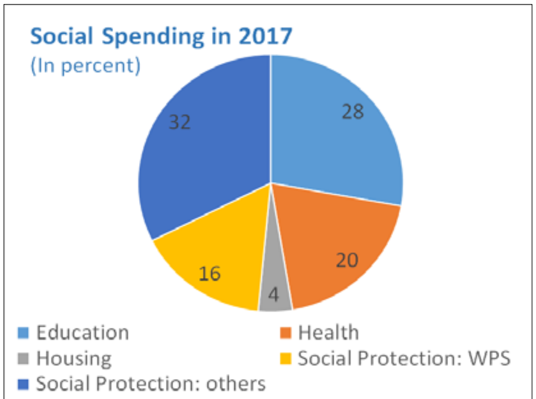
[3] "Equities Hotels Restaurants & Leisure, Macau Gaming," HSBC Global Research, October 2018.

Box 2. Universal Cash Transfers: Wealth Partaking Scheme[1]

Macao SAR adopted a universal cash transfers program in 2008. Macao SAR's level of government spending and social spending are below OECD's average. However, Macao SAR has a universal cash transfers program. Within social spending, the universal cash transfers program—Wealth Partaking Scheme (WPS)— accounts for one third of social protection and 16 percent of social spending. A remarkable feature of WPS is that it is a universal basic income program (UBI) as it transfers an equal amount of cash to all permanent residents.



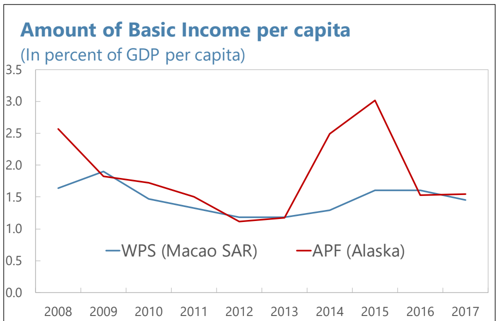
Source: Government Finance Statistics



Source: GFS, Macao SAR Financial Services Bureau

Cash transfers under the program amount to 5 percent of median annual income. The amount received by each permanent resident was 9,000 patacas in 2017, amounting to 5 percent of annual median income. The transfer is scheduled to increase to 10,000 patacas in 2019, representing a 34 percent increase in real terms of the initial amount of 5,000 patacas in 2008.

WPS is the second oldest ongoing UBI program. Several countries have implemented or studied UBI programs recently, such as Finland, Iran, and India.[2] However, most UBI programs are short-lived. WPS is one of only two ongoing programs that have lasted more than 10 years, together with the pioneering Alaska Permanent Fund (APF) that started in 1982. WPS and APF are similar in generosity, with 2017 benefits around 1.5 percent of GDP per capita in both cases.



Source: Staff estimates.

---

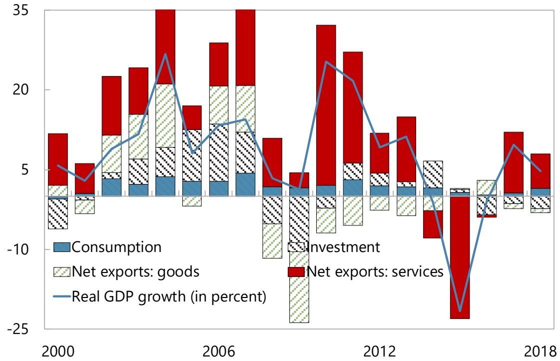
[1] Prepared by Sakai Ando (STA).

[2] In Finland, to study a potential UBI, 2,000 randomly selected unemployed individuals received 17 percent of GDP per capita in 2017 and 2018, and the program will be ended in 2019. In Iran, over 90 percent of Iranians received 6.5 percent of GDP per capita between 2011 and 2015, and the program was ended in 2016. India plans to take a step toward UBI in 2019 by distributing 6,000 rupees to farming family with less than 2 hectares.

Figure 1. Macao SAR: Real Sector

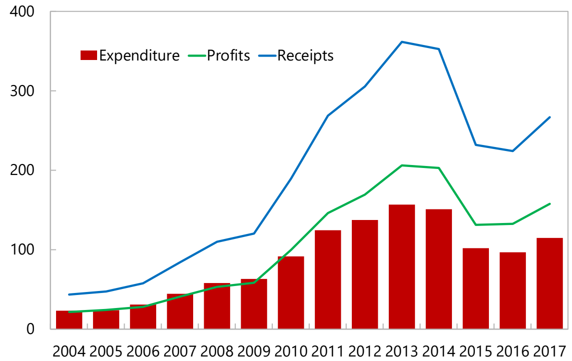
Growth has rebounded after the 2014-16 contraction…

Contribution to Real GDP Growth
(In percentage points)



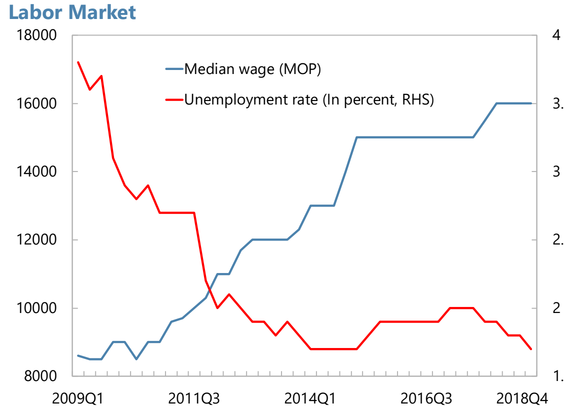
…supported by the return of gaming tourists.

Gaming Sector
(In billion of MOP)



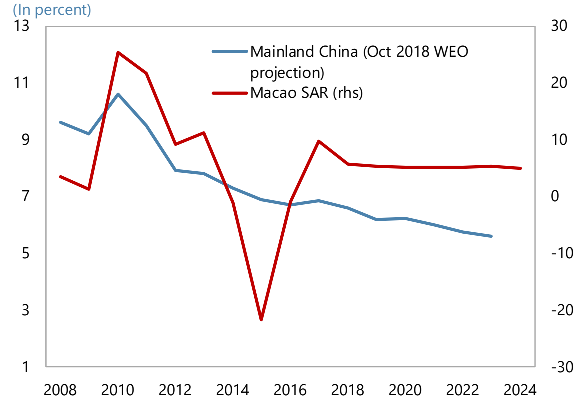
Unemployment declined further, and median wage ticked up.

Labor Market



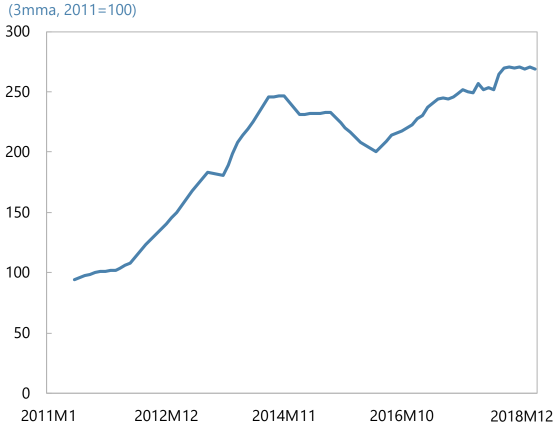
Going forward, growth momentum appears to be slowing, together with Mainland's.

Real GDP Growth
(In percent)



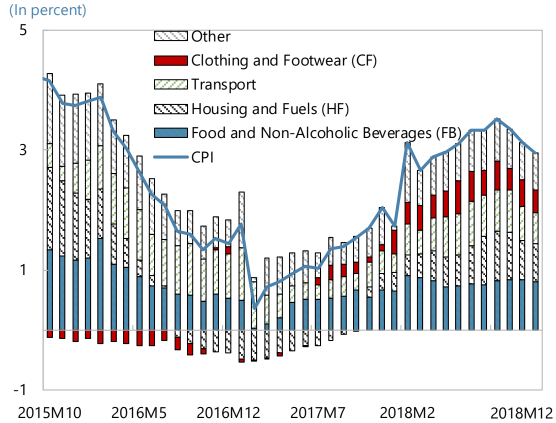
Residential property prices recovered with the 2017-18 rebound but they were flat in H2-2018.

Monthly Property Price Index
(3mma, 2011=100)



Inflation picked up in 2018 despite RMB depreciation.

CPI Growth Decomposition
(In percent)



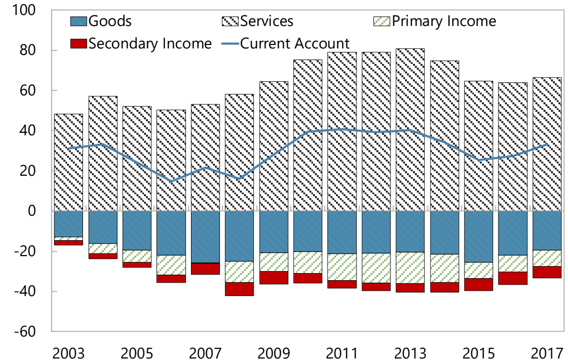
Source: CEIC, DSEC, Haver Analytics, and IMF staff calculations.

Figure 2. Macao SAR: External Position

Services exports continue to deliver sustained strong current account surpluses…

Current Account and Components

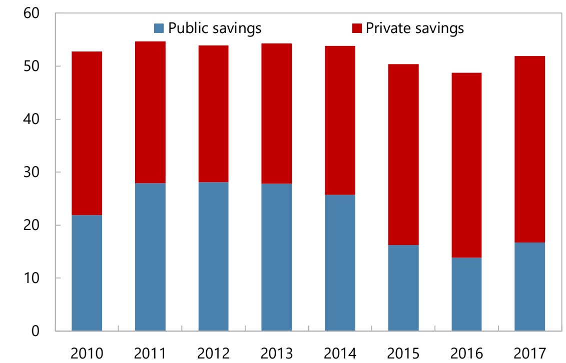
(In percent of GDP)



…with national savings—from fiscal surpluses and private profits—stronger than investment.

National Savings

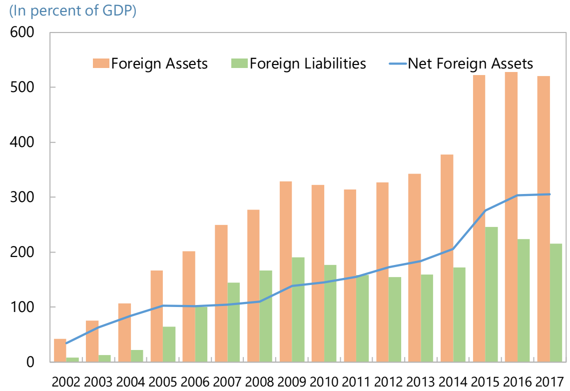
(In percent of GDP)



Meanwhile, CA surpluses have delivered a growing net foreign asset position…

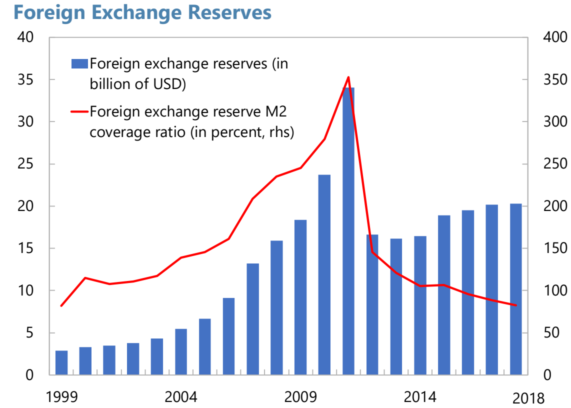
Estimated International Investment Position

(In percent of GDP)



…with ample foreign exchange reserves.

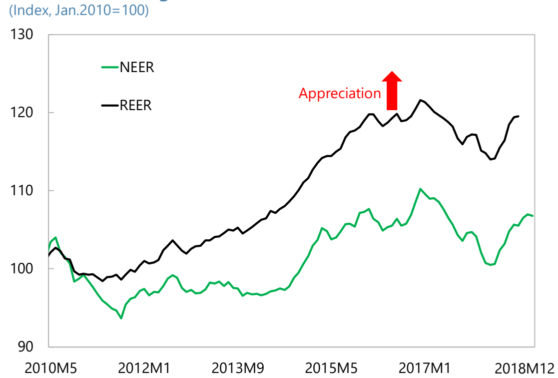
Foreign Exchange Reserves



The pataca depreciated in 2017 and appreciated since April 2018.

Effective Exchange Rate

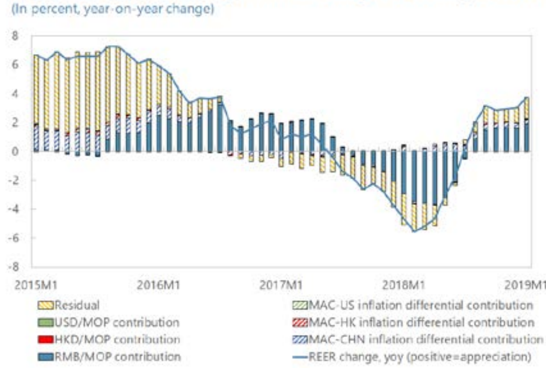
(Index, Jan.2010=100)



RMB depreciation contributed to 2018 REER appreciation in recent months.

Real Effective Exchange Rate Change, Decomposition

(In percent, year-on-year change)

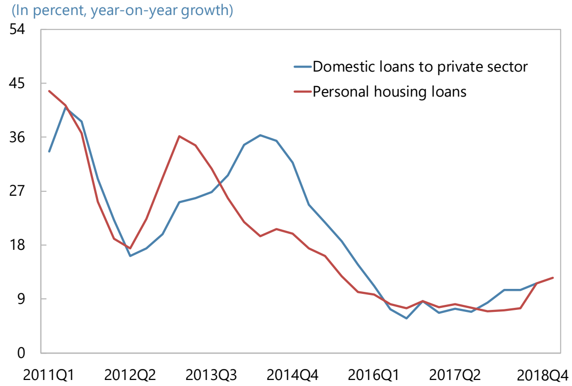


Source: CEIC, DSEC, Haver Analytics, and IMF staff calculations.

Figure 3. Macao SAR: Banking Sector Developments

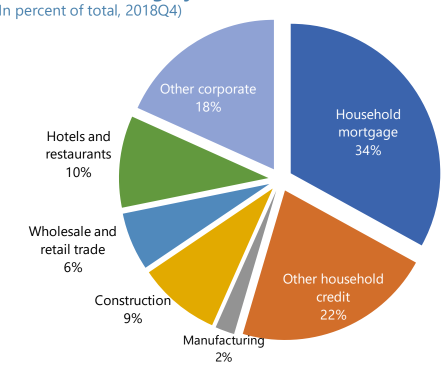
Credit to the private sector has somewhat picked up since the economic rebound…

Domestic Loan Growth (to Residents)
(In percent, year-on-year growth)



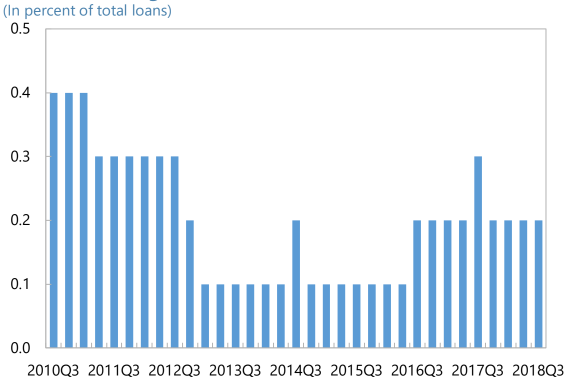
… with household mortgages still accounting for the largest share of domestic lending.

Domestic Lending by Sector (to Residents)
(In percent of total, 2018Q4)



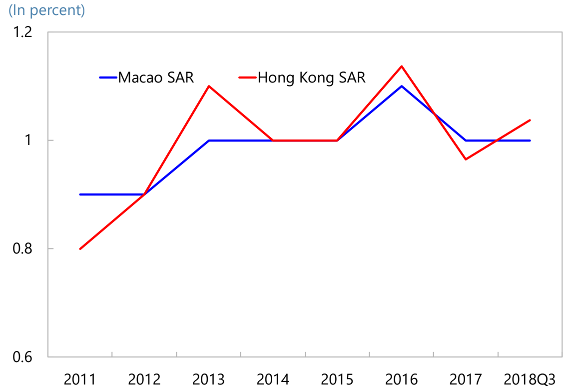
Asset quality remained high, despite a slight increase in NPLs…

Non-Performing Loans
(In percent of total loans)



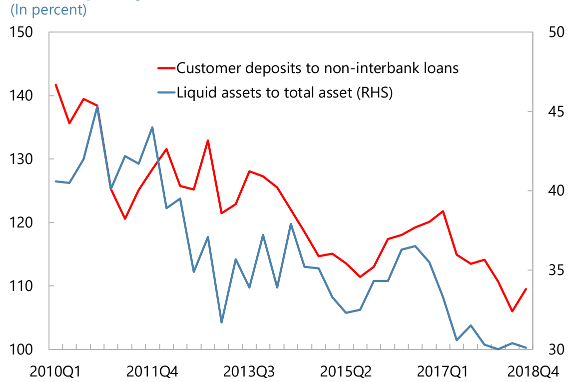
…and bank profitability slightly reduced.

Return on Assets
(In percent)



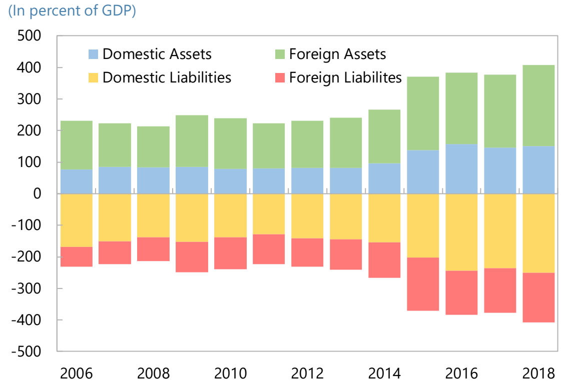
Liquidity ratios have declined, though they remain at healthy levels.

Bank Liquidity
(In percent)



Continued monitoring of the large external liabilities and external assets is important.

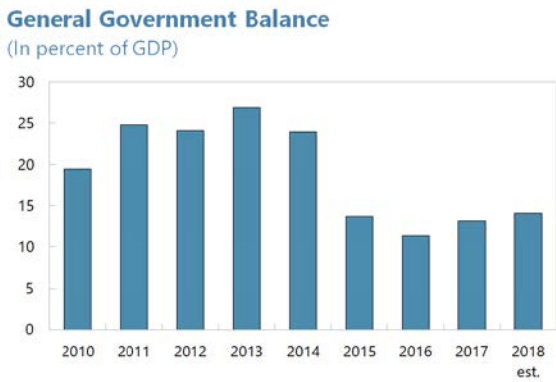
Bank Balance Sheets
(In percent of GDP)



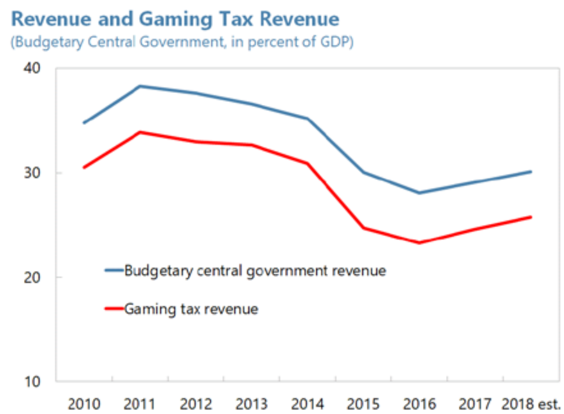
Source: CEIC, DSEC, Haver Analytics, and IMF staff calculations.

Figure 4. Macao SAR: Fiscal Outlook

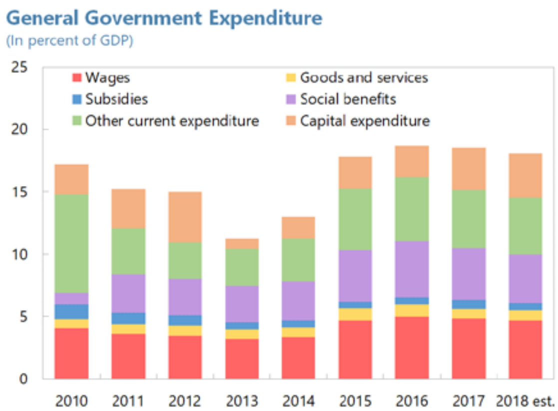
The fiscal balance has recovered with the economic rebound…



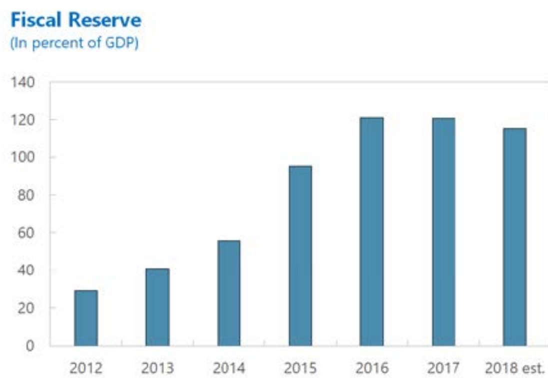
…mostly due to the recovery in gaming tax revenue…



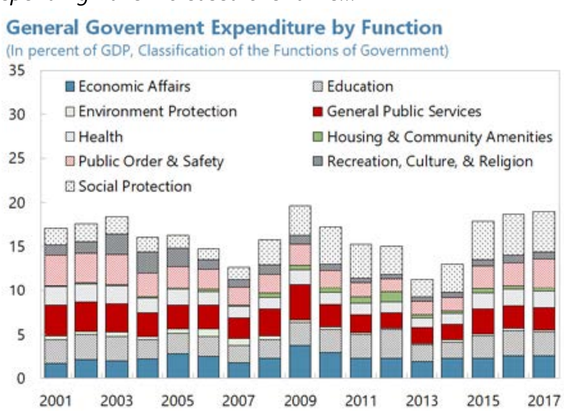
…while expenditure has been more stable.



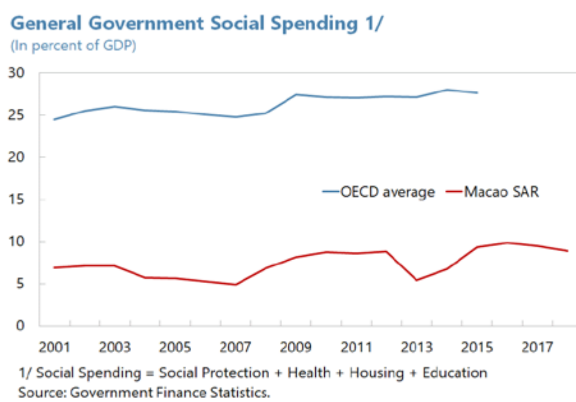
Fiscal reserves are strong.



While non-targeted transfers within "social protection" spending have increased over time…



…social spending remains relatively low when compared with other countries.



Source: CEIC, DSEC, Haver Analytics, Macao Financial Serices Bureau, IMF GFS database, and IMF staff calculations.

Table 1. Macao SAR: Selected Economic and Financial Indicators

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
									Est.			Proj.			
							(Annual percentage change, unless otherwise specified)								
National accounts															
Real GDP	25.3	21.7	9.2	11.2	-1.2	-21.6	-0.9	9.7	4.7	4.3	4.2	4.1	4.1	4.1	4.1
Total domestic demand	-0.4	13.9	10.3	6.5	16.7	2.9	-5.4	-1.2	-1.7	-0.6	1.4	2.5	2.7	2.7	2.7
Consumption	5.4	9.7	7.0	6.4	6.0	2.7	0.6	1.7	4.3	3.0	2.7	3.1	3.3	3.2	3.2
Investment	-12.0	23.6	17.0	6.8	36.3	3.3	-14.0	-6.2	-12.4	-8.5	-1.7	0.9	1.3	1.3	1.3
Net exports 1/	25.5	15.4	4.9	8.5	-7.9	-22.9	2.4	10.4	5.7	4.5	3.5	3.0	2.9	2.9	2.9
Exports	39.7	25.7	10.5	13.2	-4.5	-26.6	-1.9	16.9	9.5	6.7	5.5	5.0	4.8	4.8	4.8
Imports	16.7	22.0	14.3	10.7	12.5	1.1	-10.1	7.0	6.1	3.5	3.9	4.3	3.9	3.9	3.9
Gross fixed capital formation (in percent of GDP)	12.5	12.4	13.6	13.3	18.8	24.6	21.7	19.3	16.0	14.1	13.2	12.8	12.4	12.0	11.6
National savings (in percent of GDP)	52.7	54.7	54.0	54.3	53.8	50.4	48.7	51.9	50.8	51.2	51.7	52.0	52.4	52.7	53.1
Prices and employment															
Headline inflation (average)	2.8	5.8	6.1	5.5	6.1	4.6	2.4	1.2	3.0	2.5	2.7	3.0	3.1	3.1	3.0
Terms of Trade	-0.9	0.7	-2.3	-0.1	-0.5	0.8	0.5	0.2	-0.2	0.5	0.1	0.1	0.1	0.1	0.1
Housing prices	33.5	33.6	38.4	42.6	22.0	-13.0	-0.6	16.8	7.5	...	...	...	...	...	...
Median monthly employment earnings	5.9	11.1	13.0	6.2	10.8	12.8	0.0	0.0	6.7	...	...	...	...	...	...
Unemployment rate (annual average)	2.8	2.6	2.0	1.8	1.7	1.8	1.9	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8
							(In percent of GDP, unless otherwise specified)								
Fiscal accounts															
General government balance	19.5	24.8	24.1	27.0	24.0	13.7	11.4	13.2	14.1	14.2	13.8	13.3	12.9	12.4	12.0
Budgetary Central Government Balance	18.1	22.1	21.8	23.5	20.5	8.7	6.3	10.6	12.5	12.6	12.2	11.7	11.3	10.8	10.4
Revenue	34.8	38.3	37.6	36.6	35.2	30.1	28.0	29.1	30.1	29.7	29.3	29.0	28.6	28.3	27.9
Expenditure	16.7	16.1	15.6	13.1	14.6	21.4	21.7	18.5	17.6	17.1	17.2	17.3	17.4	17.5	17.6
Extra-budgetary funds balance	0.4	1.4	1.0	1.0	0.9	0.6	0.5	1.0	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Social security funds balance	0.9	1.3	1.3	2.5	2.5	4.5	4.6	1.7	1.0	1.1	1.1	1.1	1.1	1.1	1.1
Total public debt	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Fiscal Reserve 2/	...	...	29.2	41.0	55.7	95.3	121.1	120.8	115.6	123.4	130.8	136.8	141.8	146.2	149.7
Balance of payments															
Current account	39.4	40.9	39.3	40.2	34.2	25.3	27.2	33.0	35.0	37.4	38.7	39.5	40.2	40.9	41.7
Goods	-20.2	-21.1	-21.0	-20.5	-21.4	-25.6	-22.3	-20.8	-20.1	-19.2	-18.4	-18.0	-17.5	-17.0	-16.6
Services	75.3	79.1	79.0	80.7	74.7	64.8	64.0	67.8	70.6	71.7	71.8	71.7	71.5	71.3	71.1
Income	-15.7	-17.1	-18.8	-20.0	-19.1	-13.9	-14.4	-14.0	-15.5	-15.2	-14.7	-14.3	-13.8	-13.3	-12.9
Financial account	5.9	6.4	34.8	35.5	22.8	6.2	27.0	32.6	31.6	31.4	32.3	31.7	32.2	35.4	34.8
FDI	-13.9	-3.8	-5.9	-2.9	-1.8	-1.3	-3.7	2.3	3.5	2.2	3.7	3.8	5.1	9.1	9.2
Portfolio investment	3.0	5.1	6.7	24.1	10.2	26.9	6.7	20.0	15.0	16.5	16.5	16.4	16.2	15.9	15.5
Financial derivatives	0.0	0.1	-0.3	-1.2	-0.6	-0.7	0.8	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Other investment	16.7	5.0	34.3	15.4	14.9	-18.7	23.2	11.0	13.7	13.2	12.7	12.1	11.6	11.1	10.7
Errors and omissions	-15.3	-10.3	4.3	-5.9	-11.2	-14.0	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reserve Asset	18.3	27.7	8.8	-1.1	0.1	5.1	1.0	0.4	3.3	5.9	6.3	7.7	7.9	5.5	6.8
Foreign exchange reserves (In billion of US dollars) 2/	23.7	34.0	16.6	16.1	16.4	18.9	19.5	20.2	20.3	...	...	...	...	...	...
Gross external debt	113.1	127.8	119.2	120.6	133.5	198.9	172.2	166.7	182.0	184.0	186.0	188.0	190.0	192.0	194.0
							(Annual percentage change)								
Financial sector															
Loans	31.6	31.2	26.2	31.4	29.0	10.3	3.1	14.2	12.9	...	...	...	...	...	...
Resident	29.3	28.5	18.4	29.6	31.8	14.8	8.6	8.4	10.2	...	...	...	...	...	...
Mortgages	45.6	25.3	29.2	25.9	19.9	10.1	8.7	6.9	12.6	...	...	...	...	...	...
Others	21.6	30.3	12.5	32.0	39.0	17.1	8.6	9.2	9.0	...	...	...	...	...	...
Nonresident	34.4	34.3	34.6	33.2	26.4	6.0	-2.7	21.0	15.7	...	...	...	...	...	...
Mortgages	18.4	9.8	21.5	-6.2	6.1	22.3	-3.7	-1.6	-3.7	...	...	...	...	...	...
Others	35.2	35.3	35.1	34.4	26.8	5.8	-2.7	21.5	16.0	...	...	...	...	...	...
Domestic credit to residents (in percent of GDP)	58.0	56.9	57.7	62.5	76.7	107.4	116.7	113.0	114.7	...	...	...	...	...	...
Domestic credit to non-residents (in percent of GDP)	51.2	52.6	60.6	67.4	79.3	102.6	99.8	107.8	115.0	...	...	...	...	...	...
Household domestic credit to residents (in percent of GDP)	27.1	26.9	29.7	35.0	43.1	57.6	63.8	60.1	62.6	...	...	...	...	...	...
Household domestic credit to non-residents (in percent of GDP)	2.5	2.2	2.8	4.0	4.4	4.2	4.7	4.6	4.9	...	...	...	...	...	...
Interest rates															
Discount window base rate (level, %, eop)	0.5	0.5	0.5	0.5	0.5	0.8	1.0	1.8	2.8	...	...	...	...	...	...
Saving deposit rate (level, %, average)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	...	...	...	...	...	...
MAIBOR 3-month (level, %, eop)	0.3	0.4	0.4	0.4	0.4	0.4	1.0	1.3	2.4	...	...	...	...	...	...
Tourism															
Visitor arrivals	14.8	12.2	0.3	4.4	7.5	-2.6	0.8	5.4	9.8	...	...	...	...	...	...
Gaming revenue	57.5	41.9	13.4	18.6	-2.5	-34.3	-3.3	19.0	14.0	...	...	...	...	...	...
Exchange rate															
MOP per USD, period average	0.2	0.2	-0.4	0.0	0.0	0.0	0.1	0.4	0.6	...	...	...	...	...	...
Nominal effective exchange rate (avearge, +=appreciation)	-0.8	-5.0	1.7	0.2	0.3	7.0	1.5	-0.1	-2.5	...	...	...	...	...	...
Real effective exchange rate (avearge, +=appreciation)	-1.2	-1.7	2.9	2.2	3.7	6.9	3.3	-0.9	-0.9	...	...	...	...	...	...
Memorandum items:															
Nominal GDP (in millions of US dollars)	28,123.7	36,708.0	43,031.8	51,552.4	55,348	45,362	45,322	50,559	54,545	58,055	62,158	66,673	71,689	77,086	82,990
Per capita GDP (in thousands of US dollars)	52	67	76	87	89	71	70	78	83	86	91	96	102	108	115

Sources: CEIC; Haver Analytics; IMF, International Financial Statistics; national authorities; and IMF staff estimates.

1/ Contribution to annual growth in percentage points.

2/ Fiscal Reserve was established on January 1, 2012 with a transfer from foreign exchange reserves.

Table 2. Macao SAR: Medium-Term Macroeconomic Framework

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
					Est.			Proj.			
					(Annual percentage change)						
National accounts											
Real GDP	-1.2	-21.6	-0.9	9.7	4.7	4.3	4.2	4.1	4.1	4.1	4.1
Total domestic demand	23.0	2.9	-5.3	-1.2	-1.6	-0.6	1.4	2.5	2.7	2.7	2.7
Consumption	6.0	2.7	0.6	1.7	4.3	3.0	2.7	3.1	3.3	3.2	3.2
Investment	36.3	3.3	-14.0	-6.2	-12.4	-8.5	-1.7	0.9	1.3	1.3	1.3
Net exports 1/	-7.9	-22.9	2.4	10.4	5.7	4.5	3.5	3.0	2.9	2.9	2.9
Export	-4.5	-26.6	-1.9	16.9	9.5	6.7	5.5	5.0	4.8	4.8	4.8
Import	12.5	1.1	-10.1	7.0	6.1	3.5	3.9	4.3	3.9	3.9	3.9
Consumer prices and employment											
Headline inflation (average)	6.0	4.6	2.4	1.2	3.0	2.5	2.7	3.0	3.1	3.1	3.0
Terms of Trade	-0.5	0.8	0.5	0.2	-0.3	0.5	0.1	0.1	0.1	0.1	0.1
Unemployment rate	1.7	1.8	1.9	2.0	1.8	1.8	1.8	1.8	1.8	1.8	1.8
					(In percent of GDP)						
Gross capital formation	19.6	25.1	21.6	19.0	15.8	13.8	13.0	12.5	12.1	11.8	11.4
Gross national saving	53.8	50.4	48.7	51.9	50.8	51.2	51.7	52.0	52.4	52.7	53.1
					(In percent of GDP, unless otherwise specified)						
Balance of payments 2/											
Current account, net	34.2	25.3	27.2	33.0	35.0	37.4	38.7	39.5	40.2	40.9	41.7
Trade balance of goods and services, net	53.3	39.2	41.7	47.0	50.5	52.5	53.4	53.7	54.0	54.3	54.6
Goods balance	-21.4	-25.6	-22.3	-20.8	-20.1	-19.2	-18.4	-18.0	-17.5	-17.0	-16.6
Services balance	74.7	64.8	64.0	67.8	70.6	71.7	71.8	71.7	71.5	71.3	71.1
Income	-19.1	-13.9	-14.4	-14.0	-15.5	-15.2	-14.7	-14.3	-13.8	-13.3	-12.9
Primary Income	-14.3	-8.1	-8.2	-8.1	-9.3	-9.0	-8.6	-8.2	-7.9	-7.5	-7.1
Secondary Income	-4.8	-5.8	-6.2	-5.9	-6.1	-6.2	-6.1	-6.0	-5.9	-5.9	-5.8
Capital account, net	0.0	0.0	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	0.0	0.0
Financial account, net	22.8	6.2	27.0	32.6	31.6	31.4	32.3	31.7	32.2	35.4	34.8
Direct investment, net	-1.8	-1.3	-3.7	2.3	3.5	2.2	3.7	3.8	5.1	9.1	9.2
Portfolio investment, net	10.2	26.9	6.7	20.0	15.0	16.5	16.5	16.4	16.2	15.9	15.5
Financial derivatives, net	-0.6	-0.7	0.8	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Other investment, net	14.9	-18.7	23.2	11.0	13.7	13.2	12.7	12.1	11.6	11.1	10.7
Errors and omissions, net	-11.2	-14.0	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reserve assets (net change)	0.1	5.1	1.0	0.4	3.3	5.9	6.3	7.7	7.9	5.5	6.8
					(In percent of GDP)						
Fiscal accounts											
General government balance	24.0	13.7	11.4	13.2	14.1	14.2	13.8	13.3	12.9	12.4	12.0
Budgetary Central Government Balance	20.5	8.7	6.3	10.6	12.5	12.6	12.2	11.7	11.3	10.8	10.4
Revenue	35.2	30.1	28.0	29.1	30.1	29.7	29.3	29.0	28.6	28.3	27.9
Expenditure	14.6	21.4	21.7	18.5	17.6	17.1	17.2	17.3	17.4	17.5	17.6
Extra-budgetary funds balance	0.9	0.6	0.5	1.0	0.6	0.5	0.5	0.5	0.5	0.5	0.5
Social security funds balance	2.5	4.5	4.6	1.7	1.0	1.1	1.1	1.1	1.1	1.1	1.1
Memorandum items:											
Nominal GDP (in millions of MOP)	442,070	362,214	362,356	405,790	440,316	466,060	491,300	520,656	552,217	585,396	621,589
Exchange rate (MOP per USD, percent change)	0.0	0.0	0.1	0.4	0.6	-0.6	-1.5	-1.2	-1.4	-1.4	-1.4
Nominal effective exchange rate (percent chang	0.3	7.0	1.5	-0.1	-2.5	...	...	...	...	...	...
Real effective exchange rate (percent change)	3.7	6.9	3.3	-0.9	-0.9	...	...	...	...	...	...

Sources: CEIC; Haver Analytics; IMF, International Financial Statistics; national authorities; and IMF staff estimates and projections.

1/ Contribution to annual growth in percentage points.

2/ BPM6 methodology.

Table 3a. Macao SAR: General Government Accounts (million MOP)

	2011	2012	2013	2014	2015	2016	2017	2018 Budget	2018 Est.	2019 Budget	2019 Proj.	2020 Proj.
					(In millions of MOP)							
Budgetary Central Government												
Revenue	112,621	129,384	150,749	155,489	108,857	101,566	117,908	103,170	132,671	114,994	138,289	144,059
Taxes	107,281	123,307	145,557	149,523	102,781	97,426	114,266	100,736	128,388	112,356	133,647	139,165
Personal Income	961	1,144	1,310	1,737	2,058	2,139	2,365	2,391	2,606	2,627	2,863	3,018
Corporate Income	2,801	3,276	3,645	4,575	5,898	5,571	5,610	5,084	5,229	4,841	4,979	5,248
Property	320	335	462	581	765	996	1,055	1,000	1,081	923	998	1,052
Goods and Services	102,787	117,961	139,536	141,861	93,489	88,110	104,531	91,608	118,700	103,290	124,009	129,005
Of which: Gaming	99,656	113,378	134,382	136,710	89,573	84,375	99,845	87,010	113,512	98,228	118,517	123,217
Other	413	592	603	770	572	610	703	652	772	675	798	841
Other Revenue	5,340	6,077	5,192	5,966	6,076	4,140	3,642	2,434	4,283	2,639	4,643	4,894
Expenditures	47,483	53,685	53,950	64,646	77,416	78,718	75,006	92,100	77,445	93,635	79,504	84,301
Wages	6,265	6,997	7,794	8,762	9,826	10,560	11,403	12,792	12,040	13,552	12,755	13,445
Goods and Services	2,198	2,836	3,156	3,396	3,544	3,356	3,155	4,812	3,589	6,503	4,850	5,113
Subsidies	2,277	1,324	1,598	1,725	1,491	1,557	1,830	1,959	1,892	1,882	1,818	1,917
Intra Government Transfers	16,909	18,244	26,213	28,997	38,418	37,197	27,261	29,383	26,671	31,178	28,444	30,476
To EBFs	12,509	13,086	14,210	16,426	19,911	19,076	21,743	24,729	20,390	25,965	21,410	22,815
To SSF	4,400	5,158	12,003	12,571	18,507	18,121	5,518	4,654	6,281	5,212	7,035	7,662
Social Benefits	7,112	7,700	8,717	10,002	10,545	11,487	11,405	12,410	11,729	14,184	13,406	14,378
Other Current	3,580	2,382	3,661	4,781	5,071	6,233	6,565	11,074	6,810	11,044	6,792	7,160
Capital Expenditure	9,142	14,202	2,812	6,983	8,521	8,328	13,387	19,671	14,714	15,291	11,438	11,812
Budgetary Central Government Balance	65,138	74,859	96,796	90,843	31,441	22,848	42,902	11,069	55,226	21,359	58,786	59,759
Extra-Budgetary Funds												
Revenue	17,154	18,359	20,418	23,007	24,319	24,525	28,059	29,936	27,123	31,905	29,706	31,561
Taxes and other Receipts	4,582	5,160	6,129	6,468	4,246	4,988	5,922	4,820	6,733	5,940	8,297	8,746
Transfers from Central Government	12,572	13,198	14,289	16,539	20,073	19,537	22,137	25,116	20,390	25,965	21,410	22,815
Expenditure	13,152	14,840	16,450	19,064	22,270	22,872	24,030	28,030	24,587	31,053	27,336	29,062
Wages	4,392	4,877	5,335	6,070	6,995	7,452	8,048	8,950	8,452	9,726	9,185	9,683
Subsidies	429	1,384	690	682	588	670	1,206	894	595	583	388	409
Grants	102	161	117	164	204	525	433	431	474	682	750	791
Social Benefits	846	1,130	1,100	1,184	1,326	1,422	1,578	1,823	1,525	2,342	1,959	2,311
Other Current	7,123	7,546	8,718	10,360	12,470	12,077	12,155	14,908	12,750	16,508	14,119	14,883
Capital Expenditure	259	(259)	490	604	687	726	610	1,024	789	1,212	934	985
EBF Balance	4,002	3,519	3,969	3,943	2,049	1,653	4,029	1,906	2,536	853	2,370	2,499
Social Security Fund												
Revenue	4,939	5,789	12,658	14,006	19,621	20,515	10,772	7,458	8,840	8,262	9,815	10,592
Social Contributions	305	181	181	185	190	192	383	407	389	392	375	395
Transfers from Central Government	4,400	5,158	12,003	12,571	18,507	18,121	5,518	4,654	6,281	5,212	7,035	7,662
Other Revenue	234	451	475	1,250	925	2,203	4,871	2,397	2,170	2,657	2,405	2,536
Expenditure	1,191	1,412	2,311	2,844	3,410	3,884	4,026	4,741	4,510	4,963	4,702	5,202
Wages	61	70	76	89	100	107	119	140	135	157	151	160
Social Benefits	1,103	1,306	2,198	2,612	2,979	3,436	3,772	4,358	4,094	4,644	4,363	4,845
Other Current	26	28	34	143	331	341	135	242	281	162	188	198
Capital Expenditure	2	8	4	-	-	-	-		-		-	-
SSF Balance	3,747	4,377	10,347	11,161	16,212	16,631	6,746	2,717	4,330	3,299	5,113	5,390
General Government Balance	72,887	82,755	111,112	105,947	49,701	41,132	53,677	15,692	62,092	25,511	66,269	67,647
Revenue	117,742	135,176	157,533	163,392	114,218	108,948	129,083	110,794	141,963	123,984	149,366	155,736
Expenditure	44,855	52,422	46,421	57,445	64,517	67,816	75,406	95,101	79,871	98,473	83,097	88,089
Memorandum												
Fiscal Reserve 1/	...	100,240	168,899	246,337	345,055	438,663	490,038		508,803		575,072	642,719
Public Sector Domestic Deposits	236,824	244,126	301,578	340,533	308,840	285,974	311,852		380,860		...	...
Non-Gaming Balance	(26,769)	(30,623)	(23,270)	(30,763)	(39,872)	(43,243)	(46,168)		(51,420)		(52,248)	(55,569)

1/ Fiscal Reserve was established on January 1, 2012 with a transfer from foreign exchange reserves.
Sources: Financial Services Bureau and IMF staff estimates.

Table 3b. Macao SAR: General Government Accounts (percent of GDP)

	2011	2012	2013	2014	2015	2016	2017	2018 Budget	2018 Est.	2019 Budget	2019 Proj.	2020 Proj.
				(In percent of GDP)								
Budgetary Central Government												
Revenue	38.3	37.6	36.6	35.2	30.1	28.0	29.1	23.4	30.1	24.7	29.7	29.3
Taxes	36.4	35.9	35.3	33.8	28.4	26.9	28.2	22.9	29.2	24.1	28.7	28.3
Personal Income	0.3	0.3	0.3	0.4	0.6	0.6	0.6	0.5	0.6	0.6	0.6	0.6
Corporate Income	1.0	1.0	0.9	1.0	1.6	1.5	1.4	1.2	1.2	1.0	1.1	1.1
Property	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.2	0.2	0.2	0.2
Goods and Services	34.9	34.3	33.9	32.1	25.8	24.3	25.8	20.8	27.0	22.2	26.6	26.3
Of which: Gaming	33.9	33.0	32.6	30.9	24.7	23.3	24.6	19.8	25.8	21.1	25.4	25.1
Other	0.1	0.2	0.1	0.2	0.2	0.2	0.2	0.1	0.2	0.1	0.2	0.2
Other Revenue	1.8	1.8	1.3	1.3	1.7	1.1	0.9	0.6	1.0	0.6	1.0	1.0
Expenditures	16.1	15.6	13.1	14.6	21.4	21.7	18.5	20.9	17.6	20.1	17.1	17.2
Wages	2.1	2.0	1.9	2.0	2.7	2.9	2.8	2.9	2.7	2.9	2.7	2.7
Goods and Services	0.7	0.8	0.8	0.8	1.0	0.9	0.8	1.1	0.8	1.4	1.0	1.0
Subsidies	0.8	0.4	0.4	0.4	0.4	0.4	0.5	0.4	0.4	0.4	0.4	0.4
Intra Government Transfers	5.7	5.3	6.4	6.6	10.6	10.3	6.7	6.7	6.1	6.7	6.1	6.2
To EBFs	4.2	3.8	3.5	3.7	5.5	5.3	5.4	5.6	4.6	5.6	4.6	4.6
To SSF	1.5	1.5	2.9	2.8	5.1	5.0	1.4	1.1	1.4	1.1	1.5	1.6
Social Benefits	2.4	2.2	2.1	2.3	2.9	3.2	2.8	2.8	2.7	3.0	2.9	2.9
Other Current	1.2	0.7	0.9	1.1	1.4	1.7	1.6	2.5	1.5	2.4	1.5	1.5
Capital Expenditure	3.1	4.1	0.7	1.6	2.4	2.3	3.3	4.5	3.3	3.3	2.5	2.4
Budgetary Central Government Balance	22.1	21.8	23.5	20.5	8.7	6.3	10.6	2.5	12.5	4.6	12.6	12.2
Extra-Budgetary Funds												
Revenue	5.8	5.3	5.0	5.2	6.7	6.8	6.9	6.8	6.2	6.8	6.4	6.4
Taxes and other Receipts	1.6	1.5	1.5	1.5	1.2	1.4	1.5	1.1	1.5	1.3	1.8	1.8
Transfers from Central Government	4.3	3.8	3.5	3.7	5.5	5.4	5.5	5.7	4.6	5.6	4.6	4.6
Expenditure	4.5	4.3	4.0	4.3	6.1	6.3	5.9	6.4	5.6	6.7	5.9	5.9
Wages	1.5	1.4	1.3	1.4	1.9	2.1	2.0	2.0	1.9	2.1	2.0	2.0
Subsidies	0.1	0.4	0.2	0.2	0.2	0.2	0.3	0.2	0.1	0.1	0.1	0.1
Grants	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Social Benefits	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4	0.3	0.5	0.4	0.5
Other Current	2.4	2.2	2.1	2.3	3.4	3.3	3.0	3.4	2.9	3.5	3.0	3.0
Capital Expenditure	0.1	-0.1	0.1	0.1	0.2	0.2	0.2	0.2	0.2	0.3	0.2	0.2
EBF Balance	1.4	1.0	1.0	0.9	0.6	0.5	1.0	0.4	0.6	0.2	0.5	0.5
Social Security Fund												
Revenue	1.7	1.7	3.1	3.2	5.4	5.7	2.7	1.7	2.0	1.8	2.1	2.2
Social Contributions	0.1	0.1	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Transfers from Central Government	1.5	1.5	2.9	2.8	5.1	5.0	1.4	1.1	1.4	1.1	1.5	1.6
Other Revenue	0.1	0.1	0.1	0.3	0.3	0.6	1.2	0.5	0.5	0.6	0.5	0.5
Expenditure	0.4	0.4	0.6	0.6	0.9	1.1	1.0	1.1	1.0	1.1	1.0	1.1
Wages	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Social Benefits	0.4	0.4	0.5	0.6	0.8	0.9	0.9	1.0	0.9	1.0	0.9	1.0
Other Current	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.1	0.1	0.0	0.0	0.0
Capital Expenditure	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.0		0.0	0.0
SSF Balance	1.3	1.3	2.5	2.5	4.5	4.6	1.7	0.6	1.0	0.7	1.1	1.1
General Government Balance	24.8	24.1	27.0	24.0	13.7	11.4	13.2	3.6	14.1	5.5	14.2	13.8
Revenue	40.0	39.3	38.2	37.0	31.5	30.1	31.8	25.2	32.2	26.6	32.0	31.7
Expenditure	15.2	15.2	11.3	13.0	17.8	18.7	18.6	21.6	18.1	21.1	17.8	17.9
Memorandum												
Fiscal Reserve 1/	...	29.2	41.0	55.7	95.3	121.1	120.8		115.6		123.4	130.8
Public Sector Domestic Deposits	80.5	71.0	73.2	77.0	85.3	78.9	76.9		86.5		...	...
Cyclically Adjusted Non-Gaming Balance 2/	-23.3	-23.8	-16.1	-19.1	-21.0	-21.3	-21.5		-22.2		-21.3	-21.5
Social Spending 3/	8.6	8.8	5.4	6.7	9.3	9.8	9.5		8.9		9.2	9.3

1/ Fiscal Reserve was established on January 1, 2012 with a transfer from foreign exchange reserves.
2/ In percent of potential non-gaming GDP
3/ Includes Social Protection, Health, Housing, and Education from spending categories by function.
Sources: Financial Services Bureau; and IMF staff estimates.

Table 4. Macao SAR: Balance of Payments 1/

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
								Est.			Proj.			
							(In milions of US dollars)							
Current account, net	14,999	16,893	20,742	18,912	11,484	12,341	16,662	19,108	21,700	24,032	26,332	28,833	31,542	34,594
Trade balance of goods and services, net	21,293	24,977	31,053	29,506	17,801	18,887	23,746	27,539	30,501	33,168	35,836	38,722	41,830	45,305
Goods balance, net	-7,758	-9,017	-10,545	-11,831	-11,615	-10,126	-10,511	-10,984	-11,145	-11,457	-11,982	-12,532	-13,100	-13,737
Credit (exports)	1,061	1,400	1,493	1,787	1,959	1,546	1,742	1,992	2,133	2,271	2,434	2,611	2,800	3,011
Debit (imports)	8,819	10,417	12,039	13,618	13,574	11,671	12,253	12,975	13,278	13,728	14,416	15,143	15,900	16,748
Services balance, net	29,051	33,995	41,598	41,337	29,416	29,013	34,258	38,523	41,646	44,624	47,817	51,254	54,930	59,042
Credit (exports)	32,226	37,805	45,233	45,224	33,384	32,989	38,840	43,780	47,189	50,012	53,097	56,265	59,584	63,297
Debit (imports)	3,174	3,810	3,635	3,887	3,968	3,976	4,583	5,257	5,543	5,388	5,279	5,011	4,654	4,256
Primary Income, net	-4,953	-6,405	-8,124	-7,930	-3,668	-3,728	-4,095	-5,078	-5,217	-5,357	-5,496	-5,635	-5,774	-5,913
Secondary Income, net	-1,340	-1,679	-2,187	-2,663	-2,649	-2,817	-2,990	-3,352	-3,583	-3,779	-4,008	-4,255	-4,514	-4,798
Capital account,net	1,329	0	-1	-2	-8	-68	-45	-45	-45	-45	-45	-45	-45	-45
Financial account, net	2,353	14,960	18,283	12,647	2,818	12,230	16,507	17,255	18,226	20,085	21,138	23,098	27,278	28,899
Direct investment, net	-1,390	-2,543	-1,475	-972	-587	-1,660	1,169	1,896	1,289	2,308	2,521	3,641	6,980	7,657
Liabilities	1,754	3,566	3,737	2,362	367	1,673	431	-216	-280	-291	-303	-314	-325	-336
Assets	365	1,022	2,262	1,390	-220	14	1,601	1,681	1,008	2,017	2,218	3,328	6,655	7,321
Portfolio investment, net	1,879	2,880	12,444	5,664	12,202	3,047	10,088	8,204	9,607	10,266	10,923	11,578	12,231	12,880
Liabilities	213	419	-175	1,142	-1,136	1,713	3,946	1,973	1,282	1,336	1,391	1,448	1,508	1,570
Assets	2,093	3,299	12,269	6,806	11,066	4,759	14,034	10,177	10,889	11,602	12,314	13,026	13,738	14,450
Financial derivatives, net	44	-124	-629	-319	-336	345	-313	-340	-359	-379	-401	-426	-451	-479
Liabilities	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Assets	44	-124	-629	-319	-336	345	-313	-340	-359	-379	-401	-426	-451	-479
Other investment, net	1,820	14,747	7,943	8,274	-8,461	10,498	5,563	7,494	7,690	7,890	8,095	8,305	8,519	8,841
Liabilities	6,457	4,347	11,666	9,776	17,236	-13,076	1,308	1,439	1,511	1,587	1,666	1,749	1,837	1,929
Assets	8,277	19,094	19,609	18,051	8,776	-2,578	6,871	8,933	9,201	9,477	9,761	10,054	10,355	10,770
Errors and omissions, net	-3,796	1,838	-3,029	-6,186	-6,334	400	84	0	0	0	0	0	0	0
Reserve assets	10,179	3,771	-572	77	2,325	443	193	1,809	3,430	3,902	5,149	5,690	4,219	5,651
							(In percent of GDP)							
Current account, net	40.9	39.3	40.2	34.2	25.3	27.2	33.0	35.0	37.4	38.7	39.5	40.2	40.9	41.7
Trade balance of goods and services, net	58.0	58.0	60.2	53.3	39.2	41.7	47.0	50.5	52.5	53.4	53.7	54.0	54.3	54.6
Goods balance, net	-21.1	-21.0	-20.5	-21.4	-25.6	-22.3	-20.8	-20.1	-19.2	-18.4	-18.0	-17.5	-17.0	-16.6
Credit (exports)	2.9	3.3	2.9	3.2	4.3	3.4	3.4	3.7	3.7	3.7	3.7	3.6	3.6	3.6
Debit (imports)	24.0	24.2	23.4	24.6	29.9	25.8	24.2	23.8	22.9	22.1	21.6	21.1	20.6	20.2
Services balance, net	79.1	79.0	80.7	74.7	64.8	64.0	67.8	70.6	71.7	71.8	71.7	71.5	71.3	71.1
Credit (exports)	87.8	87.9	87.7	81.7	73.6	72.8	76.8	80.3	81.3	80.5	79.6	78.5	77.3	76.3
Debit (imports)	8.6	8.9	7.1	7.0	8.7	8.8	9.1	9.6	9.5	8.7	7.9	7.0	6.0	5.1
Primary Income, net	-13.5	-14.9	-15.8	-14.3	-8.1	-8.2	-8.1	-9.3	-9.0	-8.6	-8.2	-7.9	-7.5	-7.1
Secondary Income, net	-3.7	-3.9	-4.2	-4.8	-5.8	-6.2	-5.9	-6.1	-6.2	-6.1	-6.0	-5.9	-5.9	-5.8
Capital account,net	3.6	0.0	0.0	0.0	0.0	-0.2	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Financial account, net	6.4	34.8	35.5	22.8	6.2	27.0	32.6	31.6	31.4	32.3	31.7	32.2	35.4	34.8
Direct investment, net	-3.8	-5.9	-2.9	-1.8	-1.3	-3.7	2.3	3.5	2.2	3.7	3.8	5.1	9.1	9.2
Liabilities	4.8	8.3	7.2	4.3	0.8	3.7	0.9	-0.4	-0.5	-0.5	-0.5	-0.4	-0.4	-0.4
Assets	1.0	2.4	4.4	2.5	-0.5	0.0	3.2	3.1	1.7	3.2	3.3	4.6	8.6	8.8
Portfolio investment, net	5.1	6.7	24.1	10.2	26.9	6.7	20.0	15.0	16.5	16.5	16.4	16.2	15.9	15.5
Liabilities	0.6	1.0	-0.3	2.1	-2.5	3.8	7.8	3.6	2.2	2.1	2.1	2.0	2.0	1.9
Assets	5.7	7.7	23.8	12.3	24.4	10.5	27.8	18.7	18.8	18.7	18.5	18.2	17.8	17.4
Financial derivatives, net	0.1	-0.3	-1.2	-0.6	-0.7	0.8	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Liabilities	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Assets	0.1	-0.3	-1.2	-0.6	-0.7	0.8	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6	-0.6
Other investment, net	5.0	34.3	15.4	14.9	-18.7	23.2	11.0	13.7	13.2	12.7	12.1	11.6	11.1	10.7
Liabilities	17.6	10.1	22.6	17.7	38.0	-28.9	2.6	2.6	2.6	2.6	2.5	2.4	2.4	2.3
Assets	22.5	44.4	38.0	32.6	19.3	-5.7	13.6	16.4	15.8	15.2	14.6	14.0	13.4	13.0
Errors and omissions, net	-10.3	4.3	-5.9	-11.2	-14.0	0.9	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Reserve assets	27.7	8.8	-1.1	0.1	5.1	1.0	0.4	3.3	5.9	6.3	7.7	7.9	5.5	6.8
Memorandum items:														
Total External Debt (in millions of US dollars)	46,915	51,313	62,191	73,916	90,221	78,029	84,286	99,262	106,810	115,603	125,332	136,195	147,991	160,986
Banks	34,925	39,038	49,536	61,891	76,508	63,721	70,620	85,596	...	...	...	...	...	...
Non-bank entities	11,990	12,275	12,655	12,025	13,713	14,308	13,666	13,666	...	...	...	...	...	...
Foreign exchange reserves (in million of US dollars)	34,026	16,600	16,146	16,444	18,893	19,492	20,170	20,282	...	...	...	...	...	...
Nominal GDP (in millions of US dollars)	36,708	43,032	51,552	55,348	45,362	45,322	50,559	54,545	58,055	62,158	66,673	71,689	77,086	82,990

Sources: CEIC; Haver Analytics; IMF, International Financial Statistics; national authorities; and IMF staff estimates and projections.

1/ BPM6 methodology.

Table 5. Macao SAR: Indicators of External Vulnerability

	2011	2012	2013	2014	2015	2016	2017	2018
Monetary and financial indicators								
Broad money (M2, annual percentage change)	22.6	25.8	17.7	10.4	-3.0	12.6	11.1	10.1
Loans (annual percentage change)	31.2	26.2	31.4	29.0	10.3	3.1	14.2	12.9
Resident	28.5	18.4	29.6	31.8	14.8	8.6	8.4	10.2
Nonresident	34.3	34.6	33.2	26.4	6.0	-2.7	21.0	15.7
Private domestic credit excl financial investment (MOP bn)	167.6	198.5	257.2	339.1	389.1	422.7	458.4	505.0
(Percent change)	28.5	18.4	29.6	31.8	14.8	8.6	8.4	10.2
Personal loans for house purchases (MOP bn)	59.4	76.7	96.6	115.8	127.5	138.6	148.2	166.8
(Percent change)	25.3	29.2	25.9	19.9	10.1	8.7	6.9	12.6
Balance of payments indicators 1/								
Exports (annual percentage change, U.S. dollars)	34.8	17.8	19.2	0.6	-24.8	-2.3	17.5	12.8
Imports (annual percentage change, U.S. dollars)	30.6	18.6	10.2	11.7	0.2	-10.8	7.6	8.3
Current account balance (percent GDP)	40.9	39.3	40.2	34.2	25.3	27.2	33.0	35.0
Capital and financial account balance (percent GDP)	-2.8	-34.8	-35.5	-22.9	-6.2	-27.1	-32.7	-31.7
Of which: gross foreign direct investment inflows	4.8	8.3	7.2	4.3	0.8	3.7	0.9	-0.4
Reserve indicators 1/								
Foreign exchange reserves (billions of US dollars)	34.0	16.6	16.1	16.4	18.9	19.5	20.2	20.3
Foreign exchange reserves to imports of GNFS (months)	34.0	14.0	12.4	11.3	12.9	14.9	14.4	13.3
Foreign exchange reserves to broad money (M2, percent)	352.4	145.8	121.2	105.5	106.7	95.5	88.8	82.4
Foreign exchange reserves (percent of GDP)	92.7	38.6	31.3	29.7	41.6	43.0	39.9	37.2
Banking sector								
Net foreign assets of banking sector (percent GDP) 2/	143.0	206.0	258.0	255.0	232.3	226.9	229.7	255.5
Banking system profits (MOP bn)	5.1	6.3	8.5	11.0	12.8	14.3	14.9	16.1
(annual percent change)	30.1	24.4	34.7	29.9	16.4	11.5	4.3	8.0
Nonperforming loans (MOP bn)								
To residents	0.8	0.6	0.4	0.7	0.9	1.5	1.5	1.5
To nonresidents	0.4	0.2	0.1	0.2	0.1	0.1	0.6	0.8
Financial Sector								
Policy rate: discount window base rate (eop)	0.5	0.5	0.5	0.5	0.8	1.0	1.8	2.8
Saving deposit rate (average)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prime lending rate (average)	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
MAIBOR 3-month (eop)	0.4	0.4	0.4	0.4	0.4	1.0	1.3	2.4
Monetary bill yield (weighted average)	0.3	0.4	0.5	0.4	0.4	0.6	0.8	1.1
Residential property market								
Average transaction price: residential (MOP/sq. m.)	41,433	57,362	81,811	99,795	86,826	86,342	100,822	108,427
(Percent change)	33.6	38.4	42.6	22.0	-13.0	-0.6	16.8	7.5
Tourism								
Visitor arrivals (person mn)	28.0	28.1	29.3	31.5	30.7	31.0	32.6	35.8
(Percent change)	12.2	0.3	4.4	7.5	-2.6	0.8	5.4	9.8
Gaming revenue (MOP bn)	269.1	305.2	361.9	352.7	231.8	224.1	266.6	303.9
(Percent change)	41.9	13.4	18.6	-2.5	-34.3	-3.3	19.0	14.0
Memorandum items:								
Nominal GDP (USD mn)	36,708	43,032	51,552	55,348	45,362	45,322	50,559	54,545

Sources: CEIC; Haver Analytics; IMF, International Financial Statistics; national authorities; and IMF staff estimates and projections.

1/ BPM6 methodology. Data for 2018 are IMF staff estimates.

2/ Excluding AMCM.

Table 6. Macao SAR: Financial Soundness Indicators

	2011	2012	2013	2014	2015	2016	2017	2018
	(In percent)							
Capital adequacy								
Regulatory capital to risk-weighted assets * 1/	14.1	14.6	14.8	14.2	15.1	16.1	15.7	14.8
Regulatory Tier I capital to risk weighted assets * 1/	11.7	11.9	11.2	9.9	11.6	11.7	11.4	10.5
Capital to assets **	4.0	4.0	3.7	3.6	4.3	4.6	4.8	4.5
Asset composition and quality								
Sectoral distribution of domestic credit to private corporations (% of gross loans)	52.0	48.8	48.1	49.2	51.1	53.9	51.2	51.3
Real estate	18.4	18.9	18.1	16.8	16.8	17.7	16.5	16.9
Construction	5.9	4.7	5.0	5.3	6.1	6.1	6.1	4.6
Manufacturing	2.4	1.6	1.4	1.3	1.3	1.5	1.5	1.1
Commercial	4.3	4.9	4.2	4.6	3.7	3.7	3.5	3.2
Public utilities	0.4	0.4	0.2	0.2	0.2	0.1	0.2	0.2
Restaurant, hotel and related services	5.0	3.7	2.6	2.8	4.1	4.3	4.0	5.1
Banking and financial businesses	0.2	0.1	0.5	0.7	0.3	0.2	0.3	0.1
Other industries	15.4	14.5	16.2	17.5	18.8	20.3	19.2	20.1
Total claims on government to gross loans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asset quality								
Nonperforming loans (NPL) to gross loans *	0.3	0.2	0.1	0.1	0.1	0.2	0.2	0.2
NPL net of provisions to capital * 1/	0.7	0.3	-0.3	0.6	0.2	0.8	1.2	1.1
Earnings and profitability								
Return on assets *	0.9	0.9	1.0	1.0	1.0	1.1	1.0	1.0
Return on equity *	20.8	22.0	25.1	28.1	25.8	23.9	21.9	21.2
Interest margin to gross income *	63.8	70.4	78.2	77.7	68.4	73.7	72.5	80.9
Trading income to total income **	2.6	4.1	0.9	1.4	8.4	3.4	2.4	0.2
Noninterest expenses to gross income *	40.4	37.5	37.4	43.1	42.6	37.1	39.0	37.9
Personnel expenses to noninterest expenses **	50.3	53.7	48.8	51.2	49.4	52.7	47.6	51.3
Spread between reference loan and deposit rates, period average ** (basis points)	142.3	153.9	147.4	135.0	167.1	185.1	170.6	171.8
Liquidity								
Liquid assets to total assets *	44.0	37.1	37.2	35.1	34.3	35.5	30.3	31.9
Liquid assets to short-term liabilities *	66.2	61.7	63.6	59.0	59.6	59.9	52.2	61.2
Foreign currency-denominated loans to total loans **	84.8	83.5	82.8	83.7	82.4	79.1	81.3	80.6
Foreign currency-denominated liabilities to total liabilities **	81.8	81.5	83.5	84.2	83.5	82.0	82.8	85.3
Sensitivity to market risk								
Net open position in equities to capital	0.6	0.2	0.2	0.9	3.8	4.9	0.1	0.1
Net open position in foreign exchange to capital *	182.3	143.9	139.8	143.1	124.1	136.7	116.5	91.8
Real estate markets								
Residential real estate loans to total gross loans **	23.2	23.5	21.7	21.6	22.0	22.0	20.6	20.6
Commercial real estate loans to total gross loans **	19.4	16.7	15.7	17.3	20.7	20.5	19.4	18.9

Sources: AMCM and IMF FSI database.
* Core indicators ** Encouraged indicators
1/ Locally incorporated banks only.

Annex I. Risk Assessment Matrix

Source of Risk	Likelihood	Impact	Recommended Policy Response
Rising protectionism and retreat from multilateralism. Escalating trade tensions could lead to lower global growth both directly, through a negative impact on global trade, and by indirectly through confidence and financial markets.	**High**	**High.** Could sharply reduce tourism inflows and foreign investment prospects, with negative effects on the economy. Reduction in exports, fiscal revenue and growth.	Counter the adverse impact on growth through a temporary fiscal stimulus centered on needed infrastructure and vulnerable households. Continue to actively monitor financial stability.
Sharp tightening of global financial conditions could cause higher debt service and refinancing risks, stress on leveraged households and firms, and capital account pressures. Tighter financial conditions could be triggered by a sharper than expected increase in U.S. interest rates (prompted by higher than expected inflation) or the materialization of other risks.	**Low/Medium**	**High.** Given the indirect peg to the U.S. dollar, this would result in an increase in the cost of credit and, likely, a real effective appreciation. The financial sector is well-capitalized helping limit the risks.	Focus on ensuring the flexibility of prices in the tourism sector to help maintain competitiveness during episodes of nominal appreciation. Provide targeted fiscal support as needed. Continue to adopt policies to ease housing supply constraints.
Weaker than expected global growth, especially in Mainland China. Over the medium term, insufficient progress in deleveraging and rebalancing could reduce growth, with additional stimulus postponing the slowdown. Should a sharp adjustment occur, this would entail weak domestic demand, and reduce global growth	**Medium**	**High.** Could sharply reduce tourism inflows from Mainland and foreign investment prospects, with negative effects on the economy. Reduction in exports, fiscal revenue and growth.	Counter the adverse impact on growth through a temporary fiscal stimulus centered on needed infrastructure and vulnerable households. Continue to actively monitor financial stability. Work closely with Mainland counterparts to facilitate an orderly resolution of distressed assets and address any weaknesses in bank balance sheets.
Further policy changes in Mainland China (travel policy, capital outflow restrictions, gambling regulation) that directly affect tourism.	**Low**	**High.** Could sharply reduce tourism spending from Mainland which accounts for over two-thirds of total.	Continue progress on issues related to financial integrity of gaming sector and accelerate efforts to diversify the tourism offerings and the overall economy.
Increased competition in the gaming industry from emerging gaming centers in Asia.	**High**	**Low.** Gaming revenue and tourist arrivals would drop and impact overall growth.	Maintain status as a world-class gaming destination while continuing recent progress in establishing non-gaming options of similar caliber.
Faster diversification of economic model.	**Medium**	**High.** Faster diversification would support Macao SAR efforts to build the tourism and leisure center and maintain sustainable growth in the medium term.	Improve public investment on infrastructure, education, housing, health and other social spending.
Additional land reclamation to reduce land supply constraints, increasing scope for additional public housing and other non-gaming development.	**Low**	**Medium.** Additional land would support the diversification of tourism offerings and increase housing affordability, leading to investment growth and tourism revenue.	Ensure a comprehensive plan on land distribution for tourism, public and private housing supply to make full use of additional land.

Note: Downside risks are marked with a red arrow and upside risks with a green arrow.

Annex II. Medium and Long-Term Fiscal Framework and Sovereign Wealth Fund: Some Case Studies[1,2]

1. Macao SAR has kept government expenditure within the limits of revenues every year. The prudent fiscal policy follows Macao SAR's Basic Law and has contributed to zero public debt and large foreign and fiscal reserves (with 40 and 121 percent of GDP respectively in 2017). In addition, using the growing fiscal reserves, Macao SAR plans to establish a sovereign wealth fund in 2019 (Macao SAR Investment and Development Fund, MIDF).

2. Alternatively, the adoption of a MLTFF in Macao SAR will help ensure efficient use of fiscal resources, long-term fiscal sustainability and intergenerational equity in an aging society. Some countries have adopted such formal arrangements:

- In **Australia**, the Charter of Budget Honesty Act (1998) requires an Intergenerational Report to be produced every five years. The reports assess the long-term sustainability of current government policies and how changes to Australia's population size and age profile may impact economic growth, workforce and public finances over the following 40 years.

- In **New Zealand**, the Fiscal Responsibility Act (1994) requires that the Fiscal Strategy Report (FSR) be presented to Parliament yearly, describing the government's long-term objectives and its short-term fiscal plans. The FSR is also required to include projections for key fiscal aggregates for a period of 10 or more years and an explanation of how these projections accord with the principles of responsible fiscal management. The FSR must also assess the consistency of the long-term objectives with those announced in the government's budget policy statement to the House of Representatives.

- In **France**, the Organic Budget Law (LOLF, 2001) requires the government to submit the draft annual budget law to the Parliament with a report on the national economic situation, including (i) macro-economic projections, (ii) medium-term developments, covering at least four years following the year of the draft budget, (iii) medium-term projections of revenues and expenditures, and (iv) the main orientations of economic and budgetary policies.

- In the **United Kingdom**, the Code for Fiscal Stability (CFS, 1998) requires the government to state and explain its fiscal policy objectives over the life of the Parliament. The CFS specifies that the annual economic and fiscal strategy report by H.M. Treasury at the time of budget submission include (i) the government's long-term economic and fiscal strategy, including any long-term objectives for key fiscal aggregates, (ii) an assessment of recent short-term outcomes against this long-term strategy, (iii) illustrative projections of the outlook for the key fiscal aggregates for a

---

[1] Prepared by Sakai Ando (STA).

[2] The included case studies comprise some advanced economies and resource-rich economies that have adopted formal arrangements for MLTFF and/or SWF within MLTFF. Macao SAR's high share of gaming value added in GDP is comparable to the high resource dependence in resource-rich countries, where MLTFF can help link government spending decisions to longer-term policy objectives (while insulating spending plans from short-term externally driven fluctuations).

period not less than the next 10 year, and (iv) analysis of the impact of the economic cycle on key fiscal aggregations, including estimates of the cyclically adjusted position.

- In **Azerbaijan**, the Organic Budget Law requires the preparation of a budget for the upcoming year as well as for the 3 following years. The government prepares medium-term economic forecasts that include the government priorities and the public investment plan, which are updated annually.

- In **Mexico,** the Fiscal Responsibility Law (FRL, 2006) mandates the inclusion of 5-year quantitative projections and costing for new fiscal measures in the budget documents. It also envisages a balance-or-surplus rule and the use of a reference oil price to smooth expenditures.

- In **Russia**, the parliament approves a full-fledged rolling 3-year federal budget since 2006. Russia's Budget Code mandates a target of the non-oil deficit of 4.7 percent of GDP. To capture the full effect of spending decisions and to create stability in the budget process, Russia has introduced rolling 3-year budget plans, where existing policy is explicitly linked to key macro-economic parameters, and a specific fiscal space available for new policies is determined before the start of each round of budget preparation.

3. The planned SWF (MIDF) should be integrated into the MLTFF. The principles of the MIDF are "preserving and enhancing the capital value" and "benefiting Macao's economic stability and development." Given the potential economic impact of MIDF and the long-term nature of the principles, integrating MIDF into the MLTFF will help avoid the risks of fragmentation in policymaking. Several countries have integrated SWF into MLTFF as follows:

- In **Timor-Leste**, the Petroleum Fund Law (2005) establishes the country's petroleum fund as the repository for all petroleum revenues and specifies how the fund is integrated with the state budget. The law includes a formula—based on the permanent income hypothesis—that derives the estimated sustainable income from petroleum and guides transfers from the petroleum fund to the budget.

- In **Alaska (United States)**, the Alaska Permanent Fund was established in 1976 by the Alaska State constitution. The fund receives 50 percent of mineral revenues and pays annual dividends to the population based on a fraction of the fund's realized earnings, as a safeguard against pressures to spend the oil revenue.

- In **Chile**, the Fiscal Responsibility Law (FRL, 2006) institutionalized key aspects of the structural balance rule framework and complemented the fiscal framework with the introduction of two funds: the Economic and Social Stabilization Fund (FEES) and the Pension Reserve Fund (FRP). Under the structural balance rule, government expenditures are ex-ante budgeted in line with estimated structural revenues. The FEES receives as inflows the actual central government surplus, and its funds can be drawn on according to needs defined in the law.

- In **Norway**, the fiscal guidelines were introduced in 2001 that hold the structural non-oil central government deficit over time to 4 percent of the assets in the Government Pension Fund-Global (GPF-G), formerly the Petroleum Fund. The structural non-oil deficit targeted by the fiscal guidelines excludes the budget's oil-related revenues and expenditures. Several factors have contributed to the success of the fiscal guidelines of Norway: simplicity to be understood well by the public, flexibility in relation to the fiscal policy, high level of transparency, broad political consensus and commitment, and strong fiscal institutions/governance/accountability.

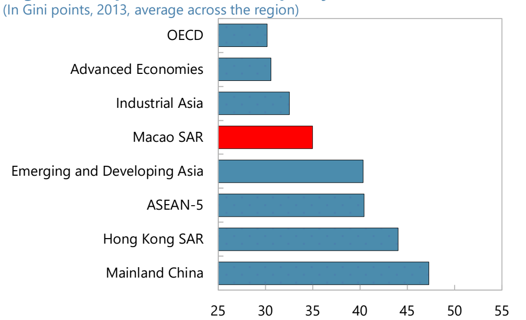
- In **Mongolia**, the Fiscal Stability Law (FSL) was enacted in 2010 to insulate the fiscal spending path from fluctuations in mineral revenue through numerical fiscal rules: (i) 2 percent of GDP ceiling of the structural deficit, (ii) expenditure growth ceiling within non-mineral GDP growth, and (iii) public debt ceiling of 40 percent of GDP. The Fiscal Stabilization Fund (FSF) was created using actual mineral revenue exceeding structural mineral revenue. To promote a minimum savings effort by the government, the FSL requires the fund to be greater than 5 percent of GDP from 2018 onward, with excesses invested with a longer-term perspective.

Annex III. Inequality: Trends and Drivers[1]

1. **Macao SAR's income per capita is one of the highest in the world, but inequality is higher than the average among OECD and advanced economies.** As of 2017, Macao SAR's per capita GDP (in PPP terms) is the second highest in the world after Qatar, but inequality is higher than the OECD and advanced economies' averages. In fact, the Gini index, Palma ratio, and Quintile ratio indicate that the income distribution in Macao SAR, while more equitable than in Asian emerging economies and Hong Kong SAR, is less equitable than the average in OECD and advanced economies.[2]

Regional comparison: income inequality level

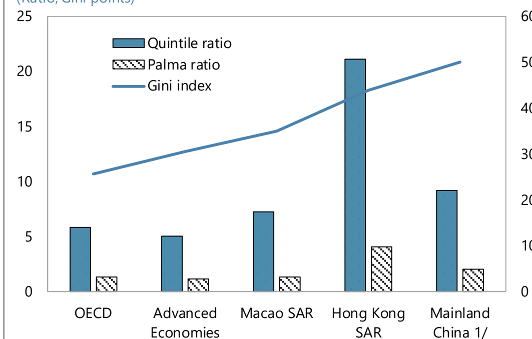
(In Gini points, 2013, average across the region)



Sources: SWIID Version 5.0; IMF WEO database; and IMF staff calculations.
Note: ASEAN = Association of Southeast Asian nations; OECD = Organization for Economic Co-operation and Development. Data shown is disposable income gini index except for Macao SAR (gross income Gini).

Inequality measure comparison

(Ratio; Gini points)

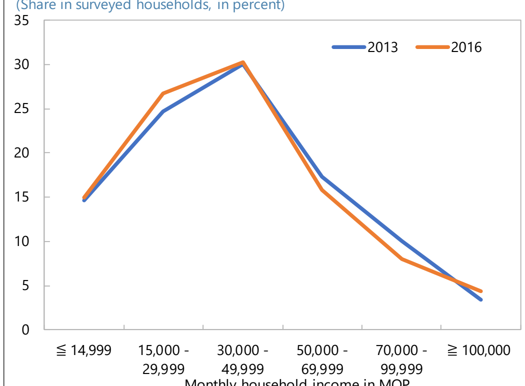


1/ Palma and quintile ratios are consumption based.
Source: DSEC, PovcalNet database, WIID, OECD stats, and IMF staff estimates.

2. **Latest data show a relatively stable income distribution between 2013 and 2016 in Macao SAR.** While the economy was booming in 2013, it started contracting in 2014 and troughed in 2016. Along the contraction in economic activity, somewhat surprisingly, 2016 data does not show a significant increase in the share of households in the low-income brackets.[3]

Number of households by income group

(Share in surveyed households, in percent)



Source: DSEC 2013 Population Census, 2016 By-Census.

---

[1] Prepared by Jacqueline Jiayi Zhang (APD).

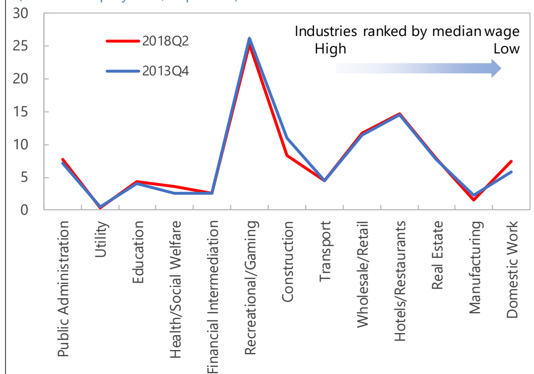
[2] Palma (Quintile) ratio is gross income received by the richest 10 (20) percent of the population over gross income of the bottom 40 (20) percent. Both measures are more sensitive to the tails of the income distribution than Gini index (Cobham and Sumner, 2013). Palma and Quintile ratios for Macao SAR are estimated on a household basis with household gross income from latest available Household Budget Survey (2013), including employment income, employee income, self-employment income, employer income, property income, monetary transfers, government subsidies, pension, contributions/subsidies from charities, tuition/stationery subsidies, remittances, scholarships, non-monetary transfers etc.

[3] Income in 2013 is measured by monthly household income including all transfers, per the 2013 Household Budget Survey. Income in 2016 is measured by monthly household employment income per the 2016 By-Census. Both statistics include nonresidents living in Macao SAR.

Regarding poverty, official data on the number of resident households receiving financial assistance show a decrease between 2013 and 2016.[4]

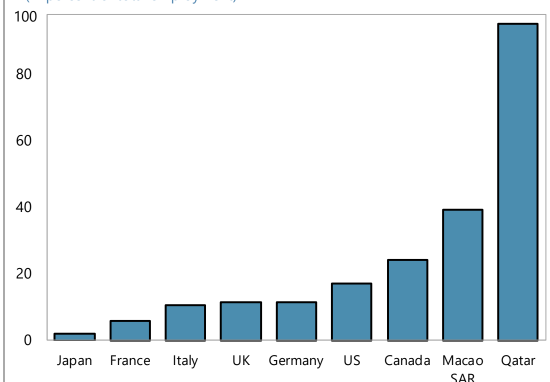
3. The economic structure of Macao SAR is heavily dependent on low-wage services employment which contributes to inequality. Even though average income per capita is very high, Macao SAR's economy relies significantly on low-wage services jobs concentrated in hotels, restaurants, retail, real estate, and domestic work sectors. The wage differential between those services jobs and other higher-wage employment helps explain inequality in the economy.[5]

Employment by Sectors in Macao SAR
(Share in employment, in percent)



Source: DSEC Employment Survey.

Foreign Employment in G7, Qatar, and Macao SAR, 2017
(In percent of total employment)



Note: For France, Italy, UK, Germany, and Qatar, share is calculated as employed persons holding foreign citizenship in percent of total employment ages 15-64 years old. For US, share is calculated as foreign-born civilian employment in percent of total civilian employment ages 16 years and older. For Canada, share is calculated as landed immigrants (who have been granted the right to live in Canada permanently) employment in percent of total employment ages 15 years and older. For Macao SAR, share is calculated as employed persons without Macao SAR identity card living in Macao SAR and abroad in percent of total employment.
Source: Haver Analytics, DSEC Employment Survey, JILPT.

4. Migration provides an inflow of low-wage workers to Macao SAR, contributing to inequality and poverty in the economy. For example, Borjas (1997) finds that while immigration and trade with less developed countries explains less than 10 percent of overall wage inequality in the U.S., immigration from less developed countries can explain up to 50 percent of the declining relative wage of low-skilled labor. Nonresident workers living in Macao SAR (NRLMs) account for over 20 percent of total employment in 2017. The fraction of foreign employment increases to almost 40 percent of total employment when adding nonresident workers commuting to Macao SAR (NRCMs), which is relatively high when compared with other advanced economies. NRLMs and NRCMs are not eligible for government assistance and they are subject to work restrictions that limit their occupations and wages, likely contributing to a higher poverty incidence in this group. For example,

Low-income Employment by Employment Type

No. of person earning less than $4,000/month (in thousands)	2013	2016	2018Q2
Total	26.6	15.8	13.1
Part-time	7.9	5.0	5.5
o/w resident	7.4	4.8	5.4
o/w unwilling to prolong working hour	7.1	4.6	5.1
o/w non-resident	0.5	0.2	0.1
Full-time	18.7	10.7	7.7
o/w resident	2.7	1.2	1.1
o/w non-resident	16.0	9.5	6.6

Source: DSEC Employment Survey.

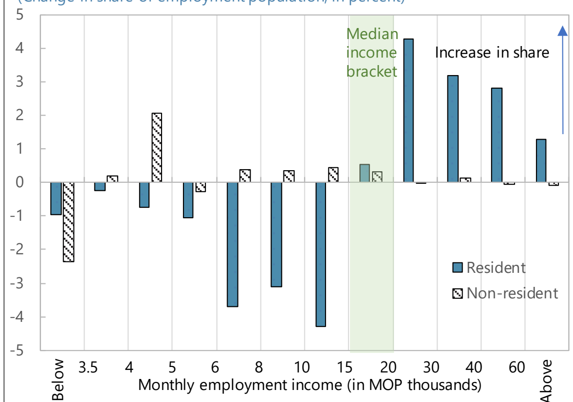
[4] In the absence of an official poverty line, the official Minimum Subsistence Index (MSI) is used as a proxy as it was established to determine residents' eligibility for public financial assistance. The *household* poverty line is estimated with the MSI for a family of three (which is the average household size in the 2013 Household Budget Survey), at 10,250 MOP per month.

[5] The Employment Survey (2018 Q2) shows that 42 percent of employment is concentrated in hotel/restaurant, wholesale/retail, real estate, and domestic work.

in 2018 Q2, about half of low-income workers are NRLMs (NRCMs are excluded from the stats). Notably, while almost all NRLM low-income workers work full time, 94 percent of low-income residents work part time voluntarily, suggesting that residents have other resources/savings and are therefore not actually in poverty.

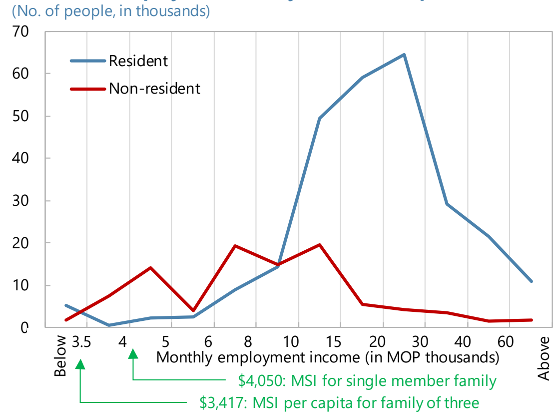
5. There has been an increase in foreign workers, mainly flowing into lower-income employment. NRLMs increased from 91,000 in 2013 to 100,000 in 2017. In addition, labor market statistics show signs of polarization between residents and NRLMs' employment income. From 2013 to 2017, the share of residents in low-income brackets decreased, while the share of residents in higher-income brackets increased. Meanwhile for NRLMs, there was an overall increase in the lower-income brackets.

Share of Employment by Income Bracket: 2013-2017
(Change in share of employment population, in percent)



Source: DSEC Annual Employment Survey.

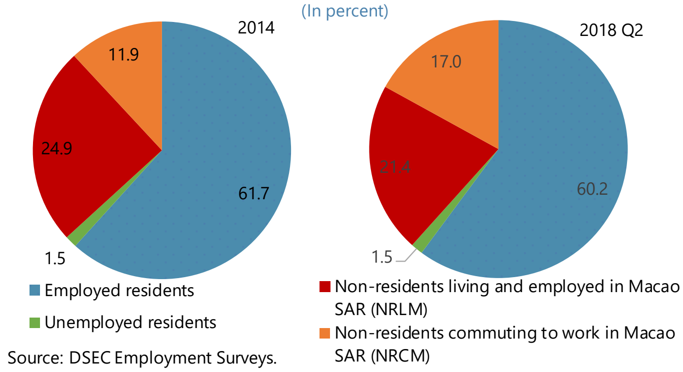
Number of Employed Person by Income Group (2017)
(No. of people, in thousands)



Source: DSEC Annual Employment Survey.

6. If commuters were to be counted, poverty in Macao SAR may be higher. Available income statistics do not capture NRCMs. NRCMs have increased significantly between 2014 and 2018 (from 53,000 in 2014 to 80,000 in mid-2018).[6] Most of NRCMs are employed in hotels, restaurants and the construction industry. As NRCMs concentrate in low-wage sectors, overall poverty for the working population in Macao SAR (including NRCMs) may be higher than estimated.

Labor Force Composition
(In percent)



Source: DSEC Employment Surveys.

[6] Data correspond to Employment Survey (2018 Q3 issue). There are also about 9,600 Macao SAR residents who work in Macao SAR but reside elsewhere. This group is excluded from the Employment Survey sample.

Annex IV. External Sector Debt Sustainability Analysis

Macao SAR's external debt is sustainable. Even though external debt is high at about 180 percent of GDP in 2018, risks are mitigated by Macao SAR's positive net asset position and the fact that much of the liabilities are obligations of banks to related parties. While external debt (as a percentage of GDP) has recently decreased due to the economic recovery, foreign borrowing will continue to rise as Macao SAR expands its role as an international financial center.

1. Background—As of end-2018, Macao SAR had an estimated US$99 billion in external debt (182 percent of GDP). There is no public external debt. The private external debt includes US$86 billion in bank liabilities and US$14 billion in nonbank liabilities.

External Debt
(end of 2018)

	Billion USD	% of Total	% of GDP
Total	99.3	100.0	182.1
Bank	85.5	86.1	156.8
Nonbank	13.8	13.9	25.2

Source: AMCM, IMF staff estimates

- Bank—The largest category of external liabilities is nonresident interbank liabilities (60 percent of banking sector external liabilities). Within nonresident interbank liabilities (excluding NCDs), 82 percent are short term (i.e. less than one-year maturity). About 70 percent of "other interbank liabilities" are to related parties. In addition, nonresident deposits amount to 35 percent of banking sector external liabilities – with most of it short term. In terms of overall currency composition, 54 percent of gross external liabilities are in U.S. dollar, and nearly 30 percent are in Hong Kong dollar (pegged to the U.S. dollar) to which the pataca is pegged.

- Nonbank—External debt by nonbank firms in Macao SAR is about 15 percent of the external debt by banks. Dealogic data suggest that the gaming sector is the main issuer of bonds and receiver of loans. As in the case with banks, a significant portion reflects related party obligations.

External Liabilities of Banking Sector
(end of 2018)

Liability	Billion USD	% of GDP
Total	85.5	156.8
Nonresident Interbank	50.9	93.4
Other Interbank Liabilities	38.0	69.7
Up to 7 Days	4.3	7.8
8 Days to 1 Month	6.3	11.5
1 to 3 Months	8.5	15.6
3 to 6 Months	8.1	14.8
6 to 12 Months	4.3	7.9
1 Year and Above	6.6	12.1
NCDs	12.9	23.7
Nonresident Deposit	29.8	54.6
Time Deposits	24.1	44.2
Up to 1 Month	8.4	15.4
1 to 3 Months	6.0	11.0
3 to 6 Months	5.8	10.6
6 to 12 Months	3.8	7.0
1 Year and Above	0.1	0.1
Demand Deposits	0.9	1.6
Saving Deposits	4.9	8.9
Other Deposits	0.00	0.0
NCDs Held by Nonresidnets	1.4	2.6
Other	3.4	6.2

Source: AMCM

2. Projection—The underlying dynamics of Macao SAR's external debt are healthy. First, structurally high savings rates and limited domestic investment opportunities result in consistent double-digit current account surpluses and large foreign asset accumulation (banks have net foreign assets of about 100 percent of GDP). Second, potential growth remains positive at around 4-5 percent. And third, the average de facto nominal interest rate according to the balance of payments is low at roughly 2 percent, reflecting the large deposit liabilities. These factors are projected to increase Macao SAR's net external position. Gross external debt is nonetheless expected to grow mostly because of the banking sector as Macao SAR expands its role as an international financial center.

3. **Risks**—In general, the headline debt level likely overstates risks due to the significant foreign external assets that increase the ability of banks to fund withdrawals without relying on AMCM's foreign exchange reserves. In addition, significant related-party foreign liabilities reduce the probability of a run, including on the large fraction of short-term liabilities. Also, the currency risk in bank's funding is moderate because of its currency composition mostly pegged (directly or indirectly) to the pataca. That said, it is important to continue to monitor the maturity of nonresidents nonbank deposits in the banking system and the liquidity and quality of the assets that back them.

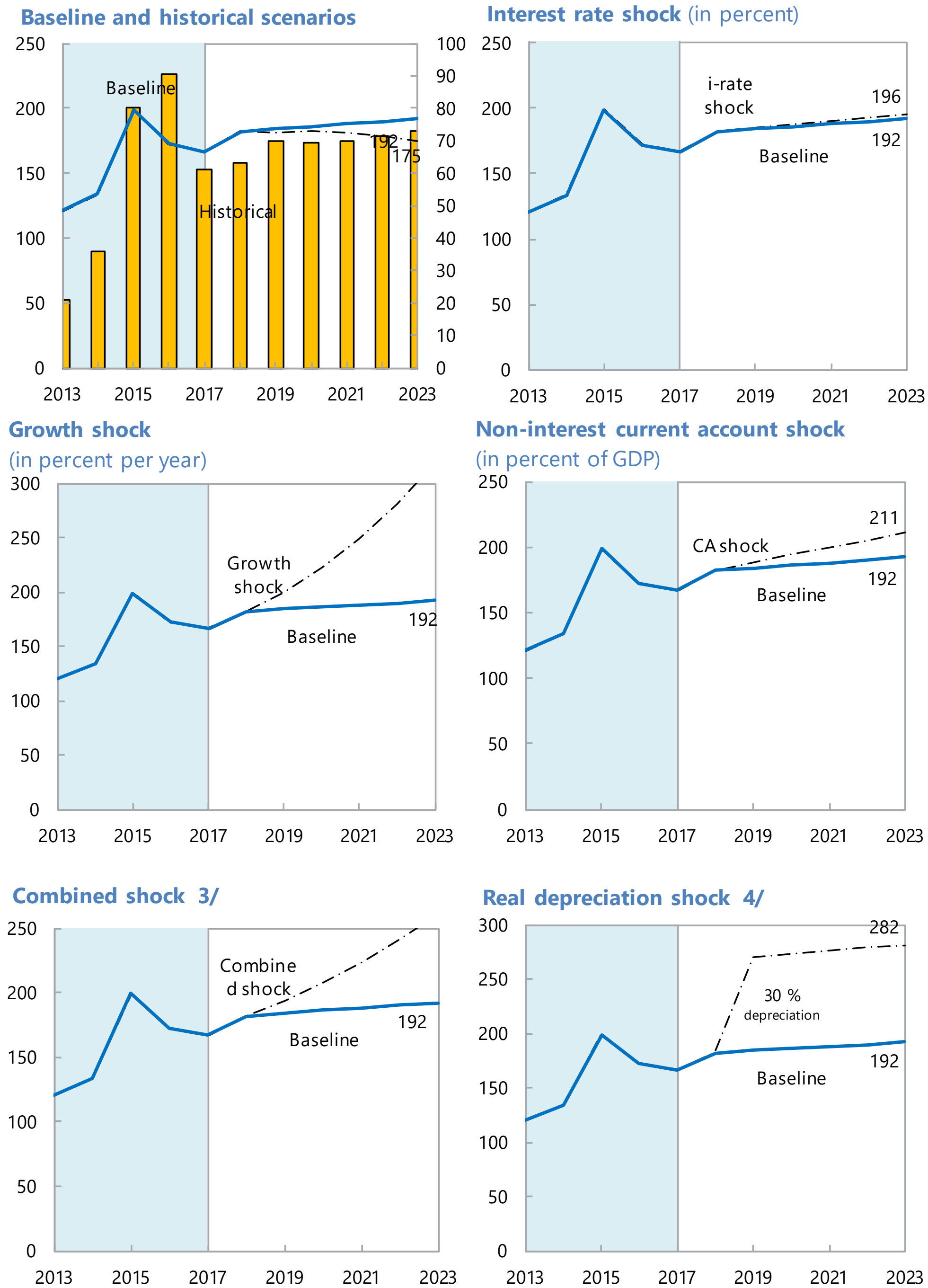
External Position of Banking Sector
(end of 2018)

Billion USD	Asset	% of Total	Liability	% of Total
Total	139.4	100.0	85.5	100.0
USD	79.7	57.2	46.5	54.3
HKD	39.0	28.0	25.3	29.5
RMB	11.8	8.5	6.6	7.7
MOP	1.5	1.1	1.4	1.7
Other	7.4	5.3	5.8	6.8

Source: AMCM

Figure 1. External Debt Sustainability: Bound Test 1/ 2/

(External debt in percent of GDP)



Sources: International Monetary Fund, Country desk data, and staff estimates.

1/ Shaded areas represent actual data. Individual shocks are permanent one-half standard deviation shocks. Figures in the boxes represent average projections for the respective variables in the baseline and scenario being presented. Ten-year historical average for the variable is also shown.

2/ For historical scenarios, the historical averages are calculated over the ten-year period, and the information is used to project debt dynamics five years ahead.

3/ Permanent 1/4 standard deviation shocks applied to real interest rate, growth rate, and current account balance.

4/ One-time real depreciation of 30 percent occurs in 2018.

Table 1. External Debt Sustainability Framework, 2013-2023
(In percent of GDP; unless otherwise indicated)

		Actual							Projections						
	2013	2014	2015	2016	2017			2018	2019	2020	2021	2022	2023	Debt-stabilizing non-interest current account 6/
1 **Baseline: External debt**	120.6	133.5	198.9	172.2	166.7			**182.0**	**184.0**	**186.0**	**188.0**	**190.0**	**192.0**	**-2.3**
2 Change in external debt	1.4	12.9	65.3	-26.7	-5.5			15.3	2.0	2.0	2.0	2.0	2.0	
3 Identified external debt-creating flows (4+8+9)	-58.2	-36.2	11.9	-22.4	-51.0			-38.7	-41.2	-42.3	-42.8	-42.4	-41.7	
4 Current account deficit, excluding interest payments	-41.6	-35.8	-27.5	-30.2	-36.4			-40.9	-45.1	-47.3	-47.1	-46.2	-45.5	
5 Deficit in balance of goods and services	-60.2	-53.3	-39.2	-41.7	-47.0			-50.5	-52.5	-53.4	-53.7	-54.0	-54.3	
6 Exports	90.6	84.9	77.9	76.2	80.3			83.9	85.0	84.1	83.3	82.1	80.9	
7 Imports	30.4	31.6	38.7	34.5	33.3			33.4	32.4	30.8	29.5	28.1	26.7	
8 Net non-debt creating capital inflows (negative)	1.7	6.3	7.8	4.4	0.0			4.1	4.1	4.1	4.1	4.1	4.1	
9 Automatic debt dynamics 1/	-18.4	-6.6	31.6	3.4	-14.6			-1.9	-0.2	0.9	0.2	-0.3	-0.3	
10 Contribution from nominal interest rate	1.3	1.7	2.2	3.2	3.2			5.4	7.2	8.0	7.4	6.9	7.0	
11 Contribution from real GDP growth	-11.1	1.3	35.2	1.7	-15.0			-7.3	-7.4	-7.1	-7.2	-7.2	-7.3	
12 Contribution from price and exchange rate changes 2/	-8.6	-9.6	-5.8	-1.5	-2.9			-4.9	-3.6	-5.0	-5.4	-6.0	-6.0	
13 Residual, incl. change in gross foreign assets (2-3) 3/	59.6	49.1	53.4	-4.4	45.5			54.0	43.2	44.3	44.8	44.4	43.7	
External debt-to-exports ratio (in percent)	133.1	157.2	255.3	225.9	207.7			216.9	216.6	221.1	225.7	231.3	237.2	
Gross external financing need (in billions of US dollars) 4/	10.8	19.8	36.4	41.0	30.9			34.4	40.5	43.0	46.5	51.1	56.4	
in percent of GDP	21.0	35.7	80.2	90.4	61.2	10-Year	10-Year	63.1	69.8	69.2	69.8	71.2	73.1	
Scenario with key variables at their historical averages 5/								**182.0**	**181.7**	**181.8**	**181.1**	**178.8**	**174.8**	**-9.8**
Key Macroeconomic Assumptions Underlying Baseline						Historical Average	Standard Deviation							
Real GDP growth (in percent)	11.2	-1.2	-21.6	-0.9	9.7	5.8	13.2	4.7	4.3	4.2	4.1	4.1	4.1	
GDP deflator in US dollars (change in percent)	7.7	8.7	4.5	0.8	1.7	5.4	3.3	3.0	2.0	2.8	3.0	3.3	3.3	
Nominal external interest rate (in percent)	1.3	1.5	1.4	1.6	2.1	2.1	1.0	3.5	4.2	4.7	4.3	4.0	4.0	
Growth of exports (US dollar terms, in percent)	19.2	0.6	-24.8	-2.3	17.5	12.5	20.0	12.8	7.8	6.0	6.2	6.0	6.0	
Growth of imports (US dollar terms, in percent)	10.2	11.7	0.2	-10.8	7.6	6.9	15.7	8.3	3.2	1.6	3.0	2.3	2.0	
Current account balance, excluding interest payments	41.6	35.8	27.5	30.2	36.4	34.6	8.0	40.9	45.1	47.3	47.1	46.2	45.5	
Net non-debt creating capital inflows	-1.7	-6.3	-7.8	-4.4	0.0	-5.1	2.9	-4.1	-4.1	-4.1	-4.1	-4.1	-4.1	

1/ Derived as [r - g - r(1+g) + ea(1+r)]/(1+g+r+gr) times previous period debt stock, with r = nominal effective interest rate on external debt; r = change in domestic GDP deflator in US dollar terms, g = real GDP growth rate, e = nominal appreciation (increase in dollar value of domestic currency), and a = share of domestic-currency denominated debt in total external debt.

2/ The contribution from price and exchange rate changes is defined as [-r(1+g) + ea(1+r)]/(1+g+r+gr) times previous period debt stock. r increases with an appreciating domestic currency (e > 0) and rising inflation (based on GDP deflator).

3/ For projection, line includes the impact of price and exchange rate changes.

4/ Defined as current account deficit, plus amortization on medium- and long-term debt, plus short-term debt at end of previous period.

5/ The key variables include real GDP growth; nominal interest rate; dollar deflator growth; and both non-interest current account and non-debt inflows in percent of GDP.

6/ Long-run, constant balance that stabilizes the debt ratio assuming that key variables (real GDP growth, nominal interest rate, dollar deflator growth, and non-debt inflows in percent of GDP) remain at their levels of the last projection year.

Annex V. Real Estate Market in Macao SAR: Overvaluation, Policies, and Affordability[1]

1. **Residential property prices are assessed to be 8-9 percent overvalued—for smaller units in particular—when compared with per capita GDP and rent.** Deviations from the Hodrick-Prescott filter trend suggest that, as of 2018Q4, prices are below trend by 2-11 percent (with the degree of trend-deviation dependent on the chosen smoothing parameter). On the other hand, deviations from historical price-to-income ratios to capture potential overvaluation (using market price and per capita GDP) suggest that market prices are 9 percent overvalued as of 2018Q4. In addition, deviations from historical price-to-rent ratios (assuming a stable relationship between property prices and rent) suggest an 8 percent overvaluation as of 2018Q4. A complementary analysis by property unit size indicates that smaller units may face higher overvaluation than larger units.[2]

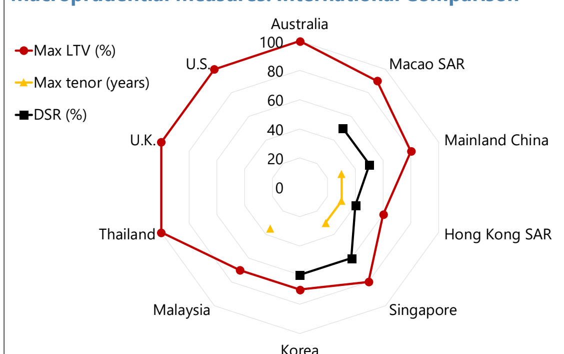
Residential Property Market Overvaluation Estimates

Whole Market	HP-filter (λ=1600)	HP-filter (λ=8000)	Price-to-Income Ratio Method	Price-to-Rent Ratio Method
Overall				
2018Q1	10%	3%	11%	9%
2018Q2	-3%	-10%	11%	7%
2018Q3	-4%	-12%	12%	7%
2018Q4	-2%	-11%	9%	8%
Properties less than 50 sq meters				
2018Q1			14%	12%
2018Q2			15%	11%
2018Q3			17%	12%
2018Q4			14%	12%
Properties 50-99.9 sq meters				
2018Q1			10%	8%
2018Q2			11%	7%
2018Q3			12%	7%
2018Q4			9%	7%
Properties 100-149.9 sq meters				
2018Q1			9%	7%
2018Q2			8%	5%
2018Q3			10%	5%
2018Q4			7%	5%
Properties 150 sq meters and over				
2018Q1			9%	7%
2018Q2			9%	5%
2018Q3			7%	1%
2018Q4			7%	5%

Source: CEIC and IMF staff estimates.

2. **Since 2010, five rounds of housing market macroprudential measures have been implemented.** Macroprudential policies were last tightened in 2017 with reduced loan-to-value ratios (LTV) for non-first-time homebuyers. The measures are somewhat tighter for nonresidents and for equitable mortgages.[3] In February 2018, the LTV framework was eased for young first-time homebuyers, making Macao SAR's housing macroprudential policies somewhat looser than Mainland's and Hong Kong SAR's.

Macroprudential Measures: International Comparison



Source: IMF's Annual Macroprudential Policy Survey.
Note: Tighter policy measures are closer to the center.

[1] Prepared by Jacqueline Jiayi Zhang (APD).

[2] According to Macao SAR's 2018 Private Construction and Real Estate Transaction Report, 40 percent of real estate transactions deal with properties of less than 50 square meters.

[3] Equitable mortgages are granted to properties under construction. On average, equitable mortgages amount to 11 percent of the value of newly approved residential mortgage loans over 2012-18. Nonresident refers to individuals without Macao SAR identity card. The share of nonresidents in the aggregate value of residential units purchased was 3 percent in the first eight months of 2018.

LTV Macroprudential Framework

Property price (million MOP)			Less than 3.3	3.3-6	6-8	More than 8	Less than 3.3	3.3-6	6-8	More than 8
			Legal mortgage				*Equitable mortgage*			
2010										
Residents	LTV 1/		90	70	70	70				
	Loan cap 1/		2.31	-	-	-				
Non-residents	LTV		70	70	70	70				
	Loan cap		-	-	-	-				
Additional measures			*Debt service ratio was capped at 50%. Maximum loan tenor is set to not exceed the retirement age of the borrower concerned.*							
2011										
Residents	LTV		90	70	70	70	70	70	70	70
	Loan cap		2.31	-	-	-	-	-	-	-
Non-residents	LTV		70	70	70	70	50	50	50	50
	Loan cap		-	-	-	-	-	-	-	-
2012										
Residents	LTV		90	70	60	50	70	70	60	50
	Loan cap		2.31	3.6	4	-	3.6	3.6	4	-
Non-residents	LTV		70	60	50	40	50	50	50	40
	Loan cap		1.98	3	3.2	-	3.2	3.2	3.2	-
2017										
Residents	First-time home buyers	LTV	90	70	60	50	70	70	60	50
		Loan cap	2.31	3.6	4	-	3.6	3.6	4	-
	Other residents	LTV	70	60	50	40	60	60	50	40
		Loan cap	1.98	3	3.2	-	3	3	3.2	-
Non-residents	LTV		60	50	40	30	40	40	40	30
	Loan cap		1.65	2.4	2.4	-	2.4	2.4	2.4	-
2018										
Residents	Young first-time home buyers 2/	LTV	90	80	80	50	70	70	60	50
		Loan cap	2.64	-	6.4	-	3.6	3.6	4	-
	Other first-time home buyers	LTV	90	70	60	50	70	70	60	50
		Loan cap	2.31	3.6	4	-	3.6	3.6	4	-
	Other residents	LTV	70	60	50	40	60	60	50	40
		Loan cap	1.98	3	3.2	-	3	3	3.2	-
Non-residents	LTV		60	50	40	30	40	40	40	30
	Loan cap		1.65	2.4	2.4	-	2.4	2.4	2.4	-

1. LTV is in percent of total property value. Loan cap is in million MOP.
2. Qualified applicants have to be between 21 to 44 years old.
Source: Authorities.

Tightening compared to previous announcement for residents
Tightening compared to previous announcement for non-residents
Loosening for residents
Loosening for non-residents

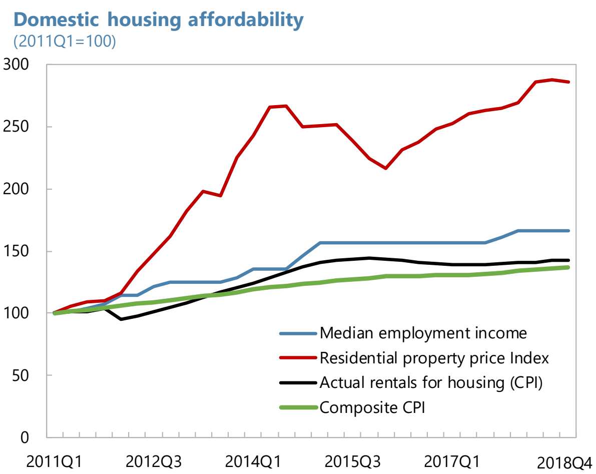
3. **In addition to above-mentioned macroprudential measures, some fiscal measures have been used to moderate the buoyant housing market.** In Macao SAR, all buyers must pay a stamp duty tax (SD) of 1-3 percent of the property value, except for intermediate transfers (that pay 0.5 percent). In 2010, the exemption for intermediate transfers was annulled. A special stamp duty tax (SSD) was introduced in 2011 targeting market speculators: 20 percent for sellers of properties within one year of purchase, and 10 percent if within two years of purchase. The SSD was extended to commercial properties and parking spaces in 2012. Also in 2012, a flat rate of 10 percent buyers' stamp duty tax (BSD) was introduced on buyers of residential properties who are legal persons, individual entrepreneurs, or nonresidents. A new SSD was imposed on non-first residential property purchases in February 2018: a 5 percent SSD is applicable on acquisition of the second residential property, and a 10 percent SSD is applicable for the third property and above. Lastly, the previous exemption of housing tax for vacant residential property was removed in February 2018.

Residential Property Market: Macroprudential and Fiscal Measures

1/ In Jun 2013, a new regulation for title transfer of uncompleted units was introduced. Real estate agency law, land law, the urban planning law and the cultural heritage protection law were also promulgated.
2/ "Non-resident" refers to individuals without Macao SAR identity card.
Source: CEIC, DSEC, Haver Analytics and IMF staff estimates.

Housing Affordability Concerns and Housing Supply:

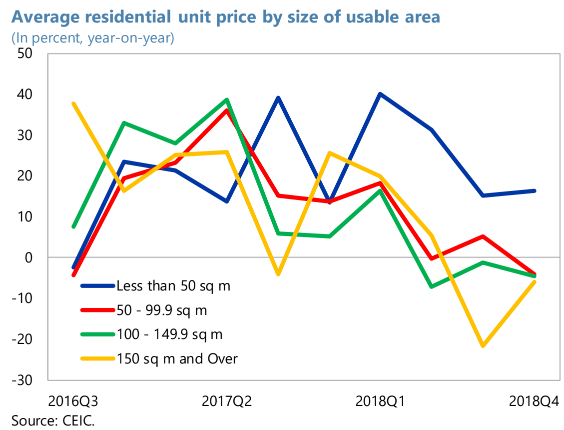
4. Housing affordability has deteriorated with the economic recovery that started in mid-2016. While wages have gradually increased, property prices have risen by 33 percent since the low point in 2016Q1, reaching almost three times their 2011 level. The growth of Macao SAR's property price index is only second to Hong Kong SAR, surpassing all other Tier I cities in Mainland China.[4] Relative to other economies, Macao SAR's property price growth is higher than many metropolitan areas in the world including Greater London, Korea, Singapore, Sydney, Tokyo and the aggregate for top-ten U.S. metro regions.

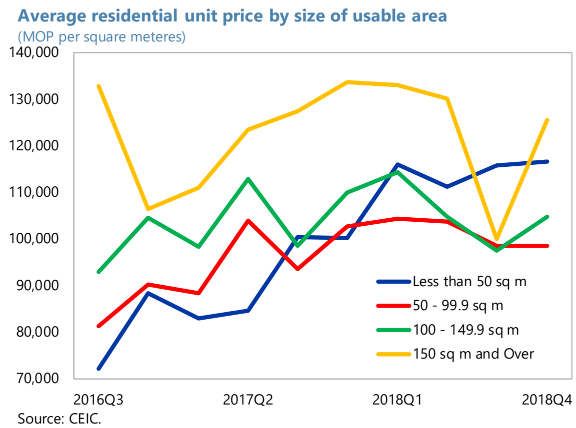


Source: CEIC, Haver Analytics and IMF staff estimates.

[4] Tier I cities are Beijing, Shanghai, Guangzhou, and Shenzhen.

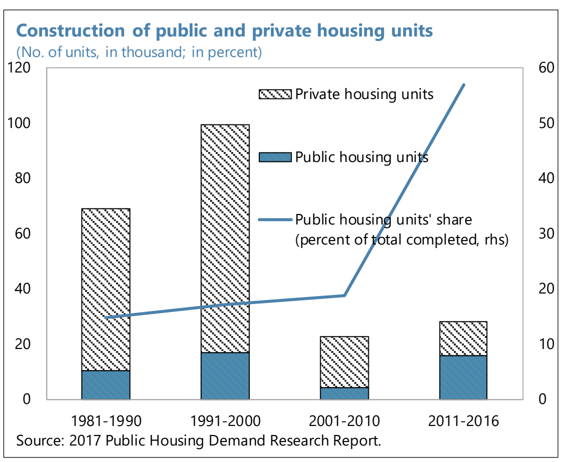
5. Recent macroprudential policy easing for young first-time homebuyers may have unintentionally worsen housing affordability in this segment. As mentioned, in February 2018, LTV was eased for young first-time homebuyers.[5] The continued increase in the price of small properties over 2018 is likely related to the demand boost from young first-time homebuyers who benefited from the macroprudential easing in early 2018. In fact, smaller properties, historically the most affordable in the economy (in terms of average price per square meter), became the most expensive type of property in Q3 2018.

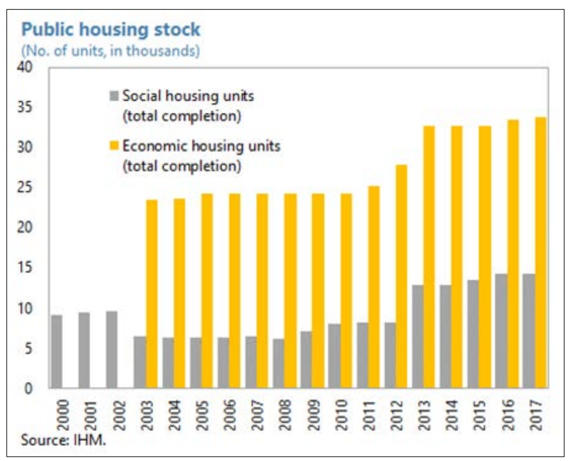




6. Boosting housing supply will be key to support housing affordability. Private housing construction has been sluggish while there is an excess demand for public housing in the near term:

- *Private housing*. As of 2016, there are over 171,000 private housing units. About 50,000 private sector units have been built between 2003 and 2016—which is significantly below the earlier (pre-2000) pace.





[5] In 2018 Q3, young first-time homebuyers account for 60 percent of the value of newly approved mortgages for residents. In terms of housing market share, young first-time homebuyers account for 45 percent in 2017 and 82 percent in 2018 (out of all buyers in the residential market).

- *Public housing.* Only 18 percent of resident households rely on public housing in Macao SAR, while it reaches 45 percent of households in Hong Kong SAR. Macao SAR's public housing program consists of social and economic housing (with economic housing accommodating 64 percent of households in public housing).[6] Since 2003, the government has added more than 6,000 social units and around 14,000 economic units. As of 2016, there were almost 48,000 public housing units and, at the moment, 50,000 public housing units are under construction or planned. However, official projections anticipate significant excess demand for public housing in the near term.[7]

[6] Social housing is owned by the government and leased to low-income families. Economic housing is financed and built by the government, and then sold to Macao SAR's residents of certain income and saving levels at affordable prices. In 2011, the Economic Housing Law extended to 16 years the minimum time period for free market resale of economic housing (it was 6 years before).

[7] According to the "2017 Public Housing Demand Research Report" (prepared by Macao Public Governance Research Center), while public housing will satisfy demand in the long-term, new demand for public housing will reach over 30,000 units by 2021 yet the supply of public housing will expand only by over 9,000 units by then.

Annex VI. External Sector Assessment

Staff assess Macao SAR's external position to be substantially stronger than medium-term fundamentals and desirable policies. There is scope for (i) more domestic absorption in terms of infrastructure investment, (ii) boosting public social spending, and (iii) closer monitoring of the quality and liquidity of external assets.

Estimated International Investment Position (In percent of GDP, end of 2017)		
	Foreign Assests	Foreign Liabilities
Total	448	212
Direct Investment	14	65
Portfolio Investment	130	12
Financial Derivative	-0.02	
Other Investment	229	135
Reserve	75	
Fiscal Reserve	121	
Banks	230	140

Source: AMCM, Haver, IMF staff estimates.

1. **Foreign Asset and Liability Position**—Official international investment position data are not available. As an alternative, staff estimate Macao SAR's net foreign assets by calculating the cumulative sum of financial account flows starting in 2002. (The estimate is imperfect as it excludes valuation changes.) Consistent with measured Macao SAR's large current account surplus since 2002, this approach suggests a large net foreign asset position of 236 percent of GDP for end-2017—up from 200 percent of GDP in 2015 due to lower liabilities. Similar to other financial centers, Macao SAR is estimated to have a large gross external position driven by the banking sector, as they hold 51 percent of the foreign assets and 66 percent of the liabilities. Another large asset holder is the fiscal reserve, accounting for 27 percent of foreign assets. In addition, Dealogic data suggest that another large holder of foreign liabilities is the gaming sector. The estimated large net foreign assets suggest limited grounds for concern about medium-term external solvency, but ongoing attention is necessary to the quality and liquidity of foreign assets in the event of a sudden fall in external liabilities.

Revised EBA-lite: CA and REER Model, 2018	
CA Model (in percent of GDP, cyclically adjusted)	
CA-Actual	34.8
CA-Norm	16.0
CA-Gap	18.8
Of which Policy Gap	5.7
Index REER model (in percent)	
REER Gap	3.8
Of which Policy Gap	-1.0

Source: IMF staff estimates.

2. **Current Account**—In 2018, Macao SAR is estimated to have a current account surplus of 35 percent of GDP, up from the trough of 25 percent in 2015 when gaming exports contracted following developments in the Mainland that reduced external demand from high-spending (VIP) visitors. Large current account surpluses are expected to continue in the medium term as Macao SAR continues to benefit from China's gaming monopoly, while the small domestic market is unable to absorb the scale of the gaming monopoly profits. However, there is scope to increase investment and reduce savings by removing structural distortions including bottlenecks to investment and policies that cause excessive savings. For example, infrastructure bottlenecks are holding up the expansion of non-VIP gaming and tourism. Moreover, there is scope to increase needed targeted public social spending that is currently at levels much below those in other countries and is causing excessive savings. The revised EBA-lite current account regression model estimates that the 2018 current account gap is 19 percent of GDP. Notably, the CA gap is largely unexplained by the model, reflecting the difficulty in properly capturing Macao SAR's volatile current account due to the gaming sector and the lack of a measure for the structural policy gap. The model identifies a policy

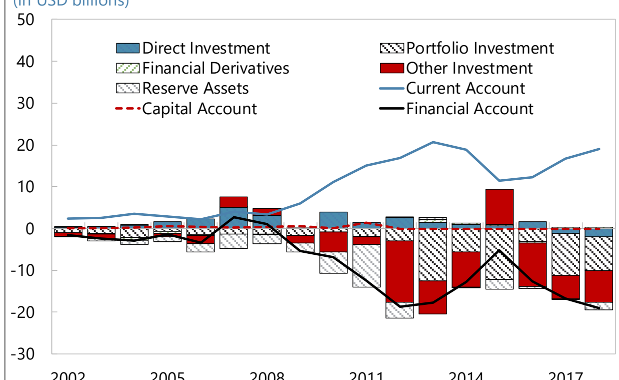
gap of 6 percent (out of the 19 percent CA gap) mainly driven by a fiscal policy gap due to a fiscal surplus above its desirable level (assumed to be the benchmark fiscal balance of zero percent under the Basic Law). Based on available data and model estimates, staff assess that the CA is substantially stronger than fundamentals and desirable policies. Higher domestic investment and lower savings will contribute to reducing the estimated current account gap.

3. Assumptions and CA Assessment—Importantly, without actual IIP data it is difficult to confirm that the measured CA properly captures changes to residents' net wealth and the size of the domestic savings-investment balance. IIP data could indicate that CA may be overstated and inaccurately assessed if, for example, some income is currently recorded as pertaining to residents when it should be recorded as nonresidents. In addition, computing IIP could improve the income account as it would provide rates of return that can be checked against international benchmarks. Thus, availability of IIP data may change the assessment. Moreover, if the gaming monopoly were to be viewed as temporary by the authorities, observed high savings could be appropriate for intergenerational purposes and wouldn't represent a distortion, also changing the CA assessment.

4. Real Exchange Rate— The real effective exchange rate depreciated by 0.9 percent annually in 2017 and in 2018, but it appreciated on a monthly basis since July 2018 in line with renminbi depreciation. The fact that the Macao SAR's exchange rate is pegged to the Hong Kong dollar (and in turn the U.S. dollar) even though over 70 percent of visitors are from Mainland may pose competitiveness issues if renminbi were to depreciate significantly and prices were not to adjust. However, there is no empirical relationship between REER and CA for Macao SAR, and, thus far, there is no evidence of overvaluation, with prices contributing to adjustments to shocks. The EBA-lite Index REER model estimates a 3.8 percent REER gap for 2018, with a negative policy gap (of 1 percent). The small REER gap is consistent with staff's view that the REER is broadly in line with fundamentals.

5. Financial Accounts—Macao SAR's balance of payments can be characterized by two basic dynamics. First, strong tourism sector exports generate large current account surpluses which are invested abroad, driving large net capital outflows and the accumulation of foreign assets. Further accumulation of foreign assets is expected as the planned sovereign wealth fund expands foreign portfolio investment. Second, as an international financial center, banks acquire large foreign liabilities which are then re-invested abroad. This results in large two-way gross financial account flows. The size of gross capital flows reflects in part the fact that the financial account is fully liberalized. Significant foreign assets (including contingent support from Mainland parent banks) and prudent financial regulation limit risks from potentially volatile capital flows.

Balance of Payments
(In USD billions)



Sources: Haver Analytics, IMF staff estimates.

6. **FX Intervention and Reserves Level**—Because Macao SAR has a currency board arrangement, international reserves have been built up in a nondiscretionary way. The stock of foreign exchange reserves is about US$20 billion (37 percent of GDP) as of end-2018. In terms of import coverage, foreign exchange reserves are estimated to be a comfortable 13 months of imports at end-2018. Regarding M2 coverage, its ratio has been declining since it peaked in 2011 (at 352 percent of M2) to 82 percent at end-2018, but international reserves remain adequate for precautionary purposes. Macao SAR also holds significant fiscal reserves (US$64 billion or 116 percent of GDP as of November 2018) in foreign exchange (of which about US$18 billion was funded out of reserves in 2012). These can be an additional buffer but are primarily intended for investment (domestically and abroad) rather than supporting the exchange rate regime.

Annex VII. Key 2011 FSAP Recommendations

Main Recommendations	Steps Taken
1. Grant operational independence to AMCM, including appointment terms of Chairman, independence over budget, and final decision making authority in implementing corrective or remedial action to assure timely and effective bank resolution.	These issues require major legislative changes and an overhaul of the administrative structure of the Macao SAR Government. Under the existing Financial System Act (FSA) and Charter, the AMCM actually has necessary and sufficient degree of operational independence and resources to perform its duties for effective supervision, for example: • the AMCM has autonomy in its day-to-day operations and the methods it uses to pursue its public policy objectives; • the AMCM on its own determines prudential policies, standards and guidelines relating to the regulation and supervision of financial institutions; • financially, the AMCM has its own budget and has sufficient resources required for performing its statutory duties; • the AMCM makes its own decision on all the matters that fall within its scope of statutory competence. As for those matters that the AMCM is legally obligated to give advice only, the track record indicates that the Macao SAR Government has been in favor of the AMCM (as it does not benefit from the same degree of resources, skills or information as the AMCM) and there is no evidence of interference from any party which compromises the operational independence of the AMCM. • the AMCM has its own HR policy and independently makes decision on staff recruitment (though increases in headcounts are subject to approval), placement and promotion on its own. Since the FSA is now under review, the AMCM will take this opportunity to relay the independence concern raised by the IMF to the Macao SAR Government again.
2. Give AMCM authority over key regulatory and supervisory decision affecting the insurance system, including the licensing approval process, the regulation of tariffs and sanctions.	*Background and authorities' views.* The Macao Insurance Ordinance (Decree Law No. 27/97/M) and the Charter of the AMCM (Decree Law No. 14/96/M) authorise the AMCM with power of supervision over insurers and reinsurers. The authorised power includes but not limited to on-site and off-site supervision, regulatory standards setting, and providing technical opinions on licensing, sanctioning, and regulating of tariffs. Operationally, the AMCM makes its own decisions on all regulatory and supervisory matters that fall within its scope of statutory competence. For those matters that the AMCM gives advice to the Macao SAR Chief Executive, like licensing of insurance companies or sanctions for contraventions, the track record indicates that the Chief Executive has been in favor of the AMCM and that no regulatory or supervisory action has been delayed.
3. Complete the onsite inspection manual for banking.	In addition to onsite inspection manual for banking, supervisory questionnaires have also been designed to obtain an overall understanding on the operations and controls of different areas of focus. These questionnaires are regularly reviewed and updated to take into consideration any changes in the respective regulatory guidelines and market practices.
4. Amend regulations on related parties to include a guideline that exposures to related parties may not be granted on more favorable terms than to nonrelated parties.	Although this is a de facto standing practice adopted by Macao SAR banks, the related-party issue is also considered in the review of the FSA. The revised Article 66 proposes a prudential requirement on the related-party transactions or dealings, which should be conducted at arm's length terms. A conferment of power to the AMCM to issue the relevant guideline for defining the scope of the related parties is also proposed in the revised FSA.
5. Enhance offsite analysis of AMCM by deepening the trend analysis for individual banks (including financial condition of the parent) and collate this information into a systemic risk framework for analyzing overall	Credit risk returns have been revised, and offsite analysis has been enhanced by consolidating different data sources into a single data store. The process to generate reports on financial key performance indicators, key risk indicators and distribution trends is then streamlined, facilitating AMCM's effective integrated data and trend analysis of financial conditions of and risks faced by individual banks, as well as systemic risk of the banking sector. Established closer relationship and more frequent communication with their parent financial institutions

Main Recommendations	Steps Taken
banking vulnerabilities. The Banking Supervision Department should modify its banks returns for credit risk analysis purposes as it would benefit from greater detail collected on outstanding loans.	and home supervisors, as always, has also strengthened these areas.
6. Develop a formal process that underpins the current bank resolution measures in place, including defining possible remedial actions at trigger points. Specify under what conditions liquidity will be provided by the AMCM and the role of the government in the event of possible deposit payout.	Currently the FSA provides for a range of corrective and remedial measures, including the intervention measures, to be taken to address unstable situations of the credit institutions. Measures are put in place that liquidity could be provided to banks under repo arrangements or under emergency conditions for the sake of securing public interests. Regarding the possible deposit payout, please see point 10.
7. On insurance supervision, carry out full scale onsite inspection and develop onsite inspection manual. Offsite supervision should incorporate an analysis of claims performance and trends.	The AMCM has adopted Insurance Core Principles promulgated by the International Association of Insurance Supervisors (IAIS), and specifically adopted a highly conservative rain-fencing supervisory measure, namely guaranteeing of technical reserves. Besides, the AMCM has also issued various regulatory guidelines in respect of customer protection, corporate governance and AML/CFT, etc. By means of on-site and off-site supervision and strict control on technical reserve and solvency requirements, the AMCM exercises adequate supervisory power. On-site inspection is not necessarily full scope, while thematic is sometimes a more result oriented and effective tool. Findings of the on-site inspections were communicated to the insurers concerned, and follow-up actions taken by the insurers were continuously monitored. Analysis of claims performance is primarily performed on nonlife compulsory insurance in order to monitor the adequacy and fairness of premium tariffs. The AMCM has developed a framework to collect the 'claims triangle for nonlife insurers relating to the major compulsory insurances. In 2019, actuarial study will be performed on motor third party liability insurance to assess the tariff system.
8. AMCM should arrange MOUs with the insurance regulators in the jurisdictions where no such arrangement exists.	There are in total 12 MOUs signed with overseas insurance regulators. Also, in line with the initiatives of the IAIS to enhance information exchange and cooperation among its members, the AMCM signed a MOU with the IAIS in 2011. The AMCM has revamped the MOU with the Insurance and Pension Funds Supervisory Authority of Portugal to strengthen the co-operation between the two regulators.
9. To enhance transparency and credibility of accounting system, adopt the IFRS system in full.	In early January of 2019, Macao SAR launched a public consultation to revise the current Macao Accounting Standards (MASs). The content of the new MASs is suggested to adopt conceptual framework, certain standards and interpretations of Part A of the 2015 Edition of International Financial Reporting Standards (IFRS) (red book), which includes a conceptual framework of financial report, 15 IFRS, 26 International Accounting Standards (IASs) and 21 interpretations. For more information about the public consultation, please refer to http://www.dsf.gov.mo/newFRSconsult/?lang=zh.
10. Consider introduction of a deposit insurance scheme.	The Deposit Protection Scheme was officially launched in October 2012, with the compensation limit set at MOP500,000 per depositor per bank. Through the promulgation of Law No. 4/2018 of 12 March, the Deposit Protection Scheme was revised to replace the "net payout approach" with the "gross payout approach" (i.e. without deducting a depositor's liabilities from his/her protected deposits in the same participating institution when determining payout), which would simplify the calculation of compensation amount and shorten the data processing time during payout.