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PEOPLE'S REPUBLIC OF CHINA—MACAO SPECIAL ADMINISTRATIVE REGION

July 2014

2014 ARTICLE IV CONSULTATION DISCUSSION - STAFF REPORT; PRESS RELEASE; AND STATEMENT BY THE EXECUTIVE DIRECTOR FOR MACAO SAR

Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. In the context of the 2014 Article IV consultation with Macao, the following documents have been released and are included in this package:

- The **Staff Report** prepared by a staff team of the IMF for the Executive Board's consideration on July 16, 2014, following discussions that ended on April 29, 2014, with the officials of Macao on economic developments and policies. Based on information available at the time of these discussions, the staff report was completed on June 20, 2014.
- An **Informational Annex** prepared by the IMF.
- A **Press Release** summarizing the views of the Executive Board as expressed during its July 16, 2014 consideration of the staff report that concluded the Article IV consultation with Macao.
- A **Statement by the Executive Director** for Macao SAR.

The publication policy for staff reports and other documents allows for the deletion of market-sensitive information.

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PEOPLE'S REPUBLIC OF CHINA—MACAO SPECIAL ADMINISTRATIVE REGION

STAFF REPORT FOR THE 2014 ARTICLE IV CONSULTATION DISCUSSIONS

June 20, 2014

KEY MESSAGES

Setting. Discussions took place for the first time since the handover of Macao SAR from Portugal to China in 1999. Prudent macroeconomic management has underpinned rapid development in the territory, which is now the world's largest gaming center. As a small, open and tourism-dependent economy, Macao SAR is currently also benefiting from loose global monetary conditions and a Mainland-related boom.

Outlook and risks. Growth should stay strong over the next few years at 8–10 percent buoyed by gaming exports and investment, with inflation remaining around 5–5½ percent. However, the economy is vulnerable to external shocks, in particular a slowdown in tourism, due to shocks in the Mainland or Hong Kong SAR or other setbacks to the global recovery. The buoyant property market could also correct if demand fundamentals shift or interest rates rise abruptly with the withdrawal of unconventional monetary policy abroad.

Macroeconomic policies. The policy stance is appropriate, with scope for further tightening of macroprudential policies should property prices continue to rise sharply. If downside risks materialize, targeted fiscal stimulus should be used to buttress growth. In the event of a severe property downturn, some countervailing measures could be cautiously unwound. The currency board is the best arrangement for Macao SAR.

Financial stability. Important progress has been made in strengthening financial stability in line with the 2011 FSAP recommendations. Prudential measures should focus on managing potential credit and liquidity risks from a gaming slowdown and the property sector, as well as spillovers from shocks in the Mainland and Hong Kong SAR.

Longer term challenges. Looking further ahead, Macao SAR's public finances face a moderation in gaming revenues juxtaposed against spending needs from population aging. A sovereign wealth fund to manage part of the territory's fiscal reserves and medium-term budgeting could therefore be useful. As the gaming sector matures, economic diversification toward other services will be key for stable growth.

Approved By
Markus Rodlauer and Peter Allum

Discussions took place in Macao SAR during April 22–29, 2014. The staff team comprised Murtaza Syed (head), Tao Sun, and Alla Myrvoda (all APD). Mr. Tao Zhang (Executive Director) participated in the high-level policy meetings. Lesa Yee and Luisa Calixto supported the team.

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CONTEXT

1. **After more than 400 years of Portuguese rule, Macao SAR returned to China's sovereignty at the end of 1999.** Discussions took place with the consent of the Chinese authorities. They were the first since the handover, although the IMF has maintained a relationship with Macao SAR, focused mainly on technical assistance and training (including an FSAP in 2011). Like neighboring Hong Kong SAR, Macao is a Special Administrative Region of the People's Republic of China. With its economic and social systems remaining unchanged for 50 years under its governing constitution (The Basic Law), the territory is a free port and separate customs jurisdiction.

2. **Macao SAR is a small and highly open economy**, with a population of around 600,000 spread over only 31km^2. Its economic fortunes are driven by tourism, mainly related to the gaming industry. Visitors originate mostly from the Mainland and Hong Kong SAR, and rose to a record-high of 29 million in 2013. Gaming directly accounts for four-fifths of exports, three-quarters of fiscal revenue, one-quarter of employment, and more than half of GDP at current producer prices (Figure 1 and Appendix II).

3. **A decade-long gaming boom has lifted per capita incomes near global highs.** For the first three years after the handover, the economy was mired in deflationary growth in the aftermath of a property slump, a sharp rise in bad loans, and dwindling tourism due to the Asian crisis and SARS. After February 2002, liberalization of the casino industry and relaxation of tourist travel policies by the Mainland revitalized the economy. By the middle of the decade, Macao SAR had overtaken Las Vegas as the largest gaming center in the world. However, inflationary pressures—both consumer and property prices—have picked up, and inequality has remained a concern during this period of rapid growth.

4. **Prudent macroeconomic management has enabled Macao SAR to navigate global and regional shocks, to which it is exposed due to its openness and narrow base.** The policy framework has served Macao SAR well in maintaining financial stability and a strong external position, while successfully weathering several external shocks, including the recent global crisis. It is anchored by the combination of a currency board pegged to the Hong Kong dollar (and hence indirectly the U.S. dollar), flexible markets, and a commitment to safeguarding fiscal discipline and financial stability.

- *Monetary conditions*. Under the currency board arrangement, domestic liquidity grows in line with international reserves and monetary conditions are tied to those in Hong Kong SAR (and thus ultimately the United States). The domestic currency, the pataca, is more than 100 percent backed by foreign assets.

- *External position*. Macao SAR is a net external creditor, with a sizable current account surplus, large foreign reserves, and no exchange restrictions on current and capital account transactions (Figure 2). The real effective exchange rate has appreciated in recent years, mirroring developments in the U.S. dollar.

- *Public finances*. Owing to the boom in the gaming sector and cautious management of public finances, Macao SAR has enjoyed large fiscal surpluses in recent years. It has no public debt and holds fiscal reserves of nearly 60 percent of GDP, serving as a key buffer against external shocks.

- *Financial system.* At nearly 250 percent of GDP, Macao SAR's financial sector is large, bank dominated, and mainly foreign owned (Figure 3). Local banking operations have strong balance sheets, are flush with liquidity through domestic deposits, and benefit from the financial and risk management support of their parent banks. There are no organized capital markets and about 60 percent of financial assets are external.

5. **Supportive policies in the United States and the Mainland also helped Macao SAR rebound from the global crisis.** After averaging 14 percent during the preceding six years, growth fell to low single-digits in 2008 and 2009, as tourism plummeted following a tightening of visa policies by the Mainland and the onset of the global recession. Growth recovered quickly thereafter, lifted by two major forces. First, the loosening of monetary conditions in the United States, which led to a corresponding fall in domestic interest rates, facilitated rapid credit growth aimed at both domestic and external borrowers, and increased foreign inflows into Macao SAR's property sector. Second, the strong recovery in the Mainland and its supportive measures toward the territory—including speeding up cross-boundary infrastructure projects and facilitating greater economic and financial integration—helped boost investment and service exports.

6. **The outlook is bright, but Macao SAR needs to prepare for future shifts in the global and domestic landscape**. With the United States beginning to withdraw from unconventional monetary policy as its economy gains strength and the Mainland engaging in major structural reforms to rebalance its growth, Macao SAR will face a different global environment. This will bring opportunities for further development of services that Macao SAR should position itself to seize. At the same time, macroeconomic and prudential policies may need to be recalibrated as these shifts may heighten volatility. Over a longer horizon, growth could slow as the gaming sector matures and the population ages. As a result, Macao SAR will need to preserve its traditional strengths by bolstering financial soundness, ensuring external stability, maintaining fiscal prudence, and diversifying the economy. These issues formed the basis of the discussions, as described below.

OUTLOOK AND RISKS

7. **The economy has continued to perform strongly over the last year.** Growth rose to 11.9 percent in 2013 from 9.1 percent the previous year, driven by a pick-up in gaming exports (Table 1). Robust activity and low unemployment kept inflation relatively elevated at 5½ percent. Notwithstanding some countervailing measures by the government, property prices increased by nearly 40 percent again last year, supported by rising incomes and low interest rates. The banking system remains in solid health, with robust growth in both deposits and loans.

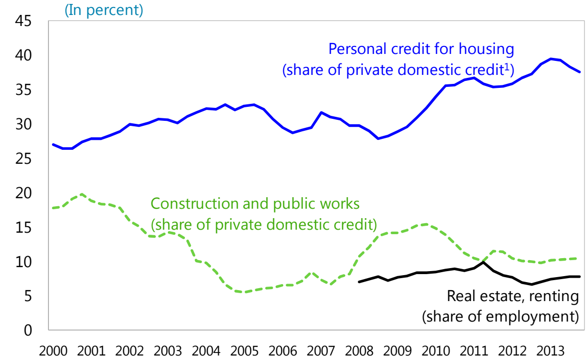
8. **Under the baseline global outlook, Macao SAR's prospects are highly favorable** (Table 2). Growth is likely to remain robust, at 8-10 percent through 2017, on the back of gaming exports as the global economy strengthens and continued investment related to several casino expansion projects, including construction of hotels and large entertainment complexes. Amid brisk activity and historically low unemployment, inflation should stay around 5-5½ percent. At the same time, demand for property will continue to be supported by strong economic growth and low, albeit slowly rising, interest rates. The current account is expected to decline as a share of GDP, as the

services surplus narrows due to capacity constraints in the tourism sector while the merchandise trade deficit rises somewhat due to capital and raw material imports associated with high investment. Meanwhile, the capital and financial account should remain in deficit as the public sector accumulates assets overseas due to rising fiscal reserves and banks continue to lend abroad, taking advantage of rising external demand and interest rates as the global recovery gains momentum. In 2018 and 2019, private investment will contract as work on expansion projects is completed. As a result, growth is likely to moderate to mid-single digits. The current account surplus should tick up, reflecting a slowdown in goods imports and a pick-up in service exports as new capacity comes on line.

9. **However, given the economy's narrow base, a potential sharp drop in tourism and gaming revenues is a core risk.** Such a decline could stem from a renewed downturn or protracted stagnation in the United States and euro area that stalls the global recovery, a severe slowdown in the Mainland or Hong Kong SAR or a fall in visitors due to visa policy changes in the Mainland or any weaknesses in Macao SAR's AML/CFT framework (see risk matrix in Appendix I). In addition to hurting growth and fiscal revenue, such shocks could lead to liquidity strains and deterioration in banks' asset quality.

10. **The main domestic risk is a sharp correction in the property market, triggered by a shift in demand fundamentals or abrupt tightening in liquidity conditions.** Housing affordability has deteriorated sharply through the global crisis and staff models suggest potential price overvaluation (Box 1). A number of triggers could result in a shift in expectations or fundamentals supporting the property market. These include a shock to the gaming and tourism industries that stunts economic growth or a sharp rise in interest rates, due to faster-than-anticipated withdrawal of unconventional monetary policy abroad or increased financial market volatility in its wake (mirroring developments in the United States due to the currency board). A severe downturn in the property market could have a significant negative impact on credit quality, fiscal revenue, and overall economic performance. Construction accounts for around 80 percent of fixed capital information, around 4.7 percent of GDP in value-added terms, and nearly 10 percent of employment. The financial sector is also exposed, with mortgages and the construction sector together accounting for almost half of private domestic credit.

Property Market Indicators
(In percent)



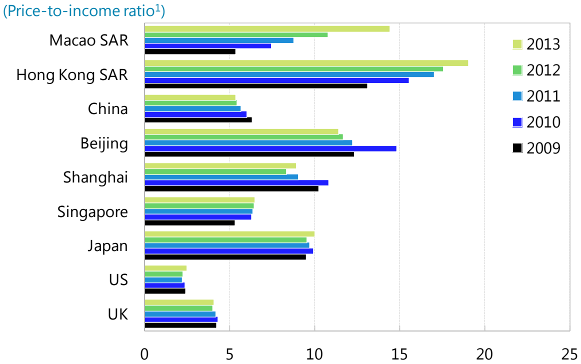
Sources: CEIC; and IMF staff calculations.
[1]Excluding financial investment.

11. **Authorities' views:**

- *Outlook and risks.* The authorities agreed with the baseline outlook. While acknowledging that Macao SAR is susceptible to external shocks, they felt that risks were receding, particularly with the global recovery in train and the Mainland's strong reform plan for rebalancing its economy. On balance, the authorities view the normalization of US monetary policy as beneficial for Macao SAR, since it should normalize domestic interest rates, cool property prices, and contain imported inflation as the exchange rate strengthens with the U.S. dollar. They noted that global financial markets expect the exit to be gradual and well-executed with interest rates only rising slowly over time, and therefore do not anticipate significant volatility. Even in the extreme event of a bumpy exit, they felt Macao SAR's vulnerability is reduced by the paucity of short-term capital inflows, owing to the persistent surplus position of the public and private sectors and lack of domestic money or capital market instruments. Nevertheless, they recognized that there could be a more tangible impact on domestic credit conditions and the property market.

- *Property market.* The authorities felt that the rise in property prices was reflective of fast income growth, very tight supply of land, and loose global monetary conditions. While it was hard to determine the fair value of housing in this environment, they were concerned about worsening affordability and focusing attention on containing any financial stability risks that may arise. They were encouraged that measures implemented in the last few years—including lowering caps on loan-to value (LTV) and debt service-to-income ratios and hiking stamp duties—have helped cool the market by slowing transactions, lowering the share of property-related loans, and reducing foreign speculative activity. On the latter, they noted that the share of nonresidents in the total value of property purchases had fallen from over 20 percent in 2011 to less than 5 percent in 2013. Notwithstanding the territory's space constraints, supply is also being mobilized to help meet rising demand, with 19,000 public housing units completed in the last few years and plans for reclaiming around 3.5 km^2 of land.

Housing Affordability
(Price-to-income ratio[1])



Sources: AMCM; CEIC; Haver Analytics and IMF staff calculations.
[1]Price of a 70 sq.m. home as a multiple of annual household disposable income

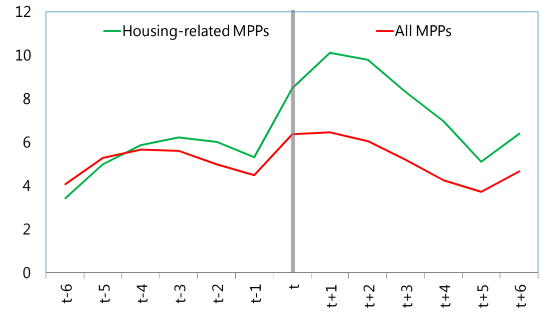
CALIBRATING MACROECONOMIC POLICIES

12. **Under the baseline, current macroeconomic policies are set to continue.** Maintaining the authorities' cautious approach to fiscal management, the 2014 budget is based on conservative revenue projections and another sizable surplus is expected (Table 3). The fiscal stance and recent surpluses provide a cushion to withstand any future downturns. This is especially important given the absence of monetary policy discretion under the currency board arrangement.

13. **Macroprudential policies remain focused on strengthening the resilience of the banking sector to risks from a slowdown in gaming and rapidly rising property prices.** The gaming sector is predominantly financed overseas, but banks are indirectly exposed through lending for gaming operators' working capital and related industries (such as hotels and construction), as well as the sector's importance to the wider economy. Bank exposure to the property market is significant, and debt service on mortgage loans is around 25 percent of household incomes based on newly-approved mortgage data. The banking system has buffers to cushion shocks through solid profits and strong capital positions, as well as potential support that foreign banks could provide to their branches or subsidiaries operating in Macao SAR. To further mitigate these risks and identify potential weak points, industry-wide stress testing that captures both domestic and external

shocks and dynamic provisioning should be established. At the same time, close scrutiny of the drivers of sharp property price increases in recent years, including investor composition, will help guide prudential measures. The authorities have taken a number of timely steps to curb speculative activity and boost supply in the last few years. Should price acceleration persist, international experience (notably from Asia) suggests that tighter housing-related tax policies—including higher stamp duties and property taxes—and additional macroprudential measures—such as limits on credit exposure to the property sector, stricter caps on debt service coverage, or lower LTV ratios for purchases of second or more homes—could be used to curtail excessive price growth and contain systemic risk (Box 2).

Asia: Housing Prices and Macroprudential Policies (MPPs)[1]
(Average across all episodes; year-over-year percentage change in housing prices)



Source: IMF Asia and Pacific *Regional Economic Outlook* (April 2014).
[1] Relevant tightening policies introduced over the period 2000:Q1–2013:Q1. Excludes overlapping episodes within four quarters.

14. **If shocks materialize, fiscal and prudential policies will need to be deployed as the main defense.** In the first instance, automatic stabilizers should be allowed full play, although these are fairly small. If growth slows more significantly, Macao SAR could undertake rapid fiscal stimulus to shore up domestic demand through targeted tax relief and direct transfers to vulnerable households, support for SMEs, and accelerated infrastructure spending. Should the growth slowdown be accompanied by significant financial strains, liquidity and capital support could be temporarily made available to banks, as was announced during the onset of the global crisis. If domestic monetary conditions tighten suddenly due to the withdrawal of unconventional monetary policy, there may be scope for a macroprudential response, including using capital buffers to avoid a procyclical contraction in lending and monitoring market developments to decide whether and when measures should be recalibrated. In particular, if the property market experiences a sharp downturn, some prudential measures that were tightened during the upswing could be selectively and judiciously unwound, in line with dissipation in systemic risks.

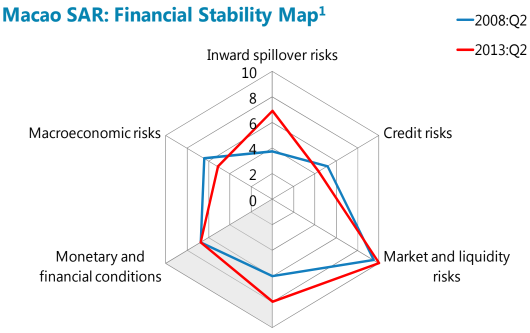
15. **Authorities' views.** The authorities agreed that the fiscal surplus envisaged for 2014 was appropriate, bolstering resources available to withstand any future shocks and underpinning confidence in the currency board. Given that property prices continue to rise, they remain vigilant to further acceleration, and could consider additional measures aimed at constraining housing credit supply and speculative demand to contain systemic risks. If shocks materialize, they concurred that fiscal and prudential policies would be the main tools to buttress growth and contain risks to financial stability. While they viewed the sudden tightening of monetary conditions as a low-probability event, they would continue to monitor closely market developments, notably with regard to the property sector. With banks having strong buffers—the average capital adequacy ratio stands at around 15 percent—and average household debt service-to-income ratios of around 30 percent, they felt that the economy should be able to withstand some price correction under such a scenario. If prices fell more precipitously, they were open to the idea of unwinding some housing-related measures enacted in recent years, They emphasized that they would only consider such unwinding provided it did not pose systemic risk, for instance by attracting less creditworthy buyers as the cycle turns, and thus harming household balance sheets and potentially weakening financial stability in the future

BOLSTERING FINANCIAL SOUNDNESS

16. **Macao SAR's financial system is bank oriented and foreign owned, with virtually all banks being either subsidiaries or branches of overseas banks.** Banks fund themselves primarily through domestic deposits, placing the majority of their excess liquidity with their parent banks and offshore affiliates. If needed, branches can borrow liquidity from their parent banks. Macao SAR's banking system is dominated by Mainland and Hong Kong SAR-owned banks—together, they account for almost 85 percent of total bank assets. The financial system appears competitive, featuring 26 commercial banks, two offshore banks, a postal savings bank and other credit institutions, insurance companies, finance companies, securities dealers, and pension funds.

17. **Since the onset of the global crisis, rapid credit growth and a booming property market have emerged as key issues for financial stability in Macao SAR.** Money supply and credit to the private sector have been growing at an annual average of around 15 and 30 percent, respectively. Moreover, growing interconnectedness with global financial markets has broadened transmission channels from external shocks. The global crisis has strongly demonstrated the need for an overarching framework and early warning systems to monitor systemic financial stability. In this context, staff's Financial Stability Map suggests that the improving global economy and strong domestic growth have increased risk appetite, while low global interest rates and expanding money supply have eased monetary and financial conditions. As a result, Macao SAR is facing elevated risks from potential inward spillovers and market and liquidity shocks, and low to medium ones with regard to the macroeconomy and credit quality.

Macao SAR: Financial Stability Map[1]



Source: IMF staff estimates.
[1]Away from center signifies higher risks, easier monetary and financial conditions, or higher risk appetite.

18. **Financial system resilience has been bolstered by the progress made on key recommendations from the IMF's 2011 Financial Assessment Program (FSAP)** (Box 3 and Table 4). The FSAP concluded that banks generally enjoy robust capitalization and adequate profitability. In line with its recommendations, progress has been made in further strengthening the supervisory framework, including by enhancing off-site analysis and improving communication with parent financial institutions. In addition, the financial safety net has been bolstered by the introduction of a deposit insurance scheme. Increasing the de jure operational independence of the Monetary Authority of Macao (AMCM) and developing a rapid remedial action framework to facilitate an orderly approach to addressing banking problems are being considered in the ongoing review of the Financial System Act, and Macao SAR plans to adopt fully the International Financial Reporting Standards (IFRS) to enhance the transparency of banks' financial reporting. It is important to implement these remaining recommendations expeditiously.

19. **Given heightened exposure to a few jurisdictions, close monitoring and co-operation with their home supervisors will help guard against adverse cross-border financial spillovers**

Counterparty risk is high, given that banks place the bulk of their surplus liquidity with banks abroad. At the same time, concentration risk has also risen due to increased bank exposure to a few jurisdictions, although mostly with high sovereign ratings and strong fundamentals. In particular, there are risks from lending to Hong Kong SAR, Portugal and the Mainland (together accounting for around two-thirds of external interbank assets). Credit and funding shocks emanating in these jurisdictions could have a significant impact on the domestic banking system (Box 4). To identify emerging risks, the AMCM should stress test and closely monitor banks' foreign exposures, including through closer cooperation with home supervisors and an assessment of financial stability developments in those jurisdictions, while ensuring that banks maintain prudent underwriting standards and hold adequate buffers against potential risks. Publicizing more details about the nature of these exposures—including granular information on lenders, borrowers, and risk implications—would also provide useful information to supervisors, the market and the public.

20. **Steps to strengthen further the AML/CFT framework are welcome.** In 2007, Macao SAR underwent a mutual evaluation of its anti-money laundering and combating the financing of terrorism (AML/CFT) framework by the Asia Pacific Group on Money Laundering (APG). The areas found to have room for improvement included customer due diligence measures on financial institutions and designated nonfinancial businesses and professions (DNFBPs), confiscation and freezing of criminal assets, targeted financial sanctions required by UN Security Council resolutions, regulation and supervision of DNFBPs, measures on cross-border transportation of cash and bearer negotiable instruments, and international cooperation. In light of the information in Macao SAR's progress reports to the APG and of the risks faced by the gaming sector, remaining measures needed to safeguard integrity in the gaming sector should be steadfastly implemented, in particular to bolster customer due diligence requirements in line with the Financial Action Task Force (FATF) standard, and to strengthen oversight of all market players, including junket promoters and their associates.

21. **Authorities' views.** The authorities noted that significant progress has been made in bolstering financial stability in recent years, in line with FSAP recommendations. In addition, banks conduct regular reviews on the effectiveness of their risk management practices, internal controls and business strategies, and submit them to the AMCM on an annual basis. Any deficiencies identified by the AMCM require prompt remedial measures. Banks are also required to conduct their own stress tests and AMCM is working toward implementing sector-wide stress testing. In terms of cross-border financial spillovers, they pointed out that linkages with Hong Kong SAR and Portugal are long-standing and reflect limited domestic lending opportunities. More recently, lending to the Mainland has risen briskly to around 20 percent of banks' overseas portfolio, spurred by increased integration and interest differentials. They noted that two Mainland banks account for the majority of these exposures, which are mainly related to trade financing, backed by collateral and letters of guarantee from their headquarters, and not to potentially more risky segments of the Mainland financial system (including "shadow" banks). If necessary, banks also have the discretion to off-load bad assets to their headquarters under local banking regulations. These features reduce credit risks. Nevertheless, as exposures will rise further with Mainland integration and given liquidity/counterparty risks, the authorities agreed that maintaining close cooperation with Mainland supervisors and publicizing more detailed information on exposures would be worthwhile. In terms of bolstering the AML/CFT framework, they noted that several steps have been

taken in light of the APG recommendations. In particular, guidelines for financial institutions have been revised, junket promoters have been incorporated into customer due diligence measures, and the Financial Intelligence Unit has strengthened its ability to cooperate with its foreign counterparts.

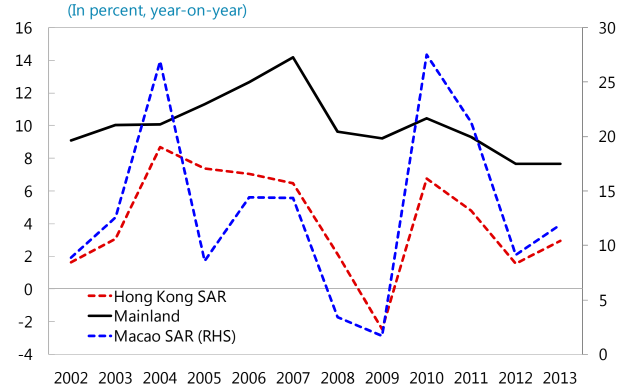
ENSURING EXTERNAL STABILITY

22. **Macao SAR's external position is broadly consistent with medium-term fundamentals and desirable policies** (Box 5 and Table 5). Exchange rate valuation models yield a broad range of estimates, which is not surprising given the uncertainty in such assessments for offshore centers like Macao SAR, whose gross exports and external assets are considerably larger than in other economies. The current account surplus mainly reflects the on-going gaming boom rather than any fundamental misalignment of the exchange rate or other undesirable policies. As a result, there is no convincing evidence of misvaluation. That said, in the event that the government were to scale up spending on health and education over the medium term (see below), this could lead to a somewhat lower national savings rate, requiring the real exchange rate to adjust to a more depreciated equilibrium level.

23. **The currency board linked to the Hong Kong dollar is the best arrangement for Macao SAR and should be maintained.** Given its small and very open economy, the system has provided a crucial nominal anchor for Macao SAR, helped maintain economic and financial stability, and kept the real effective exchange rate broadly in equilibrium. It has also overseen generally good economic performance. Macao SAR meets the pre-requisites for sustaining a currency board, namely flexible labor and product markets that prevent sizable or persistent misalignments, fiscal discipline, prudent management of foreign exchange reserves, and robust financial sector regulation and supervision (Table 6). As with all currency board arrangements, adjustment to shocks has had to take place through price movements, such that both headline and property price inflation have been higher and more volatile than in economies with a more flexible exchange rate (Figure 4). Overall, though, the benefits of the arrangement far outweigh the costs. Pegging to the Hong Kong dollar remains sensible, given its wide circulation in Macao SAR (around two-thirds of loans and deposits), significant trade and financial integration between the two territories, and close co-movement in their output and inflation. Linking to the renminbi would not be appropriate given its lack of convertibility, and the Mainland's significant capital account restrictions and different stage of development.

Real GDP Growth

(In percent, year-on-year)



Sources: CEIC; IMF, *World Economic Outlook*; and IMF staff calculations

24. **Authorities' views.** The authorities agreed that the currency board is the most desirable arrangement for Macao SAR. They also felt that the link with the Hong Kong dollar was appropriate, particularly given strong real and financial linkages with Hong Kong SAR. In terms of the renminbi, they concurred that the Mainland's capital account restrictions complicate its viability as a peg,

including in terms of honoring unlimited convertibility and as a store of value for absorbing Macao SAR's large surpluses. The authorities also broadly shared staff's external assessment, with the territory's flexible prices keeping the real exchange rate in equilibrium and a medium-term current account surplus of around 40 percent of GDP justified by the present gaming boom.

SUSTAINING FISCAL PRUDENCE

25. **Macao SAR's traditionally healthy fiscal position may face pressures over the longer term.** Macao SAR has no public debt and holds significant fiscal reserves that should be sufficient to offset shocks without an accumulation of public debt. However, the government is heavily dependent on gaming revenues, which are volatile and will slow as the sector matures and faces greater competition from online gaming and other venues in Asia. At the same time, spending pressures will mount due to population aging—with the old-age dependency ratio forecast to rise from 10 to 30 percent by 2030—and the possibility of increased social spending and investments to diversify the economy (Figure 5). Currently, these are addressed through ad-hoc measures, such as cash transfers to citizens and public injections into the pension fund.

26. **To ensure the best use of resources over time, consideration could be given to embedding a longer horizon into fiscal policy decisions.**

- *Establishing a medium-term budget framework*. Macao SAR currently has a one-year horizon in its budget, with limited forecasting of expenditure and revenue. The main items are for the most part based on the previous year's budget and there is no multi-year costing of expenditure programs, such that outcomes tend to be significantly different. Moving toward a medium-term budget framework would help promote transparency, support fiscal discipline, and ensure that growth in spending is consistent with development and fiscal objectives. Without such a framework, there is a risk of procyclicality in spending that could exacerbate the impact of shocks and harm fiscal sustainability. Based on international experience, consideration could be given to building capacity for formulating forecasts for revenue, spending and the fiscal balance over a 3–5 year horizon that are embedded into the annual budget. These could be prepared by the Ministry of Finance in consultation with other government agencies. Over time, based on the experience of other countries facing population aging, a Long-term Fiscal Report covering the next few decades may also be a useful device to inform the public about future fiscal pressures, and develop and evaluate policy options. Both these exercises should incorporate the likely slowdown in gaming revenues as well as potential spending obligations associated with population aging, promoting economic diversification, and addressing inequality.

- *Setting up a sovereign wealth fund.* There may be merit to allocating some part of the fiscal reserves to a sovereign wealth fund (SWF) with a clear mandate to achieve better risk-adjusted returns over a long-term horizon, including through a more diversified asset allocation strategy. This would help build sustainable buffers that could be used to offset the impact of potential adverse shocks and set money aside to fund long-term aging expenditures. International experience suggests that a variety of institutional arrangements are possible for a SWF, including having the monetary authority manage the assets, often with the help of external fund managers (Box 6 and text table). In terms of the governance of SWFs, the Santiago Principles developed in

2008 by the International Working Group of Sovereign Wealth Funds provide guidance on the best global practice for ensuring full accountability and transparency.

Key Features of Selected Sovereign Wealth Funds 1/

SWF	Objective	Institutional Arrangements	Total Assets (In billions of U.S. dollars)	Asset Allocation: Cash	Fixed Income	Government-Related Securities	Equities	Others	Average Return (2008-2012)
				In percent					
Norway Government Pension Fund	Pension reserve, stabilization	Central government accounts managed by the central bank	523.1		14.3	29.7	55.6	0.3	3.0
Kazakhstan National Fund	Savings, stabilization, and development	Central government accounts managed by the central bank	52.1			75	25		4.7
Government of Singapore Investment Corporation	Reserve fund	Agency managing international reserves under the government's direction	330.0	3		22	75		4.0
Korea Investment Corporation	Reserve fund, development	Agency managing international reserves under the government's direction	36.2	1.7	9.1	40.0	43.4	5.8	4.3
China Investment Corporation	Savings	Separate public entity	135.1	4	19.4	7.6	48	21	5.3
Temasek (Singapore)	Savings	Separate public entity	193.0		78			22	3.0

Sources: ; Sovereign Wealth Fund Institute; Sovereign Wealth Fund websites; and IMF staff estimates.
1/ The average return for: (a) Korea Investment Corporation is the annualized return for traditional asset portfolios during 2005-2012; (b) Government of Singapore Investment Corporation is the annualized 20-year real return till March 2013; and (c) Kazakhstan National Fund is the annualized return during 2000–2011.

27. **Authorities' views.** In light of the impending aging of Macao SAR's population, the authorities agreed with the need for incorporating a longer-term horizon into fiscal policy decisions. They noted that preserving fiscal discipline was of paramount importance, as enshrined in the Basic Law. In particular, they acknowledged the desirability of boosting returns on the fast rising fiscal reserves associated with the current gaming boom. From this year, the AMCM has decided to invest around 10 percent of the reserves in equities, including with the help of external managers. They were willing to contemplate further moves in this direction, such as by establishing a sovereign wealth fund under government control for part of the fiscal reserves. However, they emphasized that these would need to be backed by a clear increase in risk tolerance and willingness to judge performance over a long-term horizon.

DIVERSIFYING THE ECONOMY

28. **Economic diversification is crucial for sustaining Macao SAR's growth over the longer term**. Much of the territory's recent strong growth has been concentrated in the tourism sector. Even within tourism, it is predominantly considered a gaming center and a daytrip destination for residents of the Mainland and Hong Kong SAR. Looking forward, economic growth will likely moderate as the gaming sector slows to a more sustainable pace amid capacity constraints, government controls on expansion of gaming tables, and external competition. In addition, this narrow concentration leaves the territory vulnerable to external disturbances, as well as crowding out resources from the rest of the

economy. Therefore, diversification is a key policy objective and could provide the economy with an additional growth engine. In this context, the following strategic options could be further explored:

- *Nurturing comparative advantages.* Given Macao SAR's small size, there are limits to how much the economy can be diversified, especially with respect to manufacturing since land and unit labor costs are high. Nevertheless, increasing public investments in infrastructure as well as in social sectors will help reduce capacity constraints, lower inequality, and build the human capital required for modern nongaming services. Public spending on health and education, as well as the percentage of the labor force with tertiary education—at around 1¾ and 2½ percent of GDP, and 25 percent, respectively—are relatively low by international standards. In addition, addressing labor shortages may call for some relaxation of policies related to importing workers and further facilitation of workers commuting from neighboring parts of the Mainland. Further financial development, including SME financing, could also help tap new service industries.

- *Broadening linkages with the Mainland.* The Closer Economic Partnership Arrangement (CEPA, which applies zero tariff to virtually all goods of Macao SAR origin and provides Macao SAR service suppliers access to the Mainland market), the bridge connecting the territory to Hong Kong SAR and Zhuhai on the Mainland, and the joint development of neighboring Hengqin island will support greater integration. Looking ahead, as the Mainland rebalances its economy and liberalizes its capital account, further progress with financial integration and catering to new demands from its residents—including those related to education, health, and recreation as well as legal, accounting, and environmental services—represent promising avenues for Macao SAR to broaden its linkages.

Linkages with China

(Share of China in percent of total)

Sources: CEIC; and IMF staff calcualtions.

29. **Authorities' views.** Diversification of the economy toward nongaming services is a key goal of the government. Key policy measures include promoting competition and diversification in existing industries, upgrading transportation and logistics, fostering a more favorable business environment, and encouraging development and growth of nongaming services. The Mainland's 12th Five-Year Plan (2011–15) also supports Macao SAR's development into a world tourism and leisure centre and as an economic and trade co-operation platform for China and Portuguese-speaking countries. Progress is being made in several areas. For instance, the transport network should improve in the coming years with the completion of light-rail system, labor and visitor flows from the Mainland are being facilitated through new cross-border checkpoints, and 5 km^2 of land in Hengqin island has been reserved for joint development of an industrial park. The authorities hoped that further development of the nearly 100km^2 Hengqin island could help alleviate Macao SAR's significant land constraints. In addition, they saw opportunities for further RMB business, particularly capital raising by entities from Portuguese-speaking countries.

STAFF APPRAISAL

30. **Macao SAR has come a long way since its handover to China in 1999.** Prudent macroeconomic management—anchored by a currency board, flexible markets, and a commitment to fiscal discipline and financial stability—has seen the territory make significant strides. Together with a gaming boom, it has lifted average living standards to among the highest in the world and enabled Macao SAR to successfully weather external shocks, including the recent global crisis. However, inflationary pressures have picked up and inequality remains a concern.

31. **As the global recovery gains momentum, Macao SAR will need to adapt to a shifting external backdrop.** Macao SAR's rebound from the global crisis benefited from the loosening of monetary conditions in the United States, which led a corresponding fall in domestic interest rates and facilitated rapid credit growth, as well as strong growth in the Mainland. With this benign landscape shifting as the United States withdraws from unconventional monetary policy and the Mainland engages in major structural reforms to transform its economy, Macao SAR will face both opportunities and challenges. Looking ahead, preserving Macao SAR's traditional strengths by bolstering financial soundness, ensuring external stability, maintaining fiscal prudence, and diversifying the economy will be critical for stable growth.

32. **The outlook is strong but the economy's narrow base leaves it vulnerable to external shocks.** Growth should stay at 8–10 percent over the next few years buoyed by gaming exports and investment, with inflation remaining around 5–5½ percent. However, growth rates are vulnerable to external shocks. Risks mainly stem from a slowdown in tourism, due to shocks in the Mainland or Hong Kong SAR or other setbacks to the global recovery, or a fall in visitors due to visa policy changes in the Mainland or any weaknesses in Macao SAR's AML/CFT framework. The main domestic risk is a sharp property market correction if demand fundamentals shift or interest rates rise sharply, reflecting faster-than-anticipated withdrawal of unconventional monetary policy abroad or increased financial market volatility in its wake.

33. **The current macroeconomic policy stance is appropriate.** The fiscal stance envisaged for 2014 and recent surpluses are sensible, with fiscal reserves providing a cushion to withstand any future downturns. This is especially important given the absence of discretionary monetary policy. There is scope for a further tightening of housing-related taxes and macroprudential policies if property prices continue to rise sharply. The currency board arrangement with the Hong Kong dollar link has served Macao SAR well and should be maintained. Given its small and very open economy, the system provides a crucial nominal anchor and has overseen good economic performance, including keeping the real exchange rate broadly in equilibrium.

34. **Fiscal and prudential policies will need to be recalibrated if shocks hit the economy.** If downside risks materialize, automatic stabilizers and targeted fiscal stimulus could be used to shore up growth. To ease any significant financial strains, liquidity and capital support could temporarily be made available to banks. In the event of a severe property downturn, countercyclical measures enacted in recent years could also be cautiously unwound, without undermining prudent management of financial and systemic risks.

35. **Financial stability has been bolstered in recent years, and attention must now be focused on strengthening the resilience of the banking system to potential risks from the gaming and property sectors, as well as from cross-border financial spillovers.** Progress in implementing the 2011 FSAP recommendations and further strengthening the AML/CFT framework is welcome, and remaining work should be expedited. Prudential measures to manage credit and liquidity risks from a gaming slowdown and the property sector are particularly important. Banks are in a relatively strong position and the supervisory framework is sound. To further mitigate these risks and identify potential weak points, industry-wide stress testing and dynamic provisioning should be established. Given significant lending to the Mainland, Hong Kong SAR, and Portugal, it will also be important to manage spillovers from potential shocks in these jurisdictions. To identify emerging risks, the AMCM should stress test and closely monitor banks' foreign exposures, including through closer cooperation with home supervisors and an assessment of financial stability developments in those jurisdictions. Publicizing more details about the nature of these exposures would also be useful.

36. **To ensure that public finances remain on a sound footing in the coming years, a medium-term budget framework and sovereign wealth fund could be useful.** Looking ahead, Macao SAR's public finances confront a likely slowdown in gaming revenues and a rise in spending needs from population aging. To help secure sustainability, promote transparency and ensure that growth in spending is consistent with development and fiscal objectives, a medium-term budget framework could be useful. In addition, the authorities are appropriately devoting more attention to the sound management of the territory's fiscal reserves. In this context, consideration could also be given to allocating some part of the reserves to a sovereign wealth fund with a clear mandate to achieve better risk-adjusted returns over a long-term horizon, including through a more diversified asset allocation strategy. As in some other countries, such a fund could continue to be managed by the AMCM, with the help of external managers for parts of the portfolio.

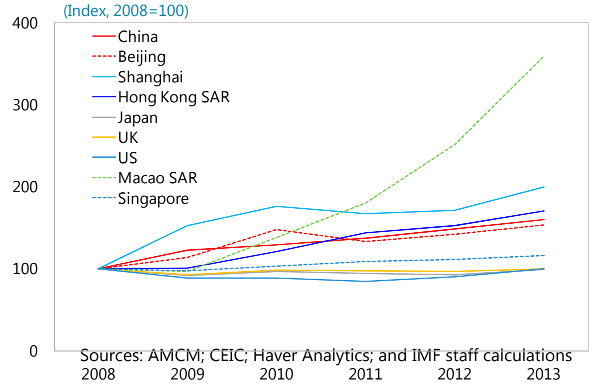
37. **Over the longer term, diversification will help provide an additional growth engine and bolster the economy's resilience.** Growth could slow over time as the gaming matures and faces greater competition from other jurisdictions. The economy's narrow concentration would also leave Macao SAR susceptible to external shocks. Therefore, diversification—particularly into nongaming services—will be key for stable growth over the long term. The authorities are taking several important steps in this regard and there is scope for exploring further opportunities, including through broader integration with the Mainland, financial development, and public investments in infrastructure and human capital.

38. It is recommended that the next Article IV consultation discussions take place on a 24–month cycle.

Box 1. Is There a Housing Bubble in Macao SAR?

Macao SAR's property price growth path has been steeper than in a number of regional and international comparators. Between 2008 and 2013 alone residential property prices more than tripled, while household disposable income is estimated to have increased by about 1.5 times. As discussed below, two empirical approaches were used to relate residential property prices in Macao SAR to a set of fundamentals.

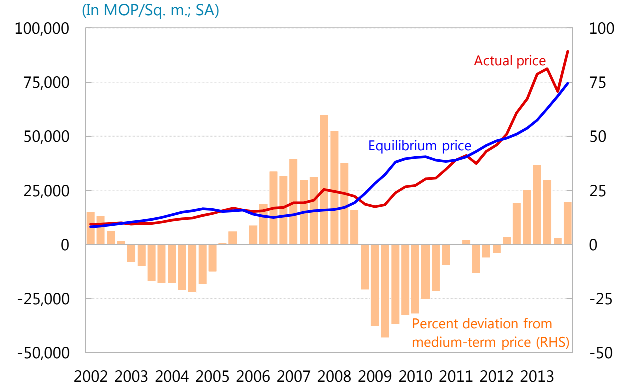
Residential Property Price Growth
(Index, 2008=100)



Sources: AMCM; CEIC; Haver Analytics; and IMF staff calculations

User-Cost Model. The first approach is an asset pricing model that compares the market price with a benchmark based on an equilibrium relationship between prices, rents, and cost of ownership. The model assumes that in a housing market with well-functioning rental and credit markets, the cost of owning a house should be in line with the cost of renting a similar property. Consequently, in a "no arbitrage" situation, the annual market rent would be equal to the annual cost of owning a property (imputed rent). If a deviation occurs between the market rent and the cost of ownership, the model suggests that the market price should move gradually toward the benchmark. By this measure, house prices in Macao SAR may currently be above the benchmark.

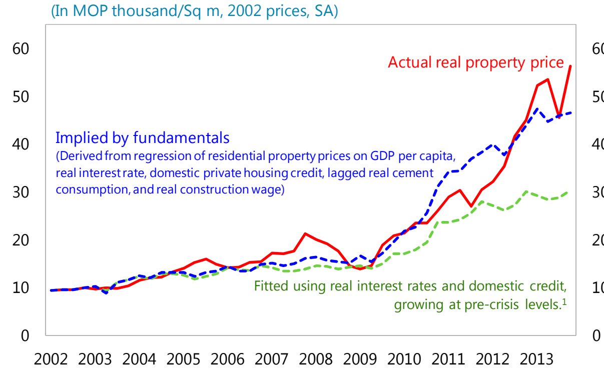
Benchmark and Actual Price
(In MOP/Sq. m.; SA)



Source: IMF staff estimates.

Regression-based Approach. The second approach is based on a regression linking house prices to a set of macroeconomic fundamentals affecting demand (income growth, credit growth, and real interest rates) and supply (construction activity and costs). The baseline results suggest a current overvaluation broadly in line with the 'user cost model.' To illustrate the potential impact of an abrupt tightening of global monetary conditions, the regression estimates were used to calculate what would happen to the equilibrium price if credit growth and the real interest rate were to suddenly return to their 2002–07 average. This exercise also suggests that housing prices would need to adjust downward.

Macao SAR: Real Residential Property Price
(In MOP thousand/Sq m, 2002 prices, SA)



Source: IMF staff estimates.
[1] 2002-2007 average growth rates.

Box 2. Macroprudential Policies: What Can Asian Experiences Imply for Macao SAR?

Macroprudential policy measures (MPPs) are aimed at promoting systemic financial stability by constraining the incentives for excessive risk-taking. They are usually classified into three types: credit-related (e.g., caps on the loan-to-value (LTV) ratio), liquidity-related (e.g., reserve requirements), and capital-related (e.g., countercyclical/time-varying capital requirements). Their objective is to limit the risk of widespread disruptions to the provision of financial services and thereby minimize the impact of such disruptions on the wider economy. The focus is on the financial system as a whole as opposed to individual components.

Asian countries stand out globally as heavy users of MPPs in recent years, with the bulk of measures focused on stability risks arising from overheating property markets. In particular, LTV caps for mortgage loans and debt-to-income limits have been used in China, Hong Kong SAR, India, Indonesia, Korea, Malaysia, Singapore, and Thailand, often together with other real estate lending restrictions and real estate taxes. To address broader-based banking system risks, several economies have also imposed capital measures (Australia), and tightened provisioning rules (India and Sri Lanka), and reserve requirements (China, India, and Sri Lanka).

The choice of instruments depends on country circumstances—notably the degree of economic and financial development, the exchange rate regime, vulnerability to certain shocks, and accompanying macroeconomic policies. For instances, countries with fixed or managed exchange rates tend to use these tools more since the exchange rate arrangement limits the room for conventional interest rate policy.

Among the various macroprudential measures, housing-related instruments have generally had a tangible impact—particularly caps on LTV ratios and the taxation of housing transactions. In particular, such instruments have helped lower credit growth, slow house price inflation and dampen bank leverage in Asia (April 2014 Asia and Pacific *Regional Economic Outlook*).

Policymakers in Macao SAR have also used some policy tools explicitly focused on system-wide risks. Macroprudential guidelines on mortgage lending were established in December 2010, including lower caps on LTV and debt service ratios. Their coverage was extended and a special stamp duty (10–20 percent) imposed in April 2011 and the LTV ratio recommended in the guideline further tightened in October 2012, especially for nonresidents. More recent macroprudential measures include curbs on developer presales, an extension of the special stamp duty to commercial properties and parking spaces, and an additional stamp duty (10 percent) on corporate and nonresident buyers.

These measures helped to somewhat cool the local property market. The market moderated in the first quarter of 2013 and trading activity shrank visibly in the third quarter both on a quarterly and yearly basis. Transactions by nonresidents contracted relatively more sharply, and the LTV ratio witnessed gradual declines. Nevertheless, prices have continued to trend up.

Given the ongoing withdrawal of UMP, policymakers could at some point reconsider these measures to prevent excessive deleveraging in the downward phase of the financial cycle, particularly if it coincides with a weak phase of the economic cycle. Preserving financial stability should be the primary criterion in deciding whether to unwind counter-cyclical prudential measures. Timely easing of MPPs may reduce the likelihood of, and damage from, credit or house price collapses. On the other hand, easing regulation as the economy enters a downturn could lower resilience and jeopardize financial stability going forward. Ultimately, the scope for rolling back will depend on the severity of the financial cycle downswing, the soundness of bank and borrower balance sheets, and the specific MPPs in place. In the case of housing-related tools, the case is stronger if there is adequate capacity for servicing household debt, taking into account likely mortgage rate normalization in the medium term.

Box 3. Progress on Key Recommendations of 2011 FSAP Assessment

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. Currently, the FSA is under review for any necessary revisions to cope with the continuous healthy development of the financial market and the relevant international supervisory standards. In the review, areas in relation to the final decision-making authority in granting and revocation of licenses, and implementing corrective or remedial actions to assure timely and effective bank resolution will be considered.
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 Financial System Act (FSA) and the Charter of the AMCM (Decree Law No. 14/96/M) authorize the AMCM with power of supervision over banks, including the ability to inspect banks, assess applications for licenses, establish regulatory rules, sanction banks, etc. 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 proposing corrective actions in the event of banking problems 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.	Onsite inspection manual has been completed. New areas of focus have been added as the banking industry has developed.
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.	The on-going review of the FSA is considering this issue. The authorities note that this is de facto a standing practice adopted by Macao SAR banks.
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 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.	Credit risk returns have been revised, and offsite analysis has been enhanced by reinforcing the trend analysis for individual banks. Furthermore, good communication with their parent financial institutions and participation in supervisory colleges organized by home supervisors has 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.	The on-going review of the FSA is considering this issue.
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.	AMCM completed the "On-site Examination Procedures Manual for the Insurers" in mid-2013 and since 2009, examiners from the Insurance Supervision Department have attended periodical trainings relating to on-site and off-site supervision topics (organized by the International Association of Insurance Supervisors (IAIS) and others). Findings of the on-site inspections were communicated to the insurers concerned, and follow-up actions taken by the insurers were continuously monitored. Relating to the analysis of claims performance of nonlife insurers, the AMCM has developed a framework to collect the 'claims triangle for nonlife insurers relating to the major classes of

	insurance' and such data shall be collected annually from locally incorporated insurers starting from 2014. These data shall enable the AMCM to analyze the claims performance and trends in its off-site supervisory regime.
8. AMCM should arrange MOUs with the insurance regulators in the jurisdictions where no such arrangement exists.	Since 2009, three new MOUs have been signed with overseas insurance regulators, bringing total MOUs to 12. 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.
9. To enhance transparency and credibility of accounting system, adopt the IFRS system in full.	Macao SAR has selectively adopted individual IFRSs into its accounting framework as Macao Accounting Standards (MASs), which became compulsory after January 2007. The Macao SAR Government plans for a full adoption of the IFRS and the relevant works are in progress. To date, Macao SAR has adopted 1 IFRS and 15 IASs.
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.

Box 4. How Vulnerable is Macao SAR to Financial Spillovers?

Network analysis is used to identify systemically important banking systems for the domestic banking sector in an economy. Based on the methodology of Espinosa-Vega and Sole (2011), it assumes extreme tail risks, that is, the failure of the banking system of a country, in tracking the contagion paths of hypothetical shocks across countries in the global banking network. It exploits data on cross-border claims and economy-specific measures of banking system resilience.

The analysis models the domino effects of two types of shocks: a credit shock triggered by the default of a banking system's interbank obligations, and a funding shock triggered by the distress of a banking system that leads to a liquidity squeeze and associated fire sale losses in countries dependent on funding from the distressed system.

Despite its extreme assumptions, network analysis is useful in ranking risks from different banking systems and identifying channels of potential spillovers. The analysis considers scenarios that allow for interbank exposures. The analysis performed for Macao SAR banks includes 27 banking systems, using BIS data on cross-border interbank exposures.[1] For the credit shock, a loss given default rate of 80 percent is assumed. For the funding shock, 35 percent of the lost funding is assumed to be irreplaceable and a loss of 80 percent from fire sales is assumed. The results suggest that:

- ***Credit shocks from the Mainland, Hong Kong SAR, and Portugal represent by far the three biggest potential risks for the Macao SAR banking system.*** This is not surprising given the rapid expansion in Macao SAR banks' exposure to these three jurisdictions. Australia represents another tier of risk to the Macao SAR banking system.
- ***Compared with a credit shock, the potential capital loss from a funding shock is smaller,*** reflecting Macao SAR banks' relatively limited dependence on offshore funding. Nevertheless, Hong Kong SAR and Mainland China represent the biggest risks from a funding shock.

Network analysis can also be used to estimate the outward spillovers of a credit or funding shock originating in Macao SAR. Similar to the case of inward spillovers, the impact of a credit shock is larger than that of a funding shock. For credit shocks originating in Macao SAR, the impact seems greatest on Hong Kong SAR. For funding shocks originating in Macao SAR, the impact would be largest for Portugal, followed by Hong Kong SAR.

Several policy implications can be drawn from this analysis:

- ***Cross-border collaboration—especially with Mainland China, Hong Kong SAR, and Portugal supervisors—is important***. Due to large exposures and potential spillover risks detected in our analysis, continued close collaboration with Mainland, Hong Kong SAR, and Portuguese supervisors would be especially useful. Collaboration with Australia is also important.
- ***Ensuring financial stability in Macao SAR will require continued careful surveillance of potential vulnerabilities overseas, especially in the Mainland and Hong Kong SAR.*** Financial spillover risks from Chinese and Hong Kong banks are already large, and are likely to increase as Macao SAR banks expand in this region.

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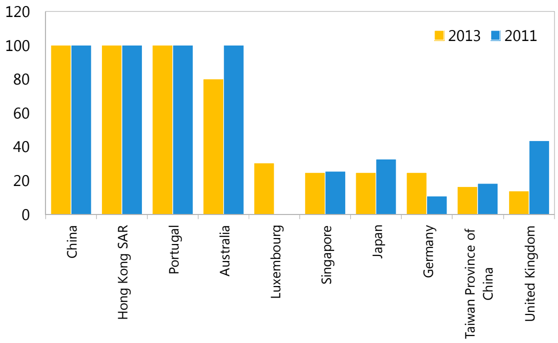
[1] Bilateral exposure data come from the BIS consolidated banking statistics and are available as of end-September 2013 (Table 9D of BIS statistics) except for three countries—China, Korea, and New Zealand, who do not report consolidated banking statistics to the BIS. Their exposures are inferred from the foreign claims and liabilities of other countries. Data on banking sector capital are obtained mainly from IMF's *Financial Soundness Indicators* database (www.fsi.org) and country authorities. A consistent definition of capital (Tier I) is used, as of end-September 2013 or latest available data.

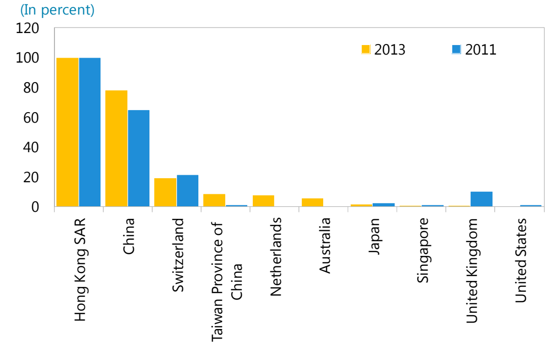
Box 4. How Vulnerable is Macao SAR to Financial Spillovers? *(concluded)*

- ***Strengthening data availability for cross-border exposures.*** Network analysis illustrates financial linkages and spillovers based on foreign claims of banking system. Data on the maturity, funding bases, and sectoral allocation of such foreign claims are not available from the BIS. Strengthening data collection and application would be key for effective macroprudential oversight.

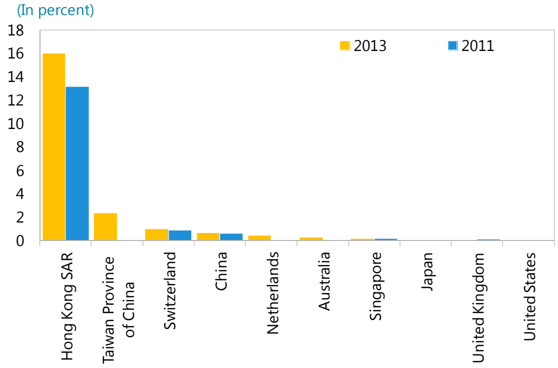
Loss in Macao Banking System Capital due to Distress in Other Banking Systems
(In percent)



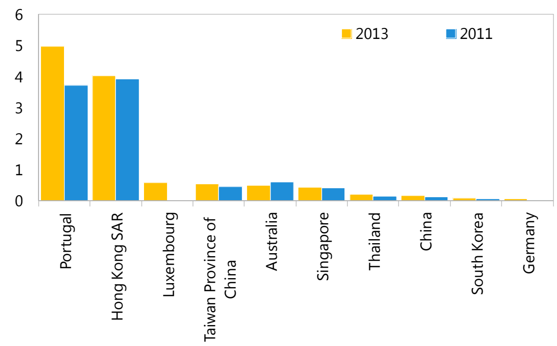
Loss in Macao Banking System Capital due to Loss of Funding from Other Banking Systems
(In percent)



Loss in Other Banking Systems Capital due to Distress in Macao Banking System
(In percent)



Loss in Other Banking Systems Capital Due to Loss of Funding from Macao Banking System
(In percent)



Source: IMF staff estimates.

Box 5. External Sector Assessment

Staff assesses Macao SAR's external position to be broadly consistent with medium-term fundamentals and desirable policies. This finding is supported by empirical estimates of the real exchange rate, as well as consideration of the balance of payments and the dynamics of its net foreign assets position.

International asset position and foreign reserves. Macao SAR has significant net foreign assets of around 170 percent of GDP. External sector sustainability is likely to be maintained owing to the persistent balance of payments surplus over the medium term. As in other financial centers, Macao SAR has large gross external financial assets (over two times GDP) and liabilities (around the same size as GDP). A slight valuation change could affect NFA levels without hampering external sustainability. At the same time, Macao SAR has built up reserves (around 30 percent of GDP) in a nondiscretionary manner through the operation of the currency board. This build-up also helps provide cover against volatile shocks, to which the economy is highly vulnerable due to its openness and narrow base. In addition, the government has fiscal reserves of about 60 percent of GDP, sufficient to cover 50 months of public spending. Part of the fiscal reserves could be set aside for meeting future spending needs.

Real exchange rate. The REER appreciated by 5½ percent in 2012 and 3½ percent in 2013. Three techniques are used to assess the real exchange rate—Macrobalance (MB), Equilibrium Real Exchange Rate (ERER), and External Sustainability (ES). The estimation of MB and ERER are based on a sample of 56 developed and emerging economies, and a separate sample of 14 offshore and international financial centers.[1] Empirical results point to a wide range of estimates both within and across techniques, which is not surprising because financial centers are more prone to valuation changes, given their large gross external asset and liabilities positions. Based on these considerations, the real exchange rate is assessed to be broadly consistent with medium-term fundamentals and desirable policies.

Macao SAR: Exchange Rate Assessment

(Misalignment from medium-term fundamental, in percent)

Approach	Sample	Baseline Results Lower	Baseline Results Mean	Baseline Results Upper
MB	56 economies	-43	-26	-8
	14 offshore/financial centers	-36	-18	-1
ERER	56 economies	-20	-15	-9
	14 offshore/financial centers	6	13	21
ES	56 economies	-66	-64	-62
	14 offshore/financial centers	-42	-40	-38

Source: IMF staff estimates.

Balance of payments flows.

- ***Current account.*** The current account surplus briefly fell below 20 percent of GDP on income repatriation and a drop in tourist arrivals following the global financial crisis but has since recovered to around 44 percent of GDP, reflecting strong gaming exports. As the gaming sector slows to a more sustainable pace and domestic demand continues to grow, the current account surplus is expected to moderate toward 35 percent of GDP. The merchandise trade deficit should rise and the income balance remain in deficit, reflecting the strong profits of (nonresident) casino operators.

- ***Capital and financial accounts.*** As a small open economy and offshore center, gross inflows and outflows are large relative to the economy (at over 15 and 50 percent of GDP, respectively). However, Macao SAR is a large net exporter of capital and has not experienced major non-FDI capital inflows, owing to the persistent surplus position of the public and private sectors and lack of domestic money or capital market instruments. Macao SAR's strong financial institutions, together with robust regulation and supervision, help contain risks from capital flows. As a result, Macao SAR has been able to maintain external sustainability with a fully open capital account and its currency board regime.

[1] Techniques employed in the External Balance Assessment (EBA) are acknowledged not to be well suited for offshore financial centers.

Box 6. Sovereign Wealth Funds: What Could International Experience Imply for Macao SAR?

Over the past decade, Macao SAR has experienced a rapid accumulation of foreign exchange and fiscal reserves. This reserves buildup, its sources, and future outlook raise important policy questions in terms of making appropriate investment decisions that are in line with Macao SAR's macroeconomic goals.

Sovereign Wealth Funds: International Experiences

International experiences show that foreign exchange and fiscal reserves are most often managed in two major ways. One option is to manage reserves on the central bank balance sheet with a long-term perspective. Often reserves are split into tranches, such as a liquidity tranche and an investment tranche, and the latter could be amplified and its mandate expanded to a longer horizon. For instance, the Hong Kong Monetary Authority separates foreign reserves into two portfolios, the Backing Portfolio and the Investment Portfolio. Another option is to set up Sovereign Wealth Funds (SWFs), which are special-purpose investment funds or arrangements that are owned by the general government for macroeconomic purposes. SWFs hold, manage, or administer assets to achieve financial objectives, and employ a set of investment strategies that include investing in foreign financial assets.

SWFs have been created by governments for different objectives. Five types of SWFs can be broadly distinguished based on their main objective: (i) *stabilization funds*, where the primary objective is to insulate the budget and the economy against commodity (usually oil) price swings; (ii) *savings funds* for future generations, which aim to set aside funds for the future needs of the economy, or of specific groups such as pensioners, or for future generations; (iii) *reserve investment corporations*, whose assets are often still counted as reserve assets, and are established to improve the potential return; (iv) *development funds*, which typically help fund socioeconomic projects or promote industrial policies that might raise a country's potential output growth; and (v) *pension reserve funds*, which provide (from sources other than individual pension contributions) for contingent pension liabilities on the government's balance sheet.

The asset allocation of SWFs varies widely depending on many factors, such as the objectives, type, investment horizon, funding source, and asset-liability management framework. For instance, stabilization funds should generally have conservative asset allocation, using shorter investment horizons and low risk-return profiles. By contrast, saving funds may seek to maximize return by having longer investment horizons and riskier investment strategies, and pension reserve funds can derive their investment horizons from the timing of the future anticipated liabilities falling due, which can be decades in the future.

SWFs may diversify their asset across two spectra: asset class and geography. Assets can be diversified to four classes: cash, fixed income, equities, and alternative assets. On average, SWFs tend to have a portfolio with a split of about 45:25:30 between equities, bonds, and alternative assets. Geographically, SWFs gradually have begun to shift assets away from investments in industrial economies and toward those in emerging economies.

A variety of institutional arrangements are possible for SWFs. SWFs could be established simply as central government accounts managed by the central bank (as in Norway and Kazakhstan), or as agencies managing international reserves under the government's direction (Government of Singapore Investment Corporation, Korea Investment Corporation), or set up as separate public entities (Temasek in Singapore, Kuwait Investment Authority). Regardless of the institutional arrangements, the operational management of the SWFs should be conducted on an independent basis to minimize potential political influence or interference that could hinder the achievement of its objectives.

Implications for Macao SAR

Supported by a growing service-trade surplus associated with the gaming boom, Macao SAR has rapidly accumulated international and fiscal reserves over the past decade. By 2011, Macao SAR's foreign exchange reserves reached US$ 34 billion, equivalent to over 90 percent of GDP. In 2012, Macao SAR adopted

Box 6. Sovereign Wealth Funds: What Could International Experience Imply for Macao SAR? *(concluded)*

the fiscal reserve law and transferred some international reserves to fiscal reserves, which reached US$30 billion as of January 2014, or nearly 60 percent of GDP. Fiscal reserves are split into a basic reserve and excess reserves, with the former meant as a buffer to cover 18 months of central government expenditure and the latter's mandate being expanded to a longer horizon.

The foreign exchange and fiscal reserves have achieved a relatively good return since the handover. During 1999-2013, the average return of the Macao SAR foreign reserve and reserve funds has been higher than Macao SAR's inflation and the average inflation in the United States, euro area and Hong Kong SAR. Illustrating the trade-off between risk and yield, returns since the onset of the global crisis in 2008 have been less volatile but, at annual average of 1½ percent, somewhat lower than for a number of sovereign wealth funds worldwide. To further improve reserves management, the AMCM has taken a more proactive approach to investing fiscal reserves. The AMCM introduced more investment vehicles and diversified asset allocations, such as holding RMB bonds and obtaining Qualified Foreign Institutional Investor (QFII) status for investment in the Mainland. Since this year, the AMCM has decided to invest around 10 percent of the fiscal reserves in equities by exploring further investment opportunities in the Mainland and overseas equity markets, diversifying asset allocations, and optimizing the portfolio weights to increase the medium- and long-term investment return.

Looking ahead, the ongoing reserves accumulation, increasing aging-related expenditures and the possibility of a prolonged period of low global real interest rates may impose more pressure to improve investment return. First, further accumulation of fiscal reserves, along with the gaming boom, would necessitate more effective management of the incoming resources. Second, increasing aging-related expenditures creates a need to secure future welfare or finance the future obligations. Third, according to IMF staff research in the April 2014 *World Economic Outlook*, global real interest rates could stay low in the medium term, which would place a further premium on undertaking a prudent search for yield.

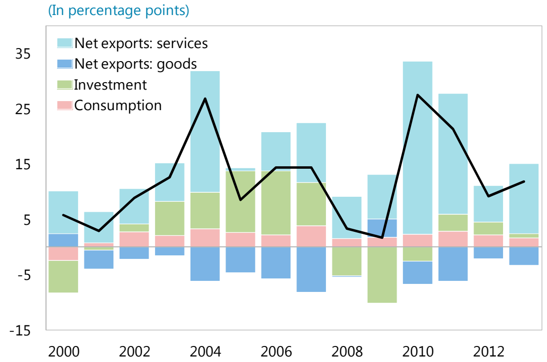
In this context, one option may be to assign a portion of the excess fiscal reserves to a SWF, which could continue to be managed by the AMCM. Setting up a SWF with a clear mandate to improve risk-adjusted returns over a long horizon, subject to a well-defined tolerance for risk, would help to better smooth intertemporal consumption and redistribute wealth across generations. The long-term investment horizon should help diversify strategic asset allocations and achieve higher risk-adjusted returns over the medium term, albeit at the cost of periods of short-term volatility. In the case of Macao SAR, it may be more cost-efficient to have such a fund managed by the AMCM. This institutional arrangement would not impact the AMCM's income and balance sheet, and could make use of existing infrastructure and human resources, including experience in hiring and monitoring external managers.

Operation, accountability, and reporting lines should be clear and consistent with international best practice, as outlined in the "Santiago Principles." Regardless of the institutional arrangements, operational independence should be embedded in a clear legal foundation and internal governance structure, where the decision making framework and oversight function are clear and the relationship between the principal (owner) and its agent is well established. Moreover, timely and accurate reporting of investment activities to the owner helps ensure that the operation is integrated into the macroeconomic policy making process with full accountability and transparency.

Figure 1. Key Economic Features

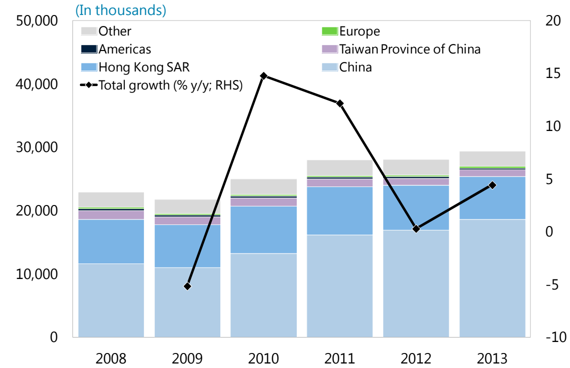
Macao SAR's economy has been volatile, but average growth has been high over the last decade, propelled by service exports and private investment…

Real GDP: Contribution to Growth
(In percentage points)



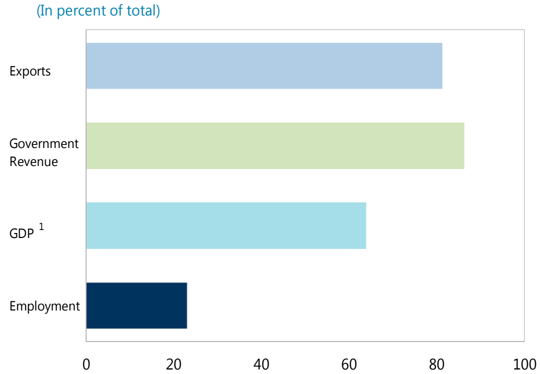
…catering to the strong influx of tourists, mainly from the Mainland and Hong Kong SAR…

Visitor Arrivals
(In thousands)



…who visit predominantly for gaming activity, which forms the core of the economy…

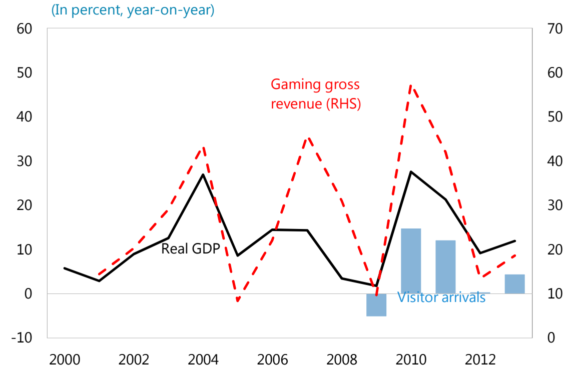
Gaming Industry
(In percent of total)



[1] Percent of GDP at current producer prices, 2012.

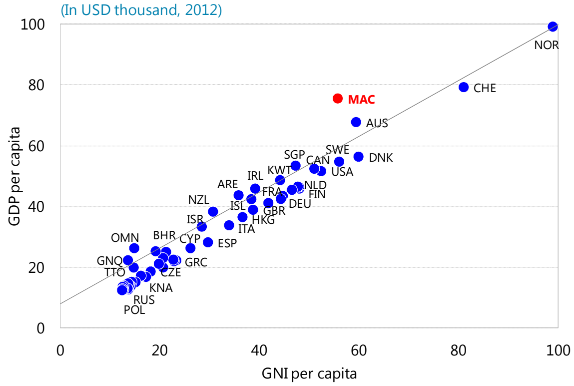
…and is the paramount driver of economic growth.

Gaming, Tourism, and Growth
(In percent, year-on-year)



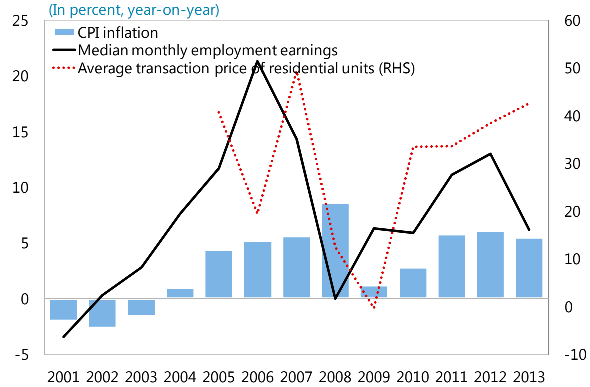
The gaming boom has lifted per capita incomes to among the highest in the world…

GDP and GNI per Capita
(In USD thousand, 2012)



…but also raised inflationary pressures.

Inflation, Property Prices, and Wages
(In percent, year-on-year)

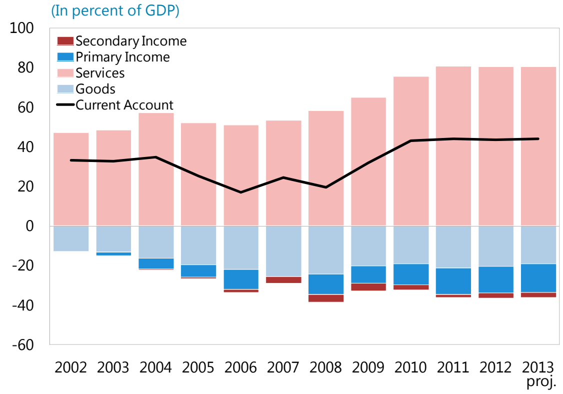


Sources: CEIC; World Bank Atlas; IMF, WEO; and IMF staff calculations.

Figure 2. External Position

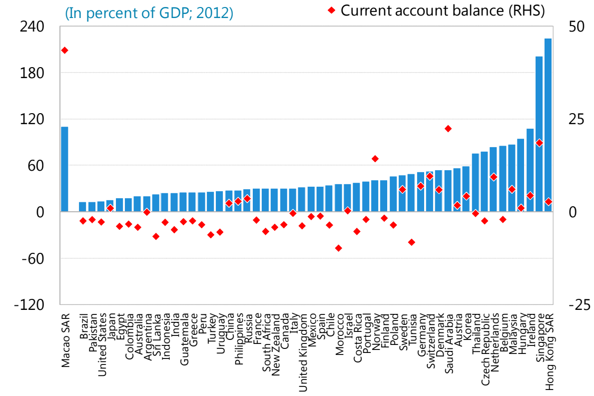
The current account surplus has remained large throughout the last decade, with services exports more than offsetting deficits in all other items...

Current Account and Components
(In percent of GDP)



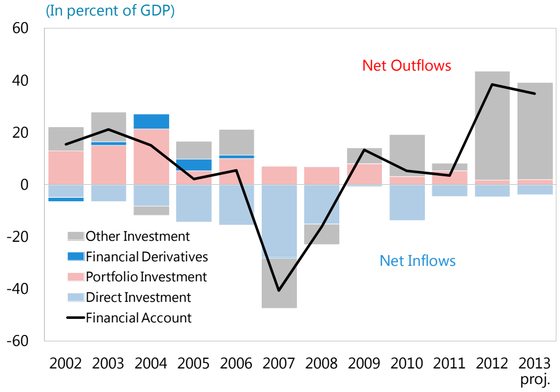
...and is high by international standards, reflecting strong gaming exports, but which are expected to slow over time.

Current Account Balance
(In percent of GDP; 2012)



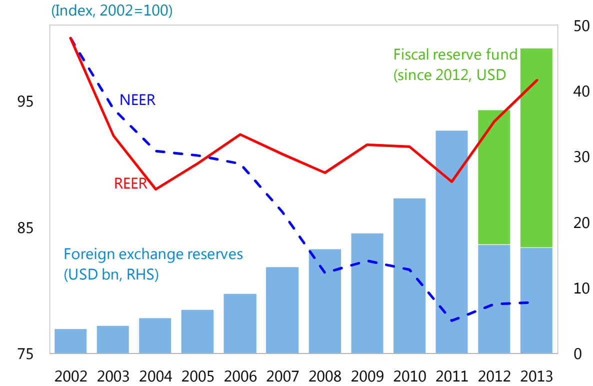
The financial account has registered sizeable net outflows in recent years, on the back of increased bank lending abroad.

Financial Account and Components
(In percent of GDP)



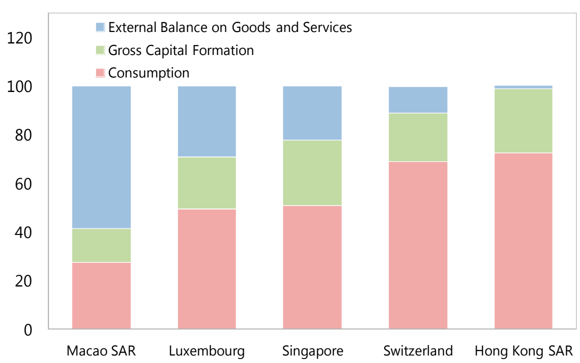
...with the overall balance of payments surplus resulting in a build-up of foreign reserves despite an appreciation in the REER in the last two years, accentuated by inflation differentials...

Effective Exchange Rate and Reserves
(Index, 2002=100)



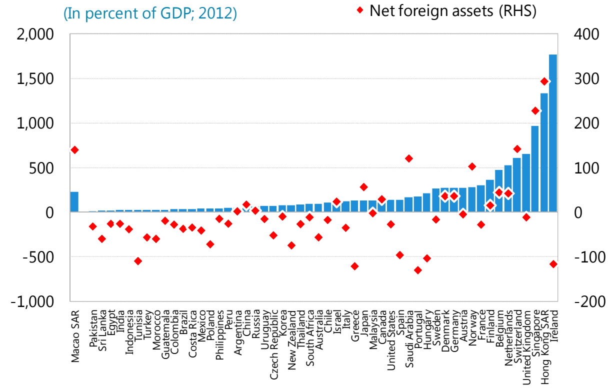
The external balance dominates GDP given the territory's openness ...

Consumption, Investment and External Balance
(In percent of GDP)



...contributing to high foreign assets and liabilities, and large net foreign assets.

External Assets
(In percent of GDP; 2012)

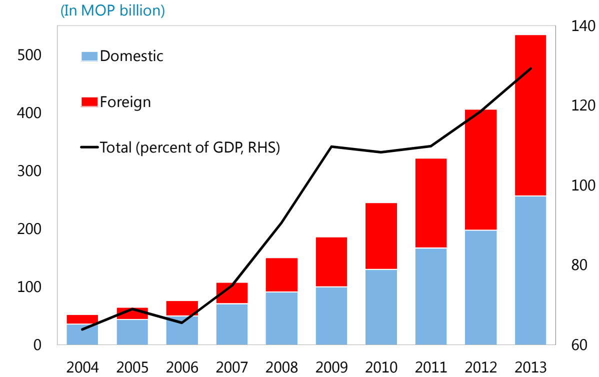


Sources: Bloomberg; CEIC; Haver Analytics; IFS; IMF, Information Notice Systems; IMF, WEO; IMF, WEO: Lane and Milesi-Ferretti (2007) dataset; World Bank, WDI; and IMF staff calculations.

Figure 3. Banking Sector Developments

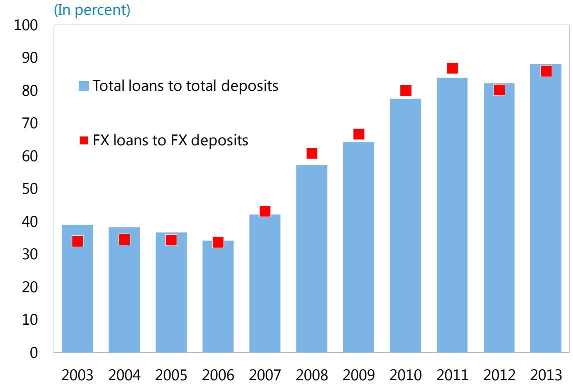
Bank lending has increased significantly since the global crisis, including outside Macao SAR…

Bank Lending
(In MOP billion)



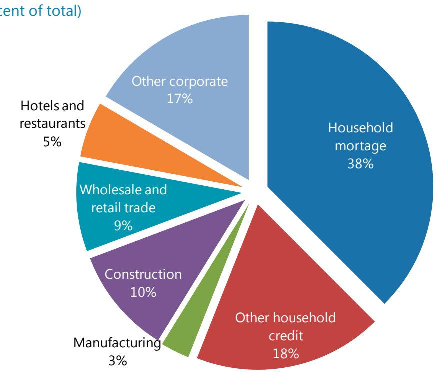
…funded through domestic deposits, which have also grown rapidly.

Loan-to-deposit ratios
(In percent)



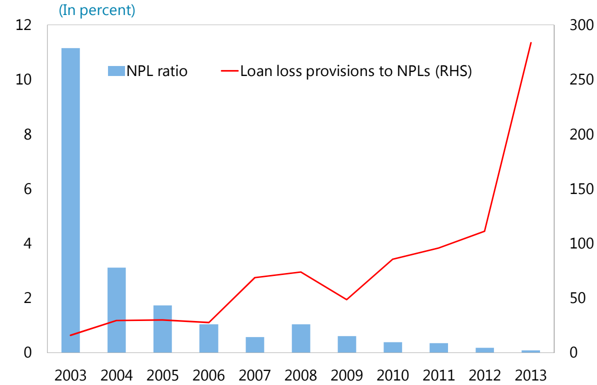
Domestically, real estate and construction are the main recipients of bank lending…

Domestic Lending by sector
(In percent of total)



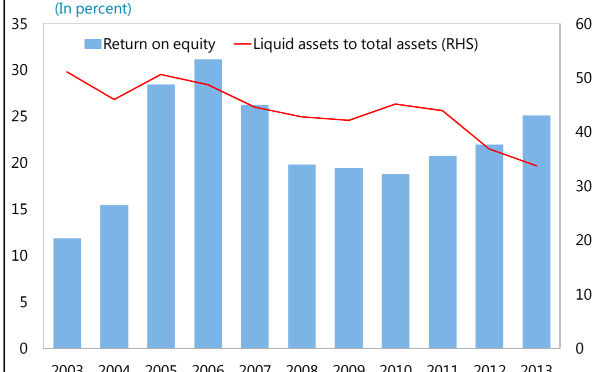
…and asset quality has improved significantly since the banking crisis in the early 2000s…

Asset Quality
(In percent)



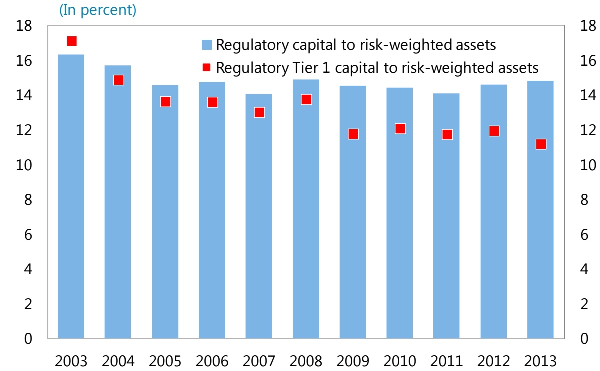
…as has bank profitability, although liquidity ratios, while healthy, have declined somewhat,…

Profitability and Liquidity
(In percent)



…allowing banks to maintain strong capital buffers.

Capital Adequacy[1]
(In percent)



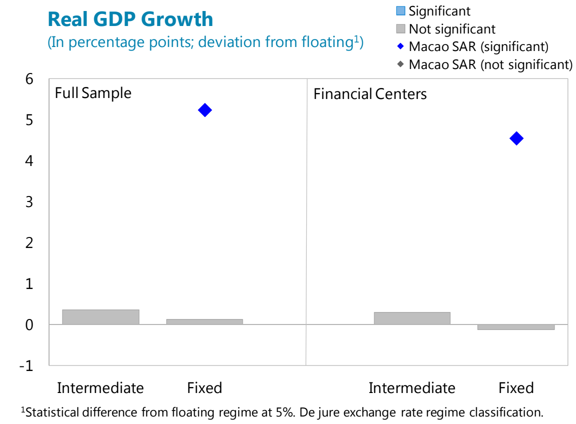
[1] Locally incorporated banks only.

Source: AMCM; CEIC; and IMF staff calculations.

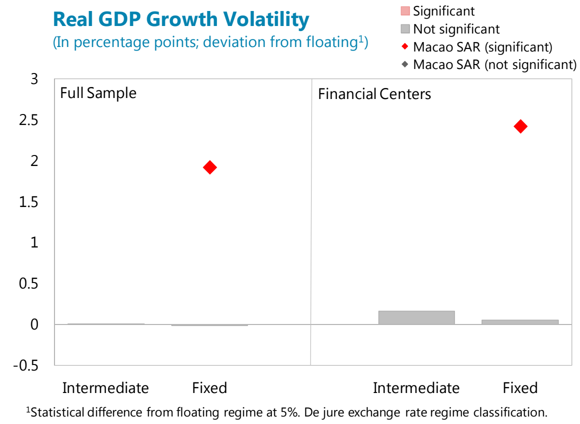
Figure 4. Macao SAR's Macroeconomic Performance: Does the Exchange Rate Regime Matter?

Macao SAR's macroeconomic data indicate higher average growth than other economies with fixed or more flexible exchange rates, but its economy has also experienced higher inflation and been somewhat more volatile. 1/

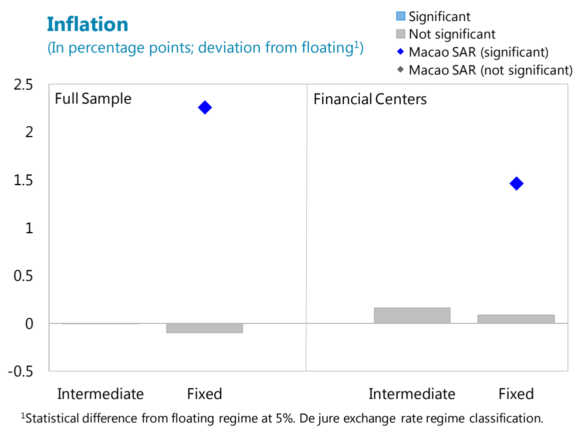
Macao SAR's average real growth has been significantly higher than that of other economies…



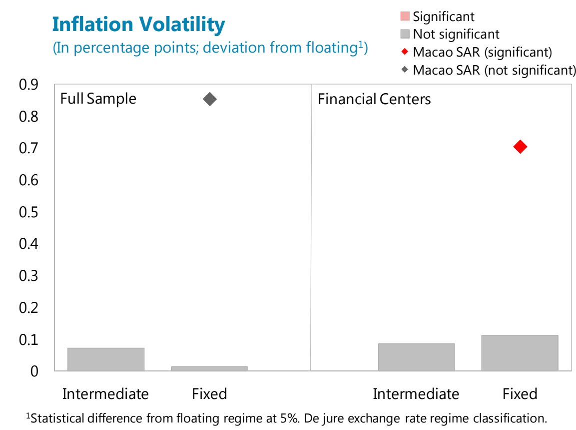
…and also more volatile than other economies with more flexible exchange rate regimes and financial/offshore centers.



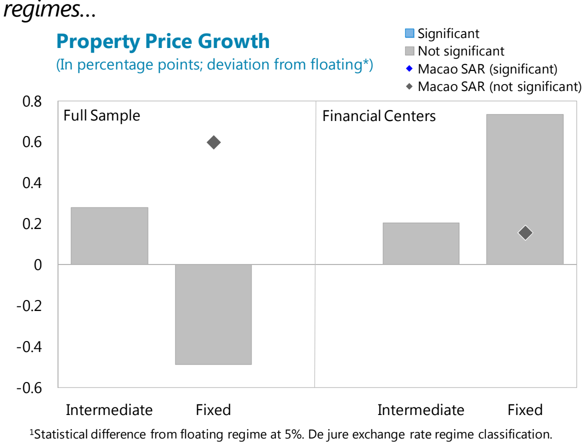
Inflation has also been higher in Macao SAR than in other economies …



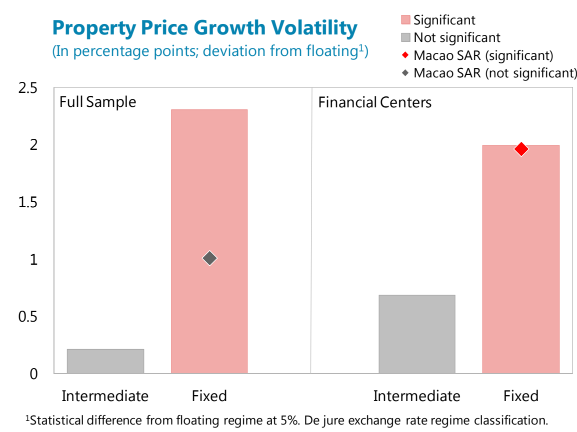
… and more volatile than in financial/offshore centers.



Housing prices have on average increased at the same speed in Macao SAR as that across different exchange rate regimes…



… although they are more volatile for all countries with fixed exchange rate regimes, including Macao SAR.

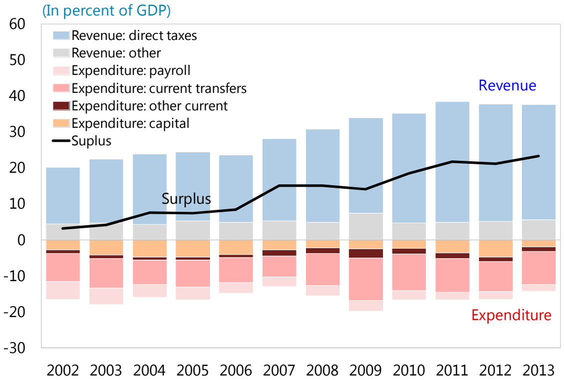


Sources: Bloomberg; CEIC; Haver Analytics; IMF, International Financial Statistics; IMF, WEO; and IMF staff calculations.
1/ The average performance and volatility are estimated after controlling for a range of macroeconomic fundamentals (terms of trade, openness, investment, government revenue and spending, money supply, interest rates, population growth, population density) and exchange rate regimes.

Figure 5. Fiscal Outlook

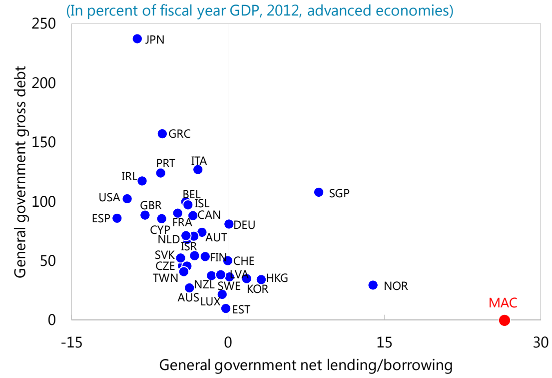
Government surpluses have grown in recent years…

Central Government: Revenue and Expenditure
(In percent of GDP)



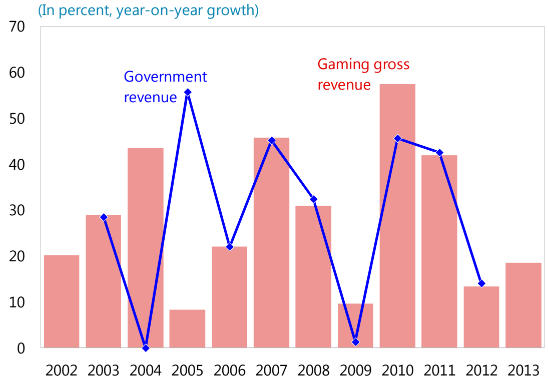
…on the back of prudent fiscal management…

General Government Gross Debt and Balance
(In percent of fiscal year GDP, 2012, advanced economies)



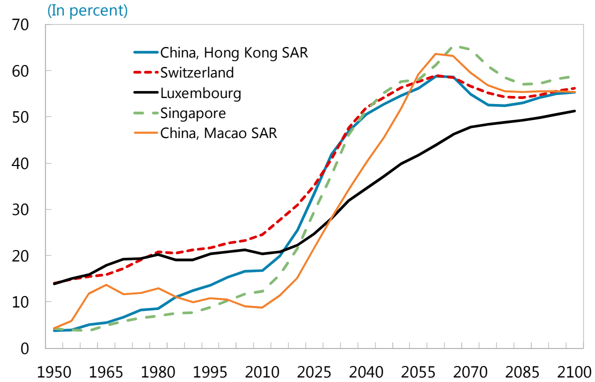
… as well as booming—but extremely volatile—gaming revenues that are likely to slow in the future.

Gaming and Government Revenue
(In percent, year-on-year growth)



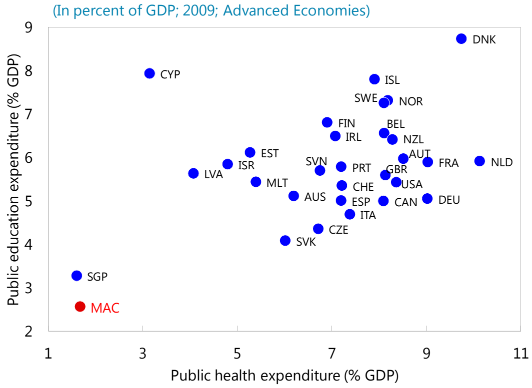
Expenditure is expected to increase over time, with the population set to age significantly.

Old-Age Dependency Ratio 65+/(15-64)
(In percent)



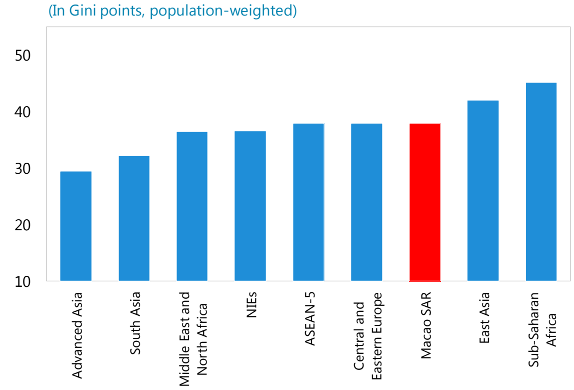
Macao SAR also confronts a short-fall in public spending in social sectors…

Public Education and Health Expenditure
(In percent of GDP; 2009; Advanced Economies)



…which may be contributing to high inequality—these trends necessitate long-term planning and judicious use of Macao SAR's current gaming-dependent fiscal reserves.

Inequality: Latest Gini Indices
(In Gini points, population-weighted)



Sources: AMCM; CEIC; IMF, WEO; Macao Economic Association; Milanovic (2010); United Nation World Population Prospects: The 2010 Revolution; WIDER income inequality database; World Bank, PovcalNet database; World Bank, WDI; national authorities; and IMF staff calculations.

Table 1. Macao SAR: Selected Economic and Financial Indicators

	2007	2008	2009	2010	2011	2012	2013	2014	2015
								Projected	
	(Annual percentage change, unless otherwise specified)								
National accounts									
Real GDP	14.3	3.4	1.7	27.5	21.3	9.1	11.9	9.0	10.0
Total domestic demand	16.9	-5.0	-12.8	-0.1	13.8	11.0	6.0	6.0	13.6
Consumption	11.0	4.6	5.1	6.6	9.6	8.1	6.3	6.0	6.0
Investment	23.0	-14.1	-33.5	-12.6	23.0	16.8	5.4	6.0	27.6
Net exports 1/	2.5	7.1	10.3	27.4	15.2	4.6	9.4	6.7	4.8
Exports	22.5	9.1	-1.5	44.4	28.5	7.2	12.0	9.5	7.9
Imports	29.1	2.2	-18.7	29.1	29.9	6.4	7.2	7.6	8.2
Prices and employment									
Headline inflation (average)	5.6	8.6	1.2	2.8	5.8	6.1	5.5	5.5	5.4
Housing prices	49.3	12.5	-0.3	33.5	33.6	38.4	42.6	...	...
Median monthly employment earnings	14.3	0.0	6.3	5.9	11.1	13.0	6.2	...	...
Unemployment rate (annual average)	3.2	3.0	3.5	2.8	2.6	2.0	1.8	1.7	1.7
	(In percent of total)								
Economic structure									
Secondary sector	19.1	17.2	10.9	7.3	6.5	6.2	...	...	...
Of which: manufacturing	2.9	2.1	1.5	0.8	0.7	0.7	...	...	...
Of which: construction	15.1	14.0	8.2	5.4	4.9	4.7	...	...	...
Tertiary sector	80.9	82.8	89.1	92.7	93.6	93.8	...	...	...
Of which: public administration, other community, social & personal services (including gaming)	43.7	44.3	47.8	55.1	57.6	57.7	...	...	...
	(In thousands)								
Employment	293.0	317.1	311.9	314.8	327.6	343.2	361.0	...	...
Of which: foreign workers	85.2	92.2	74.9	75.8	94.0	110.6	137.8	...	...
Manufacturing	20.7	24.3	16.4	15.2	12.8	10.3	9.0	...	...
Construction	31.1	37.6	31.8	27.1	28.2	32.3	35.3	...	...
Tertiary sector	239.5	253.8	261.5	271.0	284.2	298.1	314.6	...	...
Of which: gaming	62.6	65.3	61.6	62.8	70.1	78.8	83.3	...	...
	(In percent of GDP)								
Balance of payments 2/									
Current account, net	24.3	19.4	32.0	42.9	44.1	43.5	44.0	43.6	41.1
Trade balance of goods and services, net	27.6	33.8	44.5	56.1	59.2	59.7	60.9	60.8	58.6
Goods balance	-25.7	-24.4	-20.4	-19.3	-21.2	-20.5	-19.3	-19.4	-19.2
Services balance	53.3	58.1	64.9	75.4	80.4	80.2	80.3	80.2	77.8
Foreign exchange reserves 3/	73.3	76.8	86.1	83.7	92.9	38.6	31.2	...	...
(In billions of US dollars)	13.2	15.9	18.4	23.7	34.0	16.6	16.1	...	...
Saving and investment									
Gross capital formation	37.5	31.0	18.9	13.3	13.9	14.7	13.8	13.5	15.8
National saving	61.8	50.5	50.8	56.2	57.2	56.8	57.8	57.2	56.9
Central government finance									
Revenue	28.0	30.7	33.9	35.1	38.4	37.7	37.6	37.5	37.4
Expenditure	13.0	15.6	19.9	16.6	16.7	16.5	14.3	16.9	17.6
Overall balance	15.1	15.1	14.0	18.5	21.7	21.2	23.3	20.6	19.8
Fiscal reserves 4/	...	...	...	...	...	47.8	58.7	...	...
	(Annual percentage change)								
Financial sector									
Loans	42.2	38.7	23.9	31.6	31.2	26.2	31.4	...	...
Resident	42.3	27.4	10.2	29.3	28.5	18.4	29.6	...	...
Mortgages	43.7	20.9	26.3	45.6	25.3	29.2	25.9	...	...
Nonresident	42.1	60.6	45.2	34.4	34.3	34.6	33.2	...	...
Interest rates									
Discount window base rate (eop)	5.8	0.5	0.5	0.5	0.5	0.5	0.5	...	...
Saving deposit rate (average)	2.1	0.1	0.0	0.0	0.0	0.0	0.0	...	...
MAIBOR 3-month (eop)	3.5	0.9	0.2	0.3	0.4	0.4	0.4	...	...
Tourism									
Visitor arrivals	...	...	-5.1	14.8	12.2	0.3	4.4	...	...
Gaming revenue	45.8	31.0	9.6	57.5	41.9	13.4	18.6	...	...
Exchange rate									
MOP/USD, period average	0.4	-0.2	-0.4	0.2	0.2	-0.4	0.0	...	...
Nominal effective exchange rate	-4.3	-5.6	1.1	-0.8	-5.0	1.7	-0.1	...	...
Real effective exchange rate	-1.7	-1.6	2.5	-0.2	-3.1	5.4	3.5	...	...
Memorandum items:									
Per capita GDP (in thousands of US dollars)	34.7	38.4	39.8	52.8	66.7	75.5	87.3	...	...

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

1/ Contribution to annual growth in percent.

2/ BPM6 methodology. Current account, net for 2013 is staff projection.

3/ Part of foreign reserves transferred to fiscal reserve fund since 2012.

4/ Balance as of January of following year, after approval by Legislative Assembly.

Table 2. Macao SAR: Medium-Term Macroeconomic Framework

	2011	2012	2013	2014	2015	2016	2017	2018	2019
				Projected					
				(Annual percentage change)					
National accounts									
Real GDP	21.3	9.1	11.9	9.0	10.0	9.0	8.0	6.0	5.0
Total domestic demand	13.8	11.0	6.0	6.0	13.6	14.7	13.7	1.1	1.4
Consumption	9.6	8.1	6.3	6.0	6.0	6.0	6.2	6.5	6.5
Investment	23.0	16.8	5.4	6.0	27.6	28.1	23.3	-4.8	-4.8
Net exports 1/	15.2	4.6	9.4	6.7	4.8	3.2	2.3	5.5	4.4
Consumer prices and employment									
Headline inflation (average)	5.8	6.1	5.5	5.5	5.4	5.2	5.1	5.0	5.0
Unemployment rate	2.6	2.0	1.8	1.7	1.7	1.7	1.7	1.7	1.7
				(In percent of GDP)					
Gross capital formation	13.9	14.7	13.8	13.5	15.8	18.6	21.2	19.1	17.3
Gross national saving	57.2	56.8	57.8	57.2	56.9	56.6	56.1	55.1	53.9
				(In millions of US dollars)					
Balance of payments 2/									
Current account, net	16,158	18,710	22,772	24,866	26,136	26,863	27,332	30,553	33,268
Current account, net (percent of GDP)	44.1	43.5	44.0	43.6	41.1	38.0	34.9	36.0	36.5
Trade balance of goods and services, net	21,669	25,664	31,537	34,665	37,263	39,421	41,412	45,929	49,883
Goods balance	-7,784	-8,795	-10,003	-11,029	-12,196	-14,103	-16,399	-17,815	-19,603
Services balance	29,453	34,459	41,540	45,693	49,459	53,524	57,811	63,744	69,486
Primary Income	-4,960	-5,819	-7,387	-8,277	-9,423	-10,657	-11,970	-13,087	-14,155
Secondary Income	-551	-1,134	-1,378	-1,522	-1,704	-1,901	-2,110	-2,289	-2,461
Capital account, net	1,329	0	250	250	250	250	250	250	250
Financial account, net	11,451	20,264	23,022	25,116	26,386	27,113	27,582	30,803	33,518
Direct investment, net	-1,689	-2,100	-2,069	-2,128	-2,164	-2,197	-2,224	-2,274	-2,329
Portfolio investment, net	1,879	748	966	1,085	1,242	1,411	1,591	1,743	1,887
Financial derivatives, net	44	-61	-73	-81	-90	-100	-111	-120	-129
Other investment, net	1,038	17,906	19,246	20,807	22,647	24,810	26,945	28,626	30,083
Reserve assets (net change) 3/	10,178	3,771	4,952	5,433	4,752	3,189	1,382	2,829	4,006
Errors and omissions, net	-6,036	1,554	0	0	0	0	0	0	0
				(In percent of GDP)					
Central government account									
Overall balance	21.7	21.2	23.3	20.6	19.8	18.6	17.4	16.2	15.0
Revenue	38.4	37.7	37.6	37.5	37.4	36.9	36.4	35.9	35.4
Expenditure	16.7	16.5	14.3	16.9	17.6	18.3	19.0	19.7	20.4
Memorandum items:									
Nominal GDP (in millions of MOP)	293,745	343,416	413,471	455,298	508,289	565,216	625,549	677,555	727,399
Exchange rate (MOP/USD, percent change)	0.2	-0.4	0.0	…	…	…	…	…	…
Nominal effective exchange rate (percent change)	-5.0	1.7	-0.1	…	…	…	…	…	…
Real effective exchange rate (percent change)	-3.1	5.4	3.5	…	…	…	…	…	…

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

1/ Contribution to annual growth in percent.

2/ BPM6 methodology. Data for 2013 are staff projections.

3/ Majority of reserve asset build-up during projection period is likely to be reflected in fiscal reserves, are managed separately since 2012.

Table 3. Macao SAR: Central Government Accounts

	2007	2008	2009	2010	2011	2012	2013	2014	2014	2015
							Provisional	Budget	Projected	
					(In millions of MOP)					
Revenue	40,694	51,077	57,641	79,636	112,721	129,498	155,512	141,248	170,788	190,158
Current revenue	40,644	50,765	54,127	78,238	112,604	129,367	150,715	140,139	165,506	184,261
Of which:										
Direct taxes	33,020	42,991	45,190	68,849	98,395	111,963	132,392	123,525	145,329	161,735
Direct taxes from gaming	29,341	39,564	41,870	65,004	94,112	106,990	126,738	117,846	139,104	154,786
Others	3,680	3,427	3,320	3,845	4,283	4,973	5,653	5,679	6,225	6,950
Indirect taxes	2,059	1,883	1,491	2,202	3,342	4,957	5,521	5,554	6,080	6,787
Fees, fines and other penalties	736	1,027	967	1,283	1,520	1,574	1,623	1,475	1,787	1,995
Property income	3,082	2,435	3,523	2,033	3,538	3,192	3,085	2,633	3,397	3,792
Transfers	1,607	2,333	2,439	3,772	5,544	7,229	7,644	6,601	8,417	9,397
Capital revenue	50	312	3,514	1,398	117	131	4,797	1,109	5,282	5,897
Expenditure	18,856	25,944	33,825	37,758	48,977	56,737	59,227	77,087	77,087	89,617
Current expenditure	14,744	22,226	29,620	32,435	38,341	40,437	51,261	61,227	61,227	69,877
Of which:										
Payroll	3,786	4,880	5,103	5,510	6,355	7,108	7,908	9,389	9,389	10,482
Goods and services	1,415	1,883	2,280	2,771	3,564	3,583	3,921	5,722	5,722	6,388
Current transfers	8,595	14,658	20,085	23,270	27,451	28,511	38,152	43,663	43,663	50,270
Capital expenditure	4,112	3,718	4,205	5,323	10,636	16,300	7,966	15,860	15,860	19,739
Overall balance	21,838	25,133	23,816	41,878	63,745	72,761	96,285	64,161	93,701	100,541
					(In percent of GDP)					
Revenue	28.0	30.7	33.9	35.1	38.4	37.7	37.6	31.0	37.5	37.4
Current revenue	28.0	30.5	31.8	34.5	38.3	37.7	36.5	30.8	36.4	36.3
Of which:										
Direct taxes	22.8	25.9	26.6	30.3	33.5	32.6	32.0	27.1	31.9	31.8
Direct taxes from gaming	20.2	23.8	24.6	28.6	32.0	31.2	30.7	25.9	30.6	30.5
Others	2.5	2.1	2.0	1.7	1.5	1.4	1.4	1.2	1.4	1.4
Indirect taxes	1.4	1.1	0.9	1.0	1.1	1.4	1.3	1.2	1.3	1.3
Fees, fines and other penalties	0.5	0.6	0.6	0.6	0.5	0.5	0.4	0.3	0.4	0.4
Property income	2.1	1.5	2.1	0.9	1.2	0.9	0.7	0.6	0.7	0.7
Transfers	1.1	1.4	1.4	1.7	1.9	2.1	1.8	1.4	1.8	1.8
Capital revenue	0.0	0.2	2.1	0.6	0.0	0.0	1.2	0.2	1.2	1.2
Expenditure	13.0	15.6	19.9	16.6	16.7	16.5	14.3	16.9	16.9	17.6
Current expenditure	10.2	13.4	17.4	14.3	13.1	11.8	12.4	13.4	13.4	13.7
Of which:										
Payroll	2.6	2.9	3.0	2.4	2.2	2.1	1.9	2.1	2.1	2.1
Goods and services	1.0	1.1	1.3	1.2	1.2	1.0	0.9	1.3	1.3	1.3
Current transfers	5.9	8.8	11.8	10.3	9.3	8.3	9.2	9.6	9.6	9.9
Capital expenditure	2.8	2.2	2.5	2.3	3.6	4.7	1.9	3.5	3.5	3.9
Overall balance	15.1	15.1	14.0	18.5	21.7	21.2	23.3	14.1	20.6	19.8
Memorandum items:										
Nominal GDP (in millions of MOP)	145,085	166,265	170,171	226,941	293,745	343,416	413,471	455,298	455,298	508,289
General government balance (in percent of GDP)	18.8	19.8	16.0	21.7	28.0	28.2	27.7	...	...	...

Sources: National authorities; and IMF staff calculations.

Table 4. Macao SAR: Selected Financial Soundness Indicators

	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
					(In percent)						
Capital adequacy											
Regulatory capital to risk-weighted assets * 1/	17.1	15.7	14.6	14.7	14.0	14.9	14.5	14.4	14.1	14.6	14.8
Regulatory Tier I capital to risk weighted assets * 1/	17.1	14.9	13.6	13.6	13.0	13.8	11.8	12.1	11.7	11.9	11.2
Capital to assets **	5.8	5.8	5.6	5.2	5.1	4.9	4.5	4.2	4.0	4.0	3.7
Asset composition and quality											
Sectoral distribution of domestic credit to corporations (% of gross loans)	39.0	38.1	38.8	37.0	39.3	36.0	30.7	27.5	26.9	23.4	20.8
Construction	6.7	3.8	4.0	5.2	5.1	8.0	8.1	5.8	5.8	4.7	4.9
Manufacturing	5.4	5.4	6.5	5.3	3.8	3.7	2.9	2.3	2.3	1.6	1.3
Commercial	9.1	8.5	7.5	5.6	7.7	5.3	5.2	4.6	5.4	5.1	4.3
Public utilities	1.6	1.0	0.7	0.4	0.7	0.5	0.6	0.4	0.4	0.3	0.2
Restaurant, hotel and related services	3.4	4.6	4.9	4.1	5.6	5.3	5.8	6.0	4.9	3.7	2.6
Financial business (ex banks)	0.2	0.1	0.0	0.9	0.6	0.5	0.2	0.1	0.2	0.1	0.5
Other industries	12.8	14.8	15.1	15.4	15.8	12.6	7.9	8.3	7.9	7.9	6.9
Total claims on government to gross loans	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Asset quality											
Nonperforming loans (NPL) to gross loans *	11.2	3.1	1.7	1.0	0.6	1.0	0.6	0.4	0.3	0.2	0.1
Loan loss provision to gross loans	0.8	0.5	0.2	0.1	0.2	0.4	0.2	0.2	0.2	0.1	0.2
Loan loss provision to NPL	15.8	29.4	29.8	27.5	68.9	73.8	48.4	85.4	95.9	111.3	283.7
Foreclosed assets to total assets	0.6	0.2	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Provisions + write-offs to NPL	47.7	124.5	86.4	95.0	87.0	46.0	72.0	81.0	71.0	94.3	113.6
NPL net of provisions to capital * 1/	43.5	5.5	2.1	0.9	0.9	4.0	1.2	0.3	0.7	0.3	-0.3
Earnings and profitability											
Return on assets *	0.8	0.9	1.6	1.7	1.4	1.0	0.9	0.8	0.9	0.9	1.0
Return on equity *	11.9	15.4	28.4	31.1	26.3	19.8	19.5	18.8	20.8	22.0	25.1
Interest margin to assets	1.7	1.3	1.4	1.4	1.7	1.6	1.1	1.1	1.1	1.1	1.3
Interest margin to gross income *	59.4	53.0	46.0	49.7	63.2	54.6	46.9	58.6	66.0	68.0	76.5
Noninterest income as percent of gross income	40.6	47.0	54.0	50.3	36.8	45.4	53.1	41.4	34.0	32.0	23.5
Trading income to total income **	11.8	10.0	24.6	20.0	-0.5	0.4	2.0	2.9	1.9	3.0	0.9
Noninterest expenses to gross income *	46.9	48.4	38.8	38.3	44.5	54.3	56.7	48.1	39.7	38.4	35.1
Noninterest expenses to assets	1.4	1.1	1.1	1.1	1.2	1.6	1.4	0.9	0.7	0.6	0.6
Personnel expenses to noninterest expenses **	51.2	49.9	44.3	44.4	42.0	30.9	32.3	42.2	52.2	52.7	51.4
Spread between reference loan and deposit rates, period average ** (basis points)	246	243	294	282	227	230	169	181	164	149	157
Spread between highest and lowest domestic one-month interbank rate, period average ** (basis points)	133	73	377	65	201	292	20	29	17	10	6
Number of employees 2/	3,596	3,682	3,672	4,069	4,482	4,787	4,658	4,904	5,278	5,408	5,655
Number of branches 2/	109	110	111	123	133	139	145	149	156	159	167
Liquidity											
Liquid assets to total assets *	51.0	46.0	50.6	48.7	44.5	42.7	42.1	45.1	43.9	36.8	33.8
Liquid assets to short-term liabilities *	64.2	58.1	68.5	66.2	61.0	59.5	56.2	67.8	64.7	60.5	63.0
Foreign currency-denominated loans to total loans **	65.9	69.2	73.4	75.0	80.6	81.4	83.7	82.0	84.8	83.5	82.8
Foreign currency-denominated liabilities to total liabilities **	76.3	77.0	78.8	78.2	79.8	77.7	81.4	82.8	81.8	81.5	85.4
Loans to assets	34.2	33.6	32.3	30.4	35.3	45.6	45.3	47.5	50.6	52.3	55.6
Deposits to assets	84.3	84.3	84.0	82.9	79.9	74.5	69.1	59.5	59.1	62.9	61.9
Loans to deposits **	39.0	38.3	36.6	34.2	42.1	57.2	64.2	77.5	83.9	82.2	88.2
Foreign-currency loans to foreign-currency deposits	34.1	34.6	34.4	33.8	43.2	60.9	66.8	80.1	86.9	80.3	86.0
Sensitivity to market risk											
Net open position in equities to Tier I capital 3/	...	...	...	...	1.1	0.5	0.9	0.5	0.9	0.3	0.3
Net open position in foreign exchange to capital *	62.5	82.3	111.3	138.0	103.8	206.9	178.5	187.8	182.3	143.9	140.1
Aggregate net position in foreign exchange to Tier I capital 3/	...	...	...	...	111.9	183.5	162.6	163.6	175.2	151.4	163.9
Off-balance sheet and derivatives to assets 3/	...	...	...	...	5.9	2.7	1.1	4.6	4.5	4.8	6.4
Of which: foreign exchange operations	...	...	...	...	1.4	0.3	0.1	0.2	0.5	0.3	0.2
Of which: interest rate operations	...	...	...	...	4.5	2.3	1.0	4.4	4.0	4.4	6.2
Real estate markets											
Residential real estate loans to total gross loans **	...	...	...	...	...	21.3	23.2	24.1	23.2	23.5	21.7
Commercial real estate loans to total gross loans **	...	...	...	...	...	21.2	19.4	19.3	19.4	16.7	15.7

Sources: AMCM; and IMF staff calculations.

* Core indicators ** Encouraged indicators

1/ Locally incorporated banks only.

2/ All credit institutions.

3/ For all banks (trading book data only, excluding banking book data).

Table 5. Macao SAR: Balance of Payments 1/

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
				Projected						
				(In milions of US dollars)						
Current account, net	12,180	16,158	18,710	22,772	24,866	26,136	26,863	27,332	30,553	33,268
Trade balance of goods and services, net	15,916	21,669	25,664	31,537	34,665	37,263	39,421	41,412	45,929	49,883
Goods balance	-5,462	-7,784	-8,795	-10,003	-11,029	-12,196	-14,103	-16,399	-17,815	-19,603
Exports of goods	1,040	1,111	1,384	1,515	1,636	1,777	1,938	2,125	2,337	2,568
Imports of goods	6,502	8,894	10,178	11,518	12,664	13,973	16,041	18,525	20,152	22,171
Services balance	21,378	29,453	34,459	41,540	45,693	49,459	53,524	57,811	63,744	69,486
Exports of services	29,007	40,025	45,811	50,384	54,652	58,785	63,350	68,381	75,190	81,774
Imports of services	7,629	10,573	11,352	8,844	8,958	9,326	9,826	10,570	11,446	12,287
Primary Income	-2,989	-4,960	-5,819	-7,387	-8,277	-9,423	-10,657	-11,970	-13,087	-14,155
Secondary Income	-747	-551	-1,134	-1,378	-1,522	-1,704	-1,901	-2,110	-2,289	-2,461
Capital account,net	20	1,329	0	250	250	250	250	250	250	250
Financial account, net	6,646	11,451	20,264	23,022	25,116	26,386	27,113	27,582	30,803	33,518
Direct investment, net	-3,931	-1,689	-2,100	-2,069	-2,128	-2,164	-2,197	-2,224	-2,274	-2,329
Portfolio investment, net	844	1,879	748	966	1,085	1,242	1,411	1,591	1,743	1,887
Financial derivatives, net	8	44	-61	-73	-81	-90	-100	-111	-120	-129
Other investment, net	4,567	1,038	17,906	19,246	20,807	22,647	24,810	26,945	28,626	30,083
Reserve assets 2/	5,158	10,178	3,771	4,952	5,433	4,752	3,189	1,382	2,829	4,006
Errors and omissions, net	-5,554	-6,036	1,554	0	0	0	0	0	0	0
				(In percent of GDP)						
Current account, net	42.9	44.1	43.5	44.0	43.6	41.1	38.0	34.9	36.0	36.5
Trade balance of goods and services, net	56.1	59.2	59.7	60.9	60.8	58.6	55.7	52.9	54.2	54.8
Goods balance	-19.3	-21.2	-20.5	-19.3	-19.4	-19.2	-19.9	-20.9	-21.0	-21.5
Exports of goods	3.7	3.0	3.2	2.9	2.9	2.8	2.7	2.7	2.8	2.8
Imports of goods	22.9	24.3	23.7	22.3	22.2	22.0	22.7	23.7	23.8	24.4
Services balance	75.4	80.4	80.2	80.3	80.2	77.8	75.7	73.9	75.2	76.3
Exports of services	102.3	109.3	106.6	97.4	95.9	92.4	89.6	87.4	88.7	89.8
Imports of services	26.9	28.9	26.4	17.1	15.7	14.7	13.9	13.5	13.5	13.5
Primary Income	-10.5	-13.5	-13.5	-14.3	-14.5	-14.8	-15.1	-15.3	-15.4	-15.6
Secondary Income	-2.6	-1.5	-2.6	-2.7	-2.7	-2.7	-2.7	-2.7	-2.7	-2.7
Capital account,net	0.1	3.6	0	0	0	0	0	0	0	0
Financial account, net	23.4	31.3	47.1	44.5	44.1	41.5	38.3	35.2	36.3	36.8
Direct investment, net	-13.9	-4.6	-4.9	-4.0	-3.7	-3.4	-3.1	-2.8	-2.7	-2.6
Portfolio investment, net	3.0	5.1	1.7	1.9	1.9	2.0	2.0	2.0	2.1	2.1
Financial derivatives, net	0.0	0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1	-0.1
Other investment, net	16.1	2.8	41.7	37.2	36.5	35.6	35.1	34.4	33.8	33.0
Reserve assets 2/	18.2	27.8	8.8	9.6	9.5	7.5	4.5	1.8	3.3	4.4
Errors and omissions, net	-19.6	-16.5	3.6	0	0	0	0	0	0	0
Memorandum items:										
Nominal GDP (in millions of US dollars)	28,360	36,633	42,981	51,753	56,975	63,605	70,729	78,279	84,786	91,024

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

1/ BPM6 methodology.

2/ Majority of reserve asset build-up during projection period is likely to be reflected in fiscal reserves, which are managed separately since 2012.

Table 6. Macao SAR: Indicators of External Vulnerability

	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Monetary and financial indicators													
Broad money (M2, annual percentage change)	7.8	8.1	12.3	8.9	12.2	24.5	9.8	2.3	11.8	14.5	22.6	25.8	17.7
Loans (MOP bn)	49	51	49	53	65	76	109	151	187	246	322	407	535
Resident	36	34	34	36	44	50	72	92	101	130	168	198	257
Nonresident	13	17	15	16	21	26	37	59	86	115	155	208	277
Loans (annual percentage change)	-2.9	3.9	-5.1	7.9	24.1	17.1	42.2	38.7	23.9	31.6	31.2	26.2	31.4
Resident	-7.0	-5.5	-1.5	8.4	22.1	13.6	42.3	27.4	10.2	29.3	28.5	18.4	29.6
Nonresident	10.1	29.3	-12.2	6.7	28.7	24.5	42.1	60.6	45.2	34.4	34.3	34.6	33.2
Private domestic credit excl financial investment (MOP bn)	36.1	34.1	33.6	36.4	44.5	50.5	71.8	91.6	100.9	130.5	167.6	198.5	257.2
(Percent change)	-7.0	-5.5	-1.5	8.4	22.1	13.6	42.3	27.4	10.2	29.3	28.5	18.4	29.6
Personal loans for house purchases (MOP mn)	10.4	10.5	10.6	11.7	13.6	14.8	21.3	25.8	32.6	47.4	59.4	76.7	96.6
(Percent change)	-1.8	0.4	1.7	9.7	16.9	8.8	43.7	20.9	26.3	45.6	25.3	29.2	25.9
Balance of payments indicators 1/													
Exports (annual percentage change, U.S. dollars)	...	...	14.6	31.3	1.5	17.6	28.6	19.2	-0.3	49.8	36.9	14.7	10.0
Imports (annual percentage change, U.S. dollars)	...	...	13.7	22.0	7.5	21.4	33.3	10.3	-19.4	33.7	37.8	10.6	-5.4
Current account balance (percent GDP)	...	33.2	32.8	34.7	25.1	17.1	24.3	19.4	32.0	42.9	44.1	43.5	44.0
Capital and financial account balance (percent GDP)	...	-13.5	-20.0	-12.5	2.2	-2.6	42.3	18.0	-10.4	-5.2	0.2	-38.4	-34.4
Of which: gross foreign direct investment inflows	...	5.6	6.4	7.5	15.1	20.0	29.7	19.2	-1.9	12.8	5.5	6.8	6.0
Reserve indicators 1/													
Foreign exchange reserves (billions of US dollars)	...	3.8	4.3	5.4	6.7	9.1	13.2	15.9	18.4	23.7	34.0	16.6	16.1
Foreign exchange reserves to imports of GNFS (months)	...	9.3	9.3	9.5	10.9	12.3	13.3	14.5	20.8	20.2	20.8	9.1	8.2
Foreign exchange reserves to broad money (M2, percent)	...	30.8	31.3	36.0	39.4	43.3	57.3	67.0	69.1	78.2	91.4	35.3	29.2
Foreign exchange reserves (percent of GDP)	...	54.2	54.8	53.0	56.7	62.7	73.3	76.8	86.1	83.7	92.9	38.6	31.2
Banking sector													
Net foreign assets of banking sector (MOP bn)	85	98	115	131	149	192	216	233	275	334	425	483	561
Banking system profits (MOP bn)	0.6	0.9	1.0	1.4	3.0	4.0	4.0	3.3	3.5	3.9	5.1	6.3	8.5
(annual percent change)	-22.5	54.9	6.6	44.2	118.3	33.1	-0.9	-16.8	5.1	10.7	30.1	24.4	34.7
Nonperforming loans (MOP bn)													
To residents	8.8	7.4	5.0	1.5	1.0	0.7	0.6	1.1	0.8	0.8	0.8	0.6	0.4
To nonresidents	1.2	1.2	0.7	0.2	0.2	0.2	0.0	0.6	0.4	0.2	0.4	0.2	0.1
Financial Sector													
Policy rate: discount window base rate (eop)	3.3	2.8	2.5	3.8	5.8	6.8	5.8	0.5	0.5	0.5	0.5	0.5	0.5
Saving deposit rate (average)	2.0	0.1	0.1	0.0	0.9	2.4	2.1	0.1	0.0	0.0	0.0	0.0	0.0
Prime lending rate (average)	...	...	...	...	...	...	...	...	5.3	5.3	5.3	5.3	5.3
MAIBOR 3-month (eop)	2.1	1.5	0.2	0.4	4.2	3.9	3.5	0.9	0.2	0.3	0.4	0.4	0.4
Monetary bill yield (weighted average)	4.5	2.0	1.2	0.5	2.3	4.0	4.1	2.0	0.3	0.2	0.3	0.4	0.5
Residential property market													
Average transaction price: residential (MOP/sq. m.)	...	...	...	8,259	11,621	13,881	20,729	23,316	23,235	31,016	41,433	57,362	81,811
(Percent change)	...	...	...	...	41	19	49	12	0	33	34	38	43
Tourism													
Visitor arrivals (person mn)	...	...	...	...	...	...	...	22.9	21.8	25.0	28.0	28.1	29.3
(Percent change)	...	...	...	...	...	...	...	...	-5.1	14.8	12.2	0.3	4.4
Gaming revenue (MOP bn)	19.5	23.5	30.3	43.5	47.1	57.5	83.8	109.8	120.4	189.6	269.1	305.2	361.9
(Percent change)	...	20.2	29.0	43.5	8.3	22.0	45.8	31.0	9.6	57.5	41.9	13.4	18.6
Memorandum items:													
Nominal GDP (USD mn)	...	7,008	7,926	10,258	11,793	14,570	18,054	20,730	21,313	28,360	36,633	42,981	51,753

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

1/ BPM6 methodology. Data for 2013 are staff projections.

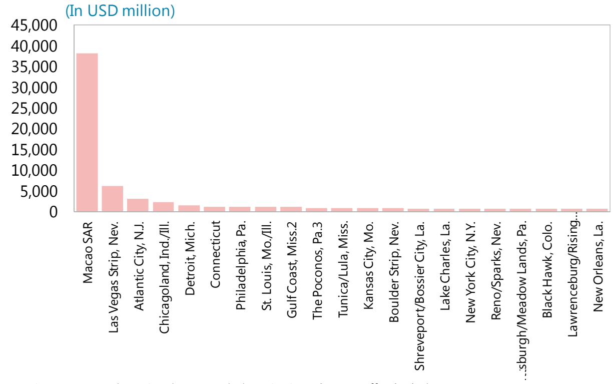
Appendix I. Risk Assessment Matrix 1/ 2/

Nature of Threat	Likelihood	Impact	Recommended Policy Response
Surges in global financial market volatility related to UMP exit	**High**	**Medium**. Macao SAR has not experienced a surge in non-FDI capital inflows since the onset of the crisis, owing to the persistent surplus position of the public and private sectors and lack of domestic money or capital market instruments. It runs a sizeable balance of payments surplus. Nevertheless, domestic interest rates and the real effective exchange rate could rise sharply, mirroring developments in the United States. This could in turn slow domestic activity and tourism, resulting in capital outflows that further tighten monetary conditions, straining household debt servicing capacity (and perhaps precipitating a property downturn, see below).	If growth falters, allow automatic stabilizers full play and deploy fiscal stimulus to support domestic demand while helping to shield low-income and vulnerable households. Options include targeted tax relief and increased transfers to households, support for SMEs, and accelerated public infrastructure (including housing). Ensure regulatory and supervision standards and risk management practices remain sound. To ease any significant financial strains, liquidity and capital support could temporarily be made available to banks. Having a rapid remedial framework for an orderly approach to resolving bank problems in place ahead of time would strengthen the financial safety net.
Protracted slow growth in advanced economies (due to deleveraging) and emerging economies (due to incomplete structural reforms)	**Medium**	**High**. As a small, open economy that relies heavily on tourism, Macao SAR would be heavily impacted, both in terms of growth and fiscal revenue.	Support domestic demand, provide liquidity/capital support to banks as needed, and diversify the economy by judiciously using fiscal reserves without jeopardizing sustainability, including through increased spending on infrastructure, education, and health as well as support for SMEs.
Sharp slowdown in the Mainland or Hong Kong SAR over the medium-term	**Medium**	**High.** Trade, FDI and financial linkages with both jurisdictions are high. Tourism would plummet, gaming revenue dwindle and bank balance sheets suffer both because of lending to these jurisdictions and the knock-on impact of slower growth on domestic loans (although most benefit from support of their parent banks abroad).	Monitor risks in these jurisdictions through increased communication with home supervisors. Shore up domestic demand through automatic stabilizers and fiscal stimulus (as above) while accelerating policies to diversify the economy toward other sectors and territories, including through judicious use of fiscal reserves.
Disorderly correction of housing prices	**Medium**	**High**. Prices have risen sharply through the global crisis, buoyed by low interest rates and strong income growth, but there are signs of over-valuation. A reversal in these factors could trigger a correction in prices, straining bank balance sheets—given high exposure to property (a third of total loans)—and triggering negative feedback loops through adverse wealth effects.	In the absence of associated systemic risks, cautiously unwind countervailing macroprudential measures implemented in recent years—including by raising caps on LTV and debt service ratios, and reducing stamp duties. Support the construction industry by building more public housing and boost demand by selectively easing purchase restrictions (including on foreigners). Ensure adequate supply of land and public housing in the medium-term.
Policy changes in Mainland China or regulatory weaknesses in Macao SAR that reduce flow of tourists	**Low**	**High.** Changes to Mainland visa policies or remaining weaknesses in the AML/CFT regime could restrict the flow of visitors and impact gaming revenues. Given the dependence of the economy on tourism and gaming, the impact on capital flows, fiscal revenue and growth could be severe.	Improve the AML/CFT measures in the gaming sector, in particular with respect to customer due diligence and oversight of the market players. Accelerate efforts to diversify the gaming sector's clientele as well as the overall economy.
Increasing geopolitical tensions surrounding Ukraine lead to disruptions in financial, trade and commodity markets	**Medium**	**Low.** Direct trade and financial linkages with Russia and Ukraine are low. To the extent that global commodity prices rise as a result, Macao SAR, which is almost exclusively externally dependent for its food and energy supplies, could be hit, both through higher imported inflation and a deterioration in terms of trade. However, the service-based nature of the economy would limit the damage. Effects could be larger if they spill over to major advanced economies, the Mainland or Hong Kong SAR.	If growth falls significantly due to spillovers to major trading and financial partners, use automatic stabilizers and deploy targeted fiscal stimulus. If property sector also falters, judiciously unwind macroprudential measures.
Successful implementation of reforms to rebalance the economy in the Mainland over the medium term	**Medium**	**High**. This would support gaming revenues as household incomes in the Mainland continue to grow, and also provide opportunities for diversification toward other services that consumers in a rebalanced and more open Mainland would demand (including education, health, recreation, financial, legal, accounting, and environmental).	Position Macao SAR to take advantage of the Mainland's transition by undertaking reforms and public investment to enhance human capital, upgrade infrastructure, and make resources and financing available to new sectors.
Successful diversification of the economy toward non-gaming services over the medium term	**Medium**	**High**. Growth would be higher and more stable in the medium-term, when the gaming sector slows as it matures and faces greater competition.	Solidify gains through broader integration with the Mainland, financial development, and public investments in infrastructure and human capital to support the sound development of non-gaming services.

1/ The Risk Assessment Matrix (RAM) shows events that could materially alter the baseline path (the scenario most likely to materialize in the view of IMF staff). The relative likelihood of risks listed is the staff's subjective assessment of the risks surrounding the baseline ("low" is meant to indicate a probability below 10 percent, "medium" a probability between 10 and 30 percent, and "high" a probability of 30 percent or more). The RAM reflects staff views on the source of risks and overall level of concern as of the time of discussions with the authorities. Nonmutually exclusive risks may interact and materialize jointly.
2/ Downside risks are represented by red arrows, upside risks by blue ones.

Appendix II. The Gaming Industry in Macao SAR

Casino Markets Revenue
(In USD million)



Sources: American Gaming Association; CEIC; and IMF staff calculations.

As the world's biggest gaming market by revenue, the economy of Macao SAR is heavily reliant on the gaming industry. Gaming revenue in 2013 rose by nearly 19 percent to MOP 360.7 billion or 87 percent of GDP, around seven times larger than in Las Vegas. The tax collected from the gaming sector in 2012 accounted for 83 percent of total government revenue.

Macao SAR's gaming boom started with the end of a 40-year monopoly in 2002. The government undertook a bidding process for gaming concessions, which were granted to one local incumbent and five new gaming operators (all foreign-owned or with foreign partners): SJM Holdings, Galaxy, Sands, Wynn, MGM and Melco Crown. Today, Macao SAR has 35 casinos, 5,750 gaming tables and around 13,106 slot machines. The only part of China where gaming is legal, almost 87percent of the clientele originates from the Mainland and Hong Kong SAR.

Gaming companies pay a special gaming tax equivalent to 35 percent of their gross revenue. In addition, they also pay 1.6 percent of gross revenue to the Macao Foundation for social, cultural, and economic development, and 1.4 to 2.4 percent of gross revenue for the development of urban construction, tourism, and the Social Security Fund.

Their profits rely heavily on gaming activities. Nongaming activities only contribute about 10 percent of total revenue, significantly lower than casinos in other jurisdictions. This can be attributed to the business model of casinos in Macao SAR that relies on operation of VIP rooms targeting high roller customers and involving junket promoters, who can lend to and gamble with customers directly. Furthermore, junket promoters could be associated with a dense network of collaborators or agents located in and outside Macao SAR, which adds to the challenge of overseeing their activities. Although the Individual Traveler Scheme introduced by the Mainland government in 2003 helped boost the mass market, the VIP or significant players continues to contribute around two-thirds of total revenues.

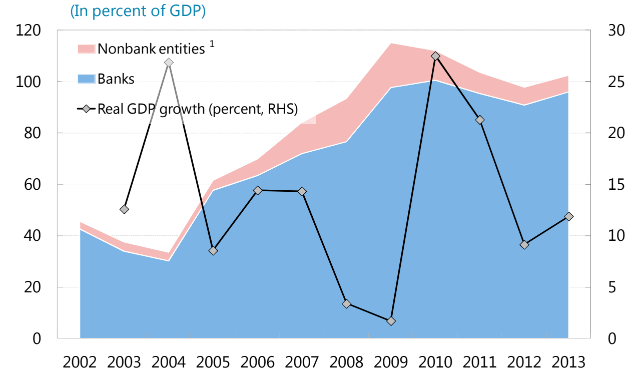
The authorities are looking to encourage more nongaming elements. Responding to concerns about the economy's reliance on gaming and the lack of alternative employment options for Macao SAR residents, the authorities have required the concessionaires to devote most of their property to nongaming segments such as restaurants, hotels, retail and event space in the context of the mid-term review of the effective concessions, which will expire in 2020-2022.

Appendix III. External Sector Debt Sustainability Analysis

Macao SAR has no public debt. All of the economy's external debt is private, with the majority of loans undertaken by the gaming industry. At 102 percent of GDP, external debt is around two-fifths of gross foreign assets. It is expected to remain sustainable given the moderate expected increase in interest rate costs as global rates normalize and the continued strong growth of the tourism industry. Under the baseline scenario, external debt is expected to decline to around 70 percent of GDP by 2019, close to pre-crisis levels. Even under the most stressed scenarios, external debt would remain on a downward trajectory or—under the growth shock and combined shock scenarios—remain relatively unchanged as a share of GDP over the forecast horizon.

Under the baseline scenario, external debt is expected to decline steadily over the medium term. Owing to the boom in the gaming sector, Macao SAR's external debt—all of which is private—reached 102 percent of GDP in 2013. External debt financing grew in the aftermath of the liberalization of the gaming industry. About three-fourths of total external loans are related to gaming, with the remaining portion undertaken primarily by the real estate and hotel sectors. New debt issuance picked up after the global financial crisis amid low interest rates. Given the expected normalization of global interest rates in the medium term to near pre-crisis levels, the slowdown in construction projects by the tourism industry after 2017, and relatively short average loan maturity, Macao SAR's external debt is expected to decline to about 70 percent of GDP by 2019.

Total Private External Debt
(In percent of GDP)



Sources: AMCM; and IMF staff estimates and calculations.
[1]External private debt by nonbank entities may be underestimated.

The projected improvement in external debt is primarily attributable to Macao SAR's large current account surpluses, and holds even under stress scenarios. Macao SAR faces favorable prospects, as the global recovery is expected to strengthen the demand for its service exports. Several expansion projects are planned for 2015–17 by the hotel and entertainment industries, which are likely to generate additional debt liabilities. However, given land and labor supply constraints in the tourism sector, private gross fixed capital formation along with new debt accumulation is expected to decline by 2019. Despite the expected moderation of the current account surplus, it should continue to remain well above 30 percent of GDP. The economy also maintains large gross foreign assets, whose build-up partly explains the residuals in Table 1. Thus, amid continued current account surpluses, large fiscal and foreign reserve accumulation, and a slowing number of expansion projects undertaken by the tourism industry, external debt is likely to follow a downward trajectory. Even under the most stressed scenarios, debt would fall or—under the growth shock and combined shock scenarios—remain relatively unchanged as a share of GDP over the forecast horizon.

Table 1. Macao SAR: External Debt Sustainability Framework, 2009–2019

(In percent of GDP, unless otherwise indicated)

	Actual							Projections						
	2009	2010	2011	2012	2013			2014	2015	2016	2017	2018	2019	Debt-Stabilizing Noninterest Current Account 6/
Baseline: external debt	115.2	112.1	103.6	97.8	102.5			**109.4**	**94.7**	**90.2**	**85.2**	**78.4**	**70.8**	**-1.6**
Change in external debt	21.8	-3.1	-8.5	-5.8	4.7			6.9	-14.6	-4.5	-5.0	-6.8	-7.7	
Identified external debt-creating flows	-27.5	-82.5	-68.9	-62.0	-62.7			-53.9	-52.3	-46.8	-42.3	-41.4	-40.7	
Current account deficit, excluding interest payments	-34.3	-44.2	-45.5	-45.2	-45.4			-45.2	-43.1	-40.6	-38.3	-40.2	-40.7	
Deficit in balance of goods and services	-44.5	-56.1	-59.2	-59.7	-60.9			-60.8	-58.6	-55.7	-52.9	-54.2	-54.8	
Exports	94.1	105.9	112.3	109.8	100.3			98.8	95.2	92.3	90.1	91.4	92.7	
Imports	-49.6	-49.8	-53.1	-50.1	-39.3			-38.0	-36.6	-36.6	-37.2	-37.3	-37.9	
Net nondebt creating capital inflows (negative)	7.0	-10.9	0.5	-3.1	-2.1			-1.8	-1.5	-1.1	-0.8	-0.6	-0.5	
Automatic debt dynamics 1/	-0.2	-27.3	-24.0	-13.6	-15.2			-6.9	-7.7	-5.0	-3.1	-0.6	0.5	
Contribution from nominal interest rate	2.3	1.3	1.4	1.7	1.4			1.5	2.0	2.7	3.4	4.1	4.1	
Contribution from real GDP growth	-1.6	-23.8	-18.5	-8.1	-9.7			-8.4	-9.8	-7.7	-6.6	-4.7	-3.7	
Contribution from price and exchange rate changes 2/	-1.0	-4.8	-6.8	-7.2	-6.9			...	...	...	...	...	...	
Residual, incl. change in gross foreign assets (2-3) 3/	49.2	79.4	60.4	56.2	67.4			58.1	36.4	41.9	37.8	35.2	33.8	
External debt-to-exports ratio (in percent)	122.4	105.8	92.2	89.1	102.2			110.7	99.5	97.7	94.6	85.8	76.4	
Gross external financing need (in billions of US dollars) 4/	4.1	0.4	-2.3	-4.7	-10.4			-13.6	-15.0	-15.6	-13.6	-14.1	-13.2	
In percent of GDP	19.1	1.6	-6.4	-11.0	-20.0			-23.9	-23.6	-22.0	-17.4	-16.6	-14.5	
Scenario with key variables at their historical averages 5/						10-Year Historical Average	10-Year Standard Deviation	**109.4**	**96.0**	**86.6**	**72.4**	**55.4**	**37.3**	**-1.6**
Key macroeconomic assumptions underlying baseline														
Real GDP growth (in percent)	1.7	27.5	21.3	9.1	11.9	13.9	9.0	9.0	10.0	9.0	8.0	6.0	5.0	
GDP deflator in US dollars (change in percent)	1.1	4.4	6.5	7.5	7.6	6.2	3.0	1.0	1.5	2.0	2.4	2.2	2.2	
Nominal external interest rate (in percent)	2.5	1.5	1.6	1.9	1.7	2.9	1.6	1.6	2.1	3.1	4.2	5.3	5.7	
Growth of exports (US dollar terms, in percent)	-0.3	49.8	36.9	14.7	10.0	20.9	15.8	8.5	7.6	7.8	8.0	10.0	8.8	
Growth of imports (US dollar terms, in percent)	-19.4	33.7	37.8	10.6	-5.4	15.2	18.2	6.2	7.8	11.0	12.5	8.6	9.1	
Current account balance, excluding interest payments	34.3	44.2	45.5	45.2	45.4	34.6	10.1	45.2	43.1	40.6	38.3	40.2	40.7	
Net nondebt creating capital inflows	-7.0	10.9	-0.5	3.1	2.1	-4.0	9.6	1.8	1.5	1.1	0.8	0.6	0.5	

Sources: AMCM; Dealogic; IMF, country desk data; and IMF staff estimates.

1/ Derived as [r - g - ρ(1+g) + εα(1+r)]/(1+g+ρ+gρ) times previous period debt stock, with r = nominal effective interest rate on external debt; ρ = 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 [-ρ(1+g) + εα(1+r)]/(1+g+ρ+gρ) times previous period debt stock. ρ increases with an appreciating domestic currency (ε > 0) and rising inflation (based on GDP deflator).

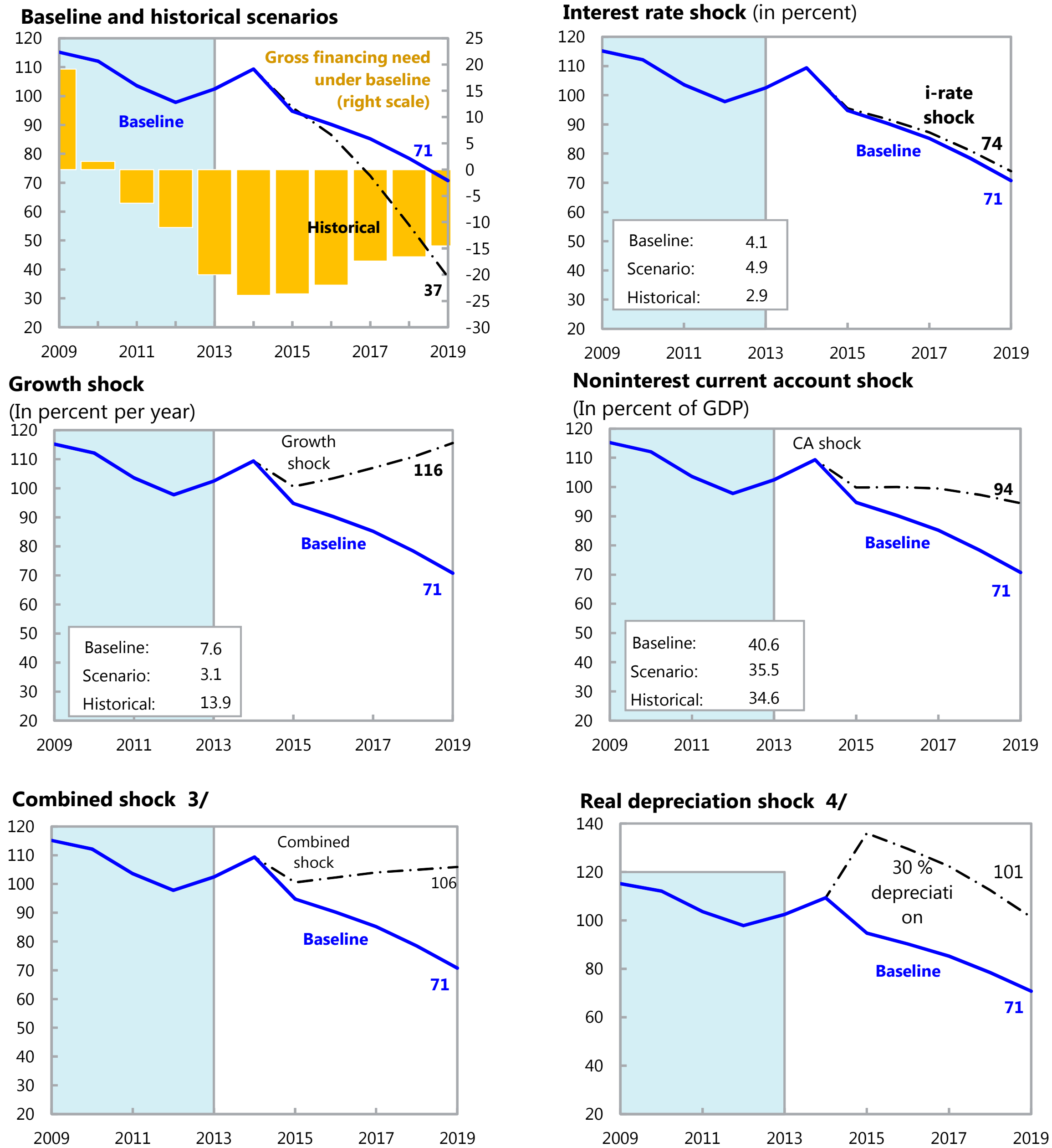
3/ For projection, line includes the impact of price and exchange rate changes.

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.

Figure 1. Macao SAR: External Debt Sustainability: Bound Tests 1/ 2/
(External debt in percent of GDP)



Sources: AMCM; Dealogic; IMF, country desk data; and IMF 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 2015.

INTERNATIONAL MONETARY FUND

PEOPLE'S REPUBLIC OF CHINA—MACAO SPECIAL ADMINISTRATIVE REGION

June 20, 2014

STAFF REPORT FOR THE 2014 ARTICLE IV CONSULTATION DISCUSSIONS—INFORMATIONAL ANNEX

Prepared By: Asia and Pacific Department (in consultation with other departments)

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FUND RELATIONS

Membership Status

As a Special Administrative Region of the People's Republic of China, Macao SAR is not a member of the Fund. The only previous Article IV consultation discussions were concluded on March 25, 1999 before the territory's handover from Portugal to China at the end of that year. However, the Fund has maintained a relationship with Macao SAR, focused mainly on technical assistance and training. STA provided technical assistance with compiling FSIs in 2013 and on the balance of payments in 2008, MCM completed an FSAP in 2011, and LEG provided advice on AML/CFT issues resulting in new legislation in 2006.

Exchange Rate Arrangement

Since 1989, Macao SAR has been operating under a currency board arrangement. On April 7, 1977, the exchange rate of Macao SAR's currency, the pataca, was formally delinked from the Portuguese escudo and linked to the Hong Kong dollar at a central rate of MOP 1.075/HK$, and the transaction rates were allowed to deviate from this rate as long as they were within a band of +/-1 percent of the central rate. Effective January 1979, the central rate of the pataca was set at MOP 1.038/HK$, and in September 1983, was adjusted to MOP 1.03/HK$, and the transaction rates were to take place within a narrow band on either side of the central rate. This arrangement continued through May 1987.

Since then, the pataca has been tied to the Hong Kong dollar at a rate of MOP1.03/HK$, and is therefore also in effect linked to the US$, at around MOP8/US$. Notes are issued by two banks, which deliver Hong Kong dollars to the AMCM in return for noninterest bearing certificates of indebtedness, which serve as the backing for the banknote issue. The Hong Kong dollars are then counted as part of the official foreign exchange reserves held at the AMCM. Under the currency board arrangement, the pataca is 100 percent backed by foreign assets. There are no exchange restrictions on current and capital account transactions. With capital freely mobile, monetary conditions in MSAR are strongly influenced by conditions in Hong Kong SAR and the United States market.

STATISTICAL ISSUES

Data provision is adequate for surveillance purposes. Macao SAR has been participating in the IMF's General Data Dissemination System (GDDS) since August 2007.

National accounts. Macao SAR compiles quarterly and annual estimates of GDP by expenditure category, at current prices and in volume terms. The volume measures are derived using annual chain linking methods. The estimates by type of activity are compiled in current prices only, due to the unavailability of relevant deflators. A major revision of the compilation process was undertaken in 2010. The key changes include the adoption of chain linking to derive volume estimates and the introduction of data from the 2007/08 household income and expenditure survey to estimate private final consumption expenditure. Macao SAR reports annual and quarterly GDP to the IMF for publication in *International Financial Statistics (IFS)*. STA has not provided technical assistance in national accounts to Macao SAR over the past ten years.

Price statistics. Macao SAR compiles a monthly consumer price index (CPI) with a base period of April 2008 to March 2009. The index is rebased every five years and has been available since October 2009. The weights were derived from the 2007/08 household income and expenditure survey. Macao SAR releases a composite CPI, which reflects price changes for the general population of households, CPI-A that covers households with an average monthly expenditure of MOP 6,000 to MOP 18,999 (about 50 percent of households), and a CPI-B that covers households with an average monthly expenditure of MOP 19,000 to MOP 34,999 (about 30 percent of households). Macao SAR submits CPI data to the IMF for publication in *IFS*.

Government finance statistics. Macao SAR reports detailed annual consolidated general government accounts (budget, 39 extra budgetary units, and one social security fund) in the *GFSM 2001* format for inclusion in the *Government Finance Statistics Yearbook*, along with summary quarterly general government accounts for publication in *IFS*. These data could be usefully augmented by the reporting of a financial balance sheet, as outlined in the 2010 Board decision regarding government finance statistics to strengthen fiscal analysis.

Monetary and financial statistics. The Monetary Authority of Macao (AMCM) reports, on a timely basis, monthly monetary data to STA for publication in *IFS*. These data are reported in the format of the Standardized Report Forms (SRFs) for central bank (1SR) and other depository corporations (2SR), monetary aggregates (5SR) and interest rates and share prices (6SR), which embody the IMF-recommended methodology for compiling monetary statistics.

Financial sector surveillance. In the area of financial soundness indicators (FSIs), the AMCM has compiled selected time series of FSIs, which are published in its semi-annual publication *Monetary and Financial Stability Review*. A statistics mission on FSIs visited AMCM in July 2013 and assisted the authorities in establishing procedures for compiling FSIs in accordance with the

IMF-recommended framework. The authorities have, since May 2014, regularly reported FSIs to STA for dissemination on the IMF website.

External sector statistics. The AMCM compiles and disseminates annual balance of payments (BOP) statistics. IIP statistics are not available. Since 2012, the BOP of Macao SAR has been compiled following the methodology and classification of the sixth edition of the *Balance of Payments and International Investment Position Manual (BPM6)*. BOP data for 2002–11 were originally compiled under the format of the fifth edition of the *Balance of Payments Manual (BPM5)* and converted to the *BPM6* format. Although, external sector statistics are not yet compiled on a quarterly basis, Macao SAR participates in major Fund Statistical Initiatives, such as the General Data Dissemination System (GDDS), the Coordinated Portfolio Investment Survey (CPIS), and the Coordinated Direct Investment Survey (CDIS). Direct investment abroad by Macao SAR household sector is not covered in external sector statistics. Household financial investment abroad (portfolio and other investments, except deposits abroad that can be collected from the BIS data) only covers those transactions going through local authorized financial institutions, and hence, transactions outside the local financial channel are not recorded. In addition, compensation of Macao SAR employees earned abroad is not covered in the BOP. Due to the implementation of the *BPM6* methodology in 2012, personal effects, financial assets, and liabilities of persons changing residence are no longer covered by a capital transfer in the capital account.

Macao SAR: Table of Common Indicators Required for Surveillance

(As of May 13, 2014)

	Date of Latest Observation	Date Received	Frequency of Data[5]	Frequency of Reporting[5]	Frequency of Publication[5]
Exchange rates	May-2014	May-2014	D	D	D
International reserve assets and reserve liabilities of the monetary authorities[1]	Mar-2014	Apr-2014	M	M	M
Reserve/base money	Mar-2014	Apr-2014	M	M	M
Broad money	Mar-2014	Apr-2014	M	M	M
Central bank balance sheet	Mar-2014	Apr-2014	M	M	M
Consolidated balance sheet of the banking system	Mar-2014	Apr-2014	M	M	M
Interest rates[2]	Apr-2014	Apr-2014	D	D	D
Consumer price index	Mar-2014	Apr-2014	M	M	M
Revenue, expenditure, balance and composition of financing—general government	Q3/13	Apr-2014	Q	Q	Q
Stocks of central government and central government-guaranteed debt[3]	….	…	…	…	…
External current account balance	2012	Jan-2014	A	A	A
Exports and imports of goods and services[4]	Mar-2014	May-2014	M	M	M
GDP/GNP	Q4/13	Mar-2014	Q	Q	Q
Gross external debt	NA	NA	NA	NA	NA
International investment position	NA	NA	NA	NA	NA

[1] Any reserve assets that are pledged of otherwise encumbered should be specified separately. Also, data should comprise short-term liabilities linked to a foreign currency but settled by other means as well as the notional values of financial derivatives to pay and to receive foreign currency, including those linked to a foreign currency but settled by other means.

[2] Both market-based and officially-determined, including discount rates, money market rates, rates on monetary bills.

[3] Macao SAR has no government debt.

[4] Goods trade data are provided monthly. Services trade data are released annually with the current account statistics.

[5] Daily (D), Weekly (W), Monthly (M), Quarterly (Q), Annually (A); Irregular (I); Not Available (NA).

INTERNATIONAL MONETARY FUND
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IMF Executive Board Concludes 2014 Article IV Consultation with the People's Republic of China—Macao Special Administrative Region

On July 16, 2014, the Executive Board of the International Monetary Fund (IMF) concluded the Article IV Consultation[1] with Macao Special Administrative Region (SAR). The Consultation took place for the first time since the handover of Macao SAR from Portugal to China in 1999.

Prudent macroeconomic management has underpinned rapid development in the territory, which is now the world's largest gaming center and has one of the highest levels of per capita GDP in the world. The policy framework—anchored by the combination of a currency board pegged to the Hong Kong dollar (and indirectly the U.S. dollar), flexible markets, and a commitment to safeguarding fiscal discipline and financial stability—has served Macao SAR well in maintaining financial stability and a strong external position, while successfully weathering several external shocks, including the recent global crisis. As a small, open and tourism-dependent economy, Macao SAR currently also benefits from loose global monetary conditions and a Mainland-related boom.

Growth rose to 11.9 percent in 2013 from 9.1 percent the previous year, driven by a pick-up in gaming exports. This enabled a large fiscal surplus of 23.3 percent of GDP and another current account surplus estimated at around 44 percent of GDP. Robust activity and historically low unemployment kept inflation relatively elevated at 5.5 percent. Notwithstanding some measures taken by the government that have slowed transactions and nonresident inflows, property prices increased by nearly 40 percent again last year, and credit growth remained brisk, up by over 30 percent. Given limited domestic lending opportunities, banks also continued to increase their foreign assets. Meanwhile, the health of the banking system strengthened further, with the average capital adequacy ratio rising to nearly 15 percent and the non-performing loan (NPL) ratio ticking down to only 0.1 percent.

[1] Under Article IV of the IMF's Articles of Agreement, the IMF holds bilateral discussions with members, usually every year. A staff team visits the country, collects economic and financial information, and discusses with officials the country's economic developments and policies. On return to headquarters, the staff prepares a report, which forms the basis for discussion by the Executive Board.

The outlook is bright. Growth should stay strong over the next few years at 8–10 percent buoyed by gaming exports and investment, with inflation remaining around 5–5.5 percent. However, Macao SAR needs to prepare for future shifts in the global and domestic landscape, including implications from the unwinding of unconventional monetary policy by the United States and the Mainland engaging in major structural reforms to rebalance its growth.

While Macao SAR may benefit from further developing services demanded by a changing global environment, the narrow base of the economy makes it susceptible to external shocks, including a potential slowdown in tourism, due to shocks in the Mainland or Hong Kong SAR, or other setbacks to the global recovery. The buoyant property market could also come under pressure if demand fundamentals shift or interest rates rise sharply, due to faster-than-anticipated withdrawal of unconventional monetary policy abroad or increased financial market volatility in its wake. Credit risks may also arise from cross-border lending to the Mainland, Hong Kong SAR, and Portugal. Over a longer horizon, growth could slow as the gaming sector matures and the population ages. As a result, Macao SAR will need to preserve its traditional strengths by appropriately calibrating macroeconomic policies while bolstering financial soundness, ensuring external stability, maintaining fiscal prudence, and diversifying the economy.

Executive Board Assessment[2]

Executive Directors commended the authorities for their prudent macroeconomic management, which has lifted living standards to one of the highest levels in the world and enabled Macao SAR to weather external shocks successfully. Directors noted, however, that, while the outlook remains strong, the small open economy is susceptible to shocks arising from a narrow economic base, booming property prices, and a shifting external environment. Accordingly, Directors recommended persevering with the prudent policies, and welcomed the authorities' determination to take all necessary steps to safeguard macroeconomic and financial stability.

Directors welcomed the progress in bolstering financial stability, including by implementing recommendations from the 2011 Financial Sector Assessment Program and enhancing the regime against money laundering and the financing of terrorism. They encouraged the authorities to address the remaining vulnerabilities and to further strengthen the resilience of the banking system to potential risks, including from the gaming and property sectors as well as from cross-border financial spillovers. To identify emerging risks, Directors highlighted the importance of industry-wide stress testing and close cooperation with supervisors in other jurisdictions. Directors welcomed the authorities' efforts to manage rising property prices with macroprudential measures and recommended continued vigilance.

[2] At the conclusion of the discussion, the Managing Director, as Chairman of the Board, summarizes the views of Executive Directors, and this summary is transmitted to the country's authorities. An explanation of any qualifiers used in summings up can be found here: http://www.imf.org/external/np/sec/misc/qualifiers.htm.

Directors took note of the staff's assessment that the currency board with the Hong Kong dollar link has worked well for Macao SAR and should be maintained. The system provides a crucial anchor to expectations and supports economic activity, including by keeping the external position broadly consistent with medium-term fundamentals and desirable policies.

Directors commended the authorities for their fiscal prudence. To ensure that public finances remain on a sound footing as the gaming sector matures and the population ages, they recommended the adoption of a medium-term budget framework. Consideration could also be given to allocating some part of Macao SAR's ample fiscal reserves to a sovereign wealth fund with a clear mandate to achieve better risk-adjusted returns over a long horizon, including through a more diversified asset allocation strategy.

Directors underscored that economic diversification holds the key to unlocking additional growth engines and achieving greater economic resilience over the longer term. They commended the authorities' focus on promoting nongaming services, and encouraged them to explore more opportunities, including through broader integration with the Mainland, further financial development, and greater public investments in infrastructure and human capital.

Macao SAR: Selected Economic and Financial Indicators

	2007	2008	2009	2010	2011	2012	2013	2014	2015
								Projected	
	(Annual percentage change, unless otherwise specified)								
National accounts									
Real GDP	14.3	3.4	1.7	27.5	21.3	9.1	11.9	9.0	10.0
Total domestic demand	16.9	-5.0	-12.8	-0.1	13.8	11.0	6.0	6.0	13.6
Consumption	11.0	4.6	5.1	6.6	9.6	8.1	6.3	6.0	6.0
Investment	23.0	-14.1	-33.5	-12.6	23.0	16.8	5.4	6.0	27.6
Net exports 1/	2.5	7.1	10.3	27.4	15.2	4.6	9.4	6.7	4.8
Exports	22.5	9.1	-1.5	44.4	28.5	7.2	12.0	9.5	7.9
Imports	29.1	2.2	-18.7	29.1	29.9	6.4	7.2	7.6	8.2
Prices and employment									
Headline inflation (average)	5.6	8.6	1.2	2.8	5.8	6.1	5.5	5.5	5.4
Housing prices	49.3	12.5	-0.3	33.5	33.6	38.4	42.6	…	…
Median monthly employment earnings	14.3	0.0	6.3	5.9	11.1	13.0	6.2	…	…
Unemployment rate (annual average)	3.2	3.0	3.5	2.8	2.6	2.0	1.8	1.7	1.7
	(In percent of total)								
Economic structure									
Secondary sector	19.1	17.2	10.9	7.3	6.5	6.2	…	…	…
Of which: manufacturing	2.9	2.1	1.5	0.8	0.7	0.7	…	…	…
Of which: construction	15.1	14.0	8.2	5.4	4.9	4.7	…	…	…
Tertiary sector	80.9	82.8	89.1	92.7	93.6	93.8	…	…	…
Of which: public administration, other community, social & personal services (including gaming)	43.7	44.3	47.8	55.1	57.6	57.7	…	…	…
	(In thousands)								
Employment	293.0	317.1	311.9	314.8	327.6	343.2	361.0	…	…
Of which: foreign workers	85.2	92.2	74.9	75.8	94.0	110.6	137.8	…	…
Manufacturing	20.7	24.3	16.4	15.2	12.8	10.3	9.0	…	…
Construction	31.1	37.6	31.8	27.1	28.2	32.3	35.3	…	…
Tertiary sector	239.5	253.8	261.5	271.0	284.2	298.1	314.6	…	…
Of which: gaming	62.6	65.3	61.6	62.8	70.1	78.8	83.3	…	…
	(In percent of GDP)								
Balance of payments 2/									
Current account, net	24.3	19.4	32.0	42.9	44.1	43.5	44.0	43.6	41.1
Trade balance of goods and services, net	27.6	33.8	44.5	56.1	59.2	59.7	60.9	60.8	58.6
Goods balance	-25.7	-24.4	-20.4	-19.3	-21.2	-20.5	-19.3	-19.4	-19.2
Services balance	53.3	58.1	64.9	75.4	80.4	80.2	80.3	80.2	77.8
Foreign exchange reserves 3/	73.3	76.8	86.1	83.7	92.9	38.6	31.2	…	…
(In billions of US dollars)	13.2	15.9	18.4	23.7	34.0	16.6	16.1	…	…
Saving and investment									
Gross capital formation	37.5	31.0	18.9	13.3	13.9	14.7	13.8	13.5	15.8
National saving	61.8	50.5	50.8	56.2	57.2	56.8	57.8	57.2	56.9
Central government finance									
Revenue	28.0	30.7	33.9	35.1	38.4	37.7	37.6	37.5	37.4
Expenditure	13.0	15.6	19.9	16.6	16.7	16.5	14.3	16.9	17.6
Overall balance	15.1	15.1	14.0	18.5	21.7	21.2	23.3	20.6	19.8
Fiscal reserves 4/	…	…	…	…	…	47.8	58.7	…	…
	(Annual percentage change)								
Financial sector									
Loans	42.2	38.7	23.9	31.6	31.2	26.2	31.4	…	…
Resident	42.3	27.4	10.2	29.3	28.5	18.4	29.6	…	…
Mortgages	43.7	20.9	26.3	45.6	25.3	29.2	25.9	…	…
Nonresident	42.1	60.6	45.2	34.4	34.3	34.6	33.2	…	…
Interest rates									
Discount window base rate (eop)	5.8	0.5	0.5	0.5	0.5	0.5	0.5	…	…
Saving deposit rate (average)	2.1	0.1	0.0	0.0	0.0	0.0	0.0	…	…
MAIBOR 3-month (eop)	3.5	0.9	0.2	0.3	0.4	0.4	0.4	…	…
Tourism									
Visitor arrivals	…	…	-5.1	14.8	12.2	0.3	4.4	…	…
Gaming revenue	45.8	31.0	9.6	57.5	41.9	13.4	18.6	…	…
Exchange rate									
MOP/USD, period average	0.4	-0.2	-0.4	0.2	0.2	-0.4	0.0	…	…
Nominal effective exchange rate	-4.3	-5.6	1.1	-0.8	-5.0	1.7	-0.1	…	…
Real effective exchange rate	-1.7	-1.6	2.5	-0.2	-3.1	5.4	3.5	…	…
Memorandum items:									
Per capita GDP (in thousands of US dollars)	34.7	38.4	39.8	52.8	66.7	75.5	87.3	…	…

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

1/ Contribution to annual growth in percent.

2/ BPM6 methodology. Current account, net for 2013 is staff projection.

3/ Part of foreign reserves transferred to fiscal reserve fund since 2012.

4/ Balance as of January of following year, after approval by Legislative Assembly.

Statement by Tao Zhang
Executive Director for the People's Republic of China—
Macao Special Administrative Region
July 16, 2014

On behalf of the Macao SAR authorities, I would like to thank staff of the Article IV team for the candid and constructive dialogue held during the mission, and their thoughtful assessment and advice. The Macao SAR authorities appreciate this consultation with the Fund, which has been the first for Macao SAR since its establishment in December 1999. I broadly agree with staff's assessment of the economic outlook and macroeconomic policies, and endorse staff's recommendation to place Macao SAR on a 24-month Article IV cycle. I am pleased to confirm the authorities' intention to publish the staff report.

Economic development and outlook

Between 1999 and 2013, the Macao SAR economy experienced a compound growth rate of 11.8 percent per annum. The slowest growth rate of 1.7 percent was in 2009 due to the global financial crisis, but it rebounded strongly with a record-high growth of 27.5 percent in the subsequent year. This pattern of relatively large swings in growth was shared by some emerging market economies. Since 2010, the Macao SAR economy has grown strongly and consistently. Real GDP rose by 11.9 percent in 2013 while nominal GDP per capita reached an all-time high of US$87,306, which was the fourth highest in the world. In terms of PPP-based per capita GDP, Macao SAR ranked the second highest in the world, just behind Qatar. A high degree of resilience and sustained growth are two outstanding features of the Macao SAR economy.

In 2014, continuous growth in both domestic and external demand is expected to underpin a steady development in economic activities. Gross fixed capital formation would expand faster, driven mainly by private tourism-related construction projects and public sector infrastructure investment. Net external demand would grow at a positive-yet-slower pace upon rising visitor arrivals, which reached 29.3 million in 2013. In the medium term, the Macao SAR economy is likely to ride on an expansionary trend, primarily attributable to new tourism and infrastructure facilities to be established within the next few years.

The general price level of Macao SAR is rising. The domestic factor has been a major driver of inflation over the last few years, along with a limited supply of domestic production resources in a growing economy. The unemployment rate fell to a historical low of 1.8 percent in 2013 from 6.8 percent in 2000, uplifting employment earnings. Foreign workers, which took up 38.2 percent of employment in 2013, have been playing a major role in alleviating labor shortage. Furthermore, both prices and rentals of commercial properties have risen at a fast pace. All these factors have pushed operating costs of local businesses up and swiftly passed onto prices of final products and services in a buoyant economy. Macao SAR's consumer price inflation is likely to stay above 5.0 percent for 2014, while the unemployment rate would be below 2.0 percent.

Economic diversification

The Macao SAR economy has been mainly driven by exports of tourism services, while the share of the tertiary sector in GDP has been close to 95.0 percent. The authorities agree with staff's assessment that economic diversification is beneficial to Macao SAR as it mitigates the concentration risk of the economy by nurturing new sources of growth to promote sustainable development.

The authorities have set a policy agenda to develop Macao SAR into a world tourism and leisure center, aiming at a balanced development in a variety of services. Policy priorities have been given to accelerate the development of nongaming entertainment, conventions and exhibitions, cultural and creative businesses, commercial and trade services, and traditional Chinese medicine. The ongoing rebalancing of the Mainland economy and Macao SAR's increasing integration with neighboring economies would help create a demand for these new services, while the continuous liberalization of China's capital and financial account would promote the RMB and other financial businesses in Macao SAR.

Institutional mechanisms have been put in place for regional integration, with a view to capitalizing on the expanded production capacity and the consistently strong growth in the region. The Mainland and Macao Closer Economic Partnership Arrangement (CEPA) and its supplement agreements have been playing a significant role in creating new opportunities for local businesses. Under the Framework Agreement on Cooperation between Guangdong and Macao, the Macao SAR authorities have commenced intensive collaboration with Guangdong province, including further liberalization of services trade between the two places and joint development of the province's Hengqin Island. Taking advantage of Macao SAR's historical background, the authorities are strengthening Macao SAR's unique role as the commercial and trade platform between China and Portuguese-speaking countries (PSCs). Major initiatives include hosting the Ministerial Conference of the Economic Cooperation Forum between China and PSCs; providing exchange and training programs for personnel from PSCs; and establishing a Cooperation and Development Fund for relevant projects and business transactions.

The authorities agree to staff's recommendations about nurturing Macao SAR's comparative advantages for economic diversification by investment in infrastructure, social sectors, and human capital, given the consistently large surplus in the fiscal accounts.

Linked exchange rate system and external sustainability

The authorities welcome staff's strong endorsement for the Linked Exchange Rate System (LERS) as the best arrangement for Macao SAR, which is properly managed under a credible currency board arrangement. The positive assessment by staff on Macao SAR's fulfillment of the prerequisites for the LERS would help strengthen public confidence in the LERS and, hence, the monetary stability of Macao SAR.
The authorities agree with staff's assessment that Macao SAR has been able to maintain external

sustainability with a fully open capital and financial account and exchange rate regime. The current account surplus is expected to sustain over the medium term with a strong travel account of the balance of payments. Macao SAR is a net exporter of capital and has not experienced major non-FDI capital inflows due to the persistent surplus position and lack of domestic money or capital market instruments. Macao SAR's real exchange rate is assessed to be broadly in equilibrium, owing to sufficient price flexibility. It has a strong net foreign assets position for both the public and private sectors, which serves as an effective buffer against external shocks. Macao SAR's healthy financial institutions, together with robust supervision and macroprudential regulation, also help contain risks from capital flows.

The authorities agree with staff's analysis of Macao SAR's external debt sustainability and its projections, under both baseline and most-stressed scenarios, of a downward trajectory of private external debts in GDP terms over the medium term.

Fiscal policy and Fiscal Reserve

Fiscal prudence, as stipulated in the Basic Law of the Macao SAR, is the key principle for the Macao SAR authorities to formulate its fiscal policy. It is also a requirement for a credible LERS. The Macao SAR authorities have reported fiscal surpluses, on an annual average of 11.5 percent of GDP in its central account over 2000–2013. The contractionary fiscal stance of the surplus budget, under the LERS, is deemed as appropriate for the macroeconomic situation of strong growth, relatively high inflation, and extremely low unemployment.

The balance sheet of the public sector has been strengthening due mainly to a continuous accumulation in fiscal-related assets and debt-free position. Accumulated fiscal surpluses had been part of Macao SAR's foreign exchange reserves. In February 2012, Macao SAR established a standalone Fiscal Reserve, which solely absorbs surpluses in the public accounts. The Fiscal Reserve, currently with an asset amount equivalent to about 400.0 percent of total government expenditure of 2013, serves as a strong cushion for future cyclical downturns and financial backup for long-term fiscal commitments in an aging society.

The Fiscal Reserve, which is now separated from foreign exchange reserves and has its own legal mandate as specified in the Fiscal Reserve Act, has acquired certain institutional characteristics of a Sovereign Wealth Fund, as pointed out by staff. The authorities agree to staff's suggestion to raise the risk-return profile by adopting a more aggressive investment strategy for a portion of the Fiscal Reserve that has a longer-term horizon, higher toleration of risk, and a better return target. The size of the portfolio with a more aggressive investment strategy shall be consistent with the principle of prudent fiscal management and the legal framework of Macao SAR's Fiscal Reserve System. The authorities started to invest in equities through external fund managers in 2014 and would continue to diversify asset allocation of the Fiscal Reserve with the objective of raising the returns in the long term and, hence, strengthen the fiscal buffer. The authorities also reckon the importance to work out the uses and sources of public funds based on the Macao SAR authorities' medium-term budget projections with allowance for stress scenarios.

Property market

Property prices have sustained their upward trend over the last decade. The rapid growth pace has been underpinned by strong economic fundamentals, scarce supply of land and housing units, as well as the loose global monetary condition since 2009. The rise in property prices has been particularly pronounced in recent years, with the average growth outpacing nominal GDP growth and employment income growth. The housing affordability has correspondingly deteriorated.

Property-related credit activities remain a significant portion of bank lending, although their growth has moderated. The share of property-related loans in total private-sector loans dropped to 38.1 percent at end-2013 from 43.5 percent at end-2009. In addition, the asset quality of these loans holds up well in line with the strong economy. The delinquency ratio of property-related loans edged down from 0.21 percent at end-2009 to 0.05 percent at end-2013, while the amount of negative equity and write-off ratios both stayed at negligible levels.

Following the implementation of macroprudential and demand management measures since 2010, trading activities have shrunk and nonresident buyers have withdrawn from the market with their share in transactions dropping from over 10.0 percent a few years ago to less than 5.0 percent. On the supply side, the recent completion of public housing units has helped met the demand for dwellings of the low-to-middle-income group of Macao SAR residents. The supply of new private housing units is also expected to pick up in the coming years.

The authorities will stay vigilant of the risk of overvalued properties upon shift in demand fundamentals and abrupt rise in interest rates. We agree with staff's recommendations that adjustments in policy measures should be promptly implemented in response to any significant rise in downside or upside risks to be observed in the future through close monitoring of market developments.

Financial sector

While the Macao SAR banking sector is currently in solid health with reference to key financial soundness indicators, the authorities agree with staff that risks associated with rising property prices and increasing external exposures of banks to a few jurisdictions would require close and continuous monitoring, especially against a background of withdrawal of U.S. unconventional monetary policy and slowdown in emerging market economies in the region.

A sharp correction in the property market is unlikely, given the strong economic fundamentals. Nevertheless, the authorities will stay vigilant and fine-tune the macroprudential and demand-management measures whenever deemed necessary to safeguard financial stability. For risk control and regulatory compliance, Macao SAR's banks have conducted stress tests, particularly on mortgage loan portfolios and liquidity under certain crisis scenarios.

With an anticipated exit from unconventional monetary policy in advanced economies, the global monetary condition would be normalized and interest rates would rise at a gradual pace. It could bring about a certain impact on Macao SAR banks' Mainland-related exposure and households' debt-servicing ability for personal lending, including housing loans. However, alongside the developments of cross-border cooperation and implementation of "going abroad" strategy by the Mainland authorities, loan portfolios of Macao SAR banks have been increasingly diversified. It is also noted that some Mainland-related loans are approved by the head offices of Macao SAR banks and, hence, according to Macao SAR's regulatory practices, the authorities could request those loans to be transferred out from the books of local banks, if necessary.

There have not been a significant flow of funds from advanced economies to Macao SAR as a result of the unconventional monetary policy. However, as the MOP maintains a stable exchange rate relationship with the U.S. dollar under the LERS, ultra-low U.S. interest rates have created lending business opportunities for Macao SAR banks. Coupled with a close economic relationship between the Mainland and Macao SAR, Macao SAR banks, particularly those with Mainland background, have utilized their close connections with parent/head offices and affiliates, and have expanded their lending associated with evolving financial and credit environments in the Mainland.

There have been loans granted, mainly trade-orientated, in US$ and RMB for companies referred by banks' parent/head offices or affiliates in the Mainland. As part of the ongoing monitoring process, the authorities conduct regular examinations on banks' lending policies and risk management practices to check if loans are granted for real economic purposes, and if the collateral is duly formalized and enforceable. Any banks with relatively high concentration in Mainland-related loans will be called upon to diversify its loan portfolios and to reset a more appropriate portfolio-based limit for Mainland-related exposure. So far, the authorities have not observed any major heightened risks on this front. For supervisory purposes, the authorities have established internally a three-tier monitoring system of banks' capital adequacy ratios to help ensure that Macao SAR banks' capital positions are in good shape.

It is expected that the low interest rate environment and strong economic growth will continue to support lending businesses. For personal credit, the debt-servicing ratio and portfolio-based limit could be introduced by the authorities if significant risks are observed. Meanwhile, a study on constructing a database for sharing customer credit data within the banking industry has been initiated. This could effectively help banks to assess borrowers' repayment ability, which would be useful for banks in monitoring and containing their credit risks.

Efforts on anti-money laundering and combating the financing of terrorism

The authorities share staff's views on the importance of persistent strengthening of the anti-money laundering (AML) and combating the financing of terrorism (CFT) framework. Macao SAR is assessed to have achieved substantial progress on this front and such efforts are conducive to Macao SAR's long-term development. Macao SAR would continue to promote international AML/CFT standards and requirements through various channels, including legislating laws, drafting and revising guidelines, participating in international organizations and forums, and organizing training workshops/meetings for relevant parties.