



MALTA

SELECTED ISSUES

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MALTA

FINANCIAL SYSTEM STABILITY ASSESSMENT

February 7, 2019

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This report is based on the work of the Financial Sector Assessment Program (FSAP) mission that visited Malta in September 2018. The FSAP findings were discussed with the authorities during the Article IV consultation mission in January 2019.

- The FSAP team was led by Veronica Bacalu and included Edda Rós Karlsdóttir (deputy mission chief), Ayman Alfi, Ziya Gorpe, Machiko Narita, Irman Pardede, and Luc Riedweg (all MCM); Chady El Houry and Maksym Markevich (both LEG); Haonan Qu (EUR); and Su Hoong Chang and David Scott (external experts). Technical support was provided by Naihan Yang (MCM), and administrative support was provided by Gabriella Ndedi (MCM).
- The mission met with Central Bank of Malta (CBM) Governor and Chairman Mario Vella; Minister of Finance Edward Scicluna; Malta Financial Supervisory Authority (MFSA) Chief Executive Officer Joseph Cuschieri; Finance Intelligence Analysis Unit (FIAU) Director Kenneth Farrugia; and other representatives of the CBM, Ministry for Finance, MFSA, FIAU, and National Statistics Office. Meetings were also organized with senior officials of the European Central Bank, as well as market participants and industry associations. The FSAP team is grateful to all counterparts for their help.
- FSAPs assess the stability of the financial system as a whole and not that of individual institutions. They are intended to help countries identify key sources of systemic risk in the financial sector and implement policies to enhance its resilience to shocks and contagion. Certain categories of risk affecting financial institutions, such as operational or legal risk, or risk related to fraud, are not covered in FSAPs. The previous FSAP for Malta took place in 2003.
- This report was prepared by Veronica Bacalu and Edda Rós Karlsdóttir with contributions from the FSAP team.

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Glossary

AML/CFT	Anti-Money Laundering/Combating the Financing of Terrorism
BCP	Basel Core Principles
BO	Beneficial Ownership
BRRD	Bank Recovery and Resolution Directive
CBM	Central Bank of Malta
CBR	Correspondent Banking Relationship
CEO	Chief Executive Officer
CET1	Common Equity Tier 1
CRD	Capital Requirements Directive
CRR	Capital Requirements Regulation
DCS	Depositor Compensation Scheme
DIA	Digital Innovation Authority
DSTI	Debt-Service-to-Income
EA	Euro Area
EBA	European Banking Authority
ECB	European Central Bank
ESA	European System of National and Regional Accounts
EU	European Union
FIAU	Financial Intelligence Analysis Unit
FSAP	Financial Sector Assessment Program
FT	Financing of Terrorism
GDP	Gross Domestic Product
GFC	Global Financial Crisis
HPLSI	High-Priority Less Significant Institution
IIP	Individual Investment Program
IMF	International Monetary Fund
LCR	Liquidity Coverage Ratio
LLP	Loan Loss Provisioning
LSI	Less Significant Institution
LTV	Loan-to-Value
MCM	Monetary and Capital Markets Department (IMF)
MFIN	Ministry for Finance
MFSA	Malta Financial Services Authority
ML/TF	Money laundering and terrorism financing
MREL	Minimum Required Eligible Liabilities
NFC	Nonfinancial Corporate
NIM	Net Interest Margin
NPL	Nonperforming Loan
NRA	National Risk Assessment
NSFR	Net Stable Funding Ratio
OFI	Other Financial Institution
PCC	Protected Cell Companies

RAM	Risk Assessment Matrix
RBSF	Risk-Based Supervision Framework
ROA	Return on Assets
ROC	Registry of Companies
ROE	Return on Equity
RWA	Risk Weighted Assets
SC	Supervisory Council
SI	Significant Institution
STeM	Stress Testing Matrix
UCITS	Undertakings for Collective Investment in Transferable Securities
VFA	Virtual Financial Assets

EXECUTIVE SUMMARY

The financial sector in Malta is large compared to the economy and is strongly connected with the rest of the world. While Malta has benefited from considerable financial inflows, the associated risks, especially related to money laundering and terrorism financing (ML/TF), need to be closely monitored and addressed.

Key metrics suggest that the banking system is in good health, but challenges exist. Banks are well capitalized, liquidity is ample, and profitability is healthy. However, core domestic banks' high exposure to property-related loans, together with the rapid house price appreciation, poses a risk. The significant share of nonresident deposits in international and noncore domestic banks makes them vulnerable, but their exposure to the domestic economy is limited. While nonperforming loans (NPL) remain below the euro area (EA) average, there are pockets of distressed corporate loans that continue to impact banks' balance sheets.

The banking system remains resilient under a severe scenario, with weaknesses limited to a few small banks. The system is sufficiently capitalized to absorb losses in the event of a severe macroeconomic shock, but risky exposures would lead to potential losses at a few small banks. Under a stress event, large withdrawals of wholesale and nonresident deposits can put some banks under pressure. Contagion risk is estimated to be limited, but distress could impact smaller banks due to cross-border and cross-sectoral linkages. There is a need to closely monitor banks' evolving business models to detect potential shifts in systemic risks, strengthen the stress test approaches, and enhance data quality and management.

Continued enhancements are encouraged in the macroprudential framework. While the recent strengthening of systemic risk monitoring is commendable, the legal framework should be enhanced, data gaps closed, and nonbank risk assessment strengthened. The planned introduction of borrower-based measures to address buildup of vulnerabilities in the housing and household sectors is welcome.

Ensuring adequate resources is critical to preserve the effectiveness and operational independence of the Malta Financial Services Authority (MFSA). It is a challenge to meet the increasing demands of supervising the growing number of financial institutions in an evolving and more complex regulatory environment. The MFSA is substantially understaffed, which undermines its effectiveness and operational independence. The authorities should upgrade the MFSA's operational capacity and grant it full autonomy over its recruitment. The authorities should develop a five-year plan to ensure sustained budgetary resources for the MFSA. Further steps should be taken to enhance checks and balances in the MFSA's decision-making process.

Shortcomings in bank supervision call for urgent action. To strengthen bank supervision, the MFSA should take timelier supervisory actions, increase the frequency of onsite inspections, make more use of monetary fines as part of the sanctioning regime, and ensure supervisory action is not delayed through judicial appeal. Supervision should focus on main risks (credit, liquidity, and compliance) and the adequacy of risk classification and provisioning. Further actions are needed to

align the related-parties framework with the Basel Core Principles (BCP). Improving oversight of non-European Union (EU) branches is also important.

Actions are needed to support the use of early intervention and resolution powers, and to address weaknesses in the bank liquidation and insolvency framework. Policies and procedures should be developed for the MFSA's early intervention and resolution powers, including to mitigate legal risks. An administrative bank insolvency framework should be adopted, and the creditor hierarchy clarified. Responsibility for decisions on bank liquidation and insolvency post-license withdrawal should be shifted from the MFSA's supervisory function to its resolution function. The MFSA and the Ministry for Finance (MFIN) should develop their internal crisis management plans.

Containing financial integrity risks is critical to financial stability. The cross-border linkages of the large financial sector pose significant ML/TF risks, notably from foreign proceeds of crimes, which create challenges through growing reputational risks, pressure on correspondent banking relationships (CBR) and compliance costs. The fast-growing remote gaming activity, virtual-assets intermediation, and high demand for real estate and the Individual Investment Program (IIP) call for effective measures to contain financial integrity risks.

A multi-prong approach is needed to address anti-money laundering and combating the financing of terrorism (AML/CFT) deficiencies. Enhancing the AML/CFT system is required to protect the financial sector and the broader economy from the ML/TF threats. Efforts should focus on banks' application of preventive measures (including customer due diligence with efficient verification of beneficial ownership (BO)), in particular regarding their higher risk activities and clients, including the significant nonresident sector. Additional supervisory resources are needed for Financial Intelligence Analysis Unit (FIAU) and the MFSA to bolster the application of risk-based AML/CFT supervision. The authorities should take appropriate corrective actions—including timely, dissuasive, and proportionate sanctions—in case of breaches of AML/CFT requirements. Establishing an EU-level arrangement responsible for AML/CFT supervision should be supported to facilitate a consistent and comprehensive approach and minimize regulatory arbitrage.

Table 1. Malta: Key Recommendations

Main Recommendations	Timing*
Risk Analysis	
1. Strengthen the risk analysis by incorporating new dimensions in liquidity stress testing, conducting regular sensitivity analysis on selected vulnerabilities, and enhancing data management (¶118) (CBM, MFSA)	NT
Macprudential Policy	
2. Consider providing the CBM with the powers to recommend actions to be taken by a public authority or public institution, with a “comply or explain” mechanism, and to issue warnings and opinions. Amend the MFSA Act to add a financial stability objective (¶129) (Government, MFSA)	NT
3. Close remaining data gaps, and enhance analytical tools (¶130) (CBM, NSO, MFSA)	NT/MT
4. Refine and introduce the planned borrower-based instruments to address possible buildup of vulnerability in the housing and household sectors (¶131) (CBM)	I
Financial Sector Supervisory Resources and Independence	
5. Ensure stable funding for the MFSA, grant it full autonomy over its recruitment and maintain a dedicated statutory committee on supervisory issues (¶134) (MFSA, Government)	I
6. Address the significant gap in supervisory and enforcement capacity by increasing staff and broadening the skill set. (¶133) (MFSA)	I
Banking Regulation and Supervision	
7. Increase the number and risk orientation of onsite inspections of LSIs. Enhance supervision of third country branches. (¶137) (MFSA)	ST
8. Take timely supervisory actions (including for ML/TF) and increase the use of monetary fines. Ensure supervisory action is not delayed through judicial appeal, including by amending the law, if needed (¶136) (MFSA, FIAU, Government)	ST
Insurance and Securities Regulation and Supervision	
9. Strengthen conduct supervision and enhance the sectoral risk-based supervision framework (¶139) (MFSA)	MT
AML/CFT	
10. Improve the authorities’ assessment and understanding of ML/TF risks and strengthen the national coordination (¶146, 47) (NCC)	I
11. Adopt a multi-prong strategy that includes: (i) ensuring that banks appropriately apply preventive measures; (ii) fully implementing a risk-based AML/CFT supervision; and (iii) applying timely, dissuasive, and proportionate sanctions and effective fit-and-proper tests. (¶148) (MFSA, FIAU, ROC, Government)	I
12. Support establishing an EU-level arrangement responsible for AML/CFT supervision (¶146) (Government)	MT
Safety Nets and Crisis Management	
13. Adopt an administrative bank insolvency regime with explicit powers to transfer assets/liabilities. Clarify the creditor hierarchy (¶141) (Government)	I
14. Shift responsibility for decisions on bank insolvency and liquidation, post-license revocation, from the MFSA’s supervisory function to its resolution function (¶142) (MFSA)	I
15. Review the adequacy of the Resolution Unit’s staffing and increase its resources accordingly (¶140) (MFSA)	I
* I = Immediate (within 1 year); ST = Short Term (within 1–2 years); MT = Medium Term (within 3–5 years)	

MACROFINANCIAL BACKGROUND

A. Context and Risks

1. **Malta's highly open economy is strongly connected to the rest of the world.** After joining the EU in 2004 and the EA in 2008, Malta harmonized its financial sector legislation with that of the EU. Its favorable tax environment, the EU passporting of financial institutions, use of the English language, and relatively low costs have attracted international businesses, including in finance.¹ During the global financial crisis (GFC), domestic banks were shielded by their relatively simple business models, reliance on domestic funding, and limited exposure to structured products and wholesale funding. Post-GFC, several financial institutions have downsized or left Malta, consistent with their foreign owners' deleveraging strategies. The country became the first EU jurisdiction to adopt a regulatory framework for virtual financial assets (VFA) in 2018.
2. **Malta's economic growth has been one of the strongest in Europe (Figure 1, Table 2).** The annual GDP growth averaged 6.8 percent in 2013–17, supported by rapid expansion of export-oriented services, including tourism and remote gaming.
3. **Credit growth has been lagging the rate of economic expansion (Figure 2).** The credit-to-GDP gap has been negative, reflecting the broad-based slowdown in credit growth post-GFC. Credit grew at 3½ percent per annum in 2015–17, mostly supported by mortgage lending. Bank credit to the private sector declined to a historic low of about 80 percent of GDP by end-2017, with bank credit to nonfinancial corporates (NFC) declining and the NFCs increasing their intercompany borrowing (Figure 3). Banks' tighter lending standards, NFCs' improved cash positions, low opportunity costs, and tax advantages have contributed to increasing intercompany lending.
4. **NFCs' leverage is high compared to their European peers.** Construction and real estate exhibit the highest leverage ratios, reflecting capital-intensive nature in these sectors. Mitigating factors include the relatively high profitability of Maltese firms and requirements for high collateralization of bank loans.
5. **Household debt is above the EA average, and home ownership is high (Figure 4).**² Household debt stood at 108 percent of gross disposable income in 2017, while the home ownership ratio was 82 percent. Post-GFC households' financial wealth has increased, leaving the debt-to-financial-wealth ratio stable at 23 percent. The loan-to-value (LTV) and the debt-service-to-income (DSTI) ratios of new mortgages remained broadly unchanged since 2011, averaging 77 percent and 21 percent, respectively, in 2017 (Figure 5).
6. **Property-related lending is increasing fast.** With mortgage lending growing by 8½ percent annually since 2013, and bank lending to NFCs declining, concentration of mortgage loans has risen, making banks susceptible to a potential sharp decline in housing prices.

¹ Malta is the only EU member utilizing the full tax imputation system and offering a refundable tax credit.

² Household leverage includes non-profit institutions serving the household sector.

7. Residential housing prices have risen quickly in recent years (Figure 6). Employment growth, influx of foreign workers, rising disposable income, and portfolio rebalancing toward property investments in a low-interest-rate environment have pushed residential property prices up by 33 percent in 2010–17. Demand is also fueled by buoyant tourism, tax benefits for first-time homebuyers, lower tax on rental income, and the IIP. Construction investment has recently picked up, reflecting a supply response to rising property prices.

8. Banks' exposure to government debt is low and concentrated (Figures 7, 8). Malta's sovereign debt is largely domestically held. Banks held 29 percent of total government debt (3.3 percent of assets) in 2017, with 90 percent of these holdings concentrated in core banks (6.6 percent of their assets).

9. Malta has recently seen some high-profile ML/TF-related incidents in the banking sector.³ In July 2018, the European Banking Authority (EBA) established that the FIAU had breached the Third EU Directive on the prevention of AML/CFT in case of Pilatus Bank and issued a series of recommendations. Reflecting supervisory actions taken by the MFSA and the current requirements of Union law, EBA decided in September 2017 not to open a breach of Union law investigation for the MFSA.

B. Financial Sector Landscape

10. Malta's financial system is large compared to its economy and is strongly linked with the world. The financial system comprises banks, insurance companies, investment funds (Figure 9), and a large residual category of "other financial institutions" (OFIs).⁴ The cross-sectoral linkages show that a part of the banking sector and OFIs hold large assets and liabilities mostly vis-à-vis the rest of the world (Figure 10).

11. Most banks, insurers, and funds orient their business models either domestically or internationally (Appendix II). Malta's economy continues to exhibit some features of its previous offshore regulatory regime, where the institutions licensed under the regime were restricted from doing business with residents. While financial institutions now operate under a unified licensing regime, there continues to be strong segmentation across several dimensions, including the geographical concentration of their funding sources and assets.

³ For example, the MFSA appointed a competent person to assume control of the Pilatus Bank (0.7 percent of system assets, excluding non-EU branches) in March 2018, following an indictment in the United States of the bank's chairman/CEO and the ultimate BO. MFSA proposed withdrawing the bank's license in September 2018 and the ECB made the decision in November 2018.

⁴ The residual OFI sector refers to sector 127 (Captive Institutions and Money Lenders) of the European system of national and regional accounts (ESA 2010). It comprises financial and quasi- corporations that are neither engaged in financial intermediation nor provide financial auxiliary services and do not transact on open markets.

Malta: Structure of the Financial System, 2004–17
Assets in Multiples of GDP (unless otherwise indicated)¹

	2004	2010	2017
Financial Institutions, total	8.7	28.0	22.9
Banks	4.2	7.5	4.3
Money market funds (MMF)	0.0	0.0	0.0
Non-MMF investment funds	0.5	1.1	1.1
Other financial intermediaries and auxiliaries	0.0	0.0	0.1
Insurance corporations	0.3	0.8	1.0
Pension funds	...	...	...
Other financial institutions	3.7	18.5	16.5
Financial institutions total (millions of euro)	42,190	184,720	257,860
Nominal GDP (millions of euro)	4,852	6,600	11,295

Sources: CBM and MFSA.

¹ European system of national and regional accounts (ESA 2010); CBM excluded. Other financial institutions comprise captive financial institutions and money lenders.

12. Maltese banks are the most important players in the financial sector. Their roles vary considerably depending on their business models and market orientation. There are 25 banks, of which six account for about half of system assets, 95 percent of resident deposits, and 98 percent of loans to residents. Two non-EU bank branches hold 39 percent of system assets but have no exposure to Maltese residents.

13. Key metrics suggest that the banking system is in good health. Banks' total capital adequacy ratio is high (21.2 percent of risk-weighted-assets (RWA) in 2017; Tier 1 Capital ratio at 19 percent) and liquidity is ample (Figure 11, Table 6).

14. Some challenges exist with asset quality, profitability, funding, and CBRs:

- *Asset quality has been improving with challenges remaining in real estate-related lending (Figure 12).* Banks' NPL ratio declined from 6.6 percent in 2014 to 4.1 percent by end-2017 (excluding non-EU branches). NPLs of NFCs declined from 11.8 percent in 2014 to 9 percent in 2017 and remained persistently high in construction (27.8 percent) and corporate real estate (13.9 percent). Asset quality remained weak in a few small banks and, in 2016, the authorities mandated banks to reduce their NPL ratio below 6 percent over five years. Loan loss provisions (LLP) stood at 34 percent of NPLs in core domestic and international banks, and 57 percent in noncore domestic banks.
- *Bank profitability remains good, but uncertain going forward.* Stable net interest margins (NIM) and operating costs help maintain profitability (Figure 13). For core domestic banks, NIM is relatively

high. However, if corporate loan books continue contracting and the property market weakens, the sustainability of core banks' profitability and business models would be challenging, given the large exposure to low-yield bonds, increased regulatory compliance costs, higher LLP requirements, and the implementation of Minimum Required Eligible Liabilities (MREL) which will likely raise funding costs.

- *Funding has been ample but depends on banks' business models.* While banks' funding structure varies by business orientation, loan-to-deposit ratios are generally low and liquidity high. However, the high and growing reliance on nonresident deposits (especially by smaller banks) and the high share of sight deposits raise concerns about funding stability in the case of adverse shocks.
- *Some banks' CBRs are subject to pressures and various restrictions,* particularly when they themselves provide correspondent banking services and channel flows from high-risk jurisdictions or deal with high-risk clients (e.g., nonresidents, e-gaming, virtual-asset operators, IIP, and politically exposed persons). The concerns stem from reasons such as profitability (e.g., low volume of transactions and high compliance costs), risk appetite, and reputational risk.

15. Insurers, investment funds, and investment service firms in Malta focus mainly on foreign markets (Tables 3, 4, 5). Except for eight domestic insurers, the insurance sector writes predominantly non-Maltese risks, mainly in other EU countries. Domestic insurers' assets amounted to 37 percent of GDP at end-2017; they have large exposures to core domestic banks and underwrite a negligible amount of foreign risk. The insurance market is sophisticated, as evidenced by the presence of professional reinsurers, captive insurers, protected cell companies (PCC), and one reinsurance special purpose vehicle. Domestic investment funds' assets amounted to 16.8 percent of GDP at end-2017. The top three domiciles for the Undertakings for Collective Investment in Transferable Securities (UCITS) passporting into Malta were Luxembourg, Ireland, and the United Kingdom. The top three jurisdictions where the Maltese investment service licensees passported their services to were Italy, Germany, and the United Kingdom. The Malta Stock Exchange had a market capitalization of 1.1 times GDP at end-2017, but market turnover is thin.

16. The OFI sector is large and mostly exposed to foreign affiliates. With total assets amounting to 16¾ times GDP, these companies are typically tax-minimizing Maltese entities (holding, invoicing, and royalty companies) that transact with their foreign affiliates (parent companies or subsidiaries) and are therefore not engaged in shadow banking.⁵ At end-2017, 98 percent of the OFIs' assets were invested abroad; 65 percent of assets were unlisted shares; and equity prevailed on the liability side. At end-2017, OFIs held deposits with 11 Maltese banks, amounting to 4.5 percent of banking sector deposits.

⁵ Information on OFIs is limited. About half of the entities are estimated to be owned by natural or legal persons from Germany, Netherlands, Ireland, Canada, and the UK, operating in a variety of economic sectors. To improve statistics, the authorities recently launched a survey to supplement the Inland Revenue Office data.

FINANCIAL SYSTEM RESILIENCE

17. Challenges to financial stability stem from global and Malta-specific factors (Risk Assessment Matrix (RAM), Appendix I). The risks could materialize as follows:

- Reputational risks, including from ML/TF, loss of CBRs, sanctions, and changes in international corporate taxation, could negatively affect Malta’s attractiveness as a financial and business center.⁶
- A sharp correction in housing prices would trigger adverse wealth effects and a deterioration of NPLs for domestically oriented banks.
- Given the openness of Malta’s economy, weaker external demand would adversely affect domestic confidence and growth prospects.
- A sharp tightening of global financial conditions would lead to declines in asset prices and cause valuation losses and higher funding costs.

18. The FSAP assessed the capacity of the banking system to withstand losses and continue supporting the real economy (Appendix III). The analysis was conducted in collaboration with the authorities. Going forward, the authorities need to closely monitor bank activities to detect potential shifts in systemic risks, strengthen the stress test approaches, and enhance data quality. New dimensions should be introduced in liquidity stress testing (e.g., residents versus nonresidents and longer time horizon) and regular sensitivity analysis conducted on solvency for selected vulnerabilities (e.g., credit and funding concentration risks).

A. Solvency and Sensitivity Analysis

19. Top-down solvency stress tests were conducted using baseline and adverse scenarios for 2018–20. The baseline was aligned with the April 2018 *World Economic Outlook*. The adverse scenario was based on the IMF Flexible System of Global Models and covered the risks identified in the RAM. It envisaged a cumulative deviation of GDP from the baseline of 15.4 percent (2.07 standard deviations) over three years (Figures 14, 15). The magnitude of the shock is similar to that in the 2018 EBA stress test and is more severe compared to past crisis periods in Malta, largely motivated by the current buoyant macroeconomic conditions. The sample accounts for 93 percent of bank assets (excluding foreign branches).

20. In the baseline, the banking system remains resilient. Capital ratios remain high after declining slightly on account of balance sheet expansion (leading to RWA growth) and valuation losses caused by higher yields (Figures 16, 17, Table 7). The total capital ratio stabilizes at 19.4 percent and the leverage ratio (Tier 1 to total assets) at 9.1 percent for the sample.

⁶ Sanctions could be imposed by foreign jurisdictions or EU entities.

21. High initial capital ratios make the banking system resilient to a severe economic downturn, with vulnerabilities found in a few small banks.

- For sample aggregate, all capital ratios remain comfortably within the Basel III requirements. The Common Equity Tier 1 (CET1) ratio would decline by 329 bps to 14.5 percent compared to end-2017. The total capital ratio would decline by 390 bps to 16 percent. The results are driven by loan loss provisions, increased RWA, and valuation losses.
- Three small banks would see at least one of their capital ratios decline below the regulatory thresholds. Total recapitalization needs would remain manageable at 0.14 percent of GDP.⁷ These banks' weakness stems from lower starting capital ratios and lower quality of their loan portfolios (particularly in the corporate sector) and high lending to mortgage, real estate, and construction.
- No bank would see its leverage ratio below the 3 percent threshold, with one bank just above it.

22. Sensitivity tests showed vulnerabilities to asset concentration in some small banks. On aggregate, banks would absorb the defaults of large exposures (including to the construction and real estate). However, a simultaneous default of five largest exposures would cause four banks' CET1 to fall under the regulatory 4.5 percent threshold. Interest rate sensitivity tests and a single-factor funding cost shock show low exposure to direct interest rate risks, partially explained by the prevalence of variable rate loans, including mortgages.

B. Liquidity Stress Tests

23. On aggregate, the banking system is resilient to short-term liquidity pressures, but some banks would struggle to meet the liquidity coverage ratio (LCR) requirement under stress conditions. High liquidity buffers help banks withstand short-term liquidity shocks (Figure 18). However, heavy reliance of some small banks on wholesale and nonresident deposits (both retail and wholesale) makes them susceptible to combined large withdrawals of wholesale and nonresident deposits. Under each of the LCR liquidity stress tests, a few small banks fail to meet the minimum requirement.

24. A liquidity stress test based on the net stable funding ratio (NSFR) showed that most banks do not face structural long-term liquidity risks. The relatively high capital and share of retail deposits drive this result. Only a few small banks struggled to meet the requirement, mostly due to their high share of mortgage and long-term corporate loans.

25. Cashflow-based tests reveal funding gaps in some small banks over five-day, one-month, and three-month time horizons. These tests use the maturity ladder data to assess banks' resilience to funding outflow shocks. Some banks experience negative cash balance after

⁷ In early 2018, two of the three banks had capital injections. Using the two banks' end-2017 balance sheets and assuming unchanged risk profiles, the capital injections effectively address the capital deficiency detected in these banks.

utilizing their counterbalancing capacity. The cashflow-based tests point to vulnerabilities resulting from the substantial share of short-term deposits.

26. Reliance on large depositors makes some small banks vulnerable. Withdrawals of the five largest depositors caused the LCR of three banks to fall below the 80 percent threshold. Similarly, three banks failed under large withdrawals of depositors from certain economic sectors.

C. Contagion Risks and Interconnectedness Analysis

27. The risk of contagion through domestic intersectoral linkages is higher than through cross-border interbank exposures due to cross-ownership and deposit concentration. The analysis used model-based simulations of bilateral exposures.

- The analysis of financial sector's domestic interlinkages reveals the potential for cascade effects and spillovers mainly from core banks to insurers, and to a lesser degree, funds (Figure 19). Though capital buffers help mitigate contagion risks, the high concentration of exposures makes some entities vulnerable.
- The analysis of cross-border interbank exposures points to a relatively strong level of interconnectivity with the EA and other European banks, which can generate contagion losses to Maltese banks (Figures 20, 21). The overall losses are limited, with the distress concentrated in a few smaller banks.

FINANCIAL STABILITY POLICY FRAMEWORK

A. Macroprudential Policies and Systemic Risk Monitoring

28. Malta's institutional framework for macroprudential policy is broadly in line with IMF guidance for effective macroprudential policymaking.⁸ The CBM is empowered to pursue its statutory macroprudential functions and has communication tools to ensure accountability and transparency. The CBM's ability to act is supported through regulatory powers and access to data. The Joint Financial Stability Board ensures effective coordination with relevant agencies, including MFIN and MFSA, and with European counterparts on cross-border issues.

29. The legal backing of interagency coordination could be strengthened. The CBM should be empowered to recommend actions to a public authority or institution with a "comply or explain" mechanism and to issue warnings and opinions. The MFSA should be provided with a financial stability objective while making sure its powers and functions (or tasks) remain distinct from those of the CBM. These measures would raise the accountability and awareness of macroprudential policy and reduce potential conflicts with microprudential policies in times of stress.

30. Continued efforts are encouraged to strengthen systemic risk monitoring. Efforts should focus on developing commercial real estate price indexes and collecting granular data on

⁸ [Staff Guidance Note on Macroprudential Policy](#), IMF (2014).

loans, including intercompany loans. The authorities are encouraged to strengthen the risk assessment of the nonbank financial sector, including the OFIs.

31. The planned introduction of borrower-based measures is a welcome step. Malta's macroprudential policy toolkit has expanded considerably in line with the EU Capital Requirement Regulation and Directive IV (CRR/CRDIV). For residential mortgages the authorities introduced stricter risk weights than prescribed by the regulation. To address possible buildup of vulnerabilities in the housing and household sectors, the authorities are preparing to introduce LTV and DSTI limits and restrict maturities for residential real estate bank loans. The authorities should further refine the measures, including by reducing exemptions from LTV limits for loans against secondary and buy-to-let properties.

B. Financial Sector Supervisory Resources and Operational Independence

32. The MFSA's prudential and conduct supervision mandate covers a broad range of entities. It includes banks, insurance, securities, and other regulated entities. The MFSA is also tasked to assist the FIAU in supervising subject persons in the financial sector. In support of the national strategy to promote blockchain, the MFSA has developed a regulatory framework for VFA (Appendix IV).

33. Resources are stretched and insufficient for the nature and range of tasks the MFSA must carry out for effective supervision. The MFSA's resources have not kept pace with the increased demands on supervision. Difficulties exist with planning and timely execution of supervision actions, including delays in review of recovery plans and strategic documents, and with maintaining regular contacts with all less significant institutions (LSI). The MFSA has already taken steps to address the severe capacity gaps. Staff remuneration was recently improved, and plans are prepared to: (i) increase the number of staff by 50 percent over the next three years; and (ii) formalize a new human resources strategy. In addition, the MFSA has launched a Business Process Reengineering exercise to overhaul its supervisory processes and enhance its technology. The MFSA urgently needs to increase its staff and quantify more precisely the resources necessary to conduct a more intrusive risk-based supervision, including by mapping the required skills (e.g., extensive credit and IT risk experience, and statistics and VFA knowledge).

34. Some aspects of the MFSA's operational independence raise concerns. The MFSA has the supervisory authority to carry out its tasks, but the necessary preconditions for operational independence are not all met.

- **MFSA should have stable funding.** With the separation of the Registry of Companies (ROC) from the MFSA in April 2018, a significant part of its funding was redirected to the government. Going forward, the government will cover MFSA's funding gaps. To avoid uncertainties, the MFSA should develop a five-year plan to increase its budgetary resources in a sustained way, which should be supported by a strong public commitment from the government. To further enhance funding stability, the MFSA should revisit its policy for license fees and the basis used for other regulatory charges.

- **MFSA should have full autonomy over its recruitment process.** Currently, the MFIN is required to endorse the human resources budget on a yearly basis, and the Office of the Permanent Secretary for Financial Services, Digital Economy and Innovation (under the Prime Minister's office) is required to approve recruitments on a case-by-case basis.
- **MFSA should maintain a dedicated statutory committee tasked with supervisory and enforcement powers.** All supervisory powers currently vested in MFSA's Supervisory Council (SC), which focuses only on supervisory issues, are planned to be transferred to the MFSA's executive committee chaired by the CEO and made up of five MFSA staff members reporting to the CEO. To enhance checks and balances in the decision-making process, a dedicated statutory committee tasked with supervisory and enforcement powers should be maintained, ensuring that enough attention, time, and resources are devoted to supervisory actions.

C. Banking Supervision

35. Bank supervision has been upgraded in recent years. The implementation of EU directives and regulations helped close several gaps identified in the 2003 FSAP and in an independent assessment in 2011. The definition of related parties has been broadened and the administrative penalties and measures have been set out. The MFSA has been empowered to issue binding regulations (e.g., requiring banks to submit NPL reduction plans). More recently, the European Central Bank's (ECB) Banking Supervision has raised the level of supervisory intensity and intrusiveness of three significant institutions (SI). The MFSA is responsible for supervision of 18 LSIs, subject to ECB oversight, and two non-EU branches. For three High-Priority LSIs (HPLSI), the ECB receives mandatory reporting and ex-ante notifications on certain supervisory actions by the MFSA. In the bank supervision area, the FSAP focused primarily on the supervision of LSIs.

36. The review of supervisory measures reveals that the MFSA's actions have not always been timely and effective. Significant delays exist between the end of onsite inspections and the date on which decisions were taken by the SC. The low and limited number of monetary sanctions has little deterrent effect. Moreover, the limited scope of onsite inspections (low frequency and key risks insufficiently covered) impair the detection of problems, including in the ML/TF area. Judicial appeals against monetary sanctions have suspensive effects, undermining the sanctions policy (e.g., MFSA has 27 pending appeals with some dating back to 2009).⁹ The authorities should eliminate delays in supervisory actions (including by amending the law if needed) and take full advantage of the broad enforcement powers.

37. Important shortcomings in bank supervision practices need to be addressed. MFSA needs to complete the rollout of its supervision strategy, including the completion of the Supervisory Review and Evaluation Process for all HPLSIs, and address the low frequency of onsite inspections at LSIs. A more intrusive approach is needed to assess banks' risk-management processes, including for asset recovery, related-party transactions, forbearance measures, and collateral valuation. The focus should be on the main risks (credit, liquidity, and compliance), the adequacy of risk classification and provisioning, and on stronger follow-up on remediation progress.

⁹ Any possible limitations on the judicial review of supervisory/resolution actions should strike a balance between the right and a legitimate need for judicial review and the effectiveness of such actions.

Despite improvements, the related-party framework exhibits significant gaps with the BCP, requiring further action. Legal amendments are needed to increase MFSA's powers and banks' obligations related to: (i) the change of legal structures; (ii) major acquisitions; (iii) the review of the activities of companies affiliated with banks' parent companies; and (iv) the communication of materially adverse developments. Finally, the authorities should improve the supervision of non-EU branches.

D. Insurance and Securities Market Supervision

38. The MFSA should continue its efforts to strengthen the supervision of the evolving insurance and securities markets. The complexity and sophistication of the insurance market, its high exposure to EU countries, and the high concentration of life insurance and reinsurance industries call for continued close monitoring of the evolving business models of the supervised entities.

39. Enhancing the risk-based supervision frameworks (RBSF) should be a priority. The RBSF for the insurance sector and the investment firms assesses the licensees based on their risk impact and the probability of risk, which drives the annual supervisory plan. There is scope for improving the monitoring of macro-risks and business model analysis in the RBSF. The supervisory program for conduct supervision should be expanded to include banks acting as distributors of insurance and securities products.

FINANCIAL SAFETY NET AND CRISIS MANAGEMENT

40. Financial safety net and crisis management arrangements are generally sound but staffing needs to be increased. A Domestic Standing Committee comprising relevant staff from the CBM, MFSA, and MFIN has a mandate to enhance crisis preparedness and to facilitate the management of an actual crisis. Within the MFSA, the supervisory and resolution functions are adequately separated, and the Depositor Compensation Scheme (DCS) has its own Management Committee. Given the current workload, a review of the adequacy of MFSA's Resolution Unit staffing should be undertaken, and its resources increased.

41. An administrative bank insolvency regime should be adopted, and the creditor hierarchy clarified. Multiple laws and regulations govern bank failures, creating uncertainties in their application, including regarding the creditor hierarchy. The uncertainties affect potential DCS recoveries in insolvency, its role in creditor-led insolvency, the use of DCS funds for resolution, and the application of the shareholder and creditor safeguards under the resolution tools provided in the European Bank Recovery and Resolution Directive (BRRD). The MFIN should initiate the reform of the bank insolvency framework in line with the international standards, including providing explicit powers to transfer assets and liabilities of failing banks. In the meantime, the DCS should clarify its legal interpretation of and policies under the current framework, and the MFSA should adopt a policy to place a bank into liquidation when a deposit payout is made.

42. The MFSA should assess recent bank failures and strengthen its supervisory and early intervention procedures, including to mitigate its legal risks. This should include reducing the

time in office for the competent person appointed to manage the affairs of a bank.¹⁰ Responsibility for decisions on bank insolvency and liquidation of banks whose license is withdrawn needs to shift from the MFSA's supervisory function to its resolution function.

43. Preparations to operationalize the BRRD resolution tools should be accelerated and internal crisis management plans developed. Ensuring the availability of sufficient MREL is critical, as the resolution regime mandates the bail-in of creditors. Issuing sufficient MREL may prove challenging for banks, considering the limited domestic professional investor market and issuance sizes that may be small for potential external investors. The Resolution Unit should prepare the use of the business transfer and the bridge bank tools, including ownership and governance structure of the latter. The MFSA and the MFIN should develop internal crisis management plans to supplement the Interagency Crisis Management Framework currently under review by the Domestic Standing Committee.

FINANCIAL INTEGRITY

44. Malta's openness to financial flows makes it vulnerable to ML/TF risks. Increasing inflows, including from countries generally considered to pose greater ML/TF risks, may exploit vulnerabilities in the banking sector, real estate, remote gaming, virtual assets, and the IIP. A new legislative AML/CFT framework entered into force in 2018, but according to the opinion of the European Commission (July 2018), the transposition of the EU's Fourth AML Directive is not complete and recent bank intervention cases exposed serious shortfalls in the framework. Malta is currently undergoing an assessment against the Financial Action Task Force 2012 standard.

45. The authorities' national AML/CFT strategy and action plan are ambitious. The National Risk Assessment (NRA) of ML/TF risks was updated in 2017 but was not published. Subsequently, the authorities published an ambitious national AML/CFT strategy and a comprehensive AML/CFT action plan. However, their implementation is at the initial phase.

46. Cooperation among concerned entities (FIAU, MFSA, law enforcement agencies) vested with AML/CFT oversight must be strengthened. The recent efforts to step up joint FIAU and MFSA AML/CFT supervision are welcome. Further efforts to improve operational cooperation between FIAU and law enforcement and among AML/CFT supervisors are needed. The authorities should consider supporting the establishment of an EU-level arrangement directly responsible for AML/CFT supervision. It could enhance convergence of supervisory practices and minimize regulatory arbitrage.

47. The authorities' and market players' understanding of risks is uneven. The NRA noted that the threat posed by the foreign proceeds of crime to Malta is high. However, there are no measurable estimates of the amount of proceeds of crime possibly laundered through and in Malta. Furthermore, there is a lack of appreciation of risks innate to Malta as an international financial

¹⁰ In the recent case of bank license withdrawal, the shareholders challenged the MFSA at the Court of Justice of the EU (CJEU) and at the Malta Financial Services Tribunal. Although covered deposits were paid out, the MFSA Board has elected not to put the bank into liquidation pending a CJEU decision.

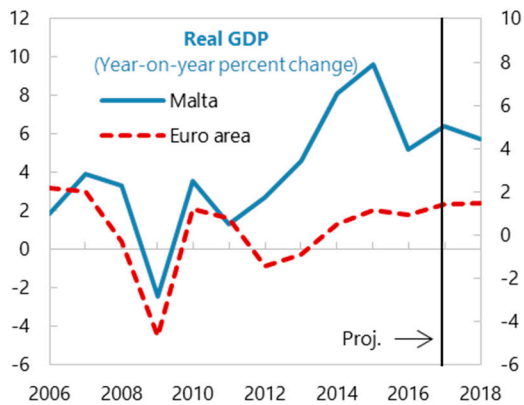
center heavily relying on nonresident clients and of threats emanating from the significant cross-border financial flows and of their nature (e.g., rationale, origin, and destination). Despite acknowledging the importance of CBRs, the authorities lack comprehensive understanding of ML/TF risks that could affect these relationships.

48. A multi-prong strategy is needed to address deficiencies in the AML/CFT framework, with particular focus on preventive measures.

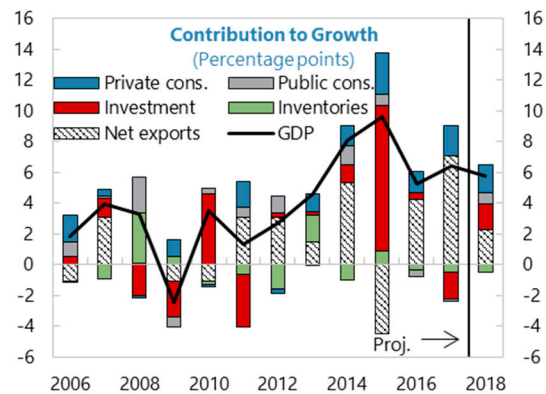
- Banks' verification of BO information and ongoing monitoring of risk-sensitive accounts should be strengthened, especially by applying enhanced measures for nonresident clients (including opaque companies), new technologies (e.g., virtual assets and e-gaming), and IIP-related funds. Customer due diligence for domestic and foreign politically exposed persons, their family members, and close associates and reporting suspicious transactions also need to be fortified.
- The authorities should continue addressing ML/TF risks related to expanding blockchain technologies and virtual assets. It is important to close any related gaps in the AML/CFT framework and ensure that the definition and AML/CFT oversight of a "subject person" are in line with the requirements of the Financial Action Task Force regarding virtual asset service providers. Immediate action is also needed to strengthen resources for AML/CFT oversight of virtual asset service providers.
- The authorities need to fully implement a risk-based AML/CFT supervision of banks, evaluate banks' risk mitigation models more stringently, and develop more effective AML/CFT enforcement, including by applying dissuasive and proportionate sanctions and eliminating delays in their application. More vigilant application of the fit-and-proper requirements, including the assessment of the reputation of bank owners and managers, would help improve bank governance.
- The ROC should be adequately resourced and required to properly verify and update the BO information.

Figure 1. GDP Growth, 2004–17

The GDP growth is higher than in the euro area



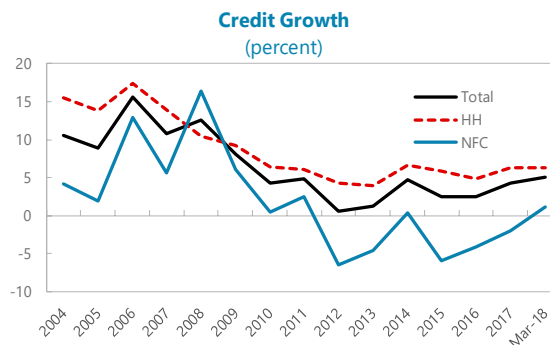
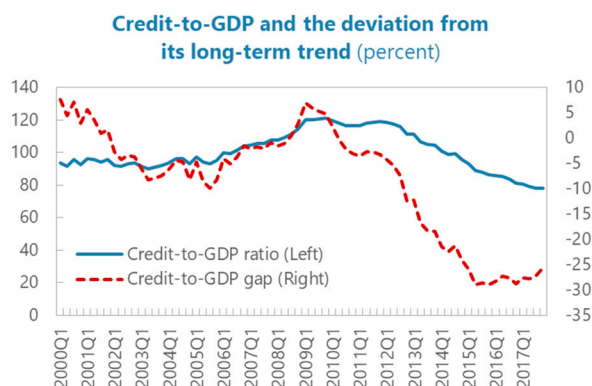
...with net exports being an important contributor to growth.



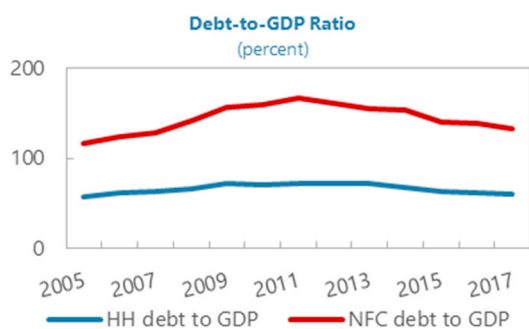
Sources: CBM; Eurostat; IMF *World Economic Outlook*; and IMF staff calculations.

Figure 2. Broad Credit Conditions

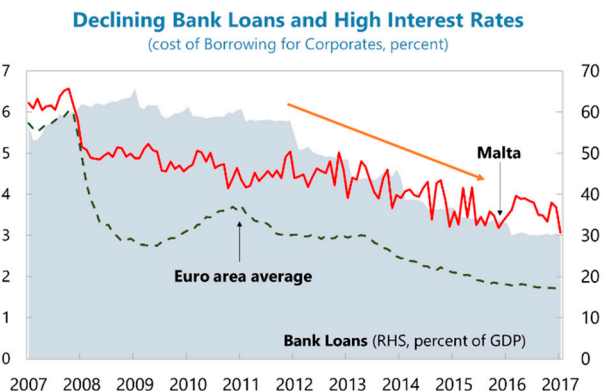
The credit-to-GDP gap, based on bank credit, has been negative due to a broad-based slowdown in credit growth since the GFC. Credit recovery has started recently.



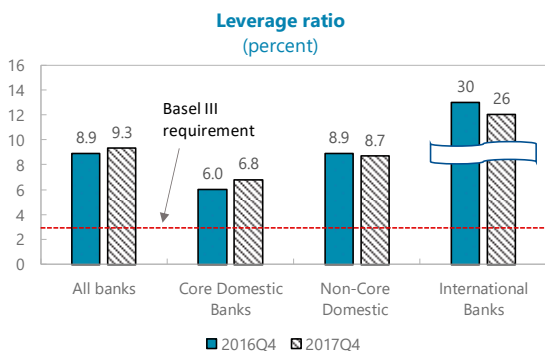
Private sector debt-to-GDP ratio, which includes both bank and nonbank credit, continues to decline.



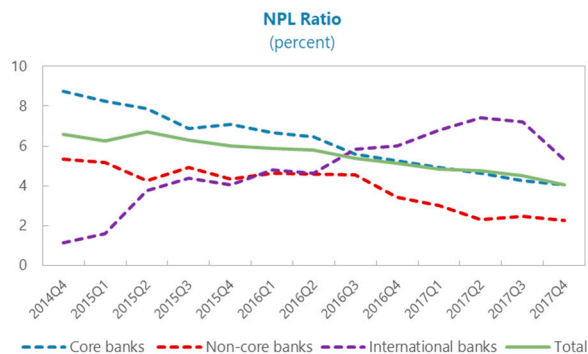
The cost of bank borrowing is among the highest in the EA countries.



Banks' leverage ratios are well above the Basel III minimum requirement, supporting credit growth^{1/}...



... and asset quality has been gradually improving.



Source: Malta authorities and IMF staff calculations.

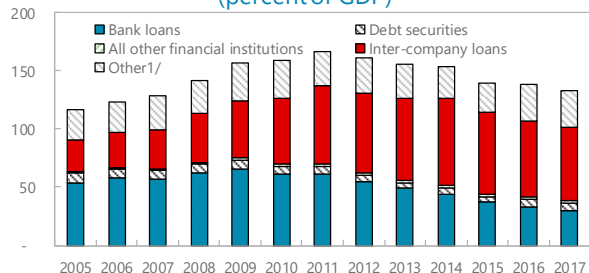
^{1/}All banks, excluding foreign branches.

Figure 3. Lending to Nonfinancial Corporations

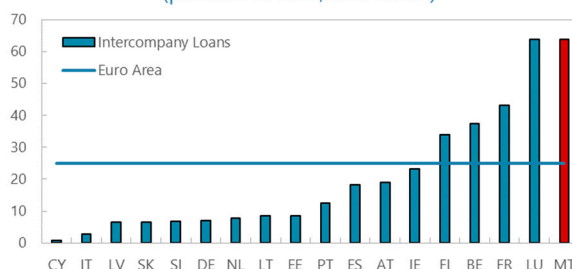
NFCs have shifted their main financing source from bank loans to intercompany loans.

Malta's intercompany loans are larger than in other European countries.

Changing structure of NFC finance
(percent of GDP)



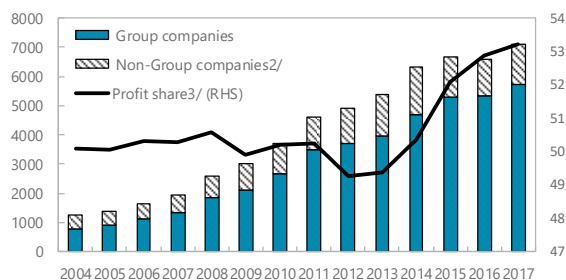
Intercompany Loans in Europe
(percent of GDP, end-2017)



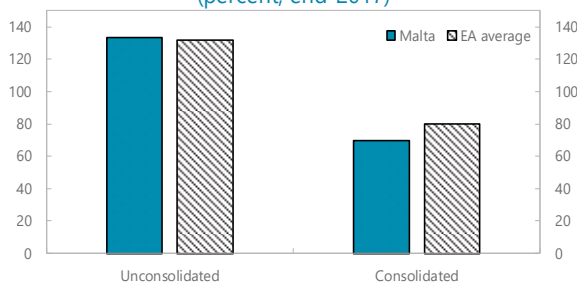
Since intercompany lending happens among related companies, mostly within a group, ...

... the NFC debt-to-GDP ratio on a consolidated basis is much lower, and below the EA average, ...

Inter-company loans by lender
(millions of euro)

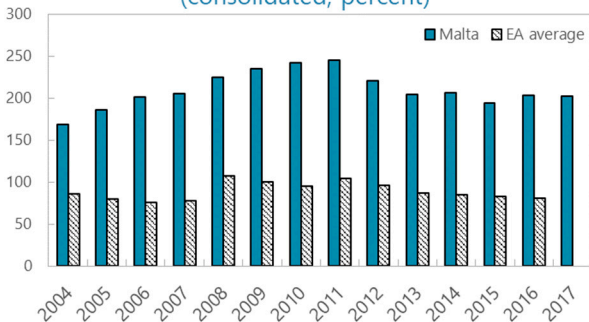


NFC debt to GDP ratio
(percent, end-2017)



... while the debt-to-equity ratio remains higher than the EA average, even on a consolidated basis.^{4/}

Persistently High Debt-to-Equity Ratio
(consolidated, percent)



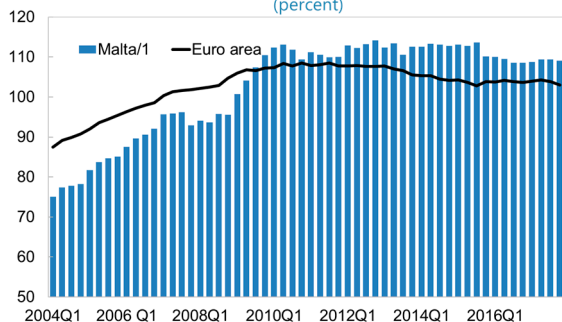
Sources: Maltese Authorities and IMF staff calculations.

^{1/}Other holders: include Government, households, and the rest of the world. ^{2/}“Non-Group companies” include related non-group companies. ^{3/}Profit share here is the two-year moving average of the ratio of gross operating surplus to gross value added. ^{4/}The consolidation is done at the domestic group level.

Figure 4. Household Indicators

Household debt-to-income has been moderate at slightly higher levels than the EA average.

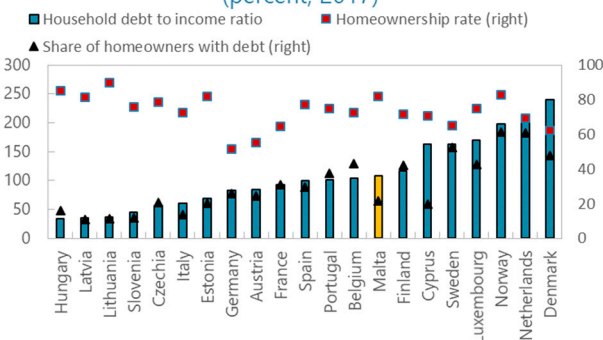
Household debt to gross disposable income
(percent)



1/ Disposable income for Malta is based on Central Bank of Malta estimates. Sources: Central Bank of Malta, Haver, and IMF staff's calculations.

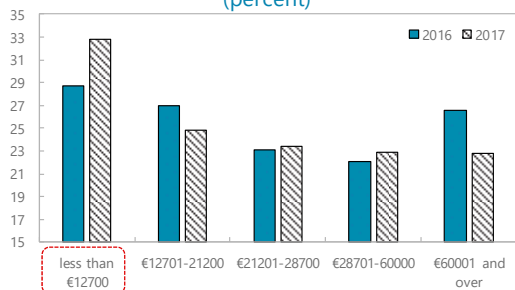
Home ownership is high in Malta, while the share of homeowners with debt is relatively low.

Household debt and homeownership rate
(percent, 2017)



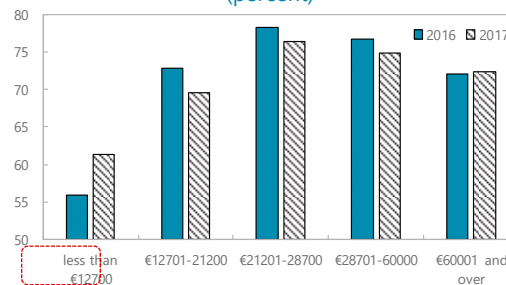
Low-income households tend to have higher DSTI ratios, ...

Average DSTI of new loans by income
(percent)



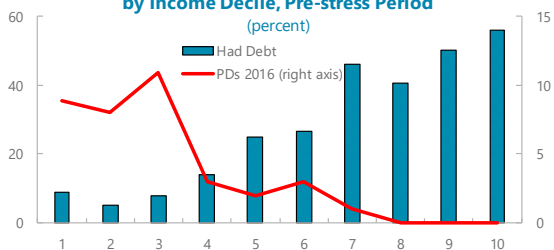
... but they have a lower LTV ratio and amounted to only 2.3 percent of total new bank mortgage loans in 2017.

Average LTV of new loans by income
(percent)

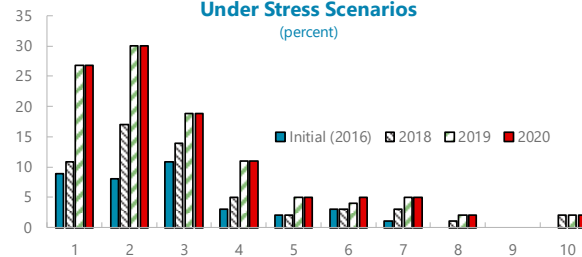


Debt varies significantly across income deciles and a balance sheet stress test shows that low-income households are more vulnerable to drop in income and house prices and a rise in financing costs.^{1/}

Distribution of Household Debts and Implied PDs by Income Decile, Pre-stress Period
(percent)



Distribution of Household PDs by Income Decile, Under Stress Scenarios
(percent)



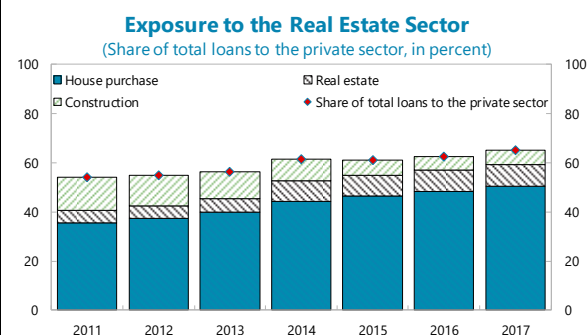
Source: IMF staff calculations

Source: Maltese Authorities; 2017 Eurosystem Household Finance and Consumption Survey; IMF staff calculations.

^{1/}Household leverage includes non-profit institutions serving the household sector. Household balance sheets were stressed, using the adverse macroeconomic scenario used to stress test banks. Debt consists of outstanding amounts of mortgages and on credit cards, credit lines/bank overdrafts, and outstanding amounts of other, non-collateralized, loans (including loans from commercial providers and private loans).

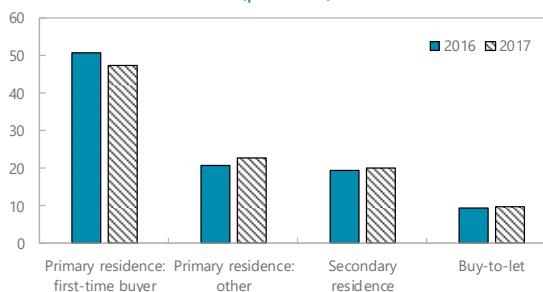
Figure 5. Banks' Mortgage Lending to Residents

Bank's exposure to the housing market has been increasing.^{1/}

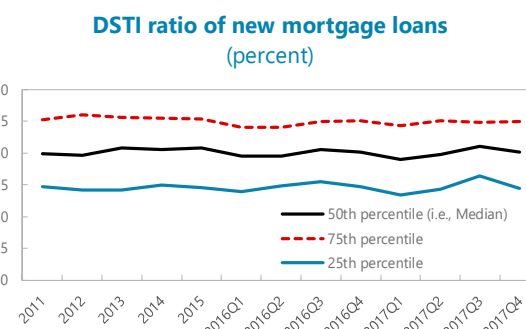
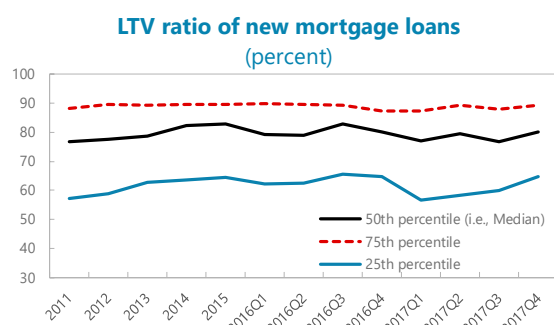


About 70 percent of new mortgages are taken for purchases of primary residence.

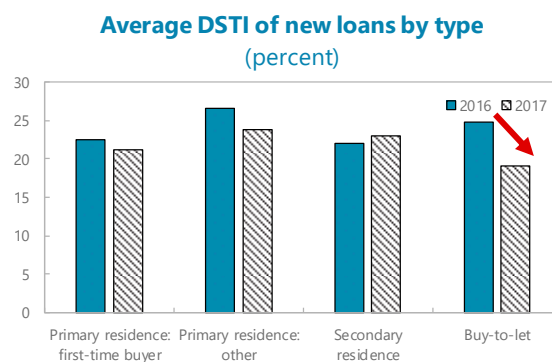
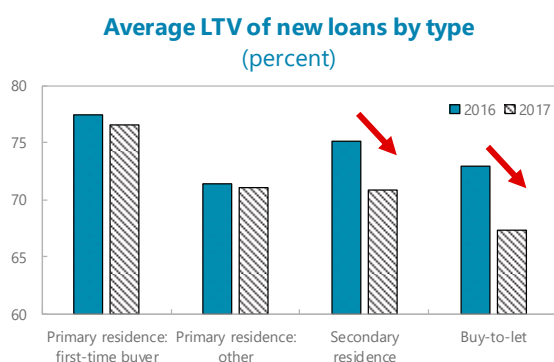
Share of new mortgage loans by type
(percent)



Mortgage lending practices by banks have been prudent; the median LTV and DSTI ratios of new loans are stable at around 80 percent and 20 percent, respectively.



LTV and DSTI ratios have become more prudent for loans for secondary residence and buy-to-let properties, which would be more sensitive to economic developments.

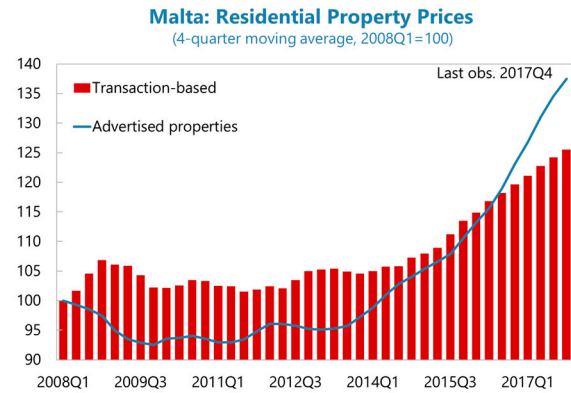


Sources: Maltese authorities and IMF staff calculations.

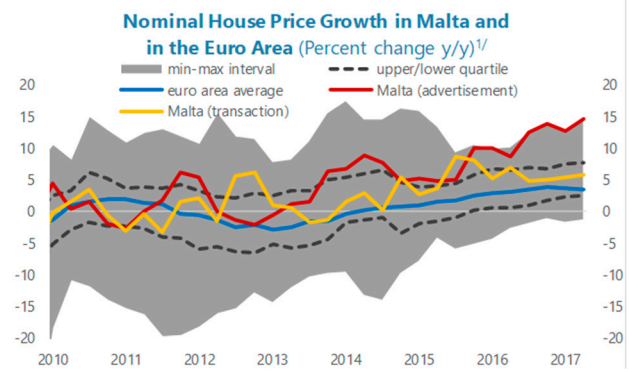
^{1/}All banks, including non-EU branches. At end-2017, total property-based lending (i.e., to residents and nonresidents) was 40 percent of total loans to customers. For core domestic banks, the ratio was 56 percent.

Figure 6. Housing Prices

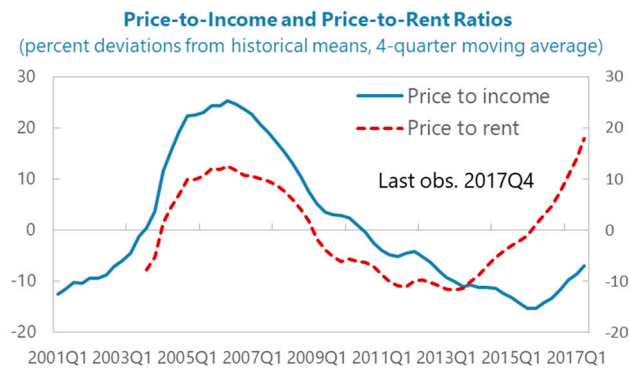
House prices have been increasing since 2014...



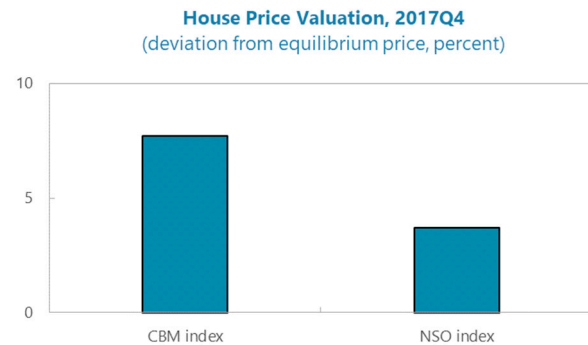
... at a higher rate than the EA average.



Price ratios are picking up ...



... while econometric analysis suggests some overvaluation.^{1/}



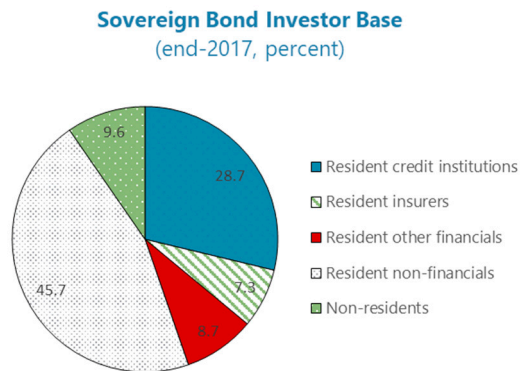
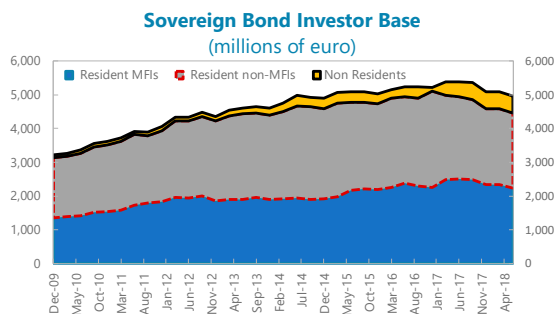
Sources: Maltese authorities and IMF staff calculations.

^{1/}Two different house price indexes are used in the model. The price index published by the CBM is based on advertised prices of the residential property, while the price index published by the NSO is based on reported market transactions. See the 2019 Article IV Staff Report.

Figure 7. Bank-Sovereign Nexus

Malta's sovereign bonds are mostly held by residents ...

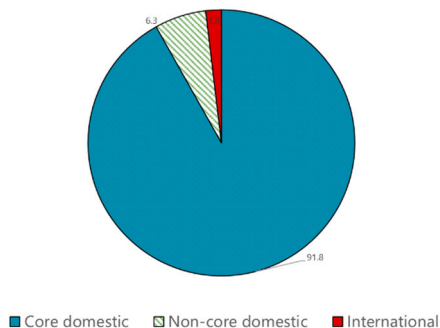
... while the banking sector holds 29 percent of the total stock of Maltese government bonds...



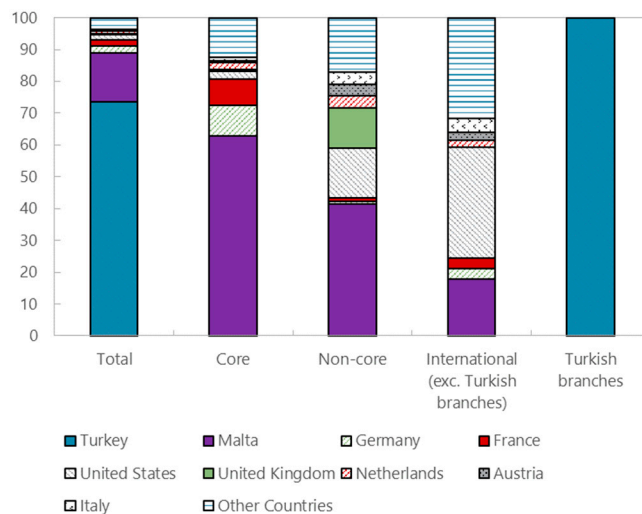
... concentrated in core domestic banks.

Holdings of other sovereign debt securities varies among groups of banks.^{1/}

Share of Maltese Government Bonds (in percent)



Holdings of Sovereign Securities by Country¹ (percent of total)

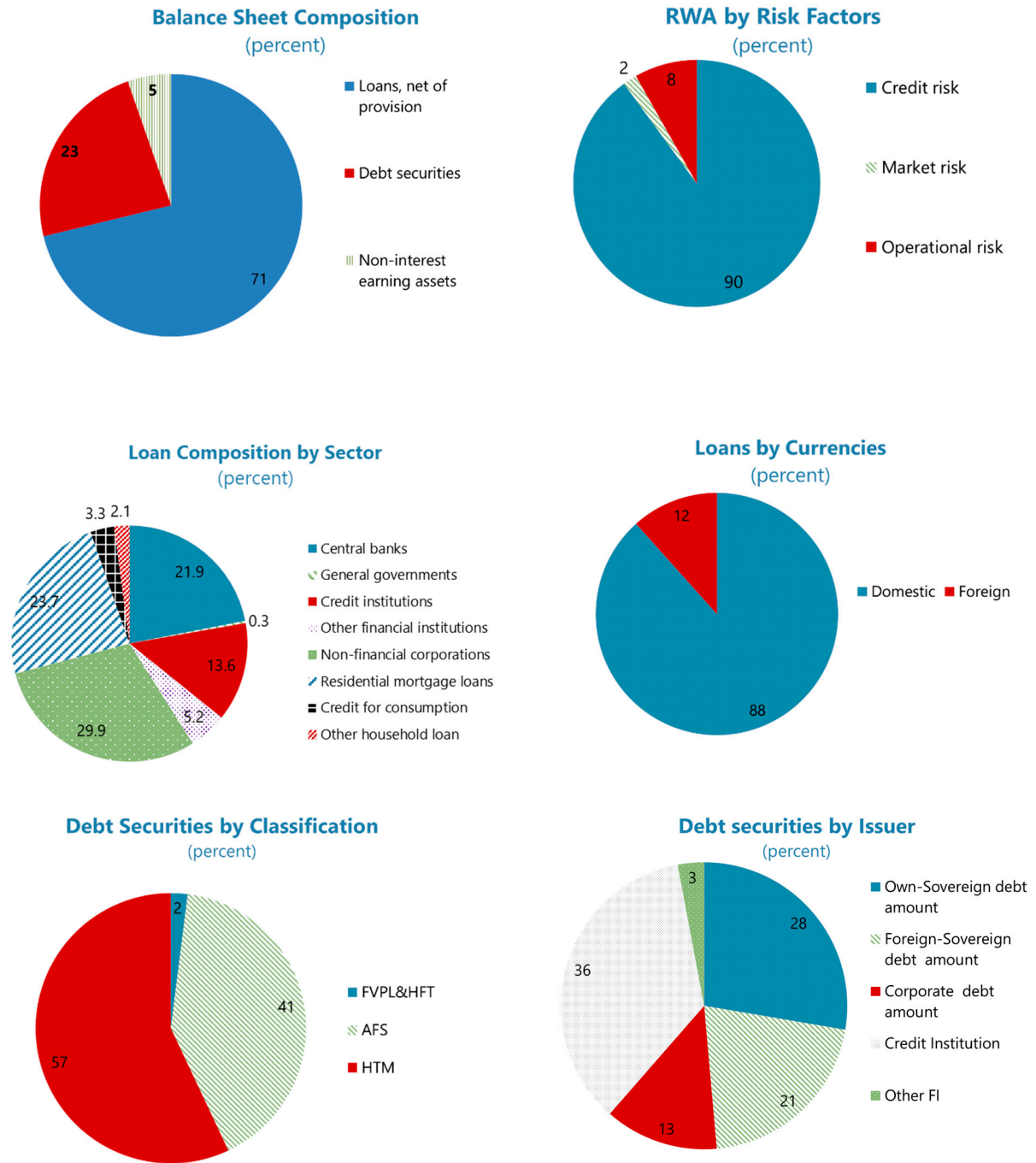


Sources: Maltese authorities and IMF staff calculations.

Note: Total banking sector, non-EU branches included.

^{1/}"International" are shown without non-EU branches but "Total" includes all banks, including non-EU branches.

Figure 8. Sample Banks' Balance Sheet Composition

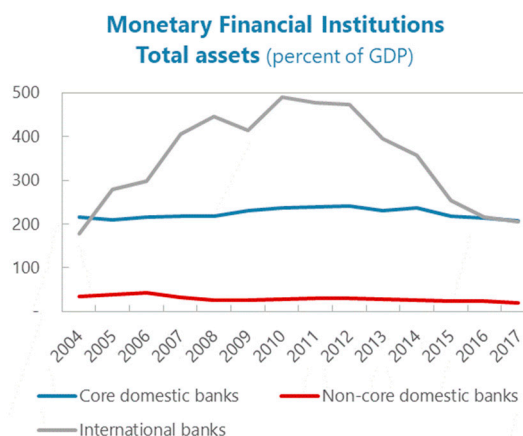
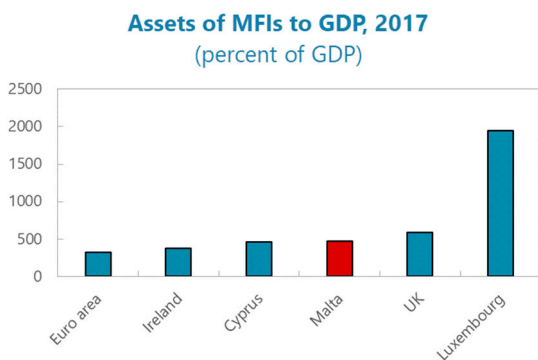


Sources: Maltese authorities and IMF staff calculations.

Figure 9. Structure of Financial System^{1/}

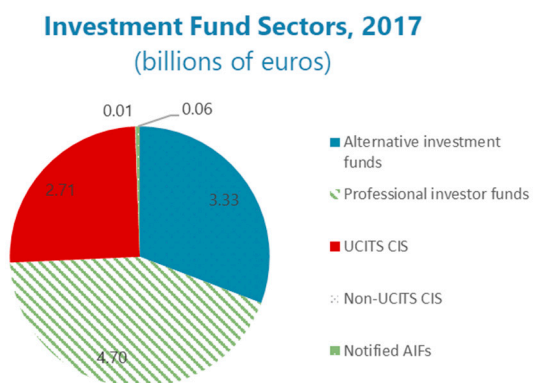
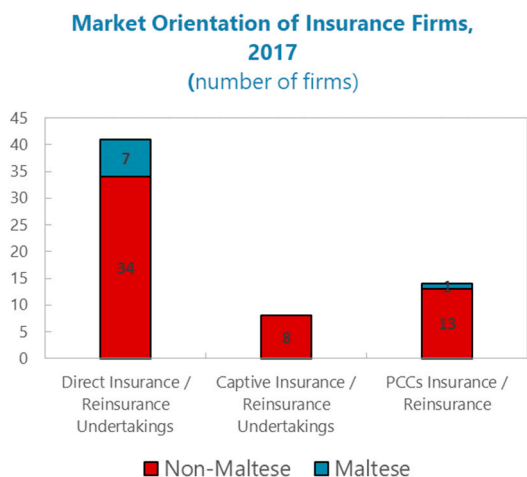
The banking sector is large...

... but declined recently as international banks consolidated their operations.



Most insurance firms focus on foreign risk.

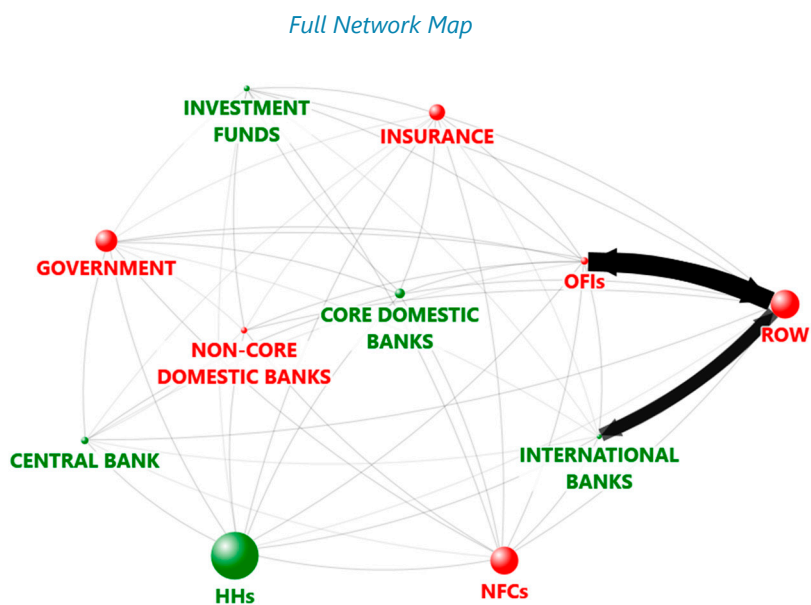
Investment funds assets amount to GDP.



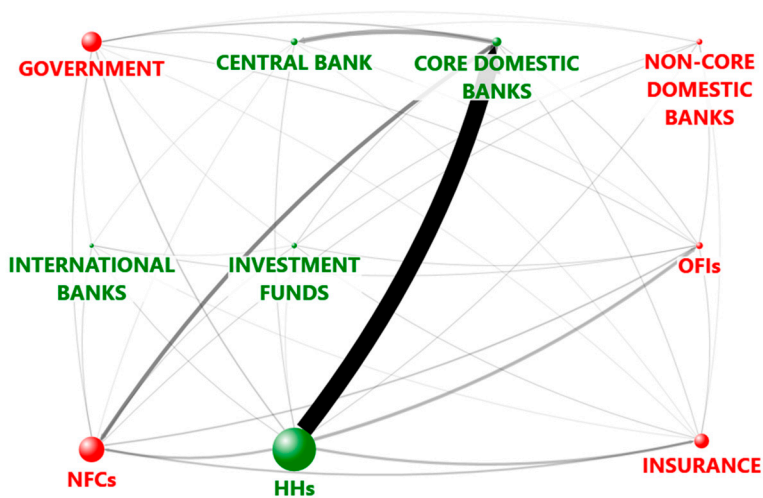
Sources: Maltese authorities, ECB, and IMF staff calculations.

^{1/}Total banking sector, non-EU branches included.

Figure 10. Cross-Sectoral Linkages (Gross Exposures, 2017)^{1, 2, 3}



Network Map without the Rest of the World



Sources: CBM and IMF staff estimates.

¹Prepared by Giovanni Ugazio (Statistics Department, IMF).

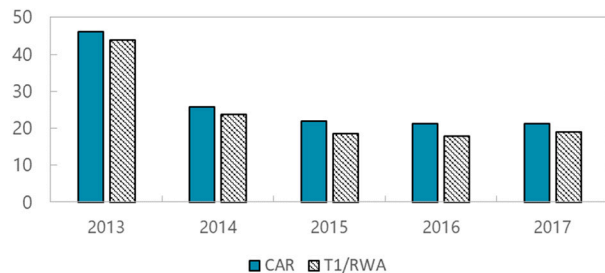
²Based on financial account data (“from-who-to-whom”), the nodes’ size represents the size of the net balance between funds borrowed and lent by a sector, while the nodes’ color represents whether a sector is a net debtor (red) or creditor (green). The thickness of arrows from a sector to another depicts the bilateral exposures.

³“OFIs” include captive financial institutions and money lenders.

Figure 11. Banking Sector Overview

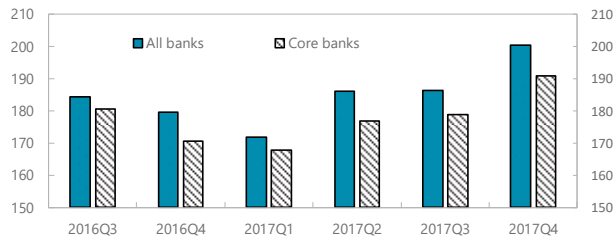
Banks are well capitalized...

**Capital to RWA
(percent)**



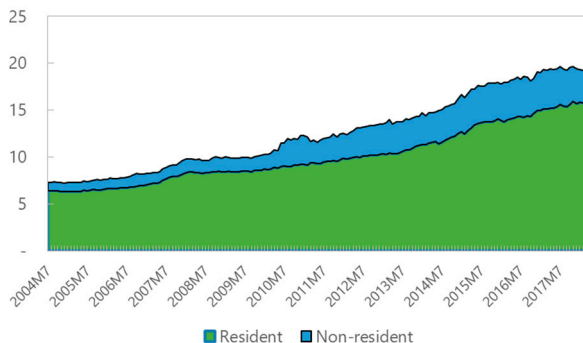
...and liquidity is ample.

**Liquidity Coverage Ratio
(percent)**



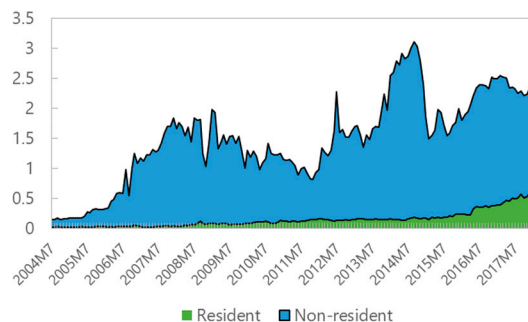
The share of nonresident deposits is relatively small in core domestic banks...

**Deposits, Core Banks
(billions of euros)**



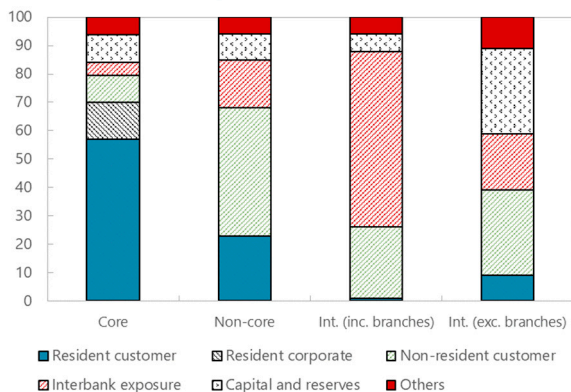
...but is large and volatile in other banks.

**Deposits, Other Banks ^{1/}
(billions of euros)**



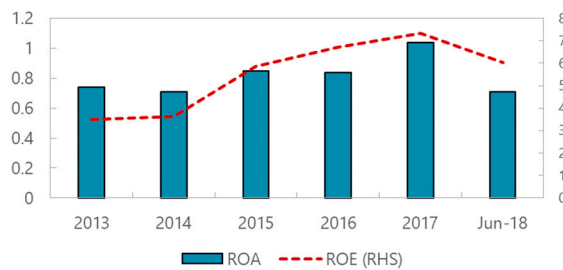
Funding differs considerably between groups of banks.

**Funding Structure
(percent of total)**



Profitability is declining, albeit still healthy.

**ROE and ROA
(percent)**



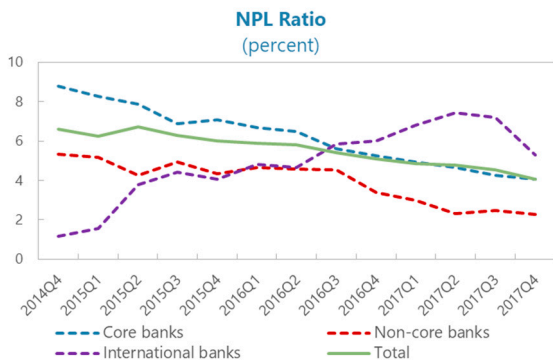
Sources: FSI, CBM, MFSA, and IMF staff calculations.

^{1/}Sample banks.

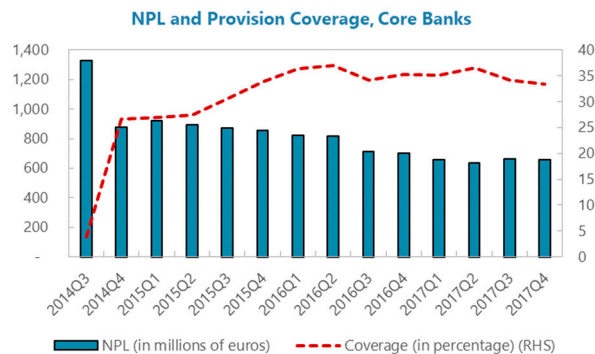
Note: Total banking sector, non-EU branches included.

Figure 12. Banking Sector Asset Quality

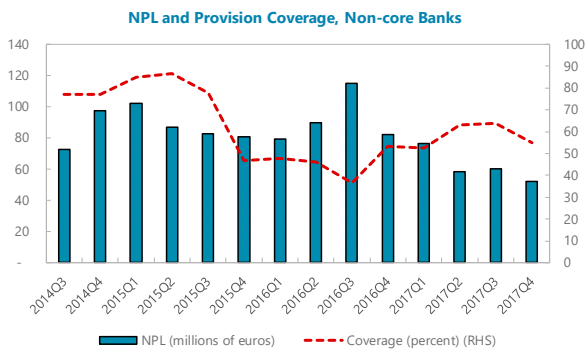
NPLs are decreasing for all groups of banks.



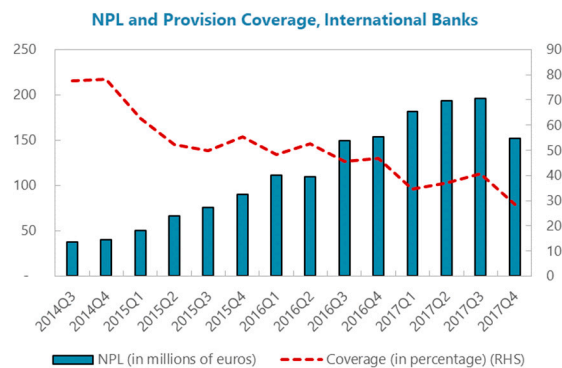
Provision coverage is stable for core domestic banks...



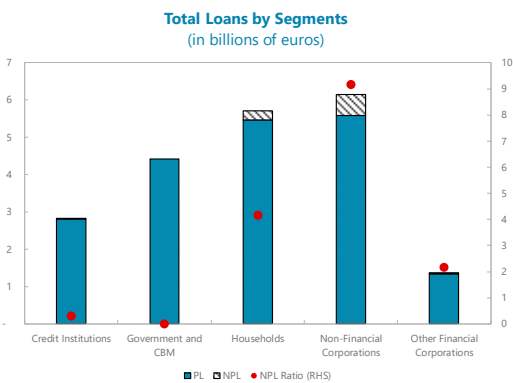
...but decreasing for non-core banks (recently)...



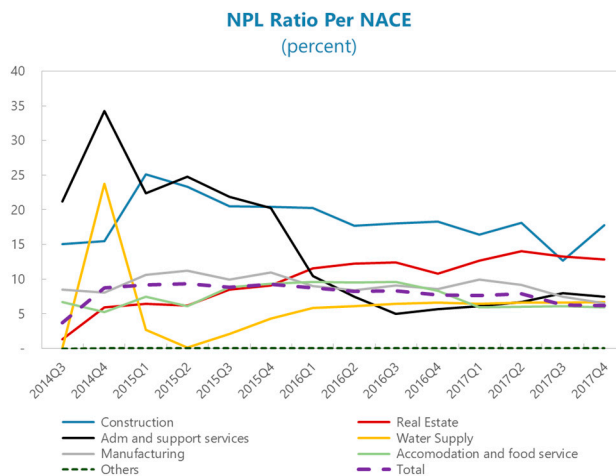
... and for international banks.



NPL ratios are high for consumer and NFC loans.



NFCs' NPLs are concentrated in construction, real estate, and administrative and support services.

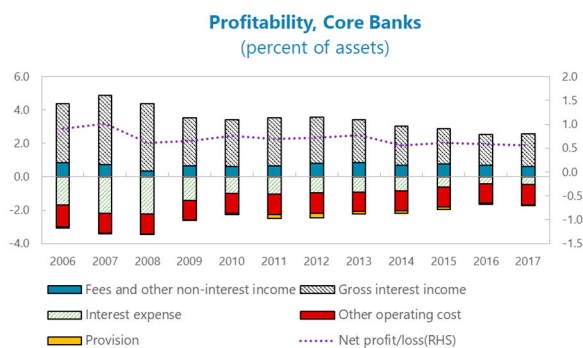


Sources: Maltese Authorities and IMF staff calculations.

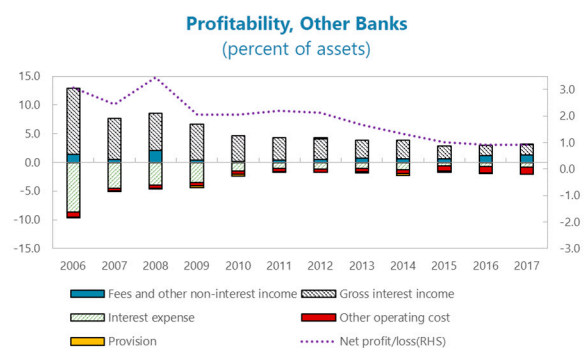
Note: Total banking sector, foreign branches excluded.

Figure 13. Sample Banks' Profitability

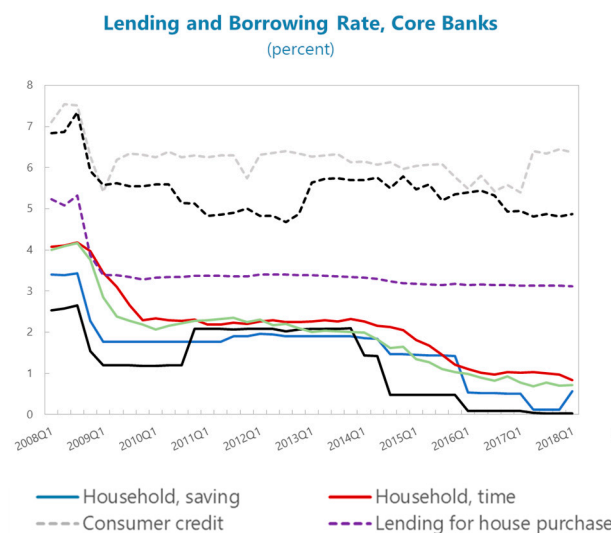
Income and expense have been shrinking...



...and interest income from securities investment diminishing.



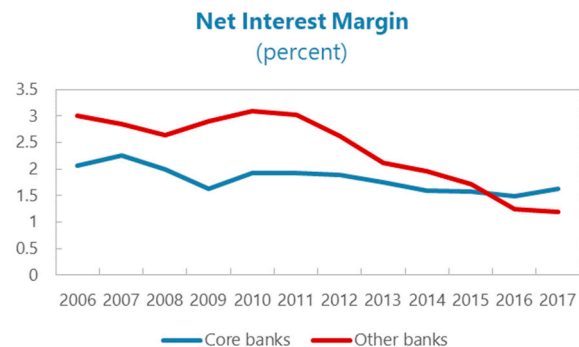
The interest spread is increasing for all banks...



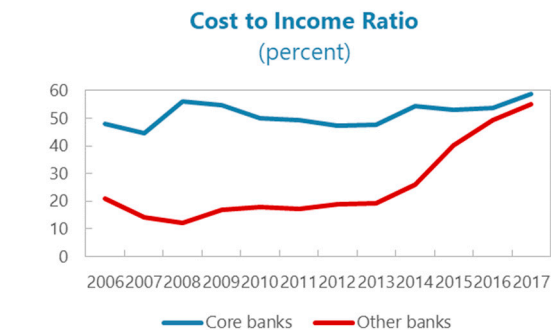
... but is volatile for other banks



NIM is stable for core domestic banks, but decreasing for other banks



Cost-to-income ratios were relatively stable for core banks in the last five years but increased for other.



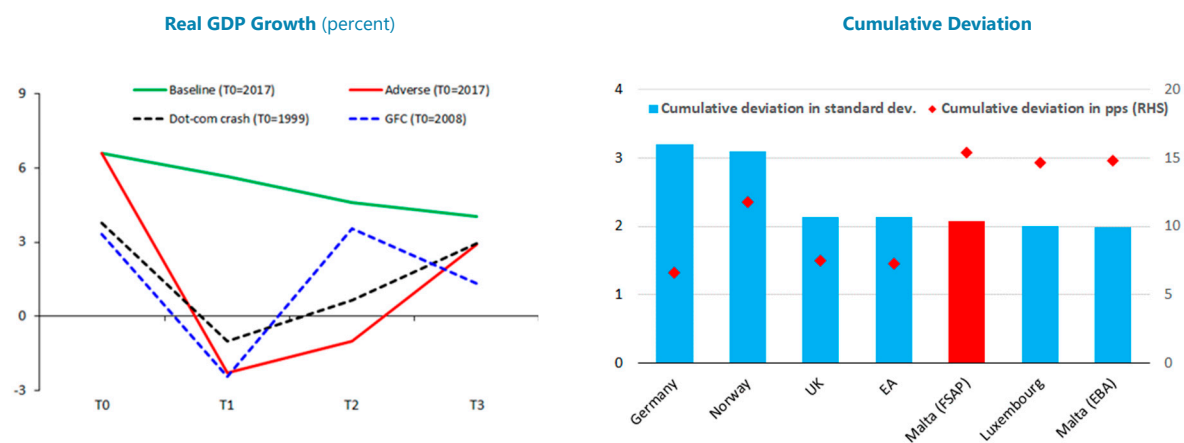
Sources: Maltese authorities and IMF staff calculations.

Note: Sample banks (11 banks), covering 93 percent of total assets, foreign branches excluded.

Figure 14. FSAP Stress Test Scenarios^{1/}

Scenario severity from historic perspective

Comparing the size of GDP shock in European FSAPs

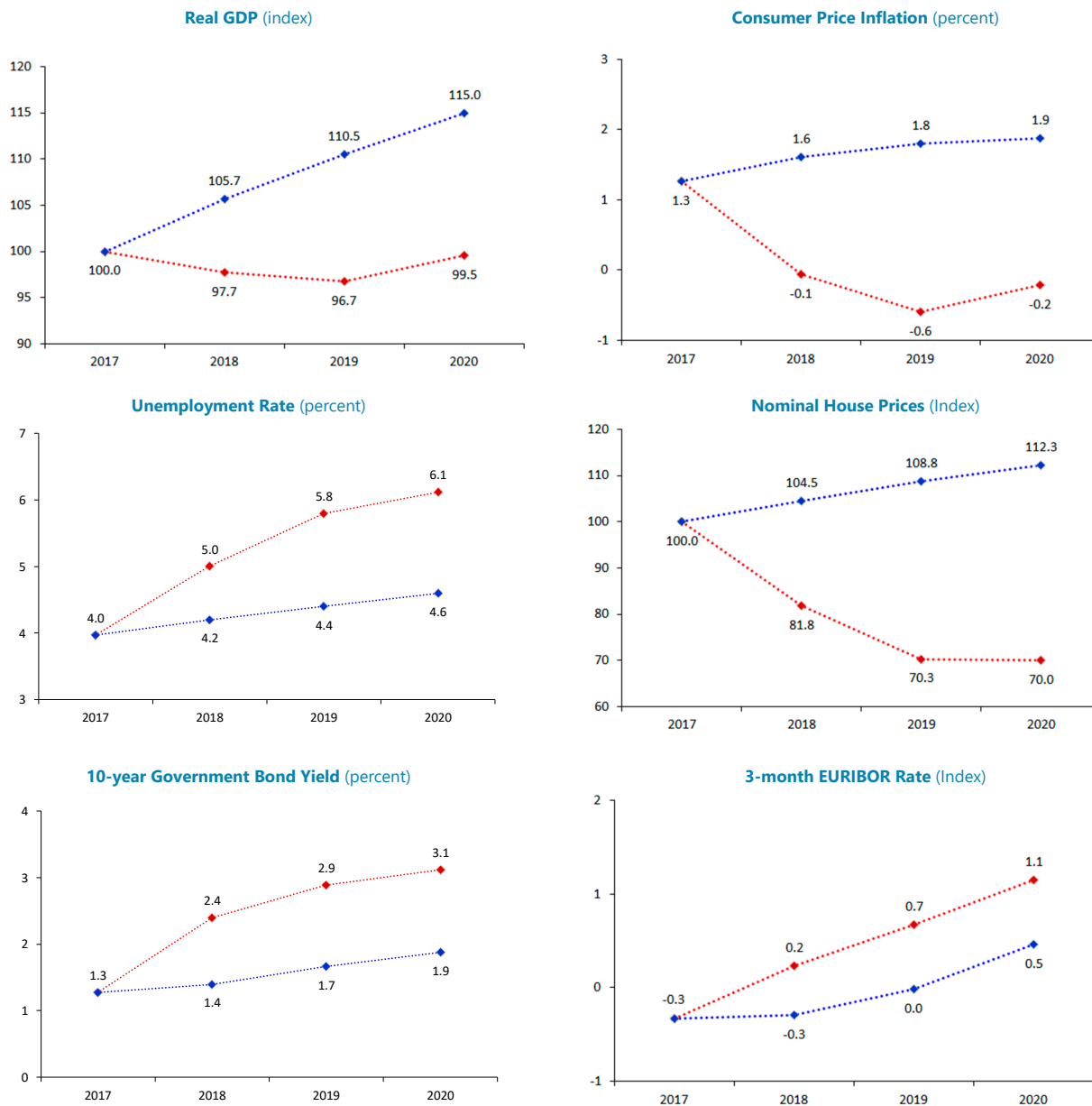


Sources: CBM, ECB, and IMF staff calculations.

^{1/}The baseline was aligned with the April 2018 *World Economic Outlook*.

Figure 15. FSAP Macroeconomic Projections^{1/}

■ Baseline scenario ■ Adverse scenario

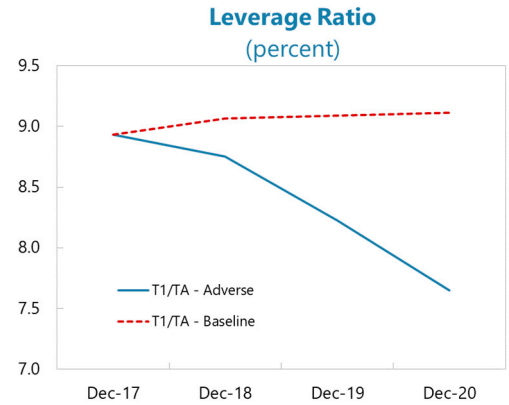
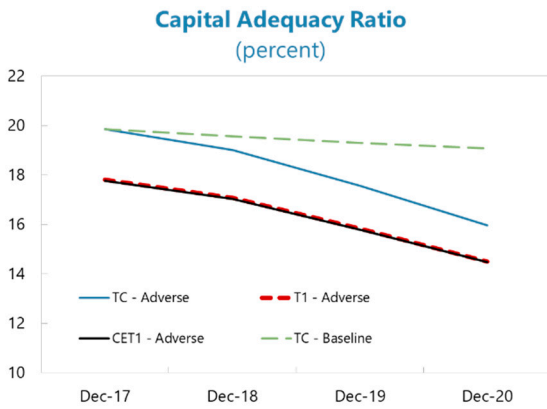


Sources: CBM, ECB, and IMF staff calculations.

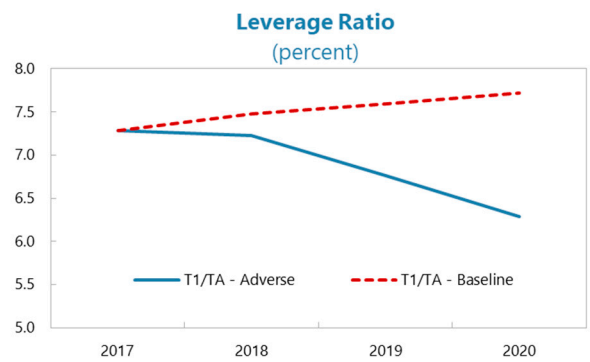
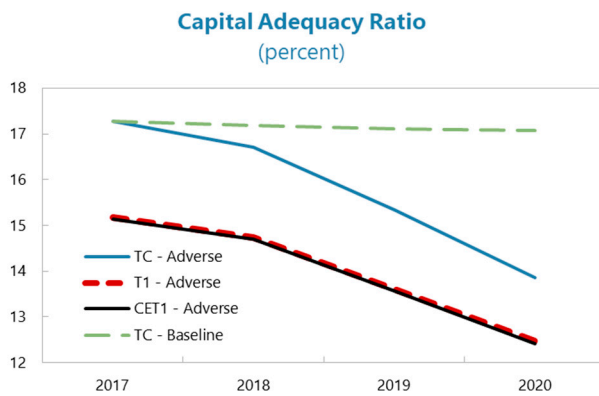
^{1/}The baseline was aligned with the April 2018 *World Economic Outlook*.

Figure 16. Results of the Top-Down Solvency Stress Test—Quasi-Static Approach

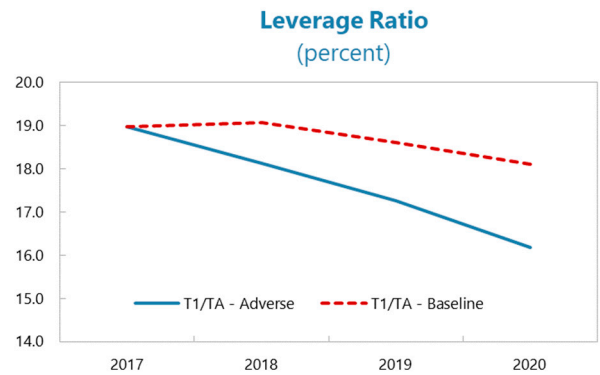
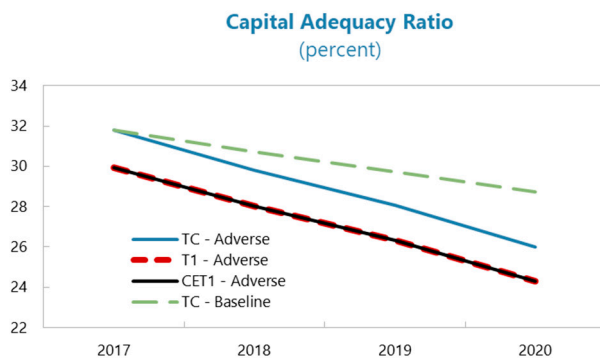
All sample banks



Core domestic banks



Other banks

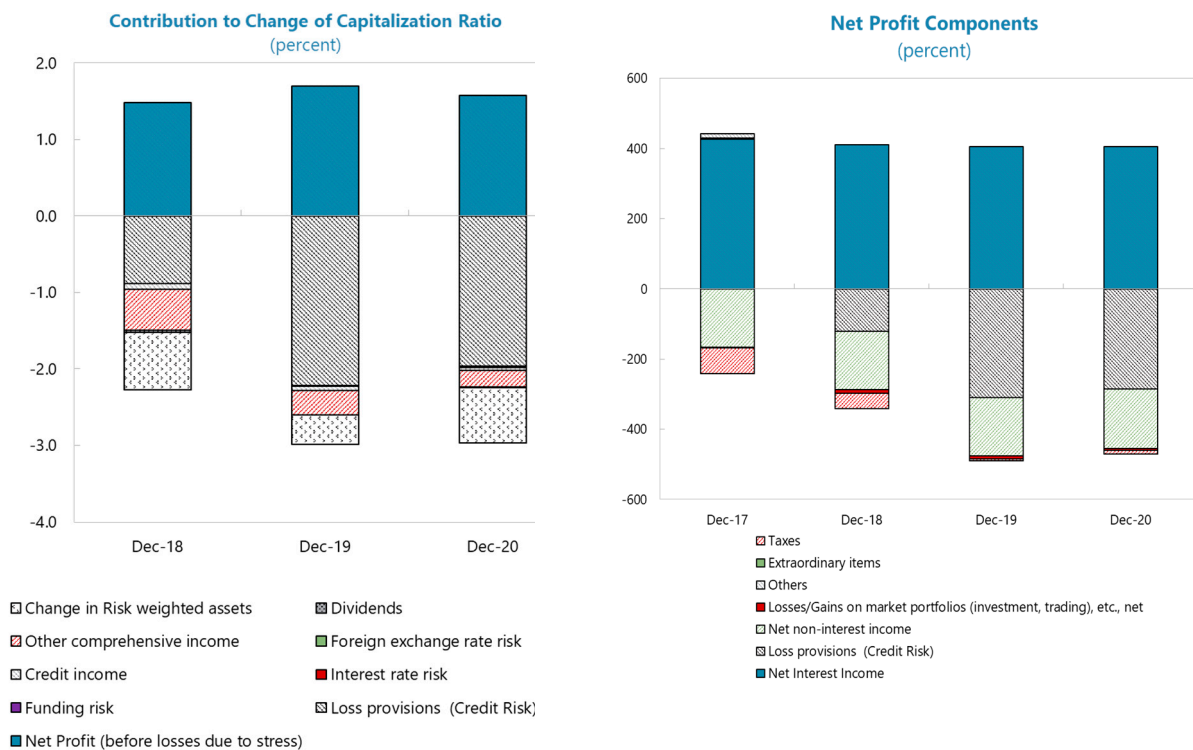


Sources: Maltese authorities and IMF staff calculations.

Note: Sample banks (11 banks), covering 93 percent of total assets, foreign branches excluded.

Figure 17. Contribution to the Results of the Top-Down Solvency Stress Test—Quasi-Static Approach

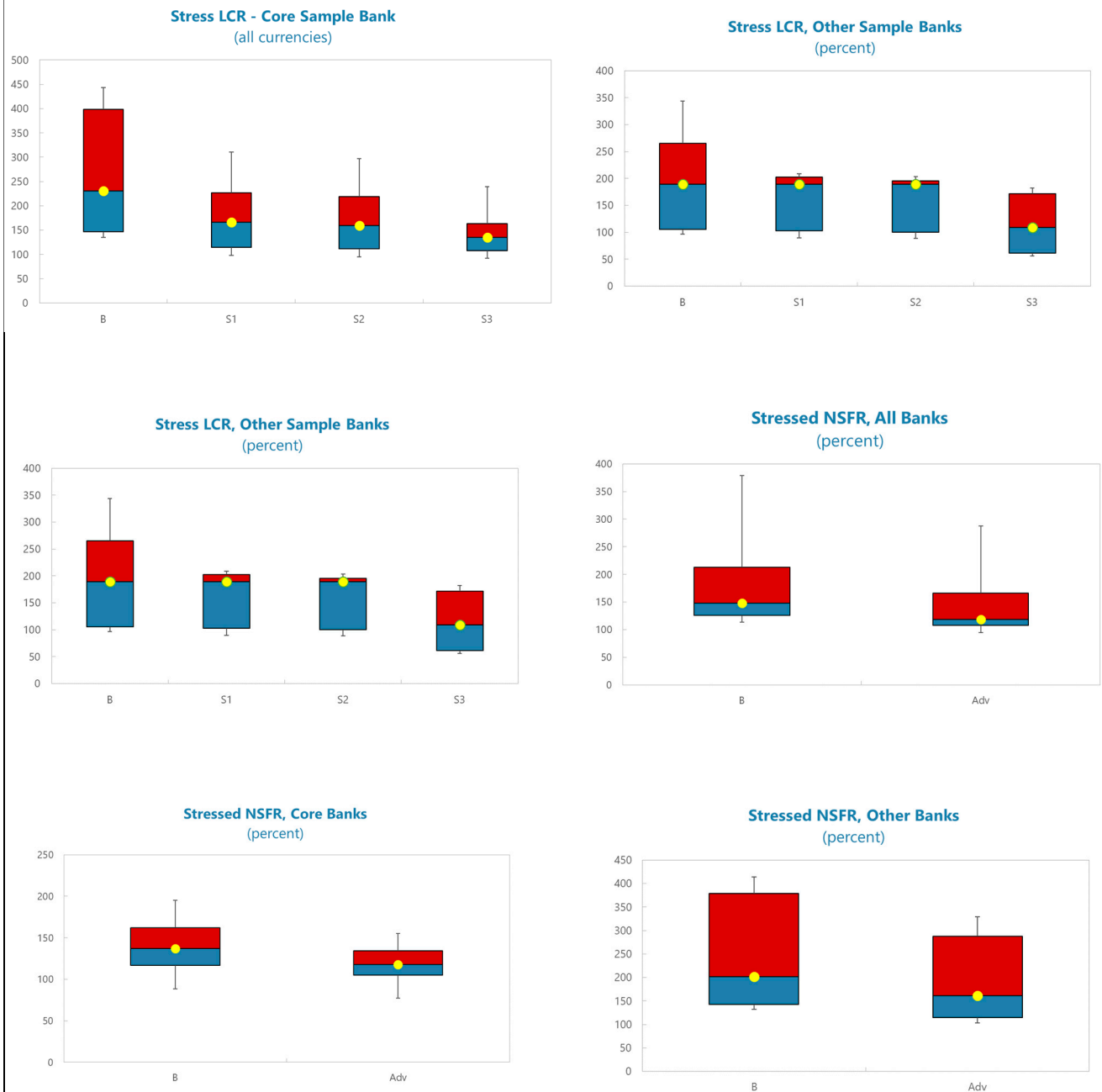
All sample banks



Sources: Maltese authorities and IMF staff calculations.

Note: Sample banks (11 banks), covering 93 percent of total assets, foreign branches excluded.

Figure 18. Results of the Top-Down Liquidity Stress Test

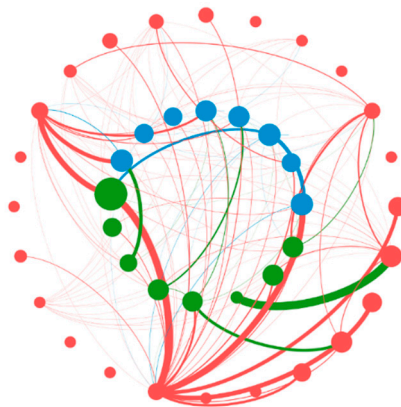


Sources: Maltese authorities and IMF staff calculations

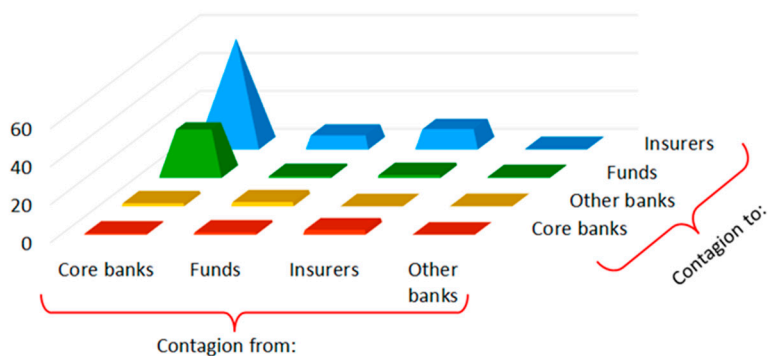
Note: Sample banks (11 banks), covering 93 percent of total assets, foreign branches excluded.

Figure 19. Domestic Cross-Sectoral Exposures

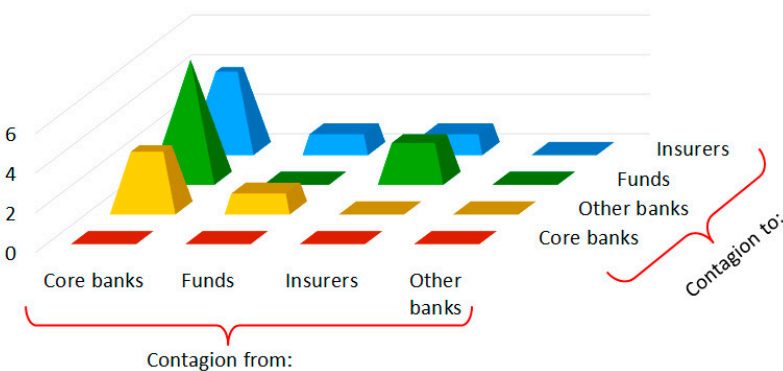
a. Topography of large exposures within the Maltese financial system^{1/}



b. Average contagion index (in percent of capital buffers)^{2/}



c. Number of contagion defaults



Sources: Maltese authorities and IMF staff calculations.

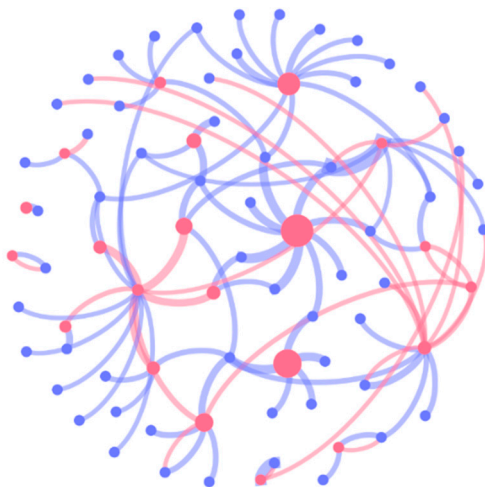
^{1/}Cross-sectoral network comprises 24 banks (red), 8 insurers (blue) and 8 funds (green). Nodes indicate vulnerability to contagion and lines reflect the prominence of large exposures normalized by absorption capacity of financial entities.

^{2/}Sector-wide losses caused by one sector to another. For example, core banks on average cause contagion losses to insurers of about 55 percent of the capital of the insurance sector (represented by the 8 domestically-oriented insurers).

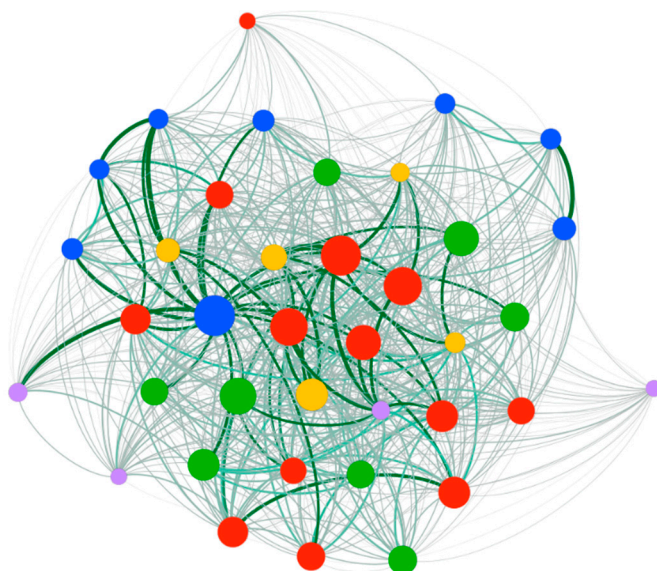
^{3/}Total number of contagion defaults of a sector, triggered by simulated defaults of all entities in another sector.

Figure 20. Cross-Border Exposures

a. Topography of cross-border banking network^{1/}



b. Market-based analysis of net spillovers to Malta^{2/}



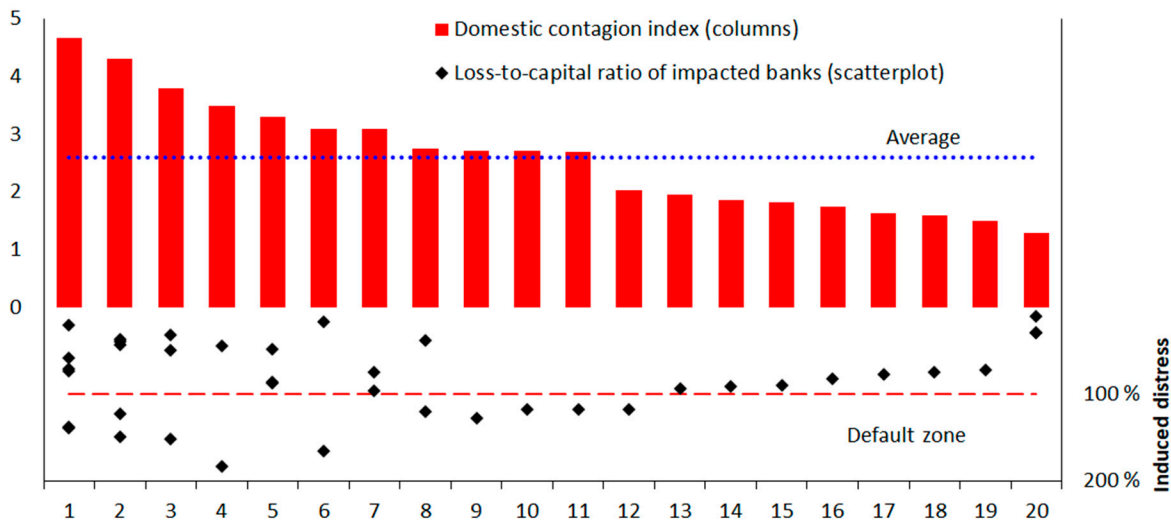
Sources: ECB, MFSA, Bloomberg, and IMF staff calculations.

^{1/}Cross-border banking network comprise 21 Maltese banks (red nodes) and 58 non-Maltese banks (blue) nodes. Nodes indicate the degree of vulnerability to systemic risk and lines are proportional to relative size of large exposures with respect to capital.

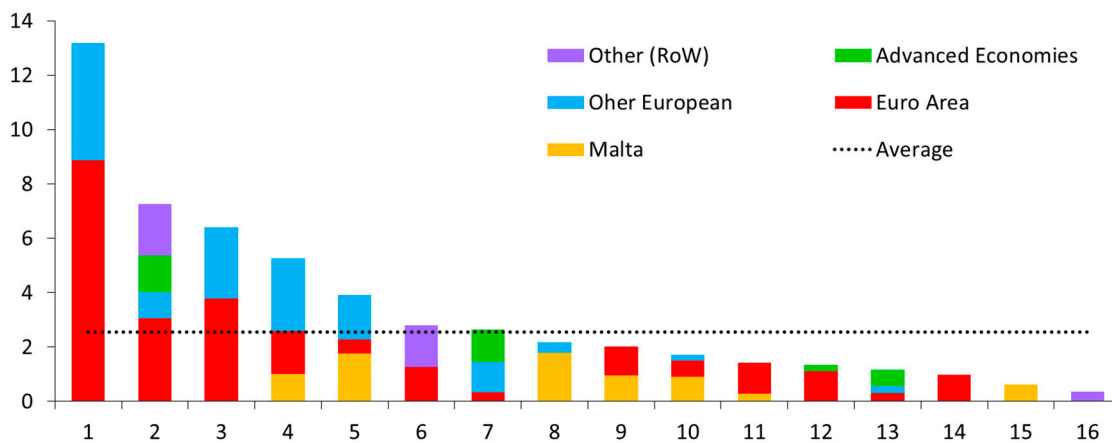
^{2/}Node size indicates relative size of inward spillover to Maltese banks (purple) from thirteen EA (red), eight other European (green), eight advanced economies (blue) and five emerging markets (yellow); color and thickness of nodes indicate "total connectedness to others" with darker and thicker lines indicating stronger pairwise relationships. Node location is derived with ForceAtlas2 algorithm (Jacomy and others, 2014), a network spatialization tool based on nodes repulsing each other like magnets, while edges attract their nodes, like springs, with these forces creating a movement that converges to a balanced state.

Figure 21. Contagion Mapping of Cross-Border Exposures¹

a. Top 20 contagious banks and their impact on Maltese banks



b. Vulnerability scores of Maltese banks by source



Sources: ECB, MFSA, and IMF Staff calculations.

¹The cross-border contagion mapping is based on a sample of 21 Maltese banks with large exposures to a total of 58 banks outside. The numbering of columns indicates only the respective ranking in each chart. For example, the hypothetical default of the most contagious bank, Bank 1, results in the average losses to the Maltese banks of close to 5 percent of their capital buffer (columns in the upper panel). The most vulnerable bank, also labeled Bank 1, incurs average losses of about 13 percent of its capital buffer (lower panel).

Table 2. Malta: Selected Economic Indicators, 2016–24
(Year-on-year percent change unless otherwise indicated)

	2016	2017	2018 Est.	Projections					
				2019	2020	2021	2022	2023	2024
Population (millions):	0.5								
Quota (as of Dec. 31, 2018; millions of SDRs):	168.3								
Per capita income (2017, euros):									24,538
At-risk-of-poverty rate ^{1/} :									16.8
	(Year-on-year percent change)								
Real GDP	5.7	6.6	6.4	5.2	4.4	3.8	3.5	3.3	3.2
Domestic demand	1.1	-1.5	6.0	5.3	4.4	3.3	3.0	2.8	2.7
Consumption	1.2	3.4	6.3	4.6	3.9	3.4	3.2	3.0	2.8
Private consumption	2.7	3.6	6.4	4.5	4.0	3.5	3.3	3.0	2.8
Public consumption	-2.8	2.8	6.0	5.0	3.7	3.2	3.0	3.0	3.0
Fixed investment	-0.1	-7.7	0.5	7.6	6.4	3.1	2.5	2.1	2.0
Exports of goods and services	4.4	5.3	1.6	2.2	2.2	2.2	2.2	2.1	2.1
Imports of goods and services	1.4	-0.1	0.5	1.9	1.9	1.7	1.7	1.6	1.6
Contribution to growth	(Percent)								
Domestic demand	1.0	-1.6	4.6	4.3	3.6	2.7	2.4	2.2	2.1
Foreign balance	4.7	8.3	1.8	0.9	0.9	1.1	1.0	1.0	1.0
Potential GDP growth	7.2	6.8	6.2	5.4	4.7	4.1	3.6	3.3	3.2
Output gap (percent of potential GDP)	0.8	0.6	0.8	0.6	0.3	0.0	-0.1	-0.1	-0.1
HICP (period average)	0.9	1.3	1.7	2.0	2.1	2.1	2.0	2.0	2.0
GDP deflator	1.5	2.4	2.2	2.2	2.3	2.2	2.2	2.2	2.1
Unemployment rate EU stand.	4.7	4.0	4.0	4.1	4.3	4.5	4.7	4.7	4.7
Employment growth	3.2	7.8	5.4	3.5	2.5	2.1	2.0	2.0	2.0
Gross national savings (percent of GDP)	27.9	29.7	29.1	28.9	28.8	28.5	28.2	27.8	27.6
Gross capital formation (percent of GDP)	24.4	19.3	19.1	19.6	20.0	19.9	19.9	19.7	19.6
Public finance	(Percent of GDP)								
Net lending/borrowing (overall balance)	0.9	3.5	0.9	0.6	0.6	0.7	0.7	0.6	0.6
Structural overall balance (percent of potential GDP)	0.6	3.4	0.4	0.3	0.4	0.7	0.8	0.7	0.7
General government debt	55.4	50.2	45.4	42.4	39.0	35.6	32.1	30.0	28.1
Balance of payments	(Percent of GDP)								
Current account balance	3.4	10.4	10.1	9.3	8.8	8.5	8.3	8.1	8.0
Trade balance (Goods and services)	13.2	20.9	21.4	21.4	21.4	21.8	22.1	22.5	22.9
Exports of goods and services	150.8	150.0	142.8	138.3	134.8	132.3	130.2	128.3	126.6
Imports of goods and services	137.6	129.0	121.4	117.0	113.4	110.5	108.0	105.8	103.7
Goods balance	-18.9	-13.1	-13.8	-14.6	-14.5	-14.0	-13.6	-13.1	-12.7
Services balance	32.1	34.0	35.2	35.9	35.9	35.8	35.7	35.6	35.6
Primary income, net	-8.6	-9.4	-10.2	-10.9	-11.5	-12.1	-12.7	-13.3	-13.8
Secondary income, net	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1	-1.1
Financial account, net	8.1	11.4	10.6	9.9	9.3	9.1	8.8	8.6	8.5
Financial sector									
Credit to the private sector (percent of GDP)	84.4	79.4	...	...	...	...	...	...	...
Credit growth, private sector	3.7	2.7	...	...	...	...	...	...	...
Memorandum items:									
Nominal GDP (millions of euros)	10,343	11,295	12,277	13,203	14,106	14,965	15,830	16,710	17,608
Nominal GDP growth	7.3	9.2	8.7	7.5	6.8	6.1	5.8	5.6	5.4

Sources: Maltese authorities and IMF staff projections.

^{1/}Share of population with an equivalized disposable income (including social transfers) below the threshold of 60 percent of the national median equivalized disposable income after social transfers. Data as of 2017.

Table 3. Malta: Insurance Market Structure
(percent of GDP)

Types of insurers	2013		2017	
	Number	Assets	Number	Assets
Life	6	28.1	6	37.2
Non-life	27	21.4	29	34.2
Composite ¹	2		2	
Reinsurance	4	75.5	4	25.5
Captive insurance	8	5.8	5	3.9
Captive reinsurance	3	1.0	3	1.3
PCC (Non-life)	9	2.5	12	4.3
PCC (Life)	1	0.3	2	0.2
Reinsurance SPV	0	0.0	1	0.0
Total	60	134.6	64	106.6

Source: Maltese authorities

¹The assets of composite insurers are allocated under non-life, as this is the dominant business.

Table 4. Malta: Analysis of Gross Written Premiums in 2017
(€ million)

	Domestic	Foreign	Total	Market share percent
Non-life				
Motor	83	380	463	28
Property	32	370	402	24
Liabilities	9	96	105	6
Accident & Health	13	114	127	8
Others	16	539	555	34
<i>Sub-total</i>	153	1,499	1,652	100
Life				
Health insurance	-	15	15	2
With profits/ participation	324	-	324	48
Index-linked and unit-linked	35	-	35	5
Others	31	264	295	44
<i>Sub-total</i>	390	279	669	100
Total	543	1,778	2,321	

Sources: Maltese authorities and IMF staff calculations.

Table 5. Malta: Investment Fund Structure
(percent of GDP)

	2013		2017	
	Number	Net Asset Value	Number	Net Asset Value
Alternative Investment funds	0	0	101	30
Professional Investor funds	509	84	450	42
UCITS CIS	70	30	114	24
Non-UCITS CIS	21	9	5	0
Recognised private schemes	4	0	7	0
Notified AIFs	0	0	18	1
Foreign	16	10	0	0
Total	620	133	695	97

Source: Maltese authorities.

Table 6. Malta: Financial Soundness Indicators¹
(Percent unless otherwise indicated)

	Core Domestic Banks						Non-Core Domestic Banks						International Banks /2						Total Banks /2					
	2013	2014	2015	2016	2017	Jun-18	2013	2014	2015	2016	2017	Jun-18	2013	2014	2015	2016	2017	Jun-18	2013	2014	2015	2016	2017	Jun-18
Core FSIs																								
Regulatory capital to risk weighted assets	16.5	14.4	15.0	16.2	16.8	17.0	22.6	17.4	22.1	15.5	16.7	17.3	119.6	69.2	56.3	49.2	46.8	50.8	46.2	25.7	21.8	21.2	21.2	21.8
Regulatory Tier 1 capital to risk-weighted assets	12.9	11.5	12.2	13.6	14.7	15.3	22.1	17.1	18.6	12.3	13.3	16.9	119.6	69.1	50.6	41.9	44.2	48.2	43.9	23.6	18.4	17.8	19.0	20.1
Non-performing loans net of provisions to capital	39.0	41.0	44.2	20.4	22.4	24.7	2.1	7.7	7.9	12.0	6.9	4.6	0.8	3.0	5.7	9.3	12.3	10.5	9.4	18.2	21.8	22.2	17.5	18.3
Non-performing loans to total gross loans	9.0	7.6	7.1	5.3	4.1	4.2	3.7	4.4	3.9	3.1	2.2	2.1	1.4	0.7	0.9	1.7	1.6	1.8	5.6	4.0	4.3	3.8	3.0	3.1
Return on assets	0.9	0.7	0.7	0.8	0.7	0.6	0.7	-1.3	0.2	0.3	0.3	0.2	0.6	0.9	1.0	1.0	1.5	0.9	0.7	0.7	0.9	0.8	1.0	0.7
Return on equity	11.9	9.8	9.8	10.2	9.3	7.6	2.3	-6.4	1.4	3.4	3.0	1.9	2.0	2.4	3.4	5.6	5.0	3.9	3.5	3.6	5.9	8.0	7.4	6.0
Interest margin to gross income	63.6	64.8	64.5	62.2	70.9	68.9	42.0	46.3	43.5	31.2	31.1	29.9	173.6	201.9	137.8	92.6	79.1	87.6	101.2	115.1	93.0	73.0	73.5	75.5
Non-interest expenses to gross income	47.1	51.2	54.2	52.7	58.7	71.2	64.8	56.1	73.4	66.5	77.7	72.0	10.0	11.9	24.8	31.9	27.7	37.4	34.9	36.8	43.3	45.0	43.8	55.9
Non-interest income to gross income	36.4	35.2	35.5	37.8	29.2	31.2	58.0	53.7	56.5	68.8	68.9	70.1	-73.6	-101.9	-37.8	7.4	20.9	12.4	-1.2	-15.1	7.0	27.0	26.6	24.5
Liquid assets to total assets	27.2	28.3	31.8	36.5	38.6	28.2	20.2	31.7	36.3	31.6	38.8	23.5	28.1	19.7	22.7	30.2	33.1	28.8	26.9	27.3	31.2	35.4	38.0	27.9
Liquid assets to short-term liabilities	51.7	50.4	50.2	55.8	57.8	41.8	72.1	77.9	63.3	62.7	68.2	27.9	204.2	84.7	83.6	96.3	98.3	65.5	59.6	53.9	52.6	58.3	60.8	42.0
Other FSIs																								
Total Coverage ratio (total provisions to NPLs as per BR/09)	37.9	40.4	43.5	45.9	44.9	43.5	94.6	77.1	65.2	53.9	66.1	83.1	43.0	40.5	50.4	54.8	43.0	61.3	42.3	37.5	40.0	48.0	45.5	49.0
Domestic Investment Securities to Total Assets	10.9	9.7	9.3	7.9	7.1	7.0	5.5	4.6	7.7	4.9	3.2	2.3	0.0	0.0	0.2	0.1	0.2	0.1	4.1	3.9	4.5	4.0	3.6	3.7
Foreign Investment Securities to Total Assets	19.3	23.3	21.8	20.6	16.8	17.0	21.0	19.5	12.5	15.0	11.9	12.1	37.6	52.8	50.4	46.9	42.7	34.4	30.4	40.1	36.0	32.8	28.9	24.4
Unsecured Loans to Total Lending	26.2	29.0	27.4	25.4	27.7	29.4	74.8	65.2	70.9	65.4	67.2	72.2	57.3	48.4	30.7	26.7	16.2	15.9	41.3	37.7	30.8	28.2	25.0	26.8
Assets to Total Capital and Reserves (Ratio)	12.6	14.1	13.7	13.3	12.0	12.2	3.4	8.4	8.4	12.1	11.5	9.0	1.3	1.7	2.0	2.9	3.4	3.0	3.7	6.4	8.0	9.5	9.3	8.9
Large exposure to total own funds	108.0	103.4	96.5	110.8	87.8	103.6	199.9	339.9	157.6	268.6	275.8	274.3	17.1	45.3	129.9	129.9	133.0	93.0	48.0	88.9	115.8	130.5	115.6	114.7
Gross asset position in financial derivatives to total own funds	2.1	1.1	1.3	1.7	0.9	0.9	0.4	0.8	0.3	0.6	0.3	0.7	0.0	15.7	67.2	104.4	131.6	174.3	0.5	8.9	25.9	38.0	43.4	57.8
Gross liability position in financial derivatives to total own fund	4.5	4.5	2.0	2.0	1.1	1.1	0.5	2.2	0.3	3.6	0.3	0.1	0.1	15.9	38.1	54.9	80.4	111.7	1.1	10.4	15.3	20.9	26.9	37.3
Personnel expenses to non-interest expenses	50.6	50.8	51.2	48.3	48.1	38.8	42.1	45.0	42.5	49.7	46.0	48.9	33.3	27.4	23.2	19.9	16.5	14.9	48.1	47.4	44.0	40.3	37.8	32.2
Customer loans to customer deposits	67.8	64.0	58.2	56.0	58.9	61.1	96.2	75.7	60.7	46.5	47.1	51.9	79.5	93.1	104.1	108.1	111.6	105.8	72.3	71.8	67.9	65.7	70.4	71.0
Net open position in equities to total own funds	13.5	14.4	15.4	14.0	13.5	12.7	169.4	45.0	81.8	146.8	139.2	109.7	0.0	0.3	2.7	1.2	3.4	0.9	10.6	9.0	18.1	20.3	18.9	17.1
Leverage ratio (Fully phased-in definition of Tier 1 capital)	...	27.5	34.6	6.0	6.8	...	...	14.3	49.2	8.9	8.7	...	...	772.3	160.7	29.9	26.0	...	...	47.9	62.7	8.9	9.3	...
Leverage ratio (Transitional definition of Tier 1 capital)	...	26.0	33.3	6.0	6.7	...	...	12.6	49.6	9.3	8.5	...	...	772.5	166.3	29.9	26.0	...	...	44.9	62.0	8.9	9.3	...

Sources: Maltese authorities and IMF staff estimates.

¹Based on CBM Financial Stability Report (except for leverage ratios) <https://www.centralbankmalta.org/financial-stability-report>.

²International Banks and Total Banks include non-EU branches.

Table 7. Malta: Solvency Stress Test Results

	Bank CET1 ratio (percent) Year 2020			Number of banks with CET1 ratio <4.5%	Number of banks with T1 ratio <6%	Number of banks with CAR <8%	Max capital shortfall in terms of CAR (as percent of GDP)	Banking sector leverage ratio		
	All 11 banks	Core- domestic banks	Other banks					All 11 banks	Core- domestic banks	Other banks
Before Stress (end-2017)	17.8	15.1	29.9	0	0	0	0.0	8.9	7.3	19.0
Quasi-static approach										
Baseline	17.4	15.4	27.2	0	0	0	0.0	9.1	7.7	18.1
Adverse	14.5	12.4	24.3	1	2	2	0.14	7.7	6.3	16.2
Static approach										
Baseline	21.4	18.9	32.9	0	0	0	0.0	10.9	9.2	21.8
Adverse	15.5	13.3	26.4	0	0	1	0.02	8.2	6.7	17.5

Sources: Maltese authorities and IMF staff estimates.

Appendix I. Risk Assessment Matrix (RAM)

Source of risk	Overall Level of Concern	
	Likelihood of severe realization in 1–3 years	Expected impact on financial stability
Weaker-than-expected global growth	<p style="text-align: center;">Medium</p> <p>The Maltese economy is highly open with exports standing at about 150 percent of GDP in 2017. A secular weak external demand would have an adverse effect on domestic confidence and growth prospects. Cross border spillovers could also impact growth and employment through FDI channel, an important source of funding to nonfinancial corporates. Rising unemployment among residents and outflow of foreign workers could amplify the housing price correction, worsening the downward spiral.</p>	<p style="text-align: center;">Medium</p> <p>The external shocks would be transmitted through international macroeconomic spillovers (adverse impact on exports and GDP growth) and financial channels, including banks' foreign exposures. Slower growth and higher unemployment could increase NPLs and lead to higher loan loss impairment impacting bank profitability. Erosion in corporate profits from lower domestic and external demand may further increase distress in the corporate sector due to the large share of intercompany lending. This could lead to cascading defaults among NFCs, which could subsequently spread into the banking system. Internationally active banks could suffer credit losses on their cross-border exposures. Higher-than-envisaged gains from recent large-scale infrastructure projects and labor market reforms may mitigate the impact.</p>
Rising protectionism and retreat from multilateralism	<p style="text-align: center;">High</p> <p>Heightened uncertainty regarding Brexit, trade tensions, and policymaking in the US may weigh on confidence and adversely affect growth prospects through lower investment and trade. Disruption to passporting arrangements into the UK for insurance and investment firms could be costly.</p>	<p style="text-align: center;">Medium</p> <p>Weaker GDP growth and higher unemployment in EA and UK would adversely impact export and GDP growth. The impact of Brexit on certain financial sector participants either through loss of business or direct exposures could spread to the rest of the system through interlinkages and cross-holding relationships. Some effects could be mitigated given Malta's trade diversification and excess demand in tourism sector, and possible relocation of firms that service the EU from the UK to Malta. Loss of market confidence and a reduction in market prices of securities held by banks could have negative implications on banks' balance sheets and capital.</p>
A sharp tightening of global financial conditions	<p style="text-align: center;">High</p> <p>Despite being relatively insulated from financial market contagion, Malta is vulnerable to weak external demand and lower FDI inflows. In the context of continued monetary policy normalization and increasingly stretched valuation across asset classes, an</p>	<p style="text-align: center;">Medium/Low</p> <p>Higher debt service and refinancing risks could stress household and firms. Loss of market confidence and increases in risk premia would lead to declines in assets prices, and cause valuation losses and higher funding cost for banks and could affect insurers/funds. A global financial cycle downturn could trigger further reduction in housing prices due to interest rate increases and a drop-in income</p>

Source of risk	Overall Level of Concern	
	Likelihood of severe realization in 1–3 years	Expected impact on financial stability
	abrupt change in global risk appetite could lead to sudden, sharp increases in interest rates as term premia decompress, and associated tightening of financial conditions. Financial stress from continuous confidence shocks would exacerbate the fall in asset prices and result in a credit crunch.	growth.
A sharp correction in historically high housing prices	<p style="text-align: center;">Medium</p> <p>After a period of price increases, coupled with a strong growth in mortgage lending in a low interest rate environment, a downturn in housing market poses significant risks to domestically oriented banks given their high and rising exposure to property-related loans. While currently strong household balance sheets could provide cushion, the pressure could be intensified if accompanied by broader economic slowdown—an increase in unemployment and/or interest rates, limiting the recovery.</p>	<p style="text-align: center;">Medium</p> <p>The significant drop in housing prices would reduce the value of collateral and result in lower recoveries in default cases. Erosion in profits and capital adequacy at the core of the banking system could cause wide-spread distress with tightening in lending conditions. Credit crunch could trigger a negative spiral of low investment and adverse effects on financial stability and growth. The combination of adverse wealth effects and income effects through the households could create negative feedback loops to the economy.</p>
Possible changes in international taxation	<p style="text-align: center;">Medium/Low</p> <p>Malta's attractiveness as a financial and business location supports its fiscal revenues with about half of corporate tax base reliant on foreign-owned companies. Changes in Malta' comparative tax advantage could impact corporates and demand for its IIP and result in the shrinkage of the international sector, including within the financial system.</p>	<p style="text-align: center;">High/Medium</p> <p>Together with contribution from ancillary professions, financial sector accounts for about 10 percent of Malta's GDP. Remote gaming sector generates an estimated 10 percent gross value added to the economy. Businesses exits from these sectors would erode the tax base significantly, increase unemployment, and suppress economic growth. Stress in public finances would spill over into the banking system given the strong home bias. Deposit outflows from retrenchment could reduce banks' liquidity and raise funding costs, and, subsequently, lending rates.</p>
Slow progress in effectively implementing the AML/CFT	<p style="text-align: center;">Medium</p> <p>The banking sector's large exposures to nonresident customers, internationally-oriented resident companies, and to new technologies (e.g., VFA, and e-gaming), and investments from the IIP pose ML/TF</p>	<p style="text-align: center;">Medium</p> <p>Heightened risks would lead to outflows from financial and remote gaming sectors. Materialization of reputational risks could trigger large withdrawals of wholesale and nonresident deposits, as well as deposits of internationally oriented</p>

Source of risk	Overall Level of Concern	
	Likelihood of severe realization in 1–3 years	Expected impact on financial stability
framework	risks, creating challenges through reputational risks, pressure on CBRs, and growing compliance costs. These would weaken Malta's attractiveness as a financial and business location. Exit of domestically oriented banks and de-risking would reduce the system's overall capacity to support financial intermediation.	resident companies. Deposit outflows from retrenchment could reduce banks' liquidity and raise funding costs. The high liquidity of banks is a mitigating factor.
<p>¹The 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 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 percent and 30 percent, and "high" a probability between 30 percent and 50 percent). The RAM reflects staff views on the source of risks and overall level of concern as of the time of discussions with the authorities. Non-mutually exclusive risks may interact and materialize jointly.</p>		

Appendix II. Financial System Features

Malta's economy exhibits features of its previous offshore regulatory regime, where the institutions licensed under the regime were restricted from doing business with residents. While financial institutions now operate under a unified licensing regime, irrespective of market orientation, there continues to be strong segmentation across several dimensions, including the geographical concentration of their funding sources and assets. The authorities group financial institutions into domestic and international based on their exposures to residents and the perceived potential effect on financial stability.

Banking System

1. Maltese banks vary considerably in their business models and market orientation. For analytical purposes, the authorities group banks into three categories based on their role in the domestic economy and exposures to residents:

- **Core domestic banks** are mainly operating in the domestic economy, attracting household and corporate deposits and lending domestically. They account for 99 percent of mortgages to residents. Sovereign debt securities account for a quarter of their total assets. Claims on the Eurosystem are high, reflecting excess liquidity of these banks. Two core domestic banks each own a large domestic insurer.
- **Non-core domestic banks** are small, foreign owned, funded from wholesale markets and nonresident deposits, and have limited exposure to residents. Some banks focus on syndication, factoring and finance, and other banks on private banking and conventional lending. Two banks account for about 80 percent of this category's assets.
- **International banks** are foreign-owned with insignificant domestic exposures. They account for over 80 percent of the banking system's total nonresident deposits and 77 percent of lending to nonresidents. These banks rely mostly on wholesale (including intragroup) funding of relatively long maturities and focus on group custodian services, trade finance, and investment banking. Two branches of Turkish banks account for 83 percent of this category's assets (€19 billion).

2. For supervisory purposes, three largest core domestic banks are classified as SIs. The SIs hold 86 percent of category assets (42 percent of total bank assets) and account for 81 percent of all mortgages. The remaining banks are classified as LSIs (18 banks), a subsidiary and a branch of banks of other EA countries (one parent entity is an LSI and one is a SI), and non-EU branches. Non-EU branches are not subject to the ECB oversight.

Malta: Banking System Assets, end-2017

	Number of banks	Assets		
		EUR, billion	Percent of GDP	Percent of system
Authorities' classification				
Core domestic banks	6	23	203	48
Non-core domestic banks	5	2	19	5
International banks	14	23	202	47
ECB's classification				
SIs	3	20	176	42
LSIs	18	8	70	16
Third-country branches	2	19	167	39
Other 1/	2	1	12	3

Sources: Maltese authorities and IMF staff calculations.

^{1/}These are a subsidiary and a branch of banks of other EA countries and are classified under the home state of their respective group parent.

Malta: Banks' Market Share, end-2017 (percent)

	Deposits			Loans				To non-residents Total
	No. of banks	Resident	Non-resident	To residents				
				Total	Household	Corporate	Other 1/	
Authorities' classification								
Core-domestic banks	6	95.3	14.8	98.4	99.6	96.9	97.1	14.7
Non-core domestic banks	5	3.1	7.9	1.4	0.4	2.7	2.4	7.0
International banks 2/	14	1.7	77.3	0.2	0.0	0.4	0.5	78.4
Total	25	100.0	100.0	100.0	100.0	100.0	100.0	100.0
ECB's classification								
SIs	3	81.7	13.4	79.4	80.2	76.4	84.2	13.9
LSIs	18	18.2	14.9	20.6	19.8	23.6	15.6	22.5
Non-EU branches	2	0.0	65.4	0.0	0.0	0.0	0.0	51.3
Other 3/	2	0.0	6.3	0.0	0.0	0.0	0.2	12.3
Total	25	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Sources: Maltese authorities and IMF staff calculations.

^{1/}"Other" includes credit and financial institutions, investment funds, and government. Deposits with CBM are excluded.

^{2/}About half of resident deposits of international banks are concentrated in one bank (LSI) and were largely accumulated during 2016 and 2017. The two non-EU branches are branches of Turkish banks and are both classified as "international banks" in the authorities' classification.

^{3/}These are a subsidiary and a branch of banks of other EA countries and are classified under the home state of their respective group parent.

3. **Branches of two large Turkish banks have no direct exposures to the Maltese economy.**

- **The Turkish branches were established in Malta in the late 90s**, benefiting from the absence of withholding tax in Malta and associated opportunities for cashflow management for Turkish corporates. The branches' assets declined from about 300 percent in 2012 to about 140 percent of GDP by mid-2018.
- **The Turkish branches have no exposures in Malta and mostly operate with Turkish counterparties.** The branches do not source deposits locally and do not extend loans to residents. Moreover, their deposits are not covered by the DCS in Malta (but are subject to the deposit insurance in Turkey). About half of Turkish branches' assets are invested in sovereign papers, of which 60 percent is denominated in US dollars. The entire sovereign portfolio of these branches is invested in Turkish sovereign bonds.
- **The Turkish branches have general banking licenses in Malta without the passporting rights into the EU.** Special licensing agreements exempt the branches from all prudential rules in Malta, prohibit them from having NPLs on their books, and prescribe NPLs transfer to their head offices' books. The branches deal exclusively with the customers introduced by the parent bank.

Domestic Insurance

4. **The authorities have identified eight domestic insurers, whose assets totaled 37 percent of GDP at end-2017.** The domestic insurers consist of three life insurance companies, four non-life insurance companies, and one non-life PCC. Two of the eight domestic insurers hold over 80 percent of their total assets, operate exclusively in Malta, and are majority owned each by a SIs.

Domestic Investment Funds

5. **There were 46 domestic investment funds at end-2017, with assets under management amounting to 16.8 percent of GDP.** More than 60 percent of the domestic investment funds were UCITS funds. Most domestic investment funds do not use borrowing except temporarily, and not to exceed 15 percent of total assets, and invest mainly in bonds, accounting for 67 percent of assets under management as of end-2017. About 80 percent of the assets under management is managed by banks' subsidiary fund management companies.

Malta: CBM Methodology to Categorize Institutions for Financial Stability Purposes	
The Banking Sector (weights)	
(i)	Credit to residents (30 percent): credit to residents by bank "I" to total resident loans;
(ii)	Resident deposits (30 percent): resident deposits of bank "I" to total resident deposits;
(iii)	Holdings of domestic bonds (13.3 percent): domestic bonds held by bank "I" to total outstanding domestic bonds;
(iv)	Resident contingent liabilities (13.3 percent): resident contingent liabilities of bank "I" to total resident contingent liabilities of the banking sector;
(v)	Market capitalization (13.3 percent): market values of equities or bonds of bank "I" to total market capitalization of banks in Malta.
The Insurance Sector (equal weights)	
(i)	Shareholding by core domestic banks;
(ii)	The amount of domestic investment assets held;
(iii)	The total gross premia written for risks situated in Malta;
(iv)	The total gross claims paid for risks situated in Malta;
Investment Funds (equal weights)	
(i)	The extent to which the fund was managed by a core domestic bank;
(ii)	The amount of resident assets that it held;
(iii)	The proportion of resident shareholder units in each fund.
Source: CBM.	

Appendix III. Stress Test Matrix (STeM)

BANKING SECTOR: SOLVENCY RISK		
Domain	Assumption	
1. Institutional Perimeter	Exercise	<ul style="list-style-type: none"> • Top-down by FSAP team.
	Institutions included	<ul style="list-style-type: none"> • The top 11 banks by share of assets.
	Market share	<ul style="list-style-type: none"> • 93 percent of total assets in the banking system (excluding foreign bank branches).
	Data and baseline date	<ul style="list-style-type: none"> • Latest data: December 2017. • Supervisory data: balance sheet information, COREP and FINREP, and large exposure (LE) templates provided by the authorities. Also provided was further supervisory information, among others, nonperforming loans by portfolio, and details of funding by type of depositor. • Market and publicly available data. • Scope of consolidation: banking activities of the consolidated banking group for banks having their headquarters in Malta and subconsolidated level data for the subsidiaries of foreign banks. • Coverage of sovereign and non-sovereign securities. exposures: held to maturity, available for sale, and fair value accounts, valued respectively at amortized cost, MTM, or fair-value at starting point.
2. Channels of Risk Propagation	Methodology	<ul style="list-style-type: none"> • In general, the solvency stress test is based on International Accounting Standard (IAS) 39 principles, for example on provisioning approach. • FSAP team satellite models and methodologies. • Balance-sheet regulatory approach. • Market data-based approach.
	Satellite models for macrofinancial linkages	<ul style="list-style-type: none"> • FSAP team's own model and expert judgment for balance-sheet and credit growth, pre-impairment net income as sum of net interest income, and noninterest income. No accrued income on NPL loans. • FSAP team's own model for credit losses from banks' lending portfolios. Due to unavailability of consistent NPL data series for consumer loans (nonmortgage), the credit risk for this category was estimated by benchmark PD and LGD provided by ECB. • Credit estimation of loan to credit, and financial institutions are proxied by Moody's Expected Default Frequency (EDF). • Methodology to calculate losses from sovereign debt holdings: haircuts are calculated based on a modified duration approach and historical distributions of changes in yield. • Methodology to calculate losses from bonds and money market instruments: haircuts are calculated based on a modified

BANKING SECTOR: SOLVENCY RISK		
Domain	Assumption	
		<p>duration approach and historical distributions of changes in yield.</p> <ul style="list-style-type: none"> Methodology to calculate losses from bonds and money market instruments (HTM portfolios): losses from credit-rating migration approach.
	Stress test horizon	<ul style="list-style-type: none"> 2017Q4–2020Q4 (three years)
3. Tail Shocks	Scenario analysis	<ul style="list-style-type: none"> Macrofinancial scenario analysis, agreed with the authorities. Baseline scenario based on April 2018 <i>World Economic Outlook</i> projections, CBM, and ECB projections. The adverse macro scenario is informed by the IMF's Flexible System of Global Models (FSGM).
	Sensitivity analysis	<ul style="list-style-type: none"> Sensitivity tests to various shocks: concentration and interest risks. Interest rate increase and decrease by 200 and 100 bps respectively. Failure of the largest 1, 3, and 5 non-financial corporate exposures.
4. Risks and Buffers	Risks/factors assessed (how each element is derived, assumptions)	<ul style="list-style-type: none"> Credit losses for lending and investment exposures, including indirect risk from foreign exchange book. Losses from debt instruments (sovereign and other issuers) in the trading and banking books. Market risk, including foreign exchange risk. Interest rate risk on banking book. Counterparty concentration risk.
	Behavioral adjustments	<ul style="list-style-type: none"> Quasi-static balance sheet assumption: (i) the balance sheet growth is in line with nominal GDP, with a floor set at zero, and accounting for foreign exchange movements and triggered off-balance sheet items (credit lines and guarantees) ; (ii) risk weighted assets change due to change in the requirement for newly nonperforming loan, triggered off-balance sheet items, and new loan granted during the stress test horizon; (iii) the balance sheet composition/structure remain constant throughout the stress test horizon; (iv) banks build capital only through retained earnings; and (v) maturing capital instruments (AT1 and Tier 2) are not renewed. For comparison, a static balance sheet assumption is also conducted: (i) the balance sheet growth is assumed to be zero; (ii) maturing assets are replaced by exposures of the same type and risk. Dividends can only be paid out by banks that remain adequately capitalized and have positive profits.
	Calibration of risk parameters	<ul style="list-style-type: none"> Based on credit models estimated by IMF staff.

BANKING SECTOR: SOLVENCY RISK		
Domain	Assumption	
5. Regulatory and Market-Based Standards and Parameters		<ul style="list-style-type: none"> The stress test made use of satellite models to project credit risk by sector. Given that all sample banks are under standardized regulatory framework, calculations for Probability of Default (PD) and Loss Given Default (LGD) are not readily available. Instead, NPL ratios were projected using panel regression techniques for two exposure classes: corporate and household mortgages. Credit risk estimation of loan to credit and financial institutions are proxied by Moody's Expected Default Frequency (EDF) series and projected using panel regression model. Due to unavailability of consistent NPL data series for consumer loans (non-mortgage), the credit risk for this category was estimated by benchmark PD and LGD provided by ECB.
	Regulatory/ Accounting and Market-Based Standards	<ul style="list-style-type: none"> National regulatory framework. Capital metrics: Basel II standardized approach and fully loaded Basel III definition. The hurdle rate based on capital requirements for CET1, T1, Total Capital, and Leverage ratio. Capital conservation buffer is allowed to be used under adverse scenario.
6. Reporting Format for Results	Output presentation	<ul style="list-style-type: none"> Capital ratio decline of the banking system. Number of banks and the percentage of banking assets (or GDP) in the system that falls below a hurdle rate.

BANKING SECTOR: LIQUIDITY RISK		
Domain	Assumption	
1. Institutional Perimeter	Exercise	<ul style="list-style-type: none"> Top-down by FSAP team.
	Institutions included	<ul style="list-style-type: none"> The top 11 banks by share of assets.
	Market share	<ul style="list-style-type: none"> 93 percent of total assets in the banking system (excluding foreign bank branches).
	Debt and baseline date	<ul style="list-style-type: none"> Latest data: <ul style="list-style-type: none"> - December 2017 (LCR and NSFR approaches); and - March 2018 (cashflow-based liquidity stress test approach). Source: supervisory data (COREP: LCR, NSFR and ALMM Maturity Ladder template). Scope of consolidation: consolidated banking group.
2. Channels of Risk Propagation	Methodology	<ul style="list-style-type: none"> Basel III LCR and NSFR type proxies, cashflow-based liquidity stress test using maturity buckets by banks, incorporating both contractual and behavioral (where available), with assumption about combined interaction of funding and market liquidity and difference level of the central bank support. Liquidity test in total currency and major foreign currencies.

BANKING SECTOR: LIQUIDITY RISK		
Domain	Assumption	
		<ul style="list-style-type: none"> • Liquidity test for large depositors' withdrawals. • Liquidity test for certain industry concentration risk for funding.
3. Risks and Buffers	Risks	<ul style="list-style-type: none"> • Funding liquidity. • Market liquidity. • Counterparty/depositor concentration risk, i.e., withdrawal of top 1, 3, and 5 depositors. • Industry concentration risk, i.e., withdrawal of depositor for certain industries, i.e., namely financial and insurance activities sector, accommodation and food service activities, and arts, entertainment, and recreation (including gaming). • ECB haircuts for Eurosystem monetary policy implementation as applicable at the reference date.
	Buffer	<ul style="list-style-type: none"> • The counterbalancing capacity, including liquidity obtained from markets and/or the central bank's facilities. • Expected cash inflows are also included in the cashflow-based and LCR-based analysis.
4. Tail Shocks	Size of the shock	<ul style="list-style-type: none"> • The run-off rates are calibrated to reflect scenarios of system-wide deposit runs and dry-up unsecured wholesale and retail funding, with additional run-off for nonresident deposits on top of the retail and wholesale run-off, which is calibrated following historic events and IMF expert judgment. • For LCR-based liquidity stress test, total run-off rate of nonresident deposits ranged from 33 to 46 percent, depending on the type of deposits (current, saving, and time). • The scenario will provide a combination of assumed deposits run-off and approaches to CBC: <ul style="list-style-type: none"> - Withdrawal of unsecured wholesale deposits, with CBC valuation at market price. - Withdrawal of unsecured wholesale and retail deposits. Market liquidity shock will reduce the CBC value and will incorporate the central bank haircut. - Withdrawal of unsecured wholesale and retail deposits, with additional run-off for nonresident deposits. Market liquidity shock will reduce the CBC value and will incorporate the central bank haircut. • The liquidity shocks will be simulated for one month for both LCR and cashflow-based approaches, and five days and three months for cashflow-based approach. • The haircut of high-quality liquid assets (HQLA) is calibrated consistent with market shock for investment securities and money market instruments in solvency stress test.
5. Regulatory and Market-Based	Regulatory standards	<ul style="list-style-type: none"> • Consistent with Basel III regulatory framework (LCR and NSFR).

BANKING SECTOR: LIQUIDITY RISK		
Domain	Assumption	
Standards and Parameters		<ul style="list-style-type: none"> • Liquidity shortfall by bank.
6. Reporting Format for Results	Output presentation	<ul style="list-style-type: none"> • Liquidity ratio or shortfall by groups of banks and aggregated (system wide). • Number of banks that still can meet their obligations.

FINANCIAL SECTOR: CONTAGION RISK		
Domain	Assumption	
1. Institutional Perimeter	Exercise	<ul style="list-style-type: none"> • Top-down by FSAP team.
	Institutions included	<ul style="list-style-type: none"> • Three networks: <ul style="list-style-type: none"> - Cross-border: 21 Maltese banks and 58 non-Maltese banks. - Cross-sectoral (domestic): 24 banks, 8 insurers, and 8 funds. - Market-based global: 4 listed Maltese banks, 34 global banks.
	Market share	<ul style="list-style-type: none"> • Cross-border: 99 percent of banking system excluding branches. • Cross-sectoral: 99 percent of total assets in the banking system, including foreign bank branches, 35 percent of total assets of the insurance industry (100 percent of domestic insurers), 17 percent of total Net Asset Value of investment funds (100 percent of domestic funds). • Market-based global: 70 percent of banking system excluding branches (100 percent of market capitalization of listed banks).
	Data and baseline date	<ul style="list-style-type: none"> • December 2017 for cross-border, June 2017 for cross-sectoral, 2005-2018 for market-based. • Source: supervisory data (COREP, LE, AMM, AE, LCR, FINREP) for cross-border, proprietary MFSA dataset from various supervisory reports for cross-sectoral, Bloomberg for market-based. • Scope of consolidation: consolidated (sub-consolidated for subsidiaries) only within own sector.
2. Channels of Risk Propagation	Methodology	<ul style="list-style-type: none"> • Cross-border and cross-sectoral: Espinosa-Vega and Sole Bank Network Model (2010) framework and calibrated based on Covi, Gorpe, and Kok (2018) CoMap methodology.
3. Tail Shocks	Size of the shock	<ul style="list-style-type: none"> • Pure contagion: hypothetical default of institutions.
4. Reporting Format for Results	Output presentation	<ul style="list-style-type: none"> • Number of undercapitalized institutions in distress; • Capital shortfall systemwide, by bank and by group: contagion and vulnerability scores. • Amplification and cascade effects, direction and size of spillovers within the network. • Net spillovers due to interconnectivity (market based).

Appendix IV. Development of Virtual-Asset Regulations¹

1. **Malta actively embraces blockchain technologies and virtual assets.** There is strong interest from the government to implement a financial innovation-friendly regulatory approach. In July 2018, the parliament passed three acts that seek to provide a legal status and regulatory framework for virtual assets. The framework determines that a financial group will not be allowed to operate VFA-related operations until it establishes a separate entity within the group.
2. **A financial instrument test is used to determine regulatory requirements for a VFA under distributed ledger technology.** It seeks to provide clear guidance to the issuer of a virtual asset, exchange, or other service providers, as to whether they are subject to: (i) the existing EU legislation and corresponding national legislation; (ii) the proposed VFA Act; or (iii) exemption from any financial regulation. A guidance note provides more details of the criteria, but it is uncertain how some criteria would be interpreted, assessed, and implemented. Although all innovative technology arrangement need an opinion issued by a system's auditor, the authorities could face the risk of manipulation or misrepresentation from the issuer, partly due to the limitation of their access to relevant information, such as the source code.
3. **The Digital Innovation Authority (DIA) is tasked with promoting and enforcing ethical and legitimate criteria in the design and use of innovative technologies.** It will have enforcement powers to investigate technology applications and take regulatory actions, including suspension and revocation of the certification. However, the power is limited in some critical areas. For example, the authority will not be able to access the source code and other information protected by the cryptographic keys. It would also face the reputational risk of endorsing unsuccessful technologies. Although the separation of powers between the MFSA and DIA would help prevent reputational contagion to the financial regulator, public reputation could be affected in case of material investment loss among retail investors.²
4. **The authorities would face additional challenges from cross-border nature of the business model.** While the Innovative Technology Arrangements and Services Act requires agents to be located in Malta and the authorities would have some enforcement powers against these agents, the authorities may not have the same level of suasion to exercise as over other traditional financial institutions, which may cause additional challenges for enforcement. Cooperation with foreign authorities may be limited to mutual legal assistance in criminal cases as some foreign authorities may not have the necessary regulatory and enforcement powers with regard to these activities. There is also another level of reputational risk derived from the use of the "Malta DIA technology certification" brand by firms offering products and services outside Malta.
5. **The authorities are encouraged to continue addressing ML/TF risks related to virtual currencies.** The authorities are now working on amendments to introduce AML/CFT obligations

¹ Prepared by Nobuyasu Sugimoto (MCM), with contributions from staff from MCM and the Legal Department, IMF.

² Authorities are working on restrictions on retail investors' exposure to innovative technologies.

related to virtual currencies. These include the issuance of a legal notice by the FIAU and relevant guidelines. The changes to the AML/CFT regulations will also expand the definition of “subject person” to include issuers, VFA agents, and license holders. The coverage falls slightly short of the Financial Action Task Force definition of VFA by excluding virtual tokens. It is important for the authorities to complete any updates to the legal framework in an expeditious manner to avoid ML/TF and reputational risks that may arise from any (temporary) gaps in the AML/CFT framework.

6. While the establishment of a legal framework is welcome, the high risk of virtual-asset investments warrants cautious implementation. Effective implementation of the acts and regulations would require significant resources with appropriate expertise, such as cyber risk experts, technology experts and lawyers specialized in technology, creating additional challenges for financial authorities to build and retain expertise. Future technological developments may also pose new challenges. Therefore, the authorities are strongly encouraged to implement the relevant laws and regulations gradually. Safeguards could be adopted as part of the Sandbox conditions, imposing strict conditions, such as periodic renewal, to any license. This would allow amending the licensing requirements in line with evolving international practices.