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TECHNICAL NOTE—MACROPRUDENTIAL POLICY FRAMEWORK AND TOOLS

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November 6, 2019

TECHNICAL NOTE

MACROPRUDENTIAL POLICY FRAMEWORK AND TOOLS

Prepared By

Monetary and Capital Markets Department

This Technical Note was prepared by IMF staff in the context of an IMF Financial Sector Assessment Program (FSAP) mission in Malta during September 10–26, 2018, overseen by the Monetary and Capital Markets Department (MCM). The note contains technical analysis and detailed information underpinning the FSAP assessment's findings and recommendations as of September 2018. Further information on the FSAP program can be found at http://www.imf.org/external/np/fsap/fssa.aspx.

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Glossary

CBM	Central Bank of Malta
CCR	Central Credit Register
CRDIV	Capital Requirements Directive IV
CRR	Capital Requirements Regulation
DSTI	Debt-Service-to-Income
DSTI-O	Debt-Service-to-Income-at-Origination
ECB	European Central Bank
ESRB	European Systemic Risk Board
EU	European Union
FSAP	Financial Sector Assessment Program
FSD	Financial Stability Department
GDP	Gross Domestic Product
JFSB	Joint Financial Stability Board
LCR	Liquidity Coverage Ratio
LTV	Loan-to-Value
LTV-O	Loan-to-Value-at-Origination
MFSA	Malta Financial Services Authority
NFC	Nonfinancial Corporate
NPL	Nonperforming Loan
NSO	National Statistics Office
O-SII	Other systemically important institutions

EXECUTIVE SUMMARY

Malta's institutional framework for macroprudential policy, formalized in 2014, is broadly in line with the IMF guidance for effective macroprudential policymaking. Amendments to the Central Bank of Malta (CBM) Act designated the CBM as the national macroprudential authority with clear objectives and the power to formulate and implement macroprudential policy and instruments. The CBM has a dedicated department to pursue its statutory macroprudential functions and various communication tools to ensure accountability and transparency. The Joint Financial Stability Board (JFSB) was also established in 2013 to ensure effective coordination with relevant agencies, especially the Malta Financial Services Authority (MFSA; the country's microprudential authority), and to address potential policy conflicts. The CBM also works closely with European counterparts on cross-border coordination.

Malta's macroprudential policy toolkit has expanded since 2014. Adopting the European Union's (EU) Capital Requirements Directive IV and Regulation (CRDIV/CRR), Maltese authorities have been phasing-in several measures, including additional capital buffers for the three banks identified as Other Systemically Important Institutions (O-SII; Article 131 of Directive 2013/36/EU). A countercyclical capital buffer framework was also introduced while the buffer rate has been set at zero percent due to a negative credit-to-GDP gap. Authorities have also introduced stricter risk weights for residential mortgage loans than those provided in the CRR.

Systemic risk monitoring is effective and conducted on a timely basis. The CBM regularly analyzes systemic risks and closely collaborates with other agencies, including the MFSA. The analysis is based on a wide range of indicators and models, is appropriately combined with expert judgement and qualitative information, and has supported policy decisions. CBM publications comprehensively cover macroprudential issues and policies, leveraging the analysis.

The institutional framework has facilitated effective macroprudential policy, but the legal backing of inter-agency coordination could be further strengthened. Currently, the JFSB facilitates inter-agency coordination of financial stability issues. However, as policy conflicts could be intensified in times of stress, the existing legal mechanism could be further enhanced in the following ways:

- Amend the CBM Act to provide the CBM with the powers to: (1) recommend actions to be taken by a public authority or public institution with a "comply or explain" mechanism ("semi-hard power"); and (2) issue warnings and opinions ("soft power"). While some of these powers may be already exercised in practice, adding their legal backing would enhance both the effectiveness and the accountability, increasing transparency as regards cooperation by other agencies.

- As planned in the draft amendment to the MFSA Act, provide the MFSA with a financial stability objective to further institutionalize inter-agency policy coordination, while making sure its powers and functions (or tasks) remain distinct from those of the CBM. Since the MFSA is already contributing to system-wide stability, including through its participation in the JFSB, adding a financial stability objective to the MFSA Act would not only be consistent with its

practice, but would also strengthen its accountability, especially when microprudential instruments are altered for macroprudential purposes.

Recent strengthening of the systemic risk monitoring framework is commendable and continued efforts are encouraged. Significant progress has been made in closing data gaps; for example, a real estate lending survey for banks has been launched, the Central Credit Register (CCR) has been introduced, and an intercompany loan dataset is being compiled. Continued efforts to close remaining data gaps are encouraged, namely, by tracking the performance of existing loans, introducing commercial real estate price indices, and collecting granular data on nonfinancial corporate (NFC) debt, including intercompany loans. Also, the authorities should consider enhancing the CCR by integrating the bank lending survey efforts and EU-level initiatives. The authorities are also encouraged to further strengthen risk assessment of the non-bank financial sector by developing analytical tools and integrating bank and non-bank analyses.

The planned introduction of borrower-based measures is a welcome step to proactively address build-up of vulnerabilities in the housing and household sectors. While household indicators are broadly sound, there are some signs of overvaluation of residential housing prices, and bank exposure to mortgages is growing. The CBM has prepared a draft Directive to introduce limits on the loan-to-value-at-origination (LTV-O) ratio, the debt-service-to-income-at-origination (DSTI-O) ratio, and to restrict the maturities at origination for residential real estate bank loans. The implementation comes with so-called "speed limits," which allow banks to exempt some loans from the LTV-O limits. This flexibility allows banks to deal with diverse cases and helps avoid initial disruptions in the housing market due to the introduction of these limits. The CBM plans to monitor implementation of the measures on a quarterly basis, reviewing the calibration upon the market developments.

There is scope to refine the design of planned borrower-based measures and reduce uncertainty over policy effects. In particular, the authorities are encouraged to consider the following amendments:

- Refine the "speed limits" by: (1) replacing the condition based on the share of the *number* of new loans on a semi-annual basis with a condition based on the share of nominal euro *amount* of new loans per quarter; and (2) narrowing the larger speed limit for "Category II" loans (i.e., those against secondary residences and buy-to-let properties) as soon as concerns about any initial disruptions dissipate.
- Extend the scope of borrower-based measures to cover all mortgage loans, instead of bank mortgage loans only, to minimize leakage (arbitrage) effects. Although almost all mortgages are currently issued by banks, financial activity could potentially migrate from the banking sector to the non-bank financial sector if the limits are applied only to the banking sector.

Table 1. Malta: Recommendations on Macroprudential Policy Framework and Tools

Recommendations (responsible authority)	Timing*
Institutional Arrangements	
1. Consider providing the CBM with the powers to recommend actions to be taken by a public authority or public institution in Malta, including the MFSA or the Government, with a "comply or explain" mechanism and to issue warnings and opinions. (¶11,12) (Ministry for Finance)	NT
2. Add a financial stability objective to the MFSA. (¶11,13) (MFSA)	I
Systemic Risk Monitoring	
3. Continue closing the data gaps, including for existing loan data, commercial real estate price indices, and granular data on intercompany lending. (¶17) (CBM, NSO)	NT/MT
4. Expand the CCR by integrating the Survey on Residential and Commercial Real Estate Lending Practices, while evaluating benefits of a further integration with EU-level initiatives. (¶17) (CBM, NSO)	MT
5. Continue to strengthen the monitoring of systemic risks in the non-bank financial sector by enhancing analytical tools. (¶17) (CBM, MFSA)	NT/MT
Macroprudential Toolkit	
6. Complete the ongoing work on introducing borrower-based instruments to proactively address build-up of vulnerability in the housing and household sectors. (¶28) (CBM)	I
7. Refine the "speed limits" for the proposed LTV limits. (¶29) (CBM)	I
8. Extend the scope of borrower-based measures to apply to all mortgage loans originated in Malta, including those provided by non-bank financial institutions. (¶29) (CBM)	I
9. Narrow the percentage of loans allowed under the "speed limit" in Category II once concerns for any initial disruptions dissipate. (¶29) (CBM)	NT

* I = immediate (within one year); NT = near term (within 1-2 years); MT = medium term (within 3-5 years)

INTRODUCTION[1]

1. Malta shares macroprudential policy responsibilities with European institutions. The Single Supervisory Mechanism regulation (Council Regulation (EU) No. 1024) provides national authorities and the European Central Bank (ECB) with specific tasks on the macroprudential policy instruments that are set out in the CRDIV/CRR for the banking sector. Malta is also a member of the European Systemic Risk Board (ESRB), which is responsible for macroprudential oversight at the EU level.[2]

2. This technical note evaluates the domestic macroprudential policy framework in Malta and provides recommendations to strengthen it. It assesses: (1) the domestic institutional arrangements; (2) the systemic risk monitoring framework; and (3) the macroprudential policy toolkit. The assessment is conducted based on the IMF guidance, which is laid out in the Staff Guidance Note (IMF, 2014a), its background note (IMF, 2014b), and other IMF's policy papers. It also assesses current financial vulnerabilities in Malta to develop specific policy recommendations.

3. The rest of this note is structured as follows. Section II reviews the current domestic institutional arrangements and provides recommendations. Section III discusses the existing systemic risk monitoring framework and provides options to enhance it further. Section IV assesses systemic risks and maps the assessment into recommendations for the macroprudential policy toolkit.

INSTITUTIONAL FRAMEWORK

4. Strong institutional arrangements are essential for effective implementation of macroprudential policy. This section evaluates the domestic institutional arrangements against three key principles in the IMF guidance (IMF, 2014a). These are: (1) *the willingness to act* in the face of opposition through a clear mandate, supported by dedicated units, and accountability; (2) *the ability to act*, through regulatory powers and access to data; and (3) *cooperation* across all agencies at the domestic and international levels. Recommendations are provided after reviewing each of these aspects of the current institutional framework.

A. Willingness to Act

5. The CBM is the national macroprudential authority and has a clear mandate. Amendments to national laws in 2014 formalized the domestic macroprudential policy framework in Malta, providing the CBM with: (1) the ultimate and intermediate objectives of macroprudential policy; (2) the tasks of macroprudential policy; and (3) the powers to formulate and implement

[1] This technical note was prepared by Machiko Narita (MCM). Ayman Alfi (MCM) contributed to the section on the institutional framework. The review was conducted during the period of September 10–26, 2018, and considers the legal and regulatory framework in place and the practices employed at the time. The mission team would like to thank the CBM, MFSA, Ministry for Finance, ECB, Malta Development Bank, and representatives from the private sector for the excellent cooperation and fruitful discussions.

[2] The EU-level macroprudential framework was assessed in the Euro Area 2018 FSAP Technical Note.

macroprudential instruments and collect information (the CBM Act and the CBM directive 11). The amendments also formalized the framework for the coordination with other domestic agencies, establishing the JFSB (see Section C).

6. **The CBM fulfills its statutory macroprudential obligation through its Financial Stability Department (FSD).** The FSD is a dedicated department that is responsible for analyzing systemic risks and preparing policy proposals. The FSD's analysis and policy proposals are presented for discussion at the Financial Stability Committee, which is an internal coordination forum consisting of the CBM's governor, deputy governors, and chief officers responsible for economics as well as financial control and risks. The committee meets at least quarterly to discuss financial stability issues and draft policy proposals. The FSD provides secretarial assistance to the committee.

7. **Multiple mechanisms exist to ensure accountability and transparency.** The CBM published its macroprudential policy strategy in 2016 (CBM, 2016), laying out an operational framework to foster transparency and accountability. It also publicly communicates its macroprudential policy via regular publications (e.g., the *Financial Stability Report* and the annual and quarterly reports), its website, and through the media (e.g., press releases, speeches, and conferences). In 2011, the CBM also launched the Financial Stability Forum to discuss macroprudential issues and policies with other agencies and major stakeholders in the financial sector.[3] The CBM is also accountable to Parliament, as per the CBM Act.

B. Ability to Act

8. **The CBM has "hard power" to implement macroprudential instruments and ample powers to collect needed information.** The CBM is empowered to issue, amend, or revoke Directives, which have force of law, to implement macroprudential policy instruments (Article 17A of the CBM Act). It has hard powers to calibrate the countercyclical capital buffer and the systemic risk buffers (Directive 11). It also identifies systemically important institutions and sets their additional capital buffers, jointly with the MFSA. The CBM can also introduce other macroprudential instruments that are outside the CRDIV/CRR toolkit, such as the planned borrower-based measures. Finally, the CBM has adequate powers to collect information for macroprudential policy (Part IV of the CBM Act).

C. Effective Coordination and Cooperation

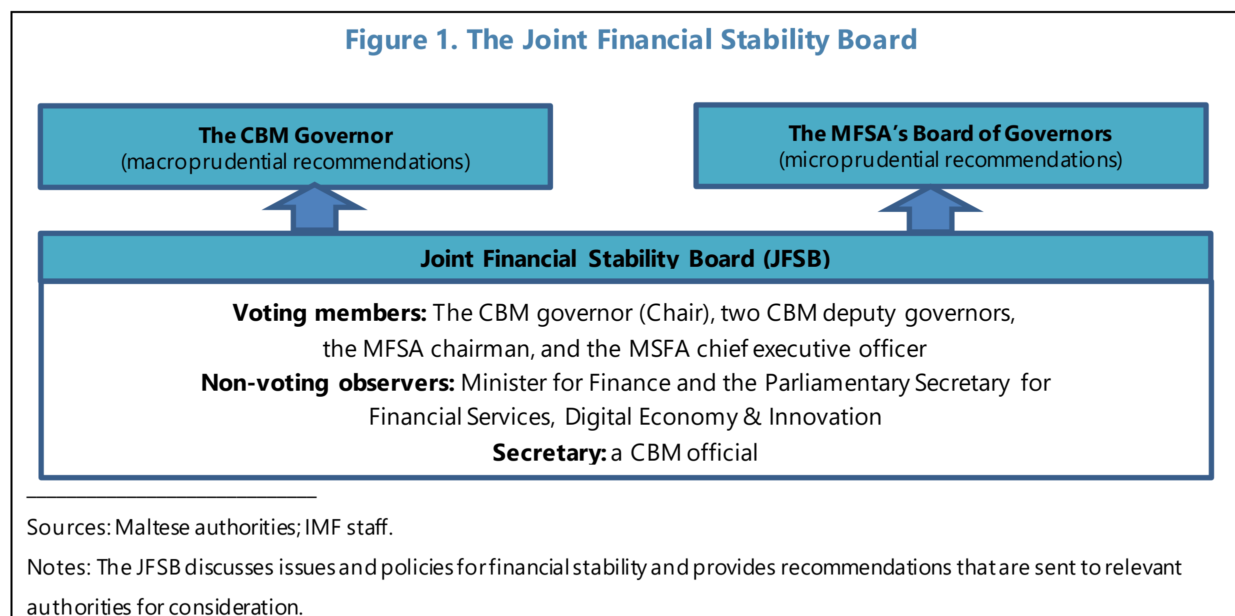
9. **The JFSB was established in January 2013 to ensure effective cooperation and policy coordination at the domestic level.** It consists of five voting members—the CBM governor (the chair), two CBM representatives, and two MFSA representatives—who make decisions through a simple majority. Two government representatives participate as non-voting observers (Figure 1).[4]

[3] The Forum is held on an ad hoc basis. It is composed of the representatives of the CBM, MFSA, Ministry for Finance, Malta Bankers Association, and major stakeholders in the financial services industry.

[4] The minister for finance may appoint a representative to participate as a non-voting observer at the JFSB meetings. The chair may also co-opt other non-voting observers.

The JFSB meets at least quarterly to discuss issues and policy recommendations for financial stability, coordinate related policies, and facilitate inter-agency collaboration.[5] The JFSB's recommendations of macroprudential and microprudential nature are sent, respectively, to the CBM governor and to the MFSA's board of governors for their final decisions.[6]

Figure 1. The Joint Financial Stability Board



Sources: Maltese authorities; IMF staff.

Notes: The JFSB discusses issues and policies for financial stability and provides recommendations that are sent to relevant authorities for consideration.

10. The authorities have been making efforts to enhance cross-border cooperation. The CBM liaises with its international counterparts, such as the ESRB, the ECB, and other national and international macro- and micro-prudential authorities. With EU countries, the authorities coordinate policies via the ESRB's mandatory and voluntary reciprocity framework and the Single Supervisory Mechanism's notification framework.[7] The CBM and the MFSA also contribute to the analytical work by the ECB and the ESRB. The JFSB is tasked to discuss cross-border cooperation (under the CBM Act), including issues raised by the ESRB.

D. Recommendations

11. The legal backing of inter-agency coordination could be further strengthened. While the JFSB already facilitates inter-agency coordination for financial stability, the legal mechanism for effective coordination could be further enhanced as follows:

[5] Inter-agency working groups are formed as needed. The MFSA set up the Regulatory Development Unit to facilitate collaboration and policy coordination, and to deal with MFSA's responsibilities that interface between the macro and microprudential aspects of regulation.

[6] The JFSB can issue non-binding recommendations not only for the CBM and the MFSA, but also for any public authority or public institution in Malta (Article 17B of the CBM Act).

[7] See the Euro Area 2018 FSAP Technical Note.

- Amending the CBM Act to additionally provide the CBM with the power to recommend actions to be taken by a public authority or public institution, including the MFSA or the Government, with a "comply or explain" mechanism ("semi-hard power") and issue warnings and opinions ("soft power").

- Ensure that the MFSA—the microprudential authority—also has a financial stability objective, as planned in the draft amendment to the MFSA Act.[8]

12. Providing the CBM with semi-hard and soft powers would be useful, as financial stability is affected by a range of other policies.[9] Such policies include monetary, fiscal, structural, competition, microprudential, and crisis management and resolution policies (IMF, 2013a). Therefore, there is a need to ensure that the CBM—the national macroprudential authority—has powers to "direct" the action of constituent or other agencies while preserving their institutional autonomy, using the comply-or-explain mechanism or non-binding recommendations (Nier and others, 2011). While some of these powers may be already exercised in practice, adding legal backing would enhance both effectiveness and accountability of macroprudential policy, increasing transparency as regards cooperation by other agencies (IMF 2013a, 2014a).

13. Sharing a financial stability objective among relevant agencies would be useful for sound coordination.[10] In general, it is important that the microprudential authority is tasked not only to ensure the safety and soundness of individual institutions, but also to contribute to the stability of the system as a whole, by providing it with a financial stability objective (IMF, 2013a, and IMF, 2013b). Since the MFSA is already contributing to system-wide stability (e.g., through its participation in the JFSB), adding a financial stability objective to the MFSA Act would not only be consistent with its current practice but also strengthen its accountability, especially when microprudential instruments are altered for macroprudential purposes. Such potential policy conflicts could be intensified in times of stress. However, while macroprudential and microprudential authorities can share a common objective, it is important that their functions (or tasks) and powers be distinct to avoid confusion (IMF, 2013b).

SYSTEMIC RISK MONITORING

14. The CBM conducts systemic risk monitoring and analysis effectively on a timely basis, closely collaborating with other agencies. The FSD regularly analyzes systemic risks, using a wide range of indicators, analytical models, stress tests, and expert judgment. It closely collaborates with the MFSA, which is increasingly incorporating macroprudential perspectives in their microprudential work. The CBM also collaborates with other agencies, including the National Statistics Office (NSO)

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[8] At the time of the FSAP mission, the legal amendment was expected to be adopted by Parliament in late 2018.

[9] For example, the macroprudential authorities in Luxemburg and Romania have a range of powers (i.e., hard, semi-hard, and soft powers).

[10] For example, a financial stability objective is shared among multiple agencies in the U.K. Please note that the terms "mandate" and "objective" are sometimes used inter-changeably, while it would be useful to distinguish them here: the mandate consists of objectives, functions (or tasks), and powers.

and the Ministry for Finance, forming technical working groups as needed. As a member of the European System of Central Banks and the ESRB, the CBM also regularly collaborates with the ECB and the ESRB in macroprudential analysis. The CBM and the MFSA also provide input in relation to the production of the ECB Macroprudential Report and the ESRB Country Risk Reports.

15. Macroprudential policy decisions are based on data and expert judgement. The CBM's annual *Financial Stability Report* and interim (six-month) report comprehensively cover macroprudential risks and policies, highlighting developments in key indicators as well as stress test results. To facilitate policy discussions, the report includes discussion on special topics, such as the nature of emerging intercompany loans in Malta. Also, a quarterly review of the countercyclical capital buffer calibration provides signals from key indicators and other complementary data and qualitative information. Such an approach, avoiding the mechanical application of indicators, is in line with international practices and the IMF guidance.

16. Recent strengthening of the systemic risk monitoring framework is commendable. With the launch of the CCR and the Survey on Residential and Commercial Real Estate Lending Practices[11] in 2016, there has been significant progress in closing data gaps in the collection of granular loan-level data. This granular loan data has already been used to monitor risks and to design new borrower-based macroprudential measures. In collaboration with the NSO, the CBM has also compiled NFC data to examine the nature of intercompany lending in Malta. The authorities also participate in ongoing EU-level initiatives to address data gaps, namely ESRB's Data Gaps project and ECB's AnaCredit.

17. Continued efforts are needed to close remaining data gaps and enhance analytical tools. Specifically, the authorities should consider the following measures:

- Track the loans in the CCR over time so that analysts know if and when the loans were classified as nonperforming, rescheduled, or restructured. Such panel data would further assist the risk analysis and the calibration of borrower-based measures (e.g., see Romania FSAP's Technical Note and Epure and others, 2018 for analyses using granular loan data).

- Integrate existing efforts to collect granular data on loans and borrower characteristics. While the CCR and the Survey on Residential and Commercial Real Estate Lending Practices complement each other, they also overlap in the types of information provided on real estate loans. The authorities should consider enhancing the CCR as the main database and integrating efforts for the survey and for related EU-level initiatives.

- Develop a commercial real estate price index using valuation data and the hedonic methodology (e.g., Cyprus's Price Indices), although the number of commercial real estate transactions is

[11] The survey collects a random sample of loans by type from all core banks in each quarter. Given the limited number of commercial real estate loans, the survey contains the entire population of loans, rather than a sample. The quarterly data is available from 2015Q4, while the annual data is available for 2011-2015.

limited in Malta. The data on property valuation and characteristics could be collected through banks.

- Continue efforts to compile granular NFC data to further understand the nature of intercompany loans and the drivers of persistently high debt-to-equity ratios in Malta's NFCs (see also paragraph 33).
- Continue strengthening the systemic risk assessment of non-banks, developing analytical tools and integrating bank and non-bank analyses. While leveraging the ongoing analysis on shadow banking activities by the CBM and the MFSA, continue monitoring their developments and risks, including possible leakages that could emerge from regulatory gaps between financial sectors.

SYSTEMIC RISKS AND MACROPRUDENTIAL TOOLS

18. This section assesses systemic vulnerabilities and maps them into recommendations for Malta's macroprudential policy toolkit. Systemic vulnerabilities are assessed based on the developments of multiple indicators and on the FSAP's financial sector risk analysis (see the Technical Note on Risk Analysis), following the Staff Guidance Note on Macroprudential Policy (IMF,2014a). Based on the assessment of each type of vulnerability, recommendations are provided for Malta's macroprudential policy toolkit, which has been established by the Central Bank Act and expanded with the EU CRDIV/CRR framework (see Appendix I).[12]

A. Vulnerabilities from Broad-Based Credit Booms

19. Credit indicators do not signal risk of a broad-based credit boom at the current juncture. The credit-to-GDP gap, [13] which is the deviation of the credit-to-GDP ratio from its long-term trend, has been in negative territory for several years, reflecting a broad-based slowdown in credit growth after the Global Financial Crisis (Figure 2). Household and corporate debt as a percent of GDP has also declined since the crisis. Supported by strong economic growth in recent years, credit growth and asset quality are gradually recovering. The Basel III leverage ratio in the banking system is well above the regulatory minimum of three percent, indicating that bank balance sheets are not stretched.

20. Accordingly, the countercyclical capital buffer has been kept at zero percent. The CBM assesses quarterly the calibration of the countercyclical capital buffer rate based on quantitative indicators and expert judgement. While the credit-to-GDP gap serves as a headline indicator in guiding decisions with its 2 percent reference threshold (BCBS, 2010, and ESRB, 2018), the calibration decision is also informed by additional indicators—such as debt-to-GDP ratios, the current account balance, and bank balance sheet indicators. The authorities appropriately

[12] As per the CBM Act Article 17A, the CBM can issue, amend, or revoke Directives to implement macroprudential measures, including those that do not form part of the CRDIV/CRR toolkit.

[13] The credit-to-GDP gap in Malta uses bank credit instead of total credit. Although the credit gaps should be ideally based on total credit, the credit gap based on bank credit would reasonably reflect broad credit conditions in Malta, given borrowers' strong reliance on bank credit.

complement the credit gap analysis with various indicators that have proven to be useful early warning indicators in cross-country studies (IMF, 2014b).

21. Recent measures are also expected to help contain broad-based systemic risks. Following consultation with the CBM through the JFSB, the MFSA began phasing in the Basel III capital conservation buffer in 2016, increasing banks' loss absorption capacity. The adoption of International Financial Reporting Standard 9 in January 2018, which uses a forward-looking approach to determine provisions against credit risk, is also expected to reduce systemic nonperforming loan (NPL) problems (e.g., IMF 2014b). Risks from systemic NPL problems would also be mitigated by a 2016 measure requiring banks with two-year average NPL ratios above the 6 percent threshold to draw up a concrete reduction plan.[14]

B. Vulnerabilities from Residential Housing and Household Sector

22. Residential house prices in Malta have risen quickly in recent years, reflecting strong demand (Figure 3).[15] Strong employment growth, rising disposable income, an influx of foreign workers, and portfolio rebalancing (largely by households) towards property investments in the current low interest rate environment have pushed residential property prices up by about 33 percent between 2010Q4 and 2017Q4. Demand also stems from buoyant tourism, lower withholding tax on rental income, and the Individual Investor Program.[16] Construction investment has recently picked up, reflecting a supply response to rising property prices.

23. Signs of over-heating in the housing market are emerging, with some metrics suggesting overvaluation (Figure 4). Recently, house price indices have gone beyond their long-term trends, and conventional price indicators have increased. The house price-to-income ratio is still around its historical average, but the house price-to-rent ratio is higher than its historical average as of end-2017. In addition, econometric analyses of equilibrium house prices conducted by IMF staff suggest some overvaluation, although the estimated size of overvaluation varies depending on the choice of house price index.[17]

[14] The follow-up of banks' implementation of NPL reduction plans should be intensified, although they have helped decrease the stock of NPLs so far (see the Technical Note on the Banking Supervision).

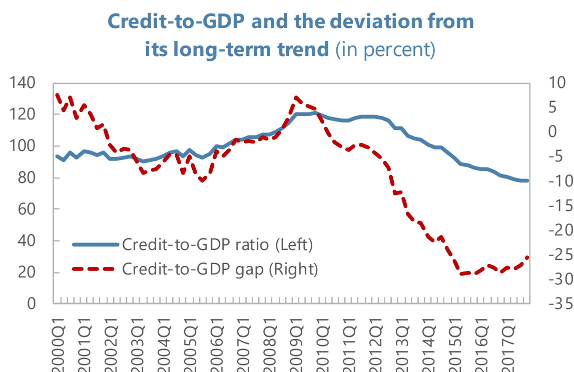
[15] The commercial real estate market is small in Malta, as discussed in the previous section.

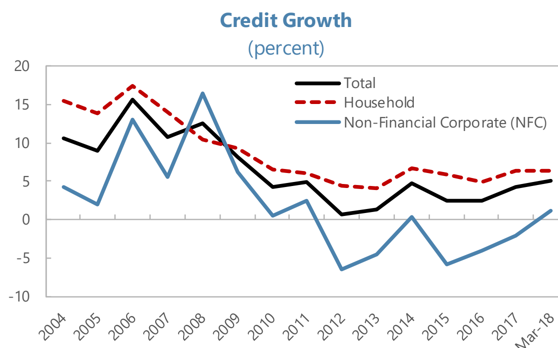
[16] The Individual Investor Program is a citizenship-by-investment program that allows individuals to acquire Maltese citizenship in exchange for major investment in the economy, including in real estate (Box 1 of IMF 2017). Although the program has added to housing demand, its contribution to the overall housing market development is assessed to be small because of the relatively low number of approved applications (about 200 per year since the program's inception in 2014).

[17] Authorities' econometric models also hint at some overvaluation, but it is small in size at this juncture.

Figure 2. Broad Credit Conditions

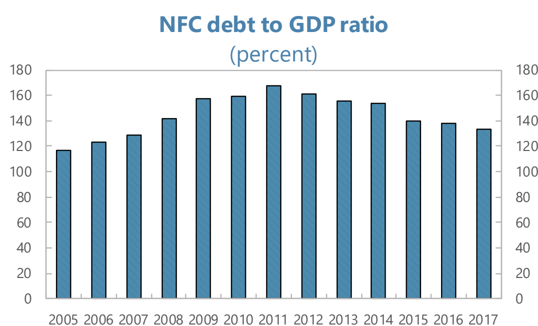
The credit-to-GDP gap, based on bank credit, has been negative due to a broad-based slowdown in credit growth since the Global Financial Crisis. Credit recovery has started recently.

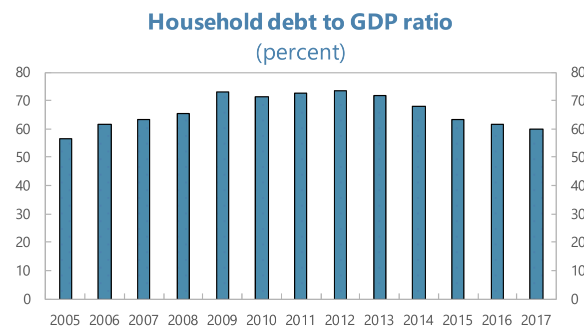




Corporate debt-to-GDP ratio, which includes both bank and non-bank credit, continues to decline.

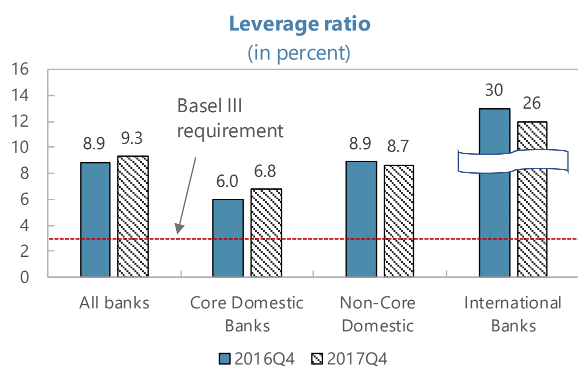
Household debt-to-GDP has also declined.[1/]

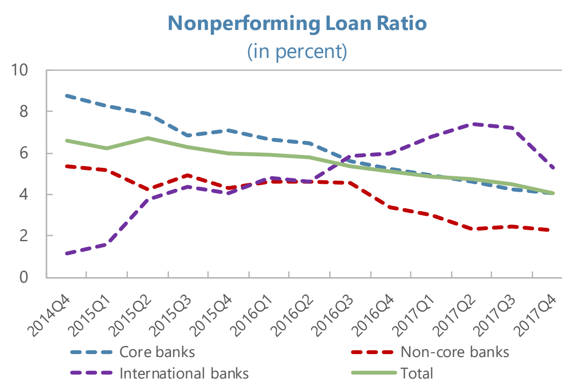




Bank leverage ratios are well above the Basel III minimum requirement[2/]*…*

…and asset quality has been gradually improving.[2/]





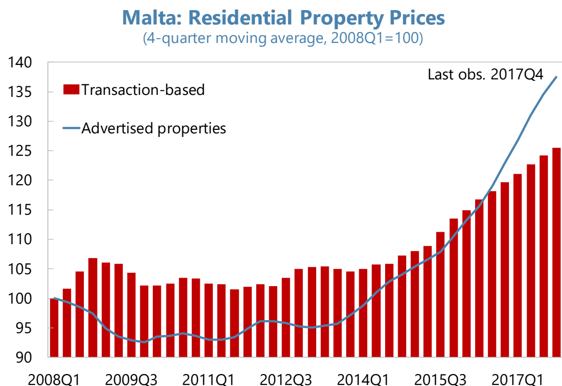
Sources: Maltese authorities; IMF staff calculations.

1/ Household leverage includes non-profit institutions serving the household sector. It is defined as the sum of debt securities, loans, and other accounts payable.

2/ All banks, excluding foreign branches.

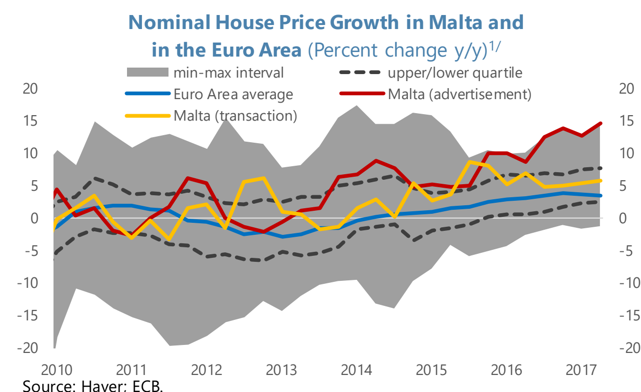
Figure 3. House Prices

House prices have been increasing since 2014 …



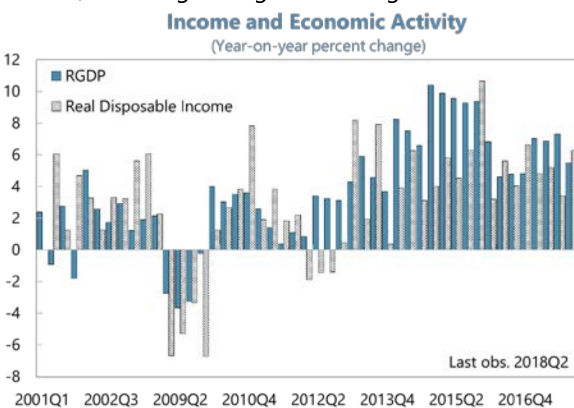
Sources: Central Bank of Malta; Eurostat; IMF staff calculations.

…at a higher rate than the Euro Area average.



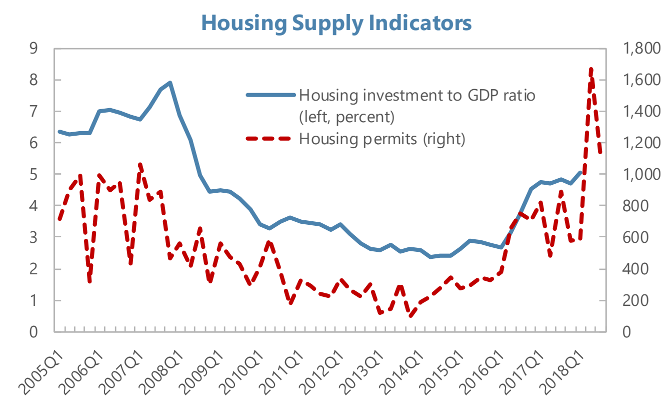
Source: Haver; ECB.

Several factors have stimulated the demand for houses, including strong economic growth.



Sources: CBM and Haver Analytics.

The supply of houses has begun to expand in response to rising prices.

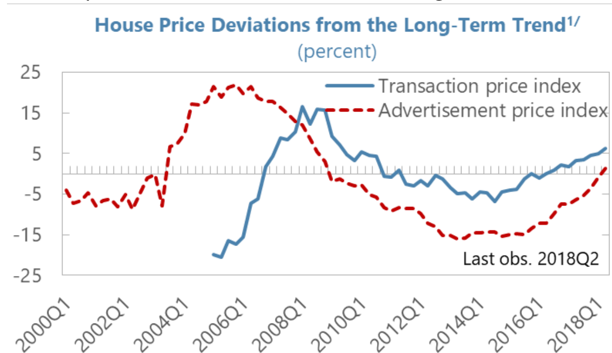


Sources: Malta authorities.

1/ The red line is based on advertised prices and the yellow line is based on transaction prices.

Figure 4. House Price Misalignment

House price indices are above their long-term trends…

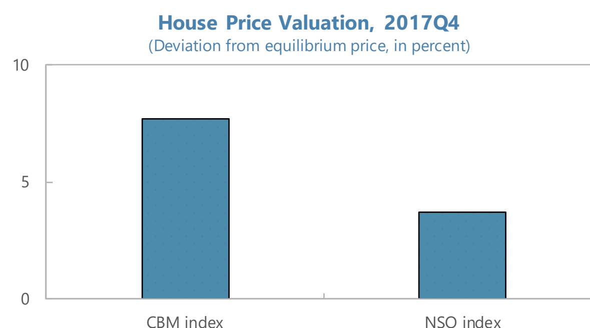


Source: Malta authorities, IFS, and IMF staff calculations.
Note: HP filter applied on seasonally-adjusted series; lambda parameter = 100,000.

…and price ratios are increasing.

Source: Global Property Guide, IFS, and IMF staff.

Econometric analyses suggest some overvaluation, although the magnitude depends on the selected house price index.[2/]



Source: IMF staff calculation.

1/ House price indices are extrapolated using an autoregressive moving average model (ARMA (2, 1)) through 2023Q4 to mitigate the end-point problem of the Hodrick-Prescott filter.
2/ Chart shows the estimated overvaluation in an error-correction model developed by the IMF's European Department for two different house price indices. The house price index published by the CBM is based on advertised prices of residential properties, while the price index published by the NSO is based on reported market transactions. See the 2019 Article IV Staff Report.

24. Mortgages are provided by banks and account for an increasing share of their total assets. Almost all mortgage loans to residents (99.6 percent of total mortgages as of end-2017) were provided by core domestic banks. Since the Global Financial Crisis, banks have notably shifted their lending from NFCs to households (Figure 5). Mortgages account for 51 percent of total bank loans to residents at end-2017, up from 37 percent at end-2012.[18] About 70 percent of mortgages to residents are granted for purchases of a primary residence.

25. Bank mortgage lending practices appear prudent. The loan-to-value (LTV) and debt-service-to-income (DSTI) ratios of new mortgages have been moderate and stable, with

[18] This figure is for all banks, including non-EU branches.

median ratios of around 80 percent and 20 percent, respectively (Figure 5).[19] These ratios declined in 2017 for secondary residences and buy-to-let property loans, which would be more for investment purposes and thus sensitive to economic developments. Nonperforming mortgages have been historically low in recent years, as one would expect in an environment of high mortgage-credit growth and increased disposable income. Foreign exchange risks in household lending are limited as most household loans are provided in euros.[20]

26. Household balance sheets appear sound. Since household income and wealth have grown alongside increasing prices, household indebtedness has remained stable in recent years. At end-2017, household debt stood at 108 percent of gross disposable income, which is slightly above the Euro Area average, and at 23 percent of gross financial wealth (Figure 6).[21] Also, the share of homeowners with debt is small at about 20 percent, which would imply that financial stability concerns from housing wealth effects may not be particularly large, despite its high homeownership rate at about 80 percent, because not many home owners extract their housing equity.

27. While variable rate mortgages are prevalent, a household stress test does not suggest systemic vulnerabilities at this juncture. Mortgages are largely granted at variable rates (Figure 6), which are indirectly linked to the ECB's Main Refinancing Operations rate. With variable rate loans, households could be sensitive to interest rate shocks, as higher interest rates result in higher debt servicing costs. Granular data suggests that about one percent of new mortgage lending is "interest only" mortgages, while the authorities noted that these tend to have special characteristics, including low LTV and short maturities (see the Technical Note on Banking Supervision). However, at this juncture, the household stress test conducted by staff indicates that, overall, households are resilient against adverse economic shocks (see the Technical Note on Risk Analysis). Low-income households are more vulnerable to shocks, but they are not systemic neither in terms of the amount of outstanding debt nor the share of the population.

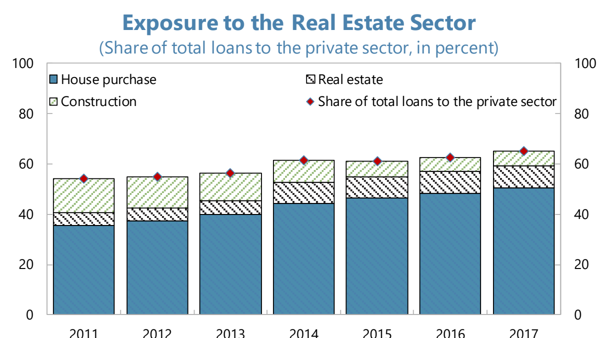
[19] The lack of professional appraisers in Malta was noted. Currently, valuations are performed by architects who may be subject to conflicts of interest. See the Technical Note on Banking Supervision.

[20] As of end-2017, core domestic banks only granted around 1.7 percent of their total loans in foreign exchange to households.

[21] Household leverage includes non-profit institutions serving the household sector. It is defined as the sum of debt securities, loans, and other accounts payable.

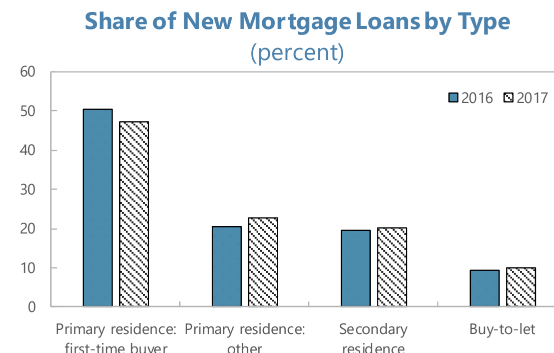
Figure 5. Residential Mortgage Lending

Bank exposure to the housing market has been increasing.

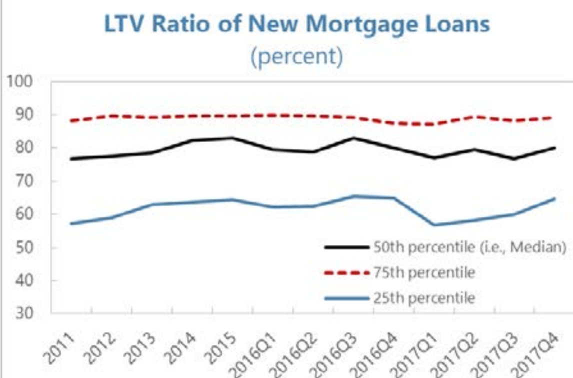


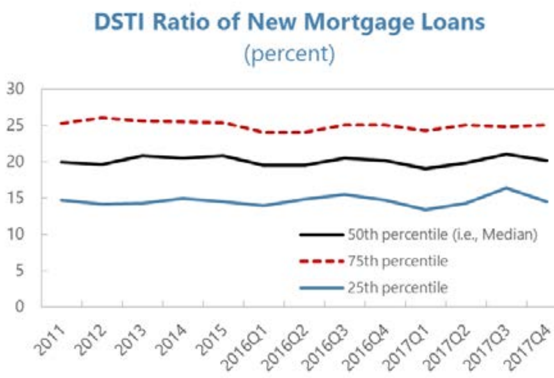
Note: Exposure to residents only.

About 70 percent of new mortgages are for primary residences.

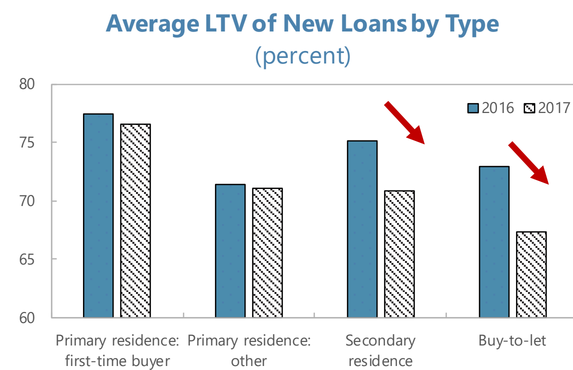


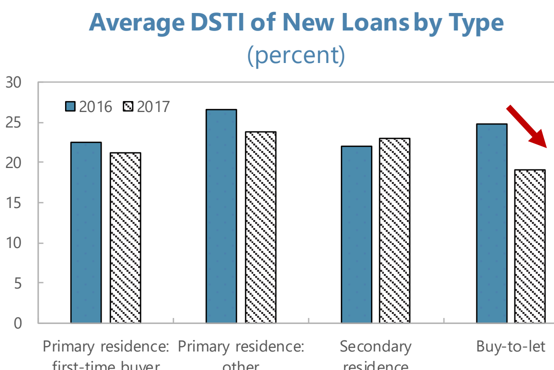
Mortgage lending practices by banks have been prudent; the median LTV and DSTI ratios of new loans are stable at around 80 percent and 20 percent, respectively.





Looking closer, the 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.





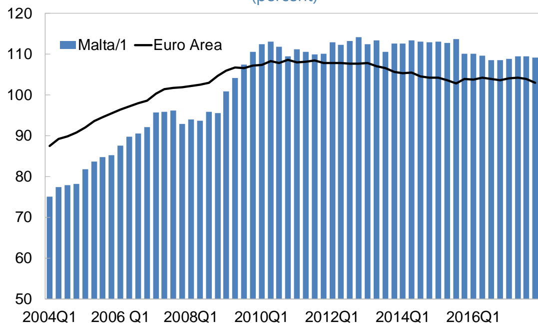
Sources: Maltese authorities; IMF staff calculations.

Figure 6. Household Indicators[1/]

Household debt-to-income has been moderate, at slightly higher levels than the Euro Area average,[1/] …

Household Debt to Gross Disposable Income

(percent)

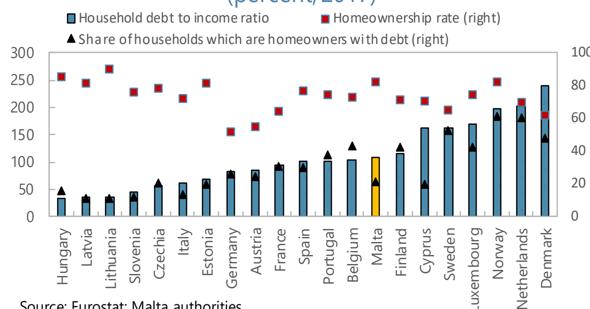


1/ Disposable income for Malta is based on Central Bank of Malta estimates.
Sources: Central Bank of Malta, Haver, and IMF staff's calculations.

…while the share of homeowners with debt is relatively small in Malta.

Household Debt and Homeownership Rate

(percent, 2017)

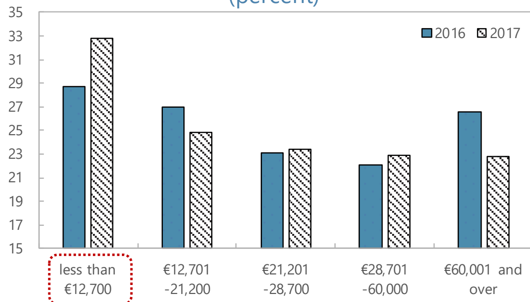


Source: Eurostat; Malta authorities.

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

Average DSTI of New Loans by Income

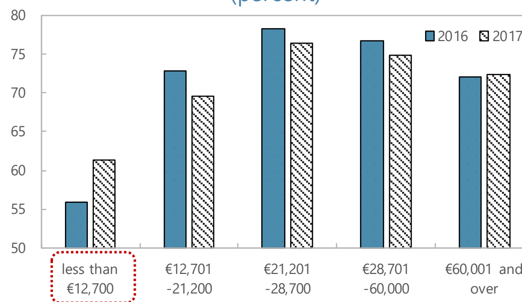
(percent)



… but they also have a lower LTV ratio, which provides a buffer against adverse shocks, …

Average LTV of New Loans by Income

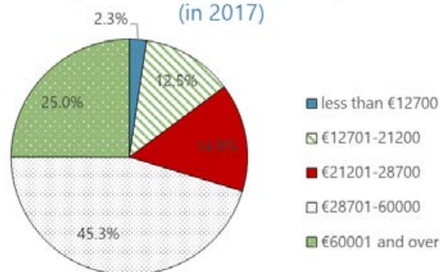
(percent)



… and they are small as a share of total new loans.

Average Share of New Loans by Income

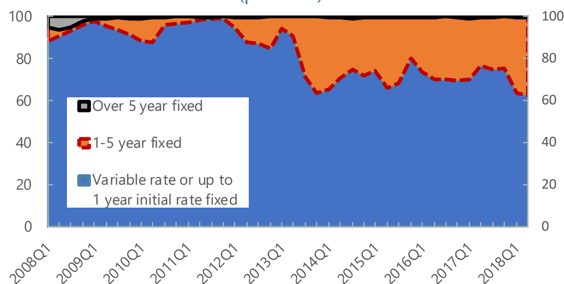
(in 2017)



Variable rate mortgages are prevalent in Malta.

Share of Mortgages by Interest Rate Type

(percent)



Sources: Maltese authorities; IMF staff calculations.

1/ Household leverage includes non-profit institutions serving the household sector. 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).

28. The planned introduction of borrower-based measures is a welcome step to proactively address a build-up of vulnerabilities in the housing and household sectors.[22] In addition to the existing stricter risk weights for mortgage loans than those provided in the CRR, the CBM has drafted a Directive to introduce limits on the LTV and DSTI ratios, as well as on the maturity for residential real estate bank loans (see Box 1).[23] The proposed measures are tailored to address risks in different loan segments, based on granular data analysis and banks' current internal policies, and include flexible implementation features—the so-called "speed limits"—that allow banks to exempt some loans from the LTV limits. The speed limits are intended to help banks deal with diverse cases and to avoid initial disruptions in the housing market. The CBM plans to monitor the implementation of the measures on a quarterly basis.

29. There is scope to refine the design of the planned borrower-based measures to reduce uncertainty over policy effects. To this end, the authorities are encouraged to consider the following amendments:

- Refining the "speed limits" for LTV to apply to the share of loans calculated based on the nominal euro *amount* of new loans per quarter, instead of the *number* of new loans on a semi-annual basis. This would reduce uncertainty over the total nominal euro amounts of the loans exempted from the LTV limits.
- Lowering the 20 percent speed limit for loans against secondary and buy-to-let properties as soon as concerns about any initial disruptions dissipate. This will strengthen the effectiveness of the LTV limit.
- Extending the scope of borrower-based measures to cover all mortgage loans, irrespective of whether they are originated by banks or non-banks, to minimize leakage (arbitrage) effects. Although almost all mortgages are currently provided by banks, financial activity could potentially migrate from the banking sector to the non-bank sector if the limits are applied only to the banking sector.

[22] Limits on LTV and DSTI ratios have been effective in many countries. Many cross-country studies find effects of these limits on credit growth and house prices, and modest sides effect on real GDP and consumption. For example, see Box 1 of IMF (2014b), Jacome and Mitra (2015), Kuttner and Shim (2016), Box 2.5 of IMF (2017), and Alam, Alter, Eiseman, Gelos, Kang, Narita, Nier, and Wang (2019) "Digging Deeper – Evidence on the Effects of Macroprudential Policies from a New Database."

[23] A 35 percent risk weight applies to the part of the residential mortgage loans whose loan-to-value ratio does not exceed 70 percent, rather than the CRR 80 percent. A 100 percent risk weight applies to the rest.

Box 1. Draft Borrower-Based Macroprudential Measures

The CBM plans to introduce borrower-based measures to proactively address the potential build-up of vulnerabilities in the housing and household sectors.[1] The CBM produced a draft Directive and launched a public consultation for the period of October 1–24, 2018. After making any necessary adjustments, it will start the ECB Single Supervisory Mechanism notification process and announce the measures possibly in early 2019. Their intention is to introduce these tools so that they can quickly tighten the measures when needed.

The proposed measures consist of three macroprudential limits applicable to all banks in Malta. They are the limits to the LTV-O ratio, the limits to a stressed DSTI-O ratio, and the limit to the maturity of originated mortgages (Box Table below).[2] These measures are intended to continue strengthening the resilience of banks and borrowers to asset price and income shocks, preserving their sound lending standards.

The proposed measures are tailored to risks in different loan segments. The calibrated limits differ across two categories of borrowers based on granular data analysis and banks' current internal policies. Category I is comprised of borrowers purchasing their primary residential property and Category II is comprised of borrowers purchasing their second or additional residential property or buy-to-let properties. The LTV-O limits are tighter for Category II as they are more investment-like in nature and sensitive to economic developments. Category I loans with property values less than €175,000 are exempted from the measures as high DSTI ratios are limited in this group.

There are some flexibility clauses, which are called "speed limits." The speed limits allow banks to exempt up to 10 percent of Category I loans and 20 percent of Category II loans from the LTV-O limits each quarter. A larger size of the speed limit is set for Category II borrowers because they face a tighter limit, which is expected to affect a larger share of loans in this category than Category I. Speed limits are also employed in other countries (e.g., New Zealand and Norway).[3]

	LTV-O	DSTI-O	Maturity
Category I borrowers	90 percent LTV-O cap, with a "speed limit" of 10 percent on the volume of loans;[4] applies to loans with a market value in excess of €175,000	A stressed DSTI-O of 40 percent for loans with a market value in excess of €175,000 with a shock to interest rates of 150 bps	A maturity term of 40 years or the official retirement age,[5] whichever occurs first
Category II borrowers	**1st year:** 85 percent LTV-O cap, with a "speed limit" of 20 percent on the volume of loans **2nd + year:** 75 percent LTV-O cap, with a "speed limit" of 20 percent on the volume of loans	A stressed DSTI-O of 40 percent with a shock to interest rates of 150 bps	A maturity term of 20 years or the official retirement age, whichever occurs first

Source: Draft Directive on the Regulation of Borrower-Based Measures.

[1] Based on a draft Directive on the Regulation of Borrower-Based Measures, as of September 2018.
[2] The stressed DSTI-O is defined as the DSTI ratio that is calculated with a 150 basis points higher interest rate than the actual interest rate at origination.
[3] In New Zealand, the speed limits are set at 20 percent of residential owner occupier mortgage lending to high-LTV (less than 20 percent deposit) borrowers and at 5 percent of investor lending to high-LVR (less than 30 percent deposit) borrowers (Reserve Bank of New Zealand). In Norway, the speed limits are set at 8 percent (in Oslo) and 10 percent (outside Oslo) of the number of new loan contracts per quarter (Norges Bank, 2016 and 2018).
[4] The volume of loans refers to the number of new loan contracts on a semi-annual basis.
[5] The official retirement age is 62 years old for those born in 1952–55, 63 years old for those born in 1956–58, 64 years old for those born in 1959–61, and 65 years old for those born after 1961.

C. Vulnerabilities from Corporate Sector

30. Bank exposure to the NFC sector has been declining, and NFC increasingly relies on intercompany loans. As a percent of GDP, bank loans to NFC have almost halved, from 57 percent in 2007 to 30 percent in 2017, while intercompany loans have increased from 34 percent to 64 percent during the same period (Figure 7).[24] Intercompany loans in Malta are now higher than in other European economies. Bond financing and loans by non-bank financials remain small, accounting for only about 5 percent of GDP.

31. The increased reliance on intercompany lending reflects several factors.[25] One of the major factors is tighter lending standards by banks after the Global Financial Crisis, reflecting legacy NPLs and the CRDIV/CRR measures that require banks to increase their capital.[26] Another major factor is the improved cash position of NFCs, which have served as an alternative source of NFC financing. The use of internal funds for NFC financing has been supported by low opportunity costs due to the prevailing low interest rate environment, as well as tax advantages for borrowing relative to equity financing.

32. At this juncture, intercompany lending does not appear to pose systemic risks to the financial sector. Intercompany loans in Malta reflect internal financing (i.e., intra-group loans or loans between related companies).[27] Therefore, when using consolidated data at the domestic group level, Malta's NFC debt-to-GDP almost halves to 70 percent because domestic intra-group loans are offset (Figure 7).[28] While the reliance on internal cash buffers exposes firms to business cycle risks, the risk to the banking sector is assessed as manageable as overall exposure of banks to NFCs has declined, including in sectors vulnerable to the business cycle (e.g., construction). Also, authorities' qualitative information indicates the limited use of collateral in intercompany lending, which implies low risk of "fire sales" of collateral assets, although this needs to be confirmed with a more comprehensive information (e.g., by conducting a survey).

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[24] Banks' lending to NFCs increased in 2018.

[25] See IMF (2018) "Nonbank Sources of Corporate Financing in Malta" and Darmanin (2017) "The Financial Companies in Malta."

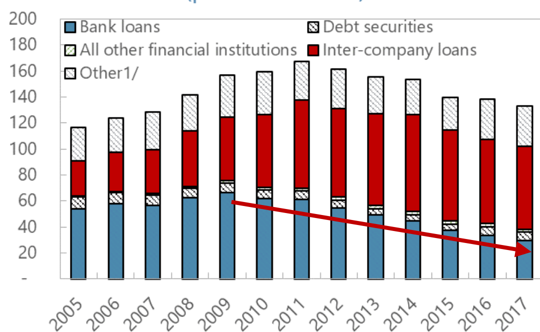
[26] With tighter lending standards, NFC groups may have further centralized their financing—i.e., one company in the group with the best access to banks and financial markets obtains external funds and distributes them to other companies within the same group.

[27] See Box 2 of the CBM's Financial Stability Report 2017.

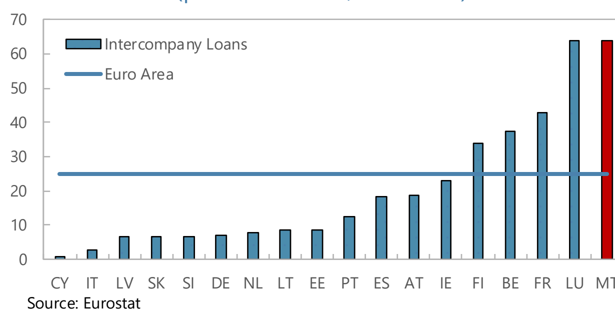
[28] The NFC debt-to-GDP ratio would be lower if the consolidation were done at the global group level, as loans provided by nonresident parent companies would also be offset.

Figure 7. Lending to Nonfinancial Corporations

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

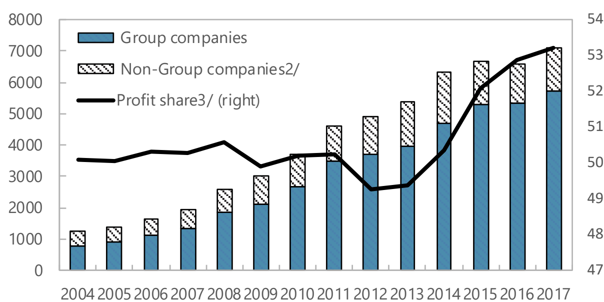


Malta's intercompany loans are larger than in other European countries.

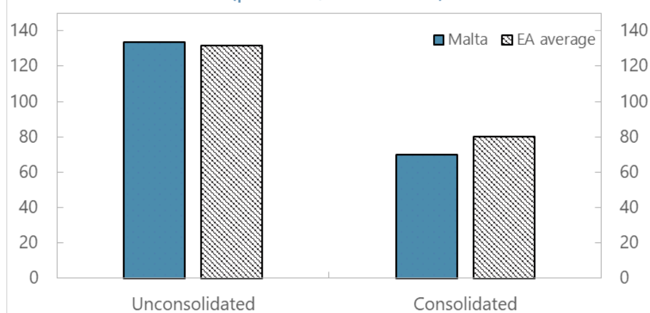


Source: Eurostat

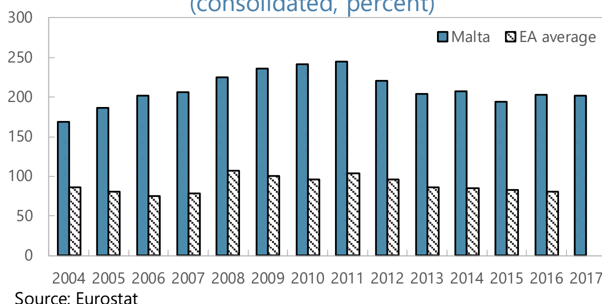
Since intercompany lending happens among related companies, mostly within a group, …



…the NFC debt-to-GDP ratio on a consolidated basis is much lower, …



… while the debt-to-equity ratio remains higher than the Euro Area average, even on a consolidated basis.[4/]



Source: Eurostat

Sources: Maltese Authorities; IMF staff calculations.

1/ Other holders include government, households, and nonresidents.
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.

33. A persistently high debt-to-equity ratio is a concern, although the debt-to-GDP ratio has been declining (Figure 7). A persistently high debt-to-equity ratio could be driven by, inter alia, (1) tax advantages of borrowing over equity financing; and (2) a statistical issue related to international intra-group finance.[29] Further analysis is needed to better assess the risks. For example, tax advantages of borrowing were reduced in 2018 by the Notional Interest Deduction Rules and it would be useful to examine the impact on the debt-to-equity ratio when data become available. [30] To address the statistical issue related to international intra-group finance, authorities could examine the debt-to-equity ratio computed only for the NFCs that do not have a foreign parent company, and compare it to the ratio computed for all NFCs in Malta. The authorities are also encouraged to assess the types of companies that have higher debt-to-equity ratios using granular data (e.g., domestic vs. foreign-owned, group vs. non-group, and industry).

D. Vulnerabilities from Funding and Liquidity

34. The banking system has ample aggregate liquidity and stable funding. The average liquidity coverage ratio (LCR) in the system was around 200 percent as of 2017Q4, well above the fully phased-in regulatory requirement of 100 percent (Figure 8).[31] While bank funding structures vary by their business orientation, loan-to-deposit ratios are generally low. The implementation of Basel III's Net Stable Funding Ratio would be beneficial to contain funding risk over a longer time horizon.

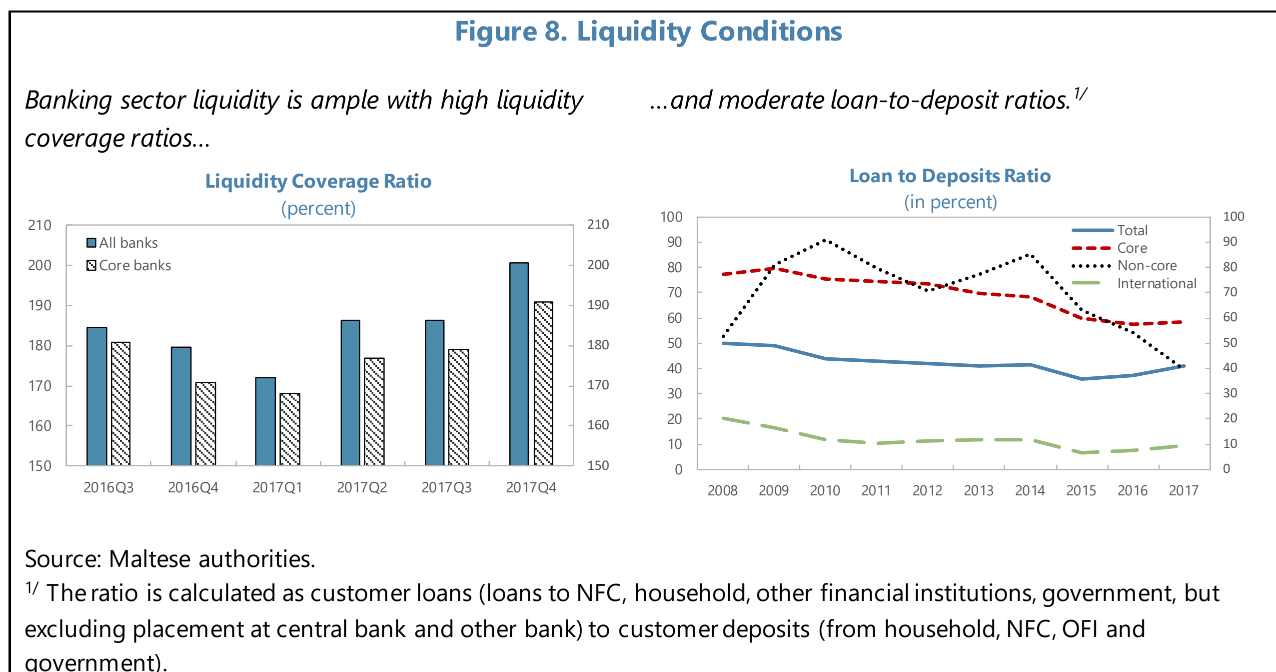


Figure 8. Liquidity Conditions

Banking sector liquidity is ample with high liquidity coverage ratios…

…and moderate loan-to-deposit ratios.[1/]

Source: Maltese authorities.

[1/] The ratio is calculated as customer loans (loans to NFC, household, other financial institutions, government, but excluding placement at central bank and other bank) to customer deposits (from household, NFC, OFI and government).

[29] Since the NFC data are consolidated only at the domestic group level, financial data would not be comprehensive for the NFCs that are part of nonresident groups. For example, loans from a nonresident parent company appear as external debt for its resident subsidiaries, although they are internal finance.

[30] The Notional Interest Deduction Rules are designed to align the tax treatment of the cost of equity with that of the cost of debt and, therefore, bring equity financing on par with debt financing. The rules became effective in 2018.

[31] The Basel III LCR requirement was gradually phased in from 2015. See also the Appendix I.

E. Vulnerabilities in Structural Dimensions

35. Banks play a dominant role in Malta's domestic financial system. The main components of financial system assets in Malta are banks (€48 billion in assets at end-2017, 4.3 times GDP), insurance (1 time GDP), and investment funds (1.1 times GDP). While Malta records a large residual category of "other financial intermediaries" in its flow of funds, they have limited domestic activities.[32] The FSAP's network analysis points to the important contagion risks to the domestic nonbanks emerging from the country's *core banks* (see the Technical Note of Risk Analysis).[33]

36. Three banks are identified as O-SIIs. The CBM and the MFSA developed the methodology for identifying and calibrating O-SII capital buffers, which applies to all credit institutions, investment firms, and parent financial holding companies. The methodology is an indicator-based approach, considering both, (1) the relative importance within the domestic financial system; and (2) the absolute importance to the domestic economy.[34] Three banks were identified as O-SIIs in 2015 and were required to hold additional capital buffers, which have been phased in from January 1, 2016, to January 1, 2019. The current O-SII buffers appear appropriate—the FSAP's risk analysis finds that O-SIIs are generally resilient under a severe economic downturn (see the Technical Note on Risk Analysis).

37. Risks from the sovereign-bank nexus are limited at this juncture.[35] The banking system's exposure to Maltese sovereign bonds was relatively low at 3.3 percent of total assets at end-2017. Although holdings of Maltese sovereign bonds are concentrated in core banks (Figure 9), this is of limited concern because most banks currently hold Maltese sovereign bonds in the amounts accounting for less than 10 percent of their total assets, with the largest exposure at around 22 percent. Sovereign risks are also assessed contained at this juncture, with the declining public debt-to-GDP ratio, the relatively high sovereign ratings, and historically moderate Maltese sovereign yields and spreads.[36] The investor base of Maltese sovereign bonds is mostly domestic and relatively stable. The FSAP's risk analysis does not point to sizable losses from sovereign exposures (see the Technical Note on Risk Analysis).

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[32] The residual "other financial intermediaries" sector consists of "special purpose entities," classified in sector 127 of the European System of regional and national accounts (ESA 2010), i.e., Captive Institutions and Money Lenders (CIML). According to the ESA 2010 official definition, these institutions and lenders consist of all financial corporations and quasi-corporations that are neither engaged in financial intermediation or in providing financial auxiliary services, and where most of either their assets or their liabilities are not transacted on open markets.

[33] Core banks, as classified by Maltese authorities, refer to six banks that are exposed mostly to the domestic economy, both through deposits and lending, and account for 95 percent of resident deposits and 98 percent of mortgages to residents.

[34] See Policy Document on the Methodology for the Identification of Other Systemically Important Institutions and the Related Capital Buffer Calibration: www.centralbankmalta.org/systemically-important-institutions.

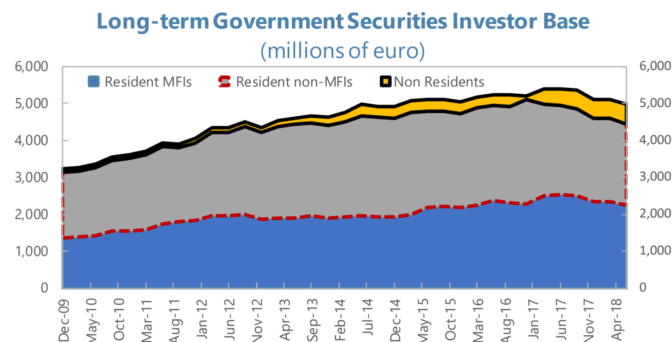
[35] The sovereign bank nexus refers to the links between banks and their governments that may lead to adverse feedback loops. See Dell'Ariccia and others (2018), for example.

[36] As of November 2018, Maltese sovereign ratings are A3 (Moody's), A- (S&P), and A+ (Fitch).

Figure 9. Sovereign Exposures

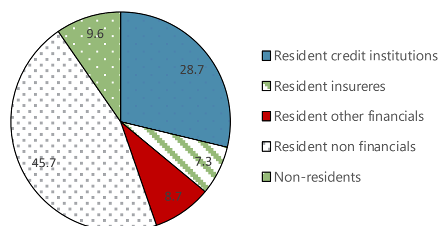
Malta's sovereign bonds are mostly held by residents.

Long-term Government Securities Investor Base
(millions of euro)



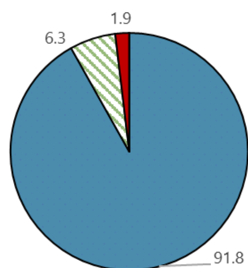
The banking sector holds 29 percent of the total stock of Maltese government bonds, which are ...

Sovereign Bond Investor Base
(December 2017, percent)



...concentrated in core domestic banks.

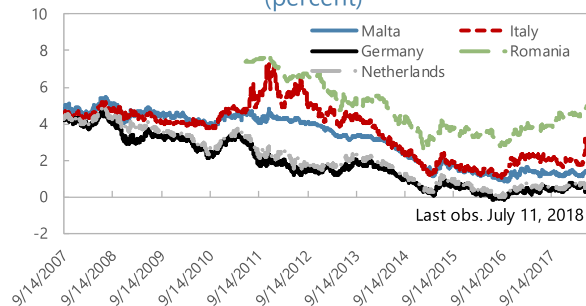
Share of Maltese Government Bonds[1]
(in percent)



Core domestic Non-core domestic International

Volatility of Maltese sovereign yields is relatively low.

10-year Government Bond Yields
(percent)



Sources: Maltese authorities and Bloomberg; IMF staff calculations.
1/ Total banking sector.

Appendix I. Macroprudential Policy Toolkit in Malta

Instrument	Agency in charge of		Description
	Decision	Implementation	
Broad-based tools			
Countercyclical capital buffer	The CBM	The CBM	The Countercyclical Capital Buffer framework was introduced in January 2016. The buffer rate is at 0 percent as of September 2018.
Capital conservation buffer	The MFSA The CBM in case of Article 458 of the CRR	The MFSA The CBM in case of Article 458 of the CRR	The Capital Conservation Buffer has been phased in at annual intervals of 0.625 percent of risk-weighted assets with effect from January 1, 2016, reaching a final level of 2.5 percent of risk-weighted assets on January 1, 2019, in line with Article 160 of the CRDIV. As the designated authority, the CBM may also increase the CCB in line with Article 458 of the CRR above the microprudential level prescribed above.
Forward-looking loan-loss provisioning requirement	The MFSA	The MFSA	The International Financial Reporting Standards 9 (IFRS 9), which takes a forward-looking approach, was endorsed by Member States on July 27, 2016, and became effective on January 1, 2018.
Household sector tools			
Household sector capital requirements	The MFSA The CBM in case of Article 458 of the CRR	The MFSA The CBM in case of Article 458 of the CRR	As announced and implemented on June 26, 2013, Maltese authorities have adopted more stringent measures than those applied in the CRR, whereby for mortgages secured by residential property, a 35 percent risk weight applies to the part of the loan that does not exceed 70 percent (rather than the CRR 80 percent) of the market value of the property. The rest of the loan is assigned a risk weight of 100 percent. Article 458 of the CRR allocates powers to the CBM to increase risk weights in the residential and commercial property sector to address changes in the intensity of systemic risk in the real estate market.
Exposure caps on foreign-currency-denominated household loans	The MFSA	The MFSA	As announced on December 12, 2012 and effective on January 1, 2013, credit institutions are required to identify their foreign currency lending risk to unhedged borrowers, on an annual basis, by applying the following threshold: Loans denominated in foreign currency to unhedged borrowers constitute at least 10 percent of an institution's total loan book (total loans to nonfinancial corporations and households), and where such total loan book constitutes at least 25 percent of the institution's total assets.
Liquidity tools			
Liquidity coverage ratio requirement	The MFSA The CBM in case of Article 458 of the CRR	The MFSA The CBM in case of Article 458 of the CRR	As announced on June 26, 2013, the LCR requirement has been progressively implemented in accordance with the CRR. The LCR was set at 60 percent on October 1, 2015, increased to 70 percent on January 1, 2016, to 80 percent on January 1, 2017, and to 100 percent on January 1, 2018. As the designated authority, the CBM may amend the LCR requirements as per Article 458.

Instrument	Agency in charge of		Description
	Decision	Implementation	
Tools to address risks in structural dimensions			
Capital surcharges for Systemically Important Institutions	The MFSA and the CBM	The MFSA	The MFSA and the CBM under the auspices of the JFSB and following consultation with the European Central Bank, identified three banks as systemically important credit institutions and requested them to hold additional capital buffers on December 27, 2015, which range between 0.5 percent and 2.0 percent and have been phased in from January 1, 2016 to January 1, 2019.
Limits on the size of exposures between financial institutions	The MFSA	The MFSA	As announced in June 26, 2013, and effective in January 1, 2014, Capital Requirements Regulation Article 392 and Article 395 to 403 require institutions to not incur an exposure to a client or group of connected clients, which include financial institutions, the value of which exceeds 25 percent of their eligible capital or EUR 150 million, whichever the higher.
Other instruments	The CBM	The CBM	In exercising its macroprudential function, the CBM can resort to other macroprudential tools which do not form part of the CRDIV/CRR toolkit, such as LTV ratios, DSTI caps and sectorial countercyclical capital buffers. Apart from the Single Supervisory Mechanism, the CBM is not legally bound to notify other European authorities about its macroprudential measures.

Source: Malta authorities; IMF's Annual Macroprudential Policy Survey.