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MALTA

SELECTED ISSUES

January 2024

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January 2, 2024

Approved By
European Department

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CONTENTS

INTEREST RATE PASS-THROUGH IN MALTA[1]

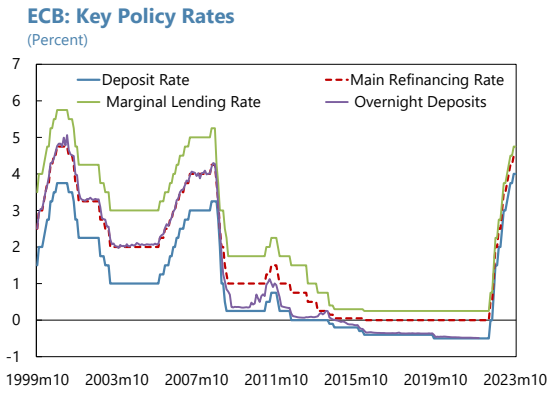
This paper examines the pass-through dynamics from monetary policy interest rates to retail bank interest rates in Malta, in comparison with other euro area countries. In Malta, the pass-through to both deposit and lending rates has been relatively limited since the European Central Bank (ECB) started a tightening cycle in July 2022. This can be attributed predominantly to abundant liquidity and the structure of banking system, aligning with historical patterns.

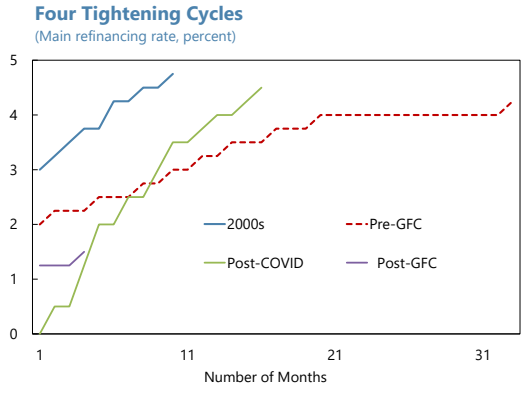
A. Introduction

1. In mid-2022, the ECB embarked on the steepest hiking cycle in the history of the monetary union. This involved reducing net asset purchases (APP), concluding all APPs by June 2022. Following this, the ECB commenced a series of monetary policy rate hikes in July 2022. From July 2022 to September 2023, the ECB increased its policy rates by 450 basis points, representing the ECB's highest speed and largest magnitude of tightening from a historical perspective.

2. The transmission of monetary policy to the economy usually occurs with time lags. The primary channel of this transmission is through the banking and financial sector, where the central bank influences the cost of market borrowing for these institutions. Consequently, this affects lending rates for consumers and corporates, as well as the interest received on deposits, ultimately shaping spending and investment decisions.

Figure 1. ECB Policy Rates and Tightening Cycles



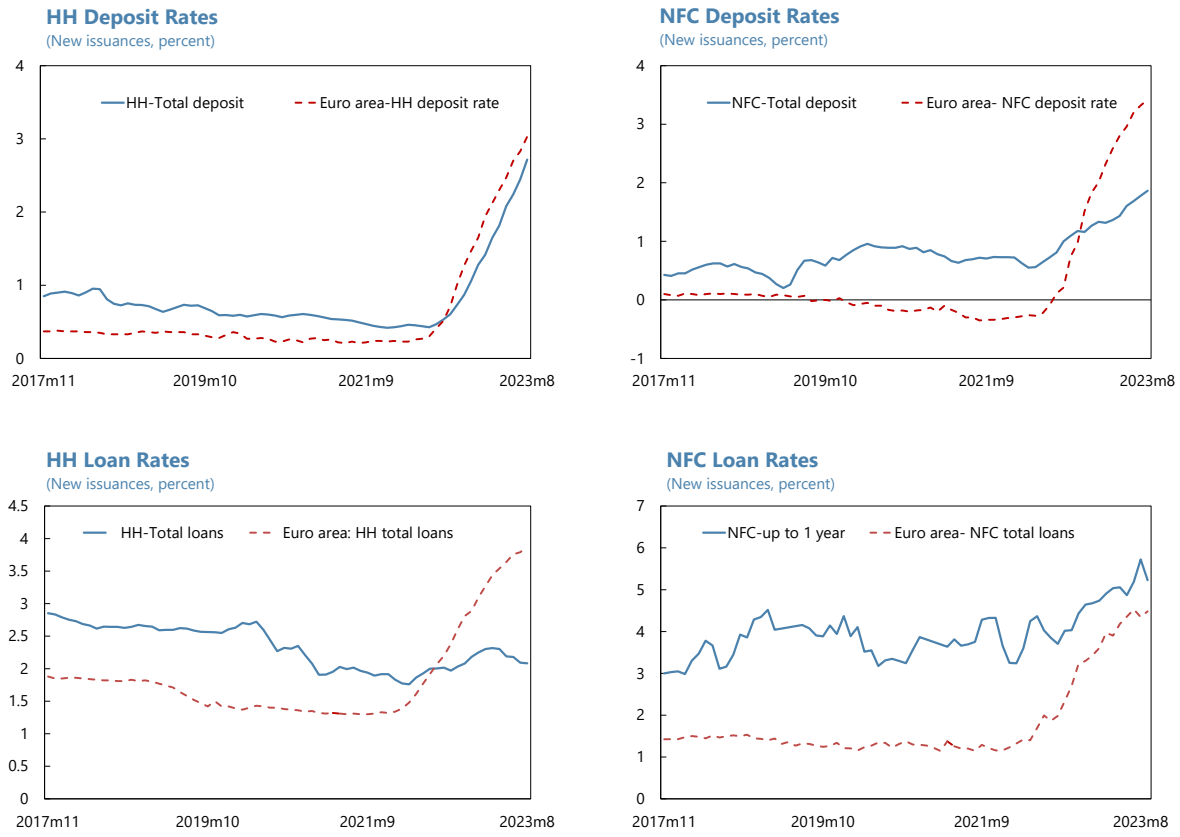


Sources: ECB Data Portal and IMF staff calculations.
Note. Tightening cycle defined by the number of months over the first event of policy rate increase to the last event.

[1] Prepared by Mahir Binici. Useful comments were received from participants in seminar held at the Central Bank of Malta.

3. Despite the sharp increase in ECB monetary policy rates, the rise in retail bank interest rates in Malta has been limited compared to other euro area countries. On deposits, deposit rates with agreed maturity for households in Malta have increased broadly in line with those in the euro area, but rates for non-financial corporates (NFCs) have been subdued.[2] On loans, mortgage rates have remained broadly stable, while the increase in lending rates for NFCs was only about 100 basis points from June 2022 to September 2023, much lower than the 250 basis points increase in the euro area. As a result, the ECB's composite cost of borrowing indicators suggest that borrowing costs in Malta are the lowest for households and the third lowest for NFCs in the euro area.[3]

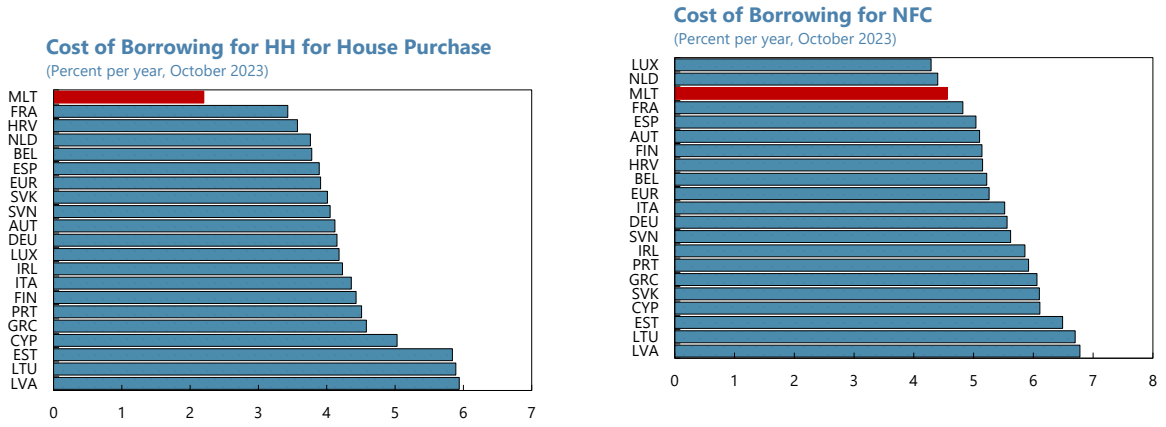
Figure 2. Retail Rates in Malta



[2] Deposits do not include O/N deposits.

[3] The cost of borrowing is calculated by incorporating various loan types and assigning weights based on their significance in a particular market in individual country. See Muller and Rumpf (2023).

Figure 2. Retail Rates in Malta (Concluded)



Sources: ECB Data Portal

4. Against this background, this chapter examines the pass-through from monetary policy rates to retail bank interest rates in Malta compared to other euro area countries. Section B presents the measurement of the pass-through and empirically compares the degree of the pass-through in Malta with that in other euro area countries. Section C analyzes whether differential degrees of the pass-through are associated with banking system characteristics. Section D concludes.[4]

B. Measuring the Pass-Through

5. To measure the degree of pass-through across euro area countries, betas for deposit rates and loan rates are estimated. *Betas* measure how deposit or lending rates respond to a change in the monetary policy rate. They are estimated as follows:

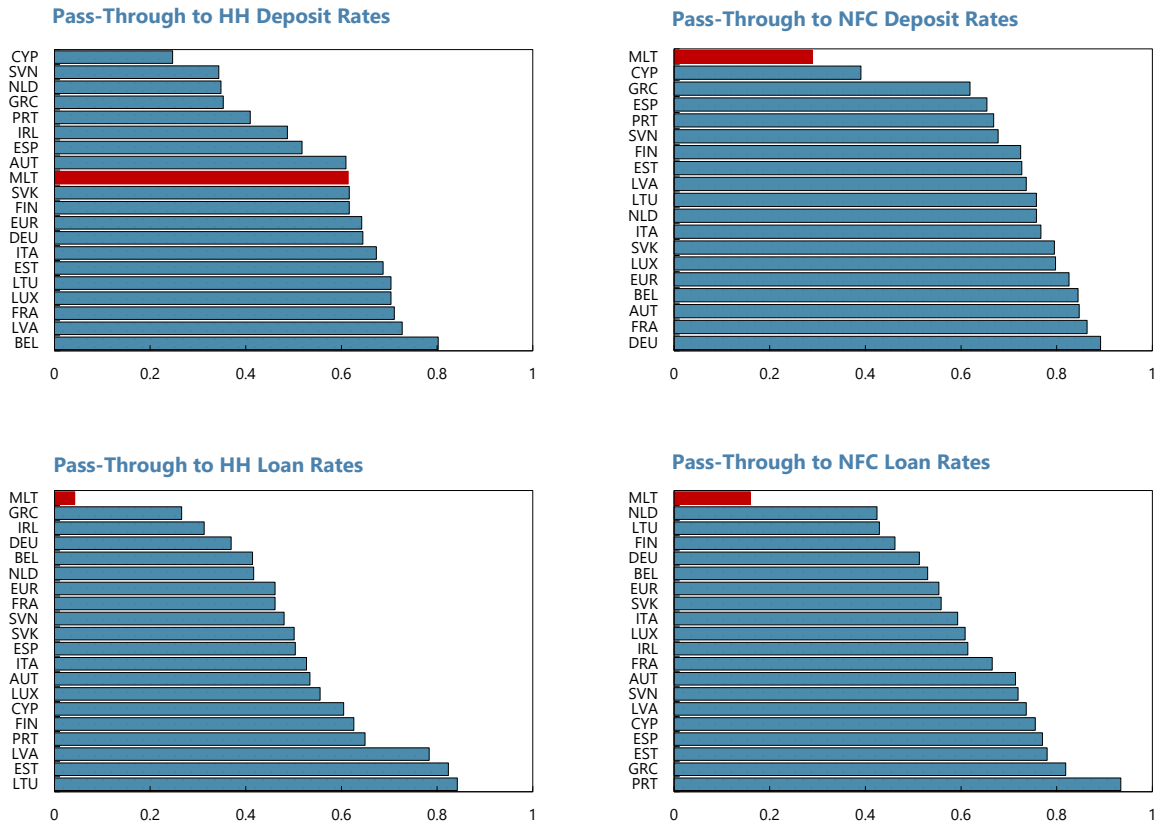
$$\textit{Deposit rate/Loan rate Beta} = \frac{\Delta \textit{Retail deposit rate or lending rate}}{\Delta \textit{Monetary policy rate}}$$

[4] There are a number of studies analyzing the pass-through of policy rates. Messer and Niepmann (2023) highlight that the relatively low pass-through from the policy rate to deposit rates is influenced by banks having little incentive to attract additional deposits amid abundant liquidity. Beyer et al. (2023) find a weaker and slower pass-through in the recent tightening cycle, attributed in part to higher financial sector concentration and ample deposits relative to lending opportunities. Earlier literature has also examined various aspects of interest rate pass-through in the euro area and in Malta. For example, Angeloni and Ehrmann (2003) and Kleimeier and Sander (2006) analyzed the pass-through during the early euro adoption; Avouyi-Dovi et al. (2017) and Holton and Rodriguez d'Acri (2018) analyzed reductions in pass-through after the global financial crisis. Darracq Paries et al. (2014), Arnold and van Ewijk (2014), Albertazzi et al. (2012), and Illes et al. (2015) analyzed the role of factors such as sovereign and credit risk, banks' capitalization, asset quality, and fragmentation in bank funding conditions, while Altavilla et al. (2020) examined the pass-through of non-standard monetary policy measures.

where $\Delta Retail\ deposit\ rate\ or\ lending\ rate$ and $\Delta Monetary\ policy\ rate$ are the monthly changes in retail deposit rates or lending rates and in the monetary policy rate, respectively, from June 2022 to August 2023.

6. Figure 3 shows the deposit rate and lending rate betas. There are considerable variations across euro area countries, and the pass-through has been incomplete—the estimated beta is below one. The pass-through to household deposits in Malta is estimated at 0.6, similar to that in Austria, Finland, and the Slovak Republic. However, for other retail bank products, the interest rate pass-through in Malta has been the lowest in the euro area, with the pass-through for mortgage loans estimated at nearly zero, NFC loans at 0.2, and NFC deposits at 0.3.[5]

Figure 3. Retail Rates Changes Relative to ECB Policy Rate



Sources: ECB Data Portal and IMF staff calculations.
Note: Figure presents change in deposit or loan rates divided by change in ECB policy rate over June 2022 to August 2023.

[5] Both deposit and loan rates refer to new issuances. Mortgage rates are the weighted average of loans (new issuances) across different initial rate fixation (IRF) periods. IRFs include periods of up to one year, over one year and up to five years, over five years and up to ten years, and over ten years.

7. The pass-through can be analyzed more systematically using an approach similar to the literature on exchange rate pass-through (Burstein and Gopinath, 2014). The following regression is estimated for Malta:

$$\Delta rr_t = \alpha + \sum_{k=0}^{K} \beta_k \Delta pr_{t-k}^{ECB} + \Gamma X_t + \varepsilon_t \quad (1)$$

where Δ*rr* denotes the change in retail deposit or loan rates in month t, Δ*pr* denotes the change in the ECB's monetary policy rate, the rate on the deposit facility, and vector *X* includes the contemporaneous and lagged industrial production and core inflation to control demand for loans or deposits. This specification allows for measuring spontaneous pass-through, β_0, and pass-through up to three months, $\sum_{k=0}^{K} \beta_k$ where K=3, as after three months, most lag terms become insignificant. The empirical analysis relies on ECB's Monetary and Financial Institutions (MFI) interest rates on new issuances of loans and deposits across different maturities. The sample period is from January 2008 to August 2023 for Malta, but a longer sample (January 2000-August 2023) for most other euro area countries, as discussed below. The model includes an interaction dummy for the recent tightening period with the change in the policy rate to assess if pass-through estimates in the recent tightening cycle are different from those in the past.

8. The empirical results verify a generally weak or sluggish retail bank interest rate pass-through in Malta, except for household deposits (Table 1). Key findings are as follows:

- The pass-through coefficients for households' total deposits are 0.37 for lag 1 and 0.24 for lag 3, both statistically significant (Table 1a. HH deposit (1)). The coefficient for the interaction dummy is negative 0.137 (though not significant), suggesting a weaker retail rate pass-through during the current tightening cycle. It is also noteworthy that the pass-through coefficient (lag 4) is larger for deposits with longer maturities (e.g., the coefficient for deposits over two years is 0.722) than those with short-term maturities (e.g., the coefficient for overnight deposits is about zero).

- For other retail bank products, the pass-through coefficients were statistically insignificant. This suggests a limited or no significant impact on both short-run and long-run pass-through to NFC deposits, households (mortgage) loans, and NFC loans in Malta. The results are broadly consistent with those discussed in the Central Bank of Malta (2023) and Micallef and Gauci (2014).

- The empirical results suggest that the degree of the retail bank rate pass-through in Malta appears to be weak compared to the euro area. Model (1) is modified to a cross-country panel setting and estimated for euro area countries (Annex I). All of the retail bank interest rate pass-through coefficients have positive signs, and most of them are statistically significant.[6]

9. To complement this analysis, a local-projection method is used to estimate the response of retail bank interest rates to a monetary policy shock. Using the same specification

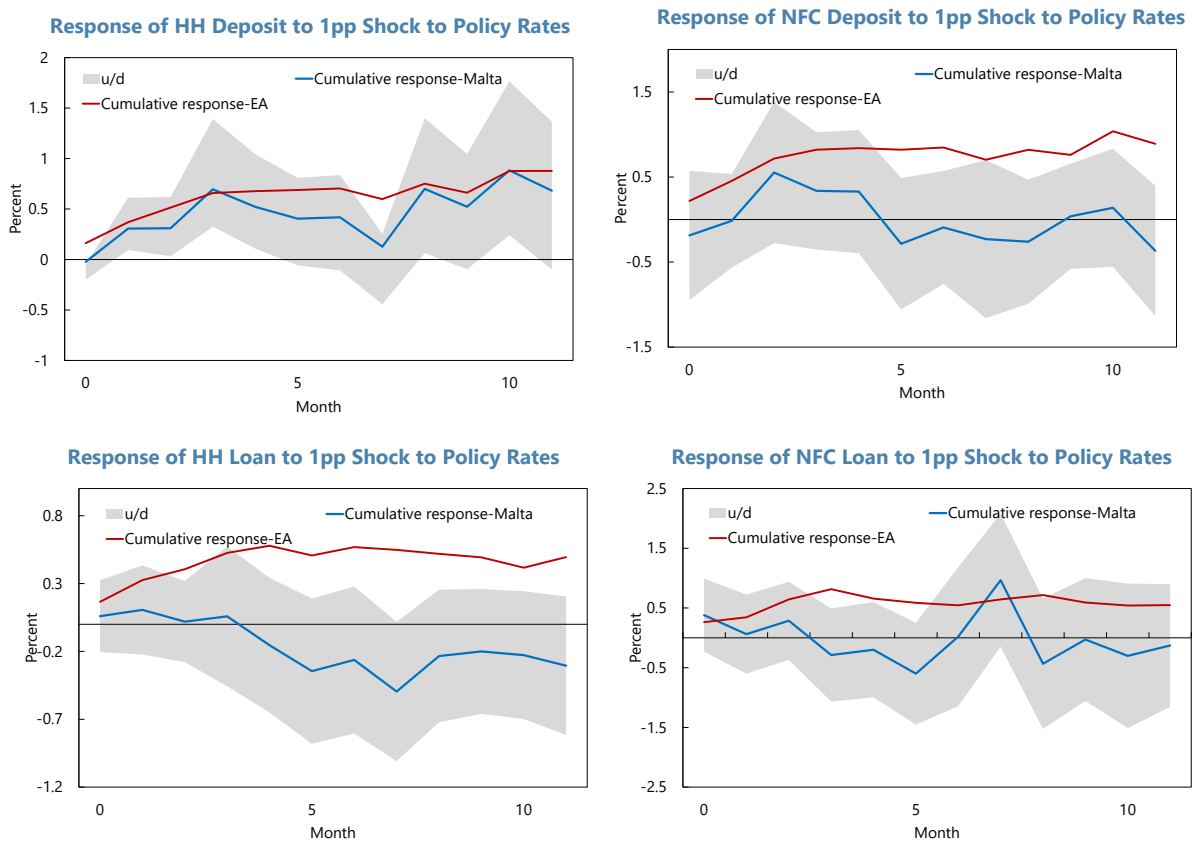
[6]The panel regression for the euro area also indicated that the pass-through in the recent cycle is weaker than in the previous tightening cycle.

of equation (1), we follow the method proposed by Jordà (2005) and estimate impulse-response functions. This approach permits the assessment of the transmission lag of a monetary policy shock on bank retail interest rates. Estimation is performed for retail rates in both Malta and the euro area countries (average) on monthly data from January 2008 to August 2023. The results broadly conform with the above findings (Figure 4).

- For household deposits, retail rates respond positively to a monetary policy rate increase in Malta (although not statistically significant). The size of the impulse response in Malta is lower than that in the euro area.

- For other retail bank products, the impulse response was muted. These results contrast with those in the euro area, where empirical estimates suggest a statistically significant increase in retail rates over several months following a policy rate hike.

Figure 4. Response to Monetary Policy Shock: Cumulative IRF



Sources: ECB Data Portal and IMF staff calculations.
Note: Confidence intervals are presented for Malta only. For the euro area results, confidence intervals are outside of the zero line for all estimations.

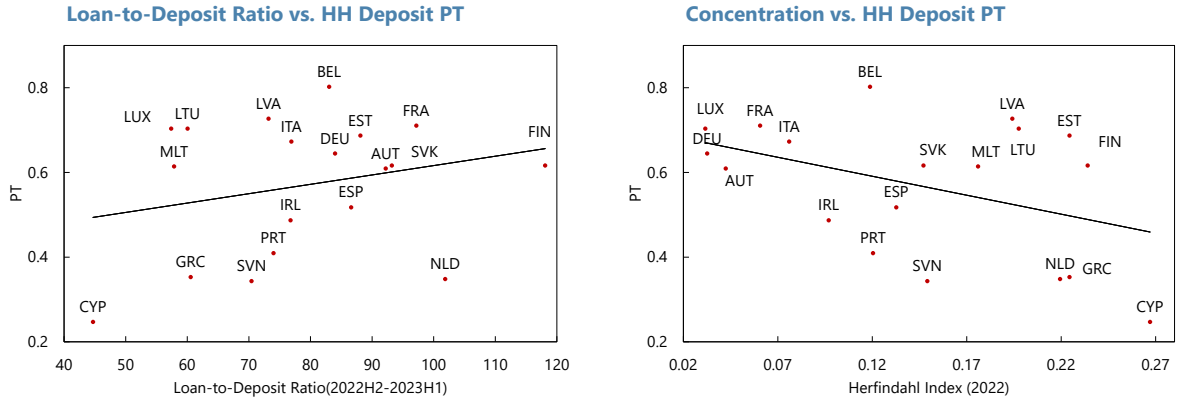
C. Banking Sector Characteristics

10. The banking system in Malta is well-capitalized with ample liquidity. Core bank common equity Tier 1 capital ratios are about 20 percent, and liquidity coverage ratios are nearly 400 percent (2023:Q2).[7] The banking system is concentrated, with the two largest banks, Bank of Valletta and HSBC Bank Malta, together accounting for about 50 percent of total bank assets. While bank funding structures vary by business orientation, loan-to-deposit ratios are generally low. Claims on the Eurosystem remain high, reflecting excess liquidity in the system.

11. Banking sector characteristics may influence pass-through. These include funding and market structure, as they affect bank interest rate-setting behavior. In addition, the extent to which banks can exercise market pricing power depends in part on the degree of competition.[8] Figure 5 plots correlations between the retail rate pass-through (measured by betas estimated in Section B) for households deposits (Y axis) and the loan-to-deposit ratio and Herfindahl index (X axis). It appears that:

- The higher the loan-to-deposit ratio is, the stronger the retail rate pass-through, implying that ample liquidity in the system is associated with a weaker pass-through.
- There are negative correlations between concentration in the banking system and the retail rate pass-through, implying that high concentration is associated with a weaker pass-through.

Figure 5. Banking Sector Characteristics and Pass-Through



Sources: ECB Data Portal and IMF staff calculations.

[7] Additionally, there has been a notable improvement in the quality of core bank credit portfolios, as evidenced by a historic low in non-performing loan ratio at 2.6 percent in 2023:Q2. This positive trajectory extends to bank profitability, with core banks' return on equity reaching 11 percent in the same period.

[8] See van Leuvensteijn et al. (2013) and the references therein for a discussion of the Monti–Klein model, as well as literature on competition and the transmission of monetary policy.

12. We estimate the following cross-country panel model including banking sector characteristics.

$$\Delta rr_{c,t} = \alpha + \sum_{k=0}^{K} \beta_k \Delta pr_{t-k}^{ECB} + \Gamma X_{c,t} + \Phi Z_{c,t-1} + \vartheta \Delta pr_{t}^{ECB} * Z_{c,t-1} + \varepsilon_t \,, \qquad (2)$$

where, Δ*rr* denotes the change in retail deposit and lending rates in month t for country c. In addition to the other variables described earlier, *Z* denotes banking sector characteristics and their interaction with the ECB policy rate.[9] Key variables pertaining to banking sector characteristics include total banking sector assets relative to GDP (a proxy for size), capital ratio (CET1), liquidity (liquid assets to total asset ratio), asset quality (the non-performing loan, NPL, ratio), loan-to-deposit ratio, profitability (ROE), and banking sector concentration (the share of the largest five banks or the Herfindahl index).The sample period is from 2022Q1 to 2023Q2, focusing exclusively on the recent tightening cycle. The model is estimated for 19 euro area countries with panel fixed effects; standard errors of coefficient estimates are adjusted for heterogeneity, autocorrelation, and potential cross-sectional correlation.

13. Empirical results suggest that various banking sector characteristics appear to play an important role in moderating the pass-through effect of policy rates (Table 2). Most of the coefficients of interaction terms are statistically significant: the pass-through is negatively correlated with capital, liquidity, the NPL ratio, and concentration, whereas the pass-through is positively correlated with the loan-to-deposit ratio. These results are consistent with the literature, as in studies such as Darracq Paries et al. (2014) and Holton and Rodriguez d'Acri (2018), where they find that liquid and well-capitalized banks with better access to funding markets tend to react less to monetary policy shocks. The findings related to NPLs align with those of Gigineishvili (2011), who suggests that the banking system might be less responsive to a monetary policy shock when credit quality is already poor as further hikes in loan rates, for instance, could increase the likelihood of incurring additional losses. These results conform with perceptions in Malta that high capital and liquidity ratios and concentration, and low loan-to-deposit ratios are associated with a relatively lower degree of the deposit rate pass-through compared to the euro area average.

D. Conclusions

14. The pace of monetary transmission in Malta has been much slower compared to other euro area countries. There is considerable variation in the pass-through of monetary policy rates to retail bank rates across the euro area during the recent tightening cycle. Various characteristics specific to the banking sector, including capital, liquidity, loan-to-deposit ratios, and concentration, appear to play a significant role in explaining the differential pass-through of policy rates on retail rates. In Malta, the pass-through from monetary policy rates has been relatively limited, reflecting abundant liquidity and relatively high concentration in the banking system. The other policies in Malta, including borrower-based measures, interest rate caps, and government mortgage support

[9] To address the limitation of a short sample period, both over time and in the country sample, we introduce individual banking sector characteristics and their interactions with the policy rate change separately in equation (2). This approach ensures a sufficient degree of freedom for unbiased parameter estimates.

programs, have remained unchanged or have not been introduced since the beginning of the ECB monetary policy tightening cycle.

15. This has potentially important implications for policymaking. Taking into account the interest rate channel of monetary policy, the Central Bank of Malta (2023) estimated that the direct impact from rising rates on economic activity and inflation would be quite limited.[10] Accordingly, given the weak interest rate channel, fiscal policy should play an important role in macroeconomic stabilization. Furthermore, as deposit rates have risen faster than lending rates, their implications for banks' profitability could warrant close monitoring, especially for those banks with a high loan-to-deposit ratio.

[10] As Malta is a small open economy, indirect channels of monetary policy, particularly lower economic activity in the euro area (which reduces demand for Malta's exports) and lower import prices, could be playing a more important role.

Table 1. Malta: Deposit and Loan Rate Pass-Through

a. Deposit Rate Pass-Through

	HH Deposit					NFC Deposit		
VARIABLES	(1) Total deposit	(2) O/N	(3) Up to 1 year	(4) Over 1 & up to 2 years	(5) Over 2 years	(1) Total deposit	(2) O/N	(3) Up to 1 year
ΔPolicyRate (t)	-0.069	0.056	-0.039	0.096	-0.344	-0.138	0.031	-0.109
	(0.103)	(0.038)	(0.125)	(0.302)	(0.266)	(0.476)	(0.033)	(0.472)
ΔPolicyRate (t-1)	0.369**	0.089	0.252	0.427	0.047	0.026	0.053	0.163
	(0.177)	(0.067)	(0.160)	(0.462)	(0.428)	(0.602)	(0.060)	(0.601)
ΔPolicyRate (t-2)	-0.127	-0.009	-0.078	-0.404	-0.104	0.497	-0.023	0.419
	(0.107)	(0.024)	(0.126)	(0.246)	(0.338)	(0.376)	(0.022)	(0.373)
ΔPolicyRate (t-3)	0.241*	-0.072*	0.247**	0.315	0.722**	-0.347	-0.055	-0.258
	(0.131)	(0.043)	(0.124)	(0.216)	(0.302)	(0.433)	(0.034)	(0.435)
Recent Tight. Cycle * ΔPolicyRate	-0.137	-0.082	0.015	-0.266	-0.377	0.270	-0.051	0.179
	(0.187)	(0.078)	(0.191)	(0.523)	(0.453)	(0.696)	(0.070)	(0.685)
Constant	-0.031	-0.002	-0.024	-0.029	-0.026	-0.005	-0.003	0.005
	(0.024)	(0.002)	(0.018)	(0.030)	(0.038)	(0.065)	(0.003)	(0.067)
Additonal controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	187	188	188	187	187	181	188	188
R-squared	0.220	0.400	0.318	0.109	0.149	0.056	0.538	0.049

Notes. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Total deposits include deposit rates with agreed maturity only.

b. Loan Rate Pass-Through

	HH Loan		NFC Loan	
VARIABLES	(1) Up to 1 year	(2) Over 1 & up to 5 years	(1) Total loans	(2) Up to 1 year
ΔPolicyRate (t)	0.269	-0.451	0.315	0.548
	(0.164)	(0.333)	(0.344)	(0.359)
ΔPolicyRate (t-1)	0.337**	-0.032	0.551	0.460
	(0.132)	(0.503)	(0.426)	(0.430)
ΔPolicyRate (t-2)	-0.191	-0.226	0.050	0.062
	(0.132)	(0.358)	(0.347)	(0.335)
ΔPolicyRate (t-3)	-0.158	-0.107	-0.565	-0.493
	(0.116)	(0.277)	(0.346)	(0.325)
Recent Tight. Cycle * ΔPolicyRate	0.093	-0.689	-1.414**	-0.453
	(0.277)	(0.777)	(0.630)	(0.637)
Constant	-0.007	-0.075*	-0.103	-0.031
	(0.025)	(0.039)	(0.113)	(0.100)
Additonal controls	Yes	Yes	Yes	Yes
Observations	187	120	186	182
R-squared	0.180	0.134	0.027	0.031

Notes. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source. ECB Data Portal and IMF staff calculations.

Table 2. Malta: Banking Sector Characteristics

a. HH Deposit Rates

Dependent Variable: ΔHH_Depsoit

Bank Characteristic: Z(t-1) =>	(1) *[Size]*	(2) *[CET1]*	(3) *[Liquidity]*	(4) *[NPL]*	(5) *[Loan-to-Deposit Ratio]*	(6) *[ROE]*	(7) *[Concentratio]*
ΔPolicyRate (t)	0.097	0.337***	0.506***	0.270***	-0.267*	0.205***	0.491***
	(0.082)	(0.050)	(0.071)	(0.059)	(0.121)	(0.022)	(0.085)
ΔPolicyRate (t-1)	0.278***	0.268***	0.277***	0.262***	0.264***	0.313***	0.259***
	(0.061)	(0.056)	(0.067)	(0.060)	(0.068)	(0.069)	(0.059)
Z(t-1)	0.000	-0.037**	-0.002	-0.075**	0.001	-0.003	-0.012*
	(0.001)	(0.014)	(0.004)	(0.030)	(0.006)	(0.002)	(0.006)
ΔPolicyRate * Z(t-1)	0.000	-0.012*	-0.015***	-0.059***	0.005***	-0.013	-0.005**
	(0.000)	(0.006)	(0.002)	(0.007)	(0.001)	(0.007)	(0.002)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	123	123	123	123	123	123	123

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

b. NFC Deposit Rates

Dependent Variable: ΔNFC_Deposit

Bank Characteristic: Z(t-1) =>	(1) *[Size]*	(2) *[CET1]*	(3) *[Liquidity]*	(4) *[NPL]*	(5) *[Loan-to-Deposit Ratio]*	(6) *[ROE]*	(7) *[Concentratio]*
ΔPolicyRate (t)	0.117**	0.512***	0.534***	0.349***	-0.151	0.290***	0.659***
	(0.032)	(0.090)	(0.060)	(0.028)	(0.105)	(0.039)	(0.069)
ΔPolicyRate (t-1)	0.381***	0.364***	0.367***	0.364***	0.367***	0.432***	0.354***
	(0.037)	(0.034)	(0.035)	(0.034)	(0.039)	(0.046)	(0.033)
Z(t-1)	0.002	-0.024*	0.015	-0.059	-0.005	-0.005*	-0.028***
	(0.001)	(0.010)	(0.010)	(0.051)	(0.009)	(0.002)	(0.006)
ΔPolicyRate * Z(t-1)	0.000***	-0.019***	-0.014***	-0.065***	0.005***	-0.016*	-0.007***
	(0.000)	(0.005)	(0.003)	(0.010)	(0.001)	(0.008)	(0.001)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	117	117	117	117	117	117	117

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Table 2. Malta: Banking Sector Characteristics (Concluded)

c. HH Loan Rates

Dependent Variable: ΔHH_Loan

Bank Characteristic: Z(t-1) =>	(1) [Size]	(2) [CET1]	(3) [Liquidity]	(4) [NPL]	(5) [Loan-to-Deposit Ratio]	(6) [Floating Loans Share]	(7) [ROE]	(8) [Concentratio]
ΔPolicyRate (t)	0.232***	0.094	0.123	0.310***	0.201	0.113*	0.076	0.051
	(0.054)	(0.053)	(0.116)	(0.072)	(0.129)	(0.048)	(0.052)	(0.110)
ΔPolicyRate (t-1)	0.094*	0.090**	0.096**	0.083*	0.091*	0.104*	0.053	0.100*
	(0.040)	(0.033)	(0.038)	(0.040)	(0.040)	(0.046)	(0.053)	(0.041)
Z(t-1)	0.001	-0.065**	-0.011	0.017	-0.007	-0.003	-0.021**	-0.001
	(0.001)	(0.019)	(0.006)	(0.033)	(0.004)	(0.002)	(0.007)	(0.006)
ΔPolicyRate * Z(t-1)	-0.000	0.007	0.004	-0.036***	0.000	0.003***	0.042***	0.003**
	(0.000)	(0.003)	(0.003)	(0.009)	(0.001)	(0.000)	(0.007)	(0.001)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	123	123	123	123	123	120	123	123

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

d. NFC Loan Rates

Dependent Variable: ΔNFC_Loan

Bank Characteristic: Z(t-1) =>	(1) [Size]	(2) [CET1]	(3) [Liquidity]	(4) [NPL]	(5) [Loan-to-Deposit Ratio]	(6) [Floating Loans Share]	(7) [ROE]	(8) [Concentratio]
ΔPolicyRate (t)	0.200***	0.315*	0.692**	0.150**	0.369**	0.206**	0.281**	0.226*
	(0.036)	(0.147)	(0.254)	(0.060)	(0.134)	(0.069)	(0.106)	(0.112)
ΔPolicyRate (t-1)	0.337***	0.336***	0.335***	0.332***	0.336***	0.328***	0.368***	0.340***
	(0.058)	(0.056)	(0.054)	(0.046)	(0.063)	(0.046)	(0.070)	(0.055)
Z(t-1)	-0.001	-0.002	0.002	-0.198**	0.027*	-0.002	0.003	-0.009
	(0.001)	(0.032)	(0.020)	(0.072)	(0.012)	(0.003)	(0.007)	(0.011)
ΔPolicyRate * Z(t-1)	0.000	-0.006	-0.020*	0.021	-0.002	0.000	-0.017	-0.000
	(0.000)	(0.009)	(0.009)	(0.015)	(0.002)	(0.001)	(0.014)	(0.001)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	123	123	123	123	123	120	123	123

Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

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Annex I. Deposit and Loan Rate Pass-Through in Euro Area

1. The following regression is employed to examine the pass-through in euro area:

$$\Delta rr_{c,t} = \alpha + \sum_{k}^{K} \beta_k \Delta pr_{t-k}^{ECB} + \Gamma X_{c,t} + \varepsilon_{t,} \quad (1)$$

where the variables are the same as in equation text (1), and the model is estimated using panel fixed effects with standard errors adjusted for heterogeneity, autocorrelation, and potential cross-sectional correlation.

2. The data sample covers 19 euro area countries, starting from their entry into the eurozone. The empirical results, presented below, offer insights into the full sample spanning 2000 to 2023, pre-pandemic monetary policy tightening cycles (early 2000, pre-GFC, and after GFC), and the recent tightening cycle from 2022 to 2023. Due to the monthly frequency of the data and the objective of providing a comparative analysis between current and past tightening cycles, the incorporation of country-level banking sector characteristics is not feasible. These specifics are only accessible from the ECB at a quarterly frequency and post-2014.

3. Both short-run and long-run pass-through from the policy rate to retail rates for the euro area are weaker in the recent tightening cycle. As presented in Table 1, the pass-through in the recent cycle is weaker compared to the full sample (covering all easing and tightening cycles and periods without any policy actions), and the previous tightening cycles. This empirical observation aligns with recent studies, such as those by Messer and Niepmann (2023) and Beyer et al. (2023), highlighting a general trend of limited and slower pass-through during the recent tightening cycle. The consistency of this trend for both deposit and loan rates, as well as for both HH and NFC, raises important questions about the traditional efficacy of monetary policy in influencing retail interest rates. This phenomenon has broader implications for both short-term and long-term economic dynamics, reflecting a diminished effectiveness of monetary policy in steering retail interest rates during the recent tightening cycle. The financial environment, characterized by ample liquidity and specific banking sector characteristics, as suggested by Messer and Niepmann (2023) and Beyer et al. (2023), could be contributing factors to this observed subdued pass-through.

Annex I. Table 1. Malta: Rate Pass-Through in Euro Area across Different Cycles

a. Deposit Rate Pass-Through

	HH Deposit Rates			NFC Deposit Rates		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Full sample	Pre-Pandemic Tightening Cycles	Recent Tightening Cycle	Full sample	Pre-Pandemic Tightening Cycles	Recent Tightening Cycle
ΔPolicyRate (t)	0.201***	0.273***	0.112**	0.283***	0.426***	0.189***
	(0.042)	(0.055)	(0.047)	(0.051)	(0.080)	(0.039)
ΔPolicyRate (t-1)	0.224***	0.223***	0.082**	0.235***	0.235***	0.148**
	(0.046)	(0.052)	(0.033)	(0.049)	(0.073)	(0.066)
ΔPolicyRate (t-2)	0.113***	0.194***	0.052	0.173***	0.220**	0.159***
	(0.032)	(0.050)	(0.033)	(0.041)	(0.093)	(0.033)
ΔPolicyRate (t-3)	0.096**	0.097	0.037	0.047	-0.063	0.073**
	(0.042)	(0.070)	(0.083)	(0.042)	(0.123)	(0.032)
Constant	-0.004	-0.019	0.127	-0.001	0.018	0.115
	(0.005)	(0.018)	(0.113)	(0.005)	(0.020)	(0.102)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,134	523	266	3,859	462	250

Notes. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1. Total deposits include deposit rates with agreed maturity only.

b. Loan Rate Pass-Through

	HH Loan Rates			NFC Loan Rates		
	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES	Full sample	Pre-Pandemic Tightening Cycles	Recent Tightening Cycle	Full sample	Pre-Pandemic Tightening Cycles	Recent Tightening Cycle
ΔPolicyRate (t)	0.183***	0.207***	0.147***	0.267***	0.458**	0.223*
	(0.021)	(0.062)	(0.035)	(0.053)	(0.179)	(0.109)
ΔPolicyRate (t-1)	0.195***	0.233***	0.152***	0.166**	0.167	0.137
	(0.022)	(0.054)	(0.015)	(0.066)	(0.155)	(0.117)
ΔPolicyRate (t-2)	0.088***	0.146***	0.004	0.202***	0.046	0.451***
	(0.027)	(0.048)	(0.029)	(0.076)	(0.088)	(0.095)
ΔPolicyRate (t-3)	0.067***	0.058	0.016	0.022	0.005	0.184
	(0.023)	(0.062)	(0.028)	(0.056)	(0.134)	(0.136)
Constant	-0.015***	0.012	0.010	-0.008	-0.003	-0.017
	(0.005)	(0.013)	(0.054)	(0.009)	(0.030)	(0.185)
Other controls	Yes	Yes	Yes	Yes	Yes	Yes
FE	Yes	Yes	Yes	Yes	Yes	Yes
Observations	4,048	523	266	4,334	568	275

Notes. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1

Source. ECB Data Portal and IMF staff calculations.