BANK ĊENTRALI TA' MALTA
EUROSISTEMA
CENTRAL BANK OF MALTA

THE RELATIONSHIP BETWEEN CREDIT AND ECONOMIC ACTIVITY

Article published in the Quarterly Review 2017:4, pp. 47-51

BOX 2: THE RELATIONSHIP BETWEEN CREDIT AND ECONOMIC ACTIVITY[1]

Economic development is usually significantly influenced by credit activity and the ability of firms to access finance. During the past decade, the financial crisis has highlighted the need to understand and monitor macro-financial linkages. Following the role that the banking sector had in propagating the initial shock to macroeconomic activity, in several countries, the provision of funding to the non-financial private sector was impaired by the need of banks to strengthen their capital and liquidity. The aim of this Box is to assess the relationship between credit to NFCs and the growth of the Maltese economy, in the light of the weakness in credit that has prevailed in recent years, which coincided with fast rates of gross domestic product (GDP) growth.

Developments in the level of credit to NFCs

The reliance of the non-financial business economy on small- and medium-sized enterprises (SME) in Malta is higher than in any other European Union Member State, with estimates for 2016 showing that around 99.8% of firms fall under this classification.[2] Although the information opacity and credit riskiness of SMEs increases their dependence on bank financing, the Survey on Access to Finance of Enterprises (SAFE) indicates that in the aftermath of the financial and economic crises, competition and skilled labour shortages were of a greater concern to SMEs in Malta than access to finance. Domestically, only around 8% of SMEs considered access to finance as their most pressing problem in 2009, as opposed to 17% of SMEs across EU Member States.

In fact, the Maltese banking sector emerged relatively unscathed from both the economic and financial crisis of 2009 and the European sovereign debt crisis of 2012. The sector remained sufficiently liquid and well-capitalised, and therefore it did not need to resort to credit rationing. This has been corroborated by banks' responses to the BLS, which shows that despite increased risk aversion to lending to certain sectors, such as construction, restrictions were generally in the form of tighter collateral requirements, loan covenants and non-interest charges, rather than quantity restrictions.

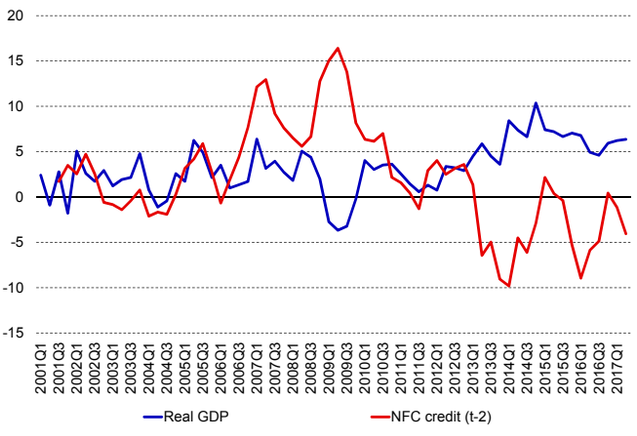
The level of credit to NFCs however, remained muted, especially when compared with that observed in the pre-crises period. Likewise, the euro area experienced periods of declining credit. However, whereas in the euro area this reflected periods of subdued economic growth, domestically the decline in credit to NFCs occurred in a period of robust economic growth and historically low levels of unemployment. Chart 1 shows how growth in loans typically lagged economic growth, but significant discrepancies are visible in the annual growth of these variables in recent years. Since 2012, credit growth has been considerably weaker, even though the Maltese economy was relatively unaffected by the economic downturn

[1] Prepared by Sandra Zerafa. The author is the Coordinator of economic publications at the Economic Analysis Office. The views expressed in this Box are the author's own and do not necessarily represent the views of the Bank. This Box summarizes the main conclusions presented in Zerafa, S. (2017), "Access to finance for firms in Malta: Estimating the impact of reduced credit", Policy Note March 2017, Central Bank of Malta.

[2] Source: European Commission (2016), 2016 SBA Fact Sheet – Malta. Estimates indicate that these generated around 80% of value added of the non-financial business economy and 81% of employed persons.

that hit the rest of the euro area. Until 2006 the cycle of credit to NFCs was largely in line with the economic cycle, but since then, contractions and expansions in the flow of credit were significantly more pronounced.

Chart 1
ECONOMIC AND CREDIT CYCLES
(annual % change)



Sources: Eurostat; Central Bank of Malta.

At around €3.4 billion in the third quarter of 2016, the stock of credit by banks to NFCs was still at the level prevailing in the first quarter of 2008. However, when measured as a ratio to GDP, it declined to historical lows unseen since the mid-1990s. In annual terms, the growth rate of loans to NFCs fell from around 16% at the end of 2008 to -6.4% at the end of 2012. Thereafter, lending remained weak and contracted further on a year-on-year basis, ending August 2017 1.7% lower than a year earlier.

In order to quantify the level of credit that would have prevailed if the trend observed between 1995 and 2011 persisted, two approaches were used. In the first approach, a simple statistical approach was applied by fitting a linear time trend to NFC credit over the period 1995 and 2011.[3] The extrapolation of this trend over the period 2012 and 2016 showed that the line of best fit no longer approximates the lower level of credit that has prevailed since 2012. In fact, as at 2016Q3, nominal credit to NFCs was 27% less than the hypothetical estimation based on past trends, which would have amounted to €1.3 billion more credit to NFCs.

Given that this approach excludes other macroeconomic variables that affect NFC credit, the results were cross-checked with those derived from an econometric estimation that includes nominal GDP and non-performing loans (NPL) as explanatory variables. The regression was estimated for the period 1995 and 2011.[4,5] Results indicate that in the short-run, a 1% increase in nominal GDP leads to an increase in NFC credit of 0.18%, whereas in the long-run, NFC credit increases by 0.34%. With regards to NPLs, a 1% increase in NPLs reduces credit by 0.05% in the short-run and by 0.1% in the long-run, everything else remaining constant. An estimation of credit to NFCs for the period 2012Q1 and 2016Q3

[3] This is an update of the measures used in: Micallef, B. (2015), "Estimating a credit gap for non-financial corporations in Malta", Working Paper WP/04/2015, Central Bank of Malta.

[4] A priori, economic activity is expected to have a positive impact on bank credit while an increase in NPLs is expected to have the opposite effect.

[5] Micallef (2015) tested the impact that the interest rate on NFC loans, and house prices, which reflect the impact of asset prices on a firm's net worth, can have on NFC credit. These were not statistically significant and an autoregressive term was included to capture the impact of other variables not included in the model.

based on the regression shows that the credit difference is in line with that obtained using the statistical approach, and has widened by almost 33% by the third quarter of 2016, amounting to around €1.7 billion less in credit to NFCs.

The weaker relationship between NFC credit and GDP in the more recent period was corroborated by estimating the same regression over an extended time frame until 2016. As expected, the coefficient of GDP was statistically significant only when data up to 2011 was included. Regressed over an extended period, GDP is no longer statistically significant and fails to explain variations in credit to NFCs.

The impact of reduced credit on the Maltese economy

Given the large number of SMEs in Malta and their high generation of value added and employment, a reduction in bank lending can have potentially significant negative consequences on real economic activity. In order to measure the impact of reduced credit on the Maltese economy, a simulation of the macroeconomic effects of a credit shock was conducted using the Bank's model STREAM.[6] The simulation quantified the impact of a positive credit shock equivalent to the difference between actual NFC credit and the level estimated on the basis of the econometric approach.

Table 1 shows that if the level of credit to NFCs between 2012 and 2016 had remained in line with trends observed pre-2011, the largest impact would have been on gross fixed capital formation (GFCF). Simulation results show a slightly negative impact on GFCF in 2012, due to observed credit being above the estimated trend in the previous years. From then onwards, if the level of NFC credit had reflected past trends, investment levels would have been significantly higher.

Table 1
THE MACROECONOMIC IMPACT OF A POSITIVE SHOCK IN CREDIT TO NFCs

Percentage deviation from baseline

	2012	2013	2014	2015	2016
Economic activity					
Real GDP	-0.01	0.05	0.36	0.61	0.94
Private Consumption	0.00	0.03	0.19	0.49	0.70
Government Consumption	0.00	0.01	0.23	0.52	0.90
Gross Fixed Capital Formation	-0.40	5.63	11.28	13.64	18.62
Exports	0.00	0.00	0.00	0.01	0.07
Imports	-0.06	0.75	1.44	1.95	2.79
Labour market					
Unemployment rate	0.00	0.00	-0.01	-0.04	-0.05

Source: Calculations based on STREAM.

[6] The Bank's macro-econometric model is a traditional structural model with full-fledged fiscal and financial blocks. The latter block models the demand and supply aspects of credit institutions in Malta and allows the model to generate a financial accelerator mechanism through the co-movement of credit and asset prices as well as credit constraints that emanate from the financial health of Maltese institutions. The model distinguishes between consumer and other credit, housing credit and credit to NFCs. Real credit to NFCs is influenced by real GDP in the short run and real non-dwelling private investment in the long run. For more information see Grech, O., & Rapa, N. (2016), "STREAM: A structural macro-econometric model of the Maltese economy", Working Paper WP/01/2016, Central Bank of Malta.

A higher credit level would have also raised government consumption. Private consumption would also have been higher, although the impact on this variable is smaller. Exports would have remained broadly unchanged. Although the rise in domestic demand would have been offset to some degree by a rise in imports, the net impact on GDP would have been positive.

When it comes to the labour market, the overall effect on employment is insignificant, as the shock would have had the effect of raising labour hours in response to higher investment. The increase in hours worked would in turn have led to higher disposable income and private consumption.

Overall, simulation results indicate that in 2013 a higher level of credit to NFCs would have increased real GDP by 0.1% more than its baseline. By 2016, a level of credit to NFCs that would have been in line with that observed prior to 2011 would have boosted real output by 0.9%.

Although this simulation suggests that higher NFC credit would have had a positive impact on the Maltese economy, its short-term effect on real output would have been limited in the context of the very rapid growth that characterised this period. In fact, the economy grew by 8.2% and 7.1% in 2014 and 2015 in real terms respectively.

Structural changes in the Maltese economy may help explain these developments in credit to NFCs. Improvements in Malta's potential output since 2004 were driven by rapid increases in labour participation, but relatively low increases in capital stock. This reflected the economy's higher orientation towards services, in particular higher value added activities generated by the financial services sector, specialised forms of tourism, professional services, back-office administration, information technology and gaming.

These sectors appear to be less capital intensive than other sectors in the Maltese economy, and in a period of rapid growth have also tended to rely more on internal sources of finance. For instance, whereas the share of the gross value added of the arts, entertainment & recreation sector, which includes remote gaming, rose from 7.6% of total gross value added in 2007 to 13.5% in 2016, its share in the economy's overall fixed capital formation remained broadly stable over the same period. Furthermore, in recent years there has been evidence of a process of financial disintermediation in Malta, with an increase in corporate bond issuance and greater reliance on intra-company loans.[7]

Conclusion

The relationship between bank credit to NFCs and GDP growth in Malta has weakened considerably in recent years, such that an increase in the level of credit can now be expected to have a smaller impact on activity than it did in the pre-crisis period. Indeed, in recent years, low or negative credit growth to NFCs has coincided with very fast GDP growth.

This may reflect the changing structure of the Maltese economy, particularly the shift towards industries with low capital intensity as well as increased recourse to alternative

[7] See Darmanin, J. (2017), "The financing of companies in Malta", Policy Note July 2017, Central Bank of Malta.

sources of finance. However, tightening conditions on the part of banks may also have played a role in leading to these changes.

Although the results of model simulations presented here suggest that the impact of lower credit availability on economic activity was somewhat limited, access to finance for firms remains a pre-requisite for investment and growth. In coming years, credit availability could remain constrained in view of new capital, liquidity and leverage rules. In this light compensating measures such as the increased use of the central credit registry, easier access to finance via the domestic capital markets and use of EU funds, together with the setting up of the Malta Development Bank are in order to facilitate the financing of SMEs.