Access to finance for firms in Malta: Estimating the impact of reduced credit

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Policy Note

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Abstract

Access to finance is a key challenge for firms particularly in a small economy like Malta. From a demand side, results from the Survey on the Access to Finance of Enterprises (SAFE) indicate that bank financing still remains the most used source, though firms have made greater use of alternative sources of finance. From a supply-side point of view, the Bank Lending Survey (BLS) indicates that Maltese banks have resorted to stricter credit conditions rather than quantity restrictions. The relationship between credit to NFCs and GDP growth appears to have weakened since the crisis, such that an increased level of credit has a smaller impact on real output. This may reflect structural changes in the Maltese economy that have taken place over the last decade, whereby the growth of the services sector, which is highly labour intensive and generally requires lower capital investment, may be contributing to lower demand for credit.

**JEL Classification:** E51, C5, G00.

**Keywords:** Credit supply, Econometric modelling, Malta
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Executive Summary

Access to finance is a key challenge for SMEs since imperfections that exist in financial markets tend to amplify discrepancies between the availability of finance and the demand for funds. Given the Maltese economy’s high reliance on bank finance, this policy note looks at changes in the access to finance over time and calculates the difference in actual credit to NFCs compared with the trend observed between 1995 and 2011. Finally, it estimates the impact of a positive shock to credit on overall economic activity.

- **What is the importance of access to finance for firms in Malta and has this changed over time?**

While access to finance for firms in Malta remains important, SAFE results have shown that in the aftermath of the financial and economic crises Maltese firms have been more concerned about competition and skilled labour shortages, rather than access to finance. Bank financing has remained the predominant source of financing though there has been a notable shift to alternative sources of financing, such as trade credit and internal financing. A larger proportion of firms were also willing to choose equity financing to fulfil their growth ambitions, though over the past two years there were no domestic firms which chose not to apply for bank loans or trade credit because they feared a possible rejection.

- **Has Maltese firms’ access to finance fallen over time?**

The Maltese banking system has remained sufficiently liquid and well-capitalised not to resort to credit rationing. While banks participating in the BLS have shown to be more risk averse to lending to certain sectors of economic activity, such as construction, restrictions were presented in the form of stricter conditions, such as those on collateral and tighter loan covenants, rather than on quantity. Nonetheless, a lower level of credit to NFCs has prevailed despite fast rates of real GDP growth that characterised the Maltese economy. By the third quarter of 2016, this was almost 33% lower than that, which should have prevailed if credit was in line with past levels, consequently leading one to ponder on the impact that a credit shortfall might be having on the Maltese economy. That said, there is econometric evidence that the relationship that existed between credit and GDP before 2012 has weakened considerably and is no longer significant when one looks at the period 1995 to 2016.
What is the impact of reduced credit on the Maltese economy?

In order to understand what the impact of the reduced credit on the Maltese economy would be, a simulation exercise was conducted using the Central Bank of Malta’s STREAM model. The level of NFC credit was positively shocked to calculate the impact on the Maltese economy of a level of NFC credit in line with the previously observed trend. Simulation results show that higher NFC credit would have had a positive impact on the Maltese economy, though its effect would have been relatively small, boosting GDP by a further 0.9% by 2016. It should be noted that over the period 2012 to 2016, despite lower credit, Malta’s GDP grew by 28% in real terms. This may be explained by the structural changes in the Maltese economy that have taken place, especially since Malta’s accession in the European Union. Growth in the services sector, which typically requires more labour input and lower capital, partially reflects a growing economy that prevailed in line with a new lower level of corporate credit.
What is the importance of access to finance for firms in Malta and has this changed over time?

Access to finance is a critical component for the development of firms, since a firm that cannot respond to an investment opportunity loses out on raising its income. Indeed, it is especially crucial for SMEs, whose financial needs differ significantly from those of large enterprises. Whereas the latter have a much wider access to capital markets, SMEs are generally more information opaque and consequently more constrained to rely on bank financing. In perfect capital and credit markets, the investment behaviour of a firm is irrelevant to its financing decisions and vice versa\(^2\). However, in the presence of market imperfections, any financing constraints will reflect on a firm’s investment decisions, such that due to information asymmetries, external funds are more costly than internal funds\(^3\).

In Malta the reliance of the non-financial business economy on SMEs is higher than in any other European Union Member State. Estimates indicate that in 2015, around 99.8% of firms in Malta were small and medium-sized enterprises (SMEs), which generated 80.4% of value added of the non-financial business economy\(^4\) and accounted for 81% of the employed persons\(^5\). As at 2015, 93.5% of SMEs were microenterprises. Despite their size, they generated around a third of both value added and employment\(^6\).

During the recent crisis, the performance of the domestic SMEs was robust, making it one of the very few in the European Union to have expanded. Bar for a drop in 2009, value added generated by SMEs grew strongly and exceeded its pre-crisis level by 2010, such that between 2010 and 2015, SME valued added rose by more than 50% and employment increased by 16%. Going forward, the number of employees in SMEs is expected to rise by 3%, or 3,500 new jobs, while value added is expected to grow by 13% between 2015 and 2017, with the highest contribution to this growth expected to come from micro firms\(^7\).

\(^2\) Modigliani, F., & Miller, M. (1958)
\(^3\) Claessens S., & Tzioumis K. (2006)
\(^4\) The term ‘non-financial’ business economy includes the industry, construction, trade and services sectors but excludes enterprises in the agriculture, forestry, fisheries and non-market services sectors such as education and health.
\(^5\) Eurostat’s Structural Business Statistics Database. Figures cover the non-financial sectors of the economy. In the European Union, these amounted to 57.4% and 66.8% respectively.
\(^6\) SMEs consist of microenterprises which employ less than 10 persons and whose annual turnover does not exceed EUR 2 million, small enterprises which employ more than 10 but less than 50 persons but whose annual turnover does not exceed EUR 10 million and medium-sized enterprises which are larger than small firms but employ fewer than 250 persons and whose annual turnover does not exceed EUR 50 million.
\(^7\) European Commission, (2016). Small Business Act Fact Sheet for Malta.
Since SMEs do not typically maintain detailed financial reports nor raise equity or debt in public markets, information on their financial constraints is generally obtained from surveys. In fact, the conditions that SMEs throughout the European Union have faced in the aftermath of the recent financial crisis may be analysed from information collected in the Survey on Access to Finance of Enterprises (SAFE), which has been published since 2009.

Access to finance in Malta has changed over time. SAFE data for Malta indicate that access to finance, which is generally considered a major constraint for SMEs, was the most pressing problem for only around 8% of domestic SMEs in 2009. Chart 1 shows how this contrasts with SMEs across EU members states, where about 17% of SMEs ranked access to finance as their major problem in the same year. This figure also masks significant degree of cross-country heterogeneity, with for instance, 30% of SMEs in Greece considering access to finance as their most pressing problem, as opposed to 7% of SMEs in Austria, Finland and Germany, which faced more relaxed credit supply conditions and a lower need for external funding.

By 2016 SAFE results indicate that the proportion of domestic SMEs which believed that access to finance was their major concern was slightly lower than that observed in 2009, but still higher than the percentage observed in 2011, even though it had declined for the first time since then. These developments mirror the behaviour of SMEs in the European Union which have also been less concerned about access to finance as a pressing problem when compared with other factors that affected their business activities. Instead, an increasing percentage of domestic SMEs believed that the ability of finding customers was their most challenging problem, though their share was significantly lower than around a quarter of euro area respondents.

Overall, SAFE data show that Maltese firms are faced with other more pressing issues than access to finance. For instance, in 2016, almost a third of domestic SMEs participating in SAFE were more concerned about the availability of finding skilled staff or experienced managers. This reflects the prevailing labour market conditions in Malta, whereby economic growth and historically low levels

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8 The 2016 SAFE consisted of 15,668 enterprises, of which 44% employed less than 10 employees. In the sample for Maltese SMEs, 39% of enterprises were micro firms employing up to 9 employees, whilst 30% and 31% of firms were medium-sized enterprises, employing between 10 and 49 employees, and between 50 and 249 employees respectively. The SAFE survey allows the separation of firms’ demand for credit from banks’ supply of loans and distinguishes between firms’ perception of the availability of finance and their actual experience obtaining credit, as well as the terms and conditions at which they receive it.

9 This covers the period April to September 2016. Results for Malta have to be treated with caution as the number of replies was low.
of unemployment are causing skill labour shortages in certain sectors. Meanwhile, the second largest proportion of domestic SMEs considered competition as their most pressing problem.\(^{10}\)

Some shifts in the type of financing used can also be observed over time. Domestically, SMEs reliance on bank financing is considerably higher than that of firms across the European Union.\(^{11}\) Nonetheless, the proportion of domestic SMEs which resorted to trade credit as a means to finance business operations has increased over the years, from 13% in 2009 to 50% in 2016 (see Chart 2). In the light of problems of asymmetric information that potentially lead to financial exclusion among start-ups and small businesses, trade credit has increasingly been used as a buffer to pre-finance production and assist credit-constrained operators. Half of the domestic SMEs participating in the last SAFE, as opposed to a fifth of participants across the European Union, used trade credit.

Internal financing has also provided liquidity and acted as a means to minimise the need for external financing. Although the percentage of domestic firms that have relied on internal financing through

\(^{10}\) These results corroborate those of a survey of 178 firms conducted between 2010 and 2013 as part of the Wage Dynamics Network project, which is intended to assess the response of Maltese firms in the aftermath of the economic and financial crisis of 2009. Survey results showed that the availability of credit to finance working capital, new investment or rolling over debt was not considered a relevant issue for most firms, with the exception of the construction sector. However, although credit was available, some companies felt that interest rates and other contractual terms were too onerous. More detailed results of this Survey are available at Micallef, B., & Caruana, K. (2014). Results of the 2014 Wage Dynamics Network for Malta. Central Bank of Malta.

\(^{11}\) It should also be noted that alternative sources of funds such as business angels, venture capital funds, mezzanine finance and other sources of finance are scarce in Malta.
retained earnings has declined over the years, it remained largely at par with their European Union counterparts. At 18% during the first half of 2016, it almost equalled 15% of the responding firms which used leasing or hire-purchase to finance their business activities. Over time some changes may also be noted in the use of external finance by domestic firms. Although between 2009 and 2016, the largest proportion of domestic SMEs has largely sought external finance to fund inventory and working capital, this ratio declined over the years. Chart 3 shows that in contrast with SMEs across the European Union, a smaller share of SMEs financed fixed investment through external sources. However, when compared with 2009, a higher proportion of domestic SMEs used external finance for the development and launching of new products as well as for hiring and training of employees. During the same period, around 12% of firms have refinanced or paid off obligations through external financing.
Resorting to bank financing as a means to fulfil the growth ambitions of domestic SMEs has also fallen over time, from around 86% in 2009 to 76% in 2016. Although bank financing remained by far the most sought after type of external finance for a firm’s growth potential, an increasing percentage of firms have indicated their increased preference to seek financing through equity investment, even though its use so far has been largely limited.

Over the years, by far the largest proportion of domestic and European SMEs have largely met their financing needs through the use of bank-related products, such as bank loans, overdrafts and credit lines much more than other market-based products and other sources of finance. From a demand-side point of view, the number of firms that applied for bank loans, overdrafts and credit lines increased slightly during 2016 and stood above the percentage reported in 2011 (see Chart 4). In fact in 2016, the percentage of respondents who applied for trade credit decreased marginally, though it was resorted to as a means of financing by a significantly larger proportion of respondents when compared with 2009 and 2011. During the past two years there were no domestic firms which chose not to apply for bank loans or trade credit because they feared a possible rejection. Rather a higher percentage of firms chose not to apply because of sufficient internal funds.

**Chart 4**

*FOR EACH OF THE FOLLOWING WAYS OF FINANCING, COULD YOU PLEASE INDICATE WHETHER YOU: (Over the preceding 6 months, per cent of responding firms)*

![Chart 4](chart.png)

Source: SAFE surveys
Access to different types of finance over time is influenced by changes in the supply of credit\textsuperscript{12}. SAFE surveys show that non-interest terms and conditions, such as charges, fees and commissions deteriorated during the observed period with a considerable net share of SMEs reporting an increase in collateral requirements\textsuperscript{13} and other non-price terms and conditions, such as loan covenants and information requirements. In net terms, during the observed period, this deterioration was much higher than that for interest rates, even though the level of interest rates in Malta (both in in terms of mean and median interest rates), is still relatively one of the highest in the EU. In fact, according to the last SAFE round, the median interest rate stood at 4.9%, considerably higher than the EU average of 1.0%.

Following considerable tightening between 2011 and 2013, substantial improvement in credit conditions registered in 2014, was reversed slightly during 2015 and 2016 (see Chart 5). In 2016 the percentage of firms that applied for overdraft, credit lines and bank loans, and got everything was smaller than that observed in the preceding two years, while the proportion of those applying for trade credit and receiving the full amount increased further. No applications for bank loans were rejected though there were a number of firms which were refused trade credit. According to the latest SAFE survey round, around 5% of firms refused to take overdraft and credit cards financing as the cost was too high.

The Bank Lending Survey (BLS) also corroborates these developments\textsuperscript{14}. While SMEs faced to some extent increased difficulty in accessing finance, the BLS shows that large firms were affected to a much larger degree by tighter credit conditions, namely through increased collateral requirements, loan covenants and non-interest charges. In fact, since 2008 there has been a diminishing difference in the lending behaviour of small and larger banks in the euro area, most probably due to increased scrutiny on the creditworthiness of firms in the wake of the economic downturn, which tightened overall credit standards.

\textsuperscript{12} Developments in the credit standards applied by banks to their customers are observed by asking participating firms in the SAFE survey that had applied for the various financing instruments whether their applications had been accepted or rejected. In the case where an application was accepted, firms were asked to specify whether the full amount or a part of it was given, or else whether the offer was refused because the cost was too high.

\textsuperscript{13} Some Maltese SMEs (especially start-ups and micro-enterprise) are sometimes met with a problem of inadequate collateral requirement. This may be partly explained by the fact that Maltese banks have a standard of high collateralisation and apply a conservative valuation of the underlying securities. Supply side market failures arise when firms are refused credit due to their inability to provide collateral despite their project/business plan.

\textsuperscript{14} The Bank Lending Survey (BLS) provides information on the experiences and perspectives of small and large banks in the euro area.
SAFE results have shown that domestically, SMEs have been subject to unfavourable credit conditions in the form of more stringent bank loan criteria and a wider interest rate spread but to a certain extent, quantity restrictions were limited. Access to finance, especially in the form of bank financing has retained its importance for domestic firms over time, though shifts in the different type of financing that firms have resorted to, have been noted. The recent financial crisis has also highlighted the importance of diversifying the financing portfolio and venture into different financing options, such as through the capital market.
Has Maltese firms’ access to finance fallen over time?

Credit developments typically depend on a combination of factors that simultaneously affect the demand for and supply of bank lending. The financial crisis highlighted the crucial role that the banking sector had in propagating the initial shock to macroeconomic activity. Sharp declines in banks’ profitability coupled with the erosion of their capital funding exerted severe pressure on the banks’ liquidity position consequently impairing the provision of funding to the non-financial private sector\(^\text{15}\). In Malta and the euro area, the impact of these supply side-constraints seems to have been geared primarily via prices (for instance, through higher margins) rather than outright quantity restrictions.

The supply of and demand for credit to non-financial corporations (NFCs)

Domestically, the impact of the financial crisis on the banking sector was very limited\(^\text{16}\). The banking system emerged relatively unscathed from both the economic and financial crisis of 2009 and the European sovereign crisis of 2012. According to the BLS, participating banks reacted to deteriorating general economic and industry-specific perceptions by tightening credit standards for corporate loans. In both Malta and the euro area, increased costs related to the banks’ capital position and access to market funding were translated into higher margins on ‘average’ and ‘riskier’ loans, higher non-interest charges, stricter collateral requirements, and loan covenants with shorter maturity periods.

Tighter credit standards that came into effect in 2008 persisted in the years ahead. Banks showed less willingness to extend credit, particularly in areas where the exposure was already high. Furthermore, in order to make up for falling net interest income and to better price risk, Maltese banks did not pass on to borrowers all the interest rate cuts implemented by the ECB but continued to follow the euro area’s tight credit standards, though the tightening process in Malta was less protracted and pronounced\(^\text{17}\). While corporate credit standards in the euro area started to ease in


\(^{16}\) In Malta the ratio of intermediation through financial institutions and financial markets as a percentage of GDP stands over 500%. This is considerably high when compared with that of other EU member states, with a typical ratio of total assets of the banking sector being about twice to four times the national GDP.

\(^{17}\) A study by Micallef, B., Rapa, N., and Gauci, M.T. (2016) Interest rate pass-through in Malta in Understanding the Maltese Economy; Central Bank of Malta (2016), finds out that the pass-through to NFCs in Malta is one of the lowest in the euro area, with a further reduction being effected since the onset of the financial crisis. In fact the long-run pass-through with respect to lending rates to NFCs declined from 70% in the pre-crisis period to 45% in the full sample.
2014, tight standards were sustained domestically mainly due to exposure towards particular sectors and additional banks capital requirements.

Lending by domestic banks to the resident corporate sector fell, especially during 2013 and 2014. BLS results indicate that this slowdown was primarily caused by low demand and subdued investment activity in the domestic economy. The largest contraction in corporate credit emanated from the construction sector, though lending to the wholesale, retail and transport sectors also declined. Credit to the manufacturing, accommodation and in particular, electricity sectors somewhat increased.

From a sectoral point of view, Chart 6 shows that the allocation of loans remained largely stable, though there has been over the medium term, a gradual shift in the loan portfolio of domestic banks, from NFCs towards households.

Although at the onset of the financial crisis domestic demand for corporate loans in Malta increased, contrasting a fall in corporate demand in the euro area, demand for credit by NFCs declined further since 2012, reflecting lower fixed investment, inventories and working capital as well as intensified
In both Malta and the euro area, corporate credit demand picked up since 2014 in line with more favourable credit terms being offered as well as an increased need for investment, inventories and working capital. Stronger investor confidence and a low interest rate environment also continued to support the rising demand for credit.

**Estimating the relationship between credit and economic activity**

The level of credit to NFCs however remains muted, especially when compared with that observed in the pre-crisis period. In fact, whereas periods of declining credit in the euro area reflected periods of subdued economic growth, in Malta the decline in domestic credit to business occurred in periods of robust economic growth and historically low levels of unemployment. Following a contraction in real GDP of 2.5% in 2009, post-crisis economic growth in Malta was robust, averaging 4.1% between 2010 and 2014 compared with an average annual growth of 2.4% between 2001 and 2008. The Maltese economy grew at a much faster pace than the euro area economies. As at 2016 Q3, real GDP stood around 28% above the pre-crisis peak, significantly higher than a rise of just 2.6% in euro area average real economic growth.

Labour market conditions have also been buoyant. In 2016 Q4, the unemployment rate in Malta stood at a historical low of 4.7%, compared with a high of 8.2% registered in 2003, when it stood largely at par with the average unemployment rate in the euro area. Whereas post-crisis euro area unemployment rate stood at 9.8% in the fourth quarter of 2016 from 12.4% in the first quarter of 2014, it was still slightly more than double the domestic unemployment rate, though significant cross-country heterogeneity exists.

Even though growth in loans to NFCs tends to lag economic growth, Chart 7 shows that there have been some discrepancies in the annual growth of these variables over time. Since 2012, credit growth has been much weaker than that observed during 2009 despite the fact that the domestic economy was relatively unaffected by the economic downturn that hit the rest of the euro area. The current credit conditions are out of synch with the prevailing trends, despite buoyant economic conditions. While the cycle of NFC credit has till 2006 been largely in line with the economic cycle, since then contractions and expansions in the flow of credit were significantly more pronounced.

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18 It should be noted that the core banks in the BLS faced higher competitive pressures from banks outside the survey, which could to a certain extent also contribute in the fall in credit demand of these participating banks. Furthermore, specific lending programmes with risk-sharing characteristics e.g. JEREMIE programme, which is an initiative of the European Commission intended to improve access to finance to SMEs via structural funds, also had a positive take-up.
Credit developments have not mirrored the country’s upbeat economic conditions, despite the fact that the flow of bank credit to firms plays a more important role in the domestic economy, given its heavy dependence of bank financing and the absence of a deep and liquid market when compared with other European economies\textsuperscript{19}. The stock of credit to NFC stood at around €3.4 billion in 2016Q3, back at the level prevailing in the first quarter of 2008. As a ratio of GDP, NFC credit declined to historical lows not seen from the mid-1990s. Similar trends have been observed in the euro area, whereby significant tightening in the growth of credit may be observed following the outbreak of the financial crisis. The annual growth rate of loans to NFCs fell from around 16% at the end of 2008 to a contraction of 6.4% at the end of 2012 before shrinking further by 8.9% in third quarter of 2015. Lending remained moderate, with positive rates of growth observed only towards the second quarter of 2016.

![Chart 7: Economic and Credit Cycles](image)

In an attempt to quantify the level of credit that would have prevailed had the trend observed between 1995 and 2011 been maintained going forward two different approaches were utilised\textsuperscript{20}.


**Statistical Approach**

In the simpler statistical approach a linear time trend to NFC credit is fitted over the period 1995-2011. The trend is then extrapolated over the 2012-2016 period to determine the level of credit to NFCs that would have prevailed had the trend observed between 1995 and 2011 been maintained. Chart 8 shows that recent developments in nominal credit are inconsistent with the trend of credit to NFCs observed in preceding years, with the recent nominal level of credit to NFCs being much lower and largely out-of-synch with the estimated trend line. Credit growth has not followed economic growth, which theoretically should have caused the demand for credit by NFCs to grow in line with firms’ increased willingness to invest. Chart 8 shows that a significant difference has developed since 2012, whereby the line of best fit which used to approximate the general behaviour of NFC credit fails to capture the new trend. In fact, whereas before 2012 NFC credit grew, NFC credit has in nominal terms, fallen over the past years. As at 2016Q3, nominal credit was 27% less than the hypothetical estimation based on past trends. In nominal terms, this would have amounted to €1.3 billion more credit to NFCs.

![Chart 8: Trend in Credit to NFCs 1995-2011](image)

*Source: Author's calculations*
Econometric Approach

Given that the statistical approach does not take into account other macroeconomic variables that affect NFC credit, an econometric approach based on a regression for NFC credit for the period 1995Q1 – 2011Q4 was estimated. Nominal GDP and non-performing loans have been included in the model to determine NFC credit, with an a priori expectation for economic activity to have a positive impact on bank credit while an increase in non-performing loans is expected to have the opposite effect. Regression results show 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%. Meanwhile, a 1% increase in non-performing loans reduces credit by 0.05% in the short-run and by 0.1% in the long run, everything else remaining constant.

An estimation of NFC credit for the period 2012Q1 – 2016Q3 was also made for the sake of comparing the actual NFC trajectory with the path that NFC credit should have taken if the relationship between GDP, NFC credit and non-performing loans observed between 1995-2011 was maintained. According to this econometric model, the credit difference has widened by almost 33% by the third quarter of 2016, or around €1.7 billion less in NFC credit.

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21 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 terms was included to capture the impact of other variables not included in the model.
The change in the relationship after 2012

Both the statistical and econometric approaches indicate that after 2012 credit to NFCs has been subdued and largely out-of-line with the trend observed between 1995 and 2011. In order to test whether the relationship between NFC credit and GDP has weakened over time, the regression used in the econometric approach was extended to include data up to the end of 2016. Regression results in table 1 show that the coefficient of GDP was statistically significant only if data up to 2011 is included. Regressed over an extended period, GDP is no longer statistically significant and fails to explain variations in credit to NFC.

Table 1
REGRESSION COEFFICIENT FOR THE RELATIONSHIP BETWEEN CREDIT TO NFCs and GDP

<table>
<thead>
<tr>
<th>Explanatory variables</th>
<th>end 2011</th>
<th>end 2016</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP</td>
<td>0.18 *</td>
<td>0.11</td>
</tr>
<tr>
<td>Non-performing loans</td>
<td>-0.05 **</td>
<td>-0.05 **</td>
</tr>
<tr>
<td>Lagged credit to NFCs</td>
<td>0.48 ***</td>
<td>0.42 ***</td>
</tr>
</tbody>
</table>

Statistical significance: * at 10% level, ** at 5% level, *** at 1% level

Source: Author’s calculations

These results are in line with previous observations which show that despite lower credit to NFCs, the economy registered high rates of growth. In fact, results from past BLS highlight the fact that the lower level of credit is not necessarily a supply-side issue and credit constraints in Malta were in most part, not based on quantity restrictions. Although domestic banks maintained a cautionary stance to bank lending, their traditional reliance on retail deposits as their main source of funding meant that they did not suffer from the liquidity crunch reported by a number of banks elsewhere and remained sufficiently liquid and well capitalised to continue to extend credit without resorting to rationing\(^\text{22}\).

\(^{22}\) It should be noted that despite abundant liquidity, the cost of capital in Malta compared with that in most of the euro area countries, was relatively high, with rates approaching those of stressed economies.
What is the impact of reduced credit on the Maltese economy?

Given the overwhelming share of SMEs in Malta and their high generation of value added and employment, a reduction in bank lending can have potentially significant negative consequences for real economic activity. Economic literature shows that the business cycle is affected by changes in financial and credit conditions through the financial accelerator, which causes negative shocks to the economy to reduce the net worth of borrowers such that the spending and production effects of the initial shock are amplified. Thus, from a supply-side point of view a negative shock to real economic output makes lending riskier by adversely impacting the value of a firm’s asset, income and future prospects. From a demand perspective, changes in economic activity affect firms’ output expectations, their expected return on investment and consequently influence their demand for credit.

In order to measure the impact of reduced credit on the Maltese economy, a simulation was conducted to quantify the impact of a positive credit shock equivalent to the estimated lower level of NFC credit as estimated on the basis of the econometric approach. Whereas by the second quarter of 2012, the actual credit level was 2.0% or €80.3 million higher than the estimated trend, by the third quarter of 2016 it was €1.7 billion or 32.9% below the level that should have prevailed if the relationship between NFC credit and GDP observed prior to 2011, persisted.

The simulation exercise was carried out using the Bank’s macro-econometric model STREAM, which is a traditional structural model with fully-fledged fiscal and financial blocks. Given the financial sector’s strong links with the rest of the economy, this simulation allows for a deeper understanding of how the Maltese economy would function should the historical relationship between credit to NFCs and GDP growth still prevails. In STREAM, the financial 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. It distinguishes between three types of credit namely, consumer and other credit, housing credit and credit to non-

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23 Bernanke, B., Gertler M., & Gilchrist S. (1996). The financial accelerator and the flight to quality. The Review of Economics and Statistics Vol. LXXVIII, No. 1. In this article, they explain how borrowers facing relatively high agency costs in credit markets will bear the brunt of economic downturns (the flight to quality) and secondly, reduced spending, production, and investment by high-agency-cost borrowers will exacerbate the effects of recessionary shocks.


25 Ibid.
financial corporations. Real credit to NFCs is influenced by real GDP in the short and real non-dwelling private investment in the long run.

The impact of the credit shock on the economy is assessed in terms of percentage deviations from the baseline. Simulation results show that growth in credit to non-financial corporations spurs output due to its effect on non-dwelling private investment and the incorporated financial accelerator mechanism. In the short-run, output is demand driven. The impact of a positive credit shock in the economy raises the level of loans, which in turn leads to an increase in available capital in the economy. The increase in capital raises private investment, which in turn raises real output. Government consumption increases slightly, while exports remain broadly unchanged. Private consumption increases, leading to a further increase in GDP, which is offset to some degree by a rise in imports. The rise in GDP increases investment even further. The overall effect on employment is negligible. In fact, as employment is relatively inelastic in the short-run, labour hours rise in response to higher investment. The increase in labour income increases disposable income which in turn increases private consumption. Thus, the impulse responses of a positive shock to NFC credit raise the level of loans, output, labour hours and consumption in the same direction.

### Table 2
THE MACROECONOMIC IMPACT OF A POSITIVE SHOCK IN CREDIT TO NFCs

<table>
<thead>
<tr>
<th>Percentage deviation from baseline</th>
<th>2012</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
<th>2016</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Economic activity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Real GDP</td>
<td>-0.01</td>
<td>0.05</td>
<td>0.36</td>
<td>0.61</td>
<td>0.94</td>
</tr>
<tr>
<td>Private Consumption</td>
<td>0.00</td>
<td>0.03</td>
<td>0.19</td>
<td>0.49</td>
<td>0.70</td>
</tr>
<tr>
<td>Government Consumption</td>
<td>0.00</td>
<td>0.01</td>
<td>0.23</td>
<td>0.52</td>
<td>0.90</td>
</tr>
<tr>
<td>Gross Fixed Capital Formation</td>
<td>-0.40</td>
<td>5.63</td>
<td>11.28</td>
<td>13.64</td>
<td>18.62</td>
</tr>
<tr>
<td>Exports</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>0.01</td>
<td>0.07</td>
</tr>
<tr>
<td>Imports</td>
<td>-0.06</td>
<td>0.75</td>
<td>1.44</td>
<td>1.95</td>
<td>2.79</td>
</tr>
<tr>
<td><strong>Labour market</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unemployment rate</td>
<td>0.00</td>
<td>0.00</td>
<td>-0.01</td>
<td>-0.04</td>
<td>-0.05</td>
</tr>
</tbody>
</table>

Source: Calculations based on STREAM
Table 2 shows the impact on a number of macroeconomic variables had the level of credit to NFCs between 2012 and 2016 been in line with past trends. As expected, the largest impact would have been on gross fixed capital formation (GFCF). Simulation results suggest that in 2012 and 2013, the years in which the level of NFC credit was initially higher and subsequently turned lower than past trends, the impact on GFCF was at first slightly negative but then turned positive, such that investment would have been higher and led to higher levels of economic activity.

Private and government consumption would also have been higher, though the latter would have risen by a slightly higher rate. Growth in consumption and investment would have fuelled economic growth. Simulation results indicate that in 2012, the effect of lower credit to NFCs had a negligible impact on real GDP. A year after however, if credit to NFCs had been in line with historical trends, then real GDP would have been 0.1% higher than its baseline. By 2016, the effect of having the same level of credit as per past estimated trend would have boosted real output by 0.9%. Faster economic growth however, would have been partially offset by imports, while the effect on exports would have been more or less negligible. Likewise, the overall effect on employment is insignificant. In fact, as employment is relatively inelastic in the short-run, labour hours rise in response to higher investment.

Overall, the simulation has shown that a positive shock on the level of credit to NFCs by a higher amount of NFC credit for the period 2012 - 2016 would have increased real GDP by 0.4% more than its baseline in 2014 and as much as 0.9% in 2016. This shows that higher NFC credit would have had a positive impact on the Maltese economy, though its effect is still limited, considering that despite the difference in credit levels, real GDP grew by 8.4% and 7.4% in 2014 and 2015, respectively. This corroborates the evidence that buoyant economic growth has occurred in line with a declining level of NFC credit. In fact, domestically, developments in credit to NFCs and economic growth reflect structural changes in the economy.

Since 2004 Malta’s potential output has improved. Labour participation rose rapidly, but increases in capital stock were relatively low. Changes in the structure of the economy were reflected in the economy’s higher orientation towards services. These did not come at the expense of the disappearance of the traditional sector but rather, the introduction of new operators which transformed the Maltese economy.26 The Maltese services sector has expanded to include higher-value added activities generated by the financial services sector, specialised forms of tourism and

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professional services, back-office administration, information technology and gaming. To this extent, the new services sector has been changing the Maltese economy in many different ways, and has been contributing to Malta becoming a net exporter.

The rise of the services sector typically requires lower capital input. Over the last decade in fact, the investment ratio declined as the capital intensity of production fell due to the surge in the labour-intensive services sector. For instance, whereas the share of the gross value added of the arts, entertainment & recreation sector, which includes gaming, rose from 5.6% of total gross value added in 2007 to 12.0% in 2016, its share in the economy’s overall gross fixed capital formation only increased from 3.1% in 2007 to 3.9% in 2016. Likewise, economic growth in Malta was largely driven by the financial and business services sector and the electronics industry, which do not generally resort to domestic bank credit. Conversely, the largest demand for credit stems from those operating in the construction and real estate sector, and the wholesale and retail trade sector.

From a policy point of view it is shown that although access to finance is a crucial prerequisite for growth, the changing structure of the Maltese economy may provide an explanation for positive economic growth that occurred in conjunction with a level of NFC credit that is substantially lower than that historically observed. This does not imply that easy access to finance for firms, especially SMEs is no longer a pre-requisite for growth.

On a euro area-wide level, the ECB has taken several measures to stabilise conditions in the European financial markets, such as the increased provision of liquidity to the banking sector, the easing of monetary policy to the extent that the overnight deposit facility now stands into negative territory and the expansion of the Asset Purchase Programme. As domestically, the pass-through to NFCs is low and incomplete, the monetary transmission mechanism should be supported by reducing pressures on banks’ balance sheets and by restoring the corporate sector’s confidence in the banks’ intermediate function.

Mitigating measures are still required to assist SMEs in their quest for the right financing tool, which as time goes by, should lessen their dependence on bank financing and move towards equity and other capital market finance. This will present a challenging scenario, especially in the light of new capital, liquidity and leverage rules, such as those in the new Basel III and the impact it will have on

27 Looking forward, there are potential implications stemming from the Basel III rules on SME credit, as the new capital and liquidity rules may have an adverse impact on lending. Although domestic banks comfortably meet the new thresholds, the new rules limit manoeuvrability to extend further lending to SMEs.
the banking system’s supply of credit to the economy. The introduction of the credit registry should reduce information monopoly, while multi trading facility by the stock exchange should improve growth financing. The planned development bank should also help facilitate SME and infrastructure financing.
References


