

How has the European Central Bank's Targeted Longer-Term Refinancing Operations (TLTROs) affected lending to households and non-financial corporations in Italy?

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Since June 2014 the European Central Bank (ECB) has implemented unconventional monetary policies to tackle weak growth, persistent below-target inflation and to support lending to the real economy. One of these policies was the Targeted Longer-Term Refinancing Operations (TLTROs) which provided ultra-cheap loans to banks, provided that banks increase lending to non-financial corporations (NFCs) and households. This paper investigates the policy's impact in Italy, where the annual growth in lending to NFCs has been negative since 2012 and interest rates are elevated above their European counterparts. The analysis addresses the gap in the literature by investigating the effect of the programme on households and firms, extending the inquiry beyond the financial conditions that previous literature has focused on. A narrative approach is used to estimate the effect of the TLTROs on interest rates and loan supply, whilst investigating loan demand by the real economy assesses whether this acted as a constraint. This paper also investigates whether critiques of the programme have hindered its success in Italy. The results show the TLTROs success has been to considerably lower interest rates in Italy. Despite slowing the pace of decline of lending to NFCs and households, considerable improvements are needed before lending returns to pre-crisis trends.

1. Introduction

This paper is an assessment of the effectiveness of the European Central Bank's (ECB) targeted longer-term refinancing operations (TLTROs) on lending to non-financial corporations (NFCs) and households in Italy. This is an interesting question because the TLTROs are one of numerous non-standard monetary measures introduced by the ECB to improve the functioning of the monetary transmission channel, but this is specifically aimed at improving lending to the real economy through providing conditional loans to European banks. The purpose of this paper is to examine whether the TLTROs have achieved their objective of stimulating lending to the real economy.

Due to restrictions on data availability we assess the policy's impact in Italy. Italy is an interesting country to investigate; following over a decade of economic stagnation and a triple-dip recession (Politi, 2015), the economy is displaying signs of improvement. The Italian banking system is weak, holding the highest proportion of bad loans and lowest profitability of all G20 countries (Sanderson and Arnold, 2016). The TLTROs should provide a stable source of cheap liquidity to banks, supporting their lending to the real economy.

We begin by describing monetary policies used prior to the TLTROs. We then discuss the technicalities of the programme; how it functions and potential limitations. Subsequently, we examine the development of cost of borrowing indicators and loan supply. Demand by NFCs and consumers is compared to assess whether uptake of the TLTROs has been hindered by the slow economic recovery in Italy. We then review the criticisms of the policy to assess whether these have reduced its impact. To conclude we summarise our findings and the implications for future policy.

We argue that the TLTROs have reduced the cost of borrowing for NFCs and households in Italy, consequently slowing the decline in lending. Section 2 provides context for the programme, summarising previous policies and their effects. We describe the programme and how it is expected to work, whilst exploring some criticisms and potential weaknesses. Section 3 outlines the methodology and data used. Our results are examined in Section 4. Section 5 summarises our results and their implication for future policy.

2. Context and literature review

2.1 Monetary policy in the Eurozone before June 2014

The financial crisis in 2009 and subsequent global recession prompted Central Banks to use unconventional expansionary monetary policy to restore liquidity in the markets and recapitalize banks (Jones and Kulish, 2011). The ECB took a relatively cautious approach, limited by a difficult legal and political environment (Pronobis, 2014).

The key measures implemented by the ECB up to June 2014 were (ECB, 2016):

- the fixed-rate full-allotment procedure for Longer-Term Refinancing Operations (LTROs)
- Covered Bond Purchase Programme
- Securities Markets Programme (SMP)
- Outright Monetary Transactions

These measures aimed to provide liquidity and repair the bank-lending channel (Claeys, 2014). Post-crisis, their impact on loans to households is estimated to be a 4% increase by Carpenter *et al.* (2013), somewhat higher than the 2.5% estimated by Lenza *et al.* (2010), suggesting these measures had a larger impact over time. However, these papers focus on the aggregate impact in the Eurozone do not estimate country variation. Furthermore, there is difficulty isolating the effect of a policy announced simultaneously with others (Pattipeilohy *et al.*, 2013), which is a limitation of this paper.

The LTROs provided liquidity to Eurozone banks, benefiting the periphery who were most adversely impacted by the crisis (Claeys, 2014). Using data from the ECB Bank Lending Survey (BLS), Darracq-Paries and De-Santis (2013) found the LTROs were successful in loosening credit standards for both households and NFCs. Fulli-Lemaire (2014) use data on sovereign spreads in an autoregressive model, concluding that the LTROs reduced bank-funding stress and sovereign risk. The paper's limitations are their focus on the impact of the LTROs on financial conditions. Although they express improvements in bank lending conditions, they do not analyse the impact on the real economy.

Overall the ECB substituted the market, partly insulating liquidity and credit conditions facing households and firms which prevented the complete breakdown of the bank lending transmission channel (Durre *et al.*, 2014). However, weak economic and lending growth prompted further unconventional policy.

2.2 Heterogeneity in the Eurozone

There is ample literature discussing the heterogeneity of the Eurozone and its banking system. Consequently, the TLTROs impact will vary by country. The ECB faces increasing difficulty setting

optimal interest rates that meet the states' heterogenic needs (Reichenbachas, 2013). This is supported by Durre *et al.* (2014) who find that the period between the sovereign debt crisis and June 2014 is marked by increasing heterogeneity between countries and intra-country borrowers and lenders. Ciccarelli *et al.* (2011) use data from the BLS in a vector autoregressive (VAR) model to analyse the transmission of monetary policy during the crisis. They find Central Bank liquidity improved conditions for borrowers, and identify that future measures targeted at increasing credit availability could "significantly stimulate economic activity" by mitigating the frictions of heterogenic conditions (Ciccarelli *et al.*, 2011). Thus, the TLTROs should converge credit conditions in the periphery relative to the core.

2.3 The TLTRO programme

In June 2014, ECB President Mario Draghi announced the introduction of a number of non-standard monetary policy measures in light of slow growth momentum in the Eurozone and persistent below-target inflation to provide support to lending to the real economy. One of these programmes was the TLTROs which would run from September 2014 for eight auctions on a quarterly basis. The TLTROs are longer-term loans granted by the ECB to European banks at a fixed rate, maturing in 2018. The main aim is to incentivise banks to lend to NFCs and households, consequently boosting demand in the real economy. Table 1 presents a timeline of ECB policy action.

The TLTROs are a "targeted" version of the ECB's LTROs which provided additional longer-term finance to banks at a lower interest rate (ECB, 2002). However, the TLTRO maturity is longer and the amount counterparties can bid for depends on their lending to NFCs and households (ECB, 2014). Funds available for the first two auctions was 7% of banks total loans to Eurozone NFCs and households outstanding on 30 April 2014. For the further six auctions funds are linked to lending from 30 April 2014 and an allotment reference date. Banks with lending below the benchmark following allotment must return the funds to the ECB by September 2016. This conditionality provides the link between bank borrowing and lending to NFCs.

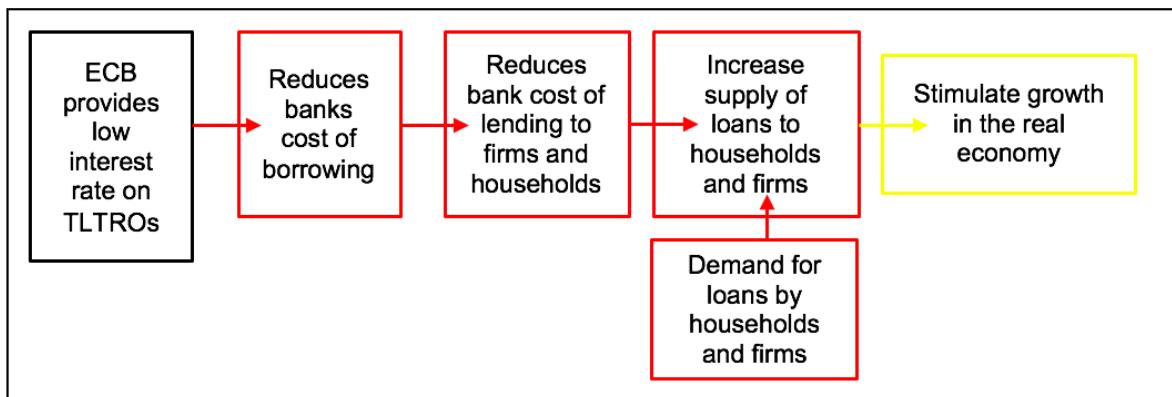
Table 1: Timeline of key events

June-14	Policy announced: <ul style="list-style-type: none">• Interest rates lowered• TLTROs to begin in September
September-14	First TLTRO Key interest rates lowered
October-14	ECB AQR results published.
December-14	Second TLTRO
January-15	Policy announced: <ul style="list-style-type: none">• TLTRO interest rate lowered to 0.05% from March• QE programme to begin in March
March-15	Third TLTRO
June-15	Fourth TLTRO
September-15	Fifth TLTRO
December-15	Sixth TLTRO Deposit facility lowered.
March-16	Seventh TLTRO Policy announced: <ul style="list-style-type: none">• Interest rates lowered• Expansion of QE• TLTRO 2 to begin in June 2016

Source(s): ECB (2016)

The programme is expected to work predominantly through the bank lending channel; reducing banks' marginal cost of funding to households and NFCs (ECB, 2016). This should increase their loan supply to the real economy, thereby increasing economic activity. Figure 1 depicts the transmission mechanism of the programme. Highlighted in red are the areas this paper studies.

Figure 1: Transmission of the TLTROs



Source(s): ECB (2016)

Little literature is available on the effect of the TLTRO's. Balfoussia *et al.* (2015) estimate the TLTRO's potential impact on real economic activity using a financial-conditions index (FCI) in a VAR framework. They anticipated a 5.7% increase in industrial production and 4.7% increase in PMI. However, their analysis assumes a €400bn allotment for the first 2 rounds, where take-up was only €212bn. A more versatile approach is taken by Fischer and Nielsen (2014) who conceive four scenarios for the take-up and assess the impact on liquidity. Take-up has been cited as a risk by Claeys (2014), because the TLTROs effectiveness depends both on the demand by banks and the corporate sector.

The TLTROs were likened to the Bank of England's Funding for Lending Scheme (FLS), which provided incentives for UK banks to lend to businesses and households. The usefulness of such a policy was highlighted by Ciccarelli *et al.* (2013) who suggested a conditional LTRO similar to the FLS could boost credit availability to NFCs. However, Draghi noted the programmes are "fairly different" (ECB, 2014), stemming from the exclusion of loans for house purchase in benchmark calculations for the TLTROs. Furthermore, the Eurozone banking system contrasts the UK as 80% of the economy is funded by banks (Wehinger, 2012), making access to bank funding more important. Small and medium sized enterprises (SMEs) have little alternatives to banks to meet external financing requirements (Deutsche Bank Research, 2014), whilst accounting for 70% of employment in the Eurozone (Eurostat, 2016). This explains why enhancement of the transmission channel is an explicit aim of the ECB; supporting SMEs is key to reviving economic growth.

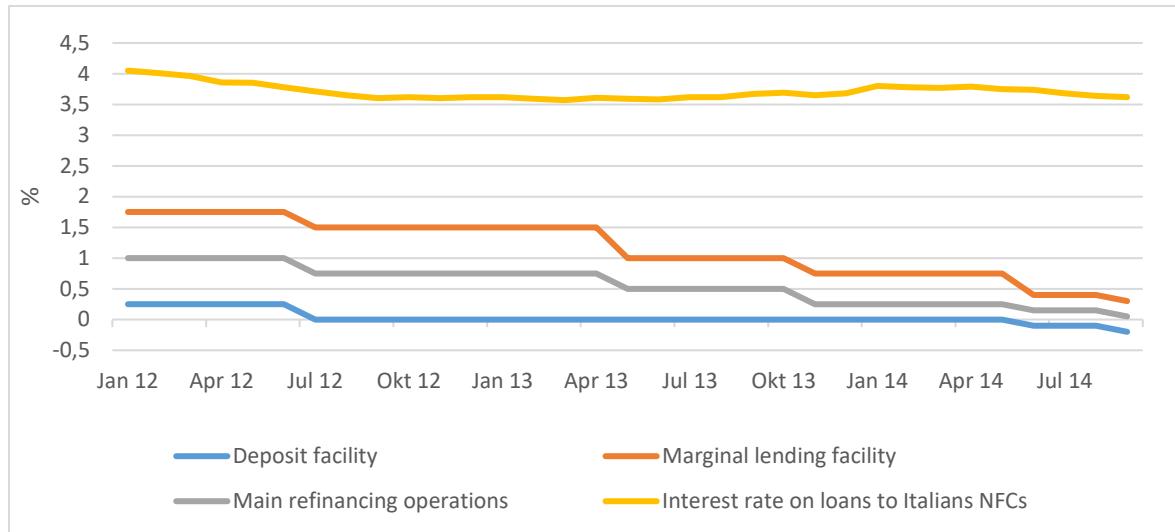
2.4 The bank lending channel

The bank lending channel is the main transmission channel of the TLTROs. Since 2012 the ECB has acknowledged the impairment of the channel due to fragmentation of money markets (Kaminska, 2012). Frictions between lenders and borrows worsen substantially during a financial crisis causing the premium paid by borrowers to increase (Bernanke and Gertler, 1995). This is exacerbated by the

“liquidity trap” defined by Keynes (1936), where interest rates are so low that monetary policy becomes ineffective.

As Figure 2 shows, despite the reduction of main ECB interest rates, lending rates to the real economy remained elevated. Al-Eyd (2013) argues this breakdown reflects the weakening of corporate and bank balance sheets and lack of term-funding. The variation in credit risk amongst countries and borrowers has led to increasing divergence in lending rates in the periphery vs the core, and small vs large firms. Ciccarelli *et al.* (2013) find the transmission of monetary policy via the bank lending channel is unequal in small banks and SMEs, highlighting the increased constraints they face. Accordingly, the programme’s impact will be uneven across countries and firms.

Figure 2: Key interest rates



Source(s): ECB (2016)

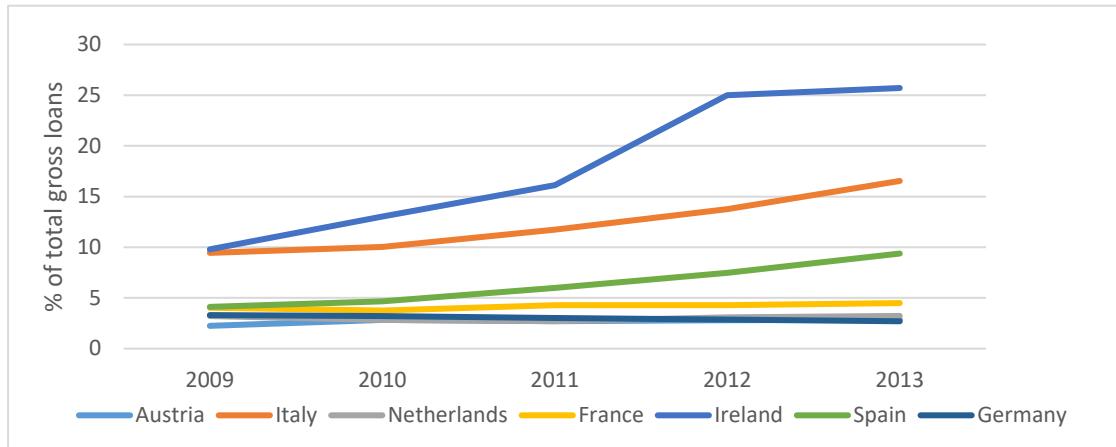
2.5 Critiques

Since the introduction of the TLTROs, market commentators have voiced concerns over the programme’s limitations.

Firstly, the programme relies on demand from commercial banks for loans. In an environment where banks have been deleveraging significantly, particularly in periphery countries, this is no certainty. Eichengreen (2014) emphasises that banks with a weak capital position are reluctant to undertake further loans, citing a study by Gambacorta and Ibanez (2011) who showed bank-specific characteristics have a large impact on credit provision. Whelan (2014) highlighted how attractive cheaper funding will not override the larger pressure to deleverage. The programme’s technicalities mean banks can continue deleveraging but at a slower pace (Ducrozet, 2014). This may hinder its effectiveness, with banks preferring to borrow less and lend less.

Secondly the policy is bias towards core countries. German and French banks are eligible for higher allotments because their net lending to households and corporations is higher. As noted by Merler (2014), despite periphery banks undertaking the majority of deleveraging, 54% of the allowance for the first two auctions was for Germany, France, Austria and the Netherlands. The TLTROs peculiarly dis-incentivize deleveraging, whilst rewarding core banks where balance sheets are healthier. This is highlighted in Figure 3, which illustrates the larger proportion of non-performing loans in the periphery.

Figure 3: Non-performing loans pre-TLTROs



Source(s): IMF (2016)

Although incorrect use of funds will prompt early repayment, there is no penalty for misuse. This has been criticised by Merler (2014b) who highlights that banks may “enjoy the profits of a carry trade” then return the funds early; consequently, our analysis may exaggerate take-up and the programme’s success. Misuse of funds to purchase sovereign bonds is not strictly prohibited, and there is a concern that this will drive take-up (Merler, 2014b). Critics have also claimed that the TLTROs do not provide sufficient liquidity to banks. Whelan (2014), Merler (2014c) and Kounis *et al.* (2014) anticipate LTRO repayments will limit the TLTROs impact on overall liquidity. Conversely, Ducrozet (2014) argues the programme will smooth management of banks liquidity needs.

Lastly, the programme’s lack of transparency has been criticised. The ECB only publishes the aggregate Eurozone allotment per auction and number of bidders. National and commercial banks are also not obliged to publish participation. This lack of transparency, which extends beyond this programme¹ has been criticised by Belke (2013) for its obstruction of policy analysis. Consequently, we focus on Italy because the Bank of Italy publishes allotment and commercial banks are forthcoming with participation.

¹ Belke (2013) found transparency “weakened significantly” in the course of the SMP because the ECB only published the weekly total amount of bonds purchased.

2.6 Changes to ECB policy

In March 2016 the ECB announced new measures to “ease financing conditions and stimulate new credit provision” to support the economic recovery (ECB, 2016c). The ECB launched TLTRO 2, a modified version of the TLTROs to begin in June 2016.

Although building on the first programme, there are some differences:

- Banks can borrow 30% of their eligible loan stock.
- The interest rate applied to loans will be between the marginal refinancing operations rate (0.0%) and the deposit facility (-0.4%), depending on net lending.
- No early repayments for banks who fail to achieve benchmarks.

The implication of our results for TLTRO 2 will be discussed in Section 5.

2.7 Summary

This paper investigates the TLTROs effect on Italian banks, NFCs and households. Whilst previous literature focuses on the impact of non-standard policies on financial conditions, this paper addresses the implication of the policy for households and firms, and whether the benefits have fed through to the real economy. The objectives of this paper are to:

- investigate if TLTROs have reduced the cost of borrowing for firms and households, and whether the supply of loans has increased consequently.
- analyse whether there is sufficient demand for loans from households and firms.
- review whether the criticisms of the TLTROs have limited its success in Italy.

3. Data and Methodology

3.1 Approach

We estimate the TLTROs impact using a three-step approach. In Section 4.1, we analyse the role of banks in the transmission process. We initially evaluate the evolution of TLTRO demand by Italian banks. Subsequently, we analyse the changes in interest rates, broken down by size and maturity. Supporting this, we use surveys including the BLS and the Survey on the Access to Finance of Enterprises (SAFE). These responses, made by banks and firms, support the significance of changes in variables we examine. They also cross-examine the same issue (such as availability of loans), to check the validity of respondents’ answers. Continuing with this approach, we analyse the loan supply by banks and how the pace of lending has changed. In Section 4.2, we investigate demand by firms and

households; the motivation for this is two-fold. Firstly, there must be sufficient loan demand by firms and households to drive banks to use the TLTROs. Secondly, if banks blame weak lending on weak loan demand, we can examine whether this is true. We analyse the factors affecting the demand by households in the BLS as reported by banks. However, there is no data (descriptive or survey) generated by households. To overcome this, we compare our findings to confidence indicators and GDP growth. We then use the BL and cross-check with the SAFE responses to investigate demand by firms. In Section 4.3, we examine whether the programme's limitations have come to fruition in Italy.

This paper uses a narrative approach, examining the changes in variables affected by the policy and using surveys to strengthen our findings. Consequently, we cannot isolate the effect of the TLTROs, instead evaluating our conclusions in light of external factors. An econometric model such as the one used by Balfoussia *et al.* (2015) could be used in isolation to examine the effects of this policy when more observations are available and to investigate implications for GDP growth. Overall, this approach is most suitable because it permits the investigation of the development of variables (for further details, see Appendix C), comparing demand against supply to evaluate the ECB's claim of the transmission mechanism against the criticisms identified in Section 2.5. Throughout the paper we compare Italy to Germany. Germany is the most resilient economy in the Eurozone and is referred to as the baseline for improvements.

3.2 Surveys

3.2.1 BLS

The BLS is conducted every quarter by the National Centrals Banks of the Eurozone alongside the ECB. It assesses the conditions of supply and demand for credit through asking senior loan officers multiple choice questions on the credit standards they apply on the loan demand received from households and businesses. Additionally, ad-hoc questions address specific areas of interest. We concentrate on questions 1-4, 6-7, 10-12, 14,18 and 20 (Appendix A). We also use the ad-hoc questions on TLTROs, but results are at an aggregate Eurozone level. The measure of responses to questions is the net percentage of banks reporting a specific change; further details are provided in Appendix C.

Eight credit groups in Italy participate in the survey, which seems low given that Italy accounts for around 16% of Eurozone GDP (Eurostat, 2016). However, the survey takes into account "characteristics of their (each country's) respective national banking structures" and takes further precautions when aggregating the data to reach a representative view (ECB, 2015). A weighting system using banks outstanding loans to NFCs and households is used, making banks that lend more account for a larger proportion of responses. This suggests the survey sufficiently accounts for the size of the banks and place in the eurosystem.

Several papers support the reliability of the BLS. The answers are reliable indicators of real developments in bank loans (Giovane *et al.*, 2011) and correlate with actual credit spreads (Maddaloni *et al.*, 2010). A typical problem with this kind of survey is under-reporting; making it under-representative of the whole economy and bias towards the types of banks surveyed. As the survey is anonymous we do not know which banks participate, but assume it involves larger banks with access to the TLTROs. It is often found in lending surveys that banks report tighter credit conditions than those which they actually apply (Giovane *et al.*, 2011). This may underestimate the programme's impact on loan supply to NFCs as reported by banks. We cross-check this by analysing flows and lending rates by banks. Furthermore, there is often not a clear association between banks changes in credit standards and the factors effecting these (Giovane *et al.*, 2011). This may mean that whilst a factor is reported to have improved/worsened credit standards, overall credit standards remain unchanged. To overcome this, we cross-check responses with descriptive statistics. Given the conclusions on the reliability of the survey reached by the literature weighted with its limitations, it is the most useful indicator of changes in the demand and supply of credit by Eurozone banks.

3.2.2 SAFE

To analyse the demand constraints facing firms, we use data from the ECB's SAFE survey. This resource has been disregarded by literature reviewed in Section 2 which focuses on the impact of non-standard measures on financial conditions. Use of the SAFE survey permits analysis of demand conditions on an intra-country basis, broken down by firm size. It also supports (contradicts) reports by banks in the BLS, specifically the short-term financial constraints faced by firms (Bankowska *et al.*, 2014). The survey is run bi-annually, providing two rounds of answers since the TLTROs were launched (and a third in September 2014). Similar to the BLS, questions are multiple choice.

We use answers regarding loan supply, interest rates and circumstantial influences to understand the factors effecting firm loan demand (see Appendix B). The limitation of this source is that it does not ask TLTRO-specific questions. We, instead, cross-correlate answers from multiple questions to build a picture of conditions. It is also conducted less regularly than the BLS making comparisons difficult. With these limitations in mind, it remains the most wide-scale survey of businesses in the Eurozone providing comparable data across countries.

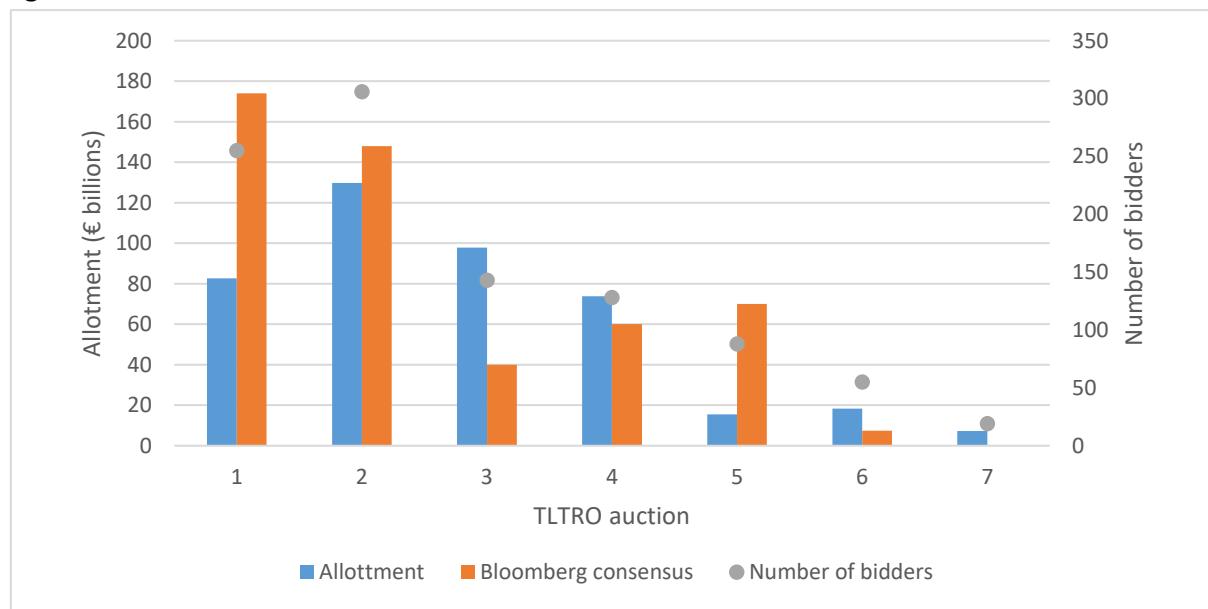
4. Results

4.1 Loan supply by banks

4.1.1 Uptake

Uptake of the TLTROs in the Eurozone has been consistently below expectations of poll respondents (Bloomberg, 2016). Only 53% of the initial €398bn made available by the ECB for the first two auctions was lent to banks, of which 28% was allotted to Italian banks. As shown by Figure 4 there has mainly been a downward trend in allotment and number of bidders. This suggests banks have reduced their demand or those that participated used their capacity early. The increase in allotment from the first to second round can be explained by the ECB Asset Quality Review (AQR) which commenced in October 2014, assessing the strength of 130 Eurozone credit institutions. Banks undergoing deleveraging preferred to wait until December to bid for funds so that these loans would not impact their results (Thompson, 2014).

Figure 4: TLTRO allotment 4

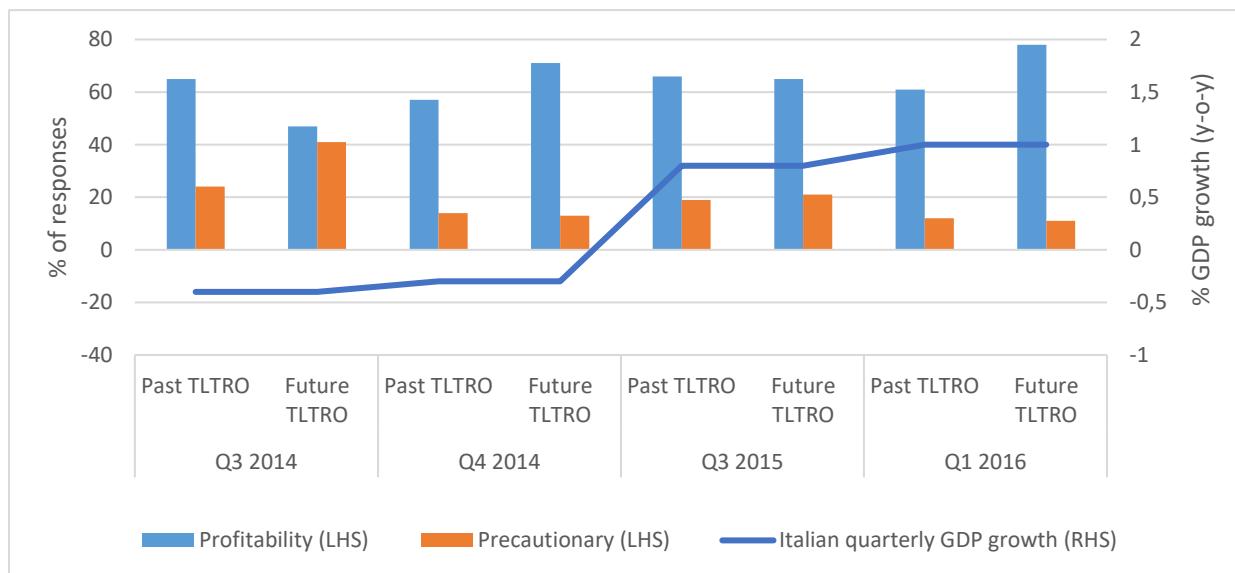


Source(s): ECB (2016) and Bloomberg (2016)

Insight into motivation behind participation in aggregate is available from the BLS. Figure 5 shows the percentage of banks intending to participate fell from 44% (in round 2) to 10% (in rounds 7&8), whilst 42% of banks in Q1 2016 planned not to participate in future TLTROs. Participation has been predominantly driven by profitability motives as opposed to precautionary motives as shown in Figure 5. 41% of banks planned to participate in future TLTROs in 2015/16 for precautionary motives when interviewed in Q3 2014, but this fell substantially in subsequent surveys. This suggests that banks anticipated more difficult refinancing conditions than materialised, which is supported by GDP growth in Italy which has been positive since Q1 2015. This question aggregates responses from all Eurozone

countries and may conceal country-specific patterns or been driven by a small number of large countries. The ECB does not publish a country-breakdown of responses for ad-hoc questions. This highlights another area where lack of transparency makes analysing the responsiveness of banks difficult. Despite this limitation we surmise that banks tended to participate in earlier auctions and were motivated by profitability rather than for precaution.

Figure 5: Banks motivation for participation



Source(s): ECB (2016)

In Italy demand began strongly but has petered out. Italian banks were allotted 76% of their allowance available in the first two auctions, just below Spanish banks which took 80% (Bloomberg, 2016). This suggests interest by periphery banks was initially strong (data for Ireland, Greece and Portugal is unavailable). As previously stated, market commentators expected higher demand for the second round than the first but this did not occur in Italy, with Italian banks accounting for only 22% of TLTRO 2. Of the 24 banks that failed the AQR, 9 were Italian but this did not alter their behaviour. As shown by Table 3, MPS undertook an even split between TLTRO 1 and 2 despite being one of the largest Italian banks to fail. Table 2 highlights the financial performance of the largest banks; highlighting in red where the capital ratio did not meet the 5.5% requirement. These banks are smaller with higher impaired loans, yet their participation in the TLTROs was largely unaffected. This suggests the TLTROs have provided funding for banks in greater need of it.

Table 2: Italian banks financial performance

	Total assets (€'000s)	Gross Impaired Loans (%)	Tier 1 Common Capital Ratio: 2013 (%)	Tier 1 Common Capital Ratio: adverse scenario 2016 (%)
UniCredit	860,433,375	9.88	9.6	6.8
Intesa Sanpaolo	676,496,000	10.25	11.7	8.3
MPS	169,011,977	19.76	7	-0.1
BPER	61,261,231	14.52	8.4	5.2
Iccrea	49,333,237	NA	10.7	7.4
BCP Popolare	120,509,595	12.27	7.9	4.7
Credit Valt	26,901,681	13.12	7.4	3.5
Credem	37,455,301	NA	10.9	8.9
Carige	30,298,856	14.32	3.9	-2.4
Mediobanca	71,548,938	1.7	8.4	6.2
UBI Banca	117,200,765	7.87	11.8	8.2

Source(s): SNL (2016)

Demand for the 3rd TLTRO exceeded expectations, where Italian banks accounted for 37% of total allotment. This can be attributed to the lower TLTRO interest rate, but also because expectations were so low (Lilleøre, 2015). From TLTRO 4 onwards, demand in Italy fell, cumulatively taking €24.1bn from the recent 3 auctions. The benchmark for negative net lending banks changed to zero in auction 5, which could have dis-incentivised participation. If this was the case we would expect Italian banks to borrow more in TLTRO 4, but they only accounted for 24%. It is more likely that demand fell because of the abundance of liquidity (Bank of Italy, 2015).

Overall, the TLTROs gained significant interest in Italy initially, which accounted for 28% of the programme (as shown in Table 3). However, falling demand following the third auction is attributed to sufficient liquidity and tighter rules applied to auctions 5-8. Economic growth in Italy was positive across 2015 which coincides with the reduction in participation. This development in the economic environment may have improved bank solvency, reducing banks dependence on the funds.

Table 3: TLTRO allotment (€ billions)

	1	2	3	4	5	6
UniCredit	7.77	2.2	7	0	-	-
Intesa Sanpaolo	4	8.6	10	5	-	-
MPS	3	3.3	0	1.25	-	-
BPER	2	0	0	0	-	-
Icrea	2.24	1.7	1.3	1.3	-	-
BCP Popolare	1	2.7	5	3.2	-	-
Credit Valt	1	0	0.5	0	-	-
Credem	0.735	0	0	1	-	-
Carige	0.7	0.4	0	0	-	-
Mediobanca	0.57	0	4.5	0.4	-	-
UBI-Banca	0	3.2	2.9	0	2	-
Italy	28.6	28.6	36	17.5	4	2.6
% allocated to Italy	35	22	37	24	26	14
Total	82.6	129.8	97.8	73.7	15.55	18.3

Source(s): Bloomberg (2016)

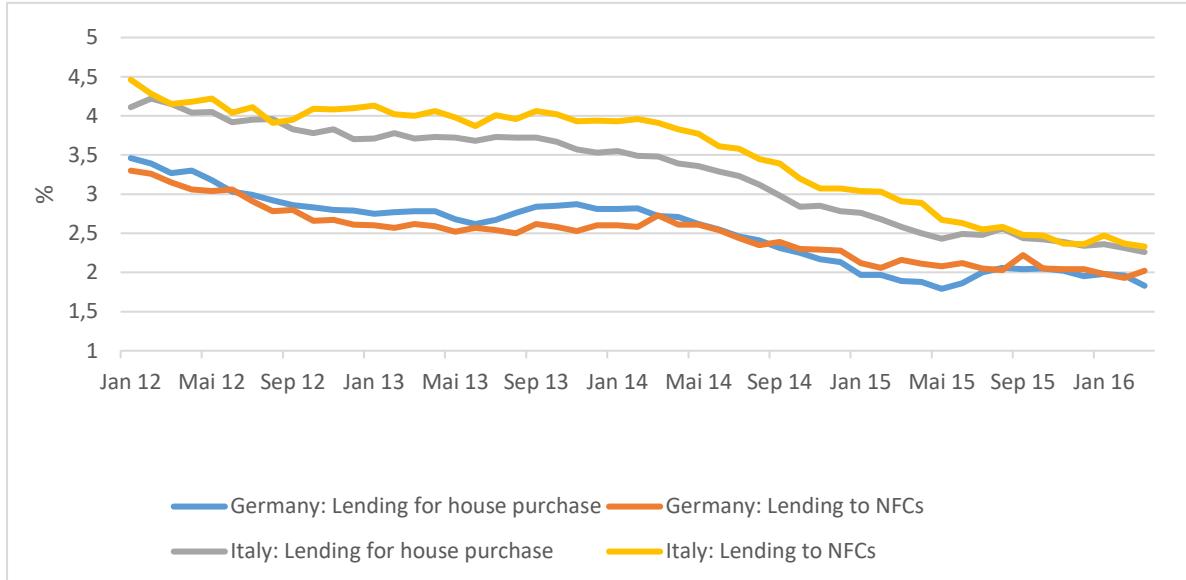
4.1.2 Interest rates

The purpose of the TLTROs was to reduce the cost of financing to banks, which would pass through to the real economy.

Cost of borrowing (CB) indicators show interest rates on loans to NFCs and households have fallen since the programme began. Figure 6 demonstrates the overall decline in interest rates in Italy and the narrowing of the spread with Germany since the TLTROs began. We compare the CB on lending to NFCs to that of house purchase, which is excluded from benchmark calculations. Consequently, we expect a larger fall in interest rates on loans to NFCs than house purchase. The interest rate on loans to NFCs has fallen by 119bps in Italy, compared to 46bps in Germany. The margin between these is now only 27bps, down from 100bps when the programme began. This suggests the lower interest rate on TLTROs has been passed through by Italian banks more so than German banks. CB for house purchase has seen a smaller decrease in Italy (67bps since the beginning of the programme) compared to 119bps on loans to NFCs. In Germany the CB for house purchase fell by 35bps, only slightly smaller than on lending to NFCs (46bps) suggesting the TLTROs have had a proportionately larger impact in Italy, where rates on loans to NFCs have fallen by substantially more than those unaffected by the TLTROs. This signals the effectiveness of the TLTROs in lowering interest rates in Italy but highlights

the downward trend of general interest rates. This suggests CB for NFCs may have fallen without the TLTROs.

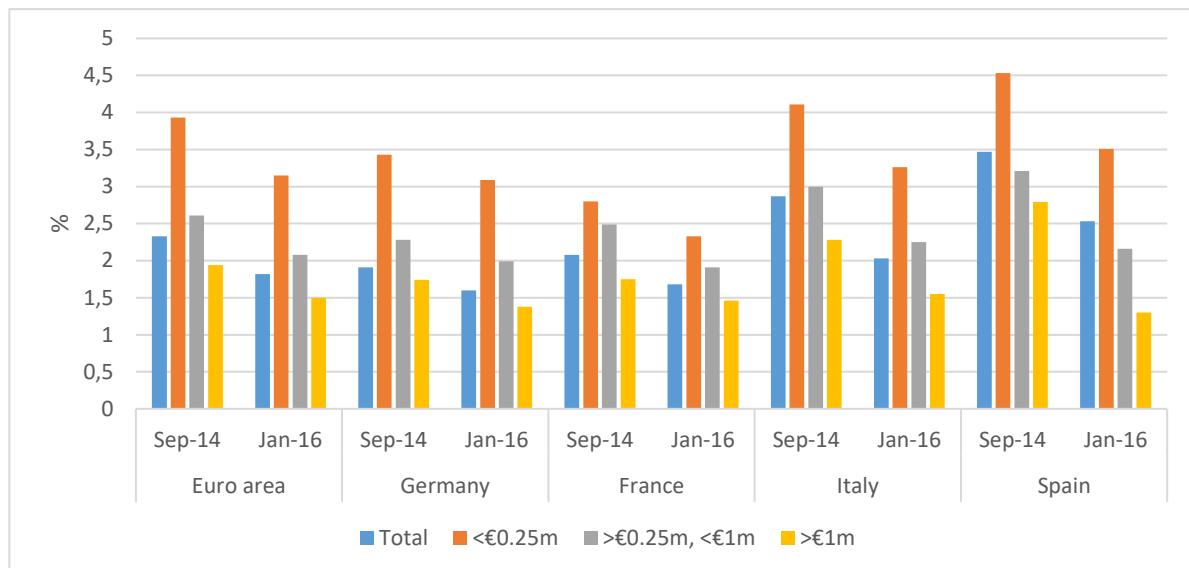
Figure 6: Cost of borrowing indicators



Source(s): ECB (2016)

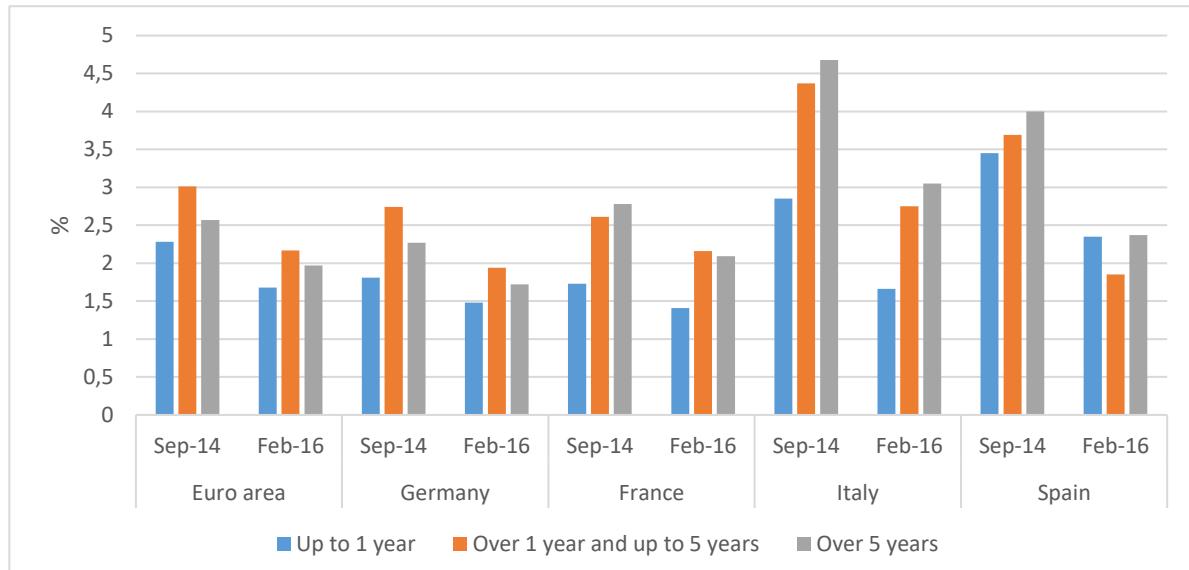
We evaluate interest rate developments based on the size and maturity of loans to estimate the type of financing they supported. Figures 7 and 8 show the change in interest rate based on loan size and maturity in the largest Eurozone countries. Interest rates have fallen more substantially in the periphery relative to the core, but particularly more when based on the length of loan rather than the size. The fall in interest rates on long-term loans (over 5 years) has been greater than on short-term loans (less than 1 year) across the Eurozone. This suggests longer-term investment projects have been supported rather than day-to-day operations. In Italy, the interest rate on loan over €1m is 1.55%, having fallen by 73bps during the programme and is now comparable to Germany and France (1.38% and 1.46% respectively). Although the interest rate on long-term loans remains heightened in Italy, it has fallen by 163bps exhibiting further convergence with the core. The larger improvements in Italy and Spain support the programme's effectiveness, whilst the improvements on long-term loans suggest the economic recovery in Italy is facilitating lending and encouraging longer-term investments. On the other hand, Italian SMEs may struggle to secure short-term funds which is worrying given their importance to the economy.

Figure 7: Interest rates on loans broken down by size



Source(s): ECB (2016)

Figure 8: Interest rates on loans broken down my maturity



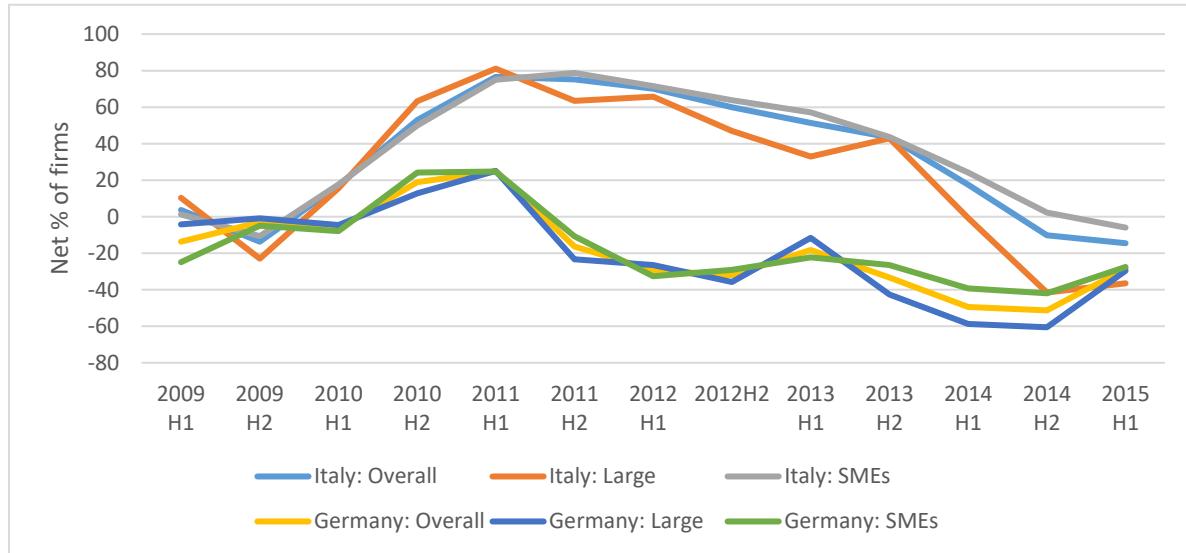
Source(s): ECB (2016)

The BLS suggests that terms and conditions (T&Cs) beyond the control of the ECB remain favourable to banks in the core. Although German banks have reported an overall larger net easing in the T&Cs applied to banks compared to Italian banks, Italian banks have reported a greater net easing effect of the margins on average and riskier loans. However, non-interest rate charges and collateral requirements have had a greater easing effect in Germany than Italy. This suggests that external financing conditions remain preferential to banks in the core.

Improvements in interest rates are supported by SAFE responses. In the last two surveys, Italian banks stipulated a fall in the level of interest rates following a sustained increase since 2009. Figure 9 shows this improvement is uneven across firms; a greater percentage of large firms have reported a fall in

interest rates (36.3%) compared to SMEs (6.0%). Given this improvement began in 2014 H2, it is reasonable to assume the TLTROs have contributed. This contrasts Germany where interest rates have fallen consistently since 2011 and the improvement is even across firms.

Figure 9: Firms reporting an increase in interest rates



Source: ECB (2016)

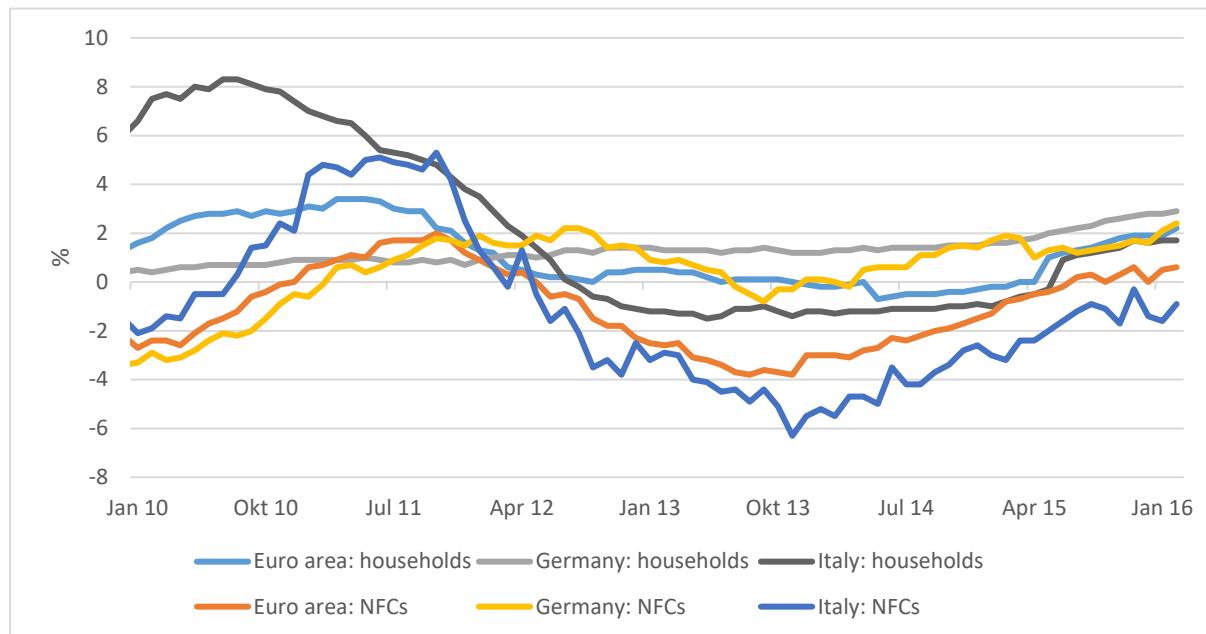
4.1.3 Supply

To meet the requirements of the TLTRO borrowing, banks must lend more to NFCs and households. Italian loan growth was negative prior to the programme; the TLTROs should prevent further decline.

As shown by Figure 10, the annual growth rate of loans to households in Italy has increased from -1.1% in September 2014 to 1.7% in February 2016, however the amount outstanding is only at its 2012 level. This superficial improvement is mirrored by loans to NFCs which despite the annual growth rate increasing from -3.7% in September 2014 to 0.9% in February 2016, outstanding loans remain at their 2008 level. This partly explains why uptake has fallen, because Italian banks have not increased their lending sufficiently.

Although the TLTROs have slowed the decline of lending to NFCs, the pace of improvement is unchanged from before the programme began. We cannot be certain that lending would have remained on this path without the TLTROs, but they have not drastically increased lending. There has also been a decline in the total amount outstanding of short-term and long-term loans, which account for over 80% of the total stock of loans to NFCs in Italy (ECB, 2016). Conversely, there has been a reversal in the trend of medium-term loans, which were declining since 2008 but began increasing since the introduction of the TLTROs. This implies banks have used the funds to grant medium-term loans, which account for a smaller proportion of overall lending, meanwhile deleveraging continues.

Figure 10: Annual growth of loans



Source(s): ECB (2016)

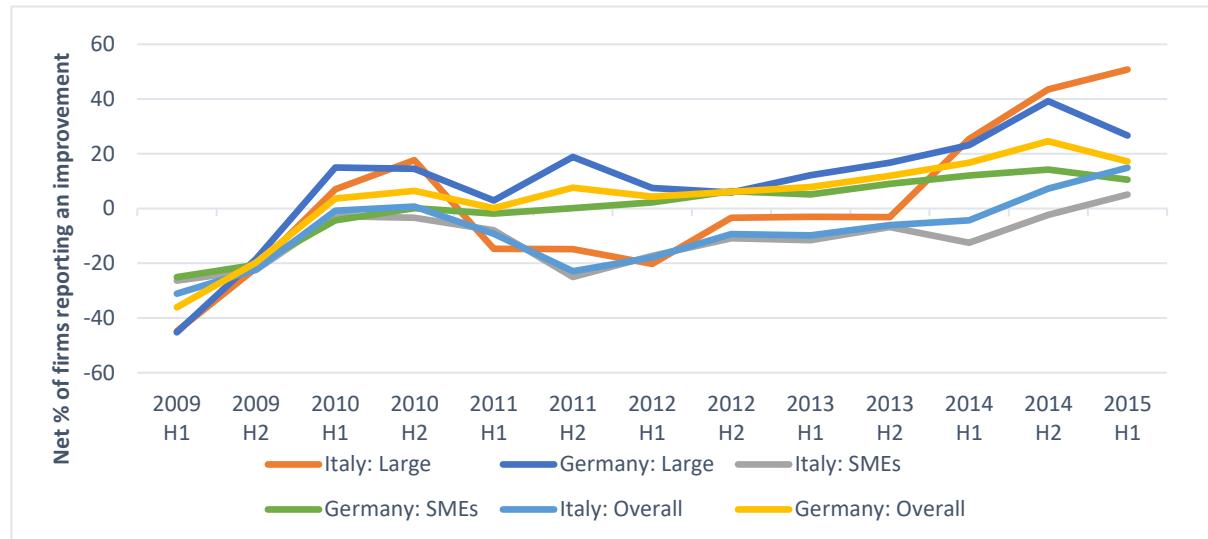
Ad-hoc BLS questions suggest the TLTROs had a larger influence on the T&Cs of loans than the quantity issued in the Eurozone. In Q1 2016, 91% of respondents indicated that past TLTROs had or will have no impact on credit standards on loans to enterprises, whilst 46% said they have “contributed or will contribute somewhat” to T&Cs on loans to enterprises. This supports that the TLTROs have contributed to the slowing decline of loans to NFCs by creating less hostile conditions but not sufficiently enough to boost lending. However, the TLTROs have had less of an impact on consumer credit; 100% of respondents said the TLTROs had no impact on credit standards, and only 10% said they contributed to the T&Cs on consumer credit. We cannot assess whether this reflects Italian banks, however the TLTROs have affected interest rates more than lending flows in the Eurozone.

The improvement in conditions has also been reported in the broader questions (not specifically related to TLTROs). Bank competition has been the dominant factor behind credit easing, suggesting that Italian banks lent more to beat competitors. This is supported by comments by Draghi who noted “we see also that the return of competition amongst banks is playing a factor in credit expansion” when referring to the results of the BLS (ECB, 2015a). Furthermore, it suggests that sufficient loan demand from enterprises warrants such competition.

The SAFE survey supports Italian bank claims of easing credit conditions. As illustrated in Figure 11, since 2014 H2 Italian firms reported an improvement in loan availability. Disparity remains between large firms and SMEs in Italy (45bps), but for the first time since the survey began, the net percentage of SMEs stating an increase in loan availability turned positive (to 5.1%). In comparison, there is only 16bps between German large firms and SMEs, where responses have been positive since 2011. Whilst

loan availability has remained unchanged in Germany, the improvement reported by Italian firms is large and in line with the Eurozone average (14.9% compared with 14.3%). This supports banks' claims that they have increased loan supply (particularly over the past year), but indicates a larger improvement in availability to large firms.

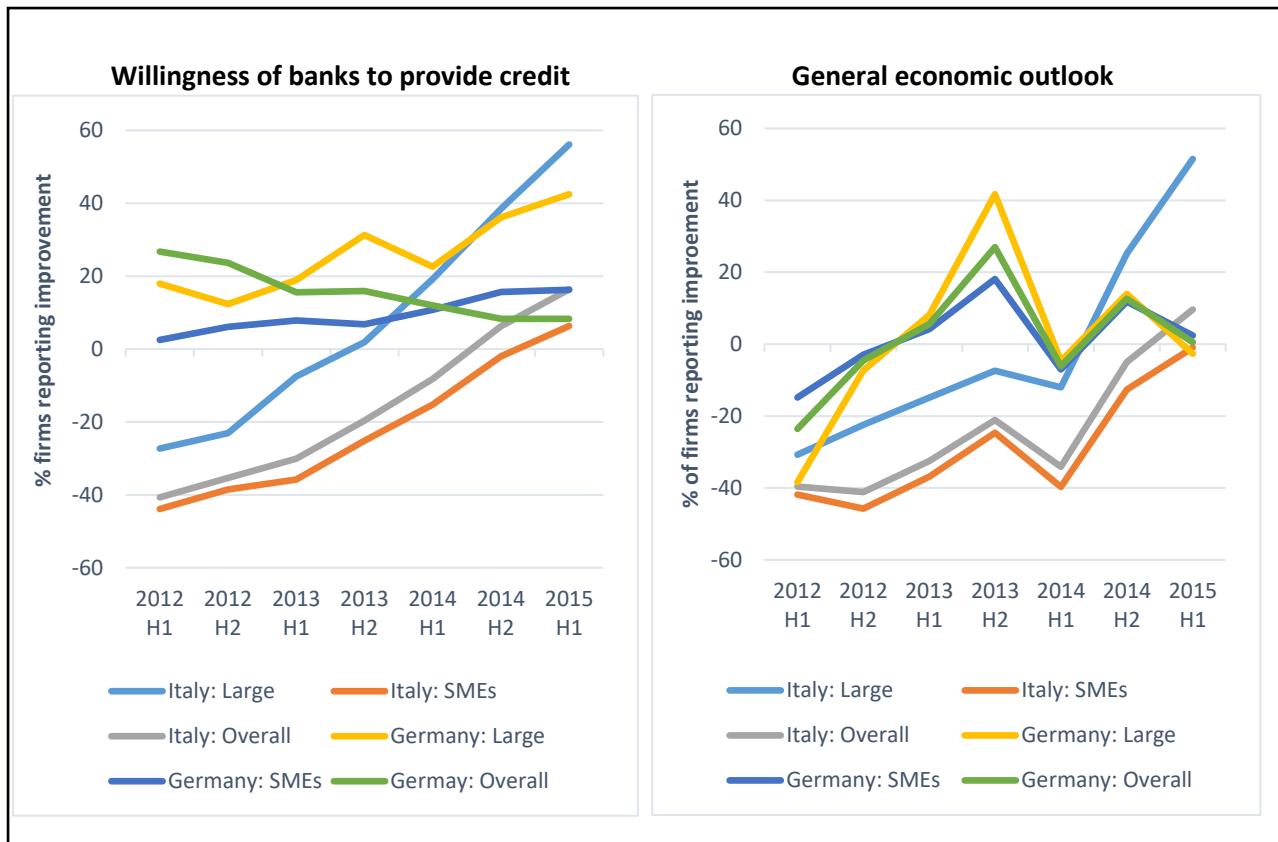
Figure 11: Firms reporting an improvement in loan availability



Source(s): ECB (2016)

This narrative of improving access to finance is reflected in SAFE responses regarding the factors effecting financing needs, which is shown in Figure 12. The net percentage of Italian firms reporting an improvement in banks willingness to provide credit has increased to 16.3% in the first half of 2015, slightly below the 26.7% of German firms. In Italy the general economic outlook had a positive impact (9.6%) for the first time since the survey began in Q1 2015, demonstrating the recovery's impact on the TLTROs success. However, the impact was greater on large firms compared to SMEs in Italy, whilst this disparity does not exist in Germany. This disparity is also exemplified by the willingness of banks to lend. The net percentage of Italian SMEs reporting an improvement in banks willingness to provide credit was only 6%, which although is a considerable improvement, is far lower than the 56% of large firms reporting an improvement. In Germany such disparity exists to a lesser extent. Overall, whilst these factors have had a positive impact in Germany for some time, only the two recent surveys indicate significant improvements in lending by Italian banks. This firstly supports the claims by banks of increased lending, and consequently the effectiveness of the TLTROs in Italy.

Figure 12: Firms reporting an improvement in factors affecting demand



Source(s): ECB (2016)

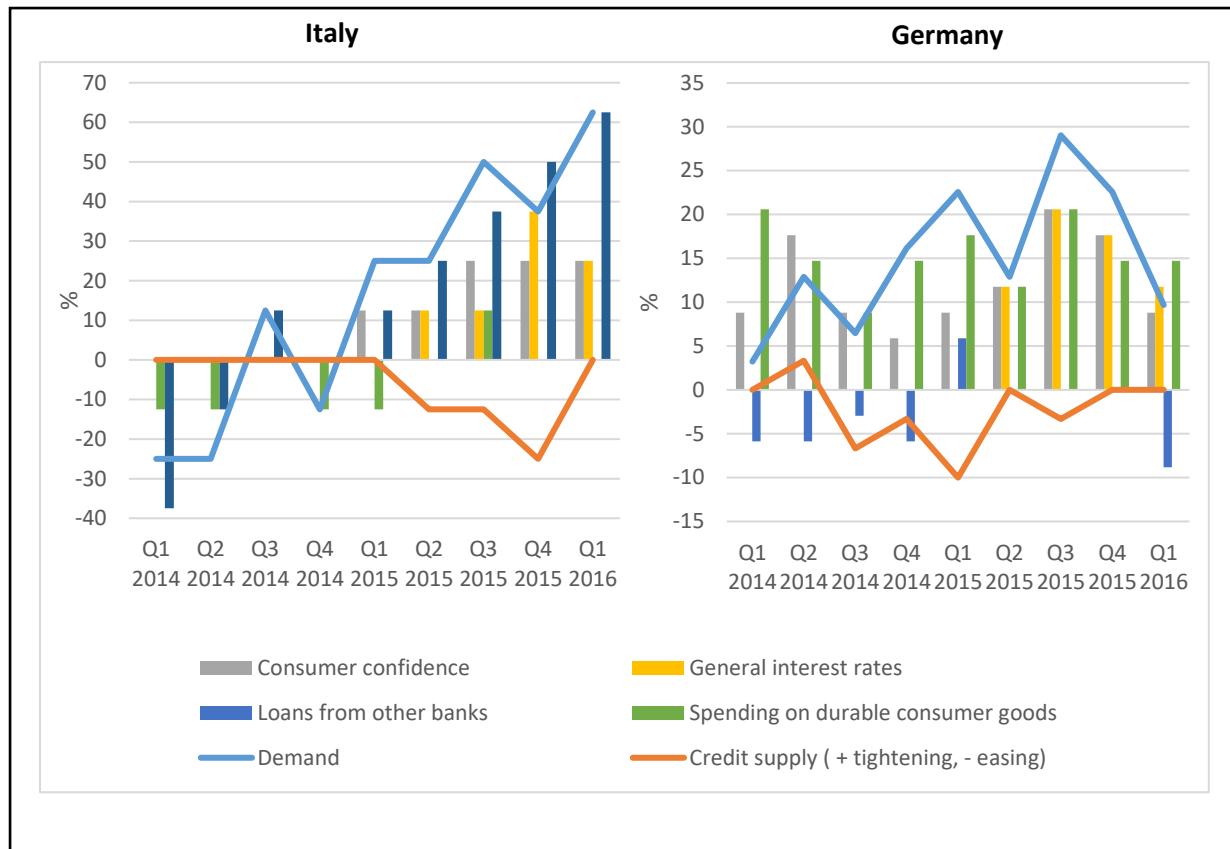
4.2 Loan demand by NFCs and households

Analysis of loan supply suggests that the TLTROs have improved conditions for borrowers, predominantly by improving the T&Cs applied to loans. We now assess whether sufficient loan demand by households and firms exists.

4.2.1 Households

The BLS indicates that demand for consumer credit in Italy has been strengthening but improvements in supply are weaker. As shown in Figure 13, demand has been positive and growing since Q1 2015, yet this has been met by a weak easing in credit standards. Given that demand has increased throughout the programme, it is unclear whether loan demand has increased due to improved conditions or whether banks have increased their supply in response to demand. The factors affecting demand for consumer credit suggest both an improvement in lending conditions and external factors are responsible as shown in Figure 13.

Figure 13: Demand and supply of consumer credit and factors contributing to demand

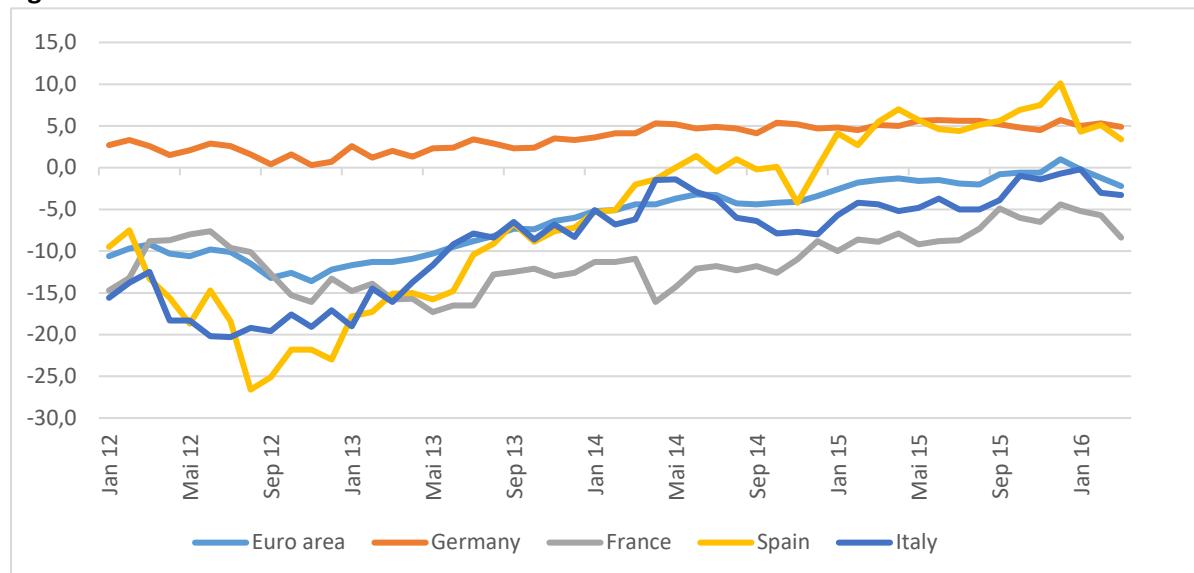


Source(s): ECB (2016)

In Italy consumer confidence and spending on consumer goods have positively impacted demand since the TLTROs began. Prior to this, their impact was negative. Questions on the general level of interest rates have only featured in the last four surveys but Italian banks have consistently reported this as a positive influence on consumer loan demand. These factors have had a sustained positive impact in Germany since 2011, although their impact is smaller relative to Italy. This suggests the TLTROs improved interest rates more significantly in Italy than Germany, consequently increasing consumer credit demand more.

Confidence indicators support the bank reports of increased loan demand due to growing consumer confidence. As shown by the FCI in Figure 14, though remaining negative in Italy, it has increased from -6.4% when the programme began to -3.3% in March 2016. This remains below the level of Germany which has been stable over the past 4 years but has improved from a trough of -20.3% in July 2012 (whilst Germany was strong at 2.6%).

Figure 14: FCI Index



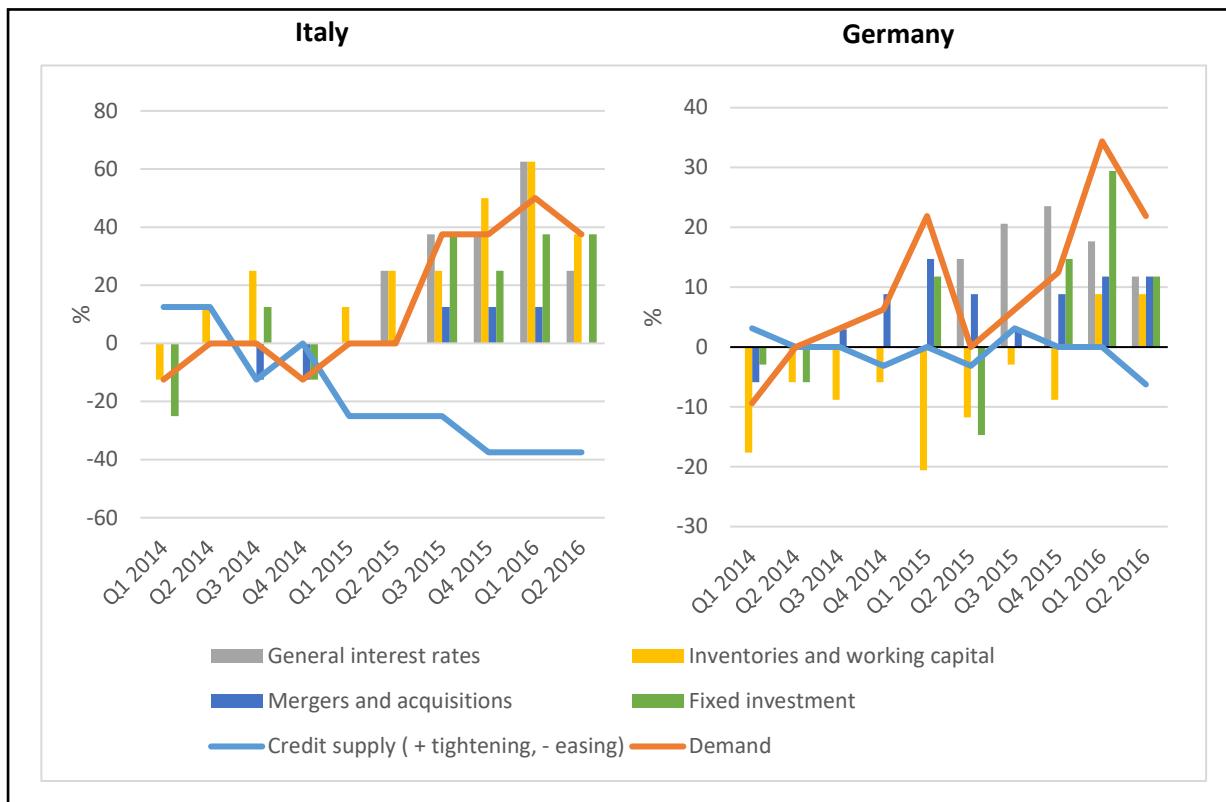
Source(s): European Commission (2016)

Given weaker improvements in loan supply compared to demand, we assume banks are responding to improvements in demand by consumers. This increase in demand was stimulated by the low-interest rate environment the TLTROs created and supported by the improvement in the economic outlook and consumer confidence. Overall loan supply by banks is weaker than it should be given that sufficient loan demand by households exists. As noted in our methodology, this weak supply may be due to under-reporting of improvements by banks in the BLS. However, when coupled with weak lending growth, we conclude that loan supply is low relative to demand.

4.2.2 NFCs

The BLS indicates that loan demand by Italian NFCs has been stable or positive since Q1 2015, following a sharp decline during the crisis. The crisis period highlights the divergence between Italy and Germany. Whilst Germany experienced a small contraction (-18.75%), demand fell substantially in Italy (-75%) and recovery took longer. As shown in Figure 15, demand has been stronger in Italy than Germany since Q1 2015. Factors contributing to this improvement show that the impact of the general level of interest rates has had a stronger effect in Italy than in Germany, demonstrating the effectiveness of the TLTROs. Furthermore, the impact of inventories and working capital and fixed investment has been positive, suggesting improving business prospects.

Figure 15: Demand and supply of loans to enterprises and factors contributing to demand



Source(s): ECB (2016)

The SAFE survey supports the effectiveness of the TLTROs in providing finance for firms. Italian SMEs reported that access to finance is now the least important problem relatively; the net percentage of businesses reporting access to finance as the most important problem has fallen from 20.2% in 2011 to 12.4% in 2015. However, the last two surveys highlighted “finding customers” as the most important problem in Italy; an increase from 15.0% at the beginning of 2014 to 23.7% in the first half of 2015. SMEs in Italy perceive access to finance as less important; 34.2% reported access to finance of “low importance” compared to 29.6% before the programme began, whilst 38.1% reported access to finance of “high importance”. This suggests concerns regarding finding customers hindered loan demand. Additionally, GDP growth and confidence indicator improvements may disguise the situation SMEs face, whilst larger firms operate in easier conditions.

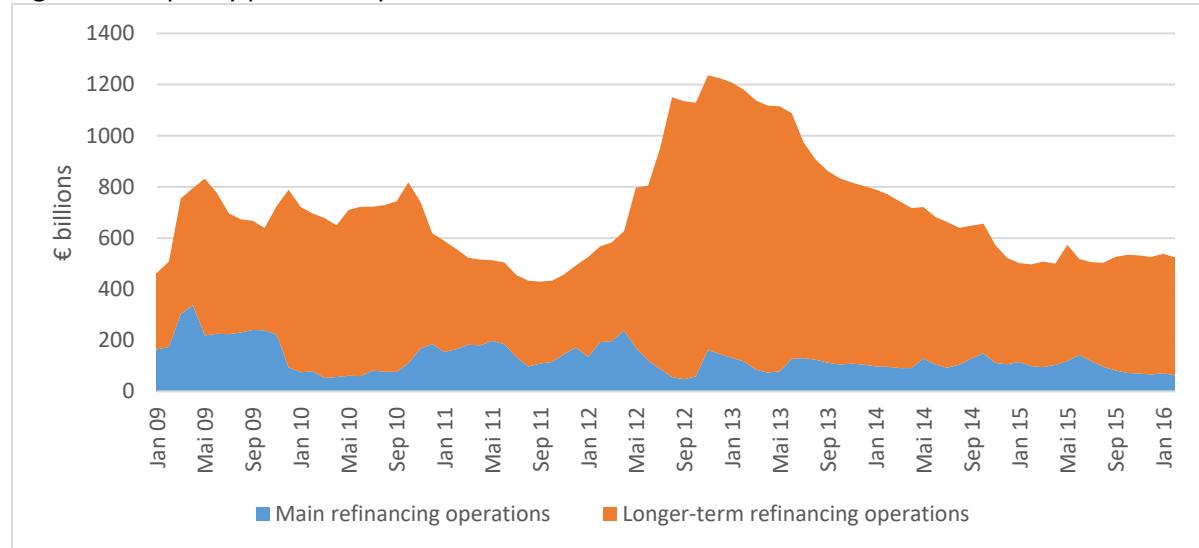
4.3 Assessment of the policy

Finally, we complete our analysis by examining whether the critiques previously identified have been detrimental to the programme’s success.

4.3.1 Liquidity

As discussed in Section 2.5, the programme was criticised for providing insufficient liquidity to banks. As shown in Figure 16, the programme has kept total liquidity allocated through refinancing operations above €500bn, but not increased the available liquidity. Evidence from the BLS suggests that this maintenance of liquidity has facilitated improving lending conditions by banks. Liquidity provision had contributed to a net tightening of conditions by Italian banks since the crisis, however, from the end of 2014 onwards it has been a source of net easing. Overall, this suggests that the TLTROs have prevented a decline in liquidity sufficient to ease credit conditions which has facilitated an improvement in lending in Italy. This finding dismisses claims² that the TLTROs would not provide enough liquidity.

Figure 16: Liquidity provided by the ECB

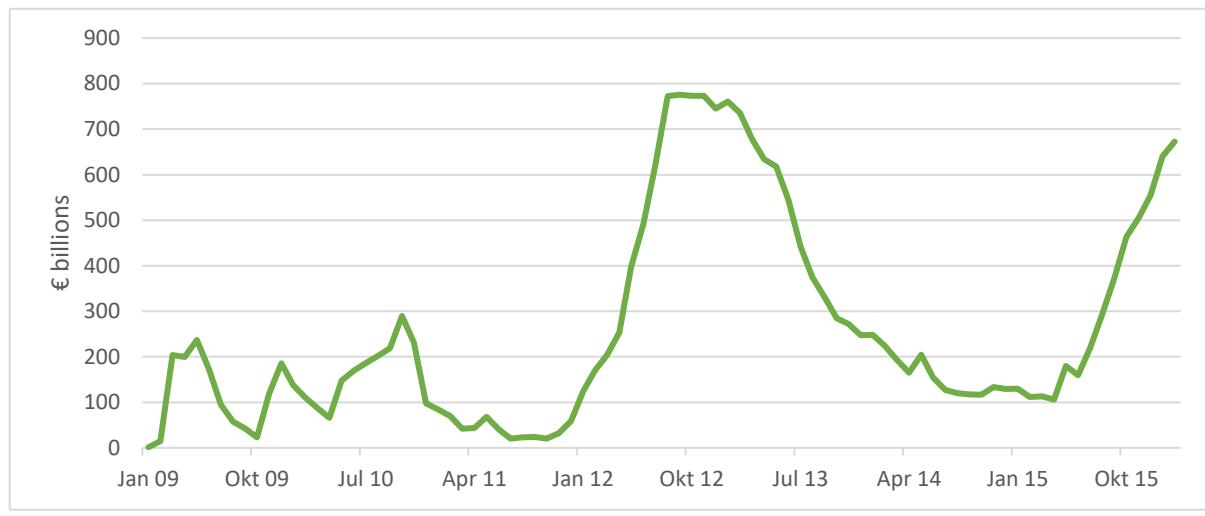


Source(s): ECB (2016)

Whilst the TLTROs have maintained liquidity of the ECB refinancing operations, excess liquidity has increased substantially since the programme began; from €117bn to €673bn in February 2016 as shown in Figure 17. This is partly due to the increase in deposits held at the deposit facility, despite an interest rate of -0.4%. This suggests banks would rather deposit additional funds at the ECB at a negative interest rate than lend or invest in riskier assets. This increase in excess liquidity also supports earlier findings regarding the decline in demand for TLTROs, and comments such as those made by Ghizzoni, CEO of UniCredit, who did not participate in TLTRO 5 because the liquidity position was “abundant” (Reuters, 2015).

² Merler (2014), Whelan (2014) and Kounis *et al.*, (2014)

Figure 17: Eurozone excess liquidity

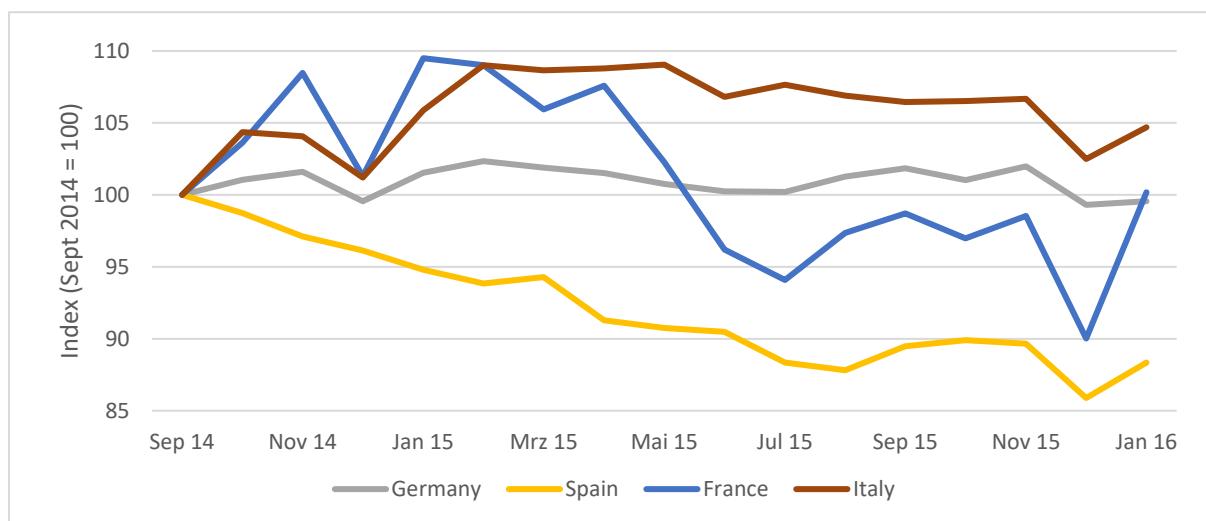


Source(s): ECB (2016)

4.3.2 Use of funds

Critics argued that nothing prevented banks from using funds to purchase corporate or sovereign bonds (Merler, 2014b). These concerns have not materialised, or at least not to an extent that the programme is ineffective. Figure 18 highlights that bank holdings of government debt have not changed uniformly. In Italy they have increased slightly (similarly to Germany), but not above trend level. Given these four countries account for 75% of the initial allotment available, it can be assumed that even if the smaller countries did increase their holdings it would only have a negligible impact.

Figure 18: Bank holdings of sovereign debt



Source(s): ECB (2016)

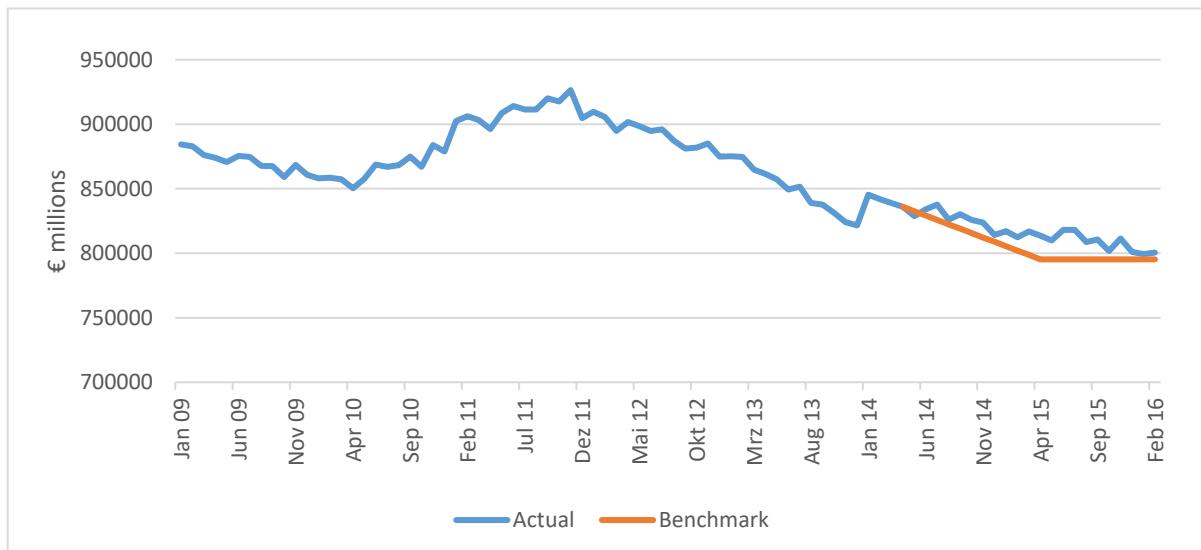
Evidence suggests that Italian MFIs have reduced their corporate bond holdings in line with Eurozone countries. In February 2016, the annual growth of Italian bank holdings of MFI issued-debt was -13.3%, up from -19.7% when the TLTROs began. Although the pace of decline has slowed, banks continue to

reduce their holdings of MFI debt; in January 2016 holding only 57% of outstanding debt securities of their peak in December 2012. The trend is similar for non-MFI issued debt, of which Italian MFIs hold 60% of the peak in February 2012. This trend is not shared in Germany and France, where holdings are growing, possibly due to healthier bank balance sheets. These findings provide no evidence to suggest that Italian banks have used TLTRO funds to purchase corporate debt. Reports from individual banks also indicate intentions to lend their funds, such as UBI Banca who reported that it had granted/approved €6.1bn of the €8.1bn TLTRO borrowed (UBI Banca, 2015). Overall, no evidence suggests that Italian banks have used funds to purchase corporate or sovereign bonds.

4.3.3 Repayment of funds

As discussed in Section 2.5, if banks fail to meet lending benchmarks, they must return the funds early. Consequently, the amounts allotted may exaggerate the programme's success. Figure 19 illustrates the stock outstanding compared to the benchmark, suggesting that Italian banks will not need to return their funds early. It does however highlight the pressure that the zero-net lending benchmark required on auctions from June 2015 placed on Italian banks, but that they met this requirement.

Figure 19: Italian outstanding stock of loans to NFCs



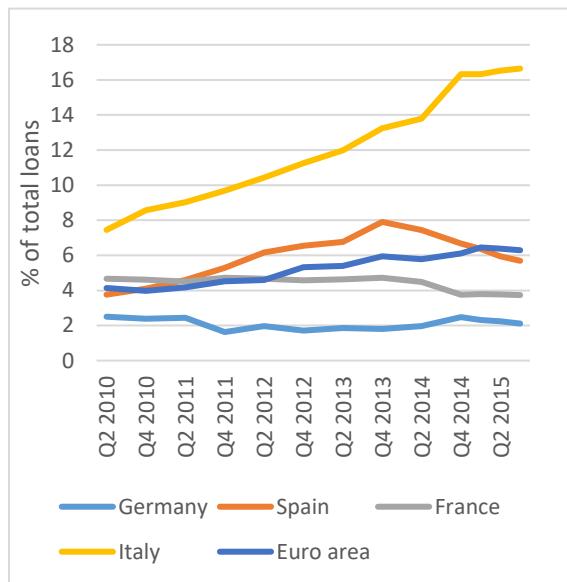
Source(s): ECB (2016)

However, the conditionality of this programme has been overridden by TLTRO 2. This second phase of the TLTROs places no conditionality on lending to the real economy and removes the benchmark pressure exhibited in Figure 19. Furthermore, the ECB introduced voluntary repayment for outstanding TLTROs in June 2016 (ECB, 2016), allowing them to be rolled over into the new scheme. This makes investigation into repayment futile, as banks who have not met their benchmarks will use the opportunity in June to return the funds and borrow again without this pre-requisite.

4.3.4 Deleveraging

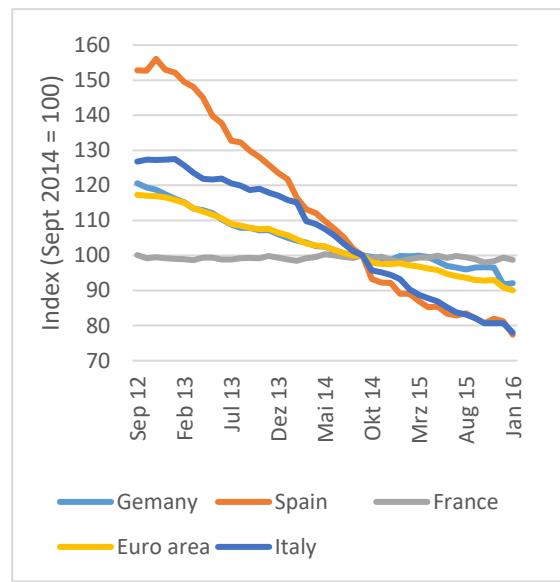
Previously we noted that deleveraging by households and NFCs was reducing loan demand. Banks in Italy have also been deleveraging to strengthen their balance sheets. As shown by Figure 20, the proportion of non-performing loans is growing in Italy (16.6% in Q3 2015, up from 13.7% in Q2 2014), unlike in other Eurozone countries where it remained relatively stable. It is important for the ratio of non-performing loans to fall, because an accumulation of bad loans make it difficult for banks to lend to NFCs and households (Merler, 2016a). This has placed Italian banks under additional strain to deleverage beyond their European counterparts.

Figure 20: Eurozone non-performing loans



Source(s): ECB (2016)

Figure 21: Debt issued by MFIs



Source(s): ECB (2016)

Figure 21 illustrates the faster pace of deleveraging by periphery MFIs relative to the core. In Italy, the pace of deleveraging has increased over the course of the programme relative to the 24 months before its announcement. Consequently, the programme's effectiveness may have been hindered by banks reluctance to undertake debt. We deduce that the programme has not discouraged banks from deleveraging and may have reduced their willingness to lend to NFCs and households. However, this deleveraging has not cancelled out the effect of the TLTROs as shown in Section 4.1.

5. Conclusion

Overall, the uptake of the TLTROs in the Eurozone has disappointed with demand below expectation and participation in decline. Despite being a “pretty successful experience” (ECB, 2016c), the improvements in growth of lending to NFCs and households have been modest across the Eurozone in aggregate.

Uptake by Italian banks accounted for 28% of the programme. Demand for the first three auctions was strong, but subsequently declined due to the abundance of liquidity in the system and tighter benchmarks applied on later auctions. The policy's main success has been reducing interest rates; the spread between German and Italian CB for NFCs has fallen from 100bps when the programme began to 18bps (ECB, 2016). These lower interest rates have translated into a slower decline in lending. Loan demand by households and NFCs has increased over the past year; contributing to the policy's success in Italy. If demand improves further, this should support the effectiveness of TLTRO 2, provided that banks maintain or increase loan supply. Concerns over the use of the funds are largely unfounded; evidence examined does not suggest that banks have used the funds to buy sovereign or corporate bonds. The programme has maintained liquidity from previous operations, but now operates in an environment where liquidity is not a concern for banks (ECB, 2016). Deleveraging remains important in periphery economies but has not rendered the programme ineffective.

The implications of these findings for TLTRO 2 are mixed. The zero or negative interest rates applied on the new TLTROs have been described as a “free lunch” by market commentators (Colussa and Wolburg, 2016), but will place downward pressure on lending rates to NFCs and households. This will benefit the real economy and provide continuity. We expect continuing convergence in lending rates between the periphery and core, however the margin between large firms and SMEs may persist. The concern with the new programme is the removal of early repayment for insufficient lending. The ECB is potentially weakening the relationship between liquidity provided by the operations and lending to the real economy; which was central to the original TLTRO strategy (Merler, 2016). By removing this, banks are under no pressure to lend to the real economy. Furthermore, the benchmark for banks with negative net lending means the negative interest rates are easily obtained (Merler, 2016). This will provide banks with more cheap liquidity, but no pressure to lend to NFCs and households. It may also limit the effectiveness of the current programme because banks that needed to lend more to prevent early repayment have no incentive to.

Overall, this paper investigated the impact of the TLTROs in Italy. The programme has reduced the cost of borrowing for firms and households, particularly on longer-term loans. It has slowed the pace of decline of lending, but improvements need to be made before lending returns to pre-crisis levels.

Analysis from the perspective of households and firms supports our findings on loan supply, and also shows there is strengthening loan demand by firms and households. Looking forward, removal of penalty for missing benchmarks may weaken the link to the real economy, reducing the TLTROs effectiveness.

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Appendix

Appendix A: BLS questions

1. Over the past three months, how have your bank's credit standards as applied to the approval of loans or credit lines to enterprises changed? Please note that we are asking about the change in credit standards, rather than about their level.

2. Over the past three months, how have the following factors affected your bank's credit standards as applied to the approval of loans or credit lines to enterprises (as defined in the notes to question 1)?

3. Over the past three months, how have your bank's terms and conditions for new loans or credit lines to enterprises changed?

4. Over the past three months, how have the following factors affected your bank's credit terms and conditions as applied to new loans or credit lines to enterprises (as defined in the notes to question 3)?

6. Over the past three months (apart from normal seasonal fluctuations), how has the demand for loans or credit lines to enterprises changed at your bank?

7. Over the past three months, how have the following factors affected the overall demand for loans or credit lines to enterprises (as defined in the notes to question 6)?

10. Over the past three months, how have your bank's credit standards as applied to the approval of loans to households changed?

18. Over the past three months (apart from normal seasonal fluctuations), how has the demand for loans to households changed at your bank?

Appendix B: SAFE survey questions

Q0b. How important have the following problems been for your enterprise in the past six months?

Please answer on a scale of 1-10, where 1 means it is not at all important and 10 means it is extremely important.

Q4. Are the following sources of financing relevant to your enterprise, that is, have you used them in the past or considered using them in the future?

- c) Credit line, bank overdraft or credit cards overdraft
- b) Grants or subsidised bank loans
- d) Bank loan (excluding subsidised bank loans, overdrafts and credit lines)
- h) Debt securities issued

Q32. You mentioned that bank loans are not relevant for your enterprise. What is the main reason for this?

Q5. For each of the following types of external financing, please indicate if your needs increased, remained unchanged or decreased over the past six months

- a) Bank loans (excluding overdraft and credit lines).

Q8B. What interest rate was charged for the credit line or bank overdraft for which you applied?

Q11. For each of the following factors, would you say that they have improved, remained unchanged or deteriorated over the past six months?

- a) General economic outlook, insofar as it affects the availability of external financing
- b) Access to public financial support, including guarantees
- c) Your enterprise-specific outlook with respect to your sales and profitability or business plan
- d) Your enterprise's own capital
- e) Your enterprise's credit history
- f) Willingness of banks to provide credit to your enterprise
- g) Willingness of business partners to provide trade credit
- h) Willingness of investors to invest in your enterprise

Q9. For each of the following types of financing, would you say that their availability has improved, remained unchanged or deteriorated for your enterprise over the past six months?

a) Bank loans (excluding overdraft and credit lines)

Q10. We will turn now to the terms and conditions of bank financing, such as bank loans, overdrafts and credit lines. Please indicate whether the following items increased, remained unchanged or decreased in the past six months.

a) Level of interest rates

Appendix C: Variables used in the paper

Variable	Definition	Data source
GDP growth	Real gross domestic product growth measured as a quarter-on-quarter percentage.	Eurostat
Financial conditions index (FCI)	Net percentage of responses reporting the situation “got better” to the question: how has the financial situation of your household changed over the last 12 months? Asked on a monthly basis.	European Commission
Non-performing loans	Non-performing loans as a percentage of total loans.	ECB
Excess liquidity	Excess liquidity is defined as deposits at the deposit facility net of the recourse to the marginal lending facility, plus current account holdings in excess of those contributing to the minimum reserve requirement.	ECB
Purchasing managers index (PMI)	A business confidence indicator measured on a monthly basis.	Markit
Industrial production	Industrial production is the change in the value of production sold in the mining, quarrying and manufacturing sectors, measured on a monthly basis.	Eurostat
Key ECB interest rates	ECB has 3 main interest rates: Deposit facility - used by banks to make overnight deposits	ECB

	Main refinancing operations - provides the majority of liquidity to the banking system Marginal lending facility - offers overnight credit to banks from the eurosystem	
Basis points (bps)	One hundredth of one percentage point	NA
Bloomberg consensus	Survey of banks and market participants on specific questions. The result obtained is the median of respondents' answers. No survey was held for March 2016.	Bloomberg
TLTRO bidders	The number of monetary financial institutions bidding for funding.	ECB
BLS response: Banks planning to participate in TLTROs	Net percentage of banks reporting they planned to (did not plan to) participate in future TLTRO auctions.	ECB BLS
Bank total assets	Total assets owned as stated on the balance sheet of banks measured in € millions.	SNL Financial
Gross Impaired loans	Impaired customer loans before the reserve for losses as a percentage of loans to customers held at amortised cost before the reserve for loan losses.	SNL Financial
Tier 1 Common capital ratio	A measurement of a banks core equity capital compared with its total risk weighted assets.	European Banking Authority (EBA)
Tier 1 Common capital ratio adverse scenario	A measurement of a banks core equity capital compared with its total risk weighted assets when facing an “adverse scenario” to help assess the resilience of banks. The pass mark is set at 5.5%.	EBA
Cost of borrowing (CB): Lending for house purchase	Composite indicator based on bank interest rate statistics for lending for house purchase, measured on a monthly basis.	ECB
Cost of borrowing (CB): lending to NFCs	Composite indicator based on bank interest rate statistics for lending for NFCs, measured on a monthly basis.	ECB

BLS: Terms and conditions	The net percentage of banks answering that their conditions have “tightened considerably” when asked “over the past three months, how have your bank’s conditions and terms for approving loans or credit lines to enterprises changed?”	ECB BLS
Growth of loans	The annual growth in lending measured on a monthly basis.	ECB
SAFE response: change in interest rates	Net percentage of firms answering that the level of interest rates has increased over the previous 6 months.	ECB SAFE
Total amount of loans outstanding	Value of total amount of loans outstanding measured in € millions, updated on a monthly basis.	ECB
SAFE response: the availability of loans	The net percentage of firms reporting that the availability of bank loans (excluding overdraft and credit lines) has improved over the past six months.	ECB SAFE
SAFE response: Improvement in general economic outlook or willingness of banks to lend	The net percentage of firms reporting that the variable has improved over the previous 6 months	ECB SAFE
BLS: Supply of loans	The net percentage of banks reporting a tightening in credit standards over the past 3 months. A negative figure indicates credit easing and a positive number indicates credit tightening.	ECB BLS
BLS: Factors affecting supply	The net percentage of banks reporting a factor has contributed to a tightening in credit standards over the past 3 months. A negative figure indicates factors contributed to credit easing and a positive number indicates credit tightening.	ECB BLS
BLS: Demand for loans	The net percentage of banks reporting an increase in the demand for loans by enterprises and consumers over the past 3 months.	ECB BLS

BLS: Factors affecting demand	The net percentage of banks reporting a factor increasing the demand for loans by enterprises and consumers over the past 3 months.	ECB BLS
Access to finance, finding customers, importance of problems SAFE	Net percentage of firms ranking between 1-10 of how important factors including access to finance and finding customers has been to the firm over the past 6 months.	ECB SAFE
ECB regular open market operations (liquidity providing)	ECB regular open market operations consists of their longer-term refinancing operations and their main refinancing operations.	ECB
Bank holdings of sovereign debt	Holdings of debt issued by Eurozone general government measured in € millions, updated on a monthly basis.	ECB
MFI-issued debt index (September 2014 = 100)	Debt securities (combining shares and securities) issued by MFIs converted into an index where September 2014 = 100.	ECB
NPL as % of total loans	Non-performing loans as a proportion of gross total loans.	Eurostat
Loan length (short-term, medium-term and longer-term)	Short-term refers to loans with a maturity of up to one year, medium-term refers to loans with a maturity between 1 and 5 years and long-term refers to loans with a maturity greater than 5 years.	ECB