Credit crunch in Hungary between 2009 and 2013: is the creditless period over?*

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This article provides a review of the Hungarian credit crunch between 2009 and 2013, including its causes and its nature, with particular regard to a factor playing a crucial role in growth: SME-lending. It is argued that, although the indebtedness of the corporate sector was much less excessive and unhealthy in structure than that of the household and the public sectors, the disruptions of the financial intermediary system resulted, to a large degree, in the decline in corporate lending. The article then goes on to present the Funding for Growth Scheme (FGS) and the economic logic behind its operating mechanism. Finally, it assesses the impact of the first phase of the programme on lending and economic growth, and it concludes that the FGS helped the Hungarian economy extricate itself from the downward spiral of the credit crunch.

1 Introduction

The countries most severely hit by the outbreak of the global financial crisis in 2007–2008 were those where financial imbalances and vulnerabilities had built up during the years preceding the crisis. Lessons from past crises demonstrate that the deleveraging of individual sectors (public, private, and corporate) may be an especially lengthy and even self-reinforcing process in an excessively indebted economy with an unhealthy debt structure: in response to the deterioration of growth prospects, market participants restrain their spending to reduce the indebtedness they deem sustainable, and this, in turn, decreases output even further. The adverse feedback loop may be fuelled by the

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behaviour of the banking sector as well: the deterioration of profitability caused by credit losses, the rising costs of external funds and exchange rate depreciation give rise to capital adequacy and liquidity problems, which, coupled with the increased risks arising from poor growth prospects, curtail credit supply and, in extreme cases, lead to the collapse of lending (i.e. a credit crunch).

During the years of the crisis, the vulnerability of Hungary resulted from its high external debt and the high ratio of short-term and foreign currency financing. The real economy and the financial system were both shaken by the depletion and rising costs of external funds, the depreciation of the exchange rate and the downturn in external demand. Although financial markets stabilised relatively quickly and liquidity strains eased, bank lending continued to contract and impeded corporate sector activity even as late as mid-2013.

The Funding for Growth Scheme (FGS) launched by the MNB in 2013 is an endeavour that can be considered unique, both in terms of its purpose and its size. Under the first phase of the programme, which was expressly intended to address the problems of corporate lending in general and lending to SMEs in particular, small- and medium-sized enterprises borrowed funds in the range of more than 2 per cent of annual GDP. To a great extent, it is due to the lending scheme that, after years of decline, the contraction in corporate lending has practically come to an end.

This study gives an account of the Hungarian credit crunch between 2009 and 2013 , including its causes and its nature, with special attention to a factor that plays a crucial role in growth: SME-lending. It can be argued that, although the indebtedness of the corporate sector was much less excessive and unhealthy in structure than that of the household and the public sectors, the disruptions of the financial intermediary system resulted, to a large degree, in the downturn in corporate lending. Next, the study presents the Funding for Growth Scheme and the economic logic behind its operating mechanism. Finally, it assesses the impact of the first phase of the programme on lending trends and economic growth, and it concludes that the FGS helped the Hungarian economy extricate itself from the downward spiral of the credit crunch.

The study is structured as follows: the next section describes the phenomenon of the credit crunch and provides an overview of the relevant literature. The third section presents Hungarian lending trends between 2009 and 2013. The fourth section elaborates on the Funding for Growth Scheme and its direct impact on corporate lending. The fifth section attempts to outline the changing trends in corporate lending and the effects they exert on economic growth. This is finally followed by conclusions.

2 The credit crunch phenomenon

The term "credit crunch" is widely used to denote a drastic meltdown or collapse of lending. Although its concept is easy to interpret intuitively, there is no consensus on a formal definition in the literature.[1] The only point of agreement is that the concept fundamentally attributes the credit squeeze to a disturbance emerging – due to endogenous or exogenous reasons – on the supply side.

It is important to distinguish between credit rationing and a credit crunch. The former refers to a situation[2] where, due to high interest rate levels, only riskier potential debtors can benefit from getting indebted, or debtors are forced to embark on projects that promise higher yields but are less likely to be successful. As a result, banks do not extend the amount of credit that would satisfy market demand. By contrast, a credit crunch denotes a steep fall in credit supply that is not necessarily induced by rising interest rates. That said, the two terms partly overlap with each other in that the meltdown of credit supply is usually accompanied by credit rationing.

Bernanke and Lown (1991) define a bank credit crunch as a significant leftward shift in the supply curve with the risk-free interest rate and the credit risk being constant,[3] which is manifested in the fact that the same customer either gets a smaller amount of credit with a higher premium or none at all. The authors identified the severe lending slowdown observed in the early 1990s in the USA as a credit crunch in view of the fact that credit growth was significantly higher in the previous five recessions. In their interpretation, the phenomenon does not necessarily imply a decline in loans outstanding; indeed, a more sluggish credit expansion is a sufficient condition in itself. The study attributes the emergence of a credit crunch to the supply shock resulting from a change in the banks' capital position.

In addition, the term is used differently in the literature, depending on whether it is perceived to be an isolated and rare phenomenon or a natural feature of business cycles. Wojnilower (1980) found that business cycles in general and recessions in particular are driven by credit crunch episodes, and not only banks, but also regulatory authorities play a role in the emergence of such episodes.

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1 Among others, see Bernanke and Lown (1991), Clair and Tucker (1993), Wojnilower (1980), Hancock and Wilcox (1998), Iyer et al. (2010), Albertazzi and Marchetti (2010), Campello et al. (2009), and Tong and Wei (2009).

2 See Jaffee and Russell (1976), Baltensperger (1978), Stiglitz and Weiss (1981), and Bester (1985).

3 Bernanke and Lown (1991), p. 207: "a significant leftward shift in the supply curve for bank loans, holding constant both the safe real interest rate and the quality of potential borrower".

2.1 Real economy effects

Shrinking credit supply ultimately leads to a decline in investment and output and rising unemployment. Besides definition problems, quantification of the macroeconomic effect is thwarted by the fact that the credit crunch seldom occurs as an isolated phenomenon; typically, numerous effects materialise simultaneously.

Buera et al. (2014) developed a calibrated model to estimate the impact of the 2007–2008 crisis on the economy of the United States, with special regard to the labour market. In their study, they examined a shock resulting from the tightening of collateral constraints, which generated, in line with the observations, a 6–8 per cent drop in the ratio of external finance to capital stock. As a result, GDP fell by nearly 5 per cent, while unemployment rose by 3 percentage points. They found that the effects were substantially stronger in an environment of wage rigidities.

Gerali et al. (2010) estimated a model for the euro area with Bayesian techniques in order to study the significance of the credit crunch experienced during the recent crisis. The results of their historical decomposition suggested that the main culprit behind the fall in GDP observed during the crisis was the financial system, while macroeconomic shocks played a much smaller role.

Similarly, Brzoza-Brzezina and Makarski (2011) estimated the macroeconomic implications of the recent global crisis in the Polish economy. According to the simulation performed by the authors on a model developed for a small, open economy, the crisis lowered GDP by 1.5 per cent through the Polish banking sector (i.e. the impact was smaller in magnitude than that presented in the previous study). The authors explained this by pointing out that the banking sector plays a less important role in the Polish economy; moreover, it was shaken by the crisis to a lesser degree than its peers in the euro area.

Besides general equilibrium models, structural vector-autoregression (VAR) models can be also used to gauge the impact of the credit crunch on the real economy. Tamási and Világi (2011) estimated the growth effect of credit supply on Hungary by using a sign restriction approach. They found that a 10 per cent drop in credit supply (as measured by the volume of corporate loans) reduces output by nearly 2 per cent. In line with the labour intensity of Hungarian GDP,[4] this translates into a 0.3–0.4 per cent decline in employment. Using a comparable methodology, Franta et al. (2011) arrived at a similar conclusion in respect of credit supply shocks and GDP in the Czech Republic.

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4 According to the expert estimates of the MNB, a 1 per cent rise in GDP increases employment by 0.15–0.2 per cent on average.

The experience of the phenomenon known as creditless recovery[5] is somewhat related to the real economy effect of the credit crunch. Recoveries from economic recessions are "creditless" when GDP growth takes place without the revival of credit growth. There is consensus in the literature that these recoveries are slower than those accompanied by an upturn in lending. Darvas (2013) found that median real GDP growth – the average of three years after the trough – was 4.5 per cent during creditless recoveries, compared to 6 per cent in the case of "with-credit recoveries". When compared to the growth rate of trading partners, the difference in speed between the two recovery types is 1.1 percentage points, which, although somewhat smaller, is still significant.

3 Credit crunch in Hungary between 2009 and 2013

The Hungarian financial system is dominated by banks' (or, more precisely, MFIs) intermediation, with capital markets playing a secondary role in corporate finance. While larger corporations have access to foreign bank loans or inter-company loans, smaller, Hungarian-owned companies rely on domestic bank loans. Therefore, the lending activity of the banking system is a crucial factor in economic growth.

Before the crisis, the outstanding borrowing of the private sector grew dynamically – even as a percentage of GDP; however, this was a typical trend in Europe at the time (Fábián and Vonnák 2014). In Hungary, loans to households accounted for the largest portion of the increment; this growth, however, had an unfavourable composition as it was generated driven by a surge in foreign currency and foreign currency-based loans. Corporate lending did not see such accelerated growth, although there was a clear shift towards project financing (which subsequently demonstrated a high default ratio) and foreign currency lending to smaller companies with no natural hedge. Nevertheless, while households were overly indebted by 2008, this applied to corporations to a lesser degree, as the GDP-proportionate loan portfolio was not excessively high by international standards before the crisis (Chart 1).

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5   The phenomenon and the related literature are discussed in Darvas (2013).

Chart 1
Corporate sector bank credit stock as a percentage of GDP

Note: Club Med countries: Spain, Portugal, Greece, Italy
Source: ECB, Eurostat
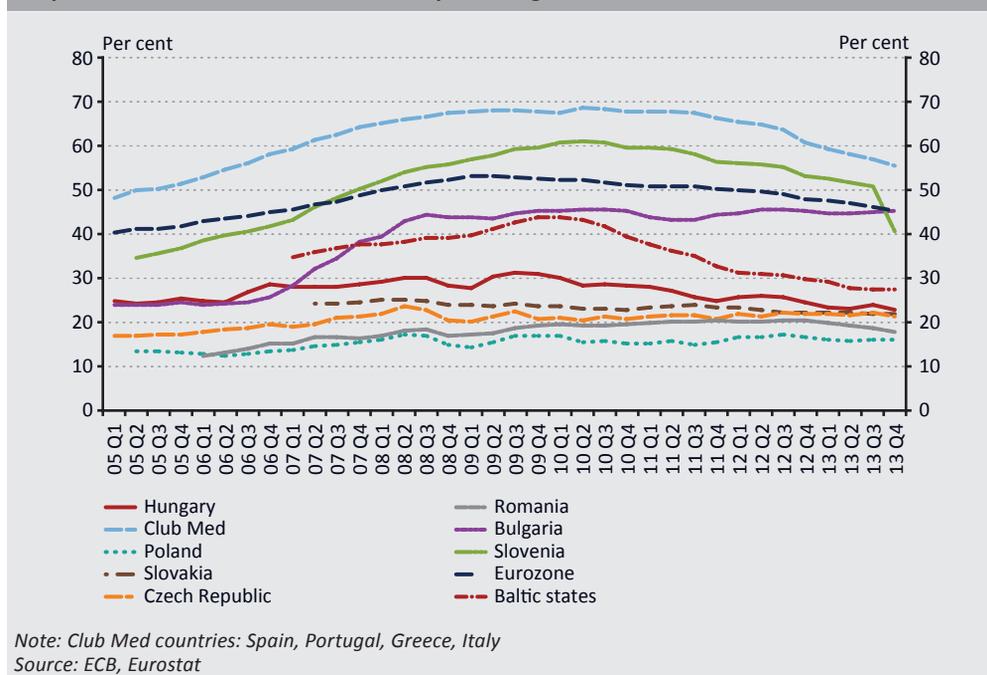
During the years of the crisis, household and corporate borrowing alike was consistently restrained. The downturn began on a transaction basis as early as 2009; however, the portfolio did not initially reflect this, due to the revaluation of foreign currency loans. Indeed, the decline manifested itself only from 2011.

The slump was similar in magnitude to that seen in other countries hit by the financial crisis earlier, especially those that had faced the crisis with high public debt and/or currency mismatch. However, historic data suggest that the contraction in lending was, in most cases, over in the fifth year following the crisis; the outstanding borrowing of the Hungarian private sector continued to decline as late as 2013 (Chart 2).

In the case of households, demand may have also fallen markedly in view of the fact that the already high debt-to-income ratio was further increased by the drastic depreciation of the forint against the Swiss franc and the decline in disposable income, forcing the sector to carry out balance sheet adjustments. In addition, intensifying precautionary motives may have also contributed to the contraction of credit demand.

At the same time, besides demand factors, supply had also become a bottleneck in the corporate sector, partly due to the ability of the banking sector to adjust faster in corporate loans with a shorter average maturity. According to the estimate of Sóvágó (2011), supply factors accounted for at least a half of the drop in the corporate credit portfolio. Based

Chart 2
Changes in GDP-proportionate private-sector debt during financial crises
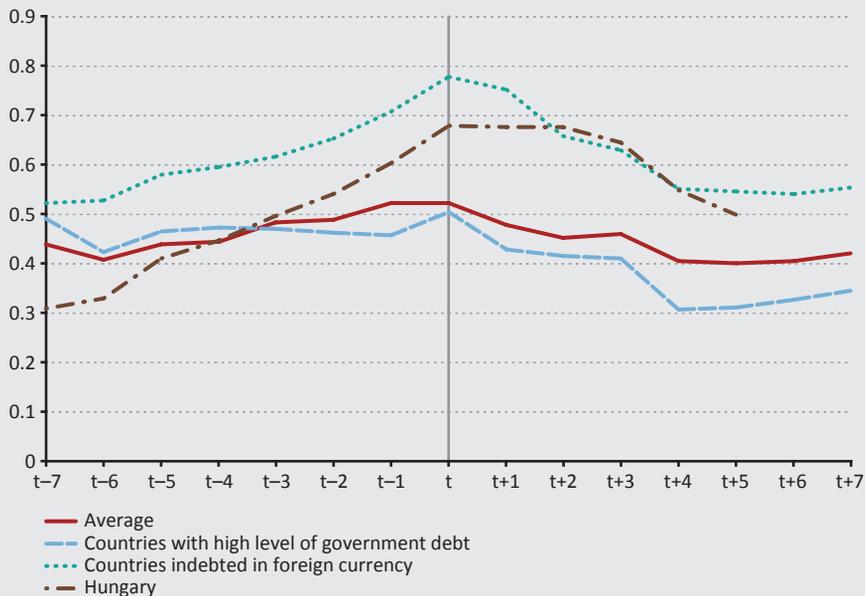
Source: IMF IFS, authors' own calculations based on the methodology of Laeven and Valencia (2008), and Felcser and Körmendi (2010)

Chart 3
Annual growth of corporate loans outstanding
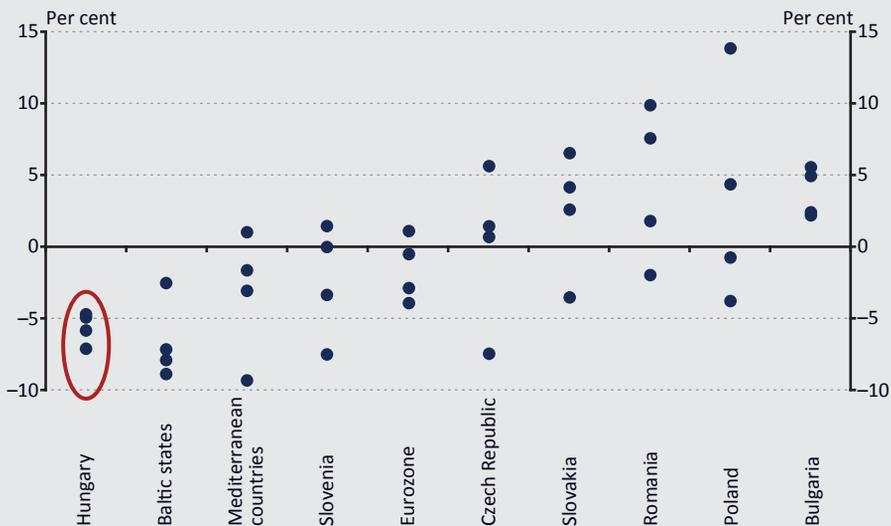
Source: National central banks

on the Financial Conditions Index of the MNB, the banking sector decelerated economic growth by 1 per cent annually on average (MNB 2014), resulting in the loss of around 20–25 thousand jobs in the private sector. Only the Baltic States saw a comparable rate and steady decline in loans outstanding in Hungary's wider region (Chart 3).

According to the univariate trend filters,[6] as a result of the continuous contraction of the portfolio, the cyclical position of corporate lending resided persistently in the negative range in 2010–2011, which suggests that the loan portfolio fell short of its "equilibrium" or "normal" level. By the end of 2013, the credit gap (i.e. the deviation of the credit-to-GDP ratio from the trend) ranged between -5 and -10 percentage points. A similar process was taking place in the euro area and in Mediterranean countries; however, as mentioned before, contraction in those regions was not even and started in earnest only after the sovereign crisis (Chart 4).

Chart 4
Corporate credit gaps

Note: cyclical components derived from exchange rate adjusted stock data by using the Hodrick-Prescott filter.
V4: the group of the Visegrád countries, excluding Hungary (Czech Republic, Poland and Slovakia).
Source: ECB, authors' calculation based on Eurostat

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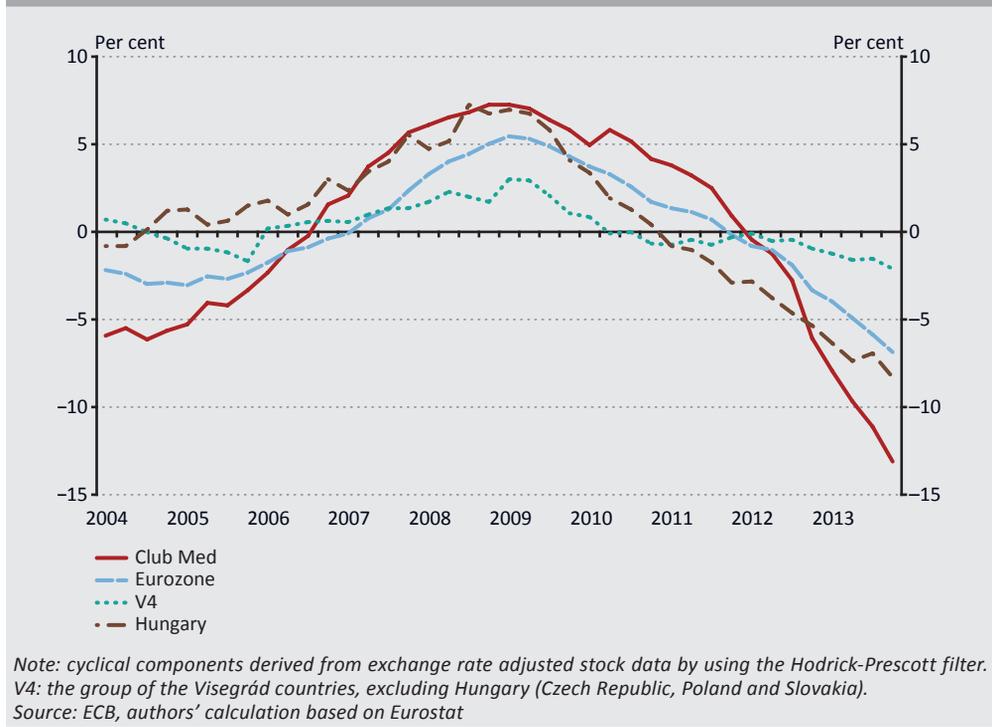
6   This document presents the Hodrick-Prescott filter only, but both the one-sided Christiano-Fitzgerald filter and the so-called band-pass filter reveal a similar result in quantitative terms. The results are available upon request. In evaluating the estimates, it should be taken into account that although statistical trend filtering methods are widely used due to their easy applicability, the exclusion of fundamental factors may be misleading in certain cases.

Based on the relevant literature, a credit crunch occurs when there is a severe contraction in lending due to factors that undermine banks' lending capacity (viz. capital adequacy, liquidity) and, consequently, they curtail their credit supply drastically. The credit crunch hitting Hungary after 2008 has two specificities that should be described in more detail.

As opposed to numerous episodes analysed in the credit crunch literature, the recession in Hungary lasted for years. However, as shown above, this protracted credit contraction is typical at a time of financial crisis, especially in excessively indebted countries with large open foreign currency positions.

The other specificity that distinguishes the developments in Hungary from "classical" credit crunch situations is the fact that – apart from a few short periods – the banks' lending capacity (e.g. capital adequacy, liquidity) appeared to be adequate. This, however, was only an appearance, simply reflecting the continuous capital injections that foreign-owned banks dominating the banking sector received from their parent institutions for covering current and expected losses. Parent banks limited their withdrawal of funds to such a degree that it did not cause severe liquidity constraints in their subsidiaries, which were operating mostly with high loan-to-deposit ratios. Consequently, to all appearances, capital and liquidity were available for banks to extend credit; this, however, did not improve their willingness to lend, although it did reinforce the stability of the banking system.

In point of fact, this situation is comparable to a credit crunch situation emerging in a capital- and/or liquidity-deprived environment. Indeed, parent banks were forced to provide capital injections in order to absorb the losses and not in order to increase the lending activity of their subsidiaries. In all probability, domestic banks would not have been able to receive funding from the market, as most of them were producing losses. As another important element of balance sheet adjustment, they restrained new lending and attempted by restructuring to mitigate and conceal the risks of outstanding loans that financed non-viable projects. This may have weakened the credit channel of monetary transmission significantly. It can be stated overall that Hungary experienced a protracted credit crunch between 2009 and 2013, and even though the banking sector was solvent and liquid during this period, their deleveraging efforts were carried out through the continuous downsizing of their corporate and household portfolios.

3.1 Credit crunch and enterprise size

The tightening of credit constraints affects individual corporations differently. In times of a crisis or an economic slowdown, investors and banks are often prone to a "flight to quality", when creditors attempt to find debtors with the highest credit rating and avoid even the smallest measure of risk-taking. In corporate lending, this means that banks shift lending to more stable, easy-to-monitor companies in order to achieve economies of scale, while

smaller – and thus riskier – firms have no access to loans or face higher premia. Given that small- and medium-sized enterprises in Hungary are more dependent on bank lending, this phenomenon often renders their operation impossible.

With the gaining ground of micro-databases and surveys, numerous studies have been dedicated to the dispersion of credit constraints among countries and corporations. Access to (bank) financing is defined, in most cases, by perceptions; in other words, the dependent variable is the credit constraint perceived by the company. The most frequent explanatory variables include the age, size, indebtedness, profitability and ownership structure of the firm.

Beck et al. (2006) relied on the World Bank's World Business Environment Survey, which was conducted between 1999 and 2000 and includes responses from companies in 80 countries. They found that older, larger (in terms of revenues) and foreign-owned firms reported fewer financing obstacles. It was a particularly interesting result of their study that the effect of age tended to be significant in developed countries, while firm size proved to be significant in less-developed countries.

Ferrando and Griesshaber (2011) utilised data obtained from the 2009 ECB-European Commission "SAFE" Survey on the access to finance by small- and medium-sized euro area enterprises. While the authors' findings regarding the significance of ownership structure and age were consistent with the previous study, they did not find the effects of firm size and sectoral classification to be robustly significant.

Holton et al. (2012) also relied on the SAFE database in an attempt to explain not only perceived credit constraints, but also the rejection of loan applications on the basis of corporate and country characteristics. While the age and size of firms significantly correlated with the rejection of loan applications, this was not true for perceived credit constraints. Of all corporate characteristics, this latter was found to be significantly related to ownership structure, as well as a firm's current and expected profitability.

In order to gain better insight into domestic credit constraints, an estimate was performed for this study that resembles those referred to above. It was done by using data from the MNB's corporate lending survey made in 2014.[7] As the role of the Funding for Growth Scheme in putting an end to the credit crunch is elaborated on in the next section, the analysis here focuses on the role of firm size and indebtedness.

The dependent variable used was the companies' response to the following question: "to what extent does access to finance hamper the business activity of your firm"? Respondents had to assess their answers on a scale of 1 to 10, where 10 meant the most serious problem. The source of the explanatory variables was the same survey. The regressions used the following variables: logarithm of years elapsed since the foundation, a logarithm of the number of employees, revenue (classified into 33 categories),

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7 For details of the survey, see the June 2014 issue of the MNB's publication entitled Trends in Lending.

indebtedness, as well as regional[8] and sectoral[9] dummy variables, and dummies indicating the presence of revenue from exports and majority foreign ownership. Due to the nature of the dependent variable, the estimate was prepared by using an ordered probit model.

Table 1		
Main statistics of the regressions explaining financial constraints		
Dependent variable: Financing constraints perceived		
	(1)	(2)
Turnover category	-0.0274 ***	
	-3.195	
Logarithm of number of employees		−0.0901 ***
		−3.250
Logarithm of age	-0.0899	−0.0724
	-1.425	−1.268
Indebtedness	0.3200 ***	0.3163 ***
	6.225	6.448
Export	0.0707	0.0635
	0.512	0.510
Foreign ownership	-0.5637 ***	−0.4700 ***
	-3.442	−3.269
East Hungary	0.0247	−0.0373
	0.218	−0.360
West Hungary	0.0400	0.0444
	0.345	0.435
Manufacturing	0.3030	0.2787
	1.217	1.176
Construction	0.2375	0.3315
	0.785	1.219
Trade and repair	0.1703	0.1565
	0.668	0.652
Other services	0.0873	0.1032
	0.358	0.447
Other activities	0.7900 **	0.6948 **
	2.093	2.084
pseudo R^2	0.0341	0.0266
Number of observations	555	664
Source: Own calculations		

8   Three regions can be distinguished: Eastern Hungary, Western Hungary and Central Hungary. The latter was applied as a benchmark category.

9   Agriculture (benchmark category), manufacturing, construction, trade and repair, other services, other.

There were two strongly correlating variables that captured firm size: employee number and revenue. If they were used together in a regression, due to multicollinearity, both variables became insignificant; separately, however, they had a high explanatory power, especially the revenue variable. Therefore, the results of two different specifications are presented in Table 1.

In addition to size, the indebtedness and foreign ownership variables were found to be significant even at 1 per cent. Signs were intuitive and identical with the referenced estimates in all cases. Of the regional and sectoral dummies, only the "other activity" proved to be significant; however, since very few companies fell into this category (a mere 23 out of 750), less relevance was attached to it.[10]

The findings suggest that smaller, Hungarian-owned and indebted companies face the tightest financing constraints, which reconfirms that alleviating the credit crunch problem in the SME sector and the burdens of indebtedness may help improve the creditworthiness of the sector.

4 Defeating the credit crunch: the Funding for Growth Scheme

In response to persistent credit supply problems in the corporate segment, in April 2013 the Magyar Nemzeti Bank announced that the Funding for Growth Scheme would be launched in June. Under the first phase of the programme that lasted until the end of September 2013, commercial banks concluded contracts with small- and medium-sized enterprises to disburse a total amount of HUF 701 billion. The second phase commenced in October 2013 and will last until the end of 2014 (or, in the case of investment loan disbursements, until the end of June 2015).

The Funding for Growth Scheme is intended to facilitate access to credit for small- and medium-sized enterprises (i.e. the companies affected the most by financing constraints) through the easing of non-price credit supply constraints on one hand and through pushing down lending rates on the other hand. With that in mind, the MNB provides funding to the credit institutions participating in the programme at a fixed interest rate of 0 per cent, which they can then disburse at an interest rate of up to 2.5 per cent for investment, working capital financing EU-subsidy pre-financing purposes. The maximum term of

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10 Consistent with the studies cited above, the pseudo R2 values are rather low; however, these are limited-information statistics in respect of the goodness of fit (i.e. the explanatory power). Moreover, without intending to produce a comprehensive model of perceived financing constraints, the primary goal was to identify causal relationships, for which the significance of the estimated coefficients is the relevant indicator.

investment loans is 10 years. In the second phase of the programme, loan redemption cannot exceed 10 per cent of total recourse, and thus new loans must represent at least 90 per cent. Beyond the central bank eligible collaterals, with appropriate haircut, the SME loan itself may serve as collateral. Credit institutions must report to the MNB all of the loans granted by them, even if they do not wish to take recourse to the latter option; therefore, the MNB has information on each individual loan agreement.

In recent years, two central banks have launched credit stimulation programmes that are similar to the FGS in many respects: the Bank of England commenced its Funding for Lending Scheme (FLS) on 13 July 2012, and the ECB announced its Targeted Longer-Term Refinancing Operations (TLTRO) in June 2014, with the first allotment available on 18 September 2014. Both programmes are aimed at stimulating bank lending by providing central bank funds at more favourable rates than the market rate. One important difference, however, that the Hungarian programme is aimed exclusively at SMEs. Access to the refinancing of the Bank of England and the ECB is conditional upon the participants' net lending activity. In contrast, there is no requirement in the FGS regarding a change in outstanding borrowing; however, at least 90 per cent of the loans granted under Phase II must be new loans. The other marked difference is that the interest rate on the loans provided by banks under the FLS and the TLTRO is not restricted, while it is maximised at 2.5 per cent in the FGS.

In view of the unique nature of the Hungarian credit programme, it is worth identifying its place among the theoretical models of unconventional central bank interventions, which may be helpful in understanding the impact mechanism.

4.1 The Funding for Growth Scheme vs the theoretical models of unconventional central bank tools

A key study on the subject was done by Gertler and Karádi (2011). Their model is based on the assumption that during financial crises, banks' ability to obtain funds is significantly compromised and, given the risks due to costly enforcement, if they are to raise funds from the market for new disbursements, they will face high premium levels. In such situations, the role of the best debtor (i.e. the state) may appreciate, as it can access cheaper financing and, therefore, can alleviate the negative credit supply shock reflected in rising premia and shrinking bank lending. On the other hand, the downside of public financial intermediation is the fact that the state lacks the resources and experiences required for the assessment and management of credit risks and the resulting sub-optimal allocation of resources entails a welfare loss. According to the authors, in the case of severe disturbances of the financial system, the welfare gains from state intervention may outstrip the costs.

In the model developed by Curdia and Woodford (2011), the financial intermediary system produces a welfare loss by pricing in operating expenses and expected credit losses in the interest rate spreads. During severe disturbances in the financial system when risk spreads increase steeply, a central bank may reduce social losses by lending to the private sector directly. Indeed, this leads to the crowding out of the banking sector which, faced with smaller costs, can offer financing, albeit in smaller volumes, but with lower spreads.

Williamson (2012), as well as Gu and Haslag (2014), analyses the implications of security purchases on the secondary market. By purchasing securities, a central bank can push down spreads by increasing market liquidity. They found that central bank security purchases could be effective in cases where the rise in spreads was due to liquidity shocks rather than real shocks. In the model of Gu and Haslag (2014), in the former case, the intervention improves wealth.

Correia et al. (2014) examine the economic policy combination of interest rate policy and interest rate subsidising in a model featuring a financial intermediary system burdened with Gertler and Karádi's (2011) costly enforcement problem. Interest rate subsidisation, as an instrument, may supplement a lax interest rate policy during the disturbances of the financial system. The former reduces firms' financing costs through the reduction of interest rate spreads, while the latter does the same through the reduction of banks' cost of funds. Their results indicate that a combination of interest rate subsidisation and central bank base rate cuts would be the optimal policy to pursue, provided that the state finances the interest rate subsidisation by a lump sum tax. Interest rate subsidisation is preferred to direct central bank lending from a welfare perspective as well, as long as the latter entails sub-optimal resource allocation.

The structure and the operating logic of the Funding for Growth Scheme (FGS) do not correspond to the direct central bank lending shown either in Gertler and Karádi (2011) or in Curdia and Woodford (2011). In the models mentioned, central bank intervention disconnects the resource allocation know-how of the financial intermediary system, which may generate a welfare loss. By contrast, the FGS entrusts the banks with the assessment of loan applications (provided that the applicant company complies with the criteria laid down by the MNB). Even during the term of the loan, banks are expected, for the most part, to handle all administrative and monitoring tasks. On the other hand, since the state's cost of funds was not significantly lower than that of the banking sector, the Gertler and Karádi (2011) study is not relevant to the Hungarian situation, either in terms of advantages or disadvantages. It is another important difference that the interest rate on FGS loans is independent of market lending rates: it is maximised at 2.5 per cent, which means that loan supply constraints are eased not only through controlling the quantity, but also price.

The Funding for Growth Scheme is not commensurate with security market intervention models either, as the MNB does not recognise direct credit risks in its balance sheet; the risk remains with the banks (which is also true when it is compared to the Gertler-Karádi and the Curdia-Woodford models). Moreover, although the partial acceptance of SME loans as collateral increases available liquidity, fundamentally this is not the main channel of the lending scheme; indeed, since the Hungarian banking sector remained largely liquid during the years of the crisis, it was not the liquidity situation that caused a bottleneck in lending. More importantly, the FGS exerts its influence through facilitating bank competition, increasing banks' willingness to lend, and boosting credit demand in the context of declining interest burdens.

Of the studies mentioned above, the model developed by Correia et al. (2014) is the most comparable to the impact mechanism of the FGS, despite the fact that, in their model, the optimal reduction of funding costs is achieved by a combination of central bank interest rate cuts and fiscal interest rate subsidisation. The lending scheme of the MNB is an example of targeted monetary easing carried out by monetary policy instruments, while at the same time – since the zero interest rate FGS refinancing loan is financed by 2-week MNB bills/deposits, the interest rate on which equals the MNB's key policy rate – it also imposes direct costs on the consolidated government budget. From the perspective of companies, "foregoing" the central bank base rate entails the effects described above. Nevertheless, even the model mentioned above lacks one specificity of the first phase of the FGS: namely, that the possibility of loan redemptions intensified bank competition and, hence, increased credit supply through another channel.

Finally, the lower limit of nominal interest rates (the "zero lower bound") also deserves mentioning. There is consensus among the studies cited above on one point: when the central bank is unable to reduce its key policy rate any further, the role of unconventional instruments appreciates in value, and its welfare improving effect becomes more obvious. While the MNB's base rate has not reached the zero lower bound, interest rate policy during the years of the crisis was often restrained by the financial stability risk arising from the open foreign currency position of the domestic sectors. This meant that although in technical terms it would have been possible to reduce the interest rate quickly and substantially, the ensuing drastic exchange rate depreciation would have set off such severe disturbances in the financial system that the implications would have either offset the stimulating effect of the monetary easing or generated an outright contraction. It can be partly attributed to these risks that the sequence of the Monetary Council's interest rate cuts between 2012 and 2014 was characterised by extreme caution, as demonstrated by the fact that the size of the interest rate cuts was smaller than 25 basis points from August 2013. In this sense, the Hungarian interest rates also had a time-varying lower bound, which may underpin the justification for the lending scheme and enhance its social gain.

4.2 Impact of the FGS on corporate lending

The high utilisation of the first phase of the FGS was surprising in light of corporations and banks' limited time to apply for and disburse the loan.[11] Of the HUF 701 billion available, corporations borrowed HUF 229 billion to refinance foreign currency loans and HUF 182 billion to refinance forint loans, while the volume of new loans totalled HUF 290 billion. As a result of the new loans, the net change of the corporate loan portfolio in the third quarter was close to HUF 600 billion, the highest value recorded since the outbreak of the crisis. The annual change of corporate credit improved spectacularly, even by international standards, especially in the SME segment (Chart 5).

Chart 5
Changes in annual growth rate of the corporate loan portfolio between 2012 and 2013

Source: ECB, MNB
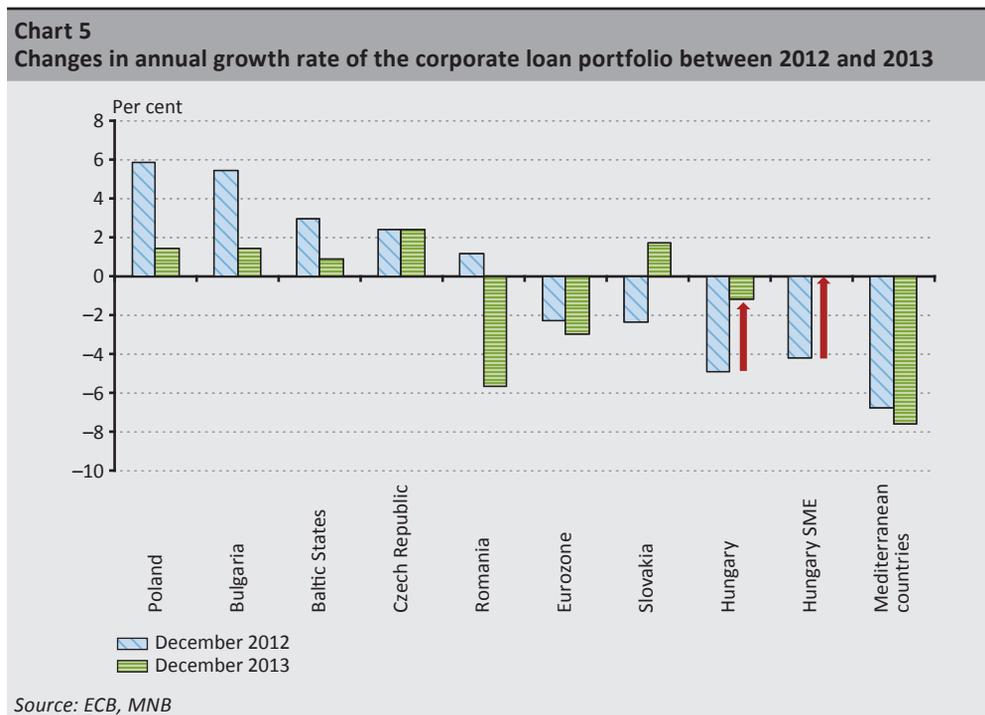
As loan redemptions played a significant role in the first phase of the FGS, a short overview is presented here on the various ways in which specific loan purposes may – in theory – influence lending trends.

New loans (i.e. working capital loans, investment loans) increase the outstanding borrowing of corporations immediately and directly; this, however, does not mean that the FGS will continue to contribute to corporate lending to the same extent over the long term. On

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11 In the case of investment loans, a part of the disbursements may have been drawn out to the first quarter of 2014.

one hand, part of these loans would presumably have been disbursed even without the central bank's lending programme, even if at market conditions (crowding-out effect; in other words, the FGS replaces the market). On the other hand, new investment projects will increase future credit demand (for instance, for working capital loans or other short-term loans), which, after the conclusion of the FGS, can be satisfied on a market basis (multiplier effect).

The crowding-out effect would be reflected in monthly/quarterly lending data in two possible ways: either lending trends would not indicate any significant changes even during the FGS or, alternatively, a temporary, larger credit outflow would be subsequently followed by a comparable slowdown as solvent companies carry forward their borrowing in view of the more favourable conditions. Given that the dynamics of corporate lending were enduringly and significantly altered by the first phase of the FGS (on a year-on-year growth or cumulated transaction basis; see Fábián, 2014), the crowding-out effect was presumably weak. This assumption is supported by the fact that more than half of new loans were directed to those three sectors (manufacturing, trade and real estate transactions) where lending declined most drastically during the years of the crisis (Chart 6).

Chart 6:
Changes in the credit stock before the FGS and new loans in the first phase of the FGS
(broken down by sector)

Source: MNB
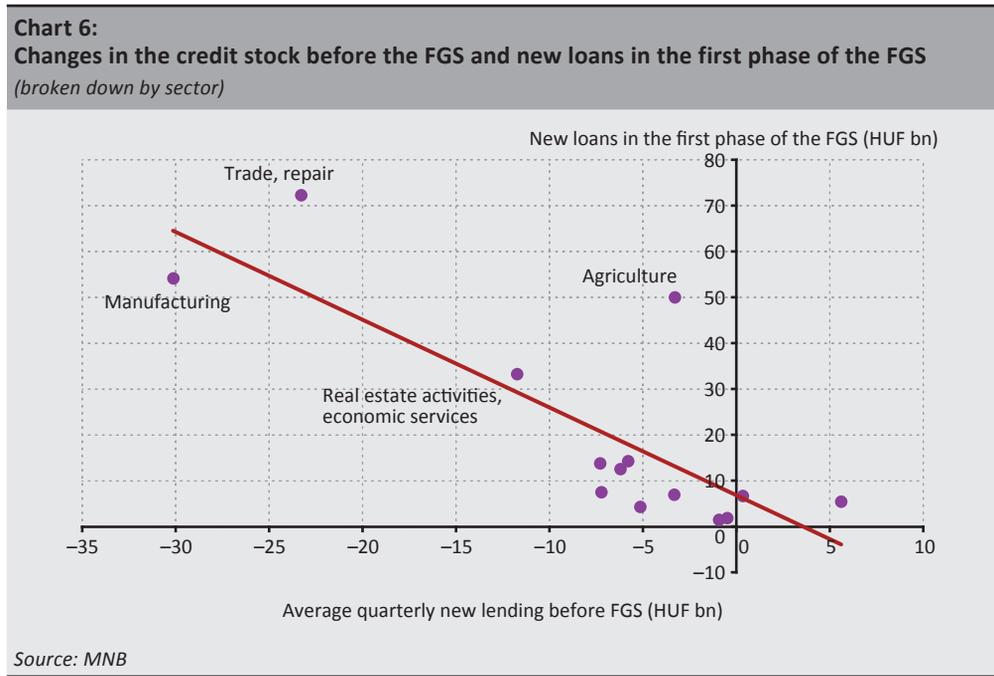
The effect of the refinancing of existing loans influences lending trends indirectly through the improvement in the repayment ability of debtors. The redemption of forint loans reduces the debt-service burden; therefore, the company concerned is capable of repaying

even a larger volume of loans. The redemption of foreign currency loans may also improve cash-flow; in their case, however, it is primarily the elimination of the exchange rate risk that becomes a channel through which the company's risk rating and, hence, access to loans improves. The magnitude of these effects is hard to gauge from lending data; however, based on the estimate presented above in Section 3.1, it is a significant channel from the perspective of credit constraints and, accordingly, redemptions may play an important role in escaping the clutches of the credit crunch.

# 5 New trends in corporate lending in 2014

Although the large outflow of credit seen in 2013 Q3 did not repeat itself in subsequent quarters, and in Q4 banks scrambled to shore up their balance sheets in anticipation of the ECB/EBA comprehensive portfolio assessment programme scheduled for 2014, the new SME loans offered in the first phase increased the loan portfolio and practically put an end to the credit crunch, the massive contraction that had mired corporate lending for years. The annual change of the total corporate sector's transaction-based outstanding borrowing improved to around -1 per cent from the previous 4–5 per cent decline, and the SME segment boasted even a slight growth year on year (Chart 7).[12] According to the MNB's forecast, which assumes full utilisation of the HUF 500 billion announced so far for the second phase, corporate lending is not expected to contract further in the coming two years either, and the increase in SME lending will become permanent.

Sectoral lending dynamics suggest that, in addition to the effects of central bank interest rate cuts and improving economic activity, the Funding for Growth Scheme may have played a crucial role in putting an end to the contraction of corporate lending. When average quarterly changes in the loan portfolio of individual sectors preceding the announcement of the FGS (2009 Q1 – 2013 Q3) are compared with the period after the commencement of the first phase (2013 Q3 – 2014 Q1), one finds that the upswing in lending is closely related to the volume of new FGS loans (Chart 8). The lending turnaround combined with a high participation rate is especially reflected in the new loans disbursed to the sectors of agriculture, manufacturing and trade in the first phase of the FGS.

The FGS induced a marked improvement not only in lending volumes, but also in the structure of the loan portfolio and, hence, the riskiness of SME borrowers. Loans disbursed under the FGS are long term, denominated in forint and have a fixed interest rate. Under Pillar 2 of the first phase, banks disbursed HUF 229 billion to refinance outstanding foreign

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12 Trends in Lending, June 2014.

Chart 7
**Annual growth rate of loans to the corporate and SME sectors**

Per cent

Corporate sector (MFI)
SME sector (banking sector)
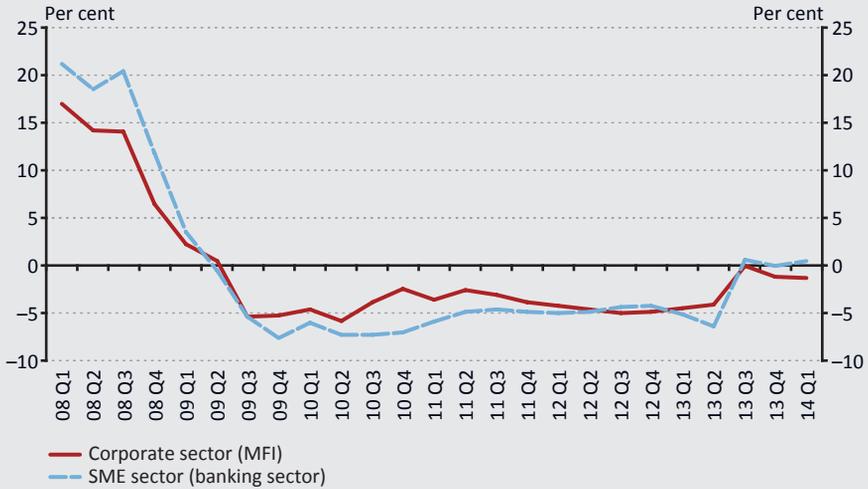
Source: MNB.

Chart 8
New loans in the first phase of the FGS and changes in lending dynamics
(broken down by sector)

Change in the quarterly dynamics ⬚of loans outstanding (HUF bn)

Trade, repair

Agriculture

Manufacturing

Real estate activities, economic services

New loans in the first phase of FGS (HUF bn)
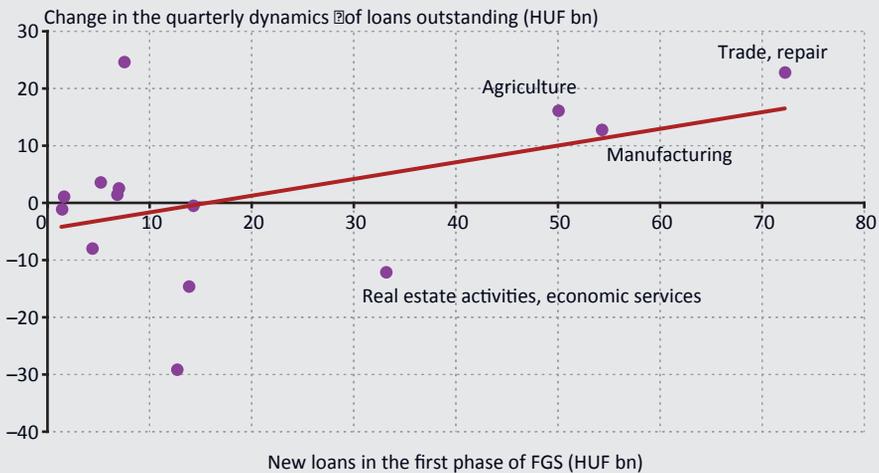
Source: MNB.

currency loans. The average maturity of loans extended in the first phase was 6.9 years, significantly longer than that of the outstanding SME borrowings (barely more than two years) at the time. As a result, the share of forint loans in the SME loan portfolio rose to

Chart 9
Share of forint loans and average maturity in the SME loan portfolio
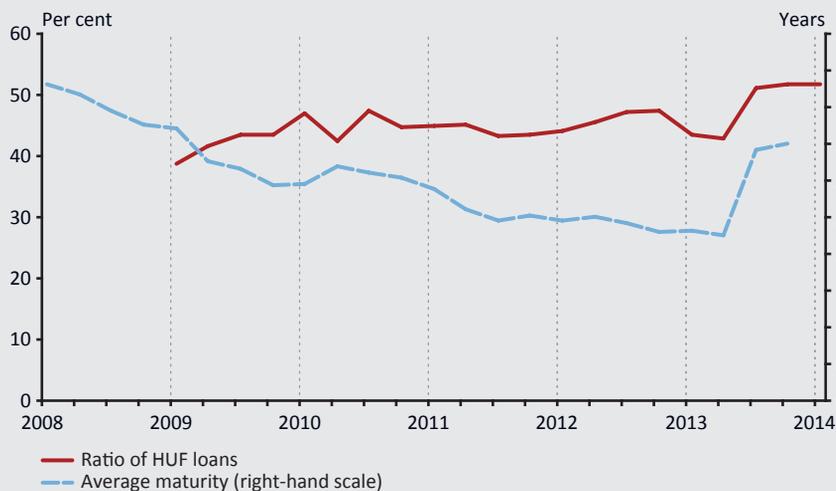
Source: MNB.

51 per cent from 43 per cent, while average maturity increased to 3.5 years, approaching pre-crisis values (Chart 9). The fixed lending rate of FGS loans, in turn, implies a highly predictable debt-service burden over the long term.

5.1 Estimate of the real economy impact of the first phase of the FGS by using the structural VAR model of Tamási and Világi (2011)

Although the second phase of the FGS has not concluded yet and even the full results of the first phase have presumably not yet been reflected in GDP data, by using the model developed by Tamási and Világi (2011) it is possible to estimate the contribution of the first phase on economic growth, based on the trends unfolding in corporate loan volume and interest rate data. The assessment of the overall impact of the programme will only be possible after some time has elapsed and the relevant corporate-level data have become available.

In their study, the authors identify three shocks (risk assessment, credit spread, monetary policy) that are potentially suitable for capturing the effect of the FGS. After selecting the shock that fit the purpose here, it was taken into account that the FGS cannot be viewed as a classical monetary policy measure. This is because, instead of inducing a change in the interest rate environment that determines the economy as a whole, the FGS is only intended to ease lending conditions for (a smaller segment of) corporations over the term

of the programme. It was also an important consideration that the FGS does not affect the risk appetite of the banking sector directly (indirectly, however, it does); accordingly, of the two credit supply shocks, the spread shock was chosen to estimate the effects of the FGS.

The size of the shock was calibrated in two different ways. In the first approach, from aggregate corporate credit rates were decomposed the effects caused by new loan disbursements under the FGS between 2013 Q2 and 2014 Q1,[13] and from the surmised lending rates thus received the actual aggregate lending rates were deducted. The difference is the shock realised on credit spreads within total disbursements as a result of new FGS loans. It is very likely that the full effect was overestimated with this procedure, as the first phase of the FGS did not provide unrestricted access to loans significantly smaller than those available in the market, but only up to the amount (albeit increased, in view of the large demand) of the facility announced. Therefore, the shock was also calibrated in such a way that its impact on corporate lending volumes was identical with the difference between the MNB's forecast (March 2013) before the announcement of the FGS and actual data pertaining to the period between 2013 Q2 and 2014 Q1. This approach can be also considered as an upper estimate, given that, besides the FGS, several other factors (central bank interest rate cuts, improvement in economic outlook, etc.) may have contributed to the improvement in lending trends.

According to the results of this study, based on the first approach, the first phase of the FGS increased GDP by 0.8 per cent; however, in consideration of the estimation bias mentioned above, the actual effect may range between 0.4 and 0.8 per cent, which, given the higher labour demand of production in the SME sector, is equivalent to the creation of 3,000–8,000 new jobs (or the preservation of a corresponding number of endangered jobs) in the private sector. Based on the second approach, the GDP effect (including the estimation bias) ranges between 0.2 and 0.5 per cent, which is equivalent to the creation and preservation of 1,500–5,000 jobs. Thus, a considerable real economy effect was quantified in both cases.

6 Summary

This study demonstrates that the Hungarian economy experienced a protracted credit crunch period between 2009 and mid-2013, which, through the freezing-up of corporate lending in particular, deepened the economic recession and impeded recovery. Compared to previous credit crunch periods observed in other countries, the specificity of the Hungarian situation lies in the fact that – largely due to parent bank behaviour – the capital adequacy

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13 Although the second phase of the FGS was launched already at the end of 2013, since the amount disbursed until the end of March 2014 is negligible compared to the first phase, the results practically reflect the impact of the first phase.

and liquidity of Hungarian banks could have been sufficient, in theory, to jump-start lending; however, in reality, parent institutions provided capital and liquidity not for lending purposes, but in order to ensure compliance with regulatory provisions and to absorb expected losses. Consequently, from the perspective of lending, there were capital and liquidity constraints in Hungary. According to the study's estimate based on a questionnaire survey, smaller, Hungarian-owned, indebted firms bore the brunt of the credit squeeze.

The MNB launched its Funding for Growth Scheme in 2013 in an attempt to address credit market disruptions. In general, literature published during the crisis provided evidence of the social gain of unconventional central bank instruments aimed at the stimulation of corporate lending during severe disturbances in the financial system. Due to a number of specificities, however, the FGS does not fit in any other theoretical model. On one hand – as opposed to other forms of intervention analysed in the studies cited in this paper – the MNB leaves the resource allocation function with the banking sector and does not recognise direct credit risks in its own balance sheet. On the other hand, the central bank controls lending rates not only through volumes, but also directly by maximising the interest rate at 2.5 per cent. Due to these specificities, even despite the predominance of market mechanisms, the FGS influences lending conditions more efficiently.

The launch of the Funding for Growth Scheme in mid-2013 put an end to the contraction in corporate lending, and SME lending embarked on a slow growth path. The borrowing possibilities offered in the first phase of the programme primarily reached those sectors of the national economy that suffered the largest contraction in lending. In these sectors, a strong turnaround was observed in lending dynamics even after the conclusion of the first phase. Besides the corporate sector's improved access to credit, the increased share of long-term, fixed interest-rate forint loans improved the structure of the loan portfolio. The upturn in lending trends suggests that the first phase of the programme contributed to GDP growth by a total of 0.2–0.8 per cent in 2014 and 2015, and it improved employment by 2,000–8,000 jobs.

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