FROM THE TURNAROUND IN LENDING TO THE GREEN TRANSITION

Collection of studies on the nine years of the Funding for Growth Scheme to date

2013-2022

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Contents

Governor's foreword

György Matolcsy

The Magyar Nemzeti Bank launched its first targeted lending incentive instrument, the Funding for Growth Scheme (FGS) nine years ago, in June 2013. The FGS played an important role in halting years of decline in the SME loan stock following the 2008 crisis, and subsequently bringing about increasingly dynamic growth. In later phases of the scheme, the focus increasingly shifted to investment loans. The coronavirus outbreak that spilled over into Hungary at the beginning of 2020 called for another extension of the scheme. The resulting 'FGS Go!' provided funding to the SME sector under more favourable conditions than ever before with a wide range of use options and was one of the most important crisis management tools. The phases of the FGS to date have provided some 75 thousand enterprises with access to favourable funds in the amount of approximately HUF 6,400 billion. The scheme had a positive impact not only on the credit volume but also on the composition of the loan stock, significantly increasing the proportion of predictable loans without any interest rate and exchange rate risks. According to the MNB's estimates, the FGS contributed to economic growth by more than 5 percentage points between 2013 and 2021, and on a micro level, it significantly improved the efficiency and productivity of participating enterprises.

In recent years, the effects of climate change, along with the increasingly comprehensive measurements and analyses, have also attracted the attention of central banks. An increasing number of central banks began to realise the impact that climate change was having on their mandates, financing roles and functioning, which made addressing the issue a priority. Committed to achieving climate goals and promoting the green turnaround, the MNB was the first European central bank to add the promotion of environmental sustainability to its statutory objectives. In that spirit, the central bank announced its green monetary policy toolkit strategy in summer 2021 and launched the FGS Green Home Programme (FGS GHP) as one of its first steps in October 2021. With its increased overall amount of HUF 300 billion, the FGS GHP enabled approximately 9 thousand households to build or buy energy-efficient residential real estate on favourable loans.

The 2020s are set to be a more difficult period in all respects, burdened by crises. In order to win this decade, we need a sustainable economic balance and convergence. In the coming years, Hungary's sustainable convergence can be facilitated by the acceleration of the green transition and digitalisation, as well as by improved productivity and competitiveness. Targeted financing programmes may again play an important role in achieving these objectives. A prerequisite for this is restoring price

stability and economic balance. That being said, even now it is worth examining and analysing the effects of various programmes, including the Funding for Growth Scheme, and drawing conclusions that could serve as lessons for the future.

The studies in this volume highlight the important features and significance of the FGS from multiple perspectives, along with the effects and tangible results of the programme to date. The evolution of the scheme, the characteristics of the different phases and the impact of the programme on SME lending are presented. Next, the direct real economic effects of the FGS are quantified by undertaking in-depth analysis both at the macro and micro levels. The third study deals with the long-term performance assessment of the enterprises using preferential central bank funds. Finally, the results of the Green Home Programme and the characteristics of the credit agreements concluded under the programme are presented in detail. Prepared by the central bank's experts, the publications will be of interest and use to experts and interested readers both in Hungary and internationally.

FGS Evolution – flexible adaptation to changing circumstances

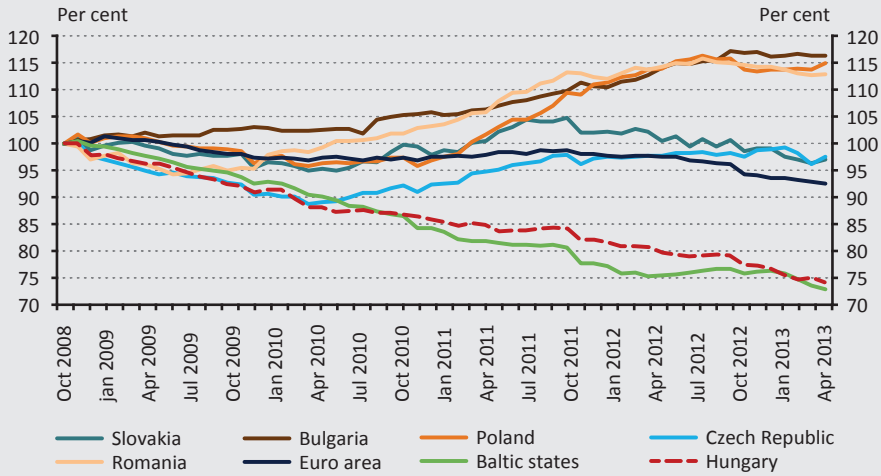
Sándor Hegedűs – Brigitta Schmidt

After the onset of the financial and economic crisis, corporate lending in Hungary contracted sharply even by international standards, shrinking to 75 per cent of its pre-crisis level by mid-2013. The economy faced the phenomenon of credit crunch, which deepened the economic downturn and hindered the recovery from the crisis. In order to mitigate the market disruption in SME lending, to facilitate economic growth and to strengthen financial stability, the MNB launched the Funding for Growth Scheme in June 2013. In the following years, the program became increasingly targeted as lending conditions improved, and the focus shifted to investment loans. The emergence of the coronavirus pandemic again called for a larger volume of available loans, which, as in earlier periods, enabled the FGS to successfully cushion the slowdown in lending and the real economy. In all phases of the programme, some 75 thousand enterprises gained access to favourable finance worth approximately HUF 6,400 billion. More than half of the loans were investment loans with the highest growth effect. According to the MNB's estimates, the FGS may have contributed to domestic GDP growth by more than 5 per cent between 2013 and 2021.

1. Evolution of lending in Hungary after the financial crisis

By nature, bank lending moves in tandem with economic developments; in an upturn, banks tend to have a higher propensity to take risks, while they may become more risk averse in a recession (Papp et al., 2017). Credit institutions' pro-cyclical behaviour may have serious effects on the real economy, because in periods characterised by excessive lending, positions of high leverage are built up, which banks will be forced to deleverage following cyclical turnarounds. In the years preceding the 2008 crisis, the Hungarian economy was characterised by a strong credit boom, which was heated further by access to cheap foreign funds. Some Hungarian credit institutions also took excessive risks before the crisis. Growing at a faster rate than what is sustainable and having an unhealthy structure, lending created excessive vulnerability in the financial system.

Chart 1
Corporate debt portfolio in an international comparison (October 2008 = 100%)

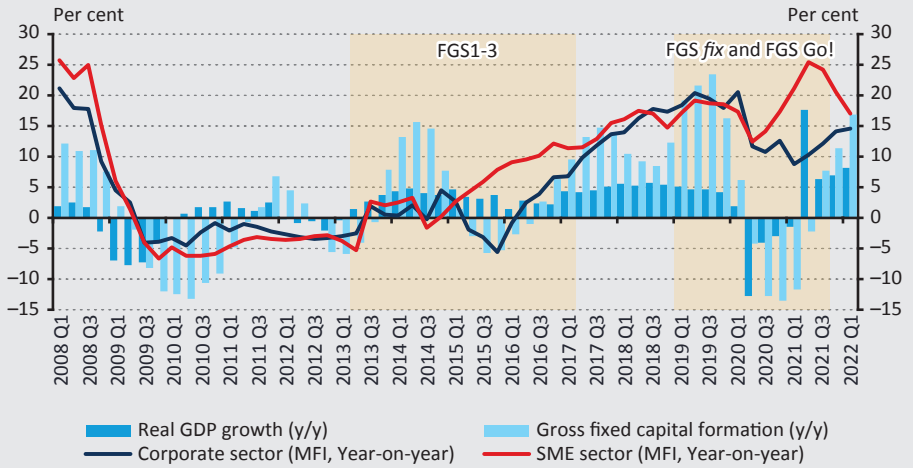


Note: credit institution sector balance sheet data.
Source: ECB

In Hungary, between October 2008 and June 2013, the corporate loan portfolio shrank by 25 per cent in total (Chart 1), with the volume of corporate credit falling by 4 to 5 per cent per year[1]. While lending already levelled out in the fifth year after the crisis in other countries that had experienced a severe financial crisis, lending to Hungary's private sector was still declining in 2013 (Chart 2). The rapid and drastic drop in the corporate debt portfolio in the aftermath of the crisis is attributable to the sensitivity of the corporate credit market to economic and financial shocks. Smaller and less financially sound credit institutions could not raise new capital or only at a very high cost, which may have caused these banks to cut back on lending even further. Banks' increased risk aversion has tightened the credit supply to sound companies as well, increasing the cost of access to credit. Strong deleveraging affected the SME sector in particular, which relied mainly on the domestic banking system due to a lack of access to the alternative sources of funding available to large companies (capital markets, foreign or parent company loans). SMEs were exposed to a higher risk of credit crunch (Balog et al., 2014), and the risk of the phenomenon referred to as 'creditless recovery' also increased (Abiad et al., 2011).

[1] Apart from the decline in transactions, the sale and write-off of non-performing loan portfolios also played a role in the decline in the contraction of the debt portfolio.

Chart 2
Annual growth rates of loans to the corporate sector and the SME sector, of corporate gross fixed capital stock, and of real GDP



Note: corporate dynamics are transaction based, prior to 2015 Q4 data for SMEs are estimated based on banking system data.

Source: MNB

Forced to adjust their balance sheets in the context of high costs of finance and deteriorating profitability, SMEs restrained production and postponed investment projects, which, in turn, affected banks' credit supply by undermining the creditworthiness of enterprises. This exacerbated the risk of an adverse feedback loop (Bauer et al., 2016). Due to an inadequate asset structure and a downturn in the performance of the real economy, the banking system incurred excessively high losses in the years of the crisis, which resulted in a major drop in lending activity, leading to slower recovery in the Hungarian economy from the recession (Bodnár et al., 2017). While before the crisis banks' active lending had spectacularly increased the annual level of corporate investment, after the onset of the crisis this declined significantly due to weak lending activity, especially in the SME sector, which is quite extensive in Hungary and has a prominent role in employment.

Overall, it may be argued that the conventional monetary policy toolkit (interest rate policy) has proven insufficient in itself to give an adequate answer to the downturn in lending. Similarly to central banks in other countries across the region, in 2012 the MNB embarked on its own easing cycle. Despite the interest rate cuts, credit conditions only improved for a limited range of companies. In order to mitigate the prolonged market disruption in lending to SMEs, and consequently to provide a stimulus to the economy, strengthen financial stability, and reduce Hungary's external vulnerability, the central bank announced the Funding for Growth Scheme (FGS) in April 2013 and launched it in

June as a new targeted instrument within the monetary policy toolkit. Under the FGS, the central bank provided financing at an interest rate of 0 per cent to credit institutions, which could lend the funds on to domestic micro, small and medium-sized enterprises at a fixed interest rate of up to 2.5 per cent per annum. Before the MNB launched the FGS, other central banks too had employed tools extending beyond interest rate policy (Krekó et al., 2012). Following the onset of the crisis, large central banks pioneered the use of unconventional instruments, in addition to the traditional toolkits, which were gradually integrated into international monetary policy practice.

2. The Funding for Growth Scheme from 2013 until the emergence of the coronavirus

Launched in June 2013, the Funding for Growth Scheme provided a much more favourable financing option for SMEs compared to previously available market conditions. In doing so, the FGS focused the attention of banks on the SME sector. In addition to preferential refinancing funds provided by the central bank and guarantee institutions becoming more flexible (Bokor-Pulai, 2016), willingness to lend has increased. In view of the interest rate margin limited at 2.5 per cent, the banks initially satisfied the credit needs of their larger and less risky customers, and then, responding to strong customer-side demand and intensifying competition, they served an increasingly wide range of SMEs despite the limited margin. In order to meet customer needs, banks could not afford to include this product in their range. The allocation mechanism[2] used in the FGS and the option of bank switching played a role in intensifying competition between banks.

The FGS reduced companies' repayment burdens, increased their willingness to invest, and stabilised their operations through working capital loans. SMEs benefited from the predictability of the long-term availability of a fixed interest rate level, which ensured smoother operations and enabled the enterprises to expand their business and implement postponed and new investment. This contributed to stronger aggregate demand, thereby putting a stop to the uncontrollable spiral where the downturn in credit supply and the contraction of the economy mutually reinforced each other. Additional investment made possible by the FGS and the resulting spare capacities also contributed to increasing employment. The FGS also had an impact on the level of interest rates in the corporate sector as a whole, through the gradual spillover of the interest rate ceiling set under the programme into market credit products.

During the three-month contracting period of the first phase, which had an overall amount of HUF 750 billion, credit institutions concluded loan contracts with SMEs in the amount of HUF 701 billion, in nearly 10,000 transactions. Owing to the short timeframe

[2] For both pillars, the overall amount of the scheme was allocated in accordance with the card dealing principle, subject to the amount agreed in the framework contract by the credit institutions.

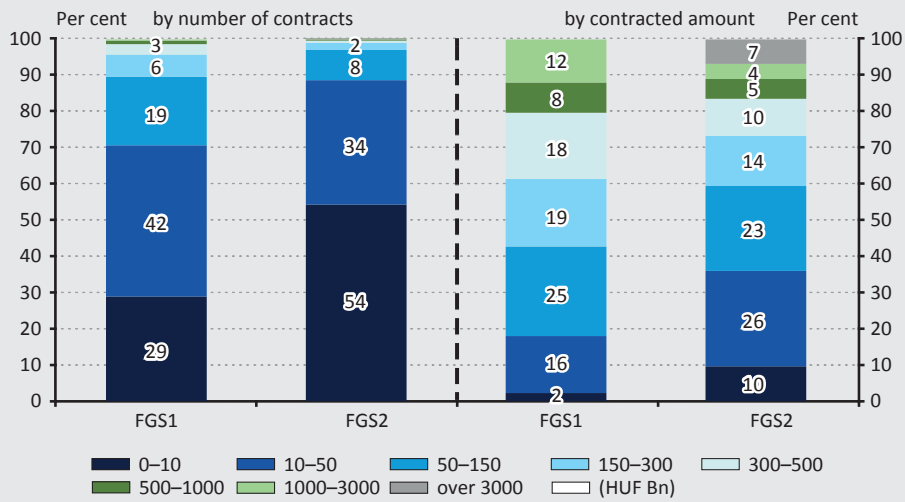
and the introduction of interest rates that were more favourable than those previously available, this phase of the programme largely financed loan redemptions. Amounting to more than HUF 400 billion, such redemptions significantly reduced the interest burden on enterprises. Foreign currency loans worth HUF 230 billion in total were converted in relation to more than 1,700 transactions, which implied the redemption of more than 10 per cent of performing FX loans outstanding in the amount of HUF 1,800 billion at the time. The FGS had a favourable impact on the operation of micro and small enterprises indebted in Swiss franc and with practically no natural foreign currency hedge. In addition to redemptions, the volumes of new investment loans (HUF 177 billion) and of loans taken out for working capital financing (HUF 115 billion) were also significant. A third of those volumes flowed into the trade and real estate sectors, mainly due to the higher share of redemptions.

In the second phase of the FGS, from October 2013 to December 2015, investment loans, which were the most conducive to economic growth, gained prominence and the possibility of loan redemptions became restricted. Lasting for more than two years, the contracting period of that phase[3] saw participating credit institutions granting loans to some 27,000 Hungarian SMEs, in the overall amount of HUF 1,425 billion. In contrast to the FGS's short first phase of a few months dominated by redemptions, there was already a wider possibility to implement investment projects requiring longer preparation, but in addition, working capital loans could also be realised in significant volumes. The range of funding options available in the FGS was also broadened by adding lease and factoring types of financing. New loans or leases accounted for around 95 per cent of the transactions, with nearly 60 per cent of the loans, i.e. HUF 833 billion, intended to finance new investment directly. Loans for the purpose of financing new working capital, granted to help enterprises' liquidity situation and their stable and more economical operations, were provided in the amount of approximately HUF 400 billion.

Due in part to the longer contracting period and more intense competition among banks, the weight of micro-enterprises, which are typically faced with financing difficulties because of their size, was already higher in the second phase, and the typical loan size also decreased accordingly, with every second investment loan granted in an amount below HUF 10 million (Chart 3). In this phase, the three largest sectors (manufacturing, trade and repair, agriculture) accounted for almost two-thirds of the total volume, each with a similar share. The sectoral breakdown of the new SME loan contracts concluded in each phase is shown in Chart 10 in the Appendix and the sectoral breakdown of the total FGS loans issued is shown in Chart 11.

[3] Combined volume of loans granted in the second phase of the FGS and under FGS+. By introducing the FGS+, the MNB sought to provide better access to credit for small and medium-sized enterprises that had previously been excluded from the FGS. Under the FGS+, the MNB assumed a limited degree of SME credit risk from the credit institutions for a limited term.

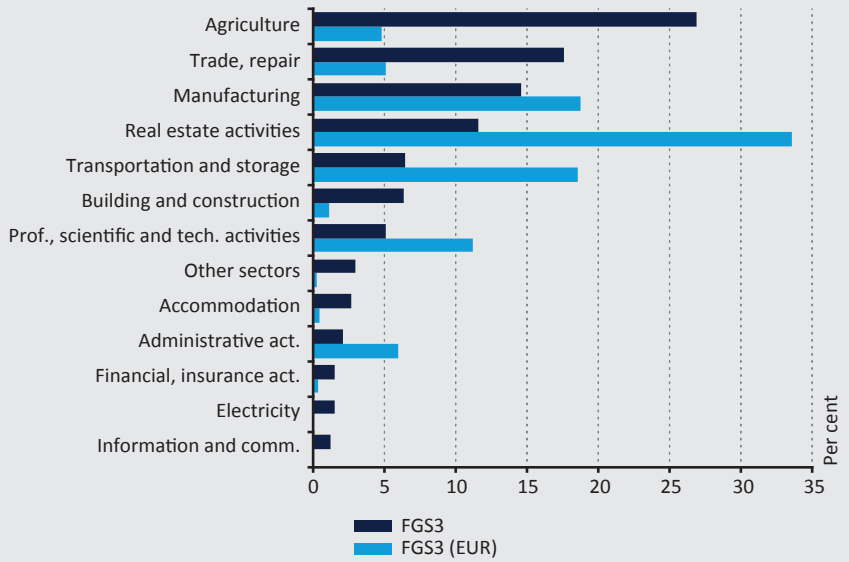
Chart 3
Contracts concluded under FGS1 and FGS2 by loan size



Note: contractual amount by transaction number.
Source: MNB

Thanks to the FGS, the decline in SME lending of 4-5 per cent per year seen after 2008 stopped, followed by an upward trend from 2015 onwards. By the end of 2015, therefore, trends in lending already enabled the return to a market basis and thus the gradual phasing-out of the FGS. For this reason, launched in early 2016, the third phase only allowed for more targeted financing than in the past. In view of the fact that the market interest rate level was already sufficiently low as a result of the previous years' base rate cuts, and the dynamics of SME lending started to increase, in this phase banks were only allowed to lend for investment purposes. As a new element, enterprises with a natural hedge could also access central bank refinancing in foreign currency. In particular, on a market basis these SMEs could only access finance on significantly less favourable terms compared to their foreign competitors, as domestic credit institutions also could only secure limited and expensive foreign currency funds for the long term. In addition to investment loans and leases taken in the approximate amount of HUF 475 billion, in the pillar allowing for foreign currency financing credit institutions signed contracts for some HUF 210 billion, especially exporting SMEs, which are of major importance from a macroeconomic point of view. In the forint pillar of the third phase, agriculture was the most prominent sector, whereas in the foreign currency pillar, the transportation and storage sector were also a major sector apart from the surge in volume of real estate transactions (Chart 4).

Chart 4
Sectoral breakdown of the FGS3 by pillar



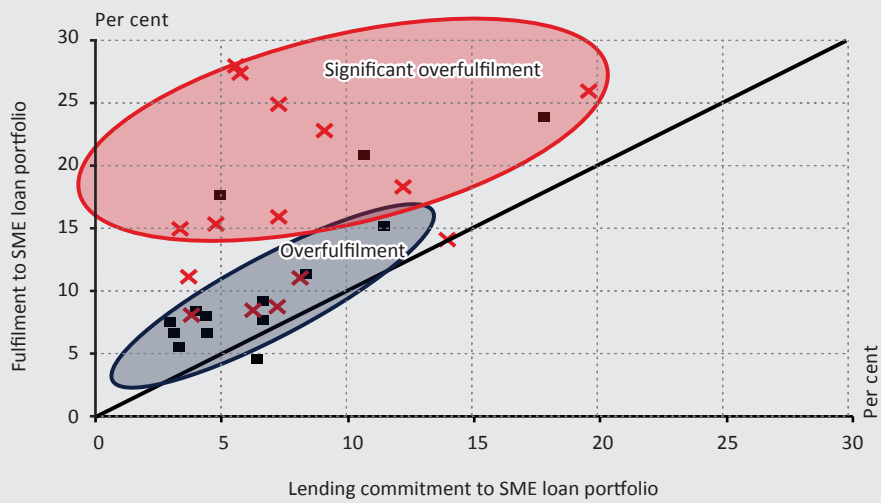
Note: by contract amount. The sectoral distribution does not include sole proprietors, but primary agricultural producers are included as part of the agricultural sector.

Source: Central Credit Information System, MNB

In the long term, the SME credit market should support the real economy in sufficient quantity and quality without central bank intervention. To this end, at the beginning of 2016 the MNB launched the Market-Based Lending Scheme (MLS) in parallel with the third phase of the FGS in order to facilitate the return to market-based lending. For credit institutions, the MLS introduced interest rate swaps tied to lending activity (LIRS)[4], along with the option to place preferential deposits[5], subject to a commitment to increase their SME lending activity during the given calendar year by one quarter of the nominal value of the LIRS transaction. In 2016, the first year of the programme, the banks fulfilled their lending commitments to increase their lending to SMEs by HUF 195 billion in total, in effect going well beyond that by increasing their SME lending by more than HUF 300 billion (Chart 5). In 2017, banks achieved fulfilment of 250 per cent, exceeding their SME lending commitments.

[4] In the transaction, the MNB paid the banks variable interest linked to BUBOR, which paid fixed interest to the central bank, thereby reducing and partially assuming the interest rate risk arising from SME lending.
[5] Under the preferential deposit, in the base case up to half of the nominal value of the LIRS transaction (or more in the event of an outstanding credit expansion), the banks were allowed to deposit part of their liquidity above the reserve requirement with the central bank at the prevailing interest rate, which therefore served as an additional lending incentive through the facilitation of liquidity management.

Chart 5
Fulfilment of the lending commitments under the Market-based Lending Scheme

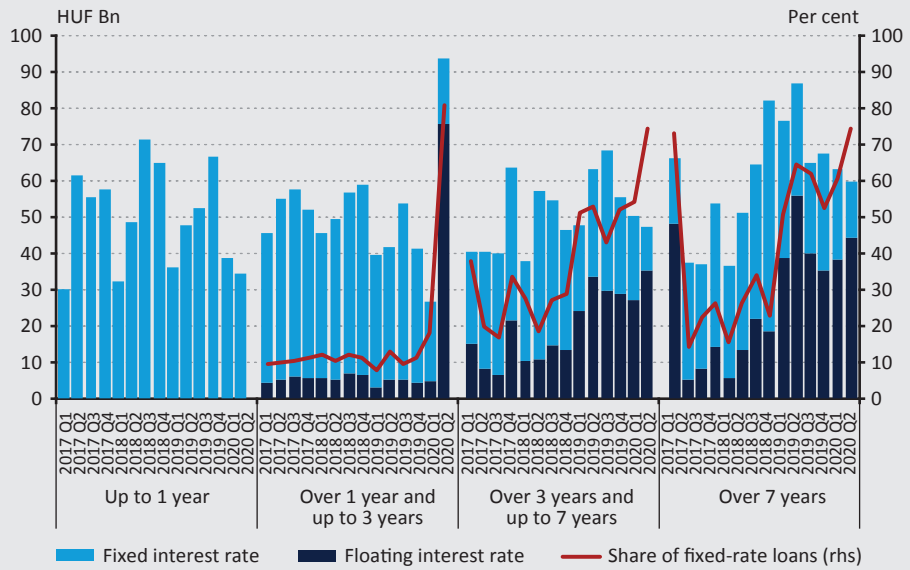


Note: two small banks with extremely high commitments and fulfilments are not shown in the chart.
Source: MNB

The FGS played a significant role in the realisation of the turnaround in lending, whereby the corporate loan portfolio achieved two-digit growth by 2017. Although the MLS successfully contributed to increasing the dynamics of lending, unlike the FGS, it did not significantly affect the qualitative characteristics of lending, and the ratio of fixed-rate SME loans dropped after the phasing-out of the FGS (third phase), especially in the case of longer tenors (MNB, 2018). The average interest rate of fixed-interest SME loans granted with maturity periods of over 5 years fell to close to 2.5 percent, but this only affected a limited range of SMEs, while the higher interest rate level that was more widely available led customers towards variable-interest loans that appeared more favourable in the short term. In response, in January 2019 the MNB launched the FGS *fix* to finance new investments on a HUF basis. The new facility only allowed loans with maturities of more than 3 years could be granted, in line with the aim of increasing the share of long-term and fixed-rate loans (Chart 6). The range of uses for investment loans was also narrowed by tightening rental rules and banning the purchase of participating interests. The fact that the MNB sterilised the excess liquidity arising from the disbursed loan volume at a base rate with a separate deposit instrument was a difference compared to the previous phases, stressing that the facility was not launched as a means of monetary easing, but specifically to improve the structure of SME lending. Under the FGS *fix*, participating credit institutions concluded nearly 25,000 loan or lease contracts with more than 17,000 enterprises in the amount of HUF 564 billion. Within the volume of those loan contracts, the share of new investment

loans was 60 per cent, and that of new leases was 40 per cent. More than half of the funds was allocated to micro enterprises. In the case of the FGS *fix*, the share of the agricultural sector was outstanding, with nearly 30 per cent of the volume being used to finance enterprises in the sector.

Chart 6
Fixed- and variable-rate SME loans by maturity



Note: loans with maturities of up to and including one year are technically classified as variable-rate loans.

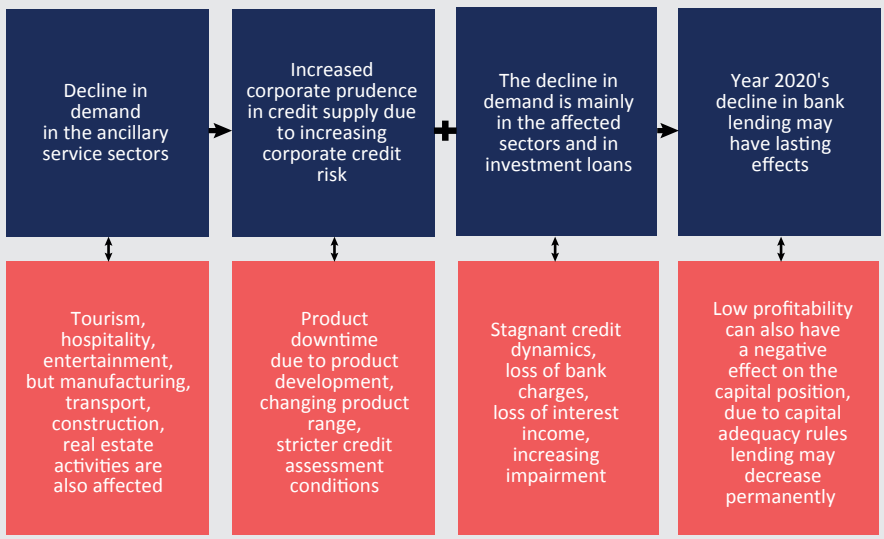
Source: MNB

3. The emergence of the coronavirus pandemic in Hungary called for the launch of the FGS Go!

in the first quarter of 2020, the coronavirus outbreak also reached Hungary, as a result of which the corporate sector also found itself in a difficult situation within a short time. In particular, enterprises in the sectors severely affected by the pandemic were hit by the simultaneous drop in demand and supply, both on the revenue and the financing side. The phenomenon was exacerbated by the fact that disruptions in international trade and supply chains led to storage problems or production shutdowns in several industries, accompanied by lower demand due to lockdowns, and changes in consumer habits. As a result of the negative economic effects of the pandemic, a number of enterprises were experiencing liquidity problems, and the precarious environment caused further difficulties in maintaining their creditworthiness and in realising their ongoing

investment projects. The change in banks' risk perception, the projected contraction in credit supply and the tightening of non-price terms and conditions required swift government and central bank intervention to mitigate the negative economic effects (Chart 7).

Chart 7
Potential direct impact of COVID-19 on corporate lending



Source: MNB

In spring 2020, the MNB responded to the emerging challenges with a coordinated series of measures, transforming and expanding its monetary policy toolkit. Among other measures, it announced a sovereign debt purchase programme, relaunched its mortgage bond purchase programme, and decided to introduce a fixed rate, secured lending instrument. In addition, it introduced measures to support the corporate sector: it expanded the Bond Funding for Growth Scheme, announced a moratorium on payments in the FGS (before the general moratorium imposed by the government), allowed for the flexible restructuring of loans previously issued under the FGS, extended the availability period and maximum tenor of loans, and also decided to accept large corporate loans as collateral. Additionally, as one of the most important instruments of crisis management, in April 2020 the central bank launched the FGS Go!, with an initial overall amount of HUF 1,500 billion, subsequently increased to HUF 3,000 billion in two steps.

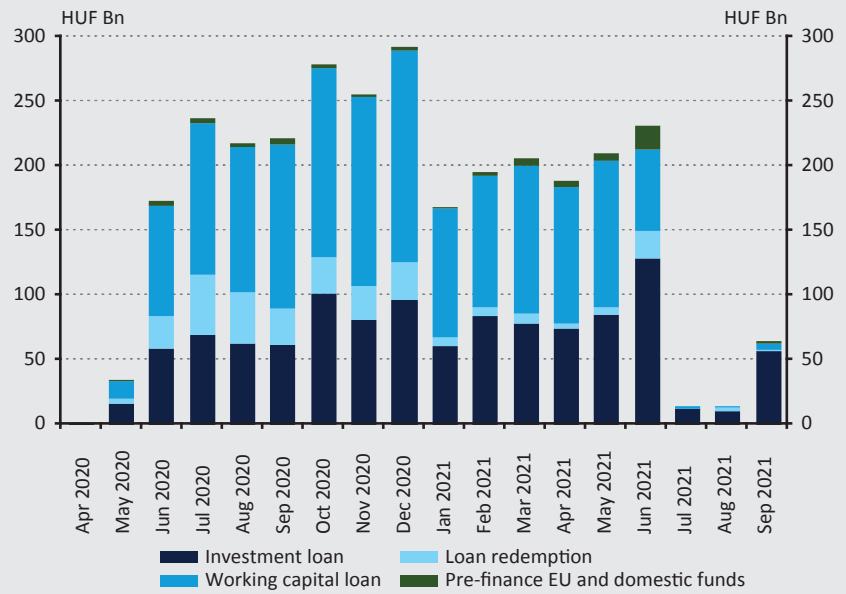
In terms of product conditions, the FGS Go! was adapted to the changed needs of firms in difficulty. While earlier phases of the FGS aimed to secure the supply of funds to

the typically more vulnerable micro and small enterprise segment, the maximum loan amount available under the FGS Go! increased to HUF 20 billion, which also helped the stable operation of medium-sized enterprises and the realisation of their investments. Unlike the typical 10-year maturity in previous phases, this phase allowed granting loans with maturities of up to 20 years, whereby the FGS could ensure predictability in financing investment offering slower returns, which typically promote renewable energy production and sustainability. In addition to financing for investment purposes, working capital loans became available again in order to maintain jobs, production capacities and ensure rapid liquidity, which could be used to pre-finance EU and domestic grants, as well as to cover labour costs, in addition to customer receivables and stock financing. The programme also provided enterprises the opportunity to redeem previous unsubsidised loans. In order to accelerate access to finance, the MNB introduced a two-week timeframe for banks' loan decisions. In order to keep credit institutions interested in maintaining their SME lending activities despite the increasing credit risks, the central bank converted the preferential deposit into a tiered interest rate facility for a transitional period from 4 May 2020. Accordingly, depending on the loan purpose, the MNB paid interest respectively at 4 and 2 per cent above the base rate for certain volumes outstanding in relation to FGS Go! contracts.

Under the FGS Go!, which was closed at the end of September 2021 on the full utilisation of its overall amount, approximately 62,000 credit and lease contracts were signed with nearly 41,000 domestic enterprises, whereby the programme also played a major role in stabilising the labour market during the coronavirus pandemic (Drabancz et al., 2021). During its existence, thanks to the wide range of possibilities for utilisation, the vast majority of SME loans with maturities of more than a year were issued under the FGS, with nearly 70 per cent of exposures related to the FGS Go! in volume terms, and every second loan granted within this phase in terms of the number of contracts. In terms of loan purposes, demand was highest for working capital loans, about half of the total volume issued under the FGS Go! was related to this form of financing, supporting operations (Chart 8). A further 38 per cent of the loans was taken out in this phase for new investment, and about 9 per cent of the total amount was used for the redemption of investment loans. The characteristics of loans granted in each phase are shown in Table 1 of the Appendix. In volume terms, a quarter of the loans contracted were granted by credit institutions to trading companies, and a further nearly 30 per cent to the companies operating in the real estate and manufacturing sectors. In terms of regional distribution, nearly half of the transactions were related to enterprises established in the Central Hungarian region.

Although the contracting period of the FGS Go! has ended, the funds received continue to support the operation of the enterprises; moreover, the contracts concluded provide further drawing options in addition to the loan tranches disbursed to date.

Chart 8
Monthly evolution of the volume reported under the FGS Go! by loan purpose

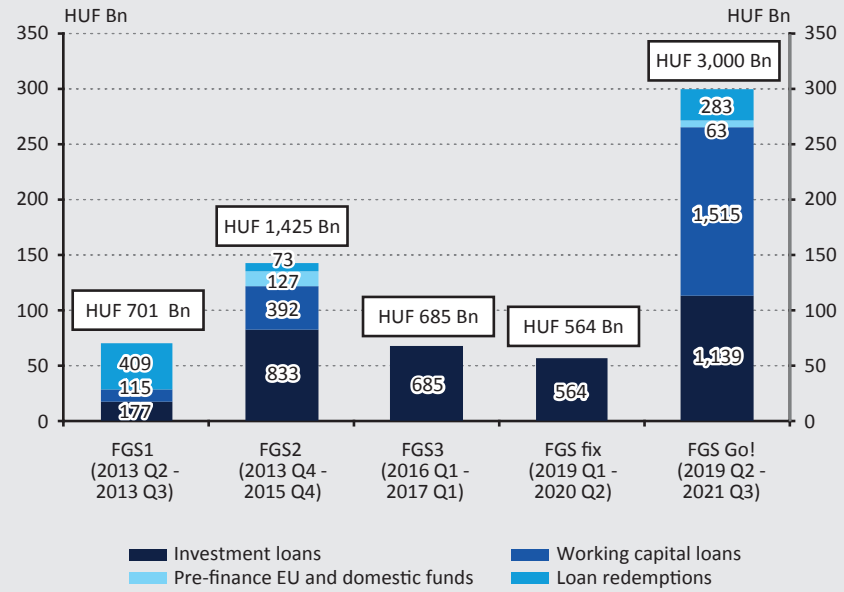


Note: by contract amount.
Source: MNB

The FGS may have contributed to domestic GDP growth by more than 5 per cent between 2013 and 2021[6]. According to MNB model estimates, the programme fundamentally influenced SME lending, and hence growth in the real economy through two channels: bank funding cheaper than funding available on the market of forint loans stimulated credit demand, which could be used to finance the new investment or working capital needs of the enterprise. On the other hand, the lower instalments improved the creditworthiness of current and potential clients, which may have resulted in relaxing strict lending conditions and increasing credit supply. As part of the Funding for Growth Scheme, some 75 thousand enterprises gained access to approximately HUF 6,400 billion worth of finance. More than half of the loans granted under the FGS consisted of investment loans with the highest growth impact, with more than 50,000 companies signing contracts for this loan purpose (Chart 9).

[6] Re-estimating the previous results of Tamás-Világi (2011) and Bauer (2016).

Chart 9
Distribution of loan purposes in the different FGS phases



Note: by contract amount. FGS+ is shown under FGS2.

Source: MNB

Box

Comparison of the Funding for Growth Scheme and the lending incentive schemes of the ECB, the Bank of England and Sveriges Riksbank

The Magyar Nemzeti Bank launched the Funding for Growth Scheme (FGS) in June 2013 in order to restore the functioning of the SME loan market, facilitate economic growth and strengthen financial stability. Under the FGS, the central bank provided financing at an interest rate of 0 per cent to credit institutions, which could lend the funds on to enterprises at a fixed interest rate margin of up to 2.5 per cent per annum. The terms of use, including the maximum amount of the loan, its maturity and scope of utilisation changed several times between 2013 and 2021 depending on the real economy and credit market situation. Due to successive restrictions on loan purposes and to the opportunities provided by the longer availability period, the focus gradually shifted to investment loans. The coronavirus outbreak, which spilled over to Hungary in early 2020, called for the transformation of the programme. Launched as a crisis management tool, the 'FGS Go!' provided a significantly wider range of funding purposes compared to previous phases.

The European Central Bank provides liquidity to credit institutions in euro area Member States under its targeted long-term refinancing operation programme (TLTRO III). The targeted long-term funding provided by the ECB is available to credit institutions under favourable conditions, so that the central bank can improve credit conditions and encourage banks to lend to the real economy on a larger scale. As a result of the adverse economic effects of the coronavirus pandemic, the ECB relaxed the conditions of the TLTRO III on several points (e.g. the interest rate on the refinancing source, the callable amount) and extended the availability period.

In the spring of 2020, the Bank of England launched its Term Funding Scheme with Additional Incentives for Small and Medium-sized Enterprises (TFSME), under which it provided loans at or very close to the policy rate to banks that had undertaken to increase their lending to the real economy, in particular to the SME sector. For all credit institutions, the initial callable refinancing amounted to at least 10 per cent of their outstanding volume of loans to the real economy, with an option to draw additional funds as determined by the Bank of England (BoE) as a weighted average of bank lending to various sectors, with SME lending given a fivefold weight.

In March 2020, the Swedish central bank launched its lending instrument to facilitate the supply of funds (V Credit) with an overall amount of SEK 500 billion. As part of the programme, variable-rate refinancing against collateral was provided by Riksbank to commercial banks at the key interest rate (0 per cent), which undertook to use at least 20 per cent of the refinancing requested from the central bank for lending to the corporate sector. In March 2021, the programme was discontinued, and was replaced by Riksbank's new lending incentive scheme, Funding to Banks to Support Corporate Lending (UBF). The aim of the new programme was to continue to support corporate lending, but the conditions attached to it were simpler, more general and less time-dependent. Central bank funds continued to be provided by Riksbank at the key interest rate, and the funds drawn remained subject to penalty interest on credit institutions' failure to meet the terms of lending.

The FGS is more targeted than the lending incentive instruments of the ECB, the Bank of England and the Swedish central bank, both in terms of final borrowers and loan purposes. As part of their lending incentive programmes, the above-mentioned central banks provided favourable funds for lending for shorter maturities and on a more general basis, not for specific credit transactions. The ECB does not specify the purpose for which the funds may be used, it excludes only household lending for housing purposes, while the Bank of Sweden and the Bank of England both applied penalty interest to encourage banks to use the

funds drawn from the Bank to lend to the real economy, in particular to the SME sector. The FGS is more focused than the schemes of other central banks and the funds available under the programme could only be used by credit institutions for lending to enterprises. Unlike international schemes, central bank refinancing under the FGS remained available until the end of the maturity period, whereby the FGS could ensure predictability in financing investments offering slower returns. While the funds received under the FGS could be passed on by banks to SMEs with a margin capped at 2.5 per cent, other programmes did not have any requirements in that regard. Additional parameters of central banks' lending incentive schemes are shown in Table 1.

Table 1

Parameters of lending incentive schemes by the ECB, the Bank of England and Sveriges Riksbank

	ECB TLTRO III	Bank of England TFSME	Sveriges Riksbank V Credit, later UBF	MNB FGS Go!
Purpose of the programme	to preserve favourable borrowing conditions for banks, and to strengthen the transmission of monetary policy	to ensure credit to businesses and households to bridge through the current period of economic disruption caused by the outbreak of Covid-19, with additional incentives for banks to support lending to SMEs	to support corporate lending	to mitigate the economic effects of COVID-19, to ensure the supply of resources to the SME sector
Use of he central bank funds	not defined	not defined (however, credit institutions had to increase their loan portfolio to the real economy, otherwise penalty interest was charged on borrowed funds)	not defined (however, credit institutions had to increase their loan portfolio to the corporate sector, otherwise penalty interest was charged on borrowed funds)	lending to SMEs
Duration of the programme	from 19 September 2019	from 15 April, 2020 to 31 October, 2021	from 20 March, 2020 to 20 September, 2021	from April 20, 2020 to September 30, 2021
Utilization (nominal and as a share of GDP)	EUR 2,287 billion (20 percent of GDP)	BGP 193 billion (~EUR 225.3 billion) (8.7 per cent of GDP)	SEK 165 billion (~EUR 16.6 billion) (3.3 per cent of GDP)	HUF 3,000 billion (~EUR 8.3 billion) (6.3 per cent of GDP)
Maturity	3 years	4 years	1-4 years	max. 20 years, up to 3 years for working capital loans
Interest on refinancing loans	depending on the expansion of the loan portfolio: 0 percent to -1.0 percent	base rate (0 per cent), or very close to base rate	0 per cent	0 per cent
Frequency of payments	tenders (quarterly)	continuous	tenders (weekly, later monthly)	continuous, tied to SME loans
Interest on bank oans	not defined	not defined	not defined	maximum 2.5 per cent

Source: MNB, ECB, Bank of England, Sveriges Riksbank, Eurostat

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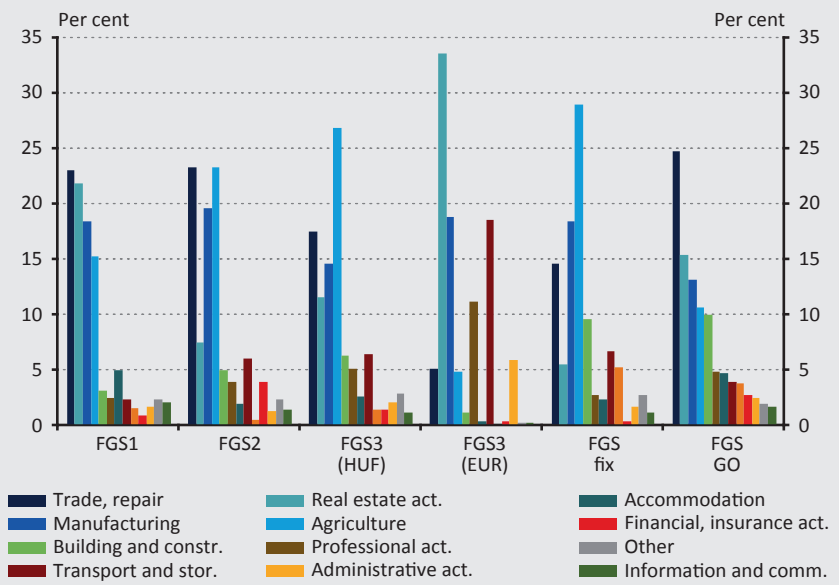
Appendix

Table 1
Characteristics of the loans granted in each phase

	FGS1		FGS2		FGS3		FGS *fix*	FGS Go!	
	Investment loan	Working capital loan	Investment loan	Working capital loan	I. (HUF)	II. (EUR)	Investment loan	Investment loan	Working capital loan
Contracted amount (HUF Bn)	176.5	114.1	832.2	390.6	474.5	210	564	1139	1578
Average loan size (HUF million)	48.3	49.8	23.9	61.7	24.1	100.3	22.8	46.7	42.6
Median loan size (HUF million)	15	20	6.6	25	6.8	20.9	6.9	7.5	15
Average maturity weighted by loan size (year)	8.2	5.2	7.1	2.3	8.3	8.4	7.2	10.3	2.6

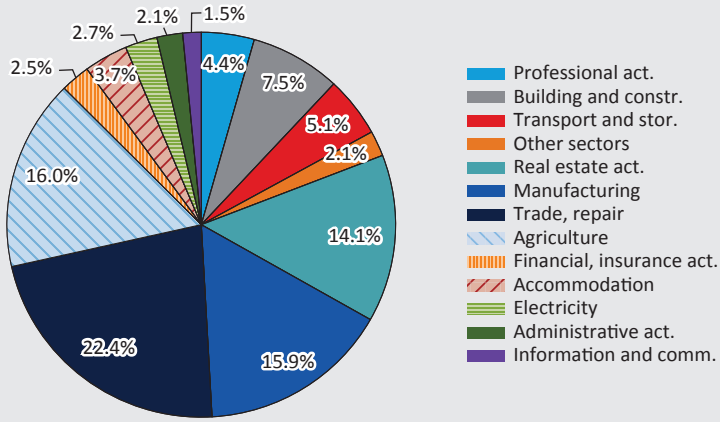
Note: the amounts in the foreign currency pillar are shown based on the forint refinancing linked to them.
Source: MNB

Chart 10
FGS loans by sector in each phase



Note: by contract amount. The sectoral distribution does not include sole proprietors, but primary agricultural producers are included as part of the agricultural sector.
Source: Central Credit Information System, MNB

Chart 11
FGS loans by sector



Note: by contract amount. The sectoral distribution does not include sole proprietors, but primary agricultural producers are included as part of the agricultural sector.

Source: Central Credit Information System, MNB

The effectiveness of the FGS in alleviating credit supply constraints – research summary

Zsolt Oláh

Following the 2008 financial crisis, the shock-like curbing of credit supply imposed serious risks on the real economy in many countries worldwide, including Hungary. Similarly to several major central banks, the MNB opted to introduce the FGS, a targeted instrument to support domestic SME lending, producing tangible benefits for the real economy in terms of investment and employment trends, both at the macro and corporate micro levels. This study reviews the conclusions of scientific studies on the background and results of the programme.

1. The FGS as a credit supply shock in macroeconomic aggregates

The global financial crisis, followed by the sovereign debt crisis in Europe, seriously undermined the risk tolerance and capacity of the Hungarian banking sector. Both expensive foreign funding and Hungary's growing NPL stock kept the balance sheets of the Hungarian banks under pressure, causing them to respond to the crisis with prolonged deleveraging between 2010 and 2013. By introducing the Funding for Growth Scheme, the central bank primarily sought to respond to asymmetric frictions in credit supply (see Balogh et al. 2014).

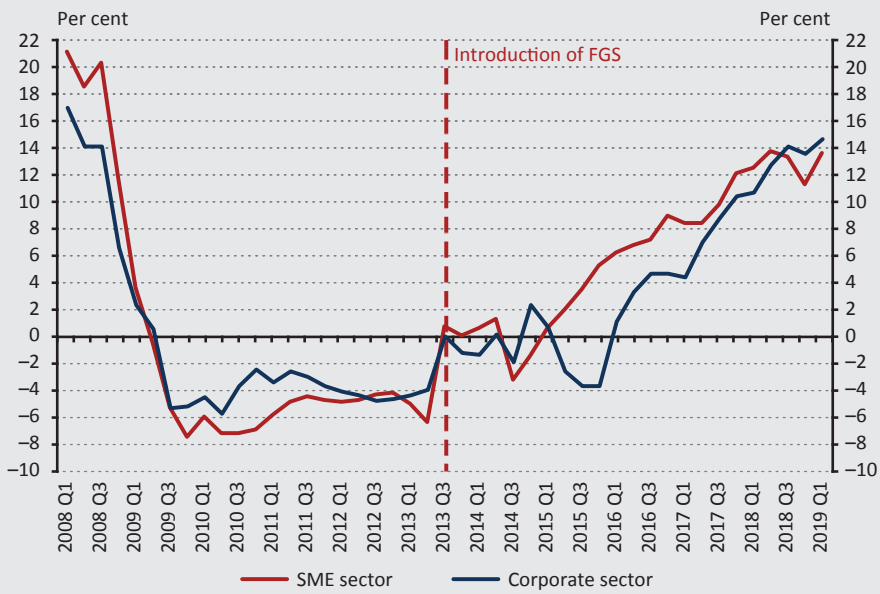
In such an environment, SME lending appeared to be an obvious tool in the course of bank deleveraging. On the one hand, given the less transparent and less stable business of smaller enterprises, it is by nature more difficult to assess the real credit risks in this sector, while on the other hand the economic climate itself introduced a high degree of uncertainty to that risk assessment. Particularly, in a recession exacerbated by a financial crisis, it is very difficult to produce forecasts even for a given business year, and the assets that are eligible as collateral can be sold with difficulty or only at a significant liquidation discount. Consequently, banks are willing to lend at a very high margin, or only in very limited quantities (i.e. credit rationing, Stiglitz-Weiss, 1981).

In the case of a new credit programme to be introduced, its expected real economic balance is also difficult to assess for policy makers. After the financial crisis, a major part of Europe suffered from the pro-cyclical behaviour of the banking sector, and by then the structural dangers involved (credit crunch, creditless recovery, the combination of bank and sovereign risks) were known. It is not by coincidence that the deployment of central bank instruments to stimulate lending was on the agenda in several countries by 2013

(BoE, 2012 and ECB, 2014). Years earlier, the MNB had also recognised and assessed the risks of tightening the credit supply and the credit crunch in the real economy.

Tamási and Világi (2011) identified credit shocks by using a structural vector-autoregressive (SVAR) model that, other than the classical shocks from monetary policy and (country) risk premium, also incorporated the risks that spill over from the financial sector directly to the real economy, in particular the economic costs arising from bank pricing and risk aversion. As a major result, they exposed the fact that the credit supply (or more generally, financial) shocks they identify contribute substantially to the overall picture of economic trends. Their credit supply shocks identified for the Hungarian economy were not primarily related to the course of the global crisis as a business cycle, but rather to the subsequent deepening of the real economy, i.e. the mechanisms of the financial cycle were shown in their model in parallel with and in addition to the business cycle. Another important finding in their research is the sensitivity of the real economy to a credit supply shock: if the volume of credit were to decrease by 1 per cent due to frictions in credit supply, then the cost to the real economy may be a fall in GDP by 0.2 to 0.3 per cent. Of course, the reverse is also true: if lending could be increased by 1 per cent by resolving credit supply frictions, the use of elasticity would produce a 'gain' from related measures equivalent to a 0.2 to 0.3 per cent increase in GDP volume.

Chart 1
Corporate and SME lending after the 2008 financial crisis (year-on-year per cent)



Source: MNB

The aftermath of the crisis became a reference point in the development of the parameters of the FGS: following the financial crisis, total corporate lending dropped by 4.5 to 5.0 per cent per year due to the prolonged deleveraging of the banking sector (Chart 1), which in turn was a major drag on economic growth (Hosszú, 2016). An economic environment characterised by credit supply constraints[1] can therefore provide a major reserve for growth if it can be resolved with a lending scheme that meaningfully improves supply conditions. It was also clear from the launch of the programme that the corporate segment is not a homogeneous issue in terms of credit supply frictions, since the corporate and SME segments are affected differently by the credit crunch. On the one hand, large companies are generally characterised by much lower credit risk due to their size and the predictability of their business activities, and on the other hand, it was seen during this period that banks competed almost exclusively for the best customers with ever lower premiums (see MNB, 2013).

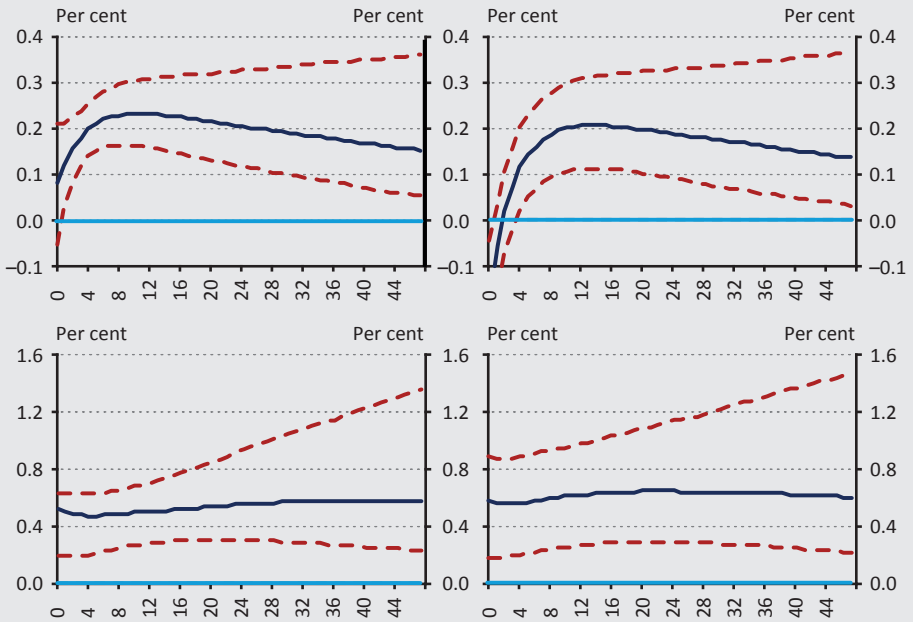
However, there is another significant difference between large corporations and SMEs: available alternatives of external financing. Large enterprises may have many options in addition to bank loans, and in the Hungarian case too, it was typical for many companies to simply refinance their previous domestic loans for foreign loans despite intense bank competition. By contrast, the options for SMEs are much more limited (they cannot issue bonds, foreign bank financing is in practice inaccessible to them), whereby their sensitivity to withdrawn bank lending is much higher. Indeed, if a significant part of the funding also covers day-to-day operations, the presence or absence of a loan becomes an existential issue for an SME, and not 'merely' a capital allocation issue.

That being said, the specific effects of credit supply shocks on company size were in fact made identifiable by the FGS: by exerting an asymmetrical effect on the corporate sector, the programme itself made it possible over time to quantify the related real economic effects for the SME and large corporate sectors separately. Also in a SVAR framework, Székely (2020) pursued an identification strategy based on the asymmetric effects of the FGS, distinguishing between credit supply shocks to companies according to company size. His results will help us to further clarify the quantification of the growth impact of targeted SME programmes. Compared to the (average) 0.25 per cent elasticity previously characteristic of the entire corporate sector, he estimated 0.44 per cent elasticity in the case of an asymmetric credit supply shock specifically targeting SMEs. According to the results of the study, credit supply shocks to SMEs will not leave corporate lending intact either: due to the spillover effects, in the longer term, corporate lending will increase even if the programme concerned only supports SME financing. The main lessons of the study include the fact that the real economic cost of credit supply constraints is higher in the case of SME loans, which makes it reasonable for a lending scheme to be targeted in

[1] Such an environment is substantially determined by the deleveraging process, which may result in a credit crunch, or create an environment where the structure of the economy may be affected through other allocative efficiency losses (creditless recovery).

this respect, and the fact that the FGS, identified as such a targeted instrument, played a major role in the post-2013 recovery (Chart 2).

Chart 2
SME credit supply shock (left) and general corporate credit supply shock (right), with unit effect on GDP (top) and bottom (bottom)



Note: the charts show the relative change from the baseline after the shock occurred, as a function of the number of months after the occurrence of the shock (impulse-response functions).

Source: Székely (2020)

Overall, it may be argued that the significant value added of the programme is demonstrated both by research conducted ex ante the FGS, and by research relying on the FGS empirics. The main effects of the programme can be totalled for key macroeconomic aggregates (primarily for real output), which can then be used to estimate an overall effect. However, these results will not provide a full insight into the mechanisms of the programme and will not describe the effects occurring at the level of individual companies, such as utilisation, and changes in investment or productivity. The following is a review of the micro-based analyses that measure those effects.

2. Micro-level impact studies of the FGS

In addition to the aggregated macro-effects, it is also important to examine how the FGS changes the operating structure of the companies during its utilisation:

– Will utilisation increase investment, thereby laying the foundations for future company growth?

– Or do certain types of companies prefer to use the funds for operational purposes?

– Does the granting of subsidised loans affect the value added and employment of the companies?

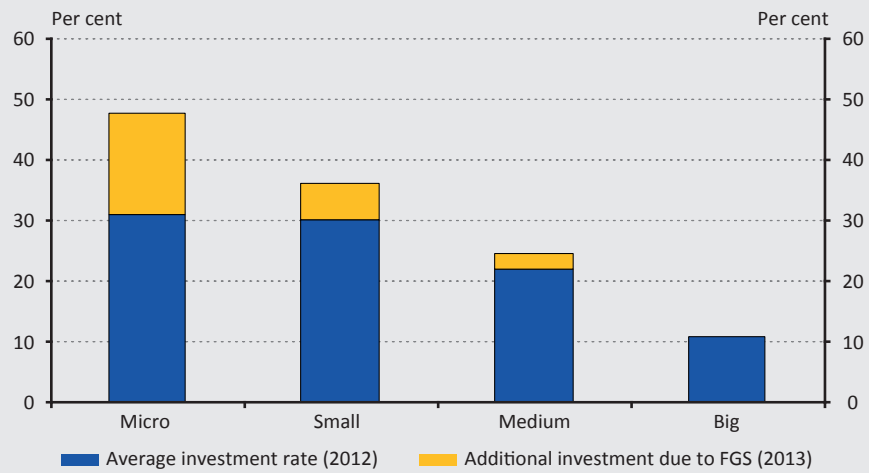
– Is there an overall improvement in the productivity and efficiency of the companies?

In economic terms, credit subsidy can essentially affect a company at the individual level via two channels. On the one hand, it reduces the debt servicing burden, thereby improving the cash-flow positions of the companies at the individual level. A higher level of cashflows improves the ability to accumulate capital (which may provide the basis for future investment) and may also reduce the credit risk of the company, since from a bank's perspective, better income generating capacity is equivalent to improved debt service capacity (which in turn may provide the basis for additional investment from new loans in the present). On the other hand, there is also an effect on capital budgeting: the lower interest rate on the subsidised loan will ultimately reduce the company's cost of capital. In turn, lower capital costs will widen the range of feasible investment projects, with lower capital costs enabling the company to implement less profitable projects profitably that it was previously prevented from under pressure to choose projects that produced enough revenue to cover the higher loan interest rates. In summary, a company may see its investment activity increase both at the extensive and the intensive boundaries, given the ability to implement a wider range of investment projects as a result of its greater burden bearing capacity in the subsidised plan.

A micro-level evaluation of the first phase of the FGS was carried out by Endrész et al. (2015). Instead of precisely modelling the mechanisms described above, however, they chose a more straightforward solution. Taking advantage of the variability offered by the balance sheet and credit data available from individual companies, they compared the investment activity of the companies before and after the launch of the FGS, but in doing so, they set up a control group according to the actual borrowing (i.e. creditworthiness from a supply side perspective) to assess the performance of the companies participating in the FGS (a 'difference-in-differences' estimate). In this way, the difference in the investment activity of companies with comparable borrowing capacities could be narrowed down to the part explained by the FGS. According to their results, 30 per cent of the total investment volume of the participating companies could be considered additional in 2013, which is attributable to the first phase of the

FGS. Additionality was greater in the case of smaller companies, resulting in two levels of efficiency for the mechanism according to size categories: in the case of smaller businesses, a large amount of new investment was made from the borrowing volume (60 per cent), while in the case of medium-sized enterprises, even if no new project was carried out (no significant impact was found in the case of upper-medium-sized enterprises), whatever was carried out could be implemented with a lower debt service burden, i.e. with a positive effect on subsequent capital accumulation. Accordingly, the average investment rate increased by nearly 17 per cent in the case of micro-enterprises, while in the case of medium-sized enterprises it increased by an average of 2 to 3 per cent (Chart 3). These results are consistent with the initial hypothesis that smaller companies are exposed to credit constraints to a greater extent. When the total aggregate impact is calculated, the first phase of the FGS may have increased the investment activity of the overall private sector by 3.4 per cent in six months.

Chart 3
Changes in the average investment rate due to the impact of the first phase of the FGS on borrowing companies (2012–2013)



Source: Endrész et al. (2015)

The above analysis assessed the impact specifically of the first phase of the FGS on corporate investment but did not yet comprehensively cover broader assessments of corporate activity, employment and productivity. This gap was filled by the work of Horváth-Lang (2020), which examined several phases of the FGS for a wide range of companies, with special regard to the mechanisms of action between the programme and the corporate credit constraints. In its methodology, it may be considered as an enhancement to Endrész et al. (2015), discussed earlier. According to their results, the subsidised loans were also used to a large extent for investment and employment

growth, and more importantly, they were typically implemented in a way that increased corporate productivity over a longer period of time. The study also found that despite the fact that between 2013 and 2015 the largest volume of disbursements was made to older and larger companies with longer banking histories, in real economic terms the programme generated the greatest value added among more recently established companies that had been subject to higher credit constraints and, accordingly, very low levels of working capital before participating in the FGS. That is, rather than the smallest firms, the efficiency of the scheme was the highest with companies that had the necessary capacity and willingness to grow but lacked the required finance.

According to their numerical results, companies participating in the FGS increased their investment activity by 55 to 60 per cent in the first year after borrowing, while in the second and third years they increased it by a further 45 to 50 per cent each (it can therefore be assumed that the greatest impact occurred immediately after borrowing). In terms of employment, it was found that in the first year after the borrowing, participants in the programme increased their level of employment by an average of 8 per cent, followed by an additional average 10 to 12 per cent increase in each of the second and third years (employment effects are presumably felt over a longer period of time).

The above results confirm that for certain companies the impact of FGS utilisation is significant. That being said, micro-level results presented so far are mainly short-term and do not address the issue of how companies utilising the FGS have transformed over the course of several years. Have they increased their productivity and capital accumulation on a permanent basis? Have they been able to achieve further growth beyond the initial growth in investment volume? In addition to the direct results of the programme, in the future it may also be useful to examine the long-term impact, pointing beyond the cycles, that the FGS had on the different company segments in terms of their structural characteristics.

3. Summary

The Funding for Growth Scheme was introduced in response to the 2008 crisis in the global banking system and in line with the policy measures of other institutions globally seen in the period 2012–2014. The aim of the programme was to address the credit crunch that amplifies the real economy cycles, mainly in the SME sector. Several studies have demonstrated the solid macro-level foundations of this, some of them already before the scheme was launched, and ex-post research has confirmed that it may be desirable to use (even targeted) programmes in the crisis of credit supply constraints in order to avoid more serious costs to the real economy. Micro-level research on the Hungarian corporate sector also showed that the FGS contributed substantially to the increase in corporate investment activity and even to the increase in employment over time. That being said, the results are not limited to the extensive growth of corporate

activity: some companies (typically young, smaller, high value-added companies, but lacking in capital, and therefore subject to credit constraints) participated more effectively in the programme and did not grow only in proportion to borrowing. These companies were able to generate higher value added from unit borrowings and even to increase their productivity over the longer term.

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Long-term productivity improvements of FGS participants

Zsolt Oláh

In recent years, several studies have addressed the direct effects of the FGS on the real economy by conducting in-depth analysis both at the macro and micro levels. However, as no comprehensive study has been prepared to date on the long-term performance assessment of beneficiary businesses, this paper seeks answers to questions such as what productivity and efficiency trends can characterise participating companies over longer periods other than the various advantages offered in terms of investment, employment and lending. Based on our findings, efficiency improvements could be observed in a wide range of companies and industries between 2012 and 2019, but FGS participants were able to show consistently higher performance regardless of their industry classification, size and age. Higher performance indicators can be attributed to the structural and efficiency characteristics of FGS participants, and in 2020 they proved to be more resilient in the economic downturn emerging in the wake of COVID. Higher efficiency and productivity accompanied the stable financing of day-to-day business and a low debt burden compared to profitability, i.e. ultimately an optimally chosen financing structure.

1. Introduction

In recent years, a number of studies have addressed the economic impact of the Funding for Growth Scheme (FGS). These included works on both macro- and micro-econometrics, allowing estimates to be made not only on short-term macro effects, but also on investment and employment effectiveness directly at company level. An example of the former type of investigation is the work of Székely (2020), which used a *SVAR* framework to quantify not only comprehensive credit supply shocks but also asymmetric ones affecting SMEs. In other words, it quantified the macro effect of undesired credit supply constraints to resolve which the MNB launched the programme in 2013 (Balog et al. 2014). On the one hand, the results identified the positive growth feedback of targeted lending programmes, which was in line with previous more general results, e.g. those in Tamási-Világi 2011. On the other hand, it also showed that the sensitivity of GDP growth is almost twice as high in the case of supply constraints on SME lending compared to large companies, and that shocks to SME lending will, over time, also impact trends in lending to large corporates, i.e. there are also cross-cutting second-round effects.

Evidence on micro-based approaches was first summarised by Endrész et al. (2015), which examined new investment activity generated at the level of the companies through the utilisation of the first phase of the FGS. Taking advantage of the variability inherent in the balance sheet and credit data available from individual companies, the authors compared the investment volumes of the companies before and after the launch of the FGS (this was done by means of *difference-in-differences* estimation, i.e. by setting up control groups for creditworthiness in addition to the time dimension). According to their results, 30 per cent of the total investment volume of the participating companies could be considered additional in 2013, which is attributable to the first phase of the FGS. Additionality was higher in the case of smaller companies, in line with the hypothesis that smaller companies exposed to credit constraints to a greater extent (higher risk to a bank), which are more vulnerable in the event of a credit supply shock (*credit crunch*).

The former study provided a detailed assessment of the direct investment effects of the programme (first phase), but did not yet comprehensively cover the broader activity of companies in addition to investment, i.e. employment, efficiency and productivity. This gap was filled by the work of Horváth-Lang (2020), which examined the first three phases of the FGS for a wide range of companies, with special regard to the mechanisms of action between the scheme and corporate credit constraints. According to the results, the subsidised loans were also used to a large extent for investment and employment growth, and more importantly, they were typically implemented in a way that increased corporate productivity over a period of several years. Another result is that the programme's greatest value added in the real economy was typically achieved among younger companies that were not necessarily the smallest, but had the necessary capacity and willingness to grow, while they also lacked the required capital to do that.

The above results confirm that for certain companies the direct real economic impact of FGS utilisation is significant, reflecting direct investment, employment and growth activity. To date, however, no studies have been carried out on the long-term effects of FGS participation. This analysis seeks to provide a comprehensive review of the long-term results of the companies participating in the FGS, focusing on issues such as:

– whether the productivity and value added of the companies participating in the FGS have increased steadily over the years;

– how the growth and profitability of FGS participants have changed compared to companies of similar age and activity;

– to what extent debt flows are different for companies that have ever participated in the programme over the years;

– whether the companies participating in the FGS are more resilient to the economic downturn in the wake of the COVID-19 pandemic.

This analysis is an attempt to provide a comprehensive assessment of the above questions based on the sample of companies operating continuously between 2012–2020, with particular regard to the dimension of FGS participation. For this purpose, the analysis will rely on the companies' annual financial statements (balance sheet and P/L account), borrowing data (Central Credit Information System) and FGS participation data. The analysis will seek to focus on the factors that can determine long-term efficiency and productivity in the corporate sector, so in addition to the diversity of unique characteristics, it will primarily examine the evolution of corporate efficiency trends over time.

2. Summary of the companies in scope

Below is a summary of the basic characteristics of the sampled companies. In the course of the analysis, particular attention was paid to include only companies that already existed in 2012 (i.e. before the launch of the FGS) and operated continuously up to 2020 (submitting tax returns and financial statements every year).

The table below provides a brief summary of the composition of and number of elements in the corporate sub-sample:

Table 1
Companies in scope

Definition	Number of companies	of which: FGS
Total number of companies operating between 2012–2020	626,048	25,550
Number of companies with continued operations between 2012–2020	201,686	16,874
of which: Companies classified in the SME sector in 2020	200,868	16,788
of which: borrowers	78,810	16,874
of which: Borrowers classified in the SME sector in 2012	78,103	16,830
of which: Borrowers classified in the SME sector in 2020	77,942	16,788

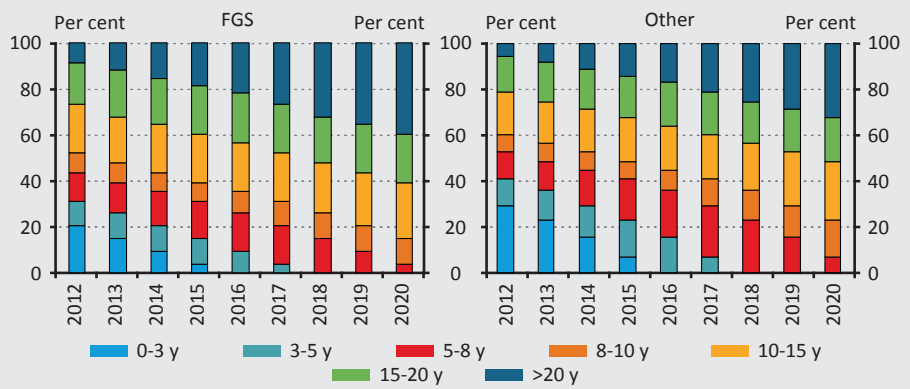
Note: The above table shows only the number of companies. The number of businesses participating in the FGS is greater (around 60,000), the difference being mainly the result of sole proprietors and primary agricultural producers.

Source: MNB, NAV, Central Credit Information System

Approximately one-third of eligible companies can be considered to have operated continuously over the time horizon concerned, while the total number of companies applying for FGS loans between 2013–2017 is 26,000, a high proportion of which, about 72 per cent, operated continuously between 2012–2020.

As a result of the definition of the companies in scope, the average age in the sample increases significantly during the period concerned. In 2012, the year before the FGS was launched, the average age of the entire population of the companies in scope was 9 years, whereas subsequent FGS participants were on average one year older compared to the rest. By 2020, this continuously operating business segment is on average 17 years old, and even the 'youngest' among them – representing a mere 4 to 5 per cent – are 9 to 10 years old. (Chart 1).

Chart 1
Changes in the age of companies operating continuously by FGS participation

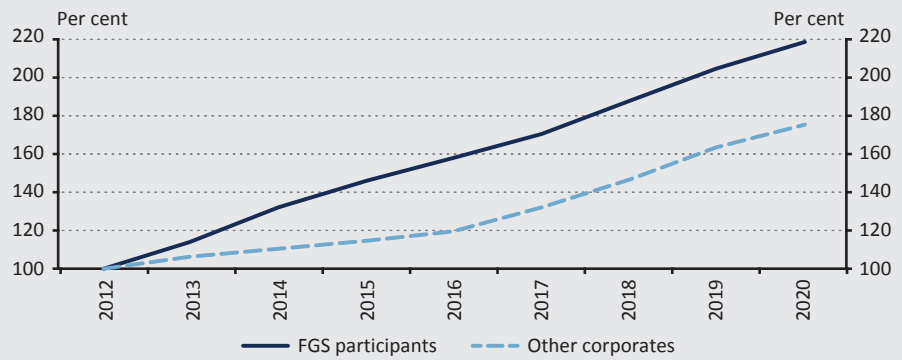


Note: as the companies in scope represent a fixed population (continuously operating between 2019 and 2020), the age structure shifts towards older age brackets over time.

Source: MNB calculation

Investment trends are best captured by the tangible assets of the companies included in their balance sheets. Over the time horizon concerned, all of the companies included in the sample appear to have been able to increase the relative holdings of tangible assets on their balance sheets by about 90 per cent on average between 2012 and 2020. When trends are examined in terms of FGS participation, however, major differences are found. In the case of FGS participants, there is an increase of about 120 per cent, while in the case of those not participating, there is an increase of 75 per cent, and while the FGS participants showed steady dynamics in increasing their assets during the whole period (approximately one-half before and after 2017), companies outside the programme realised three-quarters of their growth only from 2017 (Chart 2).

Chart 2
Relative change in tangible assets between 2012 and 2020 by FGS participation

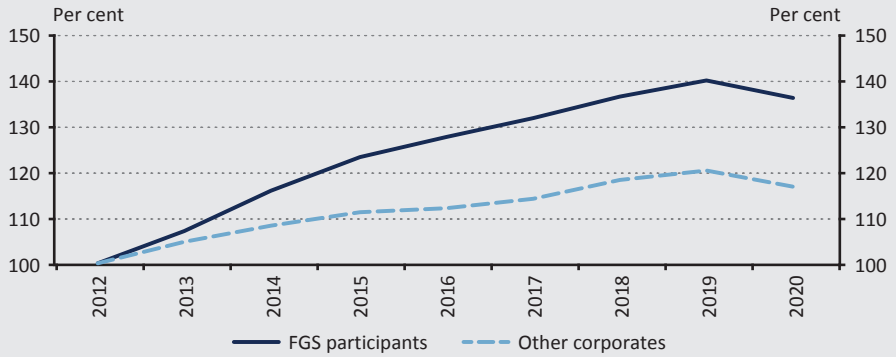


Note: only SMEs based on their size in 2012.
Source: MNB calculation

Similar trends are seen in the number of employees. Companies in almost all industries and age cohorts were able to increase their employment, as a result of which several companies were able to scale up in size and even grow from SMEs into large companies. Between 2012–2019, the number of employees increased by 14 per cent for the total sample, while the average growth rate among SMEs was 24 per cent. However, there is also a significant difference in the latter segment according to FGS utilisation: FGS participants were able to increase their headcount by 40 per cent, compared to 20 per cent for those not participating (Chart 3).

However, the economic recession in the wake of the COVID pandemic set back this expansion and the number of employees in the population of companies in scope decreased slightly between 2019–2020 (in one year, the sample size decreased by 2.2 per cent including large companies, and by almost 3 per cent if only SMEs are taken into account). There is also a slight difference here by FGS participant status. While FGS participants also saw their employment levels fall, the decrease in their headcount (2.5 per cent) was more moderate compared to their non-FGS counterparts (3 per cent).

Chart 3
Relative change in employment between 2012 and 2020 by FGS participation



Note: only SMEs based on their size in 2012.
Source: MNB calculation

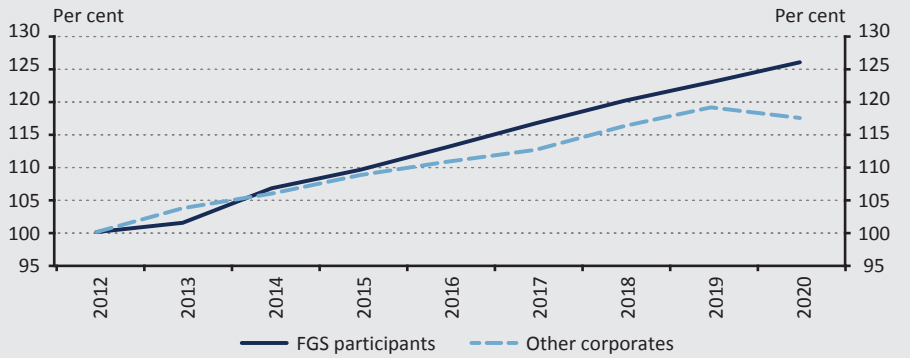
Looking at the change in the intensity of value added [1], it is found, consistently with the findings discussed earlier, that enterprises participating in the FGS were able to increase their efficiency in this area much faster. Although non-participating companies started from a higher level, their previous dynamics slowed down in the second half of the period under review, while FGS participants were able to keep their previous trend at a higher level (Chart 4).

However, when analysing the realised effects of the recession emerging in the aftermath of COVID, an examination of the change in value added will produce a different observation: while the relative amount of value added in the total sample will decrease by 2020, similarly to employment, further (almost unchanged) growth can be observed in the case of companies participating in the FGS between 2019 and 2020. Thus, compared to 2012, the intensity of value added of FGS participants is approximately 26 percent higher in 2020 (i.e. they generate 26 per cent more value added per unit of turnover than in 2012), while the growth rate of SMEs outside the FGS is only 17 per cent for the whole period.

Overall, when examining the change in value added, it can be concluded that although the business efficiency of the companies participating and not participating in the programme increased at a similar rate from 2012 onwards, growth of value added of non-FGS companies slowed down in this area compared to FGS participants from 2016, and it is particularly striking that the companies participating in the FGS seem to be more resilient than non-FGS companies in 2020.

[1] The ratio of company-level value added and sales revenue, a kind of efficiency indicator.

Chart 4
Relative change in value added between 2012 and 2020 by FGS participation



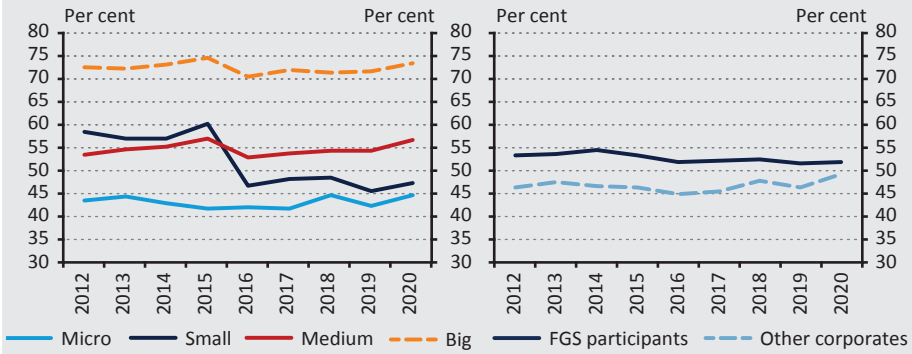
Note: only SMEs based on their size in 2012. The basic indicator is the volume of value added divided by the volume of turnover, and its change over time was normalised to the level of 2012.

Source: MNB calculation

There was little change in the baseline trends of corporate indebtedness over the time horizon concerned. Roughly all company sizes have a similar level of accounting leverage (ratio of debt capital to balance sheet total). The ratio is the lowest for micro enterprises and the highest for large enterprises, with values distributed between these two extremes for other SME categories (Chart 5). For each company size, the levels appear to be roughly constant over time, and although there was an increase in all categories in 2020, the temporary cause of this may be the loss wave due to the COVID crisis on the one hand, and the lending instruments of the economic policy of crisis management on the other. Overall, however, based on the period concerned, companies for the most part arguably strive to manage their leverage at fixed levels over time.

A look at the SME sector broken down by FGS status will show that the participants in the programme operated with substantially higher leverage (even before the FGS) than their counterparts in the SME sector that did not participate in the FGS. Furthermore, the fact that in 2020 a similar surge in leverage is not seen for FGS participants suggests that they are more crisis-proof in that they may have suffered more moderate losses in 2020 than other companies.

Chart 5
Average size of leverage between 2012 and 2020 by company size (left) and by FGS participation (right)

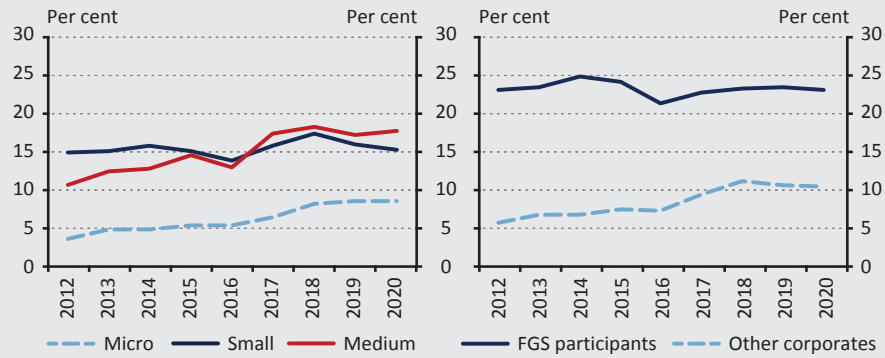


Note: for the right panel, only SMEs based on their original size category in 2012.
Source: MNB calculation

In terms of profitability trends, essentially two findings can be made. First, the size of a company significantly influences its profitability in the long run, which may be related to economies of scale. Second, on average, the relative level of profitability did not deteriorate substantially in 2020 compared to the previous years in the business population in scope (Chart 6). The highest (and also the most hectic) profitability is a characteristic of the large corporate sector, while the profitability of the smallest enterprises started to grow significantly only after 2016, which might be largely related to capital-intensive growth during this period (based on macro data, the MNB attributes the economic growth of the years after 2016 primarily to the productivity growth of the domestic SME sector (MNB 2020)).

Looking at the SME segment according to FGS participation, it also becomes apparent that this segment has the highest profitability level by far. Even before the FGS was launched, this segment was the most profitable, and these companies were able to maintain this higher level of profitability up to 2020. There are basically two possible explanations for this. One is that companies rely on the improved economic outlook to increase their operating margins, and the other is that they improve their operating efficiency and productivity. In the next section, these two aspects will be explored in more detail.

Chart 6
Evolution of corporate profitability (EBITDA) between 2012 and 2020 by company size (left) and by FGS participation (right)



Note: for the right panel, only SMEs based on their original size category in 2012. The relative level of EBITDA expresses the relationship to capital and debt in the previous year.

Source: MNB calculation

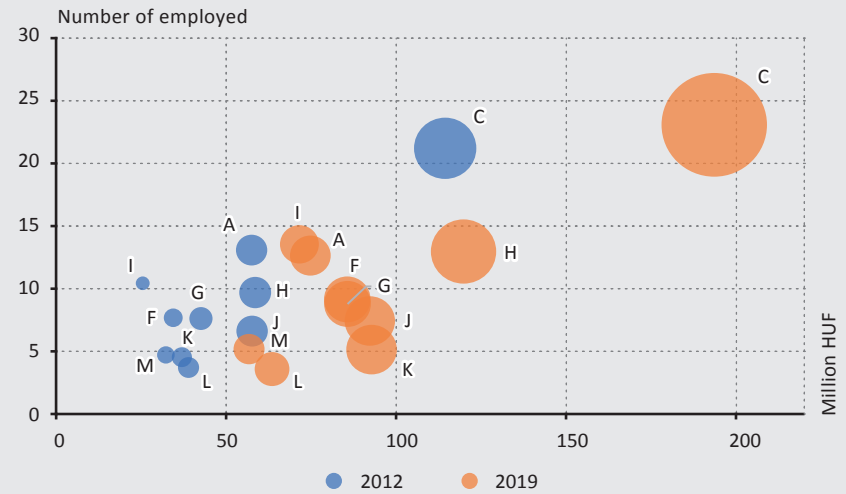
Overall, the sample arguably includes essentially older, more mature companies, and smaller companies can be characterised by lower performance indicators, but FGS participants consistently have better indicators than other SMEs. Over the time horizon under review, these companies saw the fastest increase in terms of investment in tangible assets, employment and value added, and are also characterised by the highest profitability within the SME sector. The next section looks at the different aspects of productivity for that segment.

3. Evolution of productivity and correlations with company performance

The performance characteristics of the companies in scope are shown in the chart below, which plots the average number of employees for each industry and the average added value for the period 2012–2019 (Chart 7). The results show that the average value added increased in all industries over 8 years, and while in the case of agriculture we see the smallest growth, the average performance of the manufacturing industry (C), the construction industry (F), trade (G) and the transport sector (H) increased above the whole-economy average.

There is also a general increase in the number of employees of SMEs (the smallest in agriculture), but no fundamental rearrangements can be observed in this respect, and similarly to 2012, in 2019 the manufacturing industry remained the most important employer among the companies in scope, also on average.

Chart 7
Average SME employment and value added in each industry in 2012 and 2019

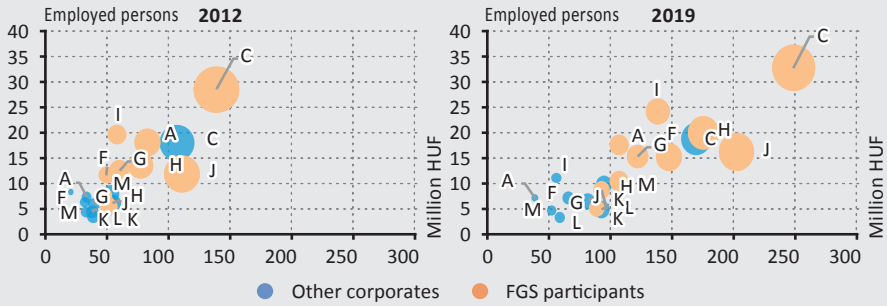


Note: only SMEs based on their size in 2012. The size of each bubble is proportionate to the average added value of the corresponding industry.

Source: MNB calculation

Based on the same performance indicators, the differences can also be examined between companies that participated in the FGS and those that did not (Chart 8). Based on their 2019 results, the previous observations may be reiterated: average value added and employment are significantly better for FGS participants than for those not participating. In terms of both value added and headcount, it can be said that even before the launch of the programme, FGS participants had higher performance indicators than their industry counterparts, but they also achieved greater growth between 2012 and 2019 compared to non-participants.

Chart 8
Average SME employment and value added in each industry by FGS status (left: 2012, right: 2019)

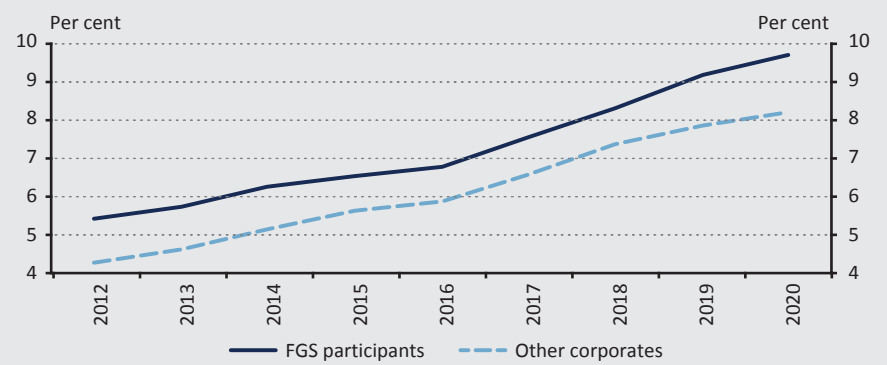


Note: only SMEs based on their size in 2012. The size of each bubble is proportionate to the average added value of the corresponding industry.

Source: MNB calculation

Although the labour productivity of FGS participants had a higher initial level in 2012, this advantage also increased until 2019 compared to those not participating in the programme, resulting in a steadily widening productivity gap between the two groups of companies over the years (Chart 9). The difference is striking between 2019 and 2020, when it becomes apparent that as a result of the COVID crisis, the labour productivity of non-FGS companies continued to grow at a slower pace, while the advantage of FGS participants continued to increase even despite the crisis. As employment in both segments decreased at a similar rate between 2019 and 2020, this also suggests a more pronounced fall in value added for non-FGS companies compared to FGS participants, underlying which is presumably a higher degree of crisis resilience of FGS participants.

Chart 9
Evolution of average labour productivity between 2012 and 2020 by FGS status



Note: only SMEs based on their size in 2012.

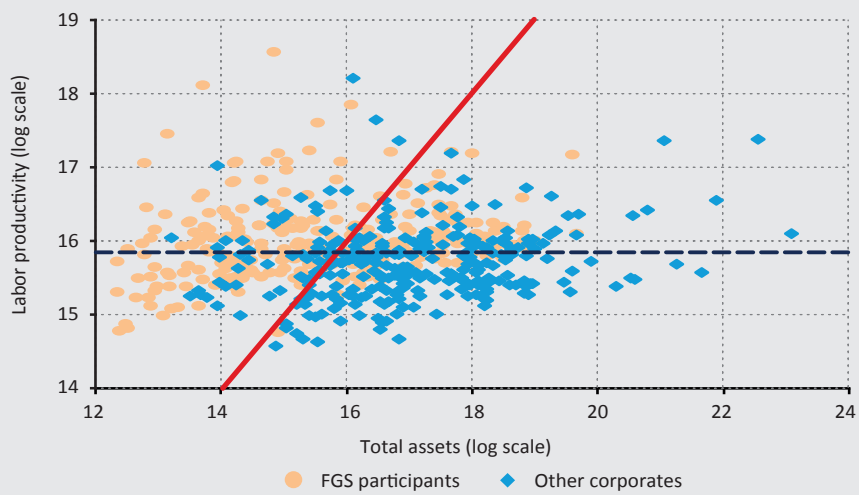
Source: MNB calculation

The higher labour productivity of FGS participants could in principle be attributed to the fact that they typically include older companies, as this would explain that they are more mature and efficient, etc. However, a look at labour productivity trends among companies by age cohorts will show that although the initial level of FGS participants in all cohorts is slightly higher than in non- participants, this difference continues to increase over time. Labour productivity of FGS companies increases more rapidly by 2020, especially in the younger cohorts.

Another natural explanation for the difference could be the size of the company, which, similarly to the age of the company, could lead to better productivity in larger companies due to possibly higher economies of scale. If we compare the size of labour productivity with the balance sheet total describing the size of the company, on the one hand, we can see that economies of scale are not self-evident (no strong positive correlation is apparent). What is apparent, on the other hand, is that while FGS participants are on average smaller than those not participating, they still operate with higher average productivity, but even where they are similar in size compared to companies outside the programme, their productivity is above average (Chart 10).

Accordingly, FGS participants can overall be characterised by higher productivity compared to their peers of similar size, age cohorts and industry as well.

Chart 10
Relationship between balance sheet total and labour productivity by FGS status (2019)



Note: only SMEs based on their size in 2012. Both axes measured on a logarithmic scale. To the left of the red line are higher performance values (mainly FGS participants) compared to relatively small companies, while the dashed line shows the average level of productivity for the companies in scope.

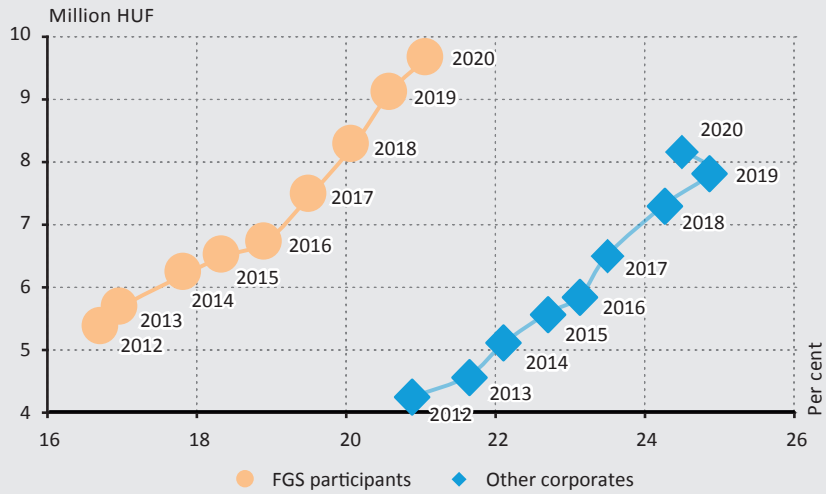
Source: MNB calculation

Looking at the evolution of the labour productivity and intensity of value added of FGS and non-FGS companies over time basically two things are evident (Chart 11). First, these performance indicators in both groups are improving over time, for FGS participants also during the COVID crisis, while the 'efficiency ratio' of value added among non-FGS companies will deteriorate slightly by 2020, accompanied by improved labour productivity – probably due to headcount reductions.

Second, it can be seen that at any level of intensity of value added, FGS participants can work with higher labour productivity, that is, they can organise their operations more effectively (or vice versa: they can manage any level of labour productivity with lower intensity of value added). This result might also be achieved by companies by operating with a higher than average margin. However, this is not the case for companies participating in the FGS. The margins of companies participating in the programme cannot be considered to be outstanding either in relation to the average level observed for each SME company size or in relation to the average level of companies not participating in the FGS.

Another potential explanation is that companies can achieve relatively higher revenues with the same headcount and size (balance sheet total). That, however, is very typical of FGS participants: in most major industries, they are seen operating with a much higher turnover per unit of balance sheet than those not participating in the FGS. This is not only true for companies with higher efficiency and headcount, because the same can be observed in the case of micro-enterprises; therefore, it is presumably not due to higher economies of scale that the sales revenues of FGS participants are higher. Overall, therefore, the reason for higher profitability and productivity should be sought in their organisational and structural functioning.

Chart 11
Relationship between labour productivity and intensity of value added by FGS status (2019)



Note: only SMEs based on their size in 2012.
Source: MNB calculation

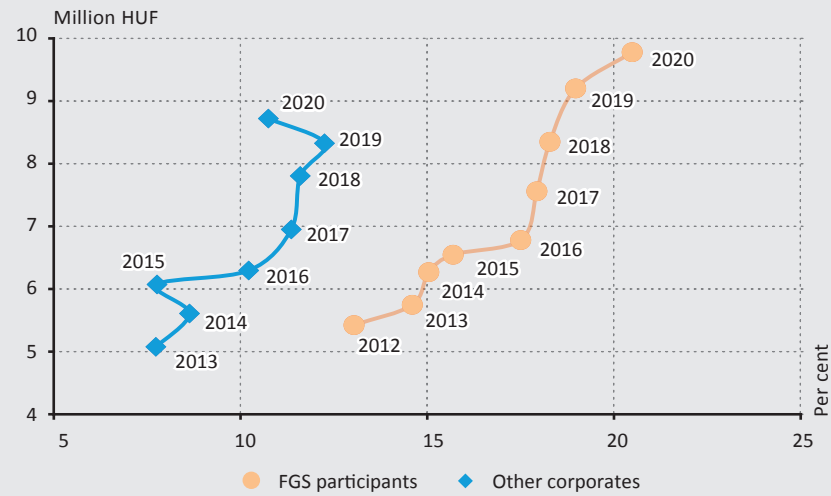
Over a longer period, then, it is observed that the intensity of value added improved year by year for both participants and those not participating, but FGS companies were able to achieve this faster and from a higher level. This is not explained by the age, size and industry classification of the companies, since, as we have seen, the companies participating in the programme were able to operate relatively more efficiently for very alike non-participants, not only in a year or two, but also between 2012 and 2019, and even during the COVID crisis.

Management competencies are very difficult to control for by reference to corporate financial reports (organisational efficiency), but balance sheet structure can be inferred from some major financial indicators (structural efficiency). We have seen that the leverage of FGS participants is higher than that of their non-participating counterparts, but in that regard, there was no significant difference between the two groups of companies, and in fact the gap has been closing in recent years. However, the financing structure that can be revealed in the balance sheet structure allows examination.

One of these financing-structural indicators is the ratio of net working capital, which shows the proportion of the equity and non-current liabilities of a given company used to finance assets in addition to fixed assets and investments (real estate, machinery, equipment, participating interests), that is, current assets (materials, self-produced inventories, trade receivables, etc.), which are necessary for its day-to-day operation.

This in face may also be construed as the proportion of current assets on the balance sheet that is no longer financed by short-term loans but by stable sources of funding.

Chart 12
Evolution of labour productivity and net working capital over time by FGS status



Note: only SMEs based on their size in 2012.
Source: MNB calculation

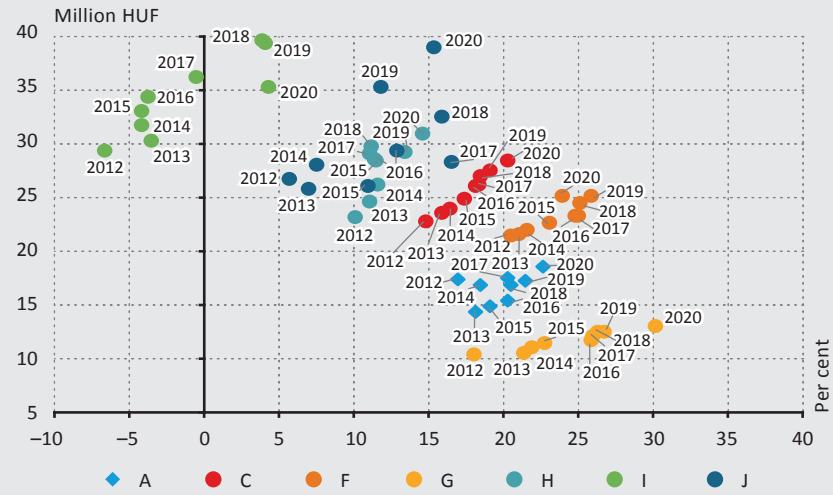
The FGS can naturally increase the proportion of net working capital, as it typically provided long-term resources to participating businesses. However, looking at the evolution of the indicator over time, FGS participants had higher net working capital and labour productivity indicators before the programme was launched (Chart 12).

Thus, the companies participating in the FGS typically operated with higher labour productivity each year compared to non-participants, and each year a higher level of net working capital was associated with this performance. In other words, the labour productivity of participating companies increased year on year, while their working capital provided with secure financing improved.

Each industry is characterised by different combinations of net working capital and intensity of value added. Different initial positions can be observed in these two dimensions, but over time an improvement is seen in the combination of the two indicators from 2012 to 2020. Apart from that, the rate at which that simultaneous improvement in the two characteristics was achieved varied by sector, even if only the companies participating in the FGS are examined (Chart 13). If net working capital is considered as a kind of capacity indicator, then the highest sensitivity of value added

over time may have occurred in the manufacturing (C), construction (F), transport (H) and accommodation (I) sectors – that is, in their case, a higher rate of productivity improvement occurred in parallel with the change in the capacity described by net working capital. However, in the case of companies not participating in the FGS, this correlation is generally weaker in the majority of the priority industries.

Chart 13
Development of value added and net working capital over time for FGS participants by sector

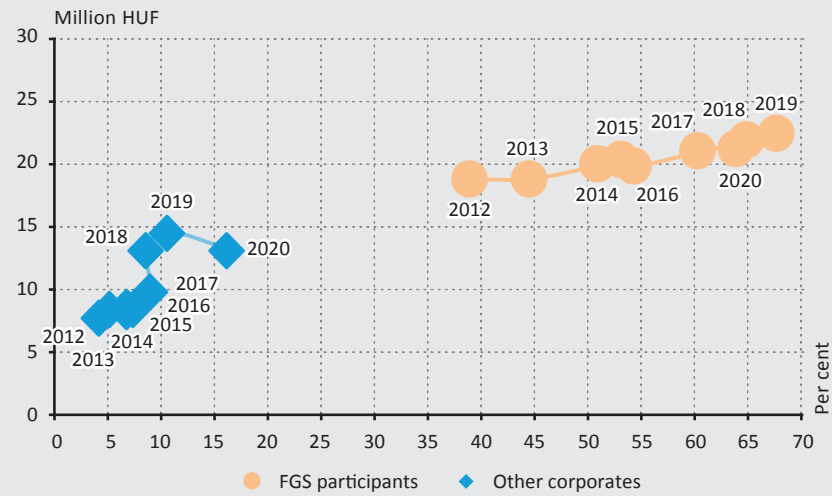


Note: only SMEs based on their size in 2012. Restricted to major industries. A – Agriculture, C – Manufacturing, F – Construction, G – Wholesale and retail trade, H – Transportation and storage; I – Food service activities, J – Infocommunication.

Source: MNB calculation

In addition to the choice of financing structure, FGS participants also have a better level of cash-flow coverage of outstanding debt (Chart 14). This means that free operational cashflows after interest payments of the participants in the programme would cover their remaining debt to a greater extent (conversely, they would be able to repay the entire stock from these free cashflows in less time on average). This group of companies had this relative advantage compared to non-participants even before the launch of the FGS, but they also gradually improved until 2019, in parallel with the increase in their level of value added per unit of assets.

Chart 14
Value added over assets and debt coverage after interest by FGS status



Note: only borrowing SMEs based on their size in 2012, with value added shown on the y-axis and debt coverage on the x-axis. Debt coverage after interest is the ratio of operating cashflows less interest expense to credit-related liabilities.

Source: MNB calculation

This means that, in addition to the fact that the initial profit levels of FGS participants are higher than those of their non-FGS counterparts, this profitability was not a result of over-indebtedness. This even enabled them to increase the average value added of their assets over the years by choosing the appropriate financing structure for their operations. Ultimately, the more efficient funding structure and the operational coverage of debt was accompanied by a higher level of value added and labour productivity.

4. Summary

Between 2012 and 2019, there was a substantial increase in productivity in the domestic SME sector, which was largely linked to companies that participated in the FGS. These participants achieved faster growth in tangible assets, employment and value added, and had the highest level of profitability in the SME sector. This observation also holds true when comparing companies of similar employment, industry and company size. Overall, borrowing among the FGS participants was also higher, but despite this they successfully avoided over-indebtedness; and not only did they stand out among other companies in terms of labour productivity and value added, but also proved to be more resilient during the COVID crisis compared to them.

An analysis of the corporate balance sheet and profit items leads to the conclusion that the higher performance indicators can largely be attributed to the structural and efficiency characteristics of FGS participants. During the long period considered, participants in the programme were likely to be able to increase their intensity of value added generated (i.e. to increase the value added by an increasing part of their turnover) not by increasing their margins or using their market power, but by increasing the efficiency of their operations and making the financing structure more efficient.

The efficiency gains affected a wide range of companies and industries, but generally FGS participants were able to achieve greater improvements in this respect, regardless of their industry status, size and age. This is also achieved in some respects in terms of their initial state before the introduction of the FGS, as they were able to increase their relative advantage compared to their initial positions on the basis of several indicators; indeed, in 2020 they proved to be more resilient in the economic downturn emerging in the wake of COVID. In the context of the relative productivity and efficiency advantage, we have highlighted two financing characteristics that are likely to be interlinked.

One of these is the proportion of net working capital within the balance sheet, which shows how stable the financing structure of companies' day-to-day operations are. In the case of FGS participants, it was found that higher labour productivity was associated with a higher level of net working capital. On the other hand, we have also seen that the level of free cashflows after interest payments is much higher in this group of companies. This suggests that the cautious choice of the required financing of FGS participants was ultimately accompanied by a higher level of value added and labour productivity.

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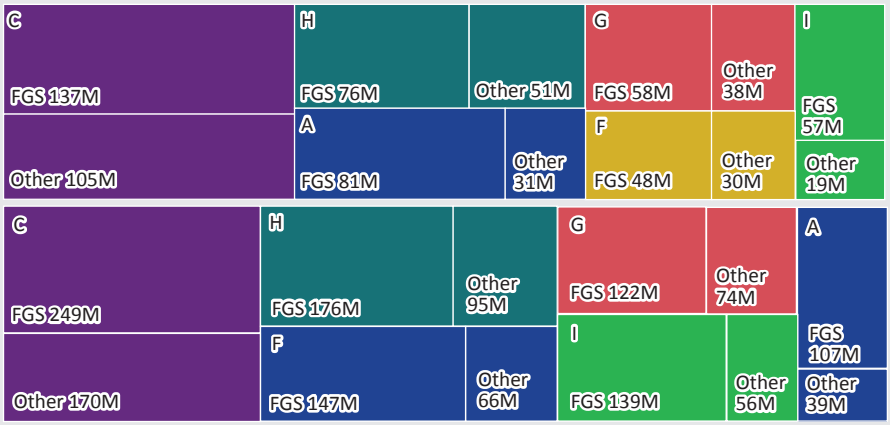
Appendix

Chart 15
Average corporate value added by industry and FGS utilisation (top: 2012, bottom: 2019)

Average value-added broken down by industries and FGS status, million HUF

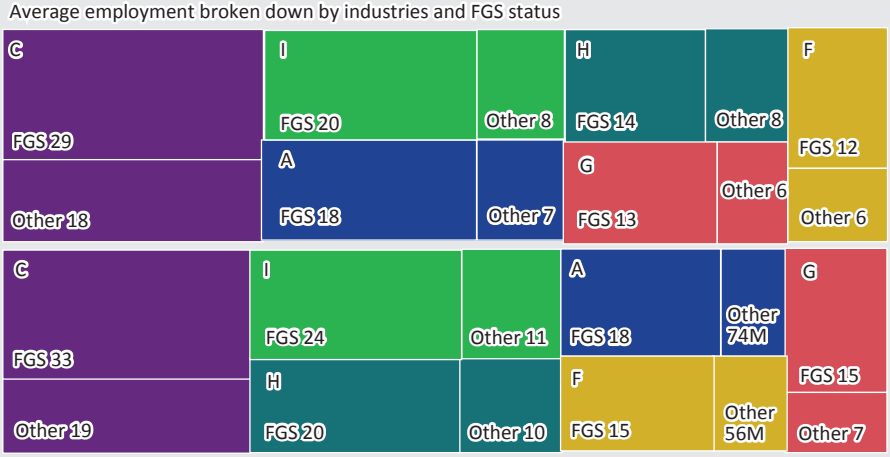


Note: restricted to major industries. A – Agriculture, C – Manufacturing, F – Construction, G – Wholesale and retail trade, H – Transportation and storage; I – Food service activities.

Source: MNB calculation

Chart 16
Average number of employees by industry and FGS utilisation (top: 2012, bottom: 2019)

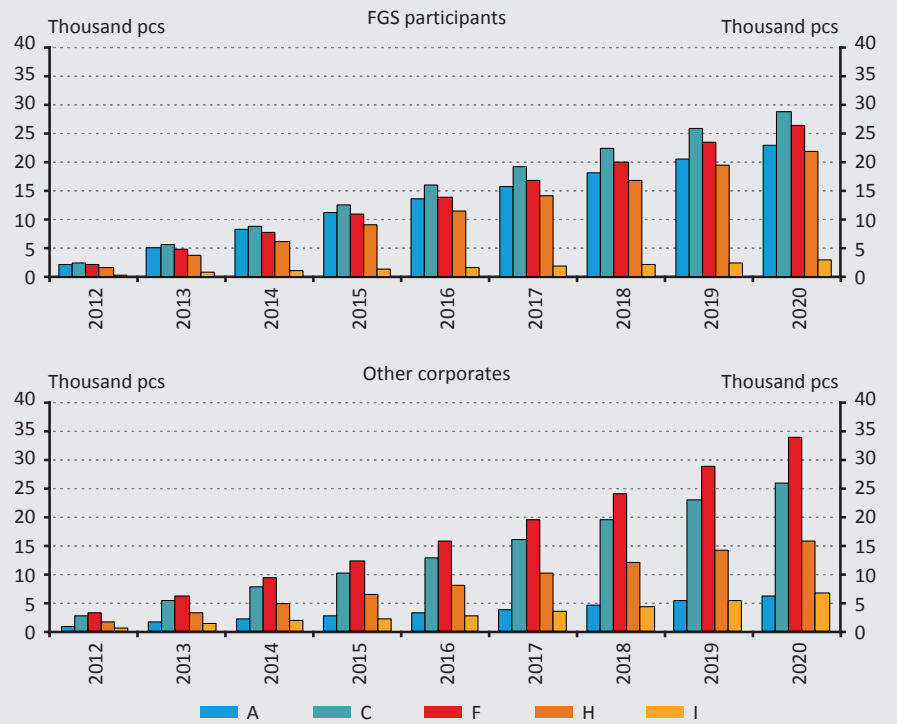
Average employment broken down by industries and FGS status



Note: restricted to major industries. A – Agriculture, C – Manufacturing, F – Construction, G – Wholesale and retail trade, H – Transportation and storage; I – Food service activities.

Source: MNB calculation

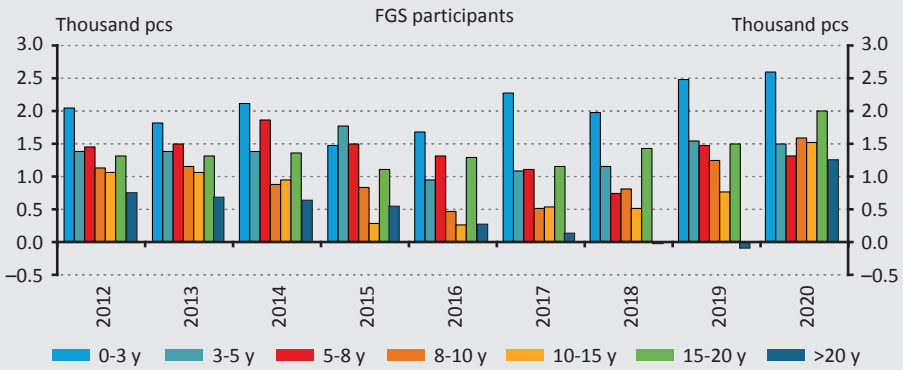
Chart 17
Cumulative number of new loan agreements in some priority industries (top: non-FGS, bottom: FGS participants)



Note: restricted to major industries. A – Agriculture, C – Manufacturing, F – Construction, H – Transportation and storage; I – Food service activities.

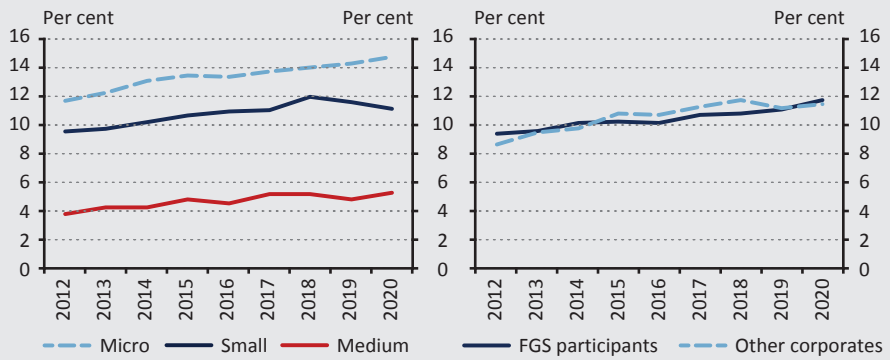
Source: MNB calculation

Chart 18
Productivity margin of FGS participants by age bracket



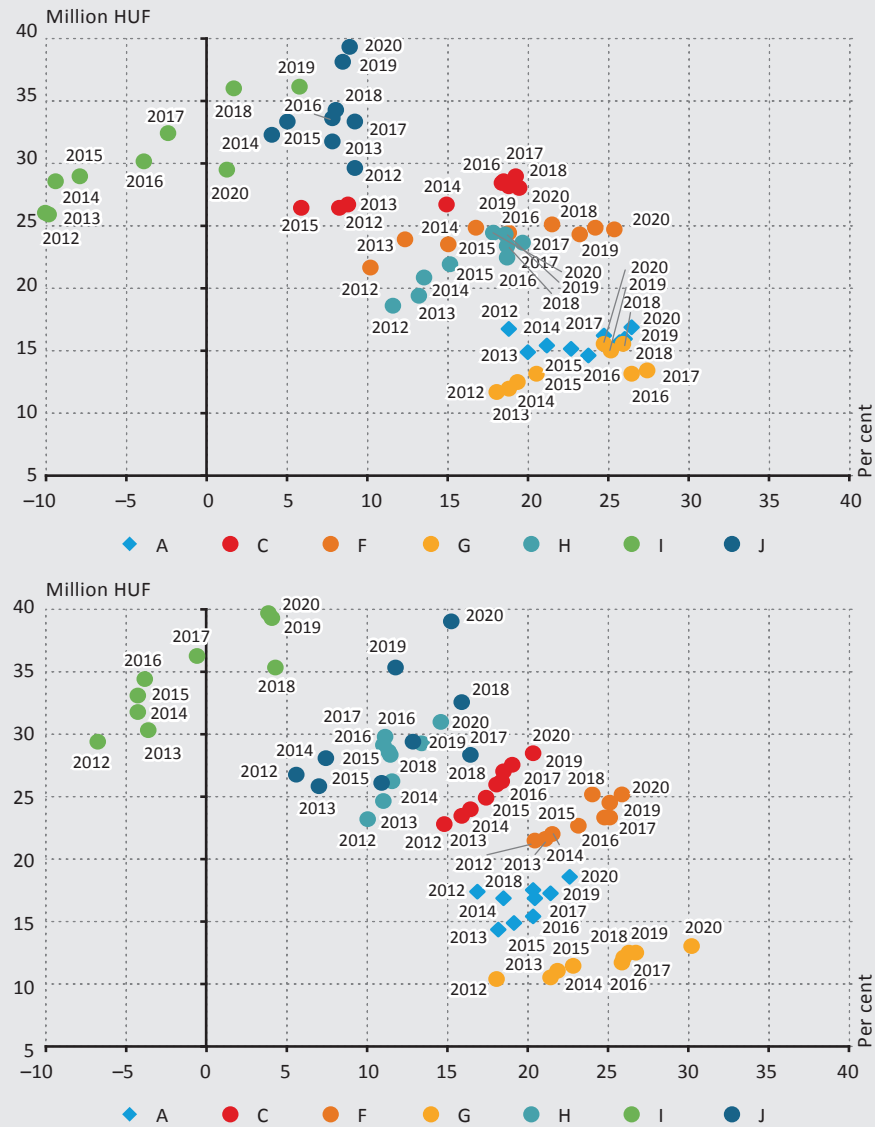
Note: only borrowing SMEs based on their size in 2012.
Source: MNB calculation

Chart 19
Development of the price margin in the SME sector and breakdown by FGS



Note: only borrowing SMEs based on their size in 2012.
Source: MNB calculation

Chart 20
Evolution of added value and net working capital over time by FGS status (left: non-FGS, right: FGS participants)



Note: only SMEs based on their size in 2012. Restricted to major industries. A – Agriculture, C – Manufacturing, F – Construction, G – Wholesale and retail trade, H – Transportation and storage; I – Food service activities, J – Infocommunication.

Source: MNB calculation

Sustainability aspects in housing loans: the FGS Green Home Programme

Laura Komlóssy

In its green toolkit strategy, the Magyar Nemzeti Bank (MNB) set itself the objective of supporting sustainable economic transformation and achieving climate goals, as well as increasing the climate awareness of the financial system. The housing loan market is an appropriate starting point for the central bank to encourage the integration of green aspects, in view of the low energy efficiency of the residential real estate stock, which accounts for a third of primary energy consumption in Hungary, and there is significant room for modernisation. As part of the Funding for Growth Scheme (FGS), in line with and as one of the first steps of the Green Monetary Policy Toolkit Strategy, the FGS Green Home Programme was launched in October 2021. The FGS GHP promotes the creation of a green housing loan market and the enforcement of environmental sustainability aspects in the domestic housing market by providing low-interest central bank funds for the construction and purchase of energy-efficient new homes.

1. Green considerations in monetary policy and the reasons for launching the FGS Green Home Programme

The natural, economic and social changes that climate change entails represent one of the greatest challenges of the 21st century. Climate change affects both price stability, financial stability and sustainable convergence (Dafermos et al., 2018), so central banks should prioritise the issue.

The MNB has also taken a number of steps in recent years to promote the development of green financial markets and to strengthen the environmentally conscious consumer approach, thereby contributing to the fight against climate change. As a follow-up to the decision of the National Assembly in May 2021, the promotion of environmental sustainability was included in the statutory objectives of the central bank – the first European central bank to have such an objective (MNB, 2021a). In line with its tasks set out in the Central Bank Act, the MNB considers it its mission to develop its monetary policy toolkit without jeopardising its primary objective of price stability and by enforcing long-term environmental sustainability criteria, thereby contributing to Hungary's sustainable convergence. Announced in July 2021 (MNB, 2021b), the green toolkit strategy is the framework underpinning the long-term operation of the central bank, according to which the MNB continuously examines how individual elements of

the monetary policy toolkit can help to accomplish environmental sustainability goals while achieving price stability.

The housing loan market is an appropriate starting point for the enforcement of environmental sustainability aspects, in view of the fact that green aspects are not represented in the pricing of loans, and the energy efficiency of the residential real estate stock, which accounts for a third of primary energy consumption in Hungary (EBRD, 2020), is low, and there is significant room for modernisation (Nagy-Winkler, 2021). In order to encourage green housing loans, the MNB launched the Green Mortgage Bond Purchase Programme and, as part of the Funding for Growth Scheme, the FGS Green Home Programme (GHP) with an overall amount of HUF 200 billion each. In addition, by facilitating the development of the bond market, the central bank added green criteria to its collateral management framework, according to which the conditions for the admission of green rated securities have become more favourable.

The FGS Green Home Programme promotes the creation of the green housing loan market and the enforcement of environmental sustainability aspects in the Hungarian housing market. Favourable green loans available under the GHP can contribute to increasing the demand for energy-efficient homes, which on the one hand indirectly encourages the development of such condominiums and on the other hand promotes the construction of energy-efficient family houses. In addition to the housing market, the programme also introduces a new approach to the credit market by significantly improving the financing conditions for more energy-efficient residential properties.

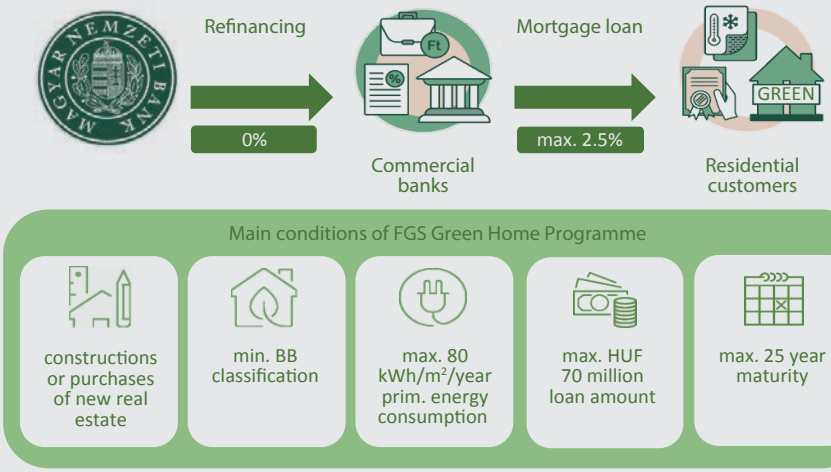
2. Terms and conditions in the FGS Green Home Programme

As in previous phases of the FGS, in the FGS Green Home Programme the MNB provides credit institutions with a refinancing funds at a 0 per cent interest rate, which they can lend on at a maximum 2.5 per cent interest rate, this time for household customers (Chart 1). Launched with an overall amount of HUF 200 billion, the programme allows loans to be granted for the purchase or construction of energy-efficient new flats and family houses (with an energy rating of at least BB and above, and with a primary energy demand of 90 kWh/m^2/year – from 19 April 2022 up to 80 kWh/m^2/year – for own housing, up to a maximum amount of HUF 70 million and a maximum term of 25 years. In view of protracted construction projects, there is a 4-year availability period for the final drawdown, but the first disbursement (full disbursement in case of a lump sum) must be made within 3 years of signing the contract. In the context of housing purpose, the debtor(s) who also become owner(s) must undertake to reside in the residential property for at least 10 years (not all co-debtors must become owner(s) and register in the property).

As in the case of the Certified Consumer-Friendly Housing Loan, a number of consumer-friendly conditions have been introduced in the case of GHP for the benefit of borrowers.

In addition to the requirements on client information and the maximum assessment period, the range and level of charges that banks can levy are limited. In addition to interest, only disbursement fees (up to 0.75 per cent of the loan amount, but not more than HUF 100,000), early repayment fees (up to 1 per cent of the amount prepaid, but not more than HUF 30,000 per contract and per occasion) and third party costs (e.g. notary fees, valuation fees) can be charged.

Chart 1
Operation and main parameters of the FGS Green Home Programme



Note: As of 19 April 2022, the criterion on primary energy use has been tightened to a maximum of 80 kWh/m²/year, from the previous maximum of 90 kWh/m²/year.

Source: MNB

3. Evolution of demand for the FGS Green Home Programme

The rising interest rate and inflation environment has played a significant role in the substantial increase in demand for Green Home Loans and a surge in loan applications in the first months of 2022. Given that the volume of loan applications received by banks, including those already contracted, could reach the overall amount of the programme by the end of March, several banks stopped accepting loan applications (some of them temporarily). The fact that interest in the favourable loans available under the FGS GHP has been greater than previously expected is due in part to a gap between the interest rates on Green Home Loans and market housing loans that has been widening since the launch of the programme on the back of tightening monetary policy; on the other hand, the significantly lower instalments may also have encouraged household customers to opt for new energy efficient homes rather than used ones. In addition, rising inflation and a more uncertain environment due to the war have led more and

more retail clients to opt for property rather than other forms of savings, and the fear of exhaustion of the overall amount and possible cancellation of the programme has led many to bring forward their housing purchases and loan applications.

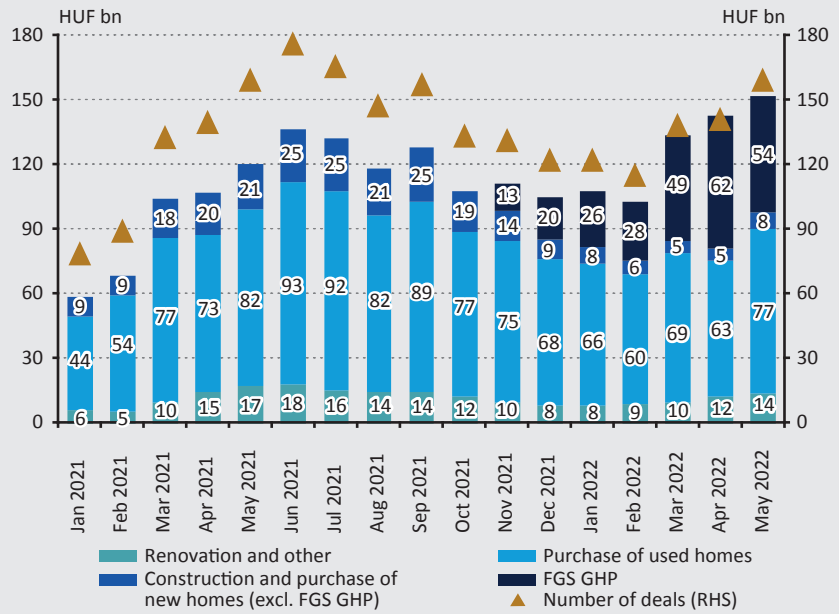
In view of strong demand for Green Home Loans and the importance of sustainability considerations, the Monetary Council increased the overall amount of the programme by HUF 100 billion to HUF 300 billion at its meeting on 5 April [2022]. At the same time, the energy requirements for eligible properties were tightened to encourage the purchase and construction of even greener flats and houses. In addition to the unchanged requirement for category BB, the upper limit for the primary energy use of a property was reduced to 80 kWh/m^2/year[1] instead of the previously required 90 kWh/m^2/year. By the end of April, the volume of loan applications received by most credit institutions had reached the new limit available to them, and they stopped accepting loan applications, as a result, the FGS GHP overall amount has now been essentially exhausted[2].

4. Characteristics of loans under the FGS Green Home Programme

Since November 2021, the GHP has significantly contributed to higher volumes of new housing loans, with significant interest from retail clients since its launch. Due to the protracted product development at some banks and the time-consuming loan approvals, there were no contracts signed under the GHP in October last year. In November, of the loan volume issued for the purchase or construction of new homes, already 47 per cent was linked to the programme, reaching 68 per cent in December, some 80 per cent in January and February of this year, and about 90 per cent in the period between March and May, totalling HUF 252 billion (Chart 2). In March, the FGS GHP exceeded one-third of all home loan issues, while nearly half of the volume in April was issued as part of the programme. In May, the share of the FGS GHP within the total volume of housing loan decreased slightly, given that a significant part of the previously accepted loan applications could already be contracted in the previous months.

[1] As of 19 April 2022, only housing loan contracts that meet the stricter energy requirements will be eligible under the scheme.
[2] Credit institutions participating in the scheme have until 30 September to conclude housing loan contracts up to the overall amount allocated to them.

Chart 2
New housing loans to households in the credit institution sector



Source: MNB

The increasing advantage of Green Home Loans over market interest rate loans played a role in the increase in the volume and share of the FGS GHP, whereby lower instalments shifted demand towards new homes. Indeed, the loan amount-weighted average APR (eliminating state-subsidised transactions) of GHL contracts was around 2.6 per cent, while market loans for the purchase and construction of new housing, excluding state-subsidised transactions, increased from 4.7 per cent at the beginning of the year to 6.2 per cent in May, in a rising interest rate environment. Based on our experience, the rise in long-term benchmark rates due to the monetary tightening cycle is followed only with a lag by market mortgage rates; however, a growing share of banks are, and will continue to be, increasingly factoring rising funding costs into their interest rate conditions.

The average loan amount of contracts signed under the GHP is higher than the average loan amount of contracts signed under the market schemes for the purchase and construction of new housing. Excluding loan contracts with state support (HPS), the average loan amount under the GHP was HUF 29 million in the period from November to May, while the average loan amount for loans under the market scheme was around HUF 17 million. The median loan amount was HUF 26 million for the GHP and HUF 12 million for the market scheme. Taking into account transactions with state subsidies,

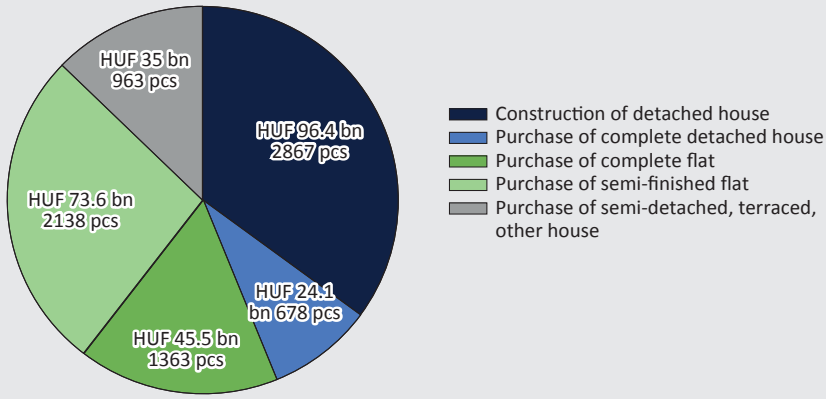
the average loan amount in the GHP was HUF 34.3 million. There is also a difference in terms of maturity between the central bank and market loan contracts. The average maturity of Green Home Loans was around 22.6 years from the date of contracting, while the average maturity of new home loans contracted on market terms was 18.6 years for the period between November and May.

By 1 July 2022, credit institutions participating in the programme had reported 8,009 transactions to the MNB, amounting to HUF 275 billion.[3] In the case of nearly 60 per cent of the contracts, borrowers also benefited from state interest subsidies ("green HPS"). The actual outstanding stock as of 4 July 2022 - i.e. already drawn but not repaid - was HUF 91 billion, one-third of the contracted amount, as most of the contracts are related to pre-construction/under-construction properties, thus (also) involving a later drawdown.

Households have taken out 44 percent of the contracted volume, totalling HUF 120 billion so far for the construction or purchase of detached houses (Chart 3). More than 80 per cent of this volume has been used to finance the construction of detached houses, almost 60 per cent of which are in rural areas, with an average loan amount of nearly HUF 34 million. Forty-three per cent of the loans were linked to flats, 62 per cent of which were for housing under construction and 38 per cent for complete flats. More than four-fifths of the latter loans flowed to the Central Hungary region (and almost 60 per cent were directly linked to Budapest). The average amount of loans taken out for the purchase of complete flats in the capital was close to HUF 37 million. For semi-finished flats, the dominance of the Central Hungary region and Budapest is slightly lower, with 78 per cent of the loan volume flowing to the Central region, of which 46 per cent was directly linked to Budapest. The average amount of loans taken for the purchase of semi-finished homes in Budapest was nearly HUF 4 million higher than for complete flats. About 13 per cent of the volume was spent on the purchase of semi-detached houses and terraced houses, of which more than 50 per cent was related to the region of Central Hungary. The average loan amount was around HUF 36 million.

[3] Contracted volume reported to the MNB by 1 July 2022, as part of the AL12 reporting. The volume/number of contracts actually concluded may slightly exceed this.

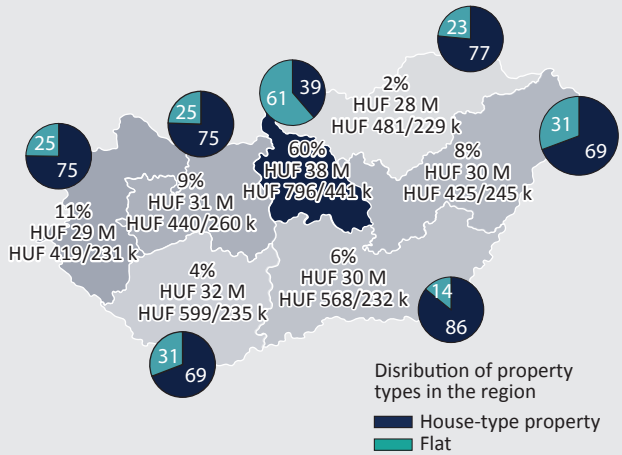
Chart 3
Distribution of the contracted volume under the FGS GHP by loan purpose and property type



Source: MNB

Sixty per cent of the volume of contracts signed so far was related to properties under construction or already built in the Central Hungarian region, and in terms of the number of loans, more than half of the loans were used in this region (Chart 4). Here, the average loan amount is HUF 38 million, which exceeds the average loan amount of HUF 34.3 million for the entire portfolio. By contrast, the average amount of loans related to the real estate in rural regions reached HUF 29.9 million. While the average price per sqm of houses in rural regions was HUF 239,000, with smaller variations by region, that of flats reached nearly HUF 489,000; at the same time, individual values varied widely by region. The average maturity of the entire FGS GHP portfolio is 21.2 years.

Chart 4
Regional distribution of contracts concluded under the FGS GHP based on volume



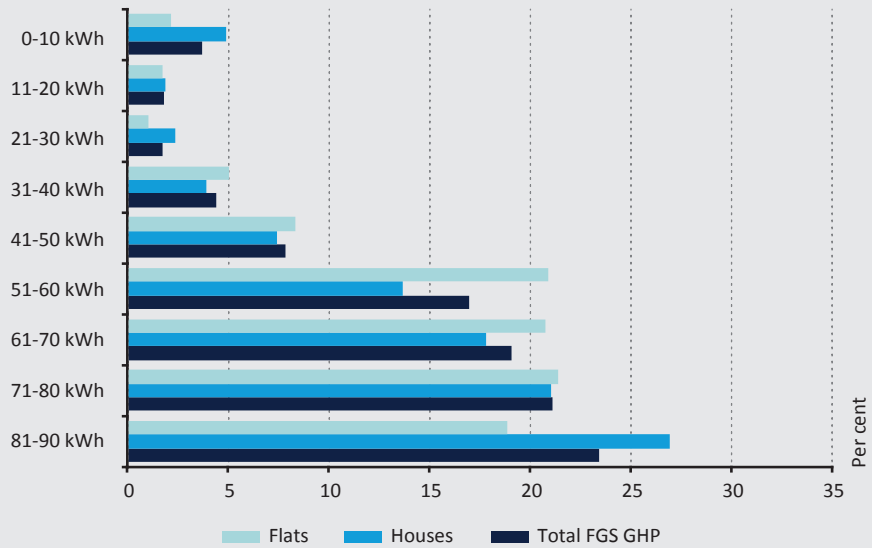
Note: regional distribution of the volume is shown in black, the average loan amount in the given region is shown in red, and the average price per square meter per apartment / house type resulting from the quotient of the sale value and the useful floor area given by the bank is shown in green.

Source: MNB

In terms of energy efficiency, the maximum value of 90 kWh/m^2/year[4] required under the programme is outperformed by a significant part of real estates financed under the FGS GHP. Average annual primary energy consumption is less than 80 kWh for 77 per cent of real estate and less than 70 kWh for 55 per cent (Chart 5). The energy rating of 54 per cent of the properties financed under the GHP so far is already known[5], of which 79 per cent have an energy rating of BB and 21 per cent have higher than BB. Of properties with only BB energy performance certificates, for 71 per cent annual energy consumption is lower per square metre than the threshold a rating above BB, i.e. 80 kWh. Some of these properties would also likely meet the quality requirements for the higher energy category, and the only reason for not obtaining an AA rating for them is higher certification cost. In terms of property types, energy demand is currently lower than 80 kWh for 81 per cent of flats and below 70 kWh for 60 per cent, while in the case of house-type properties, the same ratio is approximately 73 per cent and 52 per cent, respectively. The average annual primary energy consumption per square meter is around 66 kWh for BB-rated properties, while it is only 27 kWh/m^2/year for properties with the best energy rating of AA++.

[4] For contracts concluded after 19 April 2022, the annual primary energy demand is capped at 80 kWh/m^2 (except for loan applications submitted by 5 April).
[5] For banks participating in the GHP, only need to report the energy rating of the property after the completion of the energy certification of the property.

Chart 5
Distribution of properties financed under the FGS GHP by primary energy consumption



Source: MNB

5. Summary

By launching the Green Home Programme, the MNB's aim was to promote the establishment of a green housing loan market and the enforcement of environmental sustainability aspects in the Hungarian housing market. In recent months, the programme has played a prominent role in the housing loans market; in April this year almost half of all home loan issues were implemented within as part of the FGS GHP; however, after the end of April banks had no meaningful funds left to accept new applications. The HUF 275 billion worth of contracts concluded under the programme by early July supported the purchase and construction of 8,000 new homes, and the overall amount available will enable approximately 9,000 households to obtain green real estate on favourable loans. In line with the green toolkit strategy adopted last July, the MNB also intends to support the renewal of the domestic housing stock in the long term and is examining the conditions under which it can support the green transition in a sustainable way once the HUF 300 billion limit is exhausted.

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