EAFRD

Financial needs in the agriculture and agri-food sectors in the Czech Republic

June 2020

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Glossary and definitions

Abbreviation	Explanation
Agri-food survey	Survey of the financial needs of EU agri-food processing enterprises carried out in mid-2019 in the framework of study 'EU and Country level market analysis for Agriculture' and based on respondents' financial data from 2018.
CAP	Common Agricultural Policy
CMGDB	Czech and Moravian Guarantee and Development Bank
COSME-LGF	EU Programme for Competitiveness of Enterprises and SMEs-Loan Guarantee Facility
CR	Czech Republic
CZK	Koruna or Czech crown (national currency)
EAFRD	European Agriculture Fund for Rural Development
EaSI	EU Programme for Employment and Social Innovation
EC	European Commission
EIB	European Investment Bank
EIF	European Investment Fund
EU	European Union
EU 24	The 24 EU Member States covered by the *fi-compass* 'EU and Country level market analysis for Agriculture': Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.
EU 28	All EU Member States: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, The United Kingdom.
EUR	Euro
FADN	Farm Accountancy Data Network
FIs	Financial instruments
fi-compass survey[1]	Survey on financial needs and access to finance of 7 600 EU agriculture enterprises carried out by *fi-compass* in the period April – June 2018 and based on respondents' financial data from 2017.
GFCF	Gross Fixed Capital Formation
GVA	Gross Value Added
ha	Hectare

1 *fi-compass*, 2019, Survey on financial needs and access to finance of EU agriculture enterprises, https://www.fi-compass.eu/publication/brochures/survey-financial-needs-and-access-finance-eu-agriculture-enterprises.

LTV	Loan-to-value
M&A	Merger and Acquisition
NACE	Nomenclature générale des Activités économiques dans les Communautés Européennes / European Classification of Economic Activities
PGRLF	Farming and Forestry Relief and Guarantee Fund (Czech acronym)
PRIBOR	Prague Interbank Offered Rate
RDP	Rural Development Programme
SAPS	Single Area Payment Scheme
SME[2]	Small and medium-sized enterprise
SO	Standard Output
UAA	Utilised Agriculture Area
VCS	Voluntary Coupled Support

2 Small and medium-sized enterprises (SMEs) are defined in the EU recommendation 2003/361. Micro enterprises have less than 10 employees, small enterprises have less than 50 employees and medium-sized enterprises less than 250 employees. https://ec.europa.eu/growth/smes/business-friendly-environment/sme-definition_en.

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EXECUTIVE SUMMARY

This report gives an insight into agriculture and agri-food financing in the Czech Republic by providing an understanding of investment drivers, financing supply and financing difficulties as well as on the existing financing gap.

The analysis draws on the results from two comprehensive and representative EU level surveys carried out in 2018 and 2019, namely the *fi-compass* survey on financial needs and access to finance of EU agriculture enterprises and a survey of the financial needs of EU agri-food processing enterprises. The report does not take into account the impact of the ongoing COVID-19 health crisis and/or the effect of any new support scheme being set-up by the Member State and/or changes in legal basis and/or policies at European level to mitigate the crisis, as surveys and data available covered a period prior to its outbreak. This would need to be subject to further analyses by interested stakeholders, administrations and/or researchers.

Financing gap for the agriculture sector in Czech Republic

Investment in the Czech agriculture sector has been growing in recent years. Since 2015, the Gross Value Added (GVA) and Gross Fixed Capital Formation[3] (GFCF) in the agriculture sector has been increasing. In 2018, GFCF reached its highest level in a decade.

The main drivers of the demand for finance in agriculture are:

- **Investments in modernisation, especially in new machinery, equipment and technical facilities,** which help Czech farmers control their rising costs of production and preserve their profitability. Livestock farmers often purchase better feeding or milking equipment, while crop farmers invest in more efficient tractors, tillers, sprayers, and greenhouses.
- **High land prices**, as bank financing and national loan schemes are used for investments in land. However, land prices have been rising due to increased competition.
- **Working capital needs**, with farmers needing to purchase agriculture inputs and to cover expenses throughout the growing season.
- **Investments to adapt to climate change,** such as the purchase of specialised machinery and equipment, in order to make adaptations in infrastructure and production methods.

Support from the Common Agricultural Policy (CAP) contributes to income stabilisation and also stimulates investments. Both direct payments and rural development (RDP) grants provide an important source of income for farmers. They also facilitate access to finance, as banks see these grants and payments as a guarantee for loan re-payments. In addition, the European Agriculture Fund for Rural Development (EAFRD) investment support contributes to an increasing demand for finance since grant projects under the EAFRD have to be co-financed by the farmers, who use either their own resources or apply for bank financing. The availability of grants has also enabled young farmers to invest.

The supply of finance to the Czech agriculture sector is provided primarily by generalist commercial banks. The largest banks, which are often subsidiaries of international groups, provide Czech farms with a large variety of loan products. These products are adequately provided, as banks have accessible branches across the country. All banks employ agriculture specialists who can supply farmers with targeted financial advice.

3 GFCF measures the value of acquisitions of new or existing fixed assets. GFCF/GVA is used as a measure for how much of the new value added in the economy is invested rather than consumed. Increase of the GFCF is a measure of business confidence, a belief in that investments will be profitable in the future. In times of economic uncertainty or recession, typically business investment in fixed assets will be reduced, since it ties up additional capital for a longer interval of time, with a risk that it will not pay itself off.

In addition to the commercial banks, **the Czech government funded Farming and Forestry Relief and Guarantee Fund (PGRLF)** provides the agriculture sector with a variety of publicly funded financial services, including subsidy schemes and guarantees, as well as working capital, and short and medium-term solutions. As part of a dedicated Farmers Programme, investment loans with subsidised interest rates are provided to the sector. PGRLF contributes 16% of the total financing provided to agriculture on an annual basis.

The **total supply of finance to agriculture is increasing.** In 2017, the supply was estimated at EUR 584.13 million. The loan portfolio for agriculture, forestry and fishing has been growing over the last 6 years, demonstrating that the Czech financial market for the agriculture sector is well established and is performing well. Czech farmers continue to benefit from historically low interest rates, and this boosts the banks' interest in the sector. While loan products generally differ only slightly, competition provides benefits to farmers as banks strive to tailor their products to their clients' individual needs. Banks have dedicated agriculture finance teams that can provide clients with the specific type of finance product they require.

It is estimated that a financing gap of between EUR 95 million and EUR 217 million exists within the Czech agriculture sector. The gap mostly concerns small-sized farms (although large farms are not far behind) and long-term investments. **New financial instruments could help to close this financing gap**.

The ex-ante assessment for the introduction of financial instruments in RDP 2021-2027 concluded that a financing gap for Czech agriculture exists. The introduction of concessional loans (together with technical grants/mentoring) and guarantees can contribute to closing the financing gap. It also recommended supporting young farmers with a financial instrument combining technical support with subsidised interest rates for loans and the provision of start-up capital could be considered.

The financing gap comprises of two separate components:

- The first component consists of the estimated value of loan applications submitted in the past year by **viable farms, which were rejected by banks**, or which translated into loan offers refused by the applicants due to unacceptable lending conditions. Overall, 10% of loan applications are rejected in the Czech Republic, according to the *fi-compass* survey.
- The second component relates to the estimated value of loan applications that are **not submitted by farms considered viable, due to discouragement stemming from a fear of possible rejection**. Almost 7% of respondents to the *fi-compass* survey did not apply for a loan in 2017 because they were afraid of being rejected by banks.

Farmers believe banks are reluctant to lend to them due to a **lack of credit history**, which is something that affects younger farmers in particular, and due to the **credit policies of the banks.** Given the increasing number of non-performing loans, banks are strictly following their policies concerning borrower's liquidity, profitability and indebtedness indicators. They place an importance on credit history, which is something that many farmers, and small-sized farms in particular, often lack.

Banks have also pointed out that a number of the potential investments presented by farmers have been assessed as being economically unviable and, thus, could not be financed. In addition, the inability of farmers to prepare convincing business plans, as well as a general lack of knowledge, were also mentioned.

The **supply side is constrained by an increasing level of risk aversion in lending**. To avoid non-performing loans, banks are more conservative and have exposure limits for specific sub-sectors and regions. Hence, banks may not fund additional clients from a specific sub-sector or geographic location. In addition, banks are particularly reluctant to finance young farmers.

Young farmers are significantly constrained in accessing finance. Beyond the constraints outlined above, young farmers also lack sufficient levels of collateral to secure a loan (in addition to lacking credit history). For investment loans specifically, banks require fixed assets of high value as collateral and many young farmers cannot provide such assets to the banks. They also cannot compensate (or partly compensate) for the absence of collateral. That is why many banks are reluctant to finance this specific client segment.

RECOMMENDATIONS

Based on the analysis conducted for this report, and on the basis of information gathered among stakeholders, the following recommendations for public intervention could be considered:

- While guarantee instruments exist in the Czech Republic, they are not currently available to all farmers. Thus, guarantee instruments that could also be supported under the CAP Strategic Plan in the new programming period 2021-2027, and for which the vast majority of Czech farmers would be potentially eligible, might facilitate the flow of investment financing in the event of limited collateral. This would be particularly important for young farmers.
- Small-sized farms and young farmers should be among the main target groups of any new initiative. The opportunities offered by the new legal framework, such as the easier combination of financial instruments and grant support or the possibility to finance the purchase of land for young farmers, might offer interesting opportunities to increase the effectiveness of the instrument towards those segments.
- Even though banks offer different loan products to farmers, additional low interest working capital loans could help farmers to overcome temporary difficulties caused by climate change events/disasters, with such loans being made available immediately after a disaster occurs. In this context, the new flexibility on working capital introduced for financial instruments under the EAFRD legislation post-2020 proposal should be evaluated.
- Some small-sized farms and new entrants, find it difficult to prepare a business plan for new investments. Although main banks servicing the sector have specialised teams closely supporting the farmers applying for loans, a technical support and capacity building measures for those farmers could be considered to strengthen their ability to present convincing investment proposals and to thus receive a loan. Those measures could also support farmers in better understanding the entire loan process and the need for documentation. They could also be supported in providing such documentation.

Financing gap for the agri-food sector in Czech Republic

Investments in the Czech agri-food sector have increased in recent years. The Gross Fixed Capital Formation (GFCF) in both food and beverage manufacturing has been growing, with the GFCF of food products reaching its highest value in a decade. Since 2016, GFCF in the beverage industry has also been growing, as has the Gross Value Added. These indicators suggest a positive environment for investment.

The main **drivers of the demand for finance in the agri-food sector** are:

- **Investments in the modernisation of facilities and in technology**. The international agri-food industry is very competitive and, in order to maintain a competitive edge and consumer appeal, Czech agri-food enterprises need to invest in technology and automation. Technology that facilitates the use of renewable energies and the efficient use of resources, while also contributing to increased productivity, has been a large part of investments.
- **Renovation or construction of facilities**. Many agri-food enterprises invested in the construction and improvement of buildings, mobile or equipment stores, and storage facilities.
- **Inventory and working capital needs.** Czech agri-food enterprises experienced increases in production costs that were not followed by similar increases in the sale price of their products. The shrinking margins required many agri-food enterprises to borrow for working capital purposes.

RDP investment support for marketing and processing also shapes investment trends in the agri-food sector. In the Czech Republic, many agri-food enterprises rely on the support of the RDP and national subsidy schemes to invest.

The supply of finance in the agri-food sector is predominantly provided by banks. There is no particular specialisation of financial intermediaries in the agri-food sector, but the banks have sufficient experience and knowledge of the sector and are geographically well-organised. The banking market is fairly competitive, which allows a diverse range of products to be offered that cater to most individual needs.

Alongside banks, two institutions have a special place in the market, with both having been established by the Czech government to serve as providers of national subsidy schemes and guarantee instruments. Similar to the importance of PGRLF services in support of the agriculture sector, as regards the agri-food sector, the Czech Moravian Guarantee and Development Bank (CMGDB) plays an important role as a provider of guarantee instruments.

It is estimated that a financing gap of around EUR 578 million exists within the Czech agri-food sector. Around 75% of the gap value relates to small-sized enterprises. In terms of financial products, almost 40% of the gap relates to long-term loans and 20% to short-term loans. The need for credit lines and overdrafts accounts for around 20% of the gap. Like for the agriculture sector, **new financial instruments could help to close the financing gap.** Respondents to the Agri-food survey indicated that they would like to see more public guarantees.

About 25% of loan applications from Czech agri-food enterprises are rejected by banks. The main reasons for rejection are business risk that is too high, insufficient collateral, incompatibility between the repayment schedule and the enterprises' cash flow, unconvincing business plans and a lack of financial literacy. Another significant reason for rejection is when applicants are start-ups, as they often cannot provide adequate levels of collateral and lack credit history.

Overall, Czech agri-food enterprises show a good level of information in connection with financing their business and investing in assets.

While the supply of finance to the agri-food sector is reasonably healthy in the Czech Republic, and largely addresses the differentiated needs of the various actors in the sector, a challenge for the banks is that the monetary policy of the Czech National Bank has tightened, resulting in higher interest rates. In addition, agri-food enterprises tend to pursue investments that do not generate levels of cash flow needed to repay loans.

RECOMMENDATIONS

Cooperation between banks and agri-food enterprises works reasonably well. Loan products are available and their scale and focus varies. Still, the following recommendations should be considered, with the aim of closing the financing gap in the agri-food sector:

- Despite the diverse offering of public support, a significant gap has been identified on the market, with relation to small-scale enterprises and start-ups. This suggests that an assessment of the current instruments and their ability to address financial constraints of those target groups might be useful.
- In particular, the current provision of public guarantees seems to lack specific focus on the agri-food sector and covers mostly short-term loans. A specific guarantee or risk-sharing instrument for the sector might help to address lack of collateral for investment loans in the sector. This would operate in synergy with the instrument suggested for the agriculture sector. The opportunities offered by the new EAFRD legal framework, as for example the possibility of an easier combination of financial instruments and grant support might offer the possibility to better serve in particular small-scale enterprises and start-ups.
- The possibility to set-up a pilot equity or quasi-equity financial instrument, to support start-ups with innovative projects might be analysed.

1. INTRODUCTION

Objective

This report belongs to a series of 24 country reports and presents an assessment of the potential financing gap for the agriculture and agri-food sectors in the Czech Republic. The assessment is based on the identification and evaluation of the supply of and demand for financing, on the one hand, and on the quantification of the currently unmet demand for financing for the two sectors, on the other hand. This report aims to contribute to a better understanding of the potential need for continuing currently operating financial instruments, or the creation of new or additional ones, supported by the European Agriculture Fund for Rural Development (EAFRD).

Approach

To conduct an analysis of the potential financing gap in the agriculture and agri-food sectors, the study under which this report is prepared adopts the following three-step approach:

1. Assessment of the number of farms/firms participating in the credit market and analysis of the dynamics of their demand.
2. Mapping of the sources of finance and examination of the dynamics of supply of credit.
3. Assessment of the potential existence of a financing gap, whereby parts of the demand cannot be satisfied by the existing supply but could benefit from financial instruments.

Per definition, a financing gap (for a specific sector) arises from unmet financing demand from economically viable enterprises (operating in the same sector). This unmet demand includes two major elements:

(i) lending applied for (by the viable enterprises), but not obtained, as well as
(ii) lending not applied for (by the viable enterprises) due to expected (by the same enterprises) rejection of the application (by a financial institution).

The analysis draws on the results from two comprehensive and representative EU-level surveys carried out in 2018 and 2019, namely the *fi-compass* survey on financial needs and access to finance of EU agriculture enterprises and a survey of the financial needs of EU agri-food processing enterprises. The latter survey was undertaken as part of this study. The analysis is further elaborated by desk research and enriched with secondary data from EU and national data sources.

The financing gaps for the two sectors are calculated using data from the above-mentioned surveys and additional data and statistical indicators from Eurostat. The calculated financing gaps for the two sectors are independent from each other. The report also outlines the drivers of unmet demand for finance as identified from desk research, and from interviews with key stakeholders from the agriculture and agri-food sectors, government representatives, and financial institutions, and as identified by two focus groups, one for each sector. Information on the supply side of finance was obtained from interviews with nationally or regionally operating financial institutions.

The report does not take into account the impact of the ongoing COVID-19 health crisis and/or the effect of any new support scheme being set-up by the Member State and/or changes in legal basis and/or policies at European level to mitigate the crisis, as surveys and data available covered a period prior to its outbreak. This would need to be subject to further analyses by interested stakeholders, administrations and/or researchers.

Report structure

This report is structured in two parts, each focused on one of the sectors of interest: Part I covers financing for the agriculture sector; and Part II discusses financing for the agri-food sector. Each part is structured in five sections: an overview of the market, an analysis of the demand for financing, an analysis of the supply of finance, an assessment of the financing gap, and conclusions and recommendations.

2. PART I: AGRICULTURE SECTOR

2.1 Market analysis

Key elements on the Czech agriculture sector

- Agriculture output in the Czech Republic amounted to almost EUR 5.1 billion in 2018, representing about 2.2% of the country's total GVA.[4]
- More than 45% of the total value of agriculture production came from cereals, industrial crops and forage plants, while milk and livestock accounted for 36%.
- The agriculture sector employed about 2.8% of the total labour force in 2018.[5]
- While almost 90% of the farms in the Czech Republic are considered to be very small to medium-sized, large-sized farms manage 70% of the utilised agricultural area (UAA).
- The Czech Republic has the highest average farm size in the EU, at 130.2 ha.
- Most farmers in the Czech Republic are between 55-64 years old, with farmers younger than 40 representing less than 10%.[6]
- The sector has a significant trade deficit, which has been increasing since 2014.

The Czech Republic is a predominantly rural country, with 54% of the land being dedicated to agriculture[7] and 34% covered by forests. Despite this abundance of agriculture land, 61% of the land in the Czech Republic is 400 metres or more above sea level, meaning that over half of all agriculture land is affected by natural constraints that limit productive potential. For example, at least 40% of all agriculture land is considered at risk of soil erosion.[8]

The value of the sector's overall production amounted to EUR 5.1 billion in 2018, which was an increase of 4% on 2017.[9] After a slight drop in 2015, agriculture output increased steadily. In 2018, nearly half (45.6%) of the total value of agriculture production came from cereals, industrial crops and forage plants, while milk and livestock accounted for 19.7% and 16.3%, respectively.[10] The Czech agriculture sector accounts for around 2.2% of the country's Gross Value Added (GVA) and 2.7% of its total employment.[11] GVA for agriculture increased by almost 73% from 2009 to 2019.[12]

The Czech Republic runs a significant trade deficit in agriculture, which has been increasing since 2014. In 2018, the deficit amounted to EUR 1.7 billion, which was more than double the 2014 level. Nearly all agriculture trade is with other EU 28 countries, which accounted for 96% of the trade deficit in 2018.[13] This deficit is driven by the import of key agriculture primary products, such as poultry, pork and fruit and vegetables, which must be imported to meet local demand as local production levels are insufficient.

4 European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.
5 European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.
6 Eurostat, 2016, Farm Structure Survey, https://ec.europa.eu/eurostat/documents/2995521/9028470/5-28062018-AP-EN.pdf/8d97f49b-81c0-4f87-bdde-03fe8c3b8ec2.
7 Out of which 72% is arable land.
8 The European Network for Rural Development: 2014-2020, Rural Development Programme: Key facts & figures, Czech Republic.
9 Eurostat, 2019, Agriculture, forestry and fishery statistics.
10 Ibid.
11 Eurostat, GVA at current prices (2018: 4.1 out of 186.9 billion EUR, 2010: 2.4 out of 141.7, with price indices 140.1 and 111.5) and World Bank, Employment in agriculture (% of total employment – Czech Republic, https://data.worldbank.org/indicator/SL.AGR.EMPL.ZS?locations=CZ.
12 Eurostat, 2019.
13 European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.

The insufficient level of local production is caused partially by the limited competitiveness of Czech producers, as compared to other EU 28 countries, and the low prices local meat producers receive for their production.[14] In this regard, crop production is seen as more profitable, easier to manage and as requiring fewer workers.[15]

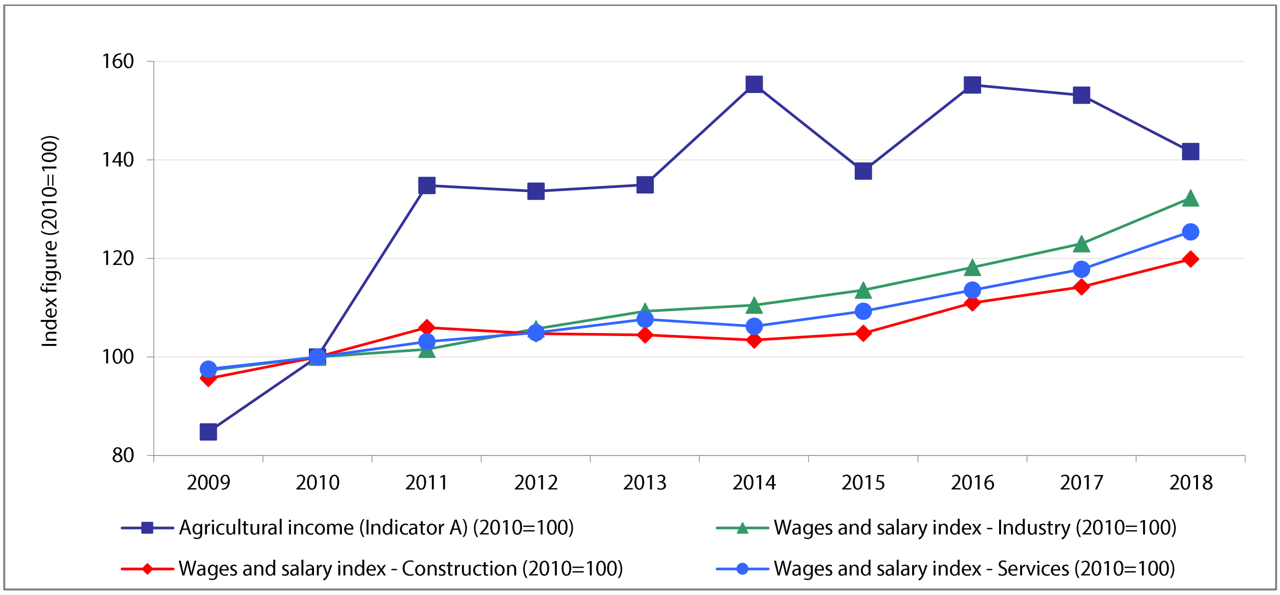
Like several other countries in Central and Eastern Europe, Czech agriculture has a dual structure. While 89% of farms are very small or medium-sized,[16] they account for only 30% of the total agricultural area used. In contrast, large farms, despite representing only 11% of farms, account for 70% of the total utilised agricultural area (UAA) and have an average size of 500 ha.[17] In 2016, 26 530 farms were operating in the Czech Republic, with an average size of 130.2 ha.[18] Land ownership in the country is strongly fragmented.[19]

The agriculture sector in the Czech Republic has an ageing workforce. The average age of farmers in the country is higher than for other sectors in the country. A driver of this is the fact that the agriculture sector offers one of the lowest average wages and is thus unattractive for younger generations. In fact, just 10.2% of the farmers are under 40 years old and only 4.4% are under 35.[20] The age pyramid of the sector, however, is pear-shaped, with the majority of farmers being middle-aged (40-64 years old) and with 26.8% being older than 64 years.[21]

While agricultural income has varied more compared to other sectors of the economy, it has been above the levels of other sectors over the last eight years. For the last three years however, the income level in agriculture has been decreasing slightly, coming closer to the other sectors' income levels. In 2018, agriculture income levels were almost 60 points above the sector level of 2009 (Figure 1).

14 Ministry of Agriculture of the Czech Republic, 2018, We support traditions and rural development in the Czech Republic.
15 Agriculture Association of the Czech Republic Bulletin, 2017.
16 Very small farms have a SO of less than EUR 8 000 and medium sized farms have a SO ranging between EUR 8 000 and EUR 249 999.
17 Large farms have a SO of EUR 250 000 or more. Eurostat, 2018, Agriculture, forestry and fishery statistics.
18 European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.
19 In another source (homepage of the Agri-Ministry) this share is reported as 90%, which seems less realistic and Ministry of Agriculture of the CR; http://eagri.cz/public/web/en/mze/agriculture/.
20 Eurostat, 2016, Farm Structure Survey, https://ec.europa.eu/eurostat/documents/2995521/9028470/5-28062018-AP-EN.pdf/8d97f49b-81c0-4f87-bdde-03fe8c3b8ec2
21 Czech Agriculture Association, Bulletin 2018, p. 30 and European Commission, CAP in Your Country: Czech Republic.

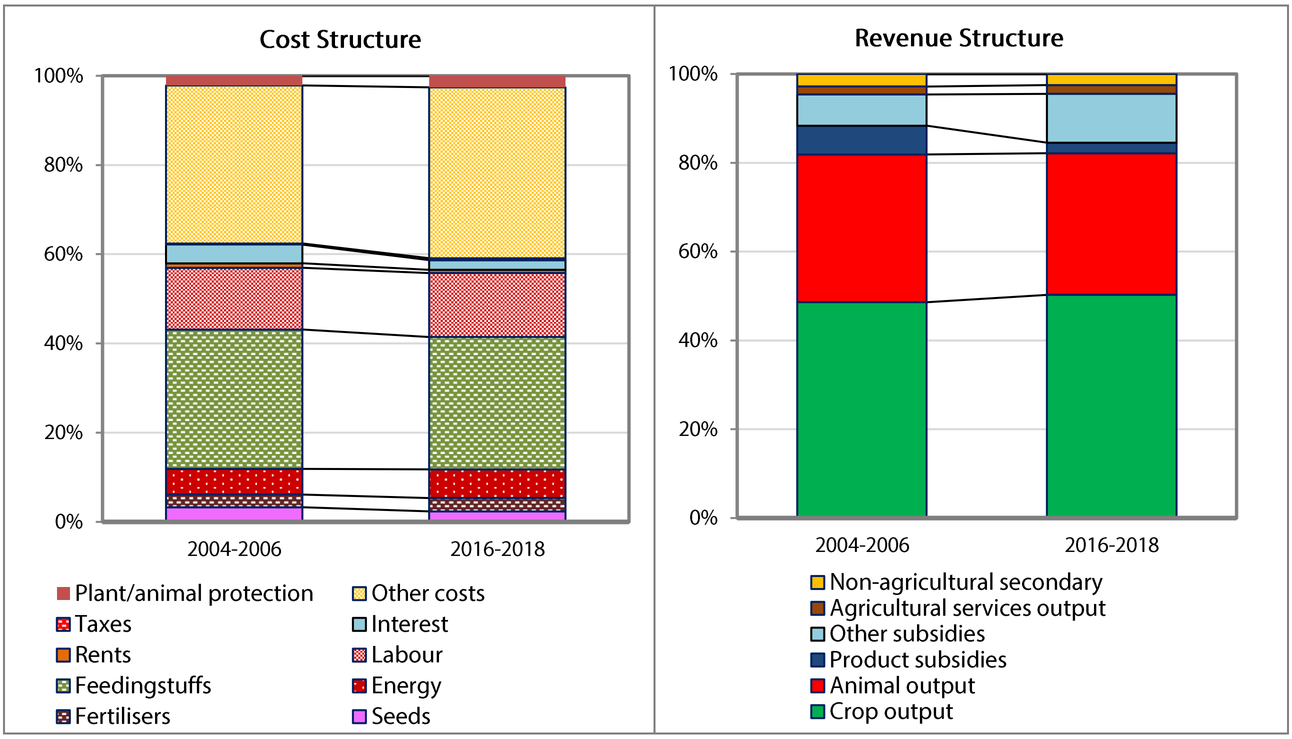
Figure 1: Evolution of agricultural income compared to wages and salaries in other sectors of the Czech economy



Source: European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.

Looking at the cost and revenue structure, comparing the 2016 to 2018 period with the 2004 to 2006 period, it can be seen that despite decreasing interest costs and feedstuff costs over the last 7 years, no significant changes in the cost structure can be noted when looking at the 15 years perspective. However, on the revenue side, the production subsidies have decreased significantly, while crop output has slightly increased and decoupled subsidies have been climbing (Figure 2).

Figure 2: Agricultural income – only cost and revenue structures



Source: European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.

Statistical factsheet the Czech Republic, 2019

More data on agriculture indicators from Czech Republic can be found in the Statistical factsheet for Czechia **2019** of the Directorate-General for Agriculture and Rural Development, Farm Economics Unit and in the Annex A.6.

2.2 Analysis on the demand side of finance to the agriculture sector

This section describes the drivers of demand for finance in the agriculture sector and analyses the met and unmet demand. It elaborates the main reasons for farm enterprises to request financing and identifies the agriculture sub-sectors with the largest need for finance. The section also provides an analysis of the type of producers that face the greatest constraints to accessing credit. The analysis of the demand for agriculture finance is based on the findings from the *fi-compass* survey of 309 Czech farms, as well as on interviews with key stakeholders from the agriculture sector, combined with information obtained from the Farm Accountancy Data Network (FADN).

Key elements of finance demand from the Czech agriculture sector

- Czech farmers' investments are driven by technological modernisation (machinery, equipment), the construction or reconstruction of technical facilities (biogas facilities or greenhouses), the purchase of farmland (due to the rarity of direct ownership of arable land and its escalating price), and climate change adaptation measures.
- The Gross Fixed Capital Formation (GFCF) shows increasing levels of investments in tangible assets since 2015.
- CAP direct payments are important for the stabilisation of farm incomes. As a general practice, banks like using them as a guarantee for the loans they offer to the Czech farmers.
- EAFRD support for agriculture and young farmers through the Czech RDP also stimulates the demand for financing as farmers often demand bank loans in conjunction with EAFRD grants.
- Young farmers and new entrants mainly undertake investments if they are approved for start-up support from the RDP. Financing from banks is often limited, as young farmers and new entrants often lacks adequate collateral and credit history.
- The total credit unmet demand for the agriculture sector is estimated at EUR 326 million.
- Compared to the EU 24, fewer loan applications are rejected, but when looking at the products, the most rejected were long-term loan applications.
- The main reasons for the rejection of Czech farmers' loan applications are (i) a lack of credit history, (ii) strict banking policies that allow for little flexibility in terms of repayment capacity, and (iii) an overall lack of creditworthiness.

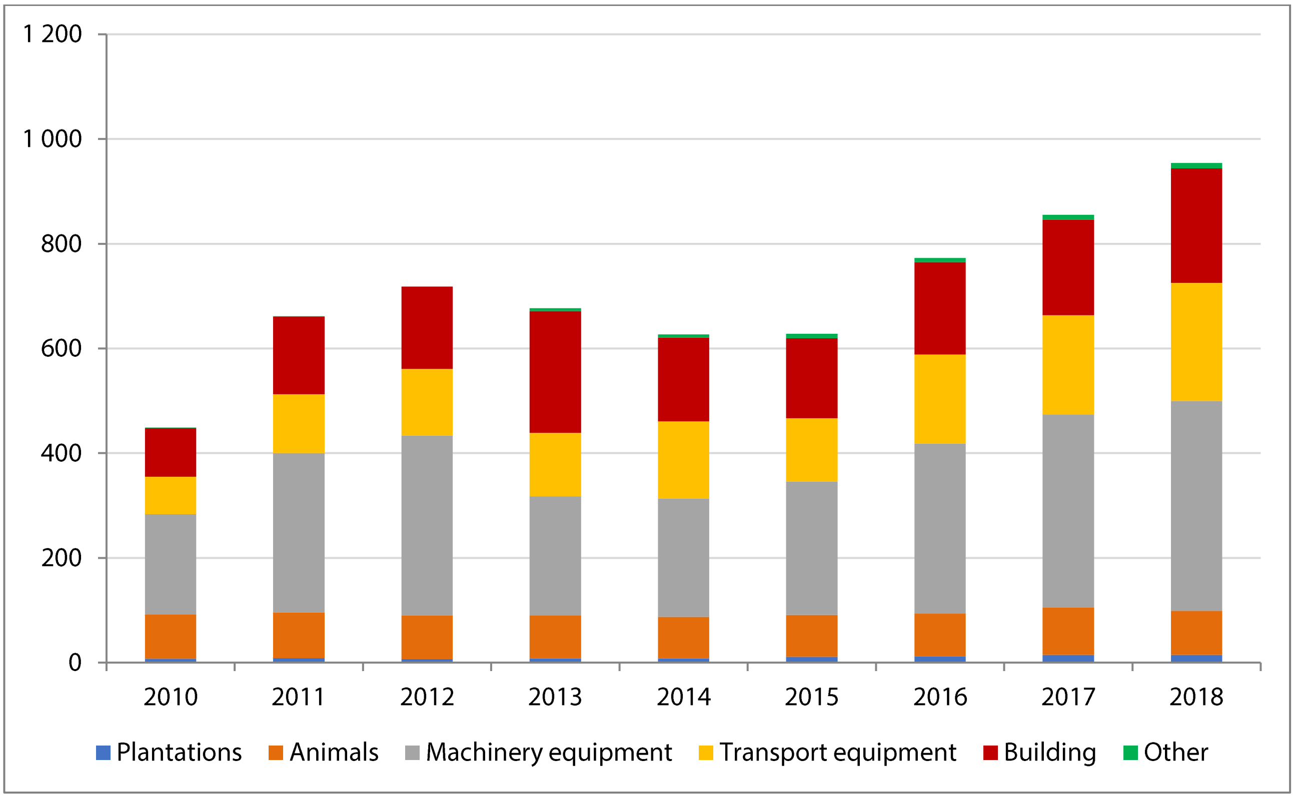
2.2.1 Drivers of demand for finance

Investments in tangible assets are increasing in the Czech Republic. The Gross Fixed Capital Formation (GFCF) in the agriculture sector[22] demonstrates that the level of investment has been growing since 2015. In 2018, GFCF reached EUR 0.95 billion (Figure 3). Most investments are in machinery and buildings. The view that investments were particularly substantial in these areas is further validated by the fact that the most subsidised investments relate to the EAFRD (RDP sub-measure 4.1) and that the majority of the support of the Farming and Forestry Relief and Guarantee Fund (PGRLF) [23] also went into physical assets.

22 Including forestry and fisheries.

23 The Czech Republic has set up a fund, the Farming and Forestry Relief and Guarantee Fund (PGRLF), whose primary goal is to provide support to Czech farmers in the form of nationally funded subsidies. See section 2.3.1 for further details.

Figure 3: Development of Gross Fixed Capital Formation in the Czech agriculture sector, 2010-2018, EUR million



Source: Eurostat, Economic accounts for agriculture, 2019.

Investments into tangible assets represented more than 55% of the GVA in 2018 (Table 1), which is higher than the average share of 30.7% for the EU 28.

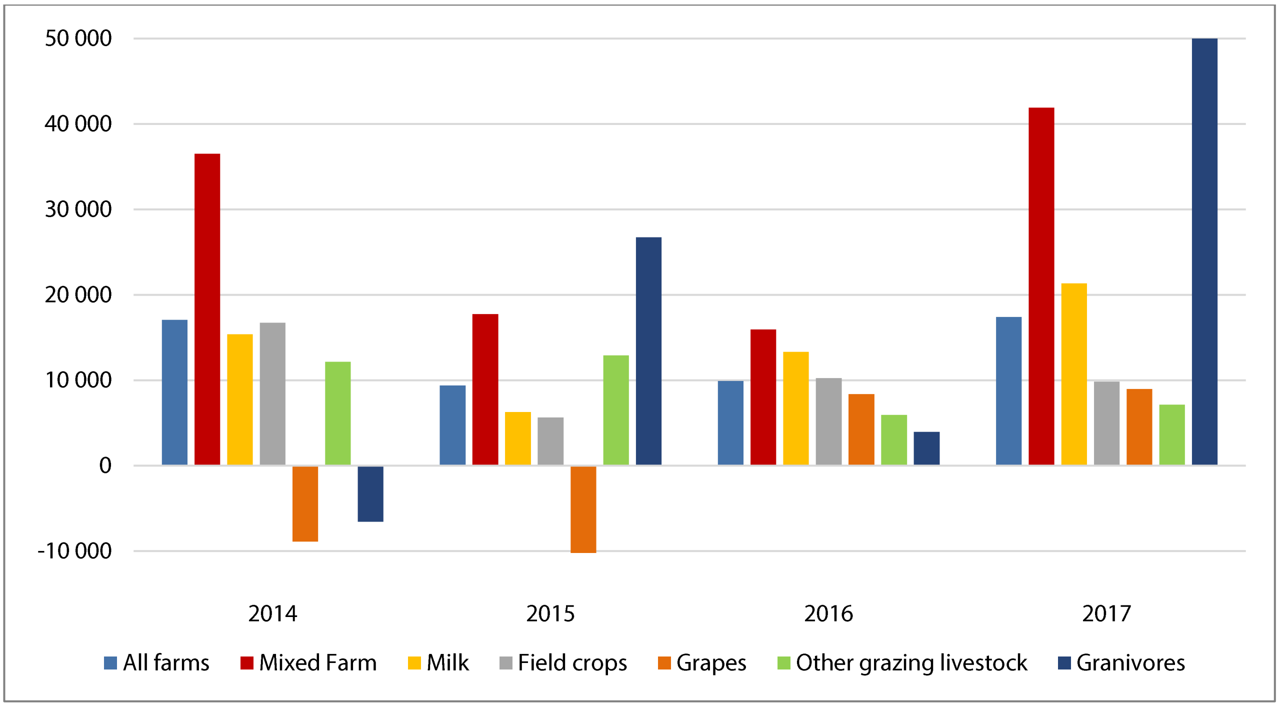
Table 1: Overview on GVA and GFCF developments, 2013-2018, EUR million

	2013	2014	2015	2016	2017	2018
GVA at basic prices	1 426.55	1 485.67	1 423.40	1 690.29	1 675.1	1 687.49
GFCF	677.10	626.87	628.22	773.00	855.25	954.16
Share of GFCF to GVA	47.46%	42.19%	44.14%	45.73%	51.06%	56.54%

Source: Calculations based on Eurostat.

The demand for finance is driven by mixed-production farms. When looking at the sectoral distribution of the net investment, mixed farms had the highest investment levels. Dairy and milk farms as well as field crop farms broadly evolved on par with the average total net investment. In comparison, investments in grapes faced some negative trends in 2015 and 2016 (Figure 4). In 2017, net investment grew in all sectors (milk, livestock, grape production, granivores), except in field crops. For granivores, net investment spiked at 25 times their 2016 value at EUR 3 959 to EUR 100 416 in 2017. According to interviews, this investment growth was due to a surge in long-term investment loans for construction of new facilities or the reconstruction of existing ones. Field crop farmers, particularly those growing oilseeds, have been investing in modern machinery, such as tractors and harvesters. Some fruit producers had to replace their old plantings with new trees to increase the productivity of their orchard.[24]

Figure 4: Net investments by all Czech farms between 2014 and 2017, in EUR



Source: FADN, 2018.

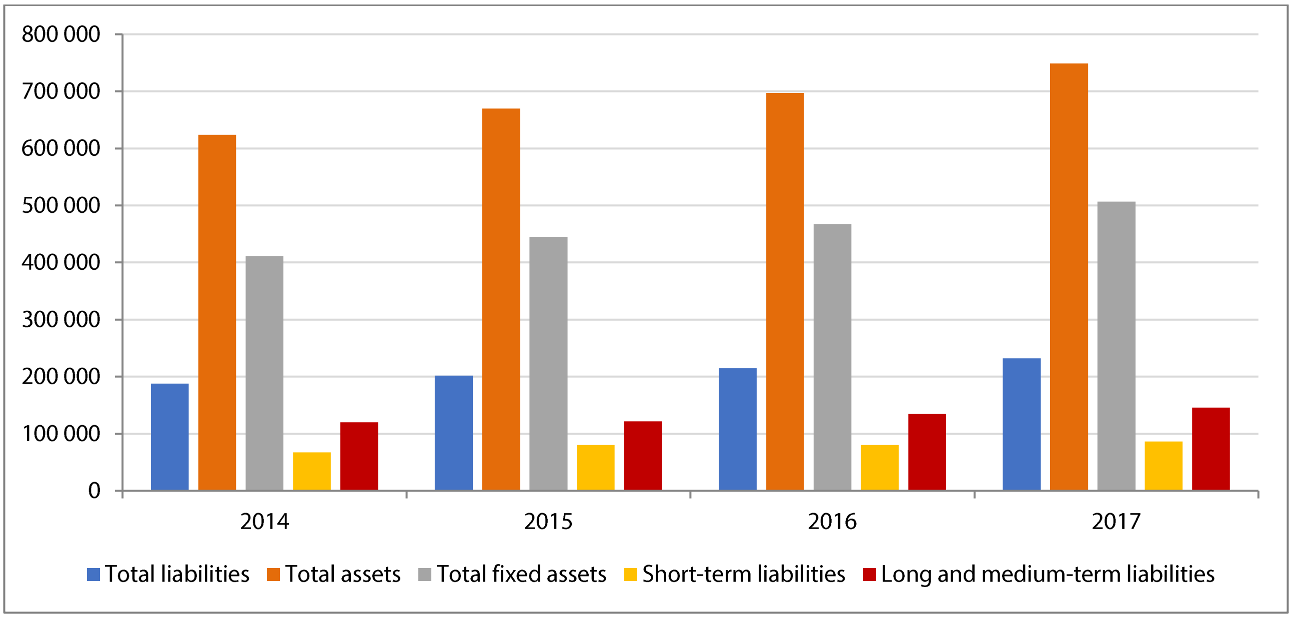
Note: The figure does not show the total value for granivores in 2017, which is EUR 100 416.

FADN data confirms that investments have been made into fixed assets. The medium and long-term liabilities of Czech farmers vastly exceeds short-term liabilities, at a ratio of at least 2:1 at all levels of farm size except for small-sized farms. Large-sized farms kept the highest volume of medium and long-term loans on their balance sheets, reaching EUR 1.1 million on average, while short term-loans reached slightly below EUR 700 000. The average long-term loan was for EUR 145 804, while short-term loans reached an average of EUR 86 426.[25]

Czech farmers have the capacity to take on further debt as the overall liabilities-to-assets ratio remains reasonable. Czech farms' average total liabilities have been growing steadily since 2014 (with both short-term and medium to long-term-loans growing). Total liabilities of Czech farms amounted to over EUR 232 230 in 2017, while short-term loans slightly exceeded EUR 86 000. Long-term liabilities plus medium-term liabilities amounted to EUR 145 804 (Figure 5). In turn, an increase in the farmers' fixed and total assets was apparent, indicating that farmers have invested in their business. Based on the above, many farmers and especially large-scale ones, have the capacity to repay additional finance.

24 FADN, 2018 data analyses and interview.
25 FADN, 2018.

Figure 5: Average total assets and liabilities per Czech farm between 2014 and 2017, in EUR



Source: FADN, 2018.

Investments in the Czech agriculture sector, and the associated finance demand, is mainly driven by the following factors, which are further analysed below:

(i) investments into technological modernisation (machinery, equipment) and the construction and reconstruction of technical facilities (biogas facilities or greenhouses);

(ii) purchase of farmland;

(iii) working capital finance;

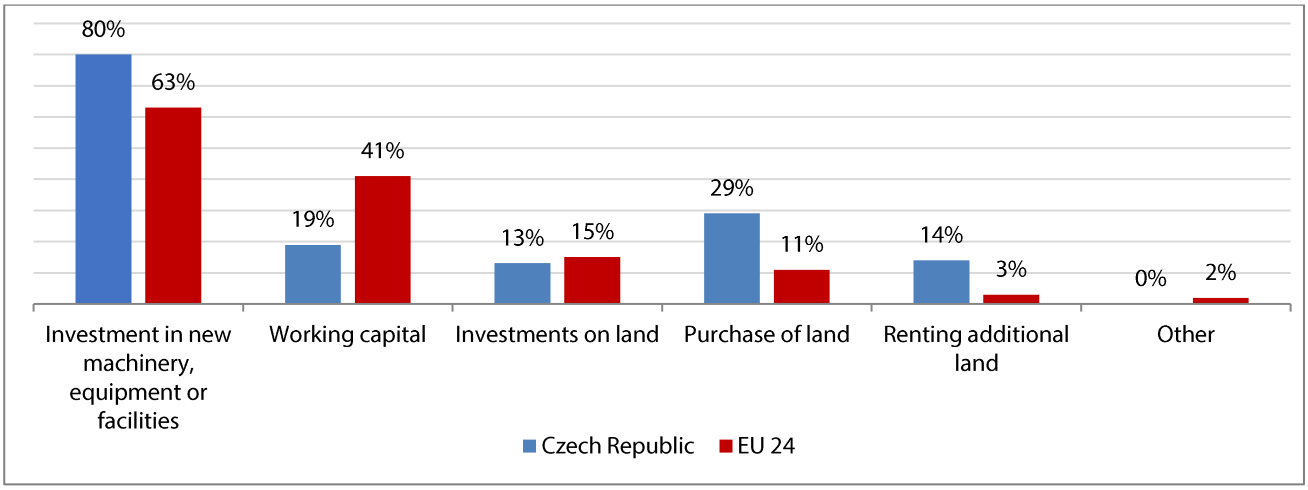
(iv) rental of (additional) land;

(v) investments on land usage (vineyards, orchards etc.); and

(vi) climate adaptation measures.

The vast majority of Czech farmers (80% of respondents in the *fi-compass* survey) have invested in fixed assets, compared to 63% for the EU 24 (Figure 6). The second most common purpose for loans was for land purchases (29% of respondents), followed by working capital needs. However, only 19% of Czech farmers borrowed for working capital needs, compared to 41% for the EU 24.

Figure 6: Purpose of bank loans in the agriculture sector in 2017



Source: fi-compass survey.

Investments in machinery, equipment and technical facilities are the key drivers of the demand for finance. Farmers pursue investments in modern production technologies to support production expansion, improve efficiency, reduce post-harvest losses and to reduce manual labour. The latter is a very important issue in Czech agriculture as it is increasingly difficult to find agriculture workers. This is because the sector is considered as unattractive for workers, due to the significant workload, mostly manual, and low wages. Interviews with farmers confirmed that investments have been made to modernise equipment across the various agriculture sub-sectors (livestock and crops). For example, livestock farmers often look at improved feeding or milking equipment, while crop farmers look to more efficient tractors, tillers, sprayers, etc. Crop farmers have also invested in greenhouses to produce fruits and vegetables during the off-season, to benefit from the higher prices received for crops when the supply of fresh products is limited.

Farmers' representatives pointed out that investments into climate change adaptation measures across all sub-sectors are of increasing importance. This includes building up irrigation infrastructure, such as drip irrigation, that helps to keep crops permanently moisturised while using the smallest amount of water possible. Some farmers also invest in water-storage facilities and rain-water-harvesting technologies. Because much of the agriculture land in the Czech Republic is prone to soil degradation and erosion, investments in agriculture conservation techniques, such as the purchase of machinery that facilitate zero-tillage techniques, are also made.

The need for working capital is also driving demand for finance, although to a lesser extent. In interviews, farmer representatives mentioned that they use working capital loans to purchase agriculture inputs and to cover expenses throughout the growing season. At the end of the season they repay their loans from the proceeds of their harvest (usually in less than 12 months). The need for working capital loans can also be explained, when looking at the price increase of agriculture inputs. Overall, total intermediate consumption expenses increased by 3.8% from 2017 to 2018. The items which experienced the highest increase were veterinary services (+11%), followed by seeds and planting stock (+7.4%) and feedstuff (+6%).[26]

Another important driver of the demand for finance is land purchase. Farmers purchase land to expand production. In interviews, farmers said that they apply for finance for land purchases in order to expand their business and benefit from economies of scale.

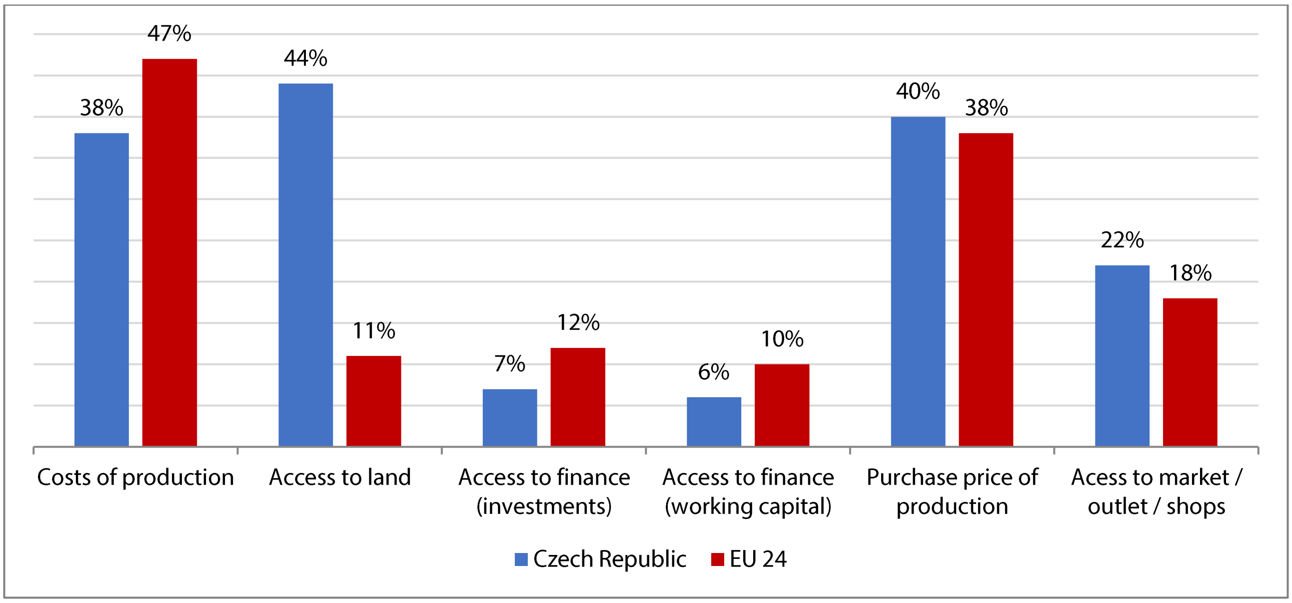
In addition to being a driver of investment, access to land was the main element of concern for Czech farmers in 2017. This concern was four times higher compared to the EU 24, with 44% of *fi-compass* survey respondents considering access to land as their main challenge in 2017 (Figure 7). The other two main concerns were product sale

26 European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.

prices (40%) and increasing costs of production (38%). As outlined above, production costs have been primarily affected by the input costs of raw materials, which rose by 3.8% from 2017 to 2018.

Concerns due to access to finance for investment and working capital were less than for the EU 24 average, reaching 7% for investment capital and 6% for working capital. Concerns related to access to markets, outlets or shops were slightly larger than for the EU 24 average, at 22% and 18%, respectively.

Figure 7: Difficulties experienced by farmers in 2017

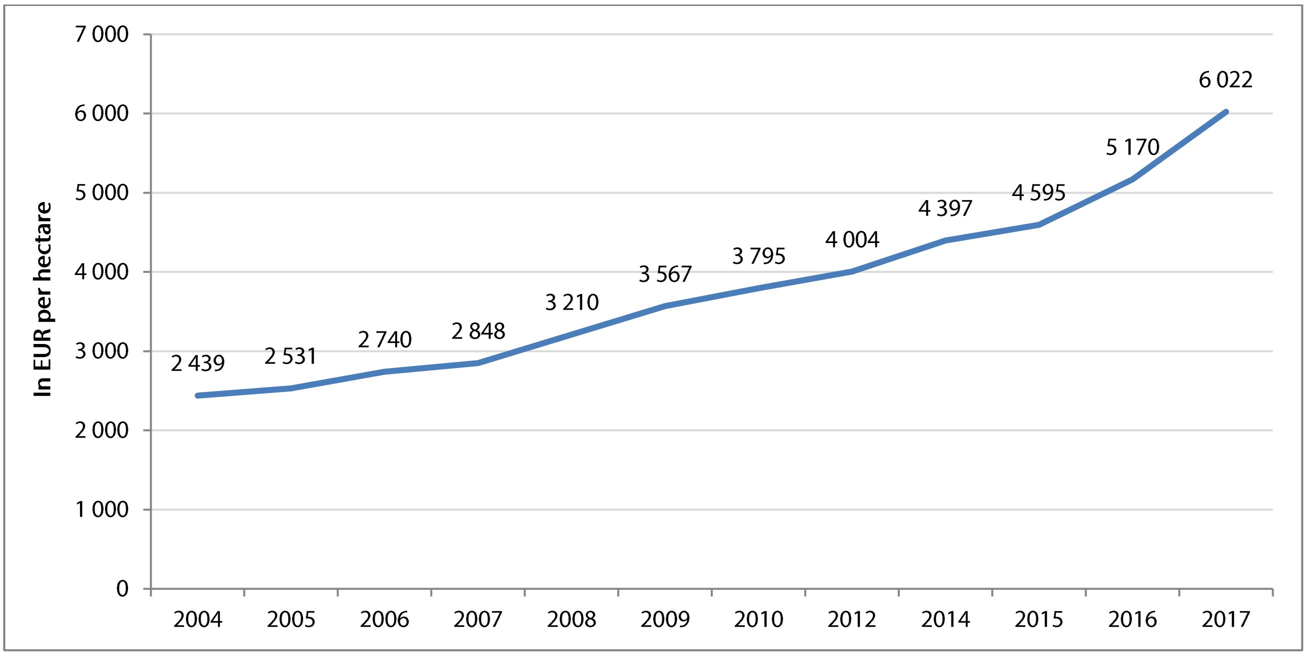


Source: fi-compass survey.

Land prices have more than doubled over the last decade and this has made access to land difficult. Over the last few years, the demand for land has increased, coming not only from farmers of neighbouring countries (e.g. Germany and the Netherlands), but also from global investment firms speculating on land value.[27] This has resulted in increases in the average land price. While in 2004 the average price of arable land was EUR 2 439 per ha, in 2017 it peaked at EUR 6 022 per ha. Prices have more than doubled over the last 10 years (Figure 8).

27 Since 2011, Czech legislation allows foreigners to own land in the Czech Republic regardless of their citizenship or residency.

Figure 8: Development of the average farmland prices in the Czech Republic, 2004-2017, in EUR



Source: Lucie Severová, Roman Svoboda and Lenka Kopecká, 2017, farmy.cz.

Lack of productive land contributes to high land prices. Over the last 15 years, total land area has decreased by 3.5%. While 3.65 million ha of farmland was available in the Czech Republic in 2002, this shrunk to 3.5 million ha in 2017. This was mainly caused by inadequate land management.[28] For example, the use of too much fertiliser and pesticide leads to a lack of essential nutrients and excessive amounts of salts or heavy metals in the soil, which prevents plant growth. The situation was further aggravated by the decreasing land quality caused by wind and water erosion, soil sealing, acidification as well as a decrease in moisture.

CAP support plays an important role for Czech agriculture. Direct payments were viewed by all interviewees as a key facilitator of access to finance as they stabilise the incomes of farmers and banks try to use the subsidy amount as a determinant for the loan amount as well as a guarantee for the loan the farm requests. In 2018, total agriculture support in the Czech Republic from the CAP amounted to almost EUR 1.2 billion, of which direct payments were the most important injections of CAP funds (EUR 830 million, representing 69.7% of total subsidies for the country). A total of EUR 340 million (28.6%) was allocated to rural development programme and EUR 20 million was planned for market measures (1.5% of the total support).[29]

Most importantly, CAP direct payments helped many farmers maintain their liquidity and even invest in their business. All banks interviewed for the purpose of this study said that they take into account the amount of direct payments during their analysis of an agricultural client that has applied for a loan. Surveyed banks placed strong emphasis on the volume of the farmers' direct payment, as this amount provides a high assurance of repayment. Direct payments are also used by banks as a collateral for working capital loans. While this facilitates access to finance, it also shows how risk-averse banks are since they use public financing to back up their private activities.

In 2017, for example, CAP direct payments were complemented by temporary national subsidies. Those drew upon national resources and amounted to EUR 24.84 million (CZK 733 million)[30]. National subsidy measures included subsidising the purchase of farmland, potatoes for starch production, cows for meat production, breeding sheep and

28 Ministry of Agriculture of the Czech Republic, 2013, Supporting our rural tradition & development.
29 European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.
30 Unless otherwise indicated, the following exchange rate is being used: INFOEURO at December 2017, 1 CZK = 0.03926 EUR.

goats. In addition, an amount of EUR 133.06 million (CZK 3.503 billion) was provided from national resources, 19% less than in 2016, to cover agriculture consulting, the purchase of breeding animals, apiculture, etc.[31]

Regarding the EAFRD and the Czech national Rural Development Programme (RDP), the measure supporting farm investments is on the top in budgetary terms (total public funding), with EUR 745 million allocated.

While support under sub-measures 4.1 and 6.1 is helpful in stimulating investments, the high share of applicants left without support signals a strong unmet demand for finance (Table 2). Although many applications do not get approval as they are ineligible, incomplete or lack value-add, the interest towards public support is enormous.

Table 2: Czech Republic: Budget allocation and RDP expenditures (EAFRD + national co-financing) for sub-measures 4.1 and 6.1, 2019

	Number of applications		Public budget (EUR million)	
	Submitted under all calls	Approved for support	Total amount requested under all submitted applications	Budget available under the grant calls for applications
Sub-measure 4.1 'Support for investments in agricultural holdings'	12 450	7 334	986.64	510.64
Sub-measure 6.1 'Business start-up aid for young farmers '	1 537	1 118	74.76	46.76

Source: Ministry of Agriculture of the Czech Republic, 2019 data shared.

Note: The total amount requested is calculated based on all received applications before any administrative check regarding eligibility or selection criteria to have taken place. Applications that have not been approved could have been non-eligible, and/or with insufficient or missing information not allowing their evaluation, and/or with insufficient value-added, and/or ranked at a place for which budget under the call has not been anymore available. They could also be withdrawn by the beneficiary at a later stage (following the submission) or under ongoing evaluation by the Paying Agency.

Interviews with farmers confirmed that the availability of EAFRD investment support encourages them to invest. When deciding whether or not to invest, farmers take into account the amount of the RDP subsidy to be received and, in many instances, request bank financing to provide the required own contribution as the grant is paid only after the submission of invoices for operations undertaken. The EAFRD regulation requires every beneficiary under the RDP to have private co-financing (for investment operations) which in turn increases the total volume of investments in the sector, leverages the public support generating added value, and as a result, contributes to the creation of additional demand for finance. In turn, banks feel comfortable when an RDP grant is granted to a business because they feel assured that the loan linked to the same project will be repaid.

Until the end of 2019, the Czech Managing Authority made a budget of EUR 510.6 million for sub-measure 4.1 available. The total demand for it has been almost twice as high, if we take into account all submitted applications, before any check by the Paying Agency (Table 2). Importantly, the minimum size of a project under the sub-measure is EUR 3 926 (CZK 100 000).[32] At present, there is a possibility for increasing the national top-ups on the sub-measures, if these are approved by the EC.

31 State Agriculture Intervention Fund, 2018, ýroční zpráva za rok.

32 Under a current RDP modification request, a proposal for increasing this threshold to EUR 9 815 (CZK 250 000) has been announced.

Young farmers under 40 years who have not been active in agriculture for more than 2 years before the submission of a grant application were entitled to receive subsidies of EUR 45 000 in three tranches for 4-year business plans. The money can be spent on constructing agriculture buildings, purchasing agriculture machinery and technology, processing own production or purchasing livestock[33] (i.e. activities in line with the business plan of the young farmer). Interviews confirmed that the availability of specific support measures for young farmers enabled their investments. In a similar case to sub-measure 4.1, although at lower levels, the budget announced under sub-measure 6.1 has been fully demanded by the Czech young farmers, with all applications asking for about 50% more than the budget (Table 2).

Financial support is also provided through preferential loans. Finally, a major set of national subsidies has been provided through Farming and Forestry Relief and Guarantee Fund (PGRLF) in the form of subsidised interest rates and the reimbursement of insurance premiums. The PGRLF has been set up by the Czech Ministry of Agriculture with funding from the National Budget. The Fund's products are analysed in depth in section 2.3.1.2.

The Czech Managing Authority took part in the targeted coaching on EAFRD financial instruments offered by *fi-compass* to take a closer look at the type of support and the possibilities offered by the EU legislation. Simultaneously, in 2019, **the managing authority launched an ex-ante assessment for analysing the potential use of EAFRD financial instruments for agriculture holdings and agri-food enterprises in the CAP Strategic Plan for the 2021-2027 programming period**. To identify possible financial instruments a so-called ´pre-screening test' was performed[34], composed of 7 parameters among which were: (i) profitability of projects, (ii) size of investment benchmarked against transactions costs; (iii) available RDP budgets for investments; (iv) policy and legal risks; (v) synergy with other support programmes, etc. The evaluation of the existence of an investment gap was done as a scoring exercise performed on the basis of a framework assessment covering the number of rejected grant applications, exceeded demand for grants, budget's availability, etc. The core objective was to understand whether agriculture activities are rather easy to finance (either from public sources or on a market basis) and if supply roughly corresponds to demand, or whether there is a fundamental problem for projects to secure resources, i.e. whether interesting and desirable projects have difficulties in securing the necessary funding for these activities.

The products that were identified to best address the key challenges were concessional loans[35] (together with technical grants/mentoring) and guarantees. Initial parameters, such as eligible expenses, interest rates or maturity, have been drafted but remain subject to final discussions and agreements. Further information about the ex-ante assessment findings is presented in the subsequent box.

Main findings of the ex-ante assessment for the introduction of financial instruments in RDP 2021-2027[36]

- The need to modernise the farm drives investment needs. Investments are mainly made in machinery and equipment, building and construction as well as the acquisition or rent of farmland.
- When calculating the investment volume per hectare, mixed-farms and livestock farms invested more than crop farms. The analysis concludes that this is due to the capital intensiveness of livestock and dairy production.
- For the agri-food sector, capacity expansion drove investment. This was particularly the case for producers of grain products, starches and starch products. Producers of vegetable oils, animal oils and fats, and dairy products also invested.
- Some small and medium-sized farmers face difficulties accessing finance, as they have often a low production volume and lack entrepreneurial experience – those issues are, however, partially covered through subsidy measures, i.e. from PGRLF or RDP.
- Young farmers also face difficulties due to issues concerning access to land and access to knowledge and experience. They are often also charged higher interest rates compared to farmers that have been in business

33 State Agriculture Intervention Fund, 2018, Výroční zpráva za rok.
34 Indicators not suitable for financial instruments were not considered in the analysis.
35 Loans that are extended on terms substantially more generous than market loans. To be considered concessional, the loan is offered at an interest rates below those available on the market or with grace periods, or a combination of these.
36 Royal Haskoning DHV, 2019, Ex-ante analýza zavedení finančních nástrojů v PRV v období 2021-2027.

longer. [37]

- Recommendations derived from the ex-ante assessment were:
  - The introduction of concessional loans (together with technical grants/mentoring) and guarantees. Both instruments relate to RDP sub-measures 4.1.1, 4.2.1, 6.1.1, 6.4.1, 6.4.2 and to modernisation: investments in machinery and equipment. Investments in building/construction for measure 6.4.2 or in 4.1.1 should also be eligible, provided the applicant proves their medium-term profitability (5 to 10 years), or if it is connected with investments in machinery which support the farm in creating profit.
  - To support young farmers a financial instrument combining technical support with subsidised interest rates for loans and the provision of start-up capital could be considered.

Specifically, the following allocations have been proposed:

Sub-measure	Pilot allocation for financial instrument
4.1.1	Between EUR 200 million and EUR 230 million (CZK 5.1 billion and CZK 5.7 billion) both for concessional loans as well as guarantees
4.2.1	Between EUR 40 million and EUR 60 million (CZK 1.0 billion and CZK 1.5 billion). Commercial loans and leasing could be used.
6.1.1	Between EUR 60 million and EUR 83 million (CZK 1.5 billion and CZK 2.1 billion).
6.4.1	Between EUR 10 million and EUR 13 million (CZK 250 million and CZK 330 million).
6.4.2	Between EUR 13 million and EUR 15.5 million (CZK 350 million and CZK 400 million).

The methodology used followed the following criteria:

1. Evaluation of the existence of an investment gap: a scoring exercise was performed based on a framework assessment of (i) the rate of rejected grant applications in the period 2014-2020, (ii) data based on the first RDP calls as well as (iii) own estimate of how significant the demand for projects that exceeds the available RDP allocation is (e.g. new activities not supported in the 2014-2020 programming period).
2. Profitability of the investment project: Assessment of the ability of a typical project to generate revenue - the existence of direct project revenues or the implementation of financial savings.
3. Size of the investment benchmarked against transaction costs: investment projects of less than EUR 19 630 (CZK 0.5 million) are considered less suitable for support by financial instruments, due to the low efficiency in relation to associated administrative costs (capacity of the managing authority, administration fees to the financial instruments administrator, etc.).
4. Assessment of the allocated budget for the corresponding individual areas of RDP support.
5. Ability to provide co-financing, legal form, financial health, history of the beneficiary: Assessment of the credibility, reliability and stability of the beneficiary of a typical project according to standard financial market analysis.

Assessment of the existence of barriers, such as legal and political risks: Assessment whether the area is subject to specific legislation that does not allow the involvement of financial instruments (e.g. direct payments) and assessing possible policy risks.

6. Overlap / complementarity / synergy with other programs: Analysis of existing or planned national or regional programmes to avoid that beneficiaries are not interested in the new financial instrument.

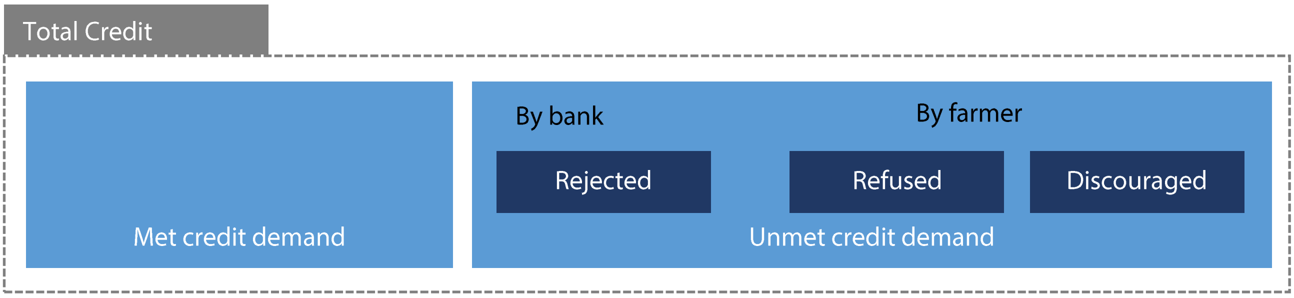
Source: Ex-ante assessment for Czech Republic, Royal Haskoning DHV, Ex-ante analýza zavedení finančních nástrojů v PRV v období 2021-2027.

37 Supporting young farmers in Czech Republic is particularly important given that the share of young farm managers is declining. While in 2010 the share of enterprises owned by young managers up to 34 years of age was 11.7%, it was only 4.4% in 2016.

2.2.2 Analysis of the demand for finance

The potential total demand for finance combines both met and unmet demand. The met demand consists of the value of all applications for finance, which were accepted by the financial institutions in the relevant year. The unmet demand consists of the assumed value of applications rejected by a financial institution, offers of credit refused by farmers, alongside cases where farmers are discouraged from applying for credit due to an expectation of rejection or refusal (Figure 9).

Figure 9: Schematic overview of the demand side of agriculture sector

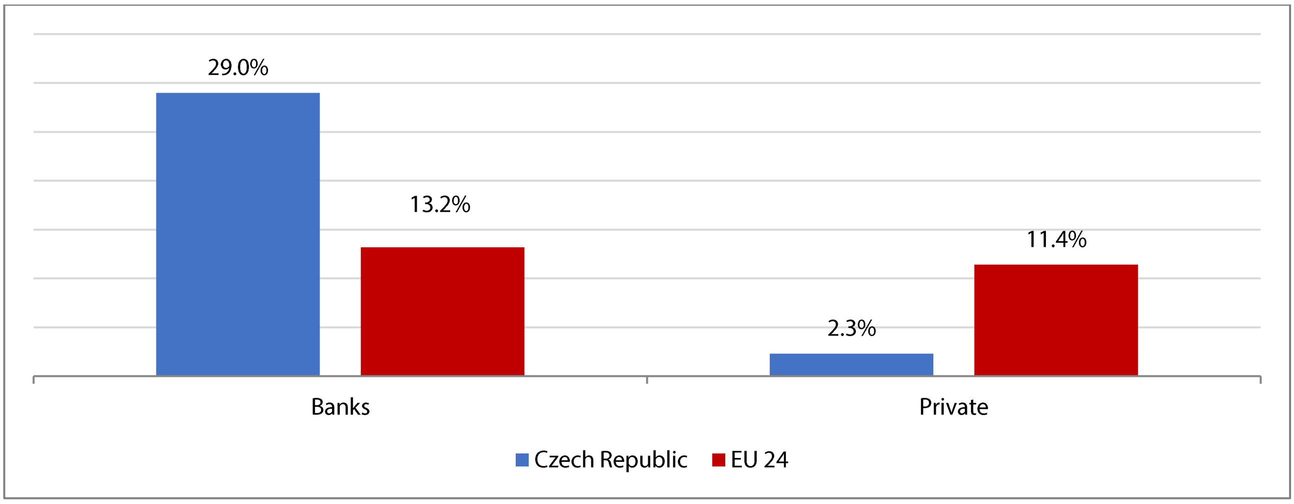


Source: Ecorys, 2019.

Based on the results of the *fi-compass* survey, the unmet demand for the agriculture sector in the Czech Republic is estimated at EUR 326 million.

Bank lending plays a key role in meeting the demand for finance of Czech farmers. According to the *fi-compass* survey, 29% of Czech farmers applied for bank financing, compared to 13% for the EU 24 (Figure 10). Private financing (from friends and family) plays a marginal role, being used by only 2.3% of the respondents compared to 11% in the EU 24. The estimated amount of private financing in the Czech Republic is EUR 5.2 million.[38]

Figure 10: Farmers applying for finance in 2017



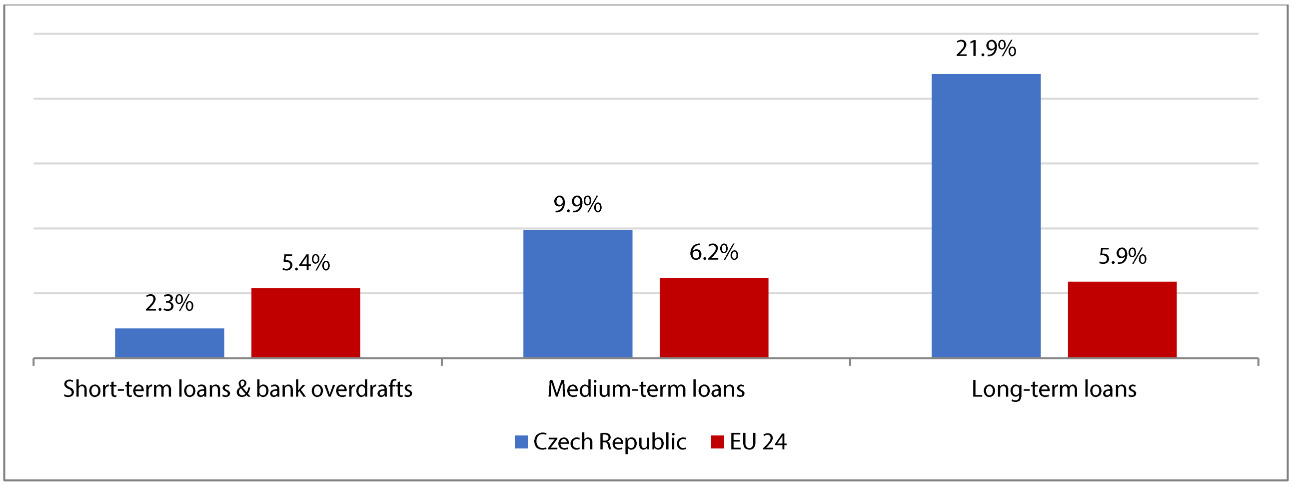
Source: fi-compass survey.

Czech farmers mostly apply for investment loans with a maturity above 5 years. The strong demand for long-term loans was influenced by the availability of investment support from the RDP and national subsidies (i.e. subsidised loans for farmland acquisition), as confirmed by interviews. Based on the *fi-compass* survey, long-term loans were

38 Calculations, assuming an average loan amount of EUR 5 000.

requested by 21.9% of farmers, which is significantly higher than the EU 24 average. Medium-term loans (more than 18 months but less than 5 years) reached 9.9%, which is also higher than for the EU 24. Demand for short-term finance (up to 18 month) is around half the EU 24 level, at 2.3% (Figure 11). Interviews indicated that while there is demand for working capital, the needs can often be met by support payments and own funds.

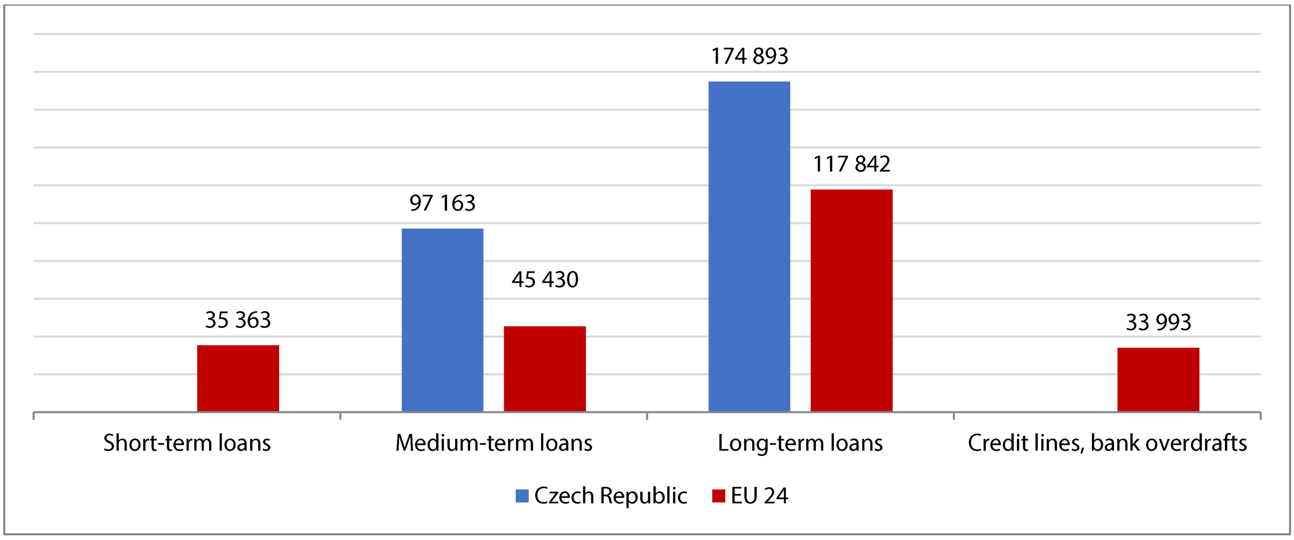
Figure 11: Farmers applying for finance in 2017, by financing product



Source: fi-compass survey.

The median loan values in the Czech Republic are well above the EU 24 average. For medium-term loans in the Czech Republic, the median value is more than double that of the EU 24, at EUR 97 163 in 2017 (Figure 12). The long-term loan amount was also significantly higher than the EU 24, at EUR 174 893 compared to EUR 117 842 for EU 24. The focus group and interviews suggested that the average amount for short-term working capital is between EUR 32 500 and EUR 37 500. Even though the banks interviewed did not want to provide detailed insights into their agriculture loan portfolio (for commercial reasons), they did not oppose these figures.

Figure 12: Median loan amount in 2017, in EUR

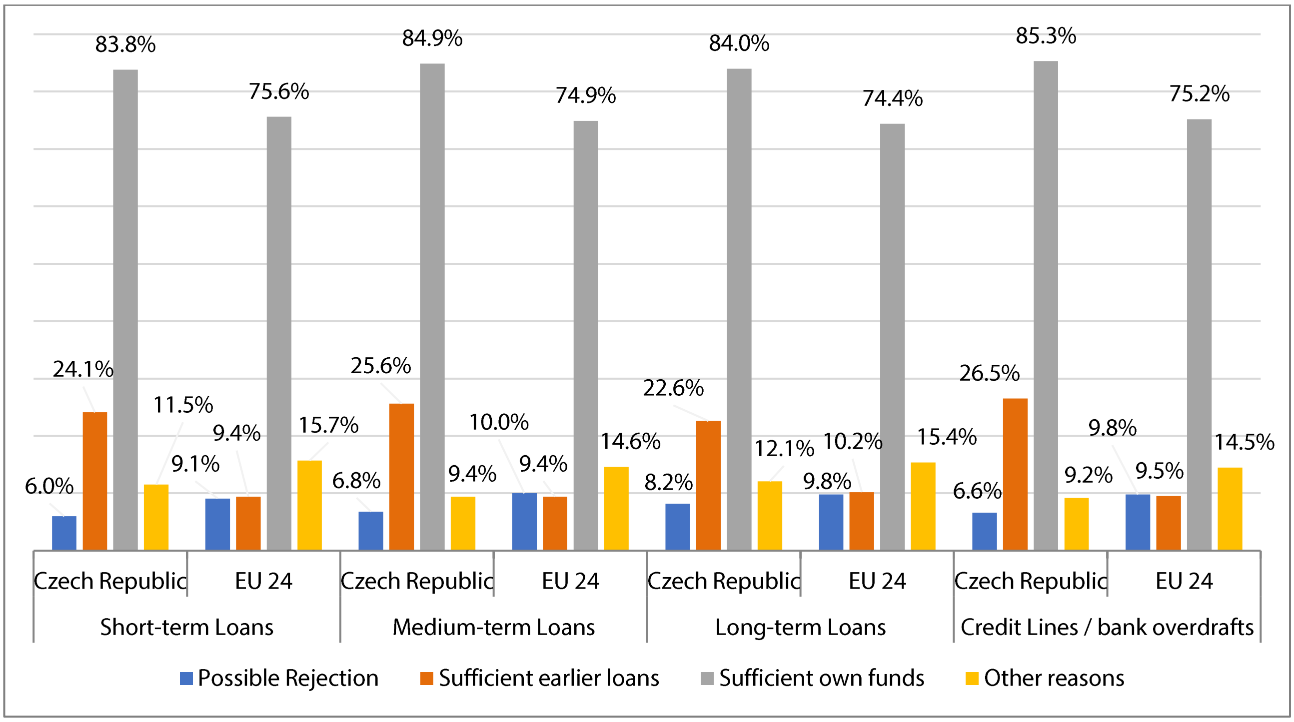


Source: fi-compass survey.

The reason most Czech farmers did not apply for finance was due to having sufficient own funds or because their current loans were sufficient for their needs. This was the case across all loan products and both reasons exceeded the EU 24 average (Figure 13).

Data shows that 7% of *fi-compass* survey respondents did not apply for finance because of a fear of being rejected by the banks. This is lower than the average rate for the EU 24 of 9.7%. In interviews, farmers and farmer association representatives indicated that while, in general, farmers are financially literate, the application process is considered by many as being too cumbersome and too complex and that this might cause farmers to be discouraged from applying for loans. They also mentioned that a simplification of the application and analysis process would be welcomed. Banks, on their own, mentioned that they provide technical support to farmers (e.g. individual consultations on the financial situation of the farm, strategic analysis, advice on feasible financing, and advice on technical or administrative support measures) when they apply for finance, in order to help their application process. Still, it seems there is scope for improvement in this regard.

Figure 13: Reasons for not applying for loans in the agriculture sector in 2017

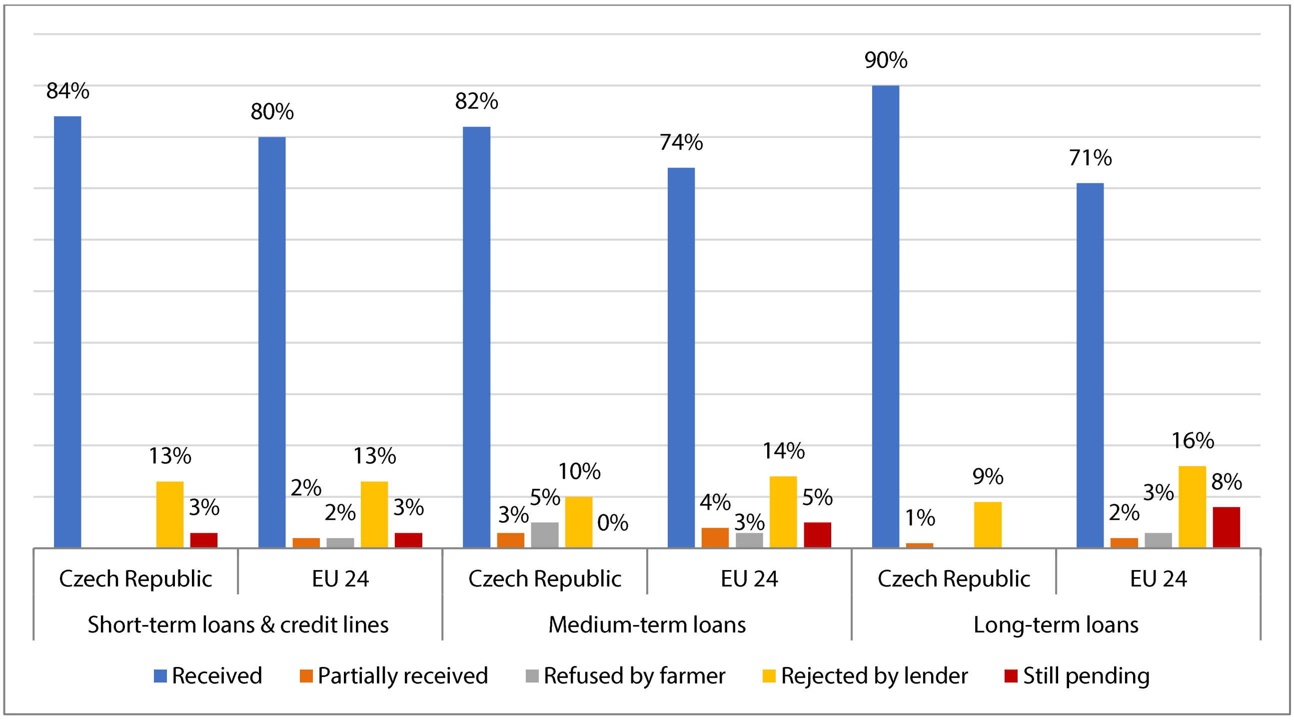


Source: fi-compass survey.

The rejection rates of 10% in the Czech Republic are broadly in line with EU 24 figures (Figure 14). Around 10% of applications are rejected across different financial products. In fact, approval results across products are higher in the Czech Republic than in the EU 24. Short-term loans and credit lines faced the highest rejection rates, with 13% of applications rejected. The most successful applications were for long-term loans, with 90% of applications approved, compared to only 71% for the EU 24.

Czech farmers mostly rejected medium-term loans (5%). This refusal might be related to unsatisfactory interest rates or other unfavourable loan conditions offered to farmers.

Figure 14: Result from applications for finance in the agriculture sector in 2017



Source: fi-compass survey.

Banks mainly reject the loan applications of farmers due to the following reasons (Figure 15):

(i) a lack of credit history;

(ii) restrictive banking policy;

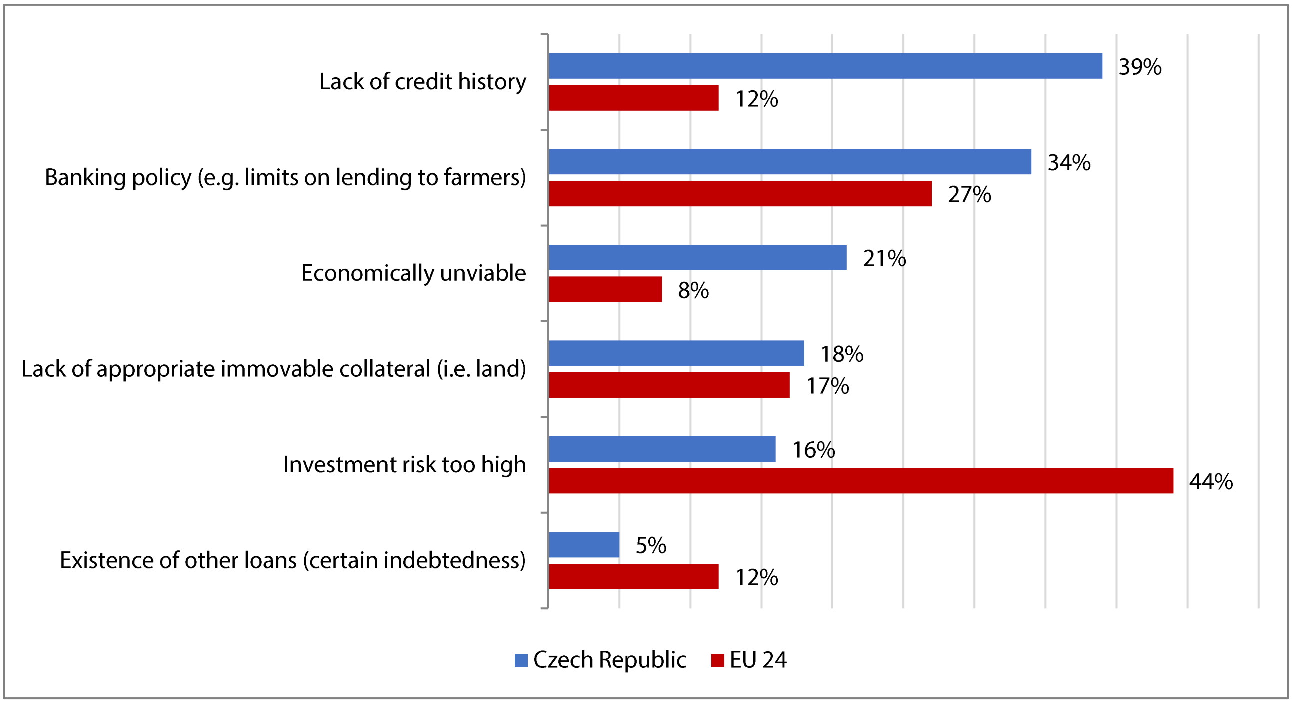
(iii) the economic non-viability of farms; and

(iv) a lack of adequate collateral.

According to the *fi-compass* survey, 39% of respondents mentioned that the absence of a positive banking track record was the main reason why they had their loan applications rejected. Another important factor behind rejections were the banks' policies. Based on the interviews it can be concluded that while banks try to meet the needs of the agriculture sector, the increase in non-performing loans[39] disbursed to the agriculture sector in recent years has led them to tighten their bank policy regarding the liquidity, profitability and indebtedness indicators of farmers who request bank financing (section 2.3.1). About 34% of the Czech farmers surveyed experienced loan rejections due to bank policy. According to the agriculture producers, 21% of loan rejections were due to the economic non-viability of the farms, while 18% were rejected due to a lack of collateral. The loan rejection rate due to high investment risk was well below the EU 24 average, accounting for 16%.

39 In 2017, the non-performing loans reached EUR 57.8 million. That was an increase of 64.2% compared to 2016. However, overall, the non-performing loans represented only 2.7% of the total outstanding loan amount.

Figure 15: Reasons for the rejection of loan applications in the agriculture sector in 2017



Source: fi-compass survey.

For young farmers and new entrants, a lack of credit history has particularly negative consequences. Interviews with banks confirmed that credit history is an important part of the loan application process. In general, it is considered an asset when a client can demonstrate their repayment capacity based on the previous loans they have received. The importance of credit history is negatively affecting young farmers and new entrants in particular, as they have been unable to demonstrate their repayment willingness and capacity, as they are often new to the business. Thus, when possible, young farmers tend to use financing from private individuals (relatives or friends) to support their investments, or RDP start-up aid, when being selected. The ex-ante assessment of the introduction of EAFRD financial instruments in the CAP Strategic Plan 2021-2027 further concluded that young farmers are at a disadvantage compared to more experienced farmers as they are often charged higher interest rates when borrowing from banks.[40]

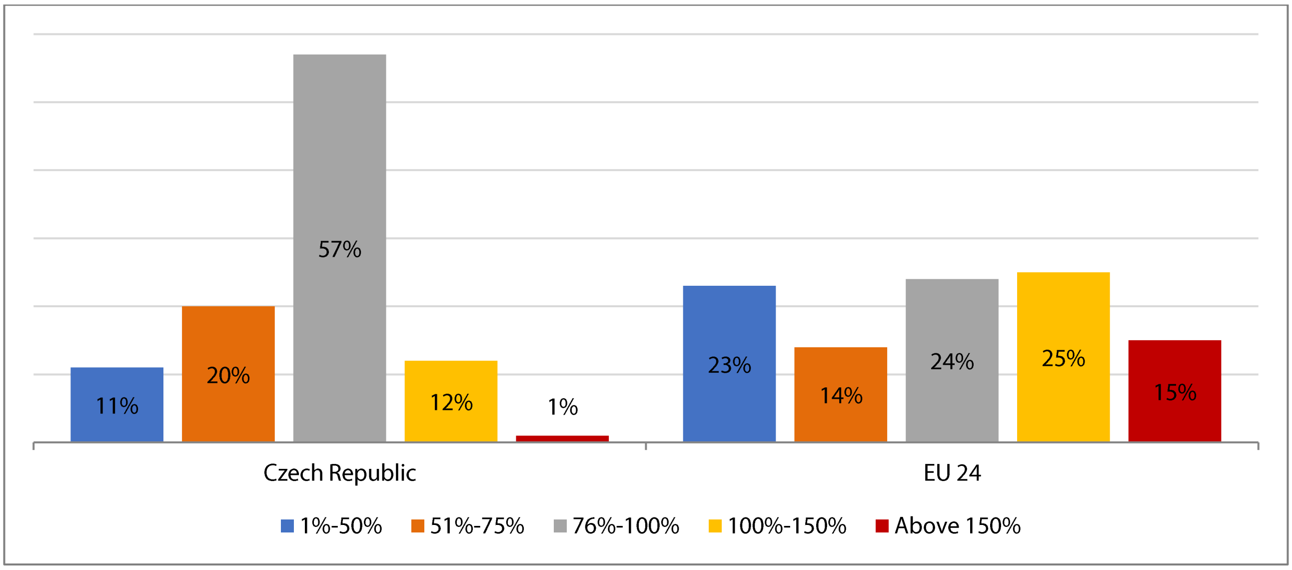
Some farmers lack the necessary collateral to secure loans. This is particularly the case for young farmers and new entrants who often lack the required collateral due to the absence of valuable assets behind their business (proposals). In addition, small-sized farms often fail to provide adequate levels of collateral, particularly for medium and long-term lending, and this is one of the main reasons for the rejection of their loan applications. While interviews confirmed that banks are willing to accept a 100% loan-to-value (LTV) ratio of farmland, this limits the flexibility of farmers in making future investments and places a significant burden in the case of a future crisis, negative climate event or change in the market situation (e.g. pushing selling prices down).

Micro- or small-sized farms are rejected more often than large-sized farms. In interviews, it was stressed that the loan applications by large-sized farms are rejected less often, as they tend to be able to provide sufficient levels of collateral. In addition, large farms have ongoing relationships with banks (and thus a credit history), receive a significant amount of CAP direct payments, have farm products that can easily be sold on the market (e.g. cereals), and can present convincing investment plans. In comparison, micro or small individual farms are less likely to be able to ensure such things.

40 Royal Haskoning DHV, Ex-ante analýza zavedení finančních nástrojů v PRV v období 2021-2027.

According to the *fi-compass* survey (Figure 16), Czech farmers had to provide collateral in 72.5% of the cases, of which farmers' own assets were given in 99% the cases. In 57% of the cases, the required value of collateral had to cover 76% - 100% of the loan amount; and in 12% of cases, 100% to 150% of the loan amount. This situation is better than in many EU 24 countries, but yet can benefit from further policy interventions to reduce the burden on farmers, especially of small scale.

Figure 16: Value of the guarantee as a percentage of the loan amount requested by farmers in 2017



Source: fi-compass survey.

Banks also assess the overall added value of the investment and whether the farmer will be able to implement the respective project successfully. Banks try to project the additional turnover and the profit that the investment will generate. For example, how much more productive a new tractor might be or how farm output / income would increase / change subject to the investment being implemented. Banks also take into account whether the farmer provides machinery services to other farmers, resulting in additional income. If the agriculture machinery has modern technology (e.g. has an IT system/on-board computer), the farmer's capacity to adequately use this technology is also evaluated.

A lack of knowledge and capacity to prepare a convincing business plan prevents some farmers from accessing finance. Farmer associations and banks stressed in interviews that a lack of financial literacy is not a major issue, however there are still famers who lack the capacity to convincingly present their business plans to the banks. This then results in the rejection of their loan applications, particularly in the case of young farmers and small-farms. If support was to be provided in the area of business management (i.e. in terms of organising and operating the farm for maximum production and profit) and investment planning (i.e. outlining the investments needed to achieve farm growth), more of these farmers would potentially receive loans (depending on the overall creditworthiness of the farm). Also the ex-ante assessment of the introduction of EAFRD financial instruments in the CAP Strategic Plan 2021-2027 mentioned that some small and medium-sized farmers face difficulties accessing finance, as they have often a low production volume and lack entrepreneurial experience.[41]

Nevertheless, based on interviews and discussions in the focus group, it can be said that although farmers are quite aware of the financing supply dedicated to the sector, it does appear that **part of the unmet demand is still caused by a lack of information about all possible options for obtaining finance.** Some farmers do not believe that they have the full picture of the financing and support measures available to them. Increased marketing and information efforts from financial providers might be helpful in this regard.

41 Royal Haskoning DHV, Ex-ante analýza zavedení finančních nástrojů v PRV v období 2021-2027.

2.3 Analysis on the supply side of finance to the agriculture sector

This section provides an overview of the financial environment, in which the agriculture sector in Czech Republic operates. It describes the main financial products offered, including any currently operating financial instruments targeting agriculture, with national and/or EAFRD resources. The section draws its information from interviews with financial institutions, as well as from national statistics and the FADN database.

An attempt is made to give a description of the general conditions for accessing finance, such as interest rates and requirements for collateral, and the availability of funding for agriculture producers. Potential differences in the availability of financial products across different types of agriculture producers are reviewed and analysed.

Key elements of the supply of finance to the Czech agriculture sector

- Agriculture finance is offered by almost all banks in the Czech Republic. While the market shares of the three leading banks in agriculture are high, MONETA bank a.s. (30%), Komerční banka a.s. (28%), Česká spořitelna a.s. (25%), the agriculture finance market remains competitive, as seen by the relatively low interest rates and due to the need to serve new client segments.
- Czech banks offer various types of financial products to farmers including short, medium or long-term loans, and tailored products for specific purposes (working capital, land acquisition, purchase of equipment, etc.) or products adapted particularly for large-sized farms (revolving credit facilities, multipurpose credit facilities or credit lines, commercial contract financing etc.).
- The publicly owned Farming and Forestry Relief and Guarantee Fund (PGRLF), as the provider of the national subsidy programme, offers a range of *de minimis* measures with a subsidy element.
- While non-performing loans in the agriculture sector have been increasing, their share is still below 3% of the total outstanding portfolio. Nevertheless, this affects the lending approach of banks, with them ensuring that borrowers strictly follow key indicators of profitability, liquidity and indebtedness.
- The total outstanding loan volume to the agriculture sector is increasing and, in 2019, amounted to EUR 2.4 billion
- Most funding went to mixed farms, dairy and granivores according to banks.
- While banks do not discriminate between various client segments, they put emphasis on the repayment capacity of borrowers and are particularly reluctant to finance young farmers. Collateral and credit history also influence their lending decisions.
- To avoid over-concentration in one sub-sector, banks might not fund new clients active in a specific sub-sector or based in a specific location.

2.3.1 Description of finance environment and funding availability

2.3.1.1 Finance providers

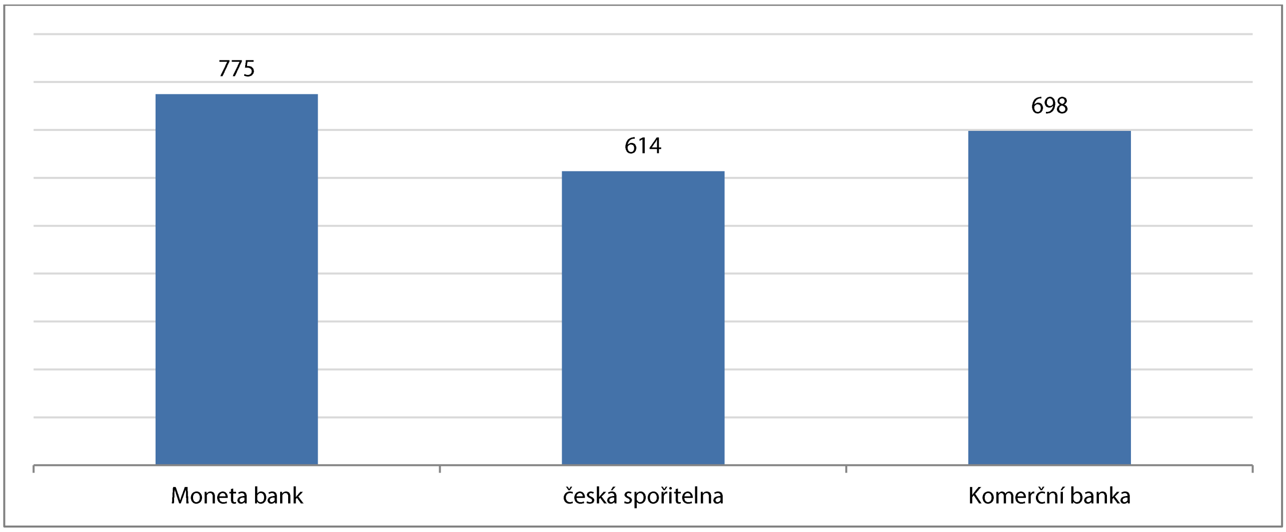
The Czech Republic has 44 registered banks, 9 cooperative banks, 12 branches of foreign banks and over 400 financial or credit institutions that provide cross-border financial services.[42] Most of the larger banks that operate in the Czech Republic are subsidiaries of large international banks, i.e. Komerční banka, a.s. (Société Générale group), Česká spořitelna, a.s. (Erste Group), Československá obchodní banka, a.s. (KBC group), Unicredit Bank, a.s., Hello Bank, a.s. (BNP Paribas group), but there are still some other local banks of importance - MONETA Bank, a.s. (former GE Capital), Fio banka, a.s. Due to the size and physical configuration of the country, banks are proportionally spread across the country and, in general, provide banking services without focusing on particular geographical areas or industry segments.

42 Czech National Bank data. Available at www.cnb.cz.

In addition to commercial banks, the Czech government plays a significant role in agriculture finance. The Czech Republic has set up a fund, the Farming and Forestry Relief and Guarantee Fund (PGRLF), whose primary goal is to provide support to Czech farmers in the form of nationally funded subsidies. PGRLF implements national measures, under *de minimis*, and subsidies in the form of interest rate reductions and/or insurance premium reimbursements, especially for the insurance of assets like livestock or crops. PGRLF also gives directly loans and guarantees to farmers within one of the 15 programmes dedicated to primary production, agriculture processing, or forestry. These measures are essential to stimulate the financial environment in the Czech Republic and can be used in combination with commercial loans. The financial products are detailed in section 2.3.1.2.

Agriculture finance is provided by all banks. The largest share of financing for the agriculture sector is provided by MONETA bank, a.s., of slightly over 30%, followed by Komerční banka, a.s., of about 28%, Česká spořitelna a.s, of about 25%, ČSOB a.s. Unicredit Bank, a.s. (Figure 17) and Waldviertler Sparkasse Bank A.G, with the latter three having a combined market share of about 17%. While the market shares of the three leading banks in agriculture are high, the provision of financing to agriculture remains relatively competitive, as seen by the low interest rates and due to the need to serve new client segments (as further outlined in sections 2.3.1.3 and 2.3.2).

Figure 17: List of banks with the largest market shares or exposure to agriculture in 2017, EUR million[43]



Source: Elaborated based on Annual reports analyses.

The five largest banks with respect to exposure to agriculture, work in partnership with the **Farming and Forestry Relief and Guarantee Fund** (PGRLF) mentioned above. This is further analysed in section 2.3.1.2. While official data related to the activity of Unicredit Bank and CSOB in the sector is limited, these two banks have been included in this section due to the following reasons: (i) in 2017, *CSOB* provided the highest volume of loans among Czech banks and (ii) Unicredit bank mentions in its annual report that farmers account for a 40% share of its clients.

2.3.1.2 Financial products

The banking portfolio comprises the standard financial products that are also being used to finance agriculture. These products are:

(i) Short-term instruments: short-term loans up to 18 months, bank overdrafts, credit card overdrafts with annual interest rates ranging between 2.5-3.3%.

43 CSOB and Unicreditbank official data is not available. Unicredit bank states in its annual report 2018 a 40% market share of served agriculture clients. The largest market share in agriculture financing belongs to Moneta bank reaching slightly over 30%. CSOB in 2017 provided the highest number of loans to entrepreneurs compared to other banks.

(ii) Medium-term instruments: medium-term loans (18 months to 5 years) for either investment purposes or financing working capital, with annual interest rates ranging between 2.5-2.9%.

(iii) Long-term instruments: long-term loans (above 5 years) for investment purposes with annual interest rates ranging between 2.2-2.8%.

Large-sized farms, in particular, may also benefit from other loan products offered by larger banks. Even though they are not directly designed for the agriculture sector, large-sized farms have access to revolving credit facilities (single or multicurrency), multipurpose credit facilities or credit lines, commercial contract financing or project finance. However, banks and farmer associations confirmed in interviews that those products are not used very often in the agriculture sector and that is why no further assessment is provided.

Czech banks also provide products based on financial instruments that aim to improve access to loans (Table 3). These include the EU Programme for the Competitiveness of Enterprises and SMEs (COSME) 2014-2020, under which a capped portfolio guarantee for newly generated SME financing portfolios, with a maximum guarantee rate of 50%, is provided.[44] As of the end of 2018, COSME had provided access to finance for 89 SMEs in the Czech republic from the agriculture, forestry and fishing sectors, including agri-food companies, for a total of EUR 10.9 million (1.6 % of the total COSME portfolio in the country)[45].

Additionally, the guarantee instrument under the **EU Programme for Employment and Social Innovation (EaSI)** is, in principle, also available for very small farmers. In the Czech Republic, as of the end of 2018, EaSI had facilitated access to finance for 192 SMEs in the agriculture, forestry and fishing sectors for a total amount of EUR 2.7 million (5.2 % of the total portfolio in the country)[46].

Partially guaranteed loans under the InnovFin – EU Finance for innovators programme for innovative small and medium-sized enterprises and small mid-caps with up to 499 employees are available in the market. InnovFin provides various financing tools (including debt and equity products) focussing on research and innovation investment. Start-ups and new entrants can benefit from products. In the Czech Republic, as of the end of 2018, InnovFin had provided access to finance for 50 SMEs and small mid-caps (< 499 employees) in the agriculture, forestry and fishing sector for a total of EUR 54.2 million (8.0 % of the total portfolio in the country).

The PGRLF, as the provider of the national subsidy programme, **offers a range of *de minimis* measures with a subsidy element:**

1) **Farmers programme – subsidised interest rates for investment loans offered by banks.** The purpose of the loan should be asset financing, i.e. equipment, machinery or immovable property. The measure involves a partial subsidy to the interest rate agreed between the farmer and the bank. The ceiling of maximum aid needs to be taken into consideration. Specific conditions for the above instrument include:

   (i) The total loan amount provided to the farmer by the participating bank should: not exceed (i) EUR 385 000 (CZK 10 million), or EUR 1.9 million (CZK 50 million) in the case of immovable property, and (ii) EUR 190 000 (CZK 5 million), in the case of breeding animals. The maturity of the loans is 8 years (20 years in the case of immovable property and 4 years in the case of breeding animals).

   (ii) An interest rate of a maximum of 3%. In 2017, the average interest rate of a bank loan was 3.1% and the average subsidised interest rate was 2.11%, and so farmers had to pay an interest rate of 0.89%.[47]

According to PGRLF, interest rate subsidised loans reached a share of 16.44% of the total loan volume in 2017, at EUR 347.3 million (CZK 9 144 billion).

44 As of 31 December 2018, 5.8% of the total volume of COSME financing provided in the EU 28 was for agriculture, forestry and fishing and equalled EUR 1.3 billion (Ciprian Cristea, 2019, COSME financial instruments Guarantees for SMEs).

45 Source: EIF.

46 Source: EIF.

47 Interview with Institute of Agriculture Economics and Information, 2019.

2) **Farmland purchase – principal repayment subsidy**. The instrument leads to a reduced repayment of the principal. Under this programme, PGRLF grants a subsidy of up to EUR 15 000.[48] The exact amount of the subsidy depends on the number of applicants in the relevant application round. The approved subsidy, however, should never exceed the principal of the loan.
3) **Farmland purchase** – **interest rate subsidy.** The purpose of the programme is the acquisition of agriculture land from private landowners. Farmland owned by the Czech government is explicitly excluded. To be able to receive this financial support, specific conditions must be fulfilled.[49]
4) **Partial reimbursement of insurance premium,** ranging between 10%-65% of the paid up insurance premium. The insurance contract needs to cover crops and/or farm animals.

Additional PGRLF programmes include:

- **Provision of guarantees**: the programme aims to support credit availability to farmers. However, in 2017, PGRLF approved only one guarantee honouring the price for an amount of EUR 5 600 (CZK 147 000). Other guarantees have not yet been issued. Only animal husbandry and vegetable production are eligible for this guarantee.
- **Provision of long-term investment loans:** the programme includes providing long-term loans directly by PGRLF to farmers under the following general conditions: (i) loan maturity up to 15 years, (ii) loan range between EUR 3 800 and EUR 385 000 (CZK 100 000 and CZK 10 000 000), (iii) purchase of immovable property is excluded. Investment loans particularly finance livestock purchases, fruit and vegetable growers, sensitive commodities or support to the cultivation of flowers. The financing covered primary production and processing activities.
- **Provision of short or medium-term working capital loans:** the programme includes providing short-term or medium-term loans directly by PGRLF to final recipients under the following general conditions: (i) loan maturity up to 2 years, (ii) loan range between EUR 3 800 and EUR 760 000 (CZK 100 000 and CZK 2 000 000). Working capital loans finance similar sectors/investments to those covered by long-term investment loans.

The investment loans and working capital loans are particularly used to finance livestock purchases, fruit and vegetable growers, sensitive commodities or to support to the cultivation of flowers. The financing covered primary production and processing activities.

For being eligible for PGRLF measures, applicants must fulfil the following eligibility criteria.[50] For the specific programmes, some additional criteria may apply:

- The entrepreneur/legal entity shall fall under the definition of a farmer according to Czech Provision 2e of the Act No. 252/1997 Coll.[51] and must systematically pursue agriculture activities in their own name, own responsibility and for the purpose of economic benefit.
- The applicant must pursue primary production, i.e. animal or plant production, feedstuff production, etc.

48 In line with Commission Regulation (EU) No 1408/2013 of 18 December 2013 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to *de minimis* aid in the agriculture sector ('Regulation (EU) No. 1408/2013').

49 (i) at least 25% of the farmer's total income in the respective period needs to come from agriculture activities and this income condition needs to persist at least 5 years after the grant-in-aid is provided.
(ii) the farmer has to pursue agriculture activities on the acquired land for a period of at least 5 year following the grant.
(iii) without PGRLF's previous written consent, the final recipient should not dispose of the acquired farm land (transfer, lease, put as lien or security, etc.).
(iv) the farmer should present the original versions of the farmland purchase agreement and fulfil the conditions governing the transfer of the purchase price to the Seller(s).
(v) total outstanding loans of the farmer should not exceed EUR 385 000 (CZK 10 000 000);
(vi) the loan granted by the Bank to finance the purchase of farmland should not be less than EUR 3 800 (CZK 100 000);
(vii) the maximum interest subsidy is 5% p.a. while the interest burden rate of the farmer should be at least 0.5%;
(viii) the maximum subsidy should be EUR 15 000 whereby the conditions for *de minimis* aid under Regulation (EU) No 1408/2013 with respect to farmers have to be fulfilled.

50 PGRLF, 2019, https://www.pgrlf.cz/programy/

51 http://extwprlegs1.fao.org/docs/html/cze74100.htm

- The applicant must not be in financial difficulties.

PGRLF has provided 3 259 loans amounting to EUR 295.9 million under the farmers programme[52] in 2017 (with an average loan amount of EUR 90 802.) **and provided subsidies to 798 farmers to purchase farmland**. .The average loan size was EUR 84 042, but no separate data was available with respect to maturity. In 2017, PGRLF was also active in providing financial subsidies for farmland acquisition - for a total of 798 successful applications, a loan volume corresponding to EUR 43.1 million was subsidised. The total subsidy for the year 2017 for farmland acquisition was EUR 11.5 million.

Since the programme inception in 1994, almost EUR 1 billion of support was provided to 64 772 farmers. These data include the entirety of PGRLF instruments.

The PGRLF products are appreciated by Czech famers. The support measures reduce the cost of capital/financing through the subsidised investment programmes. While the efforts to support the agriculture sector have been evaluated as positive, concerns have been raised regarding the assessment criteria used of not being sufficiently tailored to the situation of farmers. The applicant farmers are not assessed individually but rather using a standard approach applied for all farms. This means that some applicants are rejected even though they are presented by profitable farms.[53] Also, the guarantee instrument has not been widely deployed yet with only one guarantee having been issued in 2017. The low uptake could be caused by the narrow scope of the segments eligible under the scheme, i.e. only farmers involved in animal husbandry and vegetable production, while fruit and field crop production are excluded.[54]In addition, for the last two years, PGRLF did not issue any guarantees. During the interviews with banks and public sector stakeholders made reference that the main reasons for this are related internal policy.

Over the 2014-2020 programming period, there are no EAFRD financial instruments in the Czech Republic. However, in the context of the preparations for the 2021-2027 programming period, the Czech EAFRD managing authority launched a specific ex-ante assessment, which was finalised in December 2019. Please see section 2.2.1 for more details on the outcomes of the ex-ante assessment.

2.3.1.3 Description of financing market

In 2017, Czech farmers continued to benefit from historically low interest rates and this continued to boost the banks' active search for, and outreach to, new clients. The Czech National Bank data shows that interest rates for non-financial corporations were ranging between 2.2% to 3.32% per annum. The lowest interest rate was for loans over EUR 1.15 million (CZK 30 million). In turn, the highest interest rate was experienced for loans up to EUR 285 000 (CZK 7.5 million). For credit cards and revolving facilities, interest rates were 2.53%, while for bank overdrafts they reached 2.81%. Interest rates in 2017 were slightly higher than in 2015 and 2016 (Figure 18).

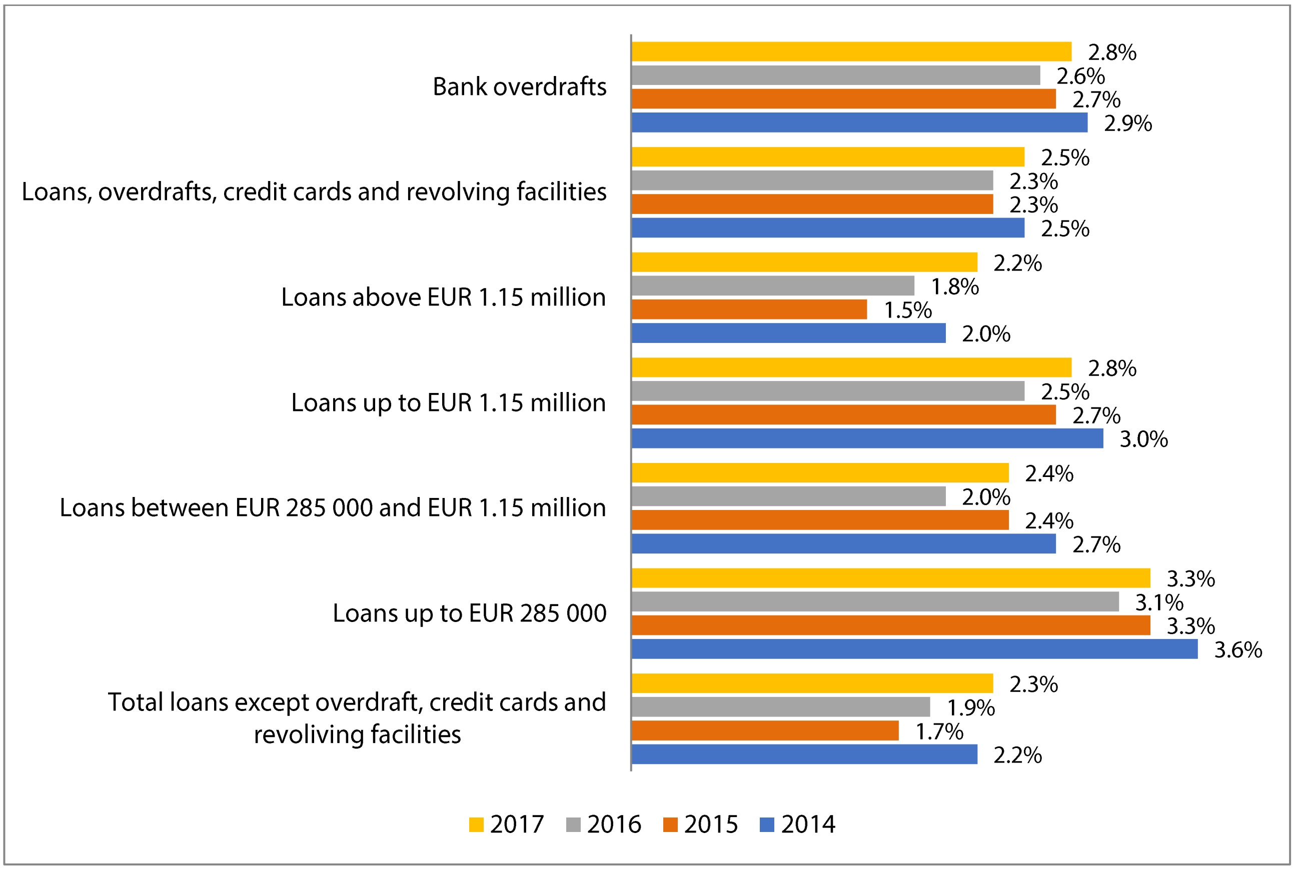
New entrants to the sector suffer from higher interest rates. Interviews with farmer associations revealed that new entrants must pay interest rates that are around 40 basis points (0.4%) higher than for existing farmers.

52 The farmers programme provides investment support particularly targeting the implementation of long-term investment projects, with a view to promote restructuring and effectiveness, modernisation, reduction of production costs, quality improvements, and further development of farmers. Investment loan purposes include the acquisition of machinery, equipment, and technology units, construction, acquisition or modernisation of movables as well as acquisition of breeding animals.

53 Šimpachová Pechrová, M., Chaloupka, O., Doucha, T., 2018, Problems and risks linked with investment supports in agrarian sector: Grants versus financial instruments? Czech experience.

54 Komerční banka, a.s. https://www.kb.cz/en/corporations-and-institutions/products/loans-and-financing/investment-financing/loans-supported-by-pgrlf-a-s.

Figure 18: Development of annual interest rates for non-financial corporations for CZK denominated loans



Source: Czech National Bank, 2019.

Banks are very proactive in offering financial products to their customers, including farmers, stimulated by the moderate interest rates. In interviews, banks mentioned that they are often participating in conferences and provide information on new trends and developments in the agriculture sector from their perspective, while also discussing analytical materials and financing possibilities.

In addition, it was also mentioned during interviews that many Czech farmers are adequately informed on access to finance for agriculture, and their respective rights and obligations arising from direct payments, RDP investment grants, national subsidised measures, as well as title transfers or transaction conditions. National public institutions[55] are particularly active in bringing information to farmers on how to access national subsidy schemes. Banks, too, provide general as well as tailor-made information to farmers on agriculture financing and on the availability of national subsidies. They especially offer help and advice in preparing loan applications. In interviews, banks have confirmed that cooperation between them and the farmers, as well as cooperation with public institutions, functions fairly well. Still, some farmers do not believe that they have the full picture on the financing and support measures available to them.

The banks providing agriculture finance have in general dedicated agriculture finance teams. These teams not only have a good understanding of the sector, but they also offer consultation and advice to farmers when they intend to take out loans or need to finance specific projects. It was mentioned during the interviews with banks that the latter play an active role in helping farmers shape their financial and/or investment needs. If during the discussion between banks and farmers it turns out that farmers might require additional solutions (i.e. leasing or factoring), many

55 Ministry of Agriculture of the Czech Republic, the State Agriculture and Intervention Fund (SZIF), the Farming and Forestry Relief and Guarantee Fund (PGRLF).

banks are able to assist farmers as they often also serve as intermediaries with financial providers of this type (e.g. insurance, factoring, leasing).

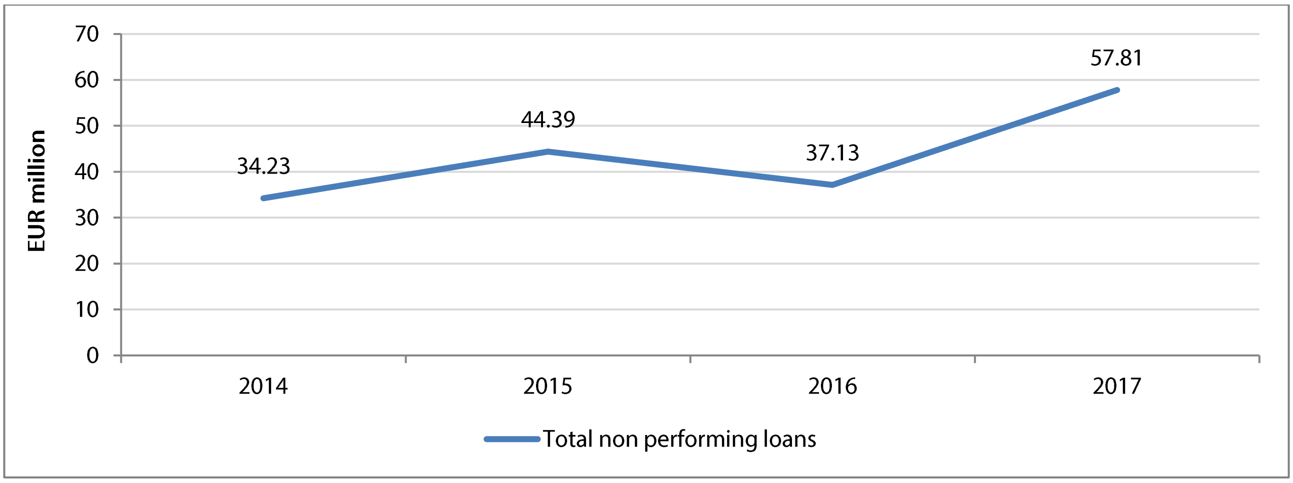
While loan products generally differ only slightly, the competition in the sector provides benefits to farmers as banks strive to tailor their products to the needs of clients. In general, banks are trying to tailor loans to the farmers' specific situation (and particularly to the cash flow of the farm so that loan disbursements, as well as repayment schedules, are in line with the respective cash flows of the farm). For example, some banks offer purpose-oriented loans for working capital finance, purchase of farmlands, or investments in buildings, machinery or technology.

Most banks do not charge penalties for early repayment of loans. Interviewees pointed out that Czech banks do not charge penalties if farmers repay their loan earlier or make extraordinary repayments (to compensate for the loss of interest rate payments). This is likely also caused by the competition in the banking sector.

While banks generally require collateral to secure a loan, they sometimes loosen their collateral requirements, depending on the loan purpose and maturity. As the *fi-compass* survey indicates, 72.5% of loans are provided against some form of collateral or security. Interviews suggested that for some types of loans (mostly up to a certain amount, generally EUR 38 000, or CZK 1 million), banks may either not require collateral or require limited security. In most cases, collateral is not required for loans below EUR 38 000 for entrepreneurs or farmers other than corporations. Nevertheless, one requirement remains, which is the positive credit history of the farmer. As far as corporations are concerned, limited security may be sufficient for lower loan amounts, i.e. through a promissory note. In most cases, however, banks will require security against the loan.

Concerns are sometimes raised regarding accommodating credit conditions, which may trigger imprudent lending behaviour, specifically in agriculture. The non-performing loan trend (Figure 19), provided by the Czech National Bank statistics, shows an increase from 2016 to 2017, particularly in agriculture, forestry and fisheries (NACE 1). While total non-performing loans reached EUR 38.1 million in 2016, they peaked at EUR 57.8 million in 2017, representing an increase of 64.2%. However, overall, the non-performing loans represented only 2.7% of the total outstanding loan amount (see section 2.3.2) to the sector in 2017, which is well below the key indicator of 5% for Portfolio at Risk (PAR) 30.[56]

Figure 19: Total non-performing loans development in agriculture, forestry and fisheries[57], 2014-2017, EUR million



Source: CNB, 2019.

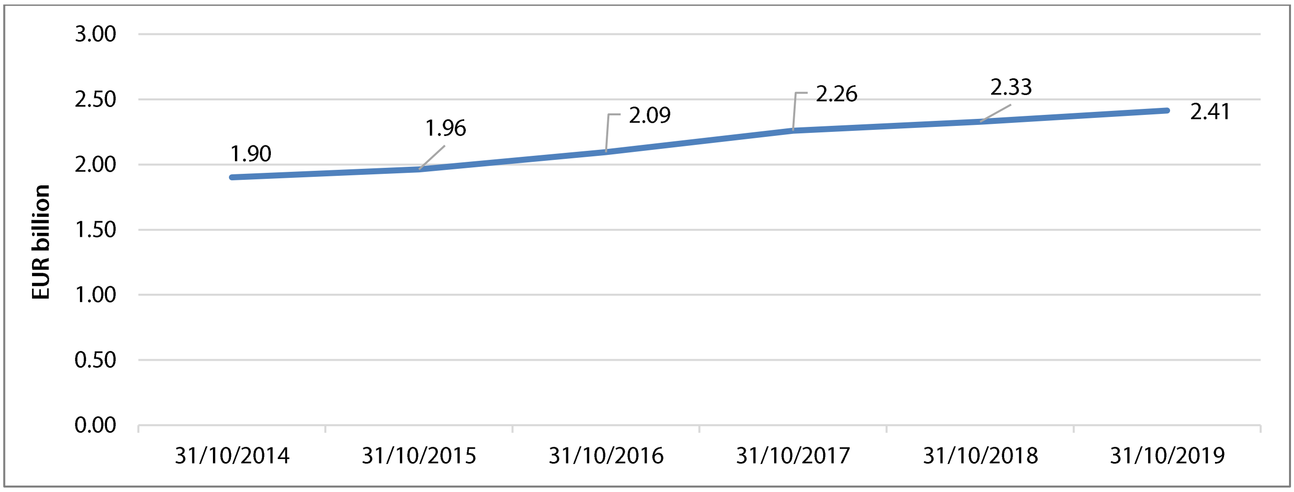
56 Portfolio At Risk (PAR) is the percentage of total loan portfolio that is at risk. So, PAR 30 is the principal amount (net after repayments) of open loans overdue by 30 days or open loans where no repayment has been made for 30 days. This is divided by the total principal amount of all open loans. A figure above 5% is usually considered highly risky if it contains a large proportion of loans that are seriously overdue.

57 Both forestry and fisheries contribute less than 1% to the Czech Republic's GDP and as such banks do not provide a lot of finance to those sectors. The NPL figures are thus almost entirely applicable for agriculture.

2.3.2 Analysis of the supply of finance

The outstanding agriculture loan portfolio has grown over the last six years (from 2014 to 2019). While credit data on individual banks are not publicly available (due to concerns over commercial strategies), the aggregate data[58] from the Czech National Bank reveal that the loan portfolio for agriculture, forestry and fishing has been consistently growing over the last six years, and stood at EUR 2.4 billion (CZK 61 billion) on 1 January 2019 (Figure 20).

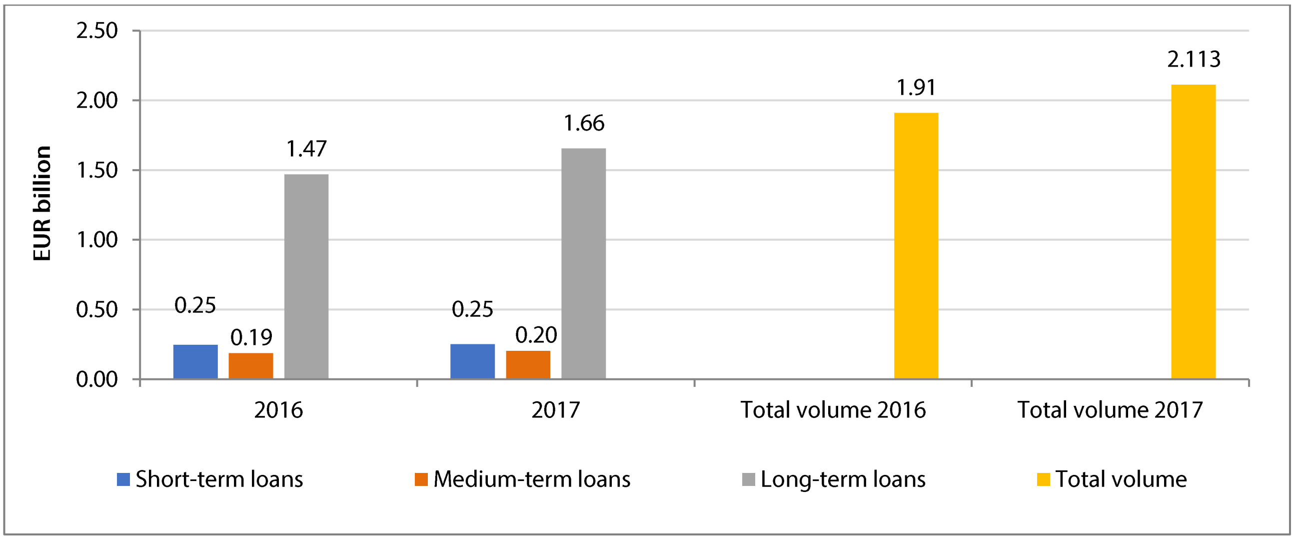
Figure 20: Development of the agriculture loan portfolio in the Czech Republic, 2014-2019, EUR billion



Source: Calculations based on CNB data, all figures in CZK, converted applying the exchange rate of 1 CZK = 0.0391 EUR.

The total outstanding agriculture loan portfolio was EUR 2.1 billion in 2017. The share of investment loans represented 78.4% of total loans according to CNB data (Figure 21). With an increase of 8.7% for investment loans, this is further confirmation of the growing investment activities of Czech farms.

Figure 21: Structure of outstanding agriculture loans in the Czech Republic, 2016-2017, EUR billion



Source: CNB, 2018, UZEI.

Providing loans to young farmers and new entrants is a challenge for many banks, mostly due to the absence of collateral and the lack of credit history of these farmers. Particularly for investment loans, banks require fixed assets

58 Data from the Czech National Bank database.

of high value as collateral and many young farmers and new entrants cannot provide such assets to the banks. They also cannot compensate (or partially compensate) for the absence of collateral with a strong credit history, which would help to ensure to the bank that they can and are willing to repay their loan. Hence, banks tend not to finance them.

In interviews, banks have repeatedly stressed that creditworthiness, and the associated repayment capacity, is the decisive factor in the loan appraisal process. While they generally assess the cooperation of farmers as smooth, farmers sometimes apply for financing of unrealistic investment projects beyond their repayment capacity. In those cases, the applications by farmers are rejected or the loan amount is reduced (where feasible, depending on the planned investment).

Banks tend to actively manage their agriculture loan portfolios to avoid the concentration of risk. Interviewees confirmed that to lessen the impact of natural disasters or price drops on their portfolio, banks tend to have limits in terms of credit exposure to specific agriculture activities, but also in terms of the location of farms.

In order to diversify their risk, they finance the key agriculture sub-sectors. Niche products are only funded to a limited extent. Banks estimated that mixed farms, dairy and granivores received the most funding.

2.4 Financing gap in the agriculture sector

This section presents an assessment of the financing gap in the Czech agriculture sector, broken down by farm-size and financial product.

Key elements of the financing gap in the Czech agriculture sector

- The financing gap is estimated between EUR 95 million and EUR 217 million.
- The most constrained segment is long-term financing.
- Small-sized farms have the highest share of the gap.
- The gap is likely higher for specific sub-sectors such as in the dairy or pork production, and for mixed-production farms.
- The key constraints are a lack of credit history and collateral of farmers, and banking policies that prevent too much exposure to a specific sub-sector.
- About 17% of the overall gap might be attributed to young farmers and new entrants.
- New entrants or young farmers who did not inherit the farm from their family have less access to financing due to a lack of collateral and credit history.

This section presents an estimate of the total value of unmet financing needs of financially viable agriculture enterprises, defined as financing gap, for 2017. The estimate is calculated by multiplying the total number of farms in the financing market by the proportion of financially viable farms reporting unmet demand for finance multiplied, in turn, by the average obtained loan value to farms.

Financing gap = Number of farms X percentage of firms that are both financially viable and have unmet demand X average loan volume

All the calculations are based on the results of the *fi-compass* survey for the Czech Republic farms and statistics from Eurostat (see Annex A.4 for more information). The methodology used for calculating the gap is described in Annex A.3.

The financing gap arises from unmet financing demand from economically viable farms[59]. As explained in section 2.2, the unmet demand for finance includes:

(i) lending applied for but not obtained; or

(ii) a lending offer refused by the potential borrower; and

(iii) lending not applied for due to expected rejection.

For the purpose of this study, 'turnover growth' is used as a proxy of farm viability. In particular, two different criteria for viability are used, which lead to the calculation of a range for the financing gap between an upper and a lower bound:

- The lower bound gap is calculated under the hypothesis that only enterprises which reported a stable (non-negative) turnover growth and no cost increase in the previous year can be considering as viable;
- The upper bound gap is calculated under the hypothesis that all enterprises which reported a stable (non-negative) turnover growth can be considered as viable.

59 The financing gap presented in this section is different from the total unmet demand presented in Section 2.2.2. In the quantification of the total unmet demand, all the enterprises in the population applying for finance are considered independent from their economic viability

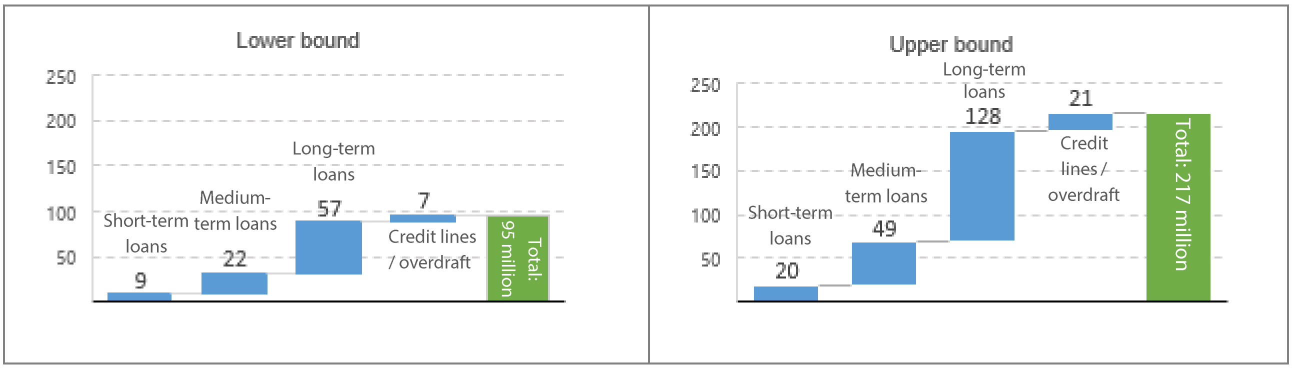
The financing gap for the Czech Republic agriculture sector is estimated to be between EUR 95 million and EUR 217 million (Table 3). The financing gap mainly concerns small-sized farms (although large-sized farms are not far behind) and, according to some stakeholders, the dairy, pork and mixed farms are facing more difficulties in accessing finance. The type of loans for which the gap is the largest are long-term loans.

Table 3: Financing gap by farm size in the agriculture sector, EUR million, 2017

		Total	Short-term Loan	Medium-term Loans	Long-term Loans	Credit lines/ bank overdraft
Upper bound	Small-sized farms	**89.3**	6.6	20.7	56.3	5.6
	Medium-sized farms	**51.0**	4.5	10.5	32.7	3.3
	Large-sized farms	**76.6**	8.7	17.6	38.6	11.6
	Total	**216.9**	**19.8**	**48.8**	**127.6**	**20.6**
Lower bound	Small-sized farms	**39.5**	3.0	9.4	25.1	2.0
	Medium-sized farms	**22.6**	2.0	4.8	14.6	1.2
	Large-sized farms	**33.3**	3.9	8.0	17.3	4.2
	Total	**95.4**	**8.9**	**22.2**	**57.0**	**7.4**

Source: Calculation based on results from the fi-compass survey.

Figure 22: Financing gap by product in the agriculture sector in 2017, EUR million



Source: fi-compass survey.

The access to long-term loans for small-sized farms is the main driver of the financing gap. Interviewees pointed out that dairy farms have been particularly affected, due to the very limited profits of the sector, with production costs estimated as being almost as high as selling prices, hence negatively impacting access to finance. The increase in net investment in granivores has not yet resulted in a stable growth rate of pork production, while poultry accounts for a lesser share of the gap, given the relatively small size of the sector. In addition, field crop producers have also had challenges in accessing finance, given that long-term investments might require the repayment period to be longer than the one available.

The general drivers of the gap include:

- **A lack of credit history:** this factor is deemed to particularly concern young farmers and new entrants, who lack a credit history or a business track record known to banks.
- **Inadequate collateral supplied against the loan:** young farmers and new entrants who cannot benefit from an established family business face particular challenges with regard to having sufficient levels of collateral.

According to stakeholders, small-sized farms with few assets are also suffering from a lack of collateral, even though, in most cases, the personal assets of farmers can be used as collateral.

- **Banking policy:** this is in terms of limits on lending to farmers due to their previous credit history, or simply due to the banks' need for a diversified client portfolio. An increasing level of NPLs is also making banks more prudent towards the sector.
- **Economic non-viability of investments:** stakeholders estimate that this mainly affects small and medium-size farms (noting Czech agriculture is dominated by very large-sized farms).
- **Lack of knowledge and capacity to prepare convincing business plans.** Some farmers would benefit from support in preparing business plans so that they can convincingly present their planned investments to the bank.

About 17% of the overall gap might be attributed to young farmers. Between 54% and 79% of rejected and viable loan applications came from applicants below 40 years old. Similarly, 12% to 25% of the discouraged applications came from young farmers. Using this information to provide a different breakdown of farms with constrained access to finance, a financing gap for young farmers of between EUR 28 million and EUR 42 million is obtained. In addition to higher collateral requirements, new entrants suffer from interest rates that are higher, by around 40 basis points, than for farmers not in this category.

Over the coming years, the evolution of the financing gap will partly depend on the future CAP, as well as future national support measures and their volumes. If CAP direct payments or EAFRD investment funds to Czech farms were to be significantly reduced, this is likely to have a negative impact on the farms' short-term cash flows, which could lead banks to place farmers' loans application in a higher risk segment. Under this scenario, the financing gap could potentially widen. On the other hand, the kind of public support to be provided to Czech farmers by the government is under debate. Since agriculture policy is a high priority to the Czech government, private sector stakeholders expect measures supporting farmers to increase. A revamped and strengthened public support scheme, including with CAP/EAFRD financial instruments, could reduce the financing gap in agriculture.

The PGRLF, which provides subsidised programmes and loans to the agriculture sector, reduces the financing gap. In addition to receiving a subsidy to lower the expenses of a commercial loan, PGRLF offers one product that allows farmers to apply for a loan straight from the fund. However, as outlined above, it has been argued that viable investment proposals have been rejected by banks as the bank's loan analysis process is too standardised and not necessarily detailed enough to cover the entire farm spectrum (i.e. different sources of agriculture income, additional income sources, etc.). In addition, the guarantees offered by PGRLF are targeted only to farmers engaged in animal husbandry and vegetable production, but not fruit or field crops. Hence, a large share of farmers remain excluded.

2.5 Conclusions

Investment has been pouring into the Czech agriculture sector in recent years. Since 2015, GFCF in the sector has been growing, reaching its highest level in a decade in 2018. These indicators suggest an optimistic and investment-friendly environment in the sector.

Drivers of the demand for finance in agriculture include modernisation, with farmers largely investing in new machinery, as well as equipment or facilities, with a view to containing the rising costs of production and preserving their profitability and market position. In addition, the extension of business potential and production capacity, particularly through the purchase of land, which allows farmers to broaden their production capacity and diversify their output drives demand for finance. Many farmers also require working capital, related to financing the day-to-day business or for inventory.

EU funded support measures stimulate demand for finance and support access to finance. CAP measures are viewed by banks as a central source for the repayment of loans by supporting the farms overall liquidity and profitability. Support measures also stimulate investment, as farmers often seek loans to finance their contribution to investments that benefit from RDP support.

The supply of finance to the Czech agriculture sector is primarily ensured by generalist commercial banks. The largest banks, often subsidiaries of international groups, all employ agriculture specialists and provide farms with a large variety of loan products. The agriculture sector has enjoyed increasing attention from the banks, with the outstanding loan portfolio to the sector growing in recent years.

A special place on the agriculture finance market belongs to the Farming and Forestry Relief and Guarantee Fund (PGRLF), which provides the agriculture sector with a variety of publicly funded financial products, including subsidy schemes, working capital loans and short and medium-term loans. However, its lending policies are believed to not cover some potential borrowers, in particular those with diversified sources of income, and does not provide guarantees to all sub-sectors. The latter product is, de facto, almost never used by farmers. The policies of banks and PGRLF seem not always aligned as banks sometimes reject loans that do not meet their eligibility criteria while the applicant would be eligible under PGRLF criteria.

The Czech financial market for the agriculture sector is believed to be well established and reasonably well-performing, according to the banks interviewed. Finance for investment purposes is available, as are national support schemes to farmers that contribute to increase the appetite for investment in the agriculture sector.

Despite the generally well-functioning financial market in agriculture, there is still room for further improvements. A financing gap has been identified, estimated in the range of EUR 95 million and EUR 217 million. Around 41% of the gap relates to small-size farms and around 17% to young farmers. In terms of financial products, 59% of the gap relates to long-term loans and 21% to medium-term loans.

10% of the loan applications by farmers are rejected. This is mostly caused by an absence of credit history or a lack of sufficient collateral (in terms of quantity and quality). Investment proposals submitted to banks are often unfeasible and would over-stretch the repayment capacity of farmers. Only some farmers are being discouraged from applying for loans. In addition, the perceived high administrative requirements and cumbersome procedures of banks stop farmers from applying for loans.

With increasing levels of non-performing loans in agriculture, banks have tightened their lending approach. However, farmers that meet the key indicators, in terms of profitability, liquidity and indebtedness, are still being financed. In addition, banks limit their exposure to specific sub-sectors to reduce their portfolio risk.

Based on the analysis conducted for this report, and on the basis of information gathered among stakeholders, the following recommendations for public intervention could be considered:

- While guarantee instruments exist in the Czech Republic, they are not currently available to all farmers. Thus, guarantee instruments that could also be supported under the CAP Strategic Plan in the new programming period 2021-2027, and for which the vast majority of Czech farmers would be potentially eligible, might facilitate the flow of investment financing in the event of limited collateral. This would be particularly important for young farmers.

- Small-sized farms and young farmers should be among the main target groups of any new initiative. The opportunities offered by the new legal framework, such as the easier combination of financial instruments and grant support or the possibility to finance the purchase of land for young farmers, might offer interesting opportunities to increase the effectiveness of the instrument towards those segments.
- Even though banks offer different loan products to farmers, additional low interest working capital loans could help farmers to overcome the difficulties caused by climate change events/disasters, with such loans being made available immediately after a disaster occurs. In this context, the new flexibility on working capital introduced for financial instruments under the EAFRD legislation post-2020 proposal has to be evaluated.
- Some small-sized farms and new entrants, find it difficult to prepare a business plan for new investments. Although the main banks servicing the sector have specialised teams closely supporting the farmers applying for loans, a technical support and capacity building measures for those farmers could be considered to strengthen their ability to present convincing investment proposals and to thus receive a loan. Those measures could also support farmers to better understand the entire loan process and the need for documentation. They could also be supported in providing such documentation.

3. PART II: AGRI-FOOD SECTOR

3.1 Market analysis

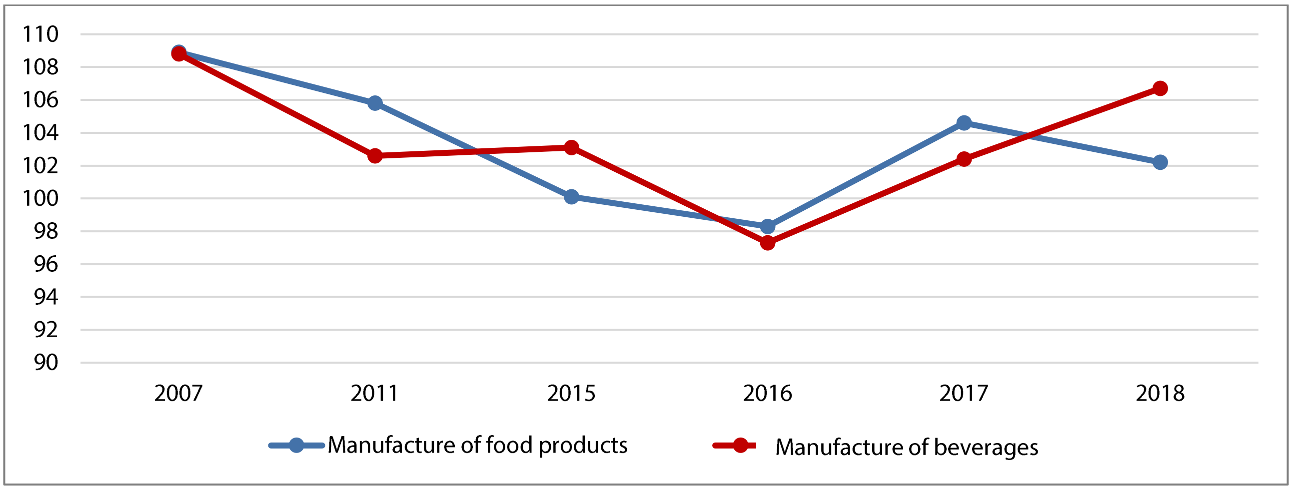
Key elements on the Czech agri-food sector

- In 2018, the Czech agri-food sector had a turnover of 14.6 billion.
- Since 2016, gross value added has been growing, reaching EUR 2.23 billion in 2018 for food production and EUR 927 million for beverage production.
- The production of food products accounts for 5.4% of the Czech Republic's total GVA, while the production of beverages accounts for 2.4%.
- The agri-food sector has a dual structure, with large-sized enterprises dominating in terms of revenue share and small-sized enterprises in terms of the number of enterprises.
- The main sub-sectors by revenue are the production of meat and dairy products for the food industry; and the production of beer for the beverage industry.
- Czech consumers are placing increasing levels of importance on the safety and quality of food. They trust in the national quality label, and tend to prefer national brands. Agri-food enterprises can thus benefit from investments into labelling, branding and packaging.

The Czech agri-food sector had a turnover of EUR 14.6 billion in 2018 and represented over 8% of the total manufacturing industry.[60] In 2016, turnover reached its lowest point since 2007 for both food and beverage manufacturing, but the sectors have since been recovering even if in 2018 the turnover index was still below 2007 level. Food manufacturing has risen by almost 4 index points and beverage manufacturing by almost 10 (Figure 23) in 2018 compared to 2016. For food production, the main sub-sector by production value was meat products (27%), followed by dairy (20%) and bakery and farinaceous products (15%).[61] For beverages production, the main sub-sector by revenue was beer production.[62]

60 Academy of Czech Science, 2019, http://www.vitejtenazemi.cz/cenia/index.php?p=podil_sektoru_na_ekonomice_cr&site=spotreba.
61 Statista, 2020, Production value of food manufacturing industry in the Czech Republic in 2017, by sector.
62 Ministry of Agriculture of the Czech Republic, 2017, We support traditions and rural development.

Figure 23: Changes in turnover index of Czech food and beverage manufacturers, annual data index, 2015 = 100%



Source: Czech Statistical Office, 2019.

In the recent years, the GVA generated by food, beverages and tobacco manufactures[63] has been increasing. The GVA rose from EUR 3.1 billion in 2013 to EUR 4.2 billion in 2018, representing an increase of more than 33%.

The agri-food sector is a significant employer in the Czech Republic. Throughout the years, employment have been stable or growing. In 2018, the manufacturing of food products, beverages and tobacco products employed 131 380 persons, which was a modest increase of 4% compared to 2013 (126 660 people employed).[64] The number of employees was highest in the manufacturing of bakery and farinaceous products; the processing, preserving and production of meat products; and the manufacturing of other food products sub-sectors.

The Czech agri-food sector has a dual structure. While large-sized enterprises are dominating the food and beverage industry in terms of revenue and value added, SMEs (under 250 employees) represent about 99% of the enterprises in the sector and, thus, also have a substantial share in terms of employment in the sector.[65] A substantial share of SMEs (42.5%) are active in the bread and bakery sub-sector. Together, these companies employ about 8.1% of the entire Czech industrial sector.[66]

The Czech agri-food sector has varying production processes and distribution networks. On the one hand, agri-food production is on an industrial scale, having introduced digitalisation, automation and modern production technologies. On the other hand, handcrafted products are still very common, particularly for small-sized enterprises that supply local markets. The sector belongs to the traditional branches of the Czech processing industry and maintains its strategic importance. With regards to distribution, most sales are realised through retail chains. However, online sales of food products have gained importance in recent years. The distribution of products sold online is further associated with flexible logistics and modern warehousing.

63 While the statistic includes tobacco, it is noted that tobacco is not subject to this study.
64 Eurostat, National accounts employment data by industry (up to NACE A*64), 2020.
65 For food manufacturing large enterprises accounted for around 39% of revenues, medium enterprises for around 42%, and small enterprises for around 19%. Large, mostly international companies exist next to smaller, local processors, especially for bakeries and breweries. For beverage manufacturing, large enterprises account for 57% revenues, 62% of value added and 42% of all employees, while medium-sized enterprises account for less than a third of revenues, value added and employees. While small and micro enterprises account for only 11% and 13%, respectively, of the revenues and value added, they are significant in terms of the number of entities and number of employees (27%). Ministry of Agriculture of the Czech Republic, http://eagri.cz/public/web/file/591564/Zemedelstvi_2017.pdf.
66 EU-MERCI, 2018, EU coordinated Methods and procedures based on Real Cases for the effective implementation of policies and measures supporting energy efficiency in the Industry, HORIZON 2020 Project Nr. 693845.

Czech consumers are increasingly concerned about food quality and safety. They have a positive opinion of the 'KLASA', the national quality label, and tend to prefer national brands to foreign brands. Consumers who prefer domestic production focus on products bearing the 'Czech food' logo. There are also unique products available that are known from regional competitions as 'Regional foods'.

3.2 Analysis on the demand side of finance to the agri-food sector

This section describes the drivers of the demand for finance in the agri-food sector and analyses the met and unmet demand. It seeks to identify the main reasons for agri-food enterprises to request financing and the agri-food sub-sectors showing the largest need for finance. The section also provides an analysis of the type of enterprises, which face more constraints in accessing credit. The examination of the demand for agri-food finance is based on the findings from the Agri-food survey results of 66 Czech firms, as well as interviews with key stakeholders from the agri-food sector, combined with national statistics.

Key elements on finance demand from the Czech agri-food sector
• The development of GFCF in the agri-food sector has been positive over the last three years for both the food and beverages sub-sectors. • Investment in modernisation (technology, equipment and vehicles), construction or reconstruction, followed by working capital requirements, are the key drivers of the demand for finance. • Overall, Czech agri-food enterprises have a good level of information in connection with financing available for their business and investing in assets. • Modernisation and digitalisation of the agri-food sector in the Czech Republic is supported by the 'Agri-food 4.0'67 initiative. • Own funds have been the most important source of finance for Czech agri-food enterprises. • The EAFRD is an important investment driver for the Czech agri-food sector. • The total unmet credit demand was estimated to be EUR 731 million. • 25% of the loan applications were rejected by banks and 5% of the loan application were rejected by agri-food enterprises, due to the unfavourable maturities and conditions offered. • Rejection of loan applications by banks is mostly due to business risk that is deemed too high and a lack of collateral. • Small-sized agri-food enterprises face more difficulties accessing finance, due to their lack of collateral, limited financial literacy and the difficulty in assessing their investment needs. • Start-ups are often rejected when applying for loans due to their lack of collateral and the high-risk perception by banks of their enterprises. • Agri-food enterprises that did not apply for loans mentioned that the high administrative requirements were the main reason for not applying, followed by the fear of being rejected by the bank. Difficulties in adequately assessing their investment needs and in presenting a credible business plan were also pointed out by some enterprises.

3.2.1 Drivers of total demand for finance

Investments were largely driven by technology and the modernisation of industrial processes. The largest share of investments for both the manufacture of food products and beverages in 2018 was directed into machinery and equipment.[68]

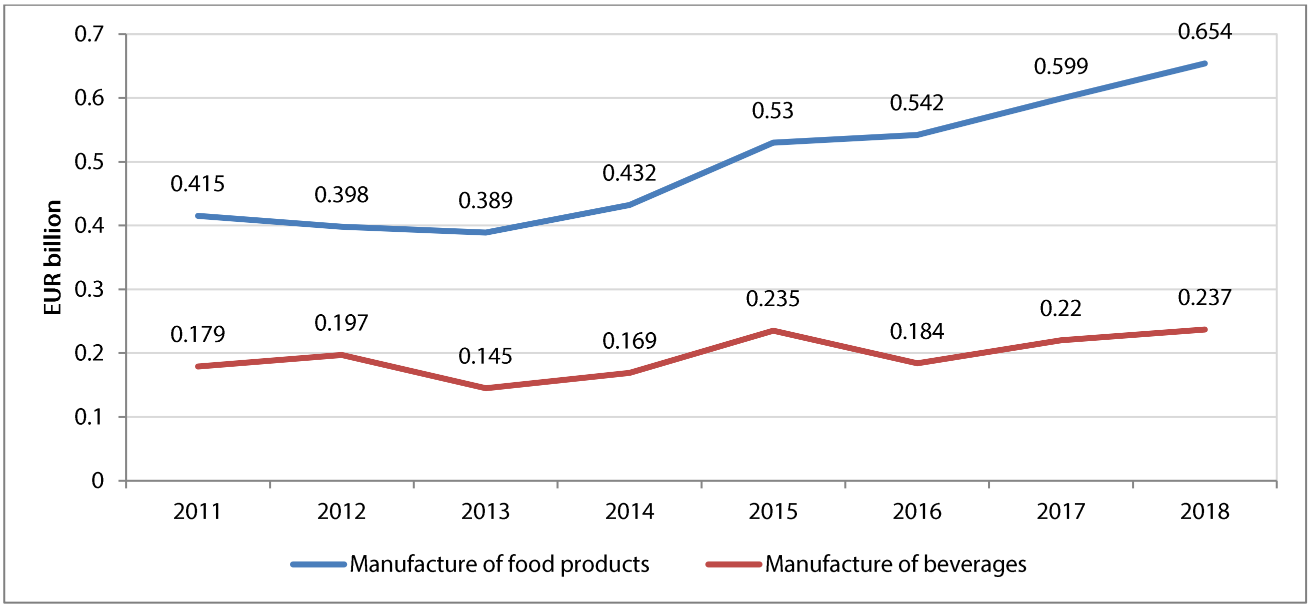
The evolution of GFCF in the agri-food sector shows lively activity. GFCF has been rising over the last 3 years in both food and beverages. However, the GFCF in the manufacturing of beverages peaked at EUR 235 million (CZK 6.4

67 This term means that food manufacturing, processing, logistic and planning are to be connected with big data, which could trigger further investment needs in technology.

68 It was followed by investments into other machinery and equipment (AN. 1139). The third largest share related to investments in other buildings and structures (AN.112), themselves followed by investments in intellectual property products (AN.117). Source: Ministry of Agriculture of the Czech Republic http://eagri.cz/public/web/file/591564/Zemedelstvi_2017.pdf.

billion) in 2015 (Figure 24). In 2018, the GFCF in the manufacture of food products reached EUR 654 million (CZK 16.8 billion), up 6.4% from 2017. With regards to the manufacture of beverages, a year-on-year increase of 4.9% took place, taking GFCF to a level of EUR 237 million (CZK 6.1 billion) in 2018. In 2018, the GFCF of the food industry represented 29.4% of the GVA of the sub-sector, while the same indicator was slightly lower for the beverage sub-sector at 25.6% (Table 4).

Figure 24: Development of Gross Fixed Capital Formation in the Czech agri-food sector, 2011-2018, EUR billion



Source: Czech Statistical Office, 2019.

Table 4: GFCF of the food and beverage manufacture sector as a share of GVA in 2011-2018

	2011	2012	2013	2014	2015	2016	2017	2018
GVA manufacture of food products in EUR million	1 965	1 878	1 921	2 002	2 087	2 120	2 194	2 228
GFCF in EUR million	415	398	389	432	530	542	599	654
% of added value	21.1%	21.2%	20.3%	21.6%	25.4%	25.6%	27.3%	29.4%
GVA manufacture of beverages in EUR million	738	717	732	756	800	821	879	927
GFCF in EUR million	179	197	145	169	235	184	220	237
% of added value	24.3%	27.5%	19.8%	22.3%	29.4%	22.4%	25 %	25.6%

Source: Author's calculations, based on data provided by the Czech Ministry of Industry and Trade in the Panorama of the manufacturing industry of the Czech Republic 2018.

Demand for finance in the Czech agri-food sector is mainly driven by:

(i) the need to modernise industrial processes;
(ii) renovation or construction of facilities; and
(iii) Inventory and working capital.

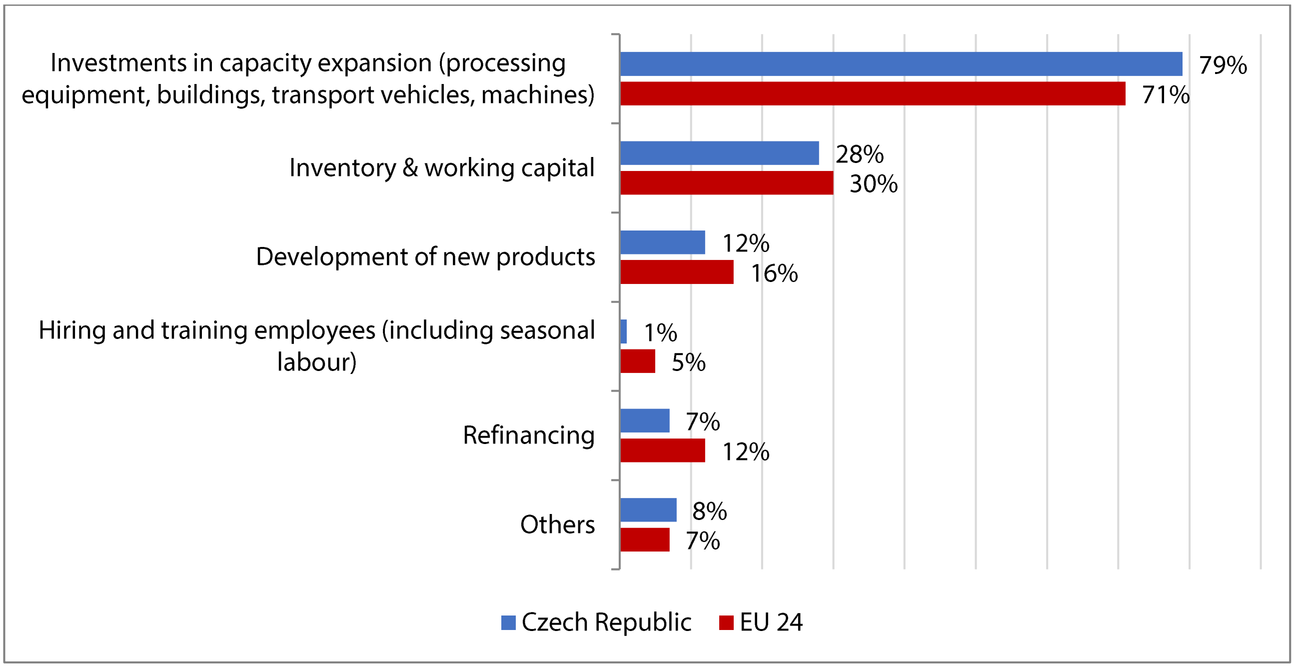
In 2018, the focus of investment activities was on technology, modernisation and automation. Increased production costs are likely to have been a powerful driver for increased investment in the sector (Figure 26), particularly in enhanced automation.

Investments in technology that facilitated the use of renewable energy and the efficient use of resources (water saving, lower carbon emission), while also contributing to increased productivity, have been made in both sectors. Particularly investments into more efficient heating, ventilation or cooling systems (e.g. in cheese manufacturing, as well as beer) have been pursued.

The focus group revealed that the negotiating power of the large stores and supermarkets has increased steadily throughout recent years. Many multinational retailers are present in the Czech market, including Kaufland, Ahold Czech Republic, Tesco Stores Czech Republic, Penny Market, Lidl, Billa and Globus. The 10 biggest chains dominate the market, with a combined market share of 75% in 2017.[69] Kaufland is the largest of these, with a turnover of EUR 2.23 billion (CZK 56.8 billion) for 2017.and 2018[70] In 2016, the ten largest supermarket chains had an overall profit of over EUR 13 billion (CZK 330 billion). This accounts for about a third of the country's retail sales, excluding the automotive sector.[71] This strong position has particularly affected the producers of bakery products, as the sale price of the production has been pushed down. The focus group mentioned that this situation is likely to be similar across the various agri-food sub-sectors, with mostly small producers negatively affected. Thus, agri-food enterprises have invested in automation to decrease their production costs.

To some extent, renovation or construction of facilities has also driven the demand for finance. 79% of the Agri-food survey respondents claimed that investments in capacity expansion was the main reason for applying for financing in 2018 (Figure 25). The agri-food enterprises interviewed said that these investments were related to the construction and renovation of buildings, the creation of mobile stores and for storing equipment. In addition, storage facilities for processed products and secondary raw materials were set up. To a limited extent, technology for the monitoring of the quality of food products was purchased.

Figure 25: Purpose of bank loans in the agri-food sector in 2018



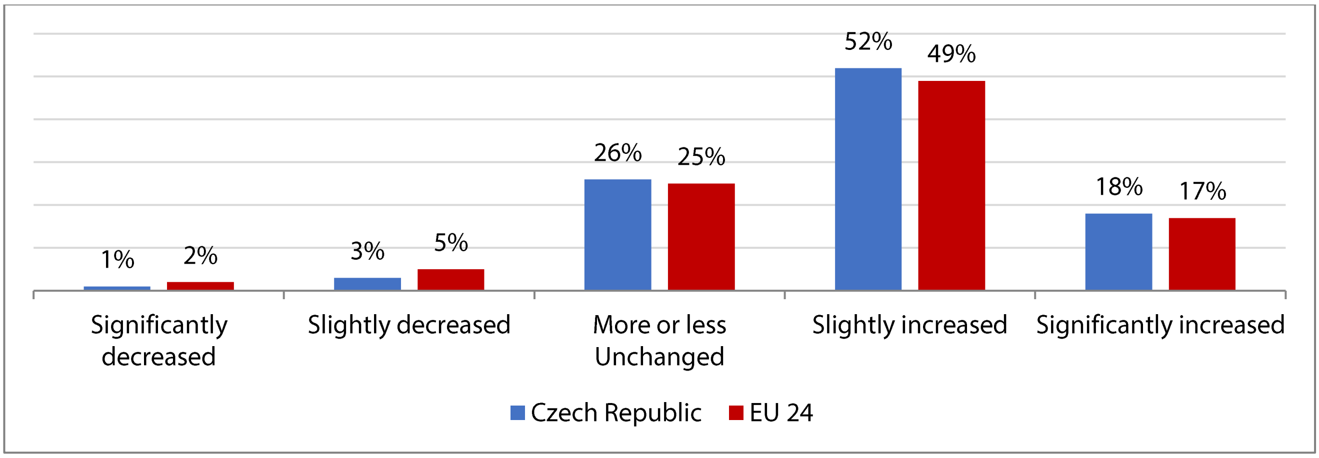
Source: Agri-food survey.

The need for working capital to meet inventory (28%) and production needs is another key driver of the demand for finance. Czech agri-food firms experienced a significant (18% of the firms surveyed) or slight (52%) increase in

69 ARTN, Trend Report 2018, 2018, http://artn.cz/trend-report/tr-2018/.
70 ARTN, Trend Report 2019, 2019, http://artn.cz/trend-report/tr-2019/.
71 Radio CZ, Share of Foreign Supermarket Chains on Czech Retail Market Exceeds Two Thirds, 04/2016, https://www.radio.cz/en/section/business/share-of-foreign-supermarket-chains-on-czech-retail-market-exceeds-two-thirds.

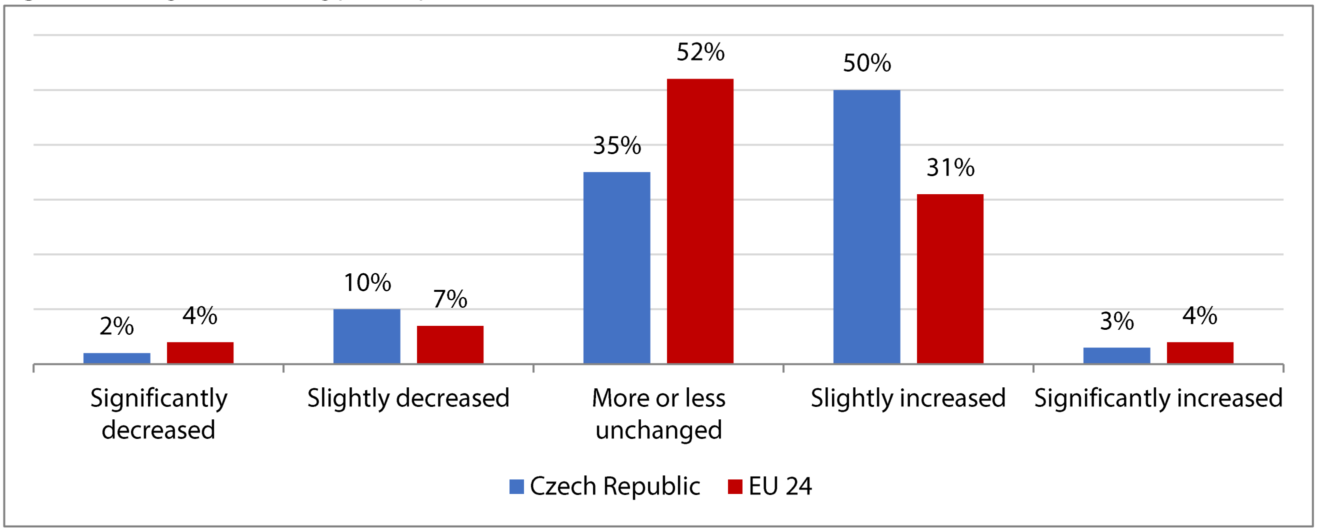
production costs in 2018, slightly more than for the EU 24 average (Figure 26). Only 3% of the enterprises noted a significant increase in the selling prices of production, while about 50% noted a slight increase (Figure 27). The increases in production costs, and the related shrinking of profit margins, required many agri-food enterprises to request increased levels of working capital.

Figure 26: Changes in production costs of agri-food enterprises in 2018



Source: Agri-food survey.

Figure 27: Changes in the selling price of products in 2018



Source: Agri-food survey.

Demand for finance for developing new products is lower in the Czech Republic than for the EU 24. The lower share of R&D financing in the Czech agri-food sector is generally explained by the sector's relative backwardness, compared to leading European agri-food processors. Only 12% of agri-food business that answered the Agri-food survey requested financing to develop new products.

Investment activity in the areas of technology and modernisation is likely to remain a focus. According to the interviews and the focus group held for the purpose of this study, a new trend called 'Agri-food 4.0' has appeared. The term is included in the Czech government 'Industry 4.0' (Průmysl 4.0) policy. 'Industry 4.0' is a national initiative aiming to maintain and enhance the competitiveness of the Czech Republic. One of its objectives is to ensure the optimisation of production processes, as part of the whole value chain, by vertically and horizontally integrating IT systems or replacing isolated production units by fully automated and interconnected production lines.[72]

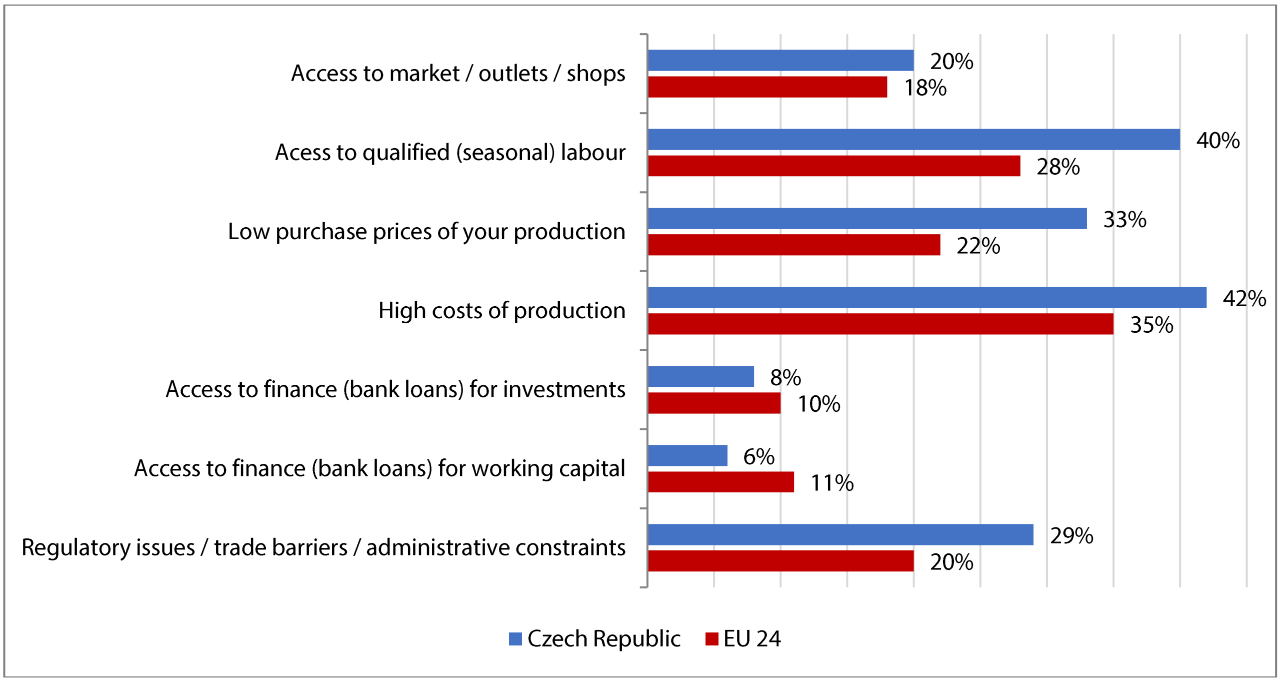
72 Vladimír Mařík et al., 2016, Industry 4.0 – the initiative for the Czech Republic.

The 'agri-food 4.0' includes the concept of data-driven supply chains, allowing customers to trace where their food is coming from. As food safety concerns are increasing in Czech Republic, the need for traceability of agri-food products is also increasing driving the need to invest in IT infrastructure.

In 2018, high production costs and access to qualified labour were the main concerns of Czech agri-food enterprises (Figure 28). The share of Czech enterprises mentioning difficulties in connection with costs of production was 42%, while the share of those with labour difficulties was 40%. Both of these figures are higher than for the EU 24 average. Access to qualified labour is a challenge for many agri-food enterprises as the newly implemented technologies require a high degree of qualification and specialisation of the labour force. Few profiles on the market meet this requirement - particularly as the aging Czech labour force is inexperienced with automation and digitalisation.[73] Low purchase prices (33%) and regulatory, trade or administrative constraints (29%) are also significant concerns.

Like for the EU 24, access to finance is also considered a difficulty for Czech agri-food enterprises. However, Czech enterprises face higher difficulties in accessing finance for investments (8%) than for working capital (6%).

Figure 28: Difficulties experienced by agri-food enterprises in 2018



Source: Agri-food survey.

Currently, there are policy measures which contribute to improving access to finance. The main measures that benefit Czech agri-food enterprises are discussed below.

The investment support provided to agri-food businesses under the EAFRD through the RDP sub-measure 4.2 (M4.2) 'Support for Investments in processing/marketing and/or development of agriculture products', has reinforced investments by agri-food enterprises. This often happened in combination with the national subsidy scheme. The focus of applications for investment grants approved under the RDP has been the acquisition of machinery and equipment for food processing, packaging and labelling. Furthermore, investments have been supported in relation to the construction and renovation of facilities and storage equipment (except waste water facilities[74]). In addition, technology for food product quality monitoring was eligible for support. The purchase of

73 OECD Economic Surveys, Czech Republic, 2018.
74 Wastewater cleaning equipment in food processing activities remained eligible for the subsidy.

immovable property, renovation of administrative buildings and logistic centres, and the purchase of vehicles designed for personal transport have been excluded from the eligibility criteria.

The financial support provided under sub-measure 4.2 is an important driver of overall investment trends in the Czech Republic, given that many food and beverage manufacturers only invest once the support is secured. At the end of 2019, a total of 2 427 applications were submitted under sub-measure 4.2 (Table 5) and 1 622 applications were approved for financing. This shows a significant interest to the support and additional room for investments by the agri-food sector. Under this sub-measure, SMEs are eligible to receive a subsidy ranging between 35% and 45% of the total costs. The M4.2 investment subsidy has ranged between EUR 3 900 (CZK 100 000) and EUR 1.7 million (CZK 30 million), but projects over EUR 39 000 (CZK 1 million) had to comply with additional financial health criteria. Subsidies per entrepreneur are capped to EUR 5.9 million (CZK 150 million) in 5 years. The subsidy is then 49.5% funded from the EAFRD and 50.5% from national resources.

Table 5: Czech Republic: Budget allocation and RDP expenditures (EAFRD + national co-financing) for sub-measure 4.2, 2019

	Number of applications		Public budget (EUR million)	
	Submitted under all calls	Approved for support	Total amount requested under all submitted applications	Budget available under the grant calls for applications
Sub-measure 4.2 ' Support for Investments in processing/marketing and/or development of agricultural products;	2 427	1 622	200.16	181.10

Source: Ministry of Agriculture of the Czech Republic, 2019 data shared.

Note: The total amount requested is calculated based on all received applications before any administrative check regarding eligibility or selection criteria to have taken place. Applications that have not been approved could have been non-eligible, and/or with insufficient or missing information not allowing their evaluation, and/or with insufficient value-added, and/or ranked at a place for which budget under the call has not been anymore available. They could also be withdrawn by the beneficiary at a later stage (following the submission) or under ongoing evaluation by the Paying Agency.

Specific eligibility criteria for the national subsidy scheme had to be fulfilled by the agri-food entrepreneurs, as stated in the Czech Agriculture Act (252/1997 Coll.)[75], Czech Food and Tobacco Act (No. 110/1997 Coll)[76], or Czech Feedstuff Act (No. 91/1996 Coll.)[77]. In particular, the entrepreneur must belong to the category 'small to medium-sized company' and, cumulatively, 45% of their income must have come from agri-food production in the latest accounting period. Entrepreneurs from the whole territory of the Czech Republic are eligible for the subsidy, except for Prague.

In addition, a national subsidy scheme managed by the State Agriculture Intervention Fund has been available under the 'Principles for providing subsidies for 2018' Act,[78] adopted by the Ministry of Agriculture. Eligibility to national subsidies for supporting the processing of agriculture products and increasing competitiveness of the agri-

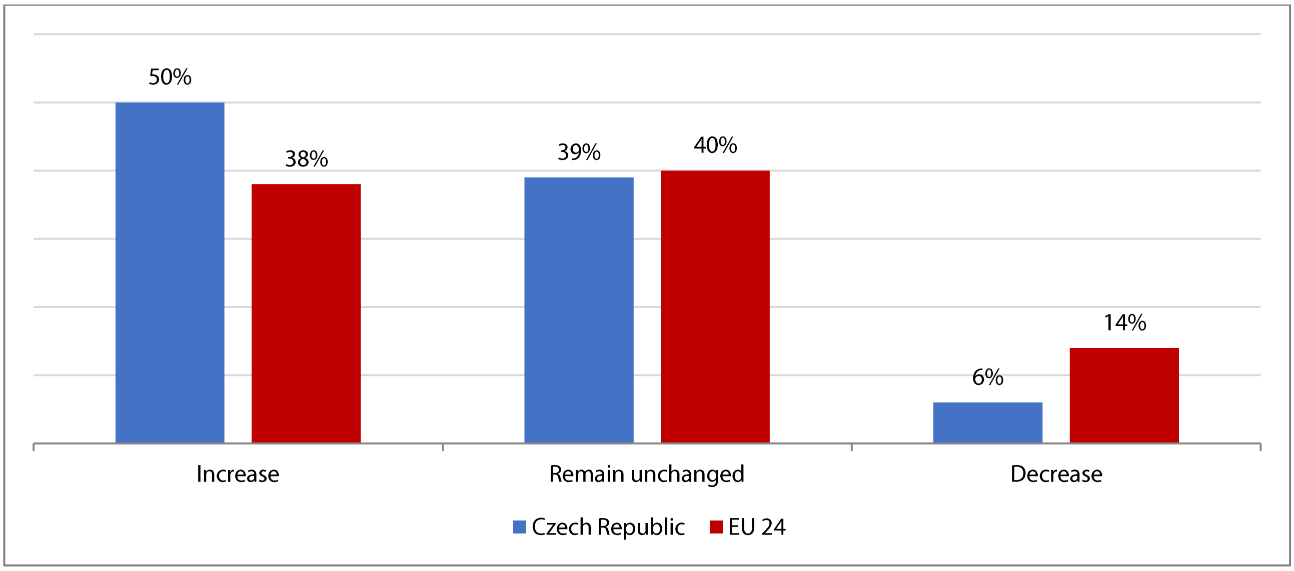
75 Zákony Pro Lidi, 2019, https://www.zakonyprolidi.cz/cs/1997-252.
76 Zákony Pro Lidi, 2019, https://www.zakonyprolidi.cz/cs/1997-110.
77 The Parliament of the Czech Republic, 1998, Act on fertilizers, http://eagri.cz/public/web/file/280477/Act_on_fertilizers_ver_November_2014.pdf
78 The relevant legislation and addenda can be obtained here: http://eagri.cz/public/web/mze/dotace/narodni-dotace/zasady-zemedelstvi-potravinarstvi/zasady-pro-rok-2018/zpresneni-zasad-kterymi-se-stanovuji.html; http://eagri.cz/public/web/mze/dotace/narodni-dotace/zasady-zemedelstvi-potravinarstvi/zasady-pro-rok-2018/zpresneni-zasad-kterymi-se-stanovuji-1.html; http://eagri.cz/public/web/mze/dotace/narodni-dotace/zasady-zemedelstvi-potravinarstvi/zasady-pro-rok-2018/zpresneni-zasad-kterymi-se-na-zaklade-1.html

food sector has been reserved to large companies, employing over 250 persons or having a turnover above EUR 50 million (but less than 750 employees or a turnover under EUR 200 million). Similarly, for the EAFRD income conditions, enterprises benefiting from national subsidy schemes need to have a 50% or larger share of their income from their own agri-food production. Under the scheme, investment is focused on process modernisation, new technology, diversification of production, environmentally friendly technology solutions, and food tracking technology. The subsidy has been capped at 50% of the relevant project costs, in the range between EUR 39 000 (CZK 1 million) and EUR 2.34 million (CZK 60 million). An overview of the total level of subsidies for the food and beverages manufacturing sub-sector could not be obtained. However, the subsidies provided, for example to increase the private storage of dairy products, amounted to EUR 19 198 (CZK 491 000) in 2018, representing a comparatively small amount of support.[79]

In the coming years, investments by agri-food enterprises in technology and modernisation are expected to grow even further with the progress in digitalisation, as outlined above. Advanced innovation and 'Industry 4.0' are expected to be linked even further with 'Agri-food 4.0'. Finally, some large-sized enterprises are also looking at expansion opportunities in the larger Central and Eastern Europe (CEE) Region. So far, the meat production sector has experienced the most Mergers & Acquisitions (M&As). This investment driver is likely to become even more prominent in the years to come.

The agri-food survey result clearly indicates that **Czech agri-food enterprises expect their financing needs to change over the next two to three years.** Half of the respondents (50%) said that they expect an increase in their financing needs (12% more than in the EU 24 average). A decrease in financing needs is expected by only 6% of the surveyed Czech enterprises (Figure 29).

Figure 29: Agri-food companies' expectations on future financing needs, 2018



Source: Agri-food survey.

3.2.2 Analysis of the demand for finance

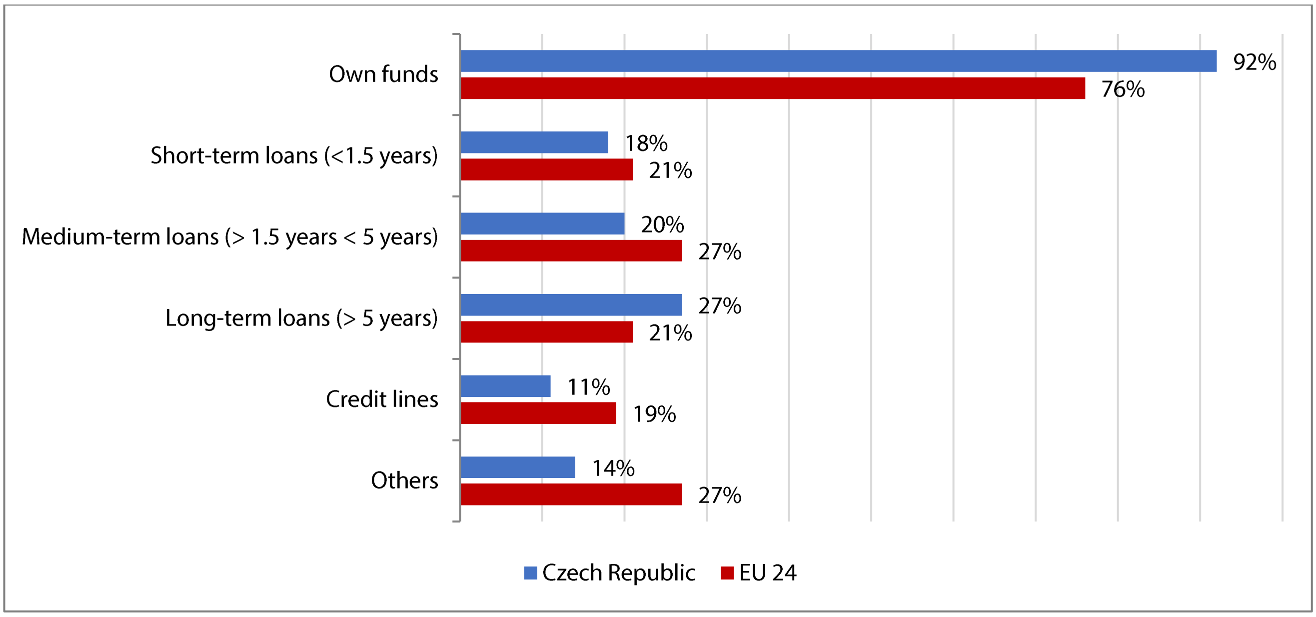
The potential total demand for finance combines both met and unmet demand. The met demand consists of the value of all applications for finance, which were accepted by the financial institutions in the relevant year. The unmet demand consists of the assumed value of applications rejected by a financial institution, offers of credit refused by farmers, alongside cases where agri-food enterprises are discouraged from applying for credit due to an expectation of rejection or refusal.

79 State Agriculture Intervention Fund, 2018, Výroční zpráva za rok.

Based on the Agri-food survey, the unmet demand of the agri-food sector in Czech Republic is estimated at EUR 731 million.

Own funds are more important than bank loans in financing investments. The Agri-food survey points out that, in the last three years, own funds have been the most important source of finance for Czech agri-food enterprises. Financing activity through own funds was the key source for 92% of Czech enterprises, a far higher share than the 76% for the EU 24 (Figure 30). Among bank products, long-term loans are considered the most important financial product (27% of respondents and above the EU 24 average), followed by medium-term loans, short-term loans and credit lines. Interviews confirmed the assumption that the demand for short-term loans and credit lines are lower than for other products, as often working capital needs tend to be financed by own resources. External financing is sought for larger investments.

Figure 30: Most important financing instruments to agri-food enterprises in 2018



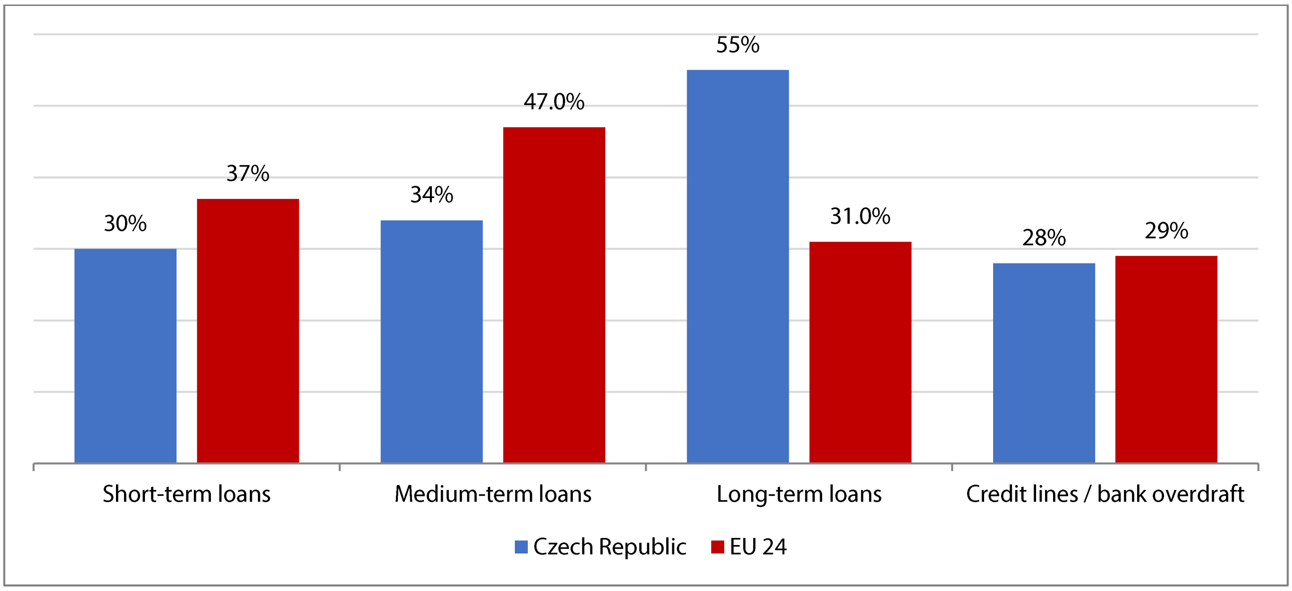
Source: Agri-food survey.

When Czech agri-food enterprises do seek external finance, most of them use bank loans. In interviews banks mentioned that financing of agri-food enterprises through private equity funds is also available, but data on private equity financing are not published and the financing pool from that source is likely to be limited. Private equity groups are reported to be particularly active in M&A deals in the agri-food sector, which is a prerequisite of blended financing. Meat production is of particular interest to such investors. Inter-company loans are provided by investment groups, but further details are not available.

Detailed data on private financing is not publicly available, but it is estimated that only a marginal share of small-sized agri-food enterprises finance their investments through loans from private individuals, such as family or friends.

The long-term loans make up the largest share, regardless of the enterprise size. This is primarily due to the nature of long-term investments in technology, modernisation and buildings, which are required if the sector is to successfully navigate the ongoing structural shifts. The agri-food survey shows that 55% of all applications have been linked to long-term loans, 24% more than for the EU 24. Medium-term loans are less popular, at 34%, and are below the EU 24 average. This is followed by short-term loans and credit lines at around 30% (Figure 31). Medium-term loans have been largely used for financing inventory and working capital by medium and large-size enterprises.

Figure 31: Agri-food enterprises applying for finance in 2018, by financing product



Source: Agri-food survey.

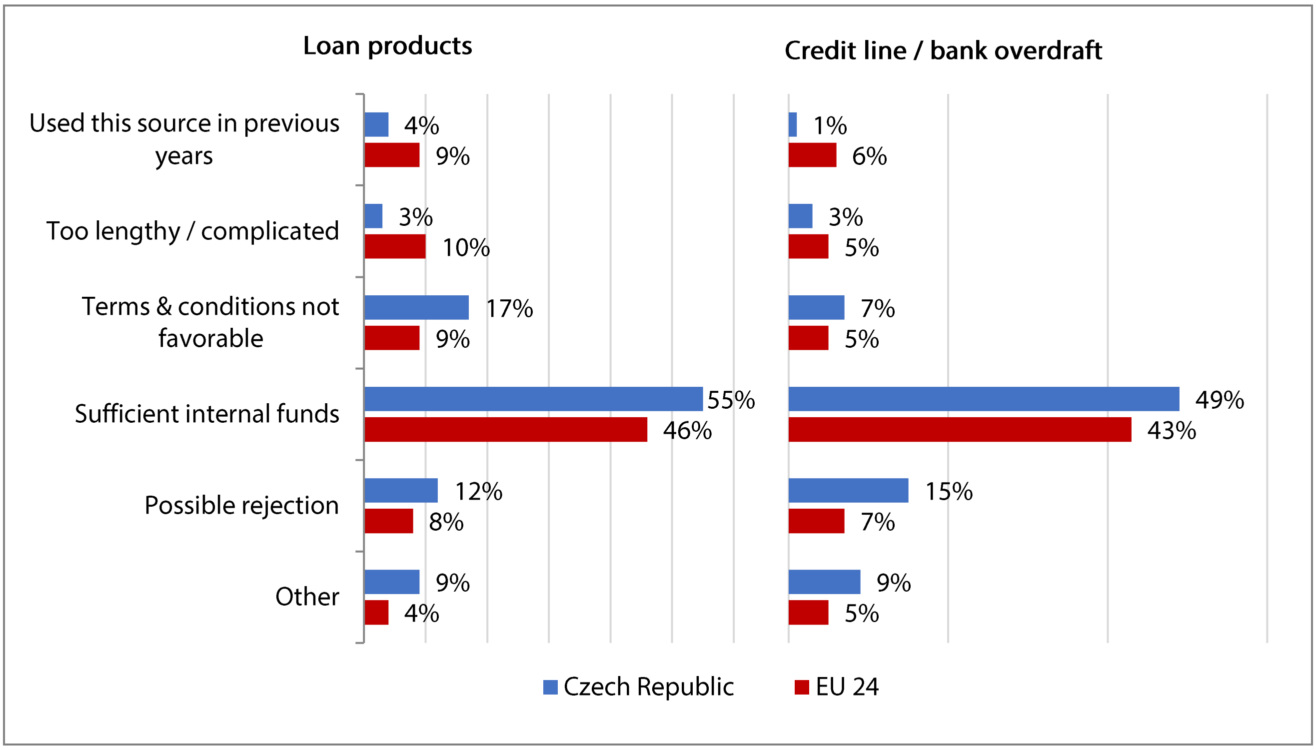
Agri-food enterprises seem to consider banks as generally willing to lend to the sector,[80] which is considered as a bulwark of stability and tradition in the Czech economy. However, the information collected in interviews with banks shows that large-sized agri-food enterprises are better equipped with collateral that they can provide against the requested loan and tend to receive more favourable treatment. Investments of large-sized enterprises are deemed to be less risky in the banks' risk models.

Despite the favourable perception that banks and agri-food firms have for each other, a number of agri-food enterprises are being discouraged from applying for loans in the Czech Republic (Figure 32). A high number of companies (12% of respondents) said that they fear a possible rejection and thus did not apply for loan financing. Fear of rejection is a bit higher, especially for credit line applications (15%). Nevertheless, in both cases, the number of discouraged agri-food enterprises is slightly higher in the Czech Republic compared to the EU 24. The perception that banks' requirements, in terms of administrative documentation and credit history, cannot easily be met are a cause of discouragement. This is a finding largely confirmed by focus groups and interviewees.[81] Most agri-food enterprises did not apply for loan products in 2018 as they still had sufficient own funds to finance their investments (55%).

80 Interviews, 2019.

81 The focus group mentioned that the administrative requirements are also discouraging when applying for government funded guarantees.

Figure 32: Reasons for not applying for loans in the agri-food sector in 2018

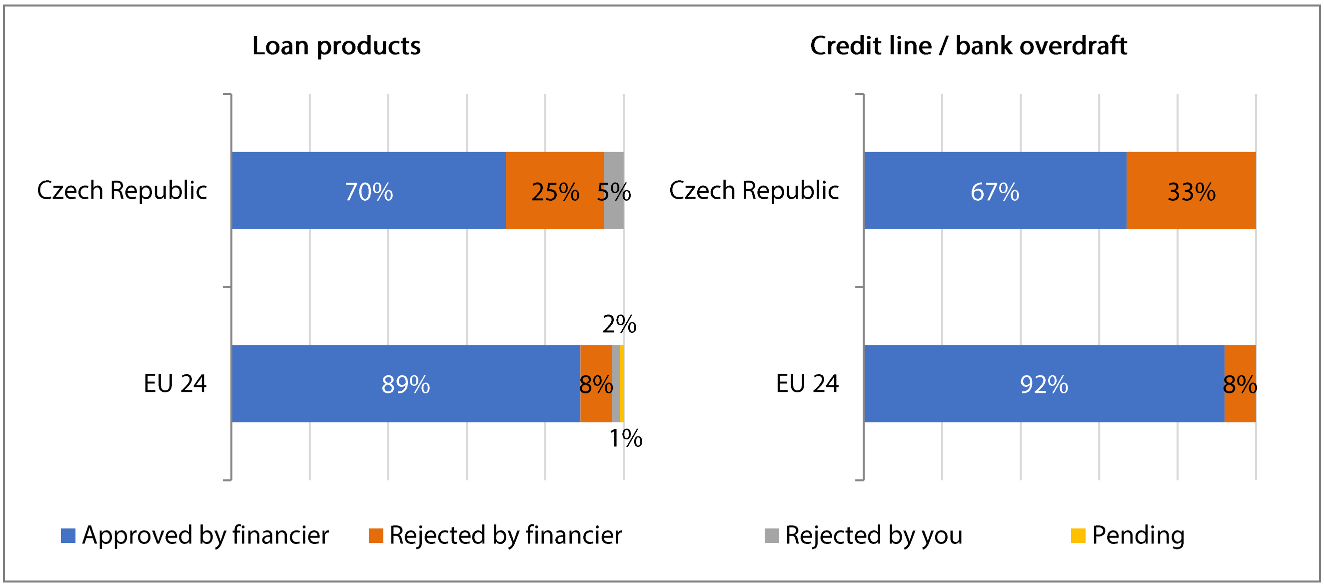


Source: Agri-food survey.

The Czech agri-food enterprises show a good level of information in connection with financing their business and investing in assets. They appear to be adequately informed on trends in the industry, particularly in the agri-food sector. National subsidy programmes and RDP measures are available and known to them, either through managing authorities, state organisations, professional chambers, dedicated websites or through advisors and banks. State authorities actively inform enterprises of new application rounds for RDP support or national subsidy measures. Banks also provide information to the sector, either individually to their clients or in public events such as sectoral conferences. Stakeholders confirmed that they cooperate well with banks, in this regard.

Rejection rates are higher for the Czech Republic than for the EU 24 (Figure 33). Every fourth application by an agri-food company for loan products was rejected by the lender, which is a significantly higher figure than for the EU 24. About 5% of the Czech agri-food enterprises refused a loan offer, compared to only 2% for the EU 24. Interviewees confirmed that this was largely due to the terms and conditions offered, particularly in relation to the interest rates and maturities. The rejection rate for credit lines and overdrafts was 33%, which is even higher than for other bank products and four times higher than for the EU 24.

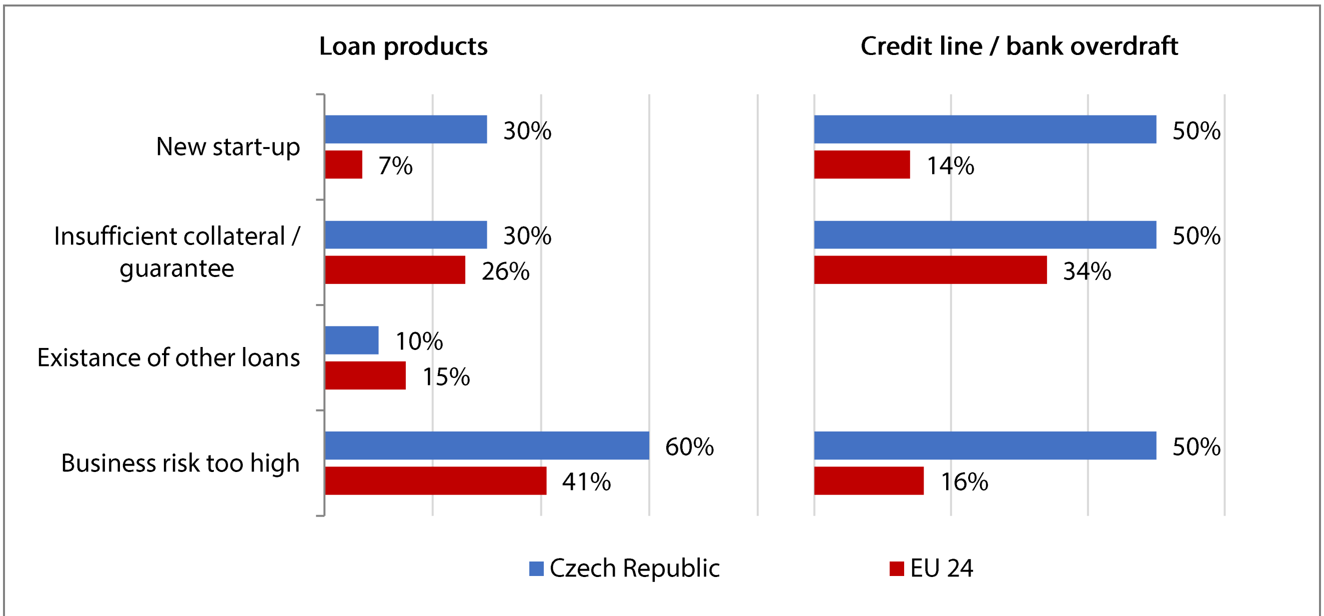
Figure 33: Results from loan applications in the agri-food sector in 2018



Source: Agri-food survey.

The main reason for rejecting loan applications is that banks consider the risk of the investment as being too high. This is followed by the start-up activities and insufficient levels of collateral (Figure 34). Focus group participants confirmed this analysis and believed that small-sized enterprises and newcomers are particularly affected by loan rejections.

Figure 34: Reasons for loans rejection in the agri-food sector in 2018



Source: Agri-food survey.

Small-sized agri-food enterprises often cannot present their business case convincingly. According to the focus group discussions, many small-sized enterprises are unfamiliar with the type of equipment or technology that is most suited to their needs and, thus, they tend to request financing for appliances not adapted to their business. Hence, higher investment costs often over-stretch their repayment capacity, causing loan applications to be rejected. In addition, small-sized agri-food enterprises, especially start-ups and young entrepreneurs, do not have the necessary experience and are not always able to convincingly present their business plan to the bank. These two aspects are serious issues, in a context where the Czech agri-food sector is structurally evolving from a traditional to a modern branch of the economy, which means that firms need to make long-term investments to support the technological transition and the digital transformation. The example of other countries shows that micro or small-sized enterprises are entirely capable of engaging in this technological transition, as long as appropriate finance is made available to them.

While enterprises active in the agri-food sector have received loans against some form of collateral or guarantee, in many cases the value or quality of the asset is not sufficient. Data on the collateral requirements are not available, however based on the interviews conducted it can be argued that for 75%-85% of long-term loans and medium-term loans, collateral has been requested or a guarantee has been provided. There are instances, where the financed asset or the asset of the applicant is being used as collateral. It is further estimated that a 75% to 150% LTV ratio is being used. Nevertheless, small-sized agri-food enterprises, in particular, do not have sufficient levels of collateral.

Banks consider the financing of start-ups as too risky. New businesses are often faced with strong market competition and a low rate of market penetration. The reasons behind relate to the fact that when initial sales decline (or fail to increase) start-ups often run out of liquidity, which prevents them from paying out their loans. Banks are thus very cautious in financing new enterprises to minimise the risks of non-performing loans.

Enterprises in the manufacturing of other food products sub-sector are likely to be most affected by unmet demand. This is particularly the case for bakeries, due to price pressure from larger chains that leads to lower profits and reduced ability for investments. Enterprises focusing on beverages, particularly spirits, are also likely to be drivers of unmet demand, given their smaller size and artisanal practices.

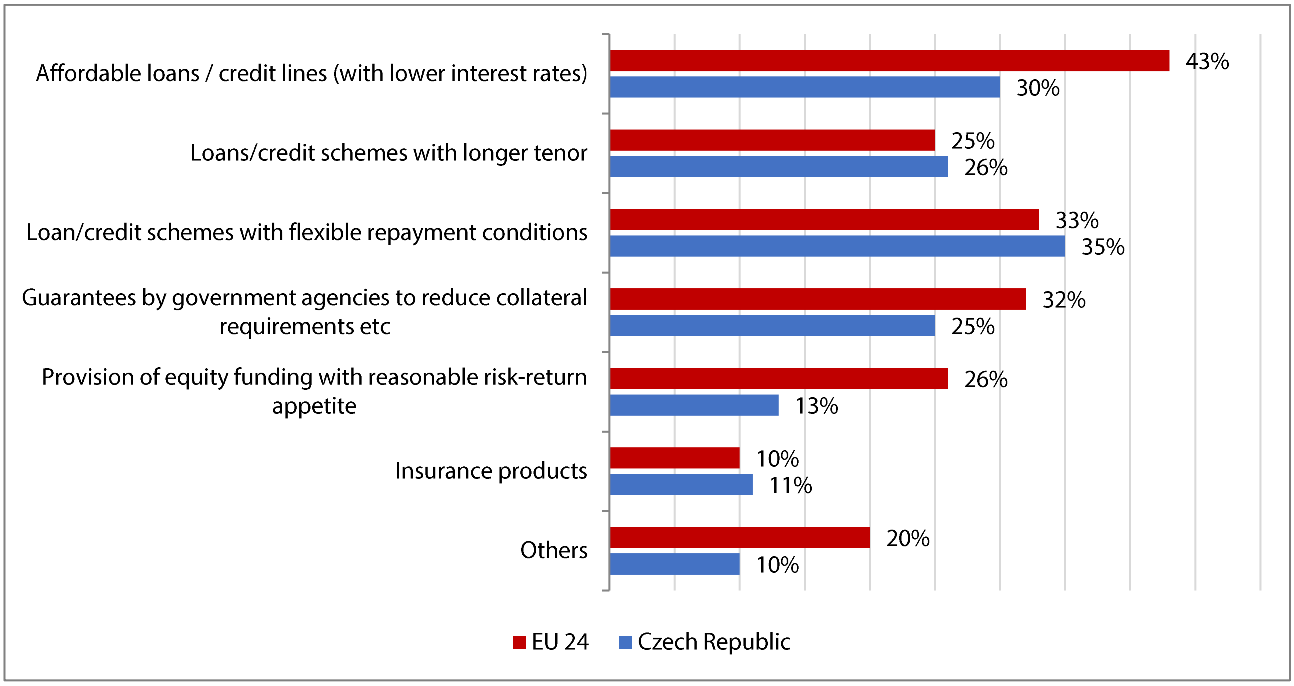
Technical assistance in the form of non-financial support for agri-food enterprises is available through various channels. The Agri-food Chamber of the Czech Republic is active in this area. In addition, banks are mostly available for discussions on new trends and development wherever they see a potential for expanding their business and reach. In addition, the Czech government has made industry-dedicated websites available, helping stakeholders to be abreast of subsidised measures and new trends and developments in the various sectors, including agri-food.

Non-financial support is also provided to farmers seeking advice to open up or expand their food processing activity. The District Chamber of Agriculture provides capacity building and technical assistance to farmers requesting support for the preparation of their investment project documents. According to interviews, banks are also open to informal discussions and advice on the preparation of business plans before formal applications.

The terms and conditions offered by banks have led agri-food enterprises to refuse loans. Given that banks want to decrease the risk of NPLs, they tend to ask for repayment of loans as early as possible. Both the agri-food enterprises interviewed and the focus group participants believed that the repayment of the loan was foreseen too early. As the agri-food enterprises did not want to run the risk of repaying the loan too late, they refused the loan offer. Some agri-food enterprises also mentioned that they would like to pay less for their loan.

Loans with flexible repayment conditions would help agri-food enterprises access finance (Figure 35). Loans with lower interest rates, longer loan maturities and fewer collateral requirements are also important. In summary, many agri-food enterprises feel that banks could better target their products to their specific needs and requirements.

Figure 35: Solutions to reduce difficulties in accessing finance, 2018



Source: Agri-food survey.

3.3 Analysis on the supply side of to the agri-food sector

This section provides an overview of the financial environment in which the agri-food sector in the Czech Republic operates. It describes the main available financial products, including any currently operating financial instrument targeting the agri-food sector, with national and/or EAFRD resources. The section draws its information from interviews with financial institutions, as well as from national statistics.

An attempt is made to give a description of the general conditions for accessing finance, such as interest rates and requirements for collateral, and the availability of funding for agri-food enterprises. Potential differences in availability of financial products across different types of agri-food enterprises are reviewed and analysed.

Key elements on the supply of finance to the Czech agri-food sector
• Banks do not have specific products for the agri-food sector, but instead finance the sector through their standard business products. • Finance providers are geographically well organised and accessible to most enterprises. The competitive environment of Czech corporate banking ensures a good variety of products, including products for new entrants and start-up entrepreneurs. • Two state-owned institutions play a significant role in implementing national subsidised measures to the agri-food sector. These are PGRLF (of less importance to agri-food than to agriculture) and CMGDB, primarily targeting SMEs. • The interest rate for non-financial enterprises has remained relatively attractive, but monetary policy started tightening in 2018.[82] • Non-performing loans have been on a decreasing trend. • Lending activity for the agri-food sector, particularly for the manufacturing of food products, remains on an upward trend. A more moderate increase in lending has been experienced in the manufacturing of beverages. • Public guarantees have played an important role. The guaranteed loans have been picking up and further expansion is expected. • Supply-side constraints relate to the absence of collateral and a lack of credit history, but mostly to planned investments that do not generate sufficient cash flow to repay the loan. Current coverage of long-term collateral needs, in particular, seems to be insufficient. Stakeholders have also pointed to the need to streamline access procedures.

3.3.1 Description of finance environment and funding availability

3.3.1.1 Finance providers

Czech banks do not have an agri-food specialisation or a particular orientation towards financing the sector. All banks operating in the Czech Republic provide financing to the agri-food broadly in line with their overall market share. The banking market is very competitive and, unlike in the agriculture sector where the largest share belongs to MONETA Bank, the agri-food market is shared among all banks.

The largest finance providers for the manufacturing sector, including agri-food industry, are Česká spořitelna, a.s. (Erste Group), Komerční banka, a.s. (Société Générale group), Unicredit Bank, a.s., MONETA a.s., Raiffeisen Bank a.s. (Raiffeisen group), or their leasing subsidiaries, Commerzbank a.s., and CITI bank a.s.

82 Implying that the Czech National Bank is seeking to reduce the demand for money. Typically, this will make borrowing more expensive (due to an increase of interest rates).

There are two specialised financial institutions that support agriculture and agri-food. These are the Farming and Forestry Relief and Guarantee Fund (PGRLF), already presented in the agriculture section of this report, and the Czech and Moravian Guarantee and Development Bank (CMGDB). These institutions provide loans, subsidised programmes and guarantees to the manufacturing sector, including agri-food. The CMGDB was established and is owned by the Czech government. It provides guarantees and affordable financing.

Komerční banka, a.s. and Česká spořitelna, a.s. were the largest financing institutions offering subsidised loans or loans guaranteed by the CMGDB.[83] 33% of guaranteed transactions were channelled through Komerční banka a.s. in 2018, and 27% through Česká spořitelna, a.s.[84] In terms of subsidised loans (particularly through the programme EXPANZE[85]), Česká spořitelna, a.s. disbursed 31% of loans and Komerční banka a.s. 24%. It is therefore estimated that Komerční banka a.s. and Česká spořitelna a.s. cover the largest share of the Czech manufacturing industry.

3.3.1.2 Financial products

Banks, in general, do not have specialisation in agri-food financing. Most banks supply the standard loan products to the agri-food sector, consisting principally of:

(i) Short-term products: short-term loans up to 18 months, bank overdrafts, and credit card overdrafts.[86]
(ii) Medium-term products: medium-term loans, from 18 months to 5 years, either for investment purposes or financing working capital.
(iii) Long-term products: long term loans, above 5 years, for investment purposes.

Most banks classify the entrepreneurs, independent of their sector, into several categories according to their turnover. The categorisation is as follows: (i) entrepreneurs with turnover from EUR 1.5 million to 2 million (CZK 40 million to 60 million), (ii) entrepreneurs with turnover above EUR 2 million, and (iii) in some cases, entrepreneurs with turnover over EUR 11 million (CZK 300 million). Some banks[87] identify a separate category of corporate customers if their turnover exceeds a certain ceiling defined by in their respective banking policy. Depending on the entrepreneur's category, targeted investment loan products are offered with specific terms and conditions.

Credit lines, bank overdrafts or short and medium-term loans are offered to finance working capital. Credit revolving facility, multicurrency loan facility and/or bridge loans are also available for banks' corporate clients. For working capital, banks offer factoring solutions too, in partnership with their factoring finance arm.

For new entrants and entrepreneurs having operated for less than three years, banks offer long-term start-up loans, usually up to EUR 23 000 (CZK 600 000), and start-up overdrafts, usually around EUR 2 000 (CZK 50 000). For such products, limited (for example movable assets) or no collateral is required. Some banks also offer credit lines for the purchase of discounted fuel, when the purchase is made through their credit cards.

For investments purposes, short-term to long-term loans are offered with conditions that can be tailored to the type of investment being financed. Moreover, banks also make funding available through COSME or HORIZON 2020,[88] but, as discussed, those are in principle not focussed on the agriculture and agri-food sectors.

PGRLF is providing loans compatible with national *de minimis* subsidised measures. The national subsidy programme (similar to the one illustrated in the agriculture section) is provided in the form of interest subsidy and reserved for the purchase of investment assets related to food and seed production. PGRLF, under its programme 'Processor', supports capital asset purchases related to food manufacturing and processing, and to animal feed. Land

83 CMGDB's annual report 2018.
84 Ibid.
85 This programme is described in Table 6.
86 A short-term loan is scheduled to be repaid in less than 18 months. A bank overdraft is a line of credit that covers transactions if the bank account balance drops below zero. A credit card overdraft may be granted if the owner has opted into over-the-limit coverage with the card issuer.
87 Česká spořitelna, a.s., Komerční banka, a.s., Unicredit Bank a.s., Moneta a.s. and Raiffeisen Bank a.s
88 Horizon 2020 is the biggest EU Research and Innovation programme with nearly EUR 80 billion of funding available over 7 years (2014 to 2020). In Czech Republic EIF has signed deals with Komerční banka and Česká spořitelna to allow those banks to enter into new loan agreements with SMEs as well as Small Mid-caps for a total of over EUR 250 million.

acquisition under this programme is possible if the cost is no more than 10% of the total investment costs.[89] The subsidy is provided in the form of discounted interest rates. Loans for working capital are also made available by PGRLF to food processors.

PGRLF states that 22 applications under the 'Processor' programme were received in 2017, of which 9 were approved. Subsidies for a total amount of EUR 81 900 (CZK 2.15 million) were granted. Further details are unavailable and data for 2018 in connection with the 'Processor Programme have not yet been published.[90]

Czech Moravian Guarantee and Development Bank (CMGDB) plays an important role in the support of the Czech industry. The CMGDB is a development bank whose primary goal is to foster the economic and social development of the Czech Republic by supplying preferential financial loans, primarily to SMEs. The CMGDB extends support to the SME sector through guarantees and preferential loans sourced from the national budget, the structural funds, and the budget of the Czech administrative regions.

The most relevant CMGDB products for SMEs are described in the table below, available also to agri-food companies.

Table 6: CMGDB products

Product	Specificity	Maturity	Maximum amount and interest payment
Programme EXPANZE	Interest-free (or subsidised) investment loans for all SMEs, except those located in Prague	Up to 10 years	The limit is EUR 1.75 million (CZK 45 million) and a possible contribution to the interest payments of up to EUR 40 000 (CZK 1 million). For some special activities i.e. high-speed internet network, effective water usage etc, the limit was EUR 2.34 million (CZK 60 million) and the interest rate contribution up to EUR 58 500 (CZK 1.5 million).
Programme 'Preferential regional Loans for SME in the South Czech Region':	Short-term to Long-term investment loan or working capital loans for small-sized enterprises	Up to 6 years but a deferred instalment up to 12 months may be available	The limit is EUR 40 000 (CZK 1 million) with a fix interest rate of 4% p.a.

Source: CMGDB, 2019.

According to data from the CMGDB, it granted loans of EUR 56.15 million (CZK 1.440 billion) to 254 enterprises in 2018 (Table 7). The EXPANZE programme provided loans to 237 enterprises, which represents a total amount of EUR 55.37 million (CZK 1.4 billion). The largest share of loans was for manufacturing, which represented 56.2% of the programme allocation and includes the agri-food sector. The volume of loans shows a peak in 2018, with a 400% increase

89 Specific conditions include:
(i) at least 25% of the producer's total income in the respective period needs to come from agriculture production and this income condition needs to persist during the contract period,
(ii) the applicant is in line with Commission Regulation (EU) No 1407/2013 of 18 December 2013 on the application of Articles 107 and 108 of the Treaty on the Functioning of the European Union to *de minimis* aid ('Regulation (EU) No. 1407/2013'),
(iii) a sub-account or separate accountancy need to be maintained in connection with the investment,
(iv) the applicant is not indebted towards the Czech public agencies. The subsidised interest rate from 1.1.2018 to 30.6.2018 was 2% p.a. and from 1.7.2018 to 31.12.2018 was 2.25% p.a.

90 Data until September 2019.

compared to 2017 (Table 7). It has to be said, however, that the lending activities started with a very low number of loans: only 9 loans had been disbursed in 2016 and in 2018 it was 254, indicating that the products have become better accepted by the market.

In addition to the loan products in the table above, two more programmes (ENERG and Energy Saving[91]) were established to improve energy efficiency. The product is also available for farmers with a total of 17 loans were disbursed, amounting to EUR 752 000 (CZK 19.3 million).

Table 7: Development of the CMGDB subsidised loans

		2014	2015	2016	2017	2018
Loan volumes	Number	36	27	9	56	254
Total loan amounts	EUR (million)	3.13	2.39	0.25	13.56	56.15
Average loan amount	EUR ('000)	83.5	87.9	29.5	243.1	226.1

Source: CMGDB annual report (2018), 2019.

As for guarantees, in 2018 the CMGDB continued to provide or make available **the following three programmes** outlined in Table 8.

Table 8: CMGDB guarantee programmes

Programmes	Specificity	Maximum amounts
Programme GUARANTEE 2015-2023: (i) a portfolio guarantees	Bank loans to SMEs, for up to 70% of the loan amount.	Covering loans up to EUR 156 000 (CZK 4 million).
Programme GUARANTEE 2015-2023: (ii) individual guarantees	Up to 80% of the loan made available to social entrepreneurs (SMEs).	Maximum guarantee of EUR 780 000 (CZK 20 million) and including a financial contribution of 10% of the guaranteed loan drawdown for the applicable costs, but a maximum of EUR 20 000 (CZK 500 000) – *de-minimis* block exemption.
Programme INOSTART:	The programme targets new SME entrants carrying out innovative projects. Only loans granted by Česká spořitelna a.s. are eligible to this programme.	Covers loans up to EUR 585 000 (CZK 15 million), with a guarantee of up to 60% of the loan amount.

Source: CMGDB, 2019.

91 The Energy Saving programme is also available for farmers. It is an interest-free loan. Loan amounts range between EUR 20 000-EUR 2.4 million (CZK 0.5-60 million). Up to 70% of eligible expenses or up to 90% for small projects up to EUR 120 000 (CZK 3 million) will be covered with a maximum maturity of up to 10 years. The grace period is up to 4 years. At least 20% of eligible expenses have to be financed by commercial bank / leasing company. Interest rate subsidy is being paid when the project results have been achieved.

There is evidence that guarantees have played a role in securing financing for the manufacturing sector.[92] They have been particularly beneficial in ensuring lower collateral requirements by banks and higher availability of finance for the relevant investments.[93]

CMGDB's guarantees have been largely issued for working capital loans (twice as many as for investment loans). Enterprises dealing with the manufacture of bakery and farinaceous products and enterprises related to the processing and preserving of meat and production of meat were the most frequent receivers of CMGDB guarantees or subsidised loans. Only a marginal share of the applied guarantees relates to the beverages industry. According to the bank interviews, the positive trend in the number and value of guarantees issued can be expected to continue in the years to come.

In 2019, an additional guarantee programme was launched for SMEs covering both working capital loans and investment loans. These loans range from EUR 155 000 (CZK 4 million) to EUR 975 000 (CZK 25 million) and had a maturity of 7 years (10 years in case of immovable investment). The guarantee is for up to 70% of the loan amount. In the case of special investments (industrial water, etc.) higher amounts and additional guarantees are available. Furthermore, a 'Foreign Development Cooperation' guarantee programme was been launched in 2019 for the private investment of enterprises operating in risky markets (for example in fragile states). Eligible criteria include:

- Enterprises that are considered small or medium-sized (in line with EC regulation) and that are registered in Czech Republic and who do not owe any taxes or are in financial difficulties.
- Enterprises in the following sectors are not eligible: primary production of agriculture products (CZ-NACE 01), fisheries and aquaculture (CZ-NACE 03), tobacco production (CZ-NACE 12), the processing of tobacco residues (within CZ-NACE 38.32), the wholesale of tobacco products (CZ-NACE 46.35) and the retail of tobacco products (CZ-NACE 47.26).

3.3.1.3 Description of financing market

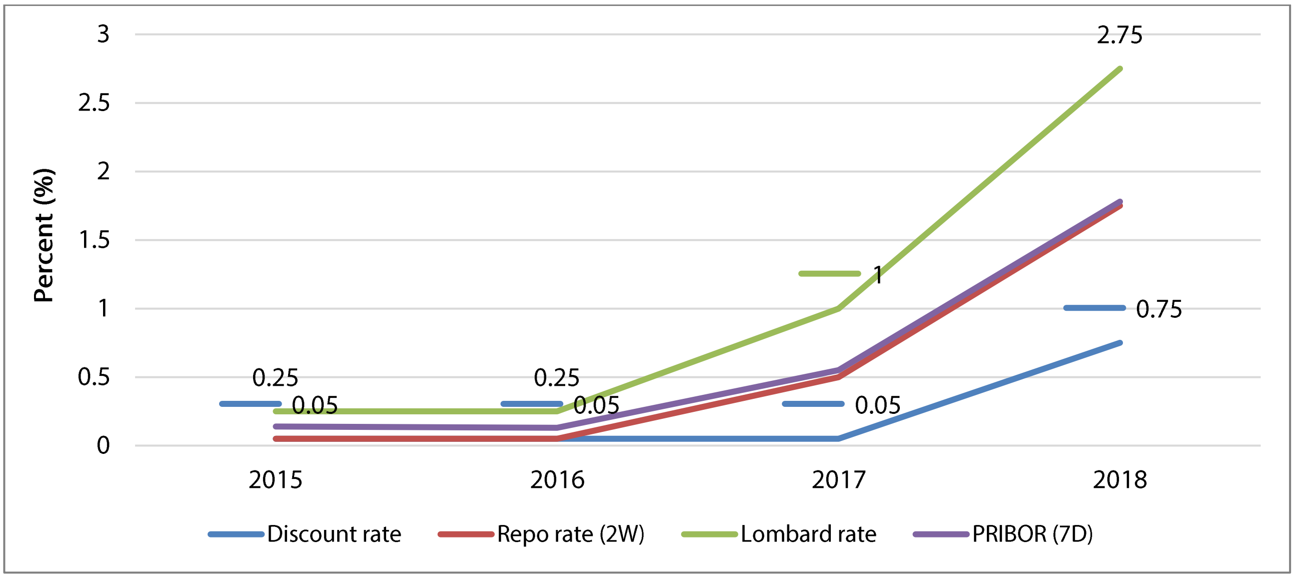
As already mentioned, **most agri-food enterprises and banks view their cooperation as fairly successful.** Banks offer a variety of financial products and they are active in disseminating their offers. They have dedicated teams that provide help and advice to enterprises on the financial products available.

While monetary policy remains accommodating at historic levels, interest rates for non-financial corporations have continued to rebound in 2018, leading to some credit tightening. This was primarily caused by the monetary policy of the Czech National Bank, which followed international trends (Figure 36). As a result of this tightening, interest rates picked up slightly at 100 basis points over the historical minimum. Despite this increase, interest rates have mostly remained attractive in 2018.

92 CMGDB, Annual Report vol. 2018.

93 In line with the agreement on providing guarantees, CMGDB issued 5 721 guarantees in 2018, for a total of EUR 430.61 million (CZK 11.044 billion), supporting underlying loans for a total of EUR 673.1 million (CZK 17.263 billion). The manufacturing sector, including agri-food sector, has received 21% of the guarantees. Guarantees from CMGDB's VADIUM programme (section 3.3.1.2) are excluded. Guarantees show an increasing trend in recent years, and are expected to grow further in the future.

Figure 36: Development of interest rates (Discount, Lombard, PRIBOR and Repo) – credit tightening[94]



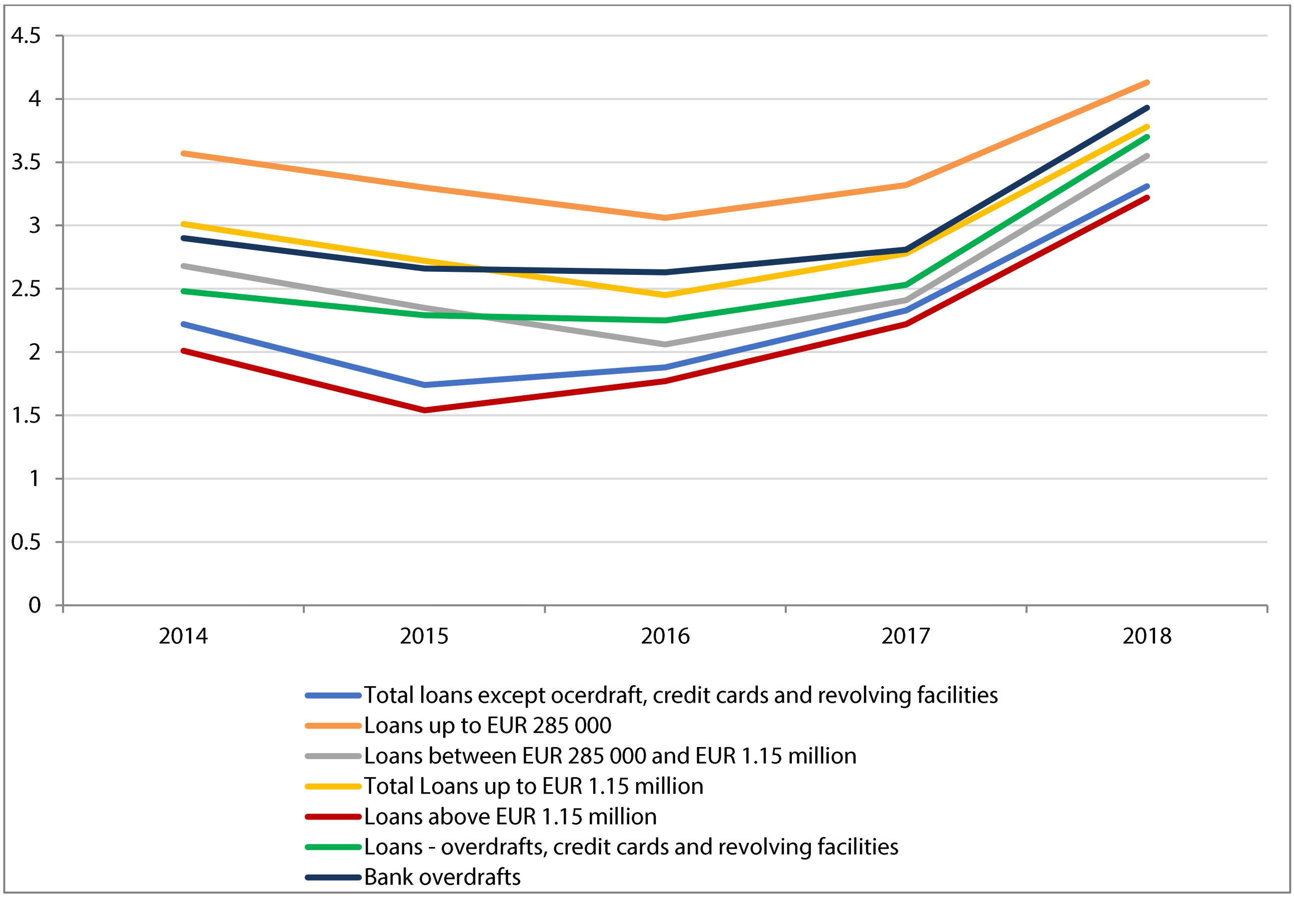
Source: Czech National Bank, 2019.

The interest rates for non-financial companies edged up for all loan amounts[95] (Figure 37). The most expensive loans related to loans up to EUR 285 000 (CZK 7.5 million), where the interest rates increased to 4.13% from 3.32% in the previous year. Interest rates for loans above EUR 1.15 million (CZK 30 million) remained the most affordable, although they were 100 basis point above 2017 levels. Bank overdrafts spiked at 3.93% and loans including bank overdrafts, credit cards and revolving facilities together reached 3.7%. It is due to these higher interest rates that 30% of agri-food firms would like to see lower rates, according to the agri-food survey (Figure 35, section 3.2).

94 Note: Discount rate refers to the interest rate charged to the commercial banks and other financial institutions for the loans they take from the Czech National Bank through the discount window loan process. PRIBOR (or Prague Interbank Offered Rate) is the average interest rate at which unsecured CZK funds are offered by Panel Banks in the interbank market, just prior to 11.00am local time The Lombard rate is the interest rate charged by the Czech National Bank when extending short-term loans to commercial banks. Repo rate is the rate at which the Czech National Bank lends money to commercial banks in case of shortage of funds.

95 Source: Czech National Bank, www.cnb.cz.

Figure 37: Development of interest rates for non-financial corporations in 2014-2018



Source: Czech National bank, 2019.

Interviews with banks pointed to the fact that **agri-food enterprises try to negotiate the interest rate offered.** While this is likely done by all types of enterprises (small, medium and large-sized), medium-size and large sized enterprises are potentially more successful as their negotiating power is arguably stronger.

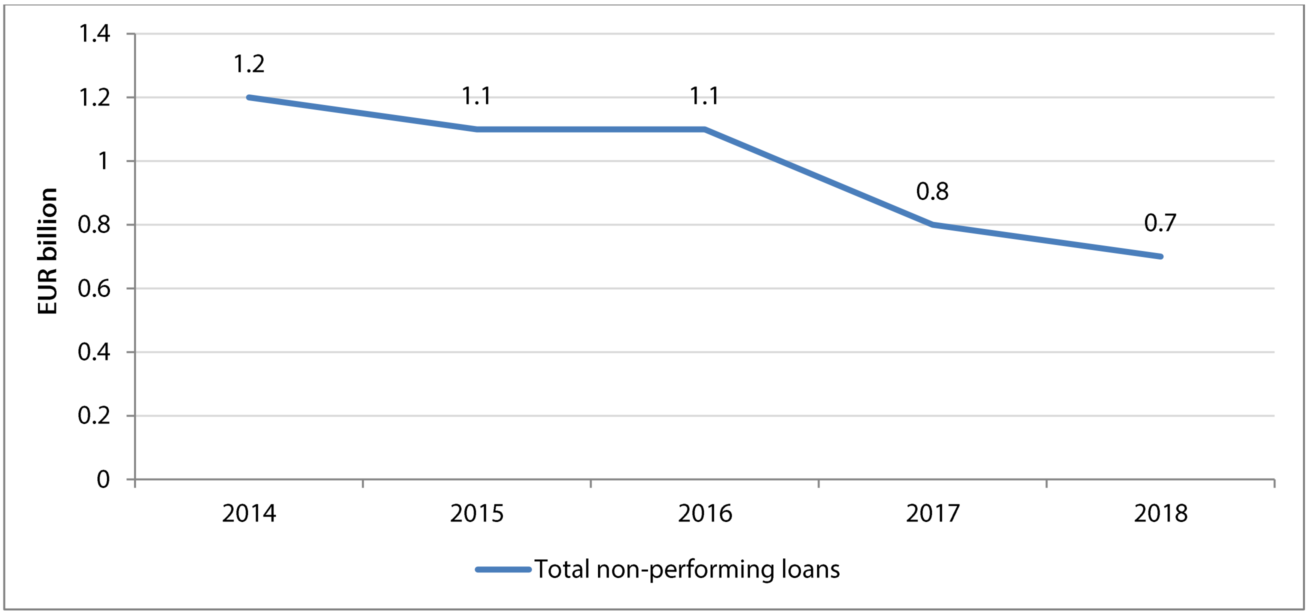
Banks require collateral to lend. When assessing clients, banks analyse their business profile, financial health, assets and liabilities, the value of investment, financing resources and cash flow plan etc., with regard to their lending policies and risk appetite. Based on this assessment, collateral is required. This is either a promissory note, personal collateral or, in many cases, the asset that is to be financed. The Loan-to-Value (LTV) ratio is calculated considering the clients' profile and is estimated to be in the range of 50% to 150%, with some variance related to the financial product and the availability of other guarantees.

The Agri-food survey indicates that 25% of the agri-food enterprises would like to see more public guarantees (Figure 35 section 3.2) in view of addressing difficulties in providing collateral. While this has been particularly true for credit lines/bank overdrafts and long-term loans, it is estimated that in 75% of all loan applications clients need to provide collateral to secure financing. There are, however, financial products for which limited or zero security is required. For lower amounts, on average up to EUR 38 000 (CZK 1 million), a promissory note serves as sufficient collateral. Likewise, financial products such as CMGDB guarantees attract a lower collateral requirement.

Banks provide agri-food enterprises with access to working capital loans that are generally short to medium-term loans. In terms of products, credit lines/bank overdrafts, credit revolving facilities, short or medium-term loans, or loans with or without specific purpose are offered for financing the day-to-day business operations. The financial products offered depend on the enterprise size, whereby small-sized firms are offered a more limited product range compared to large-sized enterprises. The agri-food survey results indicate that small-sized enterprises generally finance their working capital through credit lines and bank overdrafts, for an average loan amount of EUR 62 639, or medium-term loans, for an average of EUR 75 945. Medium-sized firms finance their working capital through short-term loans for an average of EUR 440 738, and large-sized firms through credit lines, where the average amount reaches EUR 682 000.

The portfolio quality for the manufacturing sector is high. Non-performing loans in the industry have almost halved since 2014.[96] The total non-performing loans for the manufacturing industry in 2014 were EUR 1.192 billion (CZK 32.85 billion), whereas in 2018 they had dwindled to only EUR 679.61 million (CZK 17.43 billion). From 2017 to 2018 alone, non-performing loans decreased by 26.5% (Figure 38)[97].

Figure 38: The development of total non-performing loans in the manufacturing industry in 2014 - 2018, EUR billion



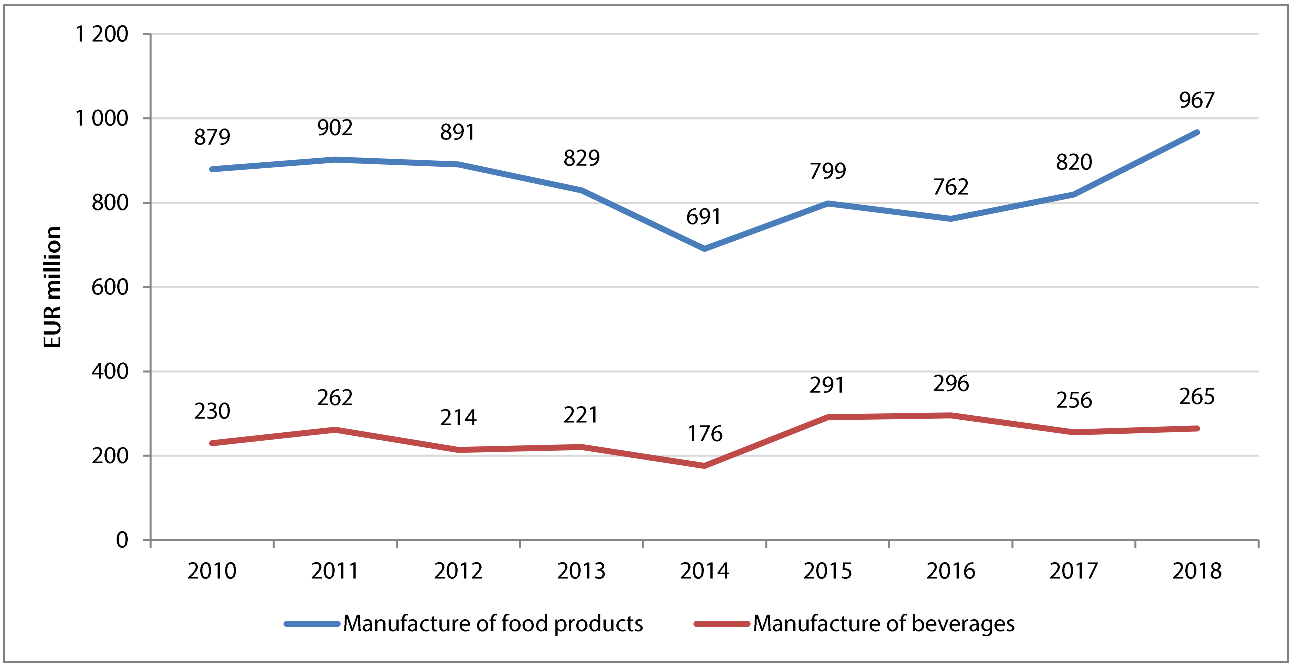
Source: CNB, 2019.

3.3.2 Analysis of the supply of finance

Lending activity to the agri-food sector, particularly to the manufacturing of food products sub-sector, has been on an upward trend for several years. A more moderate pick-up in lending has been experienced in the manufacture of beverages. These data show the health of lending to the agri-food sector. The volume of credit provided by banks to the food production sector reached EUR 967.1 million (CZK 24.80 billion), while credit to the production of beverages reached EUR 264.9 million (CZK 6.79 billion). Compared to 2017, this constitutes an increase of 15.3% for the food industry (in local currency) and 1% for the beverage industry (in local currency) (Figure 39). All sources[98] agree that most of the loans requested were to finance investments related to technology, equipment and construction or renovation.

96 Czech National Bank, www.cnb.cz.
97 The Czech National Bank does not publish further disaggregated data. In 2018, the turnover of NACE 10 of the entire manufacturing was 5%; it is assumed that potentially 5% of NPL can be attributed to NACE 10.
98 The PGRLF and CMGDB annual reports, as well as the MoA Green report.

Figure 39: Total outstanding loan volumes for the manufacture of food products and beverages, 2010-2018, EUR million



Source: CNB, 2019.

Banks approach their clients on an individual basis and even if financing is not accepted by the enterprise or is refused by the bank, banks try their best to find solutions for clients to support their business. This has been largely confirmed throughout the meetings.

Nevertheless, despite the magnitude of support measures and initiatives, banks cannot meet all the demand for finance by agri-food enterprises. In the interviews, banks confirmed that many loan applications foresee investments that are not feasible as they would also not generate sufficient cash flow to repay the loan. Also, banks had doubts on the overall management and implementation capacity of some clients. Clients would hence be pushed into over-indebtedness and banks non-performing loans would increase. In addition, the lack of credit history on the side of borrowers remains an issue, particularly for small-sized agri-food enterprises. Given the issues around adverse information (the client always knows more than the bank on how the company plans to spend the loan) banks prefer to have as many indicators on repayment willingness and capacity as possible, with credit history being a central indicator. Further, as most of the public support measures (guarantees) are focused on working capital, the supply of adequate levels of collateral is still a challenge for many agri-food enterprises.

Streamlined application procedures and requirements of the various measures would be welcomed by agri-food enterprises. While the various support measures are valued by agri-food enterprises, the focus group stakeholders pointed out that the different requirements can be cumbersome and difficult to meet. They would appreciate if those requirements could be harmonised to whatever extent possible.

3.4 Financing gap in the agri-food sector

This section presents an assessment of the financing gap in the Czech agri-food sector, broken down by firm-size and financial product.

Key elements of the financing gap in the Czech agri-food sector
• The financing gap is estimated to be EUR 578 million. • The most constrained segment is the long-term financing of small-sized agri-food enterprises, especially in sub-sectors such as bakery and spirits. • Start-ups and new entrants are also particularly constrained. • The key drivers of the financing gap are a lack of collateral and credit history, insufficient cash flow, and inadequate business planning and financial skills of entrepreneurs. • The financing gap is expected to shrink due to guarantee schemes being scaled up and more subsidised loans becoming available to agri-food enterprises.

This section presents an estimate of the total volume of unmet financing needs of financially viable agri-food enterprises, defined as the financing gap for 2018. The estimate is calculated by multiplying the total number of firms by the proportion of financially viable firms reporting unmet demand for finance multiplied, in turn, by the average obtained loan value to firms.

Financing gap = Number of firms X percentage of firms that are both financially viable and have unmet demand X average loan volume

All the calculations are based on the results of the Agri-food survey for Czech firms (see Annex A.5 for more information). The methodology used for calculating the gap is the same as the methodology used for the agriculture sector (see Annex A.3).

The financing gap arises from unmet financing demand from economically viable firms[99]. As explained in section 2.2, the unmet demand for finance includes:

(i) lending applied for but not obtained; or

(ii) a lending offer refused by the potential borrower; as well as

(iii) lending not applied for due to expected rejection.

For the purpose of this study, 'turnover growth' is used as a proxy of firm viability. In particular, we make the hypothesis that all enterprises which reported a stable (non-negative) turnover growth can be considered as viable.

Using the data of the Agri-food survey for Czech firms, the following results are obtained:

The financing gap for the agri-food sector in the Czech Republic is estimated at EUR 578 million. It mainly concerns long-term loans for small-sized enterprises (Table 9 and Figure 40).

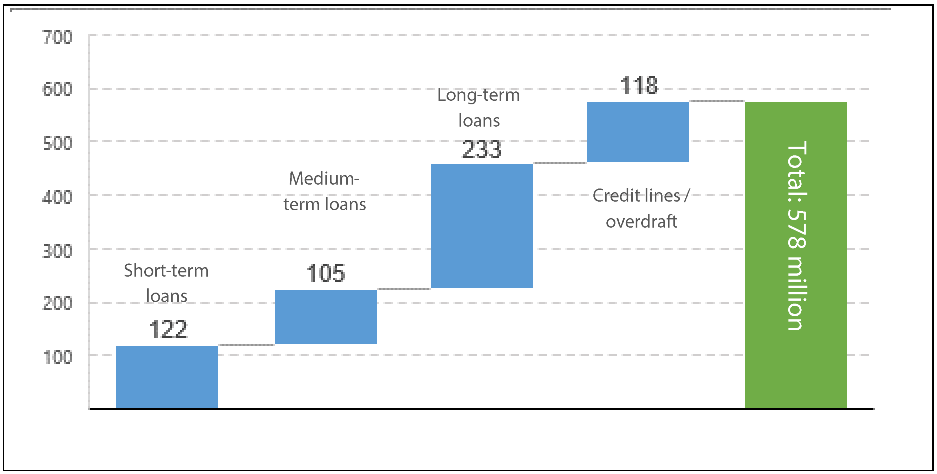
99 The financing gap presented in this section is different from the total unmet demand presented in Section 3.2.2. In the quantification of the total unmet demand, all the enterprises in the population applying for finance are considered independent from their economic viability

Table 9: Financing gap by firm size and product, EUR million, 2018

	Total	Short-term Loan	Medium-term Loans	Long-term Loans	Credit lines/ bank overdraft
Small-sized firms	**446.8**	89.5	82.3	183.1	91.8
Medium-sized firms	**100.4**	27.1	17.1	37.4	18.7
Large-sized firms	**31.0**	5.2	5.8	12.7	7.3
Total	**578.2**	**121.8**	**105.3**	**233.2**	**117.9**

Source: Calculation based on results from the Agri-food survey.

Figure 40: Financing gap by product in the agri-food sector, 2018, EUR million



Source: Calculation based on results from the Agri-food survey.

A lack of collateral, insufficient cash flow to repay loans, and high administrative demands, in terms of filing loan applications, are the key underlining factors of the gap. Even though a number of measures exist to lower collateral requirements, many small-sized agri-food enterprises are still short on acceptable collateral, mainly impacting their ability to borrow for investment purposes. Young entrepreneurs and start-ups are particularly affected by the lack of collateral. At the same time, the foreseen investment often does not generate the needed cash flow to repay the loan. Banks are also not always convinced that management, particularly of smaller enterprises, has the technical capability to manage and implement such an investment. In turn, many agri-food enterprises are not approaching banks, as they are afraid of the number of documents they must present and the paperwork that needs to be completed. Also, the overall application process is perceived as too lengthy and time-consuming.

Small-sized enterprises in the manufacture of bakery and farinaceous products face special difficulties in accessing finance. Enterprises have experienced price pressures from larger chains that brought on lower profits and reduced investments. This in turn made finance providers more cautious in looking at this business segment. Moreover, some beverage manufacturers, like the traditional manufacturers of spirits in the North-Eastern parts of the country, faced constraints in access to finance due to their ineligibility for some subsidised programmes.

New entrepreneurs and start-ups face particular challenges, mostly stemming from the absence of collateral and credit history. Banks often consider the risk of those clients as being too high, as they have not been in operation very long and cannot demonstrate that they generate adequate levels of turnover and profit.

Over the coming years, the financing gap is expected to shrink. Guarantee schemes are being scaled up. Moreover, subsidised loans are increasingly available to enterprises, enabling more affordable finance to foster investment activity in the sector. In connection with the Czech government's 'Industry 4.0' policy, further investment in innovation, technology and equipment is expected, particularly in robotisation and human capital replacement structures. Innovation support schemes have been introduced e.g. INOSTART, for which agri-food companies could potentially be entitled. The question is whether many of the small-sized enterprises operating in a traditional environment will be able to harness these promising trends.

The financing gap is expected to be reduced by the growing number of individual or portfolio guarantees. The Czech government has recently introduced a National Strategy for the Development of the Capital Markets 2019-2023, with a view to raising awareness of the possibilities and benefits from the diversification of financial resources. Diversification in capital markets might reduce the financing gap by mainstreaming new debt finance options, still rare in the Czech Republic, and developing alternatives to conservative asset-based finance.

3.5 Conclusions

Investment in the Czech agri-food sector has experienced a positive trend in recent years. The Gross Fixed Capital Formation (GFCF) in both food and beverage manufacturing has been growing and, as far as the manufacture of food products is concerned, has reached the highest value in a decade. Since 2016, GFCF in the beverage industry has been also growing. The Gross Value Added has also been increasing since 2016. These indicators suggest a positive investment environment for the sector.

Modernisation of facilities and investment in technology, as well as business expansion, are driving investment by agri-food enterprises. Czech agri-food enterprises are investing in automation (in line with the 'Industry 4.0' strategic focus of the government) and on enhancing food quality standards. To comply with strict quality standards, investments in quality monitoring equipment are necessary. Business expansion includes a wider availability of products, which require larger storage facilities and mobile stores. Storage capacity expansion has also been a driver of investment activity.

The supply of finance to the agri-food sector is still predominantly provided by commercial banks. The supply has been growing in recent years, particularly for food manufacturing. There is no particular specialisation of financial intermediaries in the agri-food sector. However, the banking market is fairly competitive and banks have sufficient experience and knowledge of the sector, and are geographically well organised, which allows a diverse range of products to be offered that cater to most individual needs. Alongside the banks, two institutions have a special place in the market, with both being established by the Czech government to serve as providers of national subsidy schemes and guaranteed instruments. Agri-food enterprises also benefit from many national subsidised programmes as well as guarantees.

A significant number of agri-food enterprises are being rejected or discouraged from applying for finance. The constraints mostly affect small-sized enterprises and new entrants. Causes of rejection include a lack of collateral and credit history, but also difficulties in presenting viable business plans. The lack of financial planning ability of some small-sized enterprises is also an issue.

Due to the constraints listed above, the study shows that there is still the potential for a further expansion of the market, with an estimated financing gap of EUR 578 million. Around 75% of the value of the gap relates to small-sized enterprises. In terms of financial products, almost 40% of the gap relates to long-term loans, while 20% relates to short-term loans.

Cooperation between banks and agri-food enterprises works reasonably well. Loan products are available and their scale and focus varies. Still, the following recommendations should be considered, with the aim of closing the financing gap in the agri-food sector:

- Despite the diverse offering of public support, a significant gap has been identified in the market, with relation to small-scale enterprises and start-ups. This suggests that an assessment of the current instruments and their ability to address financial constraints of those target groups might be useful.
- In particular, the current provision of public guarantees seems to lack specific focus on the agri-food sector and covers mostly short-term loans. A specific guarantee or risk-sharing instrument for the sector might help to address lack of collateral for investment loans in the sector. This would operate in synergy with the instrument suggested for the agriculture sector. The opportunities offered by the new EAFRD legal framework, as for example the possibility of easier combination of financial instruments and grant support might offer the possibility to better serve those target groups.
- The possibility to set-up a pilot equity or quasi-equity financial instrument, to support start-ups with innovative projects might be analysed.

ANNEX

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A.2. Stakeholders interviewed

Type of Organisation (Government, NGO, Bank, Private, etc.)	Name of Institution
Bank	Unicreditbank a.s.
Bank	Česká spořitelna a.s.
Farmer Association	The Young Agrarians Society of the Czech Republic
Farmers	Various farmers
Government	Státní zemědělský intervenční fond
Government	Ministry for Agriculture
Research	Institute of Agriculture Economics and Information

A.3. Methodology for financial gap calculation

This section of the report clarifies the terminology and proposes a method for estimating the financial gap formula for Target Group I and Target Group II. This version of the formula aligns with the *fi-compass* Factsheet on the financial gap in agriculture and the 2013 EC working paper on the Ex-ante assessment of the EU SME initiative. It is based on the data from the *fi-compass* survey of 7 600 farms carried out in mid-2018.

Financing gap definition. We define the financing gap to be the *unmet credit demand due to constrained or missing access to financing*. This definition includes market failures as well as other types of constraints.

Operationalisation of the financing gap formula. Each component of the formula can be obtained in the survey data under the following **assumptions**:

$\boldsymbol{Rejected}$ credit applications include applications that are rejected by banks (or other credit organisations) and offered from banks, but turned down by the farmers/firms.

The share of $\boldsymbol{Viable}$ firms is measured by the share of total firms that have a non-negative turnover growth[100] or a non-negative turnover and that are not in a situation of cost increase (these two criteria might be used to obtain an upper and lower boundary for the calculations).

Discouraged application is proxied by the average size (financial value) of loan applications made by firms that applied for a similar type of financial product. This allows for grouping firms which did not apply for fear of rejection with rejected firms (see step 2 and 4 below).

To calculate the financial gap, we define the following four steps. Each step refers to the latest surveyed year for both the surveys.

Step1: Ratio of viable farms with unmet demand for finance

$\boldsymbol{Rejection\ Rate^{Viable}}$ **:** This refers to the share of viable enterprises whose application was unsuccessful. It is measured by the ratio of enterprises with unsuccessful applications over the total population. It includes rejected applications by the lending institution and offers turned down by the applicant itself.

$$Rejection\ Rate_j^{Viable} = \frac{Number\ of\ Rejected\ Viable\ Firms}{Total\ survey\ population_j}$$

with and $j = Short - term\ , Medium - term, Long - term\ Loans, Credit\ lines.$

$\boldsymbol{Discouraged\ Rate^{\ Viable}}$**:** It represents the share of viable enterprise that were self-discouraged because of fear of rejection. It is computed as follows:

$$Discouraged\ Rate_j^{Viable} = \frac{Number\ of Discouraged\ Viable\ Firms}{Total\ survey\ population_j}$$

with and $j = Short - term\ , Medium - term, Long - term\ Loans, Credit\ lines.$

$\boldsymbol{Unmet\ demand\ Rate^{\ Viable}}$**:** The total share of survey respondents with unmet demand for finance is obtained by summing the two rates:

$$Unmet\ demand\ Rate_j^{Viable} = Rejection\ Rate_j + Discouraged\ Rate_j$$

100 A turnover that has been stable or growing in the last year.

Step 2: Number of farms rejected or discouraged

$\boldsymbol{N.of\ Farms\ in\ unmet\ demand_{ij}^{Viable}}$: In order to get the number of farms constrained in accessing financing, we multiply total share of viable respondents with unmet demand from the survey sample (Step 1) by the total farm population from Eurostat by farm size.

For TGI, this total population is adjusted by removing farms having a Standard Output (SO) below EUR 8 000 EUR 4 000 or EUR 2 000, depending on the Purchasing Power Parity Index (PPI) of the country. The EUR 8 000 EUR 4 000 or EUR 2 000 SO thresholds are used for countries with their 2017 PPI respectively above the 66th percentile, between the 33th and 66th percentile, or below the 33th percentile of the PPI index in the EU. We assume equal rates of rejections among small, medium and large-sized farms, and disentangle the share of farms with constrained in obtaining credit by financing product.

$$N.of\ Farms\ rejected_{ij}^{Viable} = Eurostat\ Farm\ population_i * Rejection\ Rate_j^{Viable}$$

$$N.of\ Farms\ discouraged_{ij}^{Viable} = Eurostat\ Farm\ population_i * Discouraged\ Rate_j{}^{Viable}$$

$$N.of\ Farms\ in\ unmet\ demand_{ij}^{Viable} = N.of\ Farms\ rejected_{ij} + N.of\ Farms\ discouraged_{ij}$$

for $i = Small, Medium, Large$
and $j = Short - term\ , Medium - term, Long - term\ Loans, Credit\ lines.$

Step 3: Standard Loan Application Size

$\boldsymbol{Application\ Size_{ij}}$: For each type of financial product and each firm/farm size category, a standard size of application is constructed. A starting point for Country experts might be the EU wide geometric mean, adjusted at country level with the purchasing power parity index. This value might be further adjusted based on the results of the analysis.

Step 4: Financial gap across farm size and product type

The financing gap is obtained by multiplying the amount of loans (Step 3) by the total number of farms facing constrained access to credit as calculated in Step 2.

Note: when the survey sample size allows, an indicative breakdown of the gap will be provided for young farmers per member state. The breakdown is obtained from the age ratio within rejected loan applications.

$$\boldsymbol{Financial\ Gap_{ij} = Application\ Size_{ij} \times N.of\ Farms\ in\ unmet\ demand_{ij}^{Viable}}$$

for $i = Small, Medium, Large$
and $j = Short - term\ , Medium - term, Long - term\ Loans, Credit\ lines.$

Finally, the total gap is the sum of figures across size classes (*i*) and products (j).

Private financing (obtained from family or friends) will be included in a separate quantification for countries with a high share of private lending.

The methodology for the gap calculation for TG II is the same as for TG I, but no lower limit on the size of enterprises is applied in step 2 (all enterprises in the population are included in the calculation). For Target Group II, we obtain each component of the financing gap formula from the following questions in the agri-food survey of Target Group II carried out in mid-2019:

Lending/funding applied to: For what kind of finance did you apply in 2018 and with what amount?
Lending not applied to: For what reasons did you not apply for some kind of finance?
***Rejected*:** What was the result of your application?
Viability: Has the following company indicator changed in the last year: Turnover?

It has to be noted that the surveys to be used by the Study for the calculations, the *fi-compass* farm survey and the agri-food survey, are designed to be statistically representative at national level. Therefore, regionalised figures and calculations could be applied with a limited dimension and for only few countries. Information from interviews may complement such regionalised descriptions.

For Czech Republic Table 11 and Table 12 report the elements used in the calculation of the financing gap for the agriculture and agri-food sector, respectively.

Table 10: Elements for the calculation of the financing gap in the agriculture sector in 2017

		Short-term Loans	Medium-term Loans	Long-term Loans	Credit lines/bank overdraft
Lower bound: farms with a non-negative turnover growth and no cost increase	Share of respondents rejected by creditor or farmer	0.00%	0.62%	0.14%	0.00%
	Share of respondents that have not applied because of possible rejection	1.86%	1.80%	2.21%	1.39%
	Total (sum of rejected and discouraged)	**1.86%**	**2.42%**	**2.35%**	**1.39%**
Upper bound: farms with a non-negative turnover growth	Share of respondents rejected by creditor or farmer	0.14%	1.52%	1.10%	0.49%
	Share of respondents that have not applied because of possible rejection	4.01%	3.81%	4.16%	3.40%
	Total (sum of rejected and discouraged)	**4.14%**	**5.33%**	**5.26%**	**3.88%**
Total unmet demand: all farms	Share of respondents rejected by creditor or farmer	0.14%	1.52%	1.99%	0.49%
	Share of respondents that have not applied because of possible rejection	5.88%	6.09%	6.03%	5.68%
	Total (sum of rejected and discouraged)	**6.02%**	**7.62%**	**8.03%**	**6.17%**
Farms with constrained access to finance, **lower bound**	Small-sized farms	249	325	315	186
	Medium-sized farms	133	174	168	99
	Large-sized farms	88	114	110	65
Farms with constrained access to finance, **upper bound**	Small-sized farms	556	715	705	521
	Medium-sized farms	297	382	377	279
	Large-sized farms	195	251	248	183
Standard loan application size (EUR)	Small-sized farms	11 482	27 852	76 813	10 366
	Medium-sized farms	14 548	26 473	83 407	11 498
	Large-sized farms	42 906	67 368	150 182	61 238

Source: fi-compass survey.

Table 11: Elements used for the calculation of the financing gap in the agri-food sector in 2018

		Short-term Loans	Medium-term Loans	Long-term Loans	Credit lines/bank overdraft
Firms with a non-negative turnover growth	Share of respondents rejected by creditor or firm	2.49%	2.49%	4.98%	2.49%
	Share of respondents that have not applied because of possible rejection	14.69%	9.05%	4.07%	13.11%
	Total (sum of rejected and discouraged)	**17.18%**	**11.54%**	**9.05%**	**15.61%**
Total unmet demand: all firms	Share of respondents rejected by creditor or firm	4.98%	6.56%	8.07%	4.98%
	Share of respondents that have not applied because of possible rejection	14.69%	9.05%	4.07%	13.11%
	Total (sum of rejected and discouraged)	**19.67%**	**15.61%**	**12.13%**	**18.10%**
Firms with constrained access to finance	Small-sized firms	1 614	1 084	850	1 466
	Medium-sized firms	62	41	32	56
	Large-sized firms	12	8	6	11
Standard loan application size (EUR)	Small-sized firms	55 476	75 945	215 405	62 639
	Medium-sized firms	440 738	415 020	1 154 509	335 337
	Large-sized firms	434 610	726 884	2 040 473	682 000

Source: Agri-food survey.

A.4. TG I: *fi-compass* survey

The analysis for the agriculture sector in the report relies on the *fi-compass* survey on financial needs of EU agriculture enterprises, conducted from April to June 2018 across 24 EU Member States (EU 24): Austria, Belgium, Bulgaria, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, The Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden.

The survey was carried out targeting the completion of 300 questionnaires for each Member State. The target was reached in all countries except Lithuania (for few interviews) and Ireland, where the farmers were less confident in sharing information.

Overall, the survey consists of 7 659 respondents, of which 73% own the agriculture enterprise, 8% are member owners, 8% are owner's relatives, 7% administrative managers, 3% other employees, and 1% human resource managers. Table 13 reports the number of respondents by Member State.

Table 12*: fi-compass* survey sample size per Member State

Country	No. of Respondents	Country	No. of Respondents
Belgium	350	Latvia	315
Bulgaria	351	Lithuania	296
Czech Republic	309	Hungary	315
Denmark	302	The Netherlands	301
Germany	376	Austria	320
Estonia	310	Poland	320
Ireland	151	Portugal	349
Greece	350	Romania	350
Spain	354	Slovenia	300
France	350	Slovakia	312
Croatia	300	Finland	327
Italy	351	Sweden	300

Source: fi-compass survey.

Additionally, the sample covers 198 (94.7%) of the 209 NUTS2 regions in the 24 Member States. These regions have nearly 99% of EU 24 farms

Almost 85% of questions were completely answered and 98% of all questions were answered on average. The most problematic questions were on confidential, financial aspects. Only 50% of interviewees replied concerning their turnover, 67% gave the specific amount of their loan and 56% the exact interest rate of their loan.

For additional information, please refer to https://www.fi-compass.eu/publication/brochures/survey-financial-needs-and-access-finance-eu-agriculture-enterprises.

A.5. TG II: Agri-food survey

To mirror the *fi-compass* survey on the needs of EU agriculture enterprises, a computer assisted telephone interviewing (CATI) survey was conducted for the agri-food processing sector in mid-2019.

For the purpose of this survey, a commercial global register was used in each country. A commercial global register provides data in a single source, harmonises the information collected on businesses (e.g. Industrial classification, employee size, turnover, contact names etc.) and offers software platforms that allow users to easily access a sample of businesses for commercial purposes.

The survey was conducted targeting the completion of a minimum of 45 questionnaires for each Member State. The minimum sample size obtained varied per country mirroring the differences in the size of the sector. Table 14 reports the sample size per country

Table 13: Agri-food survey sample size per Member State

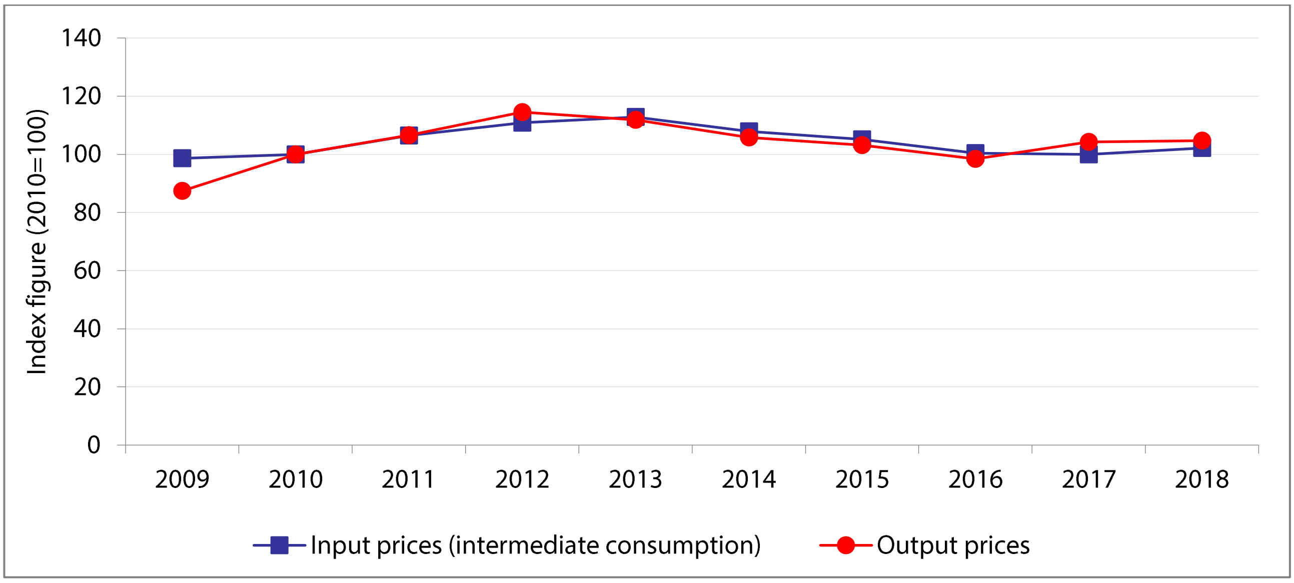
Country	No. of Respondents	Country	No. of Respondents
Belgium	100	Latvia	50
Bulgaria	100	Lithuania	50
Czech Republic	66	Hungary	46
Denmark	50	The Netherlands	80
Germany	186	Austria	50
Estonia	50	Poland	130
Ireland	50	Portugal	100
Greece	70	Romania	150
Spain	197	Slovenia	50
France	180	Slovakia	50
Croatia	45	Finland	50
Italy	200	Sweden	48

Source: Agri-food survey.

The survey consists of 2 148 respondents, of which 85% were enterprises operating in the manufacturing food sector, and 15% in the manufacturing of beverages.

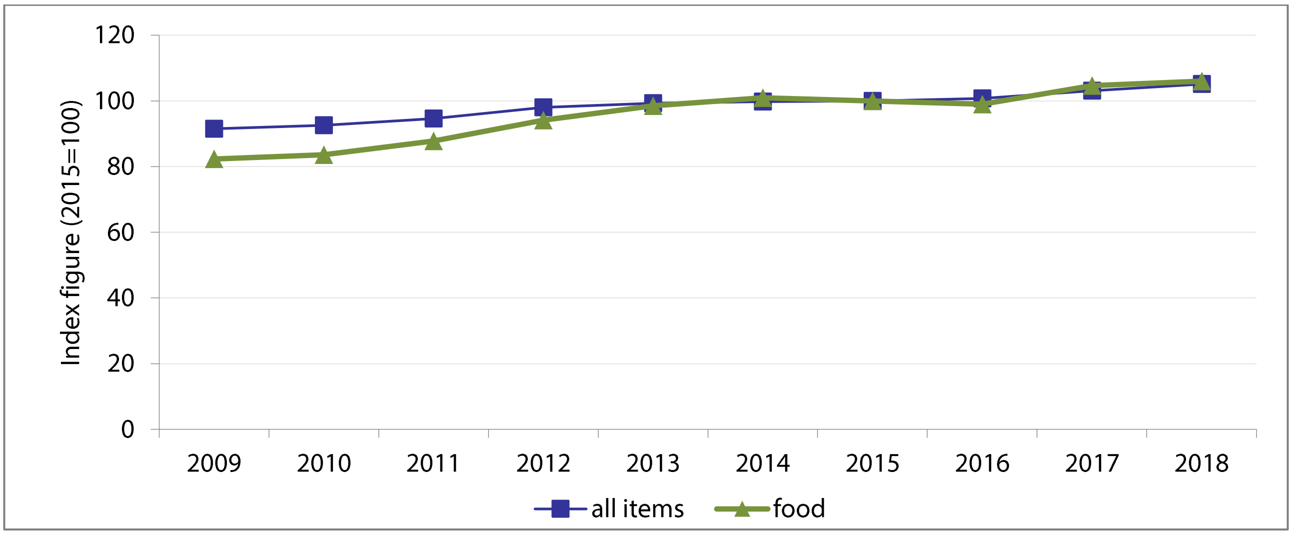
A.6. Data from the agriculture statistical factsheet

Figure 41: Evolution of agriculture input and output prices



Source: European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.

Figure 42: Evolution of harmonised indices of consumer prices



Source: European Commission, DG AGRI, June 2019, Statistical Factsheet for Czechia.

www.*fi-compass*.eu
contact@*fi-compass*.eu

European Commission
Directorate-General
Agriculture and Rural Development
B-1049 Brussels

European Investment Bank
Advisory Services *fi-compass*
98-100, boulevard Konrad Adenauer
L-2950 Luxembourg