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SME Innovation Financing Facility

Romania – final report

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SME Innovation Financing Facility
Romania – final report

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Executive summary

It seems that there is a clear rationale for the innovation support facility EBRD plans to introduce in Romania. The combination of a loan, grant and technical assistance addresses a clear gap in the Romanian financial markets, and the needs of the economy as well as the needs of the targeted companies. The market analysis indicates that the potential exists and that the Romanian banks are interested in partnering with EBRD. Implementation can benefit from earlier experiences with the EBRD energy efficiency programme. The main risks are related to eligibility criteria and thereby acceptance by the banks and companies, as well as the quality of technical assistance. However, measures to mitigate these risks are available and can easily be implemented.

Rationale

Innovation activities in Romania are modest. To secure future growth and catching up with the rest of Europe, Romanian economy must be able to capture the benefits of innovation. This can result from innovative companies investing more in R&D and innovation, from previously non-innovative companies becoming innovative, and from new innovative start-up companies.

The already innovative companies can benefit from various public support schemes aimed at innovation and innovative companies. Many of them are also financially viable and can use financial products already available on the Romanian financial markets. However, some innovative companies may be in a financially challenging situation where more risk-tolerant external funding or incentives is required for the company to be able to engage on a high-potential innovative activity. If the company has specific challenges related to collateral, Innovfin guarantee instruments may provide a viable solution. However, if the challenge is more related to high technological and/or commercial risks, the combination of EBRD loan and Horizon2020 grant may prove more effective.

Most innovative start-up companies are not looking for external debt funding. Instead, they seek for equity investments from venture capital funds or business angels. It is therefore not likely, that start-ups would be a viable target group for an instrument that combines a loan and a grant. As start-ups grow to scale-ups, they are in a better position to use external debt funding. Scale-ups are a viable target group for instruments combining loans and grants or Innovfin guarantee instruments. Innovative start-ups are innovative companies; thus, they merge with the already innovative companies in the scale-up stage.

The most promising target group for instruments combining loans and grants is non-innovative companies aiming to become innovative. The first step in becoming innovative is often the acquisition of new technologies. This exposes the company to the potential benefits of new technologies, and can inspire them to consider further new technologies and development of new or significantly improved products, services, processes, and business models. Here, the incentive effect of the grant combined with the financial resources provided by the loan allow the company to pursue new technologies or innovation they would otherwise perceive as too risky or would not have the resources or competences to attempt. The instrument is even stronger when the loan and grant are further combined with technical assistance, helping companies realise their competence and resource gaps, see the potential of innovation, and understand how to capture it.

Public support schemes focusing on innovation in Romania are either targeted to start-ups or already innovative companies. There are also more general schemes focusing on investments and productivity, which companies may benefit from. However, the impact of these schemes on innovation is limited, since they don’t specifically require or encourage innovation.

Given the current situation in Romania with respect to innovation and what there is in the financial markets to support it, there seems to be an identifiable gap in the financial markets (market failure) that the proposed new EBRD instrument can address. The gap is related to the availability of appropriate funding for non-innovative companies with a potential to become innovative. Many of these companies
are currently not interested in bank loans, nor can they access public support schemes aimed at innovation. While they may benefit from general public support schemes, these schemes don’t encourage them to become innovative, or provide technical support which could help companies to realise the potential benefits of innovation.

We therefore suggest, that the **main rationale for the new EBRD instrument** is to address this market failure, and that the main impact and therefore the key objective of the programme **is to increase the number of innovative companies in Romania by encouraging previously non-innovative companies to engage in innovative activities.** This doesn’t exclude the possibility of targeting also already innovative companies, which lack the sufficient incentives, encouragement and have difficulties in accessing the necessary funds for innovative activities.

**Market potential**

Market potential for the planned new EBRD instrument was estimated using R&D and innovation statistics, other relevant studies and analyses of the Romanian financial markets and companies interest to use bank loans to fund their activities, and interviews with the Romanian banks. The analysis revealed two groups of companies that could potentially be interested in the planned new EBRD innovation facility and benefit from it. They have been depicted as less innovative (previously no or very little innovation activities) and more innovative (prior experience in R&D and/or innovation).

Both estimations based on statistics and available studies as well as interviews with Romanian banks indicate that the **number of less innovative companies would be around 600-700 and the number of more innovative companies would be around 100-150.**

Considering that that the average ticket size covers two years of project implementation, the average ticket size calculated based on statistical data on R&D and innovation expenditures shows varying levels, ranging from €400k to €1,200k. Due to the fact, that the target companies would need to have less than 3,000 employees, an **average ticket size of €800k for more innovative companies** would be more plausible. At the same time the **ticket size of €200k for the less innovative companies** would be the potentially the more plausible size of the awarded loans.

Based on the number of eligible companies and the estimated average ticket size, introducing a debt + grant financing facility of up to €250m would be feasible to cover the needs and potential of the Romanian market for innovation. Given the current situation in the Romanian financial markets, especially with the recently introduced InnovFin and other instruments as well as the ample availability of ESIF funds over the next few years as the current structural funds funding period approaches its end, it is suggested that a new EBRD instrument is designed appropriately below this estimated maximum volume. Hence, **the suggestion is to design the EBRD instrument at the level of around €150m.** Given the estimates from the 5 banks that have shown most interest towards a new EBRD instrument, it would be highly likely that the instrument would be picked up fully by the Romanian banks.

It is likely that a sizeable share of the total volume will eventually be allocated to less innovative companies. However, with the experience these companies gain from engaging in any innovative activities with identifiable risks involved, will allow them to develop the necessary competences, awareness and courage to later aim for more innovative activities. This further encouraged by the two-level grant component and technical assistance supporting companies’ innovation management and innovation project planning competences. Hence, the innovation impact of the planned EBRD instrument is both immediate (with more innovative companies engaging in more ambitious innovation activities, and with some less innovative companies engaging in more innovative activities encouraged by the bigger grant component and technical assistance) and long-term (with less innovative companies gaining experience and skills, and later engaging in more innovative activities).
Characteristics

The planned new EBRD instrument is planned to consist of 3 components: (1) a loan, (2) a grant, and (3) technical assistance. EBRD has successfully implemented a programme for supporting energy efficiency investments in Romania. This earlier programme consisted of the same 3 components as the planned new programme. It is therefore appropriate that experiences from the earlier programme are used in designing the programme structure and detailed implementation.

The planned new EBRD instrument is based on InnovFin criteria. The criteria are partly complex, but can in practice be applied in a relatively simplified manner. As indicated in the market analysis, there are two types of companies that should be eligible for the EBRD instrument.

For less innovative companies, it is proposed that the eligibility criteria are mostly based on novelty and risk. Hence, the minimum eligibility criterion for less innovative companies therefore is, that the technology (or methodology, business model, etc.) they are adopting or developing must be new at least to them (innovation), and the adoption or development must aim at a commercial introduction to a new client base (new market), which is not familiar with the company or the product and may therefore not buy it (risk).

The minimum eligibility criteria for more innovative companies is, that the technology (or methodology, business model, etc.) they are adopting or developing must be new at least to the country or industry sector (innovation), and the adoption or development must aim at a commercial introduction of a new or significantly improved product or service, which they may not be able to develop (technological risk) or potential clients may not buy (commercial risk). Company is also eligible, if the company has verifiably invested in R&D and/or innovation earlier, or the company has innovation potential verified by complying with one or more of the specific InnovFin innovation criteria.

There are naturally more detailed criteria that can be used for verifying eligibility, but the main approach should be to use as simple as possible criteria, which are easily understandable by both participating banks and companies. The report discusses and proposes more detailed guidelines for assessing and verifying both novelty (innovation) and risks.

The interviews with the Romanian banks clearly indicated that the loan component in the new programme should have the following features:

- Credit line to the banks should be issued in local currency. This is because most of the loans in the Romanian banks are in local currency.
- The process for verifying the eligibility of the company and innovativeness of its activities should be straight-forward, understandable, and quick. The proposed process in Chapter 0 attempts to respond to this.
- The credit line for the banks should be made available at market cost, or if possible below it. This would allow banks to offer the loan at normal market interest rates.
- The credit line should be combinable with guarantees.
- EBRD should assist the banks in marketing the new programme. This could be done in the form of awareness raising as part of the technical assistance offered to the banks.

It can be estimated that most likely recipients of the loan would be SMEs with a turnover between €1M and €50M. The most likely innovation activities of these companies would consist of acquiring new technology in the form of new production equipment and machinery supported by related other activities.

As InnovFin guarantee instruments don’t include state aid, the EBRD loan can be combined with a national or European guarantee arrangement. The bank can therefore use a guarantee arrangement to overcome problems related to lack of collateral, as long as the guarantee arrangement doesn’t include state aid.

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Public funding from European-level sources is not considered State aid as such, if the managing authority is European (in this case EBRD in collaboration with Horizon 2020) and national or local public authorities are not involved in the decision making (here only private financial institutions operating on market principles). However, even in the case of European funding, the level of the grant should be consistent with at least the principles laid out in the State aid regulations.

Another consideration in designing the appropriate level for the grant component is the level of grants currently available in Romania for the companies in the target group, i.e. SMEs and Mid-caps. Too small grant component would make the EBRD instrument less attractive, if much higher grant levels would be accessible for the same purposes from national public support programme.

In practice and given the current financial market gap for R&D and innovation, the alignment with the principles outlined for R&D and innovation state aid mostly refers to the maximum size of the grant component. Hence, the lower limit for the size of the grant component is defined by minimum sufficient attractiveness of the instrument, whereas the upper limit should be defined by alignment with state aid principles and the availability of grants from public support schemes for similar purposes.

Based on the interviews with the Romanian banks as well as experiences from the previous energy efficiency instrument, we propose that the minimum size of the grant component would not be below 15%.

The maximum size of the grant component shouldn’t exceed 40%, otherwise the EBRD loan would be in direct competition with public funding schemes offering grants for similar purposes. To avoid too much overlap with the other financial instruments, the most viable target group for the new EBRD instrument would therefore seem to be companies that have a potential to become more innovative.

Hence, it is suggested that the grant component is designed to have two levels, one for less innovative companies and another for more innovative companies. The grant component for less innovative companies should be set at the minimum level still attractive for both the banks and the companies. This according to our estimates is at least 15%, preferably 20%. Even though this level may be considered relatively high given the modest direct impact on innovation, the grant component will undoubtedly have an impact on productivity and competitiveness, and thereby indirectly on economic growth and job creation. Furthermore, the learning impact and subsequent later engagement into more innovative activities (indirect, long-term impact on innovation) can be significant.

The grant component for the more innovative companies should be set closer to the upper viable limit. It is suggested that it would be set at least at 30%, preferably even 40%. The main reason for this is that the grant component for more innovative companies should be significantly higher than for less innovative companies. This will create an incentive for the less innovative companies to explore possibilities to design projects and activities that would make them eligible for the bigger grant component. The EBRD instrument with two grant levels would therefore include an additional incentive for companies to engage in more innovative activities. The impact on innovation would thereby come from the increase in R&D and innovation activities of more innovative companies, and from less innovative companies becoming more innovative.

Assuming, that 90% of the loan volume would be issued to less innovative and 10% to more innovative companies (as estimated by the banks), the overall size of the grant component would be 17% using 15%/30% grant levels and 22% using 20%/40% grant levels. For example, if the total loan volume was €100m, the estimated grant volume would be around €16.5m at 15%/30% grant levels and €22m at 20%/40% grant levels. This clearly indicates that even using the higher grant volumes, the overall size of grant component remains almost at 20% of the total loan volume.

The main purpose for the technical assistance would be to help the banks to verify the eligibility of the company and its planned innovation activities prior to the loan decision. Technical assistance would also verify the level of grant ex-ante. After the activities have been implemented, technical assistance is needed to verify that the innovation activities have been implemented as planned.
The verification support to the banks should be delivered free of charge. Otherwise the banks would have to include the cost into the cost of the loans to companies, reducing the attractiveness of the loans.

In addition to the assistance to the banks, technical assistance could also be offered for the companies. The support for companies could include financial management and business development, and planning of innovation activities. The former would be targeted to companies with limited financial management and business development capabilities, and therefore issuing loans to them is considered too risky. This assistance can also address companies with identified innovation potential, but not the necessary capabilities to engage in innovation activities. This assistance can be based on the currently available support offered by EBRD to SMEs in Romania. In practice, banks that see potential clients that could benefit from this type of technical assistance, would signpost companies to apply for this support from the EBRD SME support service.

Planning innovation activities will make them more systematic and can significantly reduce the risks related to them. Particularly in the case of new products or services, where the understanding of the targeted markets and customers and changes in their needs will shape future demand and thereby market and growth potential. A review of the entrepreneurial ecosystem in Romania funded under the Horizon Policy Support Facility found that this type of innovation advisory services for companies is scarce in Romania. Therefore, the latter technical assistance would be particularly offered to the less innovative companies, who have indicated strong enough interest in wanting to become more innovative by engaging in R&D and innovation, and thereby becoming eligible for the bigger grant component. This technical assistance should be based on existing consulting products and models focusing on innovation capacity and innovation management. This assistance would also be based on signposting by the banks. Once the bank identifies the potential or the company expresses strong enough interest, the bank can request for the technical assistance to the company.

Both types of assistance should be made available before the loan agreement is signed. Depending on how the provision of these services is arranged and to what extent they are free of charge or subsidised for the company, the possibilities vary. In any case, the duration of these service should be limited to a few days at the most. Anything more than that can’t be appropriately integrated into the loan instrument. Also, the nature of technical assistance linked to a financial instrument indicates that it is limited rather than extensive.

In addition to the innovation support services and technical assistance to the banks, technical assistance could also be offered in the form of marketing. This could take the form of awareness raising through websites, brochures and/or events planned and implemented together with the partner banks.

Assuming that the total number of companies entering the loan process is around 400 and 300 of them use either the financial or innovation management support, the total volume of technical assistance would amount to no more than 1000 days (100*1.0+200*4.0=900 days). Given an average daily rate of €1000, this would mean €1m in total.

Implementation and monitoring

The critical points in the process flow with regards to timing are the external expert verification steps. These should be delivered as fast as appropriate given the task. At the beginning of the process, external expert response time should preferably be 24 hours (or at most 48 hours). At the end of the project, the response time may vary depending on any deviations from the original business plan. However, even in this case, the response time should be fixed with an option to ask for an extension should the specific case require further investigation, e.g. contacting the company.

Subcontracting the external expertise should verify that the selected provider of external expertise has understood what they need to deliver and that they have the necessary competences to provide the expertise needed. The provider of external expertise should present a framework or model they intend to use for verifying the eligibility of the R&D and innovation costs, description of service packages for specific purposes (verification ex-ante and ex-post; innovation management assistance), description of
the competences required for delivering the external expertise, and measures planned for managing risks.

The network of experts should sufficiently cover all relevant industries and business sectors. All experts should be named, and they should have at least 5 years (preferably 10) of experience in working in the relevant industries in a leadership or senior expert position responsible for business development (incl. R&D and innovation) activities. All experts involved in verification should declare their ties to all Romanian companies to avoid any conflicts of interest. It might be practical and therefore recommendable to contract one single consulting company or other similar service provider to manage a network of experts, instead of contracting each expert separately. This would also allow the contracted service provider to manage a wider network of experts and thereby ensure the availability of the verification at all times.

It would be advisable to establish an **electronic web-based platform** to support the exchange of information between the different parties during the programme. This may be established separately, or it may be requested as an additional task from the provider of the external expert services. Regardless of how and by whom the electronic web-based platform is set up, it should allow for all information related to the programme to be stored and managed.

The platform would be essential in ensuring efficiency and appropriate response times. It would also facilitate the systematic collection of relevant monitoring data in real-time. This would allow EBRD to monitor the implementation of the programme in real-time and if necessary, report to the Horizon 2020 and take action, should the monitoring information indicate that something is not proceeding as planned.

The front end of the website could be used for marketing purposes. It could contain all relevant information concerning the EBRD loan, the grant component and technical assistance. The website should also offer an application for companies and banks to help identify if a company is eligible for the EBRD loan, and what further requirements they must comply with for the grant component. The web-application would consist of a set of easy and understandable questions based on the underlying InnovFin criteria. The application could end in a screen offering the possibility to ask for more information or even request a meeting with a bank.

EBRD should also consider establishing a **steering group for the programme** together with the partnering banks. The purpose of this group would be to monitor the implementation of the programme and identify if and when further guidelines to support the implementation would be needed. The group’s role would be most important at the beginning of the programme and again towards the end of the programme. EBRD could use this group to further develop the implementation activities and later to discuss with the banks about the need/potential for possible future programmes.

The verification of the implementation of the planned innovation activities should be sufficient to verify that the funding has been used for innovation activities. Especially the verification of the eligibility of the costs to allow for the payment of the grant component by an external expert clearly validates that the activities have indeed been innovative. As R&D and innovation includes risks and plans often need to be changed to reach the desired innovative output, the plans might not be implemented in the exact manner as described in the original business plan. However, the external expert evaluation can verify that the original innovation objectives have met to a sufficient degree and that the costs are eligible to allow for the grant.

In the exceptional case, where the company would use a significant part of the loan for non-eligible activities, they may end up losing some or all of the grant. Should the activities deviate significantly from the business plan, this may even lead to the need to immediately recall the loan partly or completely. To avoid this, mentoring could be used to monitor more closely companies, where this type of risk has been identified as high.

As the grant component originates from Horizon 2020, there may be a need to monitor not only the implementation of R&D and innovation activities, but **also the output of these activities**. A typical
approach would be to establish a set of key indicators, that can be adopted for each funded case. This would consist of typical indicators of innovative outputs, such as launched or planned new products or services, estimates of future turnover, exports and new jobs created because of the new product launch, adopted changes in the production process, as well as quality improvements, cost savings, possibility to produce new products, etc., i.e. how the changes made to the production process have benefitted or will benefit the company, adopted changes in the company’s organisational structure, governance processes or business model, including estimates how these changes have benefitted or will benefit the company, planned increase in R&D and innovation investments in the future, results of R&D activities, such as new industrial property rights, new technological solutions, etc., including planned commercialisation of these R&D results, e.g. expected revenues from licensing, deals with future clients, etc., and for startups, a good indicator can also be a new private equity investment or a funding round.

It would be advisable to keep the number of these indicators small and adjustable to allow for the monitoring of a wide range of different innovation activities and companies.

The nature of innovative activities and the uncertainty of their outcome means that the verification needs to focus on the activities as such, not on their planned outcome. Verification of the business plan and its implementation merely establishes that the plan is to benefit from innovation – either adopting or developing one – and that the planned activities to do so have been implemented. The impact of the EBRD instrument on innovation in Romania should therefore be evaluated separately, after the programme to implement the instrument has been in operation in full scale for at least 2 years. This evaluation can be partly based on the monitoring information collected during ex-ante and ex-post verifications, and partly on revisiting the companies and observing the eventual value of the outcome of the innovative activities to the company.

Risks and mitigating measures

Introducing a new EBRD instrument into Romanian financial markets should be relatively straightforward. The markets – both banks and companies – have prior experience with an earlier EBRD programme focusing on energy efficiency. The planned new programme consists of similar features, thus making it relatively easy to understand and adopt.

However, innovation is somewhat different from energy efficiency, as discussed in the previous chapter. Especially the risks inherent in all innovation activities and the uncertainties which may require changes to the business plan during implementation, mean that the success of the planned EBRD instrument depends much more on the quality of the technical assistance, than the previous instrument focusing on energy efficiency. The quality of technical assistance is further emphasised by the underlying rationale for the planned EBRD instrument, i.e. identifying and encouraging previously non- or less innovative companies to become more innovative. Technical assistance – both verification and especially innovation management support – are elemental in reaching the desired impact.

To mitigate the risks related to the quality of technical assistance, EBRD should on one hand rely on the existing SME support activity (financial and business management support), and on the other hand, rely on existing, extensively tested, established and successful methods for helping companies develop their innovation management skills and plan their innovation activities. The external expertise needed for the verification should consists of a network of Romanian and if necessary also international experts.

The mitigation measures should also include practices for eliminating potential conflicts of interest, as well as backups if specific verification experts would not be available. EBRD may also require further measures from as part of the verification consultancy agreement, such as double checking (by 2 experts) or mutual learning (regular telecon’s).

The other main risk related to the introduction of the planned EBRD instrument is related to market acceptance. Given that a similar instrument (energy efficiency) has already been implemented successfully in Romanian financial markets, the banks and also some companies may find the planned new instrument attractive because of their previous positive experiences. However, the characteristics of innovation differ from energy efficiency and therefore the eligibility criteria are different.
The eligibility criteria are more demanding than for energy efficiency. For example, whereas energy efficiency could be increased by simply acquiring new production equipment to replace old ones, eligibility for innovation requires that the new equipment represents a technology that is new to the country or sector, or it facilitates the development of new or significantly improved products, services, processes or business models, or it forces the company to seek new markets, etc. These additional eligibility requirements compared to the previous energy efficiency instrument may and will cause at least an adjustment period with both the banks and the potential target companies.

Because the final formulation of the eligibility criteria with regards to innovation have not yet been fixed, the estimates given by the banks may in part be optimistic. In view of mitigating the potential acceptance risk, EBRD should organise multi- or bilateral discussions/negotiations with the banks to establish the banks’ true interest in the new EBRD instrument. We believe, that the interest indicated by the banks is sufficient to reach a positive outcome from these discussions/negotiations. However, the eventual deals with the banks may be below what has been earlier indicated in this report. Given the funds planned for the new EBRD instrument for Romania, this should not present a serious risk.

The pace the banks will eventually have in issuing out the new EBRD innovation loans is likely to depend on the familiarity the banks and their loan officers as well as the companies have with the new instrument. It is therefore advisable, that EBRD organises a regular platform (telecon, physical or a combination of both; possibly also a webcast option to communicate selected parts to a wider audience of loan officers) between the participating banks, the external verification and innovation management experts (entities coordinating the expert networks) and EBRD (and possibly at times also Horizon 2020 people, if that is seen as useful). The purpose of this platform is to discuss any open or unclear issues and establish a common understanding of them. This platform could also act as a sounding board for preparation of all communication material related to the new EBRD instrument.

Further mitigating measures with respect to acceptance could include contacts and discussions with public funding agencies and entities providing any other public support for targeted companies. The purpose of these discussions would be to help these entities understand and know what the new EBRD instrument could offer and thus market it to the appropriate companies. The other purpose of these discussions would be to provide further insight into the size and characteristics of the potential target groups (less innovative and more innovative companies) to EBRD, the participating banks and the external experts. The former would strengthen marketing activities, thus revealing the market potential, encouraging a larger number of companies and allowing faster pick of the loans. The latter would reveal where the highest market potential may be and how it can be approached. Furthermore, the collaboration with public funding agencies will help verification of more innovative companies as they have the information of earlier or on-going public R&D and innovation support the company may have received.
1 Introduction

The EBRD launched the Knowledge Economy Initiative in 2014 in an effort to use knowledge economy to facilitate the development of productivity and competitiveness in EU member states. Within the framework of the initiative EBRD works on issues tied to innovation and development of innovation ecosystems.

The EBRD seeks to advance the development of the knowledge economy in selected countries where the initiative’s targets are:

1. Improving the innovation business environment to encourage companies to innovate, including through technology transfers, become more competitive and seek to move up global value chains through policy dialogue, networking, information sharing and technical cooperation
2. Further developing access to information via availability of broadband, fixed and mobile, particularly in regional areas, to reduce the digital dive within countries and across the EBRD Region
3. Promoting and supporting the ability of traditional industries to innovate through investing in R&D, state-of-the-art technologies, training and skills development, ICT improvements and adoption/adaption of new to the firm technologies
4. Helping to ensure the continuity of, and access to, the chain of financing from angel support, early stage and growth stage to later stage in order to allow smaller innovative companies to bring their ideas, new designs and products to the market.

The EBRD investments are classified as knowledge economy investment if through the funding the EBRD facilitates the transfer of skills that can be used by other potential innovators or creates new linkages to potential innovators. The project should have the potential to boost innovative activity by other entities in the local innovation ecosystem.

In all cases, the EBRD collaborates with other major stakeholders – including fellow international financial institutions (IFIs) and international organisations, the European Union (EU), business associations and institutional investors – to ensure a co-ordinated approach.

Working under the Knowledge Economy Initiative the EBRD (in collaboration with the European Commission) are now considering addressing specific gaps in innovation development in the EU member states. For this current assignment, the innovation gaps to be addressed are for Romania and Latvia.

The idea is to develop an SME Innovation Financing Programme for Latvia and Romania (the “Programme”) to promote innovation by SMEs and Mid-caps. This is to be achieved by improving their access to finance and the expertise that are necessary to strengthen their competitiveness and ability to move up the value-chain by increasing the rate of innovation adoption.

The main objectives of this study consist of:

- assessing the level of innovation of the corporate sector in Latvia and Romania including existing market failures, barriers for undertaking innovative projects and barriers to finance those, and in this context;
- assisting the Bank in structuring the Programme by developing a new financial product in the form of credit lines to SME and Mid-caps to encourage private sector-led innovation in Latvia and Romania and help these countries move higher on the EU’s Innovation Union Scoreboard.

The study was divided into three stages. In stage 1, information was gathered to analyse and map the SMEs and Mid-caps markets of Latvia and Romania. Stage 2 continued by deepening the market analysis and thereby provided input on how EBRD should structure the SME Innovation Financing Programme to promote innovation by SMEs and Mid-caps, facilitate their access to finances, venture capital, technical skills and other know-how which are necessary ingredients for an innovation
ecosystem to flourish. In stage 3, key risks and mitigating measures related to the Programme were identified.

This report focuses on Romania and is structured in the following sections:

1. Current situation and needs for SMEs and Mid-caps market
2. Definition of the key features that should be included in the developed Programme
3. Advice on the programme’s implementation and monitoring
4. Discussion on the risks for implementing the Programme as well as suggestions for mitigating measures.

The report covers SMEs and Mid-caps (which are defined as SMEs with full time employees of up to 3,000 for the purposes of the study), and specifically the SME and Mid-cap markets in reference to the innovation levels, access to funding for innovation (programmes, venture capital, etc.) the sectors where innovation is strong vs. where it is weaker.
2 Overview of the Romanian economy

Romania is characterised by the World Economic Forum Competitiveness index as a developed country, performing well in terms of the macroeconomic environment (score of 5.5 out of 7), health and primary education (5.5) and to some degree also higher education and training (4.4) (see Figure 1). Among its weak points are the financial market development (score of 3.7 out of 7), institutions (3.6) and infrastructure (3.6), but also business sophistication (3.6) and innovation (3.1) (see Figure 1). In general, there is a lack of trust in the government institutions, due to a constantly changing legislative framework and lack of predictability of the government’s policies, which poses challenges to business activities.

Figure 1 Global Competitiveness Index, Performance Romania

The country’s economy has been growing and recovering after the crisis especially in this past year, with GDP growth estimated at 4.9% in 2016 (Eurostat). The 2017 EU Semester Country Report issued by the European Commission characterizes this growth as driven by private consumption (European Commission, 2017). As shown below, this trend seems to not be supported by the productive sources of growth in the economy, as the country is still undergoing large structural changes. The Country Report also forecasts that the net exports will continue to decrease if no change in competitiveness model happens, which points to the fragility of the recovery.

Local currency has been stable against the euro, and the inflation rate was negative in 2016, for the first time in recent Romanian economic history, but has returned to positive values by mid-2017, reaching 0.9%. Some interviewees mention that “the temporary deflation was mainly due to VAT slash from 24 to 20 and then to 19% in two years-time”. Romania already meets the ERMII criteria for accessing the Euro monetary zone in the next couple of years. However, the Romanian Government and the National Bank are not active in pursuing the transition to the new currency, as the country still shows a significant gap in convergence with the Euro zone countries.

At the sector level, the manufacturing and wholesale and retail trade sectors generate the highest shares of value added (European Commission, 2017b). As in many other Member States, the agricultural and industrial sectors’ shares in GDP have been declining. Structural change is visible through the shift to
the services sector. On the one hand, the agricultural sector, whose gross value added used to be above 10% of GDP before 2004, is the sector that decreased significantly in the past 15 years, now only contributing below 5% of gross value added in Romania (see Figure 2). On the other hand, the services sector has become increasingly important especially since the crisis, with ICT and scientific and administrative support growing the fastest. Moreover, the ICT sector’s share in the country’s GDP is among the highest in the EU (5.6% compared to 4.2% EU average) (European Commission, 2017). As shown in Figure 2, employment in industry and agriculture also stand out as experiencing the highest decreases relative to other sectors, with tradeable and non-tradeable services taking up more employees instead.

Figure 2 Gross value added by sectors (current prices) (left) and employment by sector (right)

Source: (European Commission, 2017)

In terms of export performance, Romania has been on a gradual improvement path since 2000, with its share in the global trade market more than doubling in 2000-2015, from 0.18% to 0.39%. (European Commission, 2017). Exports of goods and services have been fluctuating, but were overall on an increasing trend in 2010-2014, balancing the imports. However, the trend has reversed since 2015, with exports reaching 5.4% of GDP and imports 9.2% then (European Commission, 2017). Imports are further forecast to increase, on the basis of high domestic consumption rates, which risks deteriorating Romania’s competitiveness and sustainability (ibid).

Romania’s top exporting sectors are the machinery and equipment sector (28% of total export value in 2015), and the vehicles manufacturing sector (16.2% of total trade value in 2015) (See Figure 3). However, their evolution has been fluctuating in 2011-15, and there are signs they are losing their strong export position relative to other Romanian sectors (European Commission, 2017). Further important exporting sectors are the insulated wire and optical fibre cables (6%), petroleum, oils and refined chemicals (5%) and the textiles, clothing and footwear industry (Figure 3). Top three destinations for merchandise exports are Germany, Italy and France (UN Comtrade, 2016).

According to UN Comtrade data, the trade growth trends are divergent between the services and the merchandise sectors. Whereas the trade balance of merchandise has been negative, at around 2-3% in 2009-2015, total services trade has been on a growing trend, reaching around 5% growth in 2015 (UN Comtrade, 2016). Transportation makes up 35% of the exports in services, while other business 27.2%, and computer & information 14.4% (ibid).

However, overall, Romania’s economic complexity has been decreasing in the past ten years, dropping from the 35th position in 2005 to the 40th position globally (out of 221 countries) in 2015. In other words,
the number of products Romania is trading with revealed competitive advantage has decreased since 2005, reaching 284 competitive products in 2015 (MIT Media Lab, 2017).

*Figure 3 Romania’s export profile, 2015*

Source: (MIT Media Lab, 2017), based on UN Comtrade data
3 SME and Mid-cap market in Romania

3.1 A snapshot of the business economy

Based on the findings in Appendix A, there are a number of observations that can be made. The overall picture of Romanian SME and Mid-cap market is that it is relatively weak in innovation. While the number of SMEs is high, their share of the added-value is well below European average. The number of high-growth enterprises is very low. Most of the companies in high-tech sectors are in services with only few in manufacturing high-tech products. The role of services has been increasing in the economy and they now contribute to the gross added-value more than industry.

Overall, there were over 445,000 SMEs in Romania in 2015 (10-249 employees), amounting to 99.7% of all companies. They employed 67.5% of the private sector employees (more than the EU average) and accounted for half of the value added (but under EU average) (European Commission, 2017b).

The private sector’s overall performance is very polarised. A large share of companies in Romania are ‘veteran companies’ (130,000), having existed for more than 20 years, facing vulnerabilities such as low internationalisation rate, concentration of activities in low- and medium-tech fields and diminishing technological intensity.1 While 40% of the latter have been growing for the past 15 years, the rest of the veteran companies have been experiencing constant decrease in GVA (ibid).

In total, around 10% of the active businesses in Romania (over 57,000 companies) generated more than 55% of total GVA in the economy in 2015, and have been considered as forming the critical mass of Romania’s businesses.2 While the majority of them (52,000) are low- to medium-technology companies, existing for more than 20 years (part of the above mentioned ‘veterans’, but with constant growth), the number of high-performing firms in terms of GVA amounted to 13,100 and generated 41% of the GVA in the economy in 2015. Among them, only 630 high-tech manufacturing “elite” companies were identified, which have contributed to 38.3% of total GVA in the manufacturing industry in 2015.3 The high-performing firms have been using bank lending services more consistently than the rest and have had a history of better financial discipline. Businesses face difficulties to grow, as 95% of micro-enterprises and 60% of small companies remain small over a period of five years, while 35% of the small companies migrate to micro-enterprises and shrink.4

The features of the Romanian companies’ innovation performance will be described more in-depth in the next chapter.

3.2 Innovation performance in the private sector

Romania is a modest innovator country according to the European Innovation Scoreboard (EIS) report. While innovation performance decreased in 2012-2015, there was a slight improvement in 2016 (EIS 2017).

The total R&D investments in Romania are very low (around 0.5% of GDP in 2015), with very low private R&D investments (0.21% of GDP in 2015). However, this level of business R&D intensity is one of the lowest in EU. There is clearly a need for external funding to support innovation in Romania.

The business R&D activities are strongest in manufacturing (motor vehicles, transport, machinery) and ICT. Other industries with R&D activities include pharmaceutical and chemical industries. The large multinational companies active in Romania focus mainly on manufacturing and IT. They don’t have any significant R&D facilities in Romania, with some exceptions in the motor vehicles industry and supply chain (e.g. Renault, Continental) and IT sector (e.g. Adobe). The discussions with banks and other

2 ibid, Neagu 2017
3 ibid, Neagu 2017
4 ibid, Neagu 2017
stakeholders confirmed that, in general, these are the sectors where they see the growth potential as well.

The agri-food sector has been mentioned as another sector with relatively large potential for investments, however, the innovation activities in this sector are rather linked to the acquisition of equipment for primary production, which we have not taken into account within the framework of this study. The tech sector has been less in focus for loans from the banks, due to the lack of collateral that the companies in this field can offer.

Other sectors selected for Smart Specialisation (RIS3) include space and security, energy, environment and climate change, eco-nanotechnologies and advanced materials. Even though the potential is apparent especially in such bio-economy related sectors including energy and environment, current industrial activities in these areas are not very strong. The interviewees from the banking industry have also confirmed they see relatively modest potential for innovation-related loans in these sectors.

The total number of companies registering R&D activities dropped from 884 units in 2011, to 462 units in 2015 (National Institute of Statistics, INSSE.ro). Nevertheless, looking at the overall population of innovative companies, there are a total of 3,645 enterprises that consider themselves innovative (CIS, Eurostat). 69% of the innovative companies seem to be small-size (with 10-49 employees), 21% are mid-size (with 50-249 employees), the rest are large (250+ employees). 48% of the innovative companies (1,754 firms) were in the manufacturing sector, followed by 19% (706 companies) in wholesale and retail trade, and by ICT companies - 12.8% of total (469 companies) (see Table 1).

Table 1 Population of innovative enterprises by sectors

<table>
<thead>
<tr>
<th>Population of innovative enterprises by sectors</th>
<th>Number</th>
<th>10 - 49 employees</th>
<th>50 to 249 employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of innovative enterprises in 2014</td>
<td>3,645</td>
<td>2,527</td>
<td>786</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>21</td>
<td>:</td>
<td>:</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>1,754</td>
<td>1,092</td>
<td>435</td>
</tr>
<tr>
<td>Electricity, gas, steam and air conditioning supply</td>
<td>26</td>
<td>:</td>
<td>:</td>
</tr>
<tr>
<td>Water supply; sewerage, waste management and remediation activities</td>
<td>42</td>
<td>11</td>
<td>18</td>
</tr>
<tr>
<td>Construction</td>
<td>:</td>
<td>:</td>
<td>:</td>
</tr>
<tr>
<td>Wholesale and retail trade; repair of motor vehicles and motorcycles</td>
<td>706</td>
<td>:</td>
<td>:</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>302</td>
<td>228</td>
<td>58</td>
</tr>
<tr>
<td>Accommodation and food service activities</td>
<td>:</td>
<td>:</td>
<td>:</td>
</tr>
<tr>
<td>Information and communication</td>
<td>469</td>
<td>391</td>
<td>62</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>88</td>
<td>58</td>
<td>16</td>
</tr>
<tr>
<td>Real estate activities</td>
<td>:</td>
<td>:</td>
<td>:</td>
</tr>
<tr>
<td>Professional, scientific and technical activities</td>
<td>237</td>
<td>:</td>
<td>:</td>
</tr>
<tr>
<td>Administrative and support service activities</td>
<td>:</td>
<td>:</td>
<td>:</td>
</tr>
</tbody>
</table>

Source: Technopolis Group based on Eurostat
As a large share of innovation activities are directed outside of the innovative companies (e.g. almost 30% of companies engage in acquisition of machinery, equipment and software, 16% for acquisition of external knowledge) there is clearly a need for external funding to support innovation in Romania. Nevertheless, 20% of the companies (750) do engage in in-house R&D activities continuously.

In terms of the type of innovation expenditures most commonly encountered in Romanian companies, as shown in Table 2, almost equal volumes of expenditures (42%) have been invested in acquisition of machinery, equipment and software and for in-house R&D activities in 2014. 60% of the innovation expenditures have been performed by companies with more than 250 employees.

<table>
<thead>
<tr>
<th>Type of expenditures (annual)</th>
<th>Type of companies by number of employees</th>
<th>Total (€1000)</th>
<th>10-49 employees (€1000)</th>
<th>50-249 employees (€1000)</th>
<th>250+ employees (€1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Expenditures in in-house R&amp;D in 2014</td>
<td>42.4%</td>
<td>327,902</td>
<td>61,168</td>
<td>102,656</td>
<td>164,078</td>
</tr>
<tr>
<td>Expenditures in external R&amp;D in 2014</td>
<td>0.3%</td>
<td>28,897</td>
<td>n.a</td>
<td>n.a</td>
<td>25,577</td>
</tr>
<tr>
<td>Expenditures in acquisition of machinery, equipment and software in 2014</td>
<td>42.6%</td>
<td>329,581</td>
<td>55,047</td>
<td>67,475</td>
<td>207,059</td>
</tr>
<tr>
<td>Expenditures in acquisition of external knowledge in 2014</td>
<td>0.9%</td>
<td>68,844</td>
<td>8,160</td>
<td>n.a</td>
<td>n.a</td>
</tr>
<tr>
<td>Expenditures for the 'other' innovation activities in 2014 (including design, training, marketing, and other relevant activities)</td>
<td>0.2%</td>
<td>18,621</td>
<td>4,984</td>
<td>1,298</td>
<td>12,339</td>
</tr>
<tr>
<td>Total innovation expenditures in 2014</td>
<td>100%</td>
<td>773,845</td>
<td>130,586 (16.85%)</td>
<td>177,662 (22.9%)</td>
<td>465,597 (60.6%)</td>
</tr>
<tr>
<td>Average innovation expenditures per company (2014) for all innovative companies</td>
<td></td>
<td>212.3</td>
<td>51.7</td>
<td>226</td>
<td>1,400</td>
</tr>
</tbody>
</table>

Source: Technopolis Group based on Eurostat (CIS data); average innovation expenditures are calculated for the existing innovative enterprises shown in Table 1 (CIS data)

Almost half of the total business R&D expenditures in 2008-2014 have been concentrated in the manufacturing sector (47%), followed by the professional, scientific, administrative and support services sector (26%) and the ICT sector (12%) (Eurostat). Within the manufacturing sector, mirroring Romania’s trade specialisation presented in the previous section, the highest amounts invested in R&D are in the manufacturing of motor vehicles, trailers and semi-trailers sector (€44.5m on average per year, in 2008-2014) (authors’ calculations based on Eurostat).

3.3 Access to finance in Romania

Whether access to finance is a problem for Romanian SMEs, there seems to be somewhat mixed messages. On one hand, most SMEs don’t seem to view this as a serious problem. However, other studies would indicate that there are SMEs that find access to funding as one of their main concerns. Furthermore, access to funding seems to be a significant challenge to specific groups of SMEs, especially start-ups. Only 6% of start-ups were planning to use bank loans as a future source of funding. Financing growth ideas was considered a very difficult or difficult challenge to 74% of the start-ups.
The most relevant sources of funding for Romanian firms were considered credit lines and overdrafts (59% of SMEs compared to 55% at EU level). Bank loans were the next most relevant source (35% of SMEs in Romania versus 50% at EU level), at the same level with trade credits (35%) and other loans (35%).

A striking 81% of Romanian SMEs state that they do not intend to access structural funds in the future, in spite of the significant availability of EU funding. The low rate of success for companies can be a factor deterring them from applying, as only 0.18% of companies answered they tried to access structural funds and obtained an approval of their project. The main perceived obstacles to accessing EU funding are the excessive bureaucracy and instability of the legislation (for 77.4% of companies), insufficient information on the available funding (44.2%), insufficient own fund for co-financing (38.23%), unsuitable eligibility criteria (36.7%), and the high cost of loans and insufficient guarantees (34.4%).

Appendix A provides a detailed overview of the available sources of funding for Romanian entrepreneurs and innovators.

The results of the interviews show that over the past two years, the access to funding for early-stage companies and start-ups has improved, as it has for SMEs. Several interviewees mentioned the gap in funding for scale-ups, as there are no public funding programmes or financial instruments specifically targeting this segment of the companies in Romania. The stakeholders interviewed emphasized the challenges for innovative activities to scale, as “innovators still have significant barriers for accessing bank financing, while risk-capital can only be mobilized with a very solid strategy, business-plan and team, and the Romanian companies”. Venture capital and private equity funding focuses mostly on the later stages, namely on buyouts. The availability of early stage capital is very limited as both the business angel and early stage venture capital fund activities are at a very emergent stage in comparison to other EU countries, even if on a growing trend.

Local national guarantee schemes are not trusted and thereby less effective. Several new financial instruments have been very recently launched with the help of European funding. Yet, it is too early to see what their eventual impact on the markets will be. However, as the guarantees and support they offer are managed by European entities, the trust in them is likely to be much higher than towards the local guarantees. Hence, it can be expected that these instruments will have a positive impact on the Romanian SME and Mid-cap market, once they become active in full scale.

Most of the newly introduced European based financial schemes target especially SMEs and to some extent also Mid-caps. While some of the schemes are more general in nature, others emphasise innovation and exports as the main focus of funding. Only agricultural and creative industries have been targeted with sector specific schemes, while other schemes are available to all industries.

Thus, the market is already well covered with several debt and equity instruments making use of European interventions, as is evident in Figure 4.

The ex-ante assessment for financial instruments for Romanian SMEs in the 2014-2020 programming period published in 2015 estimated a total market gap of €3.377b in financing from financial instruments. This includes the gap in bank financing (guarantees and risk sharing loans), estimated at up to €1.893b (for all sectors excluding agriculture). However, while this shows the gap in funding felt in 2015 for general SME support, there is no estimated market gap for the innovation sector.

In the meantime, the EIF bank financing has planned to deploy €150m for the next five years (€30-40m per year) specifically targeting innovation in Romania, according to interviews. Together with the InnovFin Mid-cap facility (which covers several countries in the region, totalling €560m for all

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countries), these are the private sources of bank funding that are directly targeting innovative SMEs and Mid-caps in Romania.

Figure 4 Debt finance gaps & European interventions (global volume) – tickets issued or planned in Romania

![Diagram showing debt finance gaps and European interventions.]

Source: Technopolis Group

However, the new EIF doesn’t seem to fulfil the market gap for innovation. Interviews with banks indicate that there seems to be space for new sources of funding for innovation, especially ones that offer debt funding in combination with grants to companies.

Many banks emphasised the importance of having a significant share of grant funding. Based on the interviews, the size of the grant component shows a clear lower limit at 15-20%. Below this level, the grant component is not believed to be sufficient to make the loan attractive enough for the banks or the companies. Increasing the size of the grant component is believed to increase the attractiveness of the loan, but not significantly. Given the grant levels available from public funding schemes (typically 35-50%), the grant component shouldn’t exceed 40% of the loan. Otherwise it would be in direct competition with public funding schemes. It could also make it more challenging to introduce future loans with significantly smaller or no grant component to the market.

All the interviewees also emphasised the need to offer funding for innovation based on as wide definition of innovation as possible. As previously shown, based on the CIS survey, the most frequent type of innovation that companies in Romania engage in, is related to acquisition of new equipment. The banks generally advised to include this type of innovation activity as eligible for a company to receive the loan.

In addition, the element of technical assistance in identifying whether the applicant company is undertaking an innovation activity has been considered critical for the efficient and successful deployment of the new financing scheme for innovation. The following chapters illustrate the findings of the market analysis and the design of the instrument based on the available evidence.

3.4 Market analysis for an innovation support facility

This chapter presents the results of the market analysis for the innovation support facility, based on one hand on data from general business as well as R&D and innovation statistics (Eurostat) and on
qualitative data collected from five interviewed banks that make up 53.38% of the banking market in Romania.

3.4.1 Estimation of market size based on general business and innovation statistics

Based on Eurostat data, the total number of innovative enterprises that serve as baseline for the calculation of eligible companies amounts to 3,645, the majority (69%) of which being small. Almost half of the total number of innovative companies are in manufacturing fields, while the second largest share are active in the field of ICT. A sub-category of the generally innovative companies are the companies performing in-house R&D activities, reaching around 797 companies. The latter form a second type of companies that we will take into consideration for the estimation of the market size that could potentially meet stricter eligibility criteria for the innovation component.

Table 3 Number of innovative companies with potential eligibility and interest in the instrument

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Sector</th>
<th>Total nr</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall innovative companies</td>
<td>Total</td>
<td>3,645</td>
<td></td>
</tr>
<tr>
<td>Number of innovative enterprises (all sectors) (2014, CIS, Eurostat)</td>
<td>10 to 49 employees</td>
<td>2,527</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>50 to 249 employees</td>
<td>786</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>250+ employees</td>
<td>332</td>
<td>9.1%</td>
</tr>
<tr>
<td>Number of companies continuously or occasionally engaged in in-house R&amp;D* (2014, CIS, Eurostat) (rounded numbers)</td>
<td>Total</td>
<td>797</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 to 49 employees</td>
<td>552</td>
<td>69%</td>
</tr>
<tr>
<td></td>
<td>50 to 249 employees</td>
<td>171</td>
<td>21%</td>
</tr>
<tr>
<td></td>
<td>250+ employees</td>
<td>72</td>
<td>9.1%</td>
</tr>
</tbody>
</table>

Source: Technopolis Group; *The calculations are adjusted by bankability (assumed to be 52% generally for innovative enterprises and 75% for companies engaged in R&D), and by interest in taking up loans (assumed at 35%, based on data from the SAFE survey on access to finance in Romania).

In order to estimate the number of companies that would be eligible and interested in taking up an EBRD loan for investments in innovation, two types of assumptions were made related to the companies’ level of bankability and general interest in taking up loans. Firstly, in terms of bankability, based on findings in Appendix A, the share of Romanian companies that are bankable and therefore eligible to obtain a loan reaches 52% of all companies. Nevertheless, according to the same source, companies that are highly performant in terms of GVA and engaged in R&D tend to be more disciplined in managing their financial accounts. Therefore, in the case of companies engaged in R&D continuously or occasionally, we have considered a bankability rate of 75%. A second assumption made for the estimations of the market size is related to the share of companies that generally show interest to obtain a bank loan in the future, which reaches 35% of all companies at Romanian level.

Based on the above assumptions, out of the total of 3,645 innovative companies, the estimated number of companies that show potential to be eligible and interested in innovation support through a loan

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7 estimations for size-classes are based on assuming the shares of companies by size-class are similar to the ones for overall innovative companies
8 based on Neagu, 2017
9 based on SAFE survey data
would reach around **707 companies** (see Table 4). It is important to bear in mind that this is a conservative estimation, since even though only roughly 35% of Romanian companies have indicated an interest towards bank loans, this share could be higher, given that in general innovative companies tend to be more competitive and more interested to take on loans to support their growth.

**Table 4** Summary table on the estimated number of companies eligible and interested in taking up a loan for innovation support

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Total number</th>
<th>Number of companies that would be eligible and interested in the loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of companies continuously or occasionally engaged in R&amp;D</td>
<td>797</td>
<td>209</td>
</tr>
<tr>
<td>Remaining number of innovative enterprises not engaged in R&amp;D</td>
<td>2,848</td>
<td>498</td>
</tr>
<tr>
<td>Number of innovative enterprises (all sectors)</td>
<td>3,645</td>
<td>707</td>
</tr>
</tbody>
</table>

Source: Technopolis Group and Eurostat, CIS data (2014), adjusted by bankability and interest to take up a loan

Furthermore, according to the available statistical data from the Community Innovation (CIS) survey (Eurostat), the total innovation expenditures in Romania have amounted to over €775.8m in 2014 (Table 2). Around 60% of the total expenditures have been performed by larger companies of over 250 employees. It is also interesting to note that total expenditures in in-house R&D are similar to the amount of expenditures in acquisition of machinery, equipment and software in 2014 (up to €327-9m) (Table 5).

**Table 5** Average expenditures for innovation and R&D in Romania, 2014

<table>
<thead>
<tr>
<th>Annual R&amp;D and innovation expenditures in 2014¹⁰</th>
<th>Total</th>
<th>10-49 employees</th>
<th>50-249 employees</th>
<th>250+ employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (€1000)</td>
<td>773,845</td>
<td>130,586</td>
<td>177,662</td>
<td>465,597</td>
</tr>
<tr>
<td>Average per overall innovative company</td>
<td>215</td>
<td>50</td>
<td>225</td>
<td>1,400</td>
</tr>
<tr>
<td>(rounded figures) (€1000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average per company engaged in in-house R&amp;D</td>
<td>410</td>
<td>110</td>
<td>597</td>
<td>2,260</td>
</tr>
<tr>
<td>(rounded figures) (€1000)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Technopolis Group based on Eurostat, CIS data

All in all, as shown in Table 5, the average expenditures for all enterprises that self-declare innovative activities can reach €215k per company, while for companies continuously or occasionally engaged in R&D the average total expenditures on in-house R&D may amount to €411k per company.

However, the average innovation expenditures vary significantly among the different sizes of enterprises and among R&D intense and broadly innovative companies. Generally innovative small companies (10-49 employees) tend to spend on average €50k per company on innovation, while companies engaged in in-house R&D would potentially spend €110k per year. The middle-sized innovative companies spend

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¹⁰ estimations for the average expenditures per companies engaged in in-house R&D assume that there are roughly equal shares of small, medium and large-sized companies engaged in in-house R&D as for the generally innovative companies
on average €225k, while the mid-sized companies engaged in in-house R&D may spend up to €600k per year per company. These average figures are close to the estimations made by the interviewed banking sector representatives for these two size classes of companies. The average expenditures for the large companies (250+ employees) can reach €1.4m for generally innovative companies or €2.26m for companies engaged in in-house R&D. It is nevertheless important to treat these figures with caution, since there were no data available on the number of companies engaged in in-house R&D by size-class.

A further source of data on companies performing R&D in Romania stems from the Romanian National Statistics Institute (INSSE.ro), which we used to counterbalance the CIS survey data. In total, there are 462 private companies registered as performing R&D activities in 2015. As previously, after adjusting this number based on a bankability rate of 75% and a likelihood to be interested in the loan of 35%, the resulting number of companies that would be eligible and possibly interested in the loan would reach **120 companies registered with R&D activities.** Since there is no publicly available data on the expenditures of these R&D intense companies on R&D and innovation by size class of company, it is difficult to estimate the average expenditure per company in an accurate manner. On average, companies spend up to €630k per year with expenses with R&D. Nevertheless, this number might be largely overstated, since the figures also reflect the performance of large companies including ones of over 3,000 employees.

**Table 6 Summary table for companies registered with R&D activities**

<table>
<thead>
<tr>
<th>Indicator</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of companies registered with R&amp;D activities (2015)</td>
<td>462</td>
</tr>
<tr>
<td>Number of companies eligible and possibly interested in loan</td>
<td>120</td>
</tr>
<tr>
<td>Total annual expenses on R&amp;D, private sector (2015) (€1000)</td>
<td>291,341.6</td>
</tr>
<tr>
<td>Average annual expenditure per R&amp;D intensive company (€1000)</td>
<td>630</td>
</tr>
</tbody>
</table>

Source: Technopolis Group based on INSSE.ro

### 3.4.2 Market size based on estimations from the Romanian banks

Information was also collected from six Romanian banks, out of which only five were able to provide qualitative estimations on the number of companies they would be able to target. In total, the banks that provided data are five of the largest seven banking institutions in terms of size, covering up to 53.38% of the assets in the Romanian banking market. Therefore, the data collected below can be considered representative.

The data provided by the banks has been adjusted downwards by 15%, in order to exclude the market potential for the agricultural sector, which was captured by the banks in their estimations. The primary production sector is not considered within the scope of this innovation funding facility due to the fact that the innovation envisioned by the responding interviewees from the banks was largely related to e.g. the purchase of equipment and machinery for basic farming activities.

Considering that there is a total of seven large banks in Romania that are plausible to take up the financing instrument, which make up for over 73% of the total market size, based on banks’ calculations,

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11 A formal request has been made to the National Statistics office INSSE.ro, however data could not be retrieved in due time before submission of this report (16 October 2017).


13 The banks indicated that the two largest sectors were agri-food and manufacturing. Assuming, that both together cover 2/3 of the target group, that would mean around 25-30% of the potential deal flow originating from the agri-food sector. Out of this, we estimated that roughly half is for farming, which gives us the 15%. The real share of farming could be even higher, but as the banks’ estimates were assumed to be conservative, we didn’t want to overly correct them downwards.
the overall estimated number of target companies reaches up to 800 companies that would be eligible and interested to take up financing from the facility (see Table 7). However, when asked how many companies would fit the stricter innovation criteria, the general conclusion based on the interviewees’ sceptical feedback is that roughly up to 10% of the above pool of companies would be eligible. Therefore, the target group of highly innovative companies that would take up the financing is estimated at only up to 80.

### Table 7 Market estimation based on data collected from the interviewed banks

<table>
<thead>
<tr>
<th>Answers</th>
<th>Market share by bank (% of Romanian market)</th>
<th>Average number of target beneficiaries estimated by banks (rounded values, excluding primary production sectors)</th>
<th>Average size of loan (€1000) (rounded values)</th>
<th>Total amount (€1000) (rounded values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank 1</td>
<td>8.49</td>
<td>60</td>
<td>1000</td>
<td>60,000</td>
</tr>
<tr>
<td>Bank 2</td>
<td>16.28</td>
<td>215</td>
<td>100</td>
<td>21,500</td>
</tr>
<tr>
<td>Bank 3</td>
<td>13.15</td>
<td>215</td>
<td>50</td>
<td>10,750</td>
</tr>
<tr>
<td>Bank 4</td>
<td>7.16</td>
<td>50</td>
<td>500</td>
<td>25,000</td>
</tr>
<tr>
<td>Bank 5</td>
<td>8.3</td>
<td>30</td>
<td>400</td>
<td>12,000</td>
</tr>
<tr>
<td>Total</td>
<td>53.38</td>
<td>570</td>
<td>225</td>
<td>129,250</td>
</tr>
</tbody>
</table>

**Estimated market size for all broadly innovative companies that would be eligible and interested in the loan (adjusted from 53.38% to 73% of total market):** 780-800

**Estimated market size for more innovative companies (10% of broadly innovative companies):** 80

Source: Technopolis Group based on data from interviews with five of the largest Romanian banks; the average number of target beneficiaries and the total estimated amount per bank have been calculated by excluding the agri-food sector or other primary production sectors (considered at 15%) from the banks’ assessment.

The above estimations have been made within the context of a grant component of 20% of the total loan. The majority of the interviewed representatives from the banks considered that a grant component of minimum 15-20% would be suitable (see next chapter for a more in-depth discussion). Below this threshold, the grant component becomes significantly less interesting for the majority of the banks. At the same time, the banks were not very sensitive to higher levels of the grant component. Therefore, as long as the grant component reaches the minimum threshold above, the banks’ estimations would not change for even higher levels of the grant.

Moreover, it is interesting to note that the interviewed banks cover complementary niches in the Romanian market in terms of the size of the client companies. This is especially visible when analysing the average ticket size envisioned by the banks, which ranges from €50k to €1m. Nevertheless, the weighted average ticket size mentioned by the banks was about €225k, considering the varying ticket sizes and number of potential clients foreseen by the interviewed banks.

In total, the estimated total size of EBRD loan would reach up to €129m for the interviewed banks.

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3.5 Summary assessment for the appropriate EBRD instrument for the Romanian market

Based on the available evidence presented above, we can compile a summary estimation of the suitable size of the financing instrument for the Romanian market. Considering both methods for estimating the number of innovative companies that would be likely to be eligible and interested in the loan, Table 8 shows the different scenarios for the EBRD funding instrument.

<table>
<thead>
<tr>
<th>Summary assessment of the market size for the financing facility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Estimation method based on statistical data (method 1)</td>
</tr>
<tr>
<td>Broadly innovative companies</td>
</tr>
<tr>
<td>Estimation method based on banks' interview answers (method 2)</td>
</tr>
<tr>
<td>Broadly innovative companies</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of eligible companies that would take up the loan</th>
</tr>
</thead>
<tbody>
<tr>
<td>500</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Average size of loan&lt;sup&gt;16&lt;/sup&gt; (€1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Estimated amounts for the EBRD facility by types of companies (€1,000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>200,000</td>
</tr>
</tbody>
</table>

Source: Technopolis Group based on Eurostat (CIS) and INSSE.ro (rounded figures); average ticket size has been considered the double of the average yearly expenditures recorded by the companies (based on CIS data)

As a result of both methods of calculation presented above, the estimations for the overall facility show a similar value for the number of companies that would be eligible and interested in taking up a loan from the facility, ranging between **700-800 companies** that are broadly innovative.

Aside from the broadly innovative companies that would be eligible for the loan, we have calculated a second category of companies that would be eligible in case of stricter innovation criteria. According to the banks’ estimation, around 80 companies would be eligible in this case. After adjusting for bankability and interest in taking up a loan, statistical data shows that there are roughly 120 companies that are registered as performing R&D, and around 200 companies that self-declare as performing in-house R&D. Therefore, as we assume the banks’ estimations to be conservative, we believe the number of companies that would be eligible in case of stricter innovation criteria would be closer to **150**, since it is possible that the banks do not capture this type of companies in their current financial information. Therefore, the remaining moderately innovative companies would reach 650.

Considering that that the average ticket size covers two years of project implementation, the average ticket size calculated based on statistical data on R&D and innovation expenditures shows varying levels, ranging from €400k to €1,200k. Due to the fact, that the target companies would need to have less than

<sup>15</sup> performing in-house R&D continuously or occasionally according to CIS

<sup>16</sup> Method 1: Based on an average duration of 2 years of the innovation activity/project the loan is applied and used for, i.e. 2 times average annual R&D and innovation expenditure. Method 2: Total is based on weighted average of the banks’ estimates. For more innovative companies, the same estimate as for method 1 is used.
3,000 employees, an average ticket size of €800k for more R&D intense companies would be more plausible. At the same time the ticket size of €200k for the modestly innovative companies would be the potentially the more plausible size of the awarded loans, which is closer to the banks’ appraisal.

Therefore, we consider that introducing a debt + grant financing facility of up to €250m would be feasible to cover the needs and potential of the Romanian market for innovation.

Table 9 Estimated size of the EBRD financing facility

<table>
<thead>
<tr>
<th></th>
<th>Modestly innovative</th>
<th>R&amp;D intense</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number companies</td>
<td>650</td>
<td>150</td>
<td>800</td>
</tr>
<tr>
<td>Average ticket size</td>
<td>200</td>
<td>800</td>
<td>310=5</td>
</tr>
<tr>
<td>(€1000)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total facility sum</td>
<td>130,000</td>
<td>120,000</td>
<td>250,000</td>
</tr>
<tr>
<td>(€1000)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Technopolis Group

Given the current situation in the Romanian financial markets, especially with the recently introduced InnovFin and other instruments as well as the ample availability of ESIF funds over the next few years as the current structural funds funding period approaches its end, we suggest that a new EBRD instrument is designed appropriately below this estimated maximum volume. Hence, our suggestion is to design the EBRD instrument at the level of max €150m–€200m. Given the estimates from the 5 banks that have shown most interest towards a new EBRD instrument, it would be highly likely that the instrument would be picked up fully by the Romanian banks.
4 Proposed key features of the programme for Romania

The programme is planned to consist of 3 components: (1) a loan, (2) a grant, and (3) technical assistance. EBRD has successfully implemented a programme for supporting energy efficiency investments in Romania. This earlier programme consisted of the same 3 components as the planned new programme. It is therefore appropriate that experiences from the earlier programme are used in designing the programme structure and detailed implementation.

4.1 Rationale

Innovation activities in Romania are modest. To secure future growth and catching up with the rest of Europe, Romanian economy must be able to capture the benefits of innovation. This can result from innovative companies investing more in R&D and innovation, from previously non-innovative companies becoming innovative, and from new innovative start-up companies.

The already innovative companies can benefit from various public support schemes aimed at innovation and innovative companies. Many of them are also financially viable and can use financial products already available on the Romanian financial markets. However, some innovative companies may be in a financially challenging situation where more risk-tolerant external funding or incentives is required for the company to be able to engage on a high-potential innovative activity. If the company has specific challenges related to collateral, Innovfin guarantee instruments may provide a viable solution. However, if the challenge is more related to high technological and/or commercial risks, the combination of EBRD loan and Horizon2020 grant may prove more effective.

Most innovative start-up companies are not looking for external debt funding. Instead, they seek for equity investments from venture capital funds or business angels. It is therefore not likely, that start-ups would be a viable target group for an instrument that combines a loan and a grant. As start-ups grow to scale-ups, they are in a better position to use external debt funding. Scale-ups are a viable target group for instruments combining loans and grants or Innovfin guarantee instruments. Innovative start-ups are innovative companies; thus, they merge with the already innovative companies in the scale-up stage.

The most promising target group for instruments combining loans and grants is non-innovative companies aiming to become innovative. The first step in becoming innovative is often the acquisition of new technologies. This exposes the company to the potential benefits of new technologies, and can inspire them to consider further new technologies and development of new or significantly improved products, services, processes, and business models. Here, the incentive effect of the grant combined with the financial resources provided by the loan allow the company to pursue new technologies or innovation they would otherwise perceive as too risky or would not have the resources or competences to attempt. The instrument is even stronger when the loan and grant are further combined with technical assistance, helping companies realise their competence and resource gaps, see the potential of innovation, and understand how to capture it.

Public support schemes focusing on innovation in Romania are either targeted to start-ups or already innovative companies. There are also more general schemes focusing on investments and productivity, which companies may benefit from. However, the impact of these schemes on innovation is limited, since they don’t specifically require or encourage innovation.

Given the current situation in Romania with respect to innovation and what there is in the financial markets to support it, there seems to be an identifiable gap in the financial markets (market failure) that the proposed new EBRD instrument can address. The gap is related to the availability of appropriate funding for non-innovative companies with a potential to become innovative. Many of these companies are currently not interested in bank loans, nor can they access public support schemes aimed at innovation. While they may benefit from general public support schemes, these schemes don’t encourage them to become innovative, or provide technical support which could help companies to realise the potential benefits of innovation.
We therefore suggest, that the **main rationale for the new EBRD instrument** is to address this market failure, and that the main impact and therefore the key objective of the programme **is to increase the number of innovative companies in Romania by encouraging previously non-innovative companies to engage in innovative activities.** This doesn’t exclude the possibility of targeting also already innovative companies, which lack the sufficient incentives, encouragement and have difficulties in accessing the necessary funds for innovative activities.

The direct impact of the new EBRD instrument is in the number of innovative companies (previous non-innovative, less innovative), and in the increased private R&D and innovation investments (both previously non-innovative and already innovative, i.e. both less and more innovative). The indirect impacts or spill-over effects are expected to materialise through the following mechanisms:

- Other companies learning from the example of these companies and engaging in innovative activities.
- Increasing demand for innovation skilled labour, as the companies see the benefits of innovation and engage in further innovative activities.
- Collaboration and networking, as the companies need further and complementary competences from other (innovative) companies and public research organisations.
- Economic growth and new jobs, as the companies become innovative and thereby more competitive in the markets.
- Innovation allows companies previously active only on domestic markets to enter international markets, thus enhancing exports.
- Acquiring new technology allows companies to realise the potential benefits of innovation, thus encouraging further and potentially more ambitious investments into innovative activities.

The **loan component provides the necessary financial resources** needed for the implementation of the innovative activities. The **technical assistance component helps companies understand their innovation capabilities, plan their innovative activities and know how to implement them.** The lower-level grant component allows companies to engage in less ambitious innovative activities, when they lack the courage or competences to aim higher. This is often a necessary step in becoming more innovative later. The higher-level **grant encourages companies to seek for more ambitious innovative activities, thus facilitating their development into innovative companies.**

### 4.2 Eligibility

The EBRD instrument is planned to be based on the InnovFin criteria. These criteria seem valid for establishing that the company is innovative (more innovative company) or aims to engage in innovative activities (less innovative company). However, the definition and range of innovative activities is very wide. Therefore, more detailed guidelines are needed for establishing eligibility, especially in view of the grant component.

Based on the more detailed analysis of the InnovFin criteria in Appendix C, we propose that for the **less innovative companies**, after the company has passed the general exclusion criteria, the main eligibility criterion would be the **purpose of the loan** (see the box below).

As the discussion regarding risks (Chapter 4.3.4) clearly indicates, new to the company is sufficient only, if it is combined with an identifiable commercial risk. In practice, this means entering new geographical or otherwise different markets (e.g. new industries, new applications for existing products, etc.).

Technological risks are always related to adopting new technologies with limited access to previous experiences (e.g. first user of the technology/methodology/business model/etc. in the country or industry sector) or to developing new or significantly improved products, services, processes or business models and introducing it to the market. Technological risks are often linked to commercial risks. Willingness of potential customers to buy the new or significantly improved product or service is a clearly identifiable commercial risk, even if the related technological risk would not materialise.
More innovative companies are characterised by their engagement in R&D and innovation activities in a more regular basis. This means that most of them have experience in developing new or significantly improved products or services and introducing them to the markets. It is therefore more likely, that they are eligible, because they can be regarded as innovative, i.e. they comply with one or more of the criteria for an innovative company (see the box below).

Hence, a more innovative company can be eligible either because of the purpose of the loan or by qualifying as an innovative company (i.e. verifiably invested in R&D and innovation, or has verifiably innovation potential).
Guidelines for screening

To help the banks to screen potential eligible clients, we propose that EBRD provides guidelines to establish which activities are not considered as innovation activities. The same applies for screening the novelty and innovativeness of the product, service or process the company intends to develop.

This section is based on the OECD Oslo Manual\textsuperscript{17}. Most important sections are 4.3.3 and 4.3.4, which can be used for screening purposes, i.e. excluding companies which don’t propose anything innovative and/or the risk of technological or industrial or business failure is not identifiable or sufficient.

\textsuperscript{17} http://dx.doi.org/10.1787/9789264013100-en
4.3.1 Novelty

The minimum requirement is that the loan is used to fund innovative activities that are new or significantly improved to the company, or that the company itself is verifiably an innovative company. The following chapter discusses the different types of innovation that the innovative activities could focus on. These range from the development of new or significantly improved products and services to new or significantly improved production processes (incl. acquisition of new technologies and/or machinery), and to new or significantly improved business processes and organisational changes.

4.3.2 Types of innovation

**A technologically new product/service** is a product/service whose technological characteristics or intended uses differ significantly from those of previously produced products/services. Such innovations can involve radically new technologies, can be based on combining existing technologies in new uses, or can be derived from the use of new knowledge.

**A technologically improved product/service** is an existing product/service whose performance has been significantly enhanced or upgraded. A simple product/service may be improved (in terms of better performance or lower cost) through use of higher-performance components or materials, or a complex product/service which consists of a number of integrated technical sub-systems may be improved by partial changes to one of the sub-systems.

**Technological process innovation** is the adoption of technologically new or significantly improved production methods, including methods of product delivery. These methods may involve changes in equipment, or production organisation, or a combination of these changes, and may be derived from the use of new knowledge. The methods may be intended to produce or deliver technologically new or improved products, which cannot be produced or delivered using conventional production methods, or essentially to increase the production or delivery efficiency of existing products.

**Organisational innovation** in the firm includes the introduction of significantly changed organisational structures; the implementation of advanced management techniques; and the implementation of new or substantially changed corporate strategic orientations. Organisational change counts as innovation only if there is a measurable change in output, such as increased productivity or sales.

4.3.3 Changes that are not innovation – basis for preliminary screening by the banks

Changes which are insignificant, minor, or do not involve a sufficient degree of novelty; or changes which make “other creative improvements” where the novelty does not concern the use or objective performance characteristics of the products or in the way they are produced or delivered but rather their aesthetic or other subjective qualities.

Typical non-novel / not innovative changes include:

(a) **Ceasing to use a process or to market a product.** Stopping doing something is not an innovation, although it may improve a firm’s performance. For example, innovation does not occur when a television constructor ceases to produce and sell a combined television and video, or a property development agency or construction company stops building retirement villages.

(b) **Simple capital replacement or extension.** The purchase of more machines of a model already installed, even if extremely sophisticated, is not a technological process innovation. A new model is defined as one with clearly improved specifications, not merely one with a new number or title in the manufacturer’s catalogue. In the case of software, for example, the purchase of a new version of a set of

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18 Which in practice means that the company has a verifiable track record of earlier R&D and/or innovation activities as indicated by the criteria described in Chapter Error! Reference source not found.
programs for Windows may be considered a technological process improvement, whereas the acquisition of interim updates which do not add significantly to the programs' performance is not.

(c) Changes resulting purely from changes in factor prices. Innovation requires a change in the nature (or use) of the product or process. A change in price of a product or of the productivity of a process resulting exclusively from changes in the price of factors of production is not an innovation. For example, innovation does not occur when the same model of PC is constructed and sold at a lower price simply because the price of computer chips falls.

(d) Custom production. Unless the one-off item displays significantly different attributes to products that the firm has previously made, it is not to be regarded as a technological product innovation.

(e) Seasonal and other cyclical changes. In certain industries such as clothing and footwear (or food) there are seasonal changes in the type of goods or services provided which may be accompanied by fashion changes in the products concerned. Typically, a given type of product will reappear after a period of absence. This should not be treated as innovation unless the returning product has been technologically improved. For example, the introduction of the new season’s anoraks by a clothing manufacturer is not an innovation unless, for example, they have a lining with improved characteristics; nor is the annual reopening of a store’s ski department.

(f) Product differentiation. Product differentiation is the introduction of minor technical (or aesthetic) modifications in order to reach a new segment of the market, to increase apparent product range or to reposition a product in relation to a competing one. It can only be considered technologically improved product innovation if changes significantly affect the performance or properties of the product concerned or the use of materials or components therein. For example, the retitling and repackaging of an existing soft drink popular with older people, to establish a link with a football team in order to reach the youth market, is not an innovation. New models of complex products, such as cars or television sets, are product differentiation if the changes are minor compared with the previous models, for example offering a radio in a car. If the changes are significant, based on new designs or technical modifications to sub-systems for example, the improved products could be considered technologically improved product innovations.

4.3.4 Risk of technological or industrial or business failure

The loan must be used for innovative activities which include a risk of technological or industrial or business failure. For this to be verified, the risk must be identifiable, and its consequences enough to constitute a failure.

Technological risks are related to the ability to reach the planned functional or operational specifications. Total failure would indicate that there is a possibility that the new product, service or process can’t be reached, and subsequently, the investment into the innovative activity could not be commercially exploited. Partial technological failure means that the functional or operational specifications can be partly reached, i.e. the new product, service or process represents an improvement but not to the extent planned.

Technological risks are typically related to the development of new or significantly improved products and processes. Technological risks are therefore identifiable typically only when the innovative activity includes R&D or other similar innovation activities or introduction of a new technology (e.g. in the form of new machinery or equipment) into a process, where it has not been used before. In the latter case, the risks are identifiable only if there is no access to prior experience from a similar introduction or the access is limited or too costly to allow access to sufficient information to eliminate the risk.

Hence, technological risks are likely to be relevant only with more innovative companies and when the purpose of the loan is to develop a new or significantly improved product, process or service.

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Sometimes also services, if they include a technological component.
Industrial and business failures (later referred as commercial failures) are related to the ability to reach the planned commercial benefits. This can mean that the projected commercial objectives can’t be reached because the new or significantly improved product, service or process is not received by the markets as planned. Alternatively, this can mean that the new or significantly improved product, process or service is too costly and therefore, the profit margins are below planned. If the new or significantly improved product, process or service is totally or almost totally rejected by the markets (either because it doesn’t offer significant enough improvement to existing ones, or because of a more competitive novelty entering the market), or the eventual profit margins drop to negative, it can be regarded as total commercial failure.

Commercial failures are related to all innovation activities, including the less innovative ones. For example, acquiring new technology in the form of production machinery can allow the company to increase its production and thereby attempt to enter new markets or increase its market share in the existing markets. Depending on the eventual profit margins after the new technology has been introduced into the production process and the developments in the market demand, the investment may prove a commercial success or failure.

Since the concept of commercial failure is somewhat vague and often related to the objectives described in the company’s business plan (where e.g. overly optimistic commercial objectives are always subject to commercial risk), it is important the verification is based on key common principles. Furthermore, these common principles must be sufficiently liked to innovation (novelty).

It is therefore proposed, that the following common principles are used in verifying the existence of sufficient commercial risk:

- **Risk can be identified** and verified,
  - If the new technology is used to develop a significantly improved or new product to be introduced to the existing client base. For what is significantly improved or new, the guidelines described in Chapter 4.3.3 can be used.
  - If the new technology allows significantly higher production volumes and therefore the company needs to find new markets or client segments for their products. The risks are typically very easy to identify especially in cases, where the new clients/markets represent internationally new geographical areas or client segments. However, new markets and clients within the same country can also be risky, especially if they represent a new application area or industry.

- **Risk can’t be identified** and verified,
  - If the new technology is merely used for replacing old one and thereby increasing profit margins with existing products (or services) and existing client base. Although, the risk for commercial failure may exist, it originates either from a technological risk (which can be identified and verified separately, thus making the company eligible), or from poor planning (which doesn’t make the company eligible).
  - If the company’s business plan is unrealistic or overly optimistic, thus implicating high risk of reaching the targeted commercial objectives. This can be regarded as normal commercial risk not related to the innovative activities. It is also often result of poor planning, which doesn’t make the company eligible.

In summary, the identification and verification of risk of technological or industrial or business failure can be simplified into assessing:

- Technological risk related to the development or adoption of a new technology into a new or significantly improved product, service or process, i.e. how certain are we that is can be made to function, operate or have the planned features and specifications as planned. Here, the key is to identify what experiences are available from other companies or other products and services to allow to identify whether the risks are significant enough to make the company and its innovative activities eligible. For example, if several companies in the same sector already use the same new technology in a similar way, the technological risks are practically non-existent. It would be advisable to...
the technological risk as eligibility criteria mainly in cases, where the company is aims to develop a new or significantly improved product (or service). It is possible to use it also in cases where the company develops a new or significantly improved process (e.g. introducing a new technology in the form of a new production machinery), but then the novelty requirement should be stricter than new only to the company (i.e. new to the sector and/or country).

- **Commercial risk** related to the development or application of a new technology to develop a significantly improved or new product to be introduced to the existing client base. This may be closely related to a technological risk. The difference is, that even if the technological risk doesn’t materialise and the functionality and operational specifications can be reached, it is not certain that the markets/clients will accept and buy the new or significantly improved product or service. Furthermore, if the new or significantly improved is a service, technological risk may not be identifiable, but the commercial risk often is.

- **Commercial risk** related to significantly higher production volumes and therefore the company needs to find new markets or client segments for their products. New technology may also facilitate the development of new business models (e.g. mass tailoring, distributed manufacturing, servitization, etc.), which may also require extending to new clients and markets (or facilitate the introduction of new or significantly improved products or services, also to the existing client base). Entering new markets, whether they are new geographical areas, new industries, or other new client segments previously little or unknown or with significantly different requirements, always include identifiable risks, which may be significant especially when entering new international markets.

### 4.4 The loan component

It should be noted, that several banks in Romania have had experience with the earlier EBRD energy efficiency programme. During the interviews, the banks referred to this earlier programme in a very positive manner, indicating that a programme with similar features would be well received.

The interviews with the Romanian banks clearly indicated that the new programme should have the following features:

- Credit line to the banks should be issued in local currency. This is because most of the loans in the Romanian banks are in local currency.

- The process for verifying the eligibility of the company and innovativeness of its activities should be straight-forward, understandable, and quick. The proposed process in Chapter 0 attempts to respond to this.

- The credit line for the banks should be made available at market cost, or if possible below it. This would allow banks to offer the loan at normal market interest rates.

- The credit line should be combinable with guarantees. InnovFin guarantees don’t include state aid, so combination is basically possible. However, a combination with any guarantee which includes state aid would not be possible.

- EBRD should assist the banks in marketing the new programme. This could be done in the form of awareness raising as part of the technical assistance offered to the banks.

According to our analysis of the Romanian SME and Mid-cap market, the market potential for the loan does exist. Banks indicate that a sufficient amount of companies in their current portfolios could be interested in the new instruments. Based on the preliminary information we have received from several banks, we estimate that there are probably about 800 companies currently in the banks’ portfolio that could be targeted with this new EBRD programme. The majority if these are SMEs – perhaps 2/3 or 75% – so even if the programme would have to be limited to SMEs only, the market potential seems sufficient. The actual demand, however, will depend on the other two components of the programme.

We estimate that most likely recipients of the loan would be SMEs with a turnover between €1M and €50M. The most likely innovation activities of these companies would consist of acquiring new
technology in the form of new production equipment and machinery supported by related other activities.

As InnovFin guarantee instruments don’t include state aid, the EBRD loan can be combined with a national or European guarantee arrangement. The bank can therefore use a guarantee arrangement to overcome problems related to lack of collateral, as long as the guarantee arrangement doesn’t include state aid.

4.5 The grant component

Public funding from European-level sources is not considered State aid as such, if the managing authority is European (in this case EBRD in collaboration with Horizon 2020) and national or local public authorities are not involved in the decision making (here only private financial institutions operating on market principles). However, even in the case of European funding, the level of the grant should be consistent with at least the principles laid out in the State aid regulations.

Another consideration in designing the appropriate level for the grant component is the level of grants currently available in Romania for the companies in the target group, i.e. SMEs and Mid-caps. Too small grant component would make the EBRD instrument less attractive, if much higher grant levels would be accessible for the same purposes from national public support programmes.

Public support programmes and grant levels available from those to similar purposes are described in Appendix A. The State aid levels and consistency with them is discussed in more detail in Appendix B. Based on these, the following chapter discusses the appropriate sizing of the grant component given the overall consistency and current market in Romania.

In practice and given the current financial market gap for R&D and innovation, the alignment with the principles outlined for R&D and innovation state aid mostly refers to the maximum size of the grant component. Hence, the lower limit for the size of the grant component is defined by minimum sufficient attractiveness of the instrument, whereas the upper limit should be defined by alignment with state aid principles and the availability of grants from public support schemes for similar purposes.

Based on the interviews with the Romanian banks as well as experiences from the previous energy efficiency instrument, we propose that the minimum size of the grant component would not be below 15%.

The maximum size of the grant component shouldn’t exceed 40%, otherwise the EBRD loan would be in direct competition with public funding schemes offering grants for similar purposes.

Both 20% and 40% can exceed the maximum levels of allowed R&D and innovation state aid. However, given that some of the activities could also be funded using de-minimis aid and some using regional investment and other forms of state aid, the alignment can be considered sufficient, if the lower limit is made available for broadly innovative companies and anything beyond that is made available only for more innovative companies complying with the stricter InnovFin criteria.

Investments in R&D and innovation in Romania are very low, especially within the private sector. The level of business R&D intensity is one of the lowest in EU. The fundamental rationale for introducing a new EBRD instrument combined with a grant component is to enhance innovation in Romania. This means that innovative companies should grow, new innovative companies should be created or more companies need to become innovative.

Some start-ups may benefit from debt funding, but the majority will seek for equity funding. Hence, the start-ups as a target group is not viable for the EBRD instrument, except for specific cases. More innovative companies, on the other hand, are a viable target group. However, they are also the target group for InnovFin instruments as well as public support programmes focusing on R&D and innovation. To avoid too much overlap with the other financial instruments, the most viable target group for the new EBRD instrument would therefore seem to be companies that have a potential to become more innovative.
Hence, we suggest that the grant component is designed to have two levels, one for broadly or less innovative companies and another for more innovative companies. The grant component for broadly or less innovative companies should be set at the minimum level still attractive for both the banks and the companies. This according to our estimates is at least 15%, preferably 20%. Even though this level may be considered relatively high given the modest impact on innovation, the grant component will undoubtedly have an impact on productivity and competitiveness, and thereby indirectly on economic growth and job creation.

The grant component for the more innovative companies should be set closer to the upper viable limit. We suggest that it would be set at least at 30%, preferably even 40%. The main reason for this is that the grant component for more innovative companies should be significantly higher than for less innovative companies. This will create an incentive for the less innovative companies to explore possibilities to design projects and activities that would make them eligible for the bigger grant component. The EBRD instrument with two grant levels would therefore include an additional incentive for companies to engage in more innovative activities. The impact on innovation would thereby come from the increase in R&D and innovation activities of more innovative companies, and from less innovative companies becoming more innovative.

The eligibility of broadly or less innovative companies would be mostly based on the purpose of the loan, as they typically don’t comply with any of the other criteria. The verification would therefore focus on the purpose of the loan before making the loan decision and verifying afterwards, that the activities indicated in the business plan have indeed been implemented. Eventual impact can be measured only years after the funded activities have been completed, so the payment of the grant component can’t be based on realised impact. However, the impact can be sufficiently indicated by the business plan and the rationale presented in it for the activities the loan is planned to cover.

In the case of more innovative companies, they are more likely to be eligible according to a wider range of InnovFin criteria. However, the purpose of the loan may still be the main eligibility criterion in practice. The same approach of verifying the business plan before the loan decision and verifying its appropriate implementation afterwards can be used for the payment of the bigger grant components.

However, if the purpose is to emphasise in-house R&D and innovation activities as well as collaboration with research organisations, additional conditions could be added to the criterion concerning the purpose of the loan. For example, the maximum share of the loan that can be used for tangible investments (i.e. investments into machinery and equipment) or production process may be limited. This would ensure that the companies would invest sufficiently into building their own innovation capabilities and capacity, thus enhancing the sustainability of the impact. The similar approach could also be considered for the less innovative companies, i.e. maximum share of the loan that can be used for R&D and innovation activities of more innovative companies, and from less innovative companies becoming more innovative.

Assuming, that 90% of the loan volume would be issued to less innovative and 10% to more innovative companies (as estimated by the banks), the overall size of the grant component would be 17% using 15%/30% grant levels and 22% using 20%/40% grant levels. For example, if the total loan volume was €100m, the estimated grant volume would be around €16.5m at 15%/30% grant levels and €22m at 20%/40% grant levels. This clearly indicates that even using the higher grant volumes, the overall size of grant component remains almost at 20% of the total loan volume.

4.6 Technical assistance component

The main purpose for the technical assistance would be to help the banks to:

- Verify the eligibility of the company prior to the loan decision. This would be necessary only if the eligibility depends on a criterion, where external expert evaluation is required. Otherwise, the eligibility could be verified by the bank based on documentation it has received from the company.
• Verify the eligibility of the planned innovation activities for the loan prior to the loan decision. This would be necessary only if the eligibility depends on a criterion, where external expert evaluation is required. Otherwise, the eligibility could be verified by the bank based on documentation it has received from the company.

• Verify the eligibility of the planned innovation activities for the grant component prior to the loan decision. This is needed to establish the amount of the grant the company can receive after completing the activities.

• Verify the eligibility of the costs of the innovation activities carried out by the company with the loan afterwards. This is needed to verify that the activities and related costs are sufficiently eligible to allow the payment of the grant.

• Verify that the innovation activities covered by the loan have resulted in innovation. This is based on the monitoring concept described in Chapter 0.

The support to the banks should be delivered free of charge. Otherwise the banks would have to include the cost into the cost of the loans to companies, reducing the attractiveness of the loans.

In addition to the support to the banks, technical assistance could also offer support for the companies. The support for companies could include the following:

• Financial management and business development. Investing in innovation activities and using external financial resources such as bank loans requires sufficient level of financial management competences. It is also important that the company can monitor and show evidence of costs related to the innovative activities afterwards to verify that it has accumulated eligible costs to allow it to receive the grant.

Technical assistance could also support companies with identified innovation potential, but not yet ready to engage into specific innovation activities. These companies could be identified and signposted to technical assistance by the banks and/or by public innovation support agencies, provided that an agreement could be reached with the latter one(s). The purpose for this support would be to help the company become aware of the potential new technologies and/or markets would offer to it.

Both of these could be based on the currently available support offered by EBRD to SMEs in Romania. In practice, banks that see potential clients that could benefit from this type of technical assistance, would signpost companies to apply for this support from the EBRD SME support service.

• Planning of innovation activities. Planning innovation activities will make them more systematic and can significantly reduce the risks related to them. Particularly in the case of new products or services, where the understanding of the targeted markets and customers and changes in their needs will shape future demand and thereby market and growth potential. A review of the entrepreneurial ecosystem in Romania funded under the Horizon Policy Support Facility found that this type of innovation advisory services for companies is scarce in Romania.

This type of technical assistance would be particularly offered to the less innovative companies, who have indicated strong enough interest in wanting to become more innovative by engaging in R&D and innovation, and thereby becoming eligible for the bigger grant component.

This technical assistance should be based on existing consulting products and models focusing on innovation capacity and innovation management. There is no need to design new concepts as consulting products and models are already available in the markets. These include e.g. Improve²⁰,

²⁰ several active consultants and organisations in Romania, see https://www.improve-innovation.eu/improve/UserList/UserListFilter.do?type=DIRECTORY_CONSULTANTS&country=205&consultantAccountType=n&name=&company=&zipCode=
Ruxal Innovation\textsuperscript{21}, FM Management Consultancy\textsuperscript{22}, Steinbeis\textsuperscript{23}, and several other consulting companies such as Civitta, PwC and BCG.

This assistance would also be based on signposting by the banks. Once the bank identifies the potential or the company expresses strong enough interest, the bank can request for the technical assistance to the company.

Both types of services should be made available before the loan agreement is signed. Depending on how the provision of these services is arranged and to what extent they are free of charge or subsidised for the company, the possibilities vary. In any case, the duration of these service should be limited to a few days at the most. Anything more than that can’t be appropriately integrated into the loan instrument. Also, the nature of technical assistance linked to a financial instrument indicates that it is limited rather than extensive.

In addition to the innovation support services and technical assistance to the banks, technical assistance could also be offered in the form of marketing. This could take the form of awareness raising through websites, brochures and/or events planned and implemented together with the partner banks.

We estimate that the volumes of technical assistance would not amount to more than the following:

- Ex-ante verification of eligibility: 0.5 days per company
- Ex-post verification of the implementation of the business plan: 0.5 days (+0.5 days, if contacting the company is necessary)
- Financial management and business development: 3 days (1 day to analyse, 2 days to focus on solving the key problems together with the company)
- Innovation management and planning of innovation activities: 3 days (1 day to analyse, 2 days to work out improvements together with the company)

This would amount to a total average of 1 day for verification per company, and 3 days for the two other types of technical assistance per company. Assuming that the total number of companies entering the loan process is around 400 and 300 of them use either the financial or innovation management support, the total volume of technical assistance would amount to no more than 1000 days (100*1.0+200*4.0=900 days). Given an average daily rate of €1000\textsuperscript{24}, this would mean €1m in total. This estimate is a bit on the high side, so the total of €1m will probably allow technical assistance for more than 400 companies in total.

Anything more than described above would mean more extensive consultation, which the companies should seek by themselves from the market. This may be the case especially with innovation management and planning of innovation activities, but also in the case of business development. In these cases, the loan process should be halted early on and resumed after the company has taken appropriate action and implemented the necessary developments/improvements.

4.7 Concluding remarks

It would seem that the loan component should be easy enough to develop and introduce to the Romanian markets. The demand seems sufficient, and the potential partner banks are mostly familiar with and can accept the eligibility criteria for the loan.

\begin{footnotesize}
\textsuperscript{21} http://www.ruxal.ro/en/servicii/instrumente-de-business-personalizate/
\textsuperscript{22} http://fmmc.ro/Services/58
\textsuperscript{23} http://steinbeis-romania.com/buch/
\textsuperscript{24} Domestic experts would most likely have a dayrate lower, but if it is possible or necessary to use international experts to complement domestic ones, the average may be closer to €1000.
\end{footnotesize}
The Romanian financial market is already quite crowded with European instruments. However, they are mostly guarantee arrangements. Furthermore, while other InnovFin instruments in Romania also focus on innovative companies, only very limited amount is expected to focus on innovative activities.

Significant amounts of public funding are allocated to productivity as well as R&D and innovation in the Operational Programme for 2014-2020. It would seem, that the major competition for this new EBRD instrument would be the public grant programmes. These funds are significant and allow for investments by SMEs to be supported with a grant ranging from a minimum of 20% even up to 70% for small companies located in the poorest regions in Romania.

For more challenging R&D, the most relevant public grant programmes would be the national R&D support programmes targeted to SMEs. However, their funding levels are low. For later stages in the innovation process and especially for innovation activities consisting of investments into production equipment and machinery, the public support for productivity development, e.g. the Regional OP (ERDF), Axis 2 Generic productive investment in SMEs would present an alternative for companies.

However, the public funding programmes suffer from high bureaucratic burden both in application and in implementation/monitoring stage. Furthermore, the decision process may take several months during which there is no certainty of the outcome. Hence, companies especially in the tech sectors often seek other sources of funding, which are more predictable and faster accessible.

While the grant component doesn’t have to comply with the state aid regulations, it should be sufficiently aligned with the key principles. Gap on the Romanian financial markets for R&D and innovation funding seems rather obvious and relatively well identifiable. Funding is made available mostly through general purpose public grant schemes, and through recently introduced InnovFin instruments and similar schemes. Based on our observations with regards to these, the interviews with the Romanian banks, and the fit of the new EBRD instrument into the Romanian financial markets, the grant component would be viable at levels between 15% and 40%.

The grant component should be designed with two levels depending on the innovativeness of the company and/or its innovation activities defined in the business plan. This would create a potentially very effective incentive for less innovative companies to explore possibilities and benefits of becoming more innovative.

Therefore, we suggest 15% (or 20%) grant for less innovative (but InnovFin-eligible) companies, and 30% (or 40%) for more innovative companies.

The technical assistance component must include eligibility verification before the loan decision and after the activities have been concluded (eligibility for the grant component), but it may also include support to the companies, and marketing support for the banks (if deemed necessary). We suggest extending the technical assistance also to companies. Similar services are not readily available in Romania (e.g. from public support schemes, EBRD or other existing similar support services). Given the fundamental rationale and the size of the potential market for the new programme, technical assistance for companies can have a significant positive impact on innovation in Romania.

Especially, if the banks would have to reject loans to otherwise eligible and potential growth companies because they lack sufficient financial management, business management, innovation management, etc. competences, or if the quality of these competences is perceived to present too high risk, the inclusion of innovation support services to companies as part of technical assistance could present a way to extend the number of potential beneficiaries. These services can be based on the current EBRD SME support programme, so no new services must be launched.

If the grant component is to be designed with two levels, the innovation activity planning support should be seriously considered. It could significantly strengthen the impact of the EBRD instrument by facilitating more companies to engage in more innovative activities. Again, no new services need to be designed, as innovation capacity and innovation management support services are already available in the European markets.
5 Implementation and monitoring the programme for Romania

5.1 Implementation of the programme

The programme can be structured in the following way combining the loan, grant and technical assistance. In the graphical representation below, not yet decided options regarding technical assistance are clearly indicated with a dashed line.

The critical points in the process flow with regards to timing are the external expert verification steps. These should be delivered as fast as appropriate given the task. At the beginning of the process, external expert response time should preferably be 24 hours (or at most 48 hours). At the end of the project, the response time may vary depending on any deviations from the original business plan. However, even in this case, the response time should be fixed with an option to ask for an extension should the specific case require further investigation, e.g. contacting the company.

Response times can be negotiated between the EBRD and the company providing the external experts. It would be advisable to set some forms of penalties should the agreed response times not be respected. This would ensure that the company providing the experts would take appropriate measures to ensure response times.

Figure 5 Process flow of the new SME innovation financing facility.

Subcontracting the external expertise should request the following items in the tender. The purpose for requiring these is to verify that the selected provider of external expertise has understood what they need to deliver and that they have the necessary competences to provide the expertise needed.

- Framework or model they intend to use for verifying the eligibility of the R&D and innovation costs. This should be based on and be aligned with the more detailed description of eligible costs for the grant component.
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• Description of service packages for specific purposes. These should include the verification services for (1) company eligibility, (2) innovation costs grant eligibility, and (3) analysing the company’s final report and delivering the monitoring information. The description should cover the main content, as well as response times. These should also include financial management, business management, innovation management, etc. should the services be extended to cover companies. Alternatively, these services could be contracted to another service provider to ensure independence of both services.

• Description of the competences required for delivering the external expertise. This should sufficiently cover all relevant industries and business sectors. All experts should be named, and they should have at least 5 years (preferably 10) of experience in working in the relevant industries in a leadership or senior expert position responsible for business development (incl. R&D and innovation) activities. All experts involved in verification should declare their ties to all Romanian companies to avoid any conflicts of interest. It might be practical and therefore recommendable to contract one single consulting company or other similar service provider to manage a network of experts, instead of contracting each expert separately. This would also allow the contracted service provider to manage a wider network of experts and thereby ensure the availability of the verification at all times.

• Risk management. How the provider of external expert services will ensure that the response times are respected. For example, relying on a single expert to cover specific industries, technologies or sectors might be considered as high risk.

It would be advisable to establish an electronic web-based platform to support the exchange of information between the different parties during the programme. This may be established separately, or it may be requested as an additional task from the provider of the external expert services. Regardless of how and by whom the electronic web-based platform is set up, it should allow for all information related to the programme to be stored and managed.

The platform would be essential in ensuring efficiency and appropriate response times. It would also facilitate the systematic collection of relevant monitoring data in real-time. This would allow EBRD to monitor the implementation of the programme in real-time and if necessary, report to the Horizon 2020 and take action, should the monitoring information indicate that something is not proceeding as planned.

The front end of the website could be used for marketing purposes. It could contain all relevant information concerning the EBRD loan, the grant component and technical assistance. The website should also offer an application for companies and banks to help identify if a company is eligible for the EBRD loan, and what further requirements they must comply with for the grant component. The web-application would consist of a set of easy and understandable questions based on the underlying InnovFin criteria. The application could end in a screen offering the possibility to ask for more information or even request a meeting with a bank.

EBRD should also consider establishing a steering group for the programme together with the partnering banks. The purpose of this group would be to monitor the implementation of the programme and identify if and when further guidelines to support the implementation would be needed. The group’s role would be most important at the beginning of the programme and again towards the end of the programme. EBRD could use this group to further develop the implementation activities and later to discuss with the banks about the need/potential for possible future programmes.

5.2 Monitoring of the programme
The verification of the implementation of the planned innovation activities should be sufficient to verify that the funding has been used for innovation activities. Especially the verification of the eligibility of the costs to allow for the payment of the grant component by an external expert clearly validates that the activities have indeed been innovative. But even if the loan would be given to a non-SME without a
grant component, the verification of the implementation of the planned innovation activities should be sufficient.

As R&D and innovation includes risks and plans often need to be changed to reach the desired innovative output, the plans might not be implemented in the exact manner as described in the original business plan. However, the external expert evaluation can verify that the original innovation objectives have met to a sufficient degree and that the costs are eligible to allow for the grant.

In the exceptional case, where the company would use a significant part of the loan for non-eligible activities, they may end up losing some or all of the grant. Should the activities deviate significantly from the business plan, this may even lead to the need to immediately recall the loan partly or completely. To avoid this, mentoring could be used to monitor more closely companies, where this type of risk has been identified as high.

As the grant component originates from Horizon 2020, there may be a need to monitor not only the implementation of R&D and innovation activities, but also the output of these activities. A typical approach would be to establish a set of key indicators, that can be adopted for each funded case. This would consist of typical indicators of innovative outputs, such as:

- **Launched or planned new products or services.** This should include the description of the novelty of these new products or services. This could include estimates of future turnover, exports and new jobs created because of the new product launch.
- **Adopted changes in the production process.** This could also include an estimate of the quality improvements, cost savings, possibility to produce new products, etc., i.e. how the changes made to the production process have benefitted or will benefit the company.
- **Adopted changes in the company's organisational structure, governance processes or business model,** including estimates how these changes have benefitted or will benefit the company.
- **Planned increase in R&D and innovation investments in the future.** A revised business plan indicating that the company has decided to increase its investments into R&D and innovation, including their aim to produce specific innovations.
- **Results of R&D activities,** such as new industrial property rights, new technological solutions, etc. These should also include the planned commercialisation of these R&D results, e.g. expected revenues from licensing, deals with future clients, etc. These are only relevant for R&D intensive companies.
- **For start-ups,** a good indicator can also be a new private equity investment or a funding round. These typically indicate that the company’s valuation has increased because of the innovative activities.

It would be advisable to keep the number of these indicators small and adjustable to allow for the monitoring of a wide range of different innovation activities and companies.

The impact of innovation activities may vary greatly. Innovation activities may result in a new or significantly improved product, service, process or a business model, which is relatively easy to verify ex-ante and ex-post. However, innovation activities include risks, which may result in not reaching the planned objectives. This doesn’t mean that the activities would not have been innovative, i.e. not eligible for the funding. It simply means that activities have failed to produce the foreseen adoption or development of the planned innovation. Furthermore, even if the planned adoption or development of innovation have been reached, it may fail at the commercialisation stage, thus not resulting in the commercial benefits originally planned.

The nature of innovative activities and the uncertainty of their outcome means that the verification needs to focus on the activities as such, not on their planned outcome. Verification of the business plan and its implementation merely establishes that the plan is to benefit from innovation – either adopting or developing one – and that the planned activities to do so have been implemented. The impact of the EBRD instrument on innovation in Romania should therefore be evaluated separately, after the programme to implement the instrument has been in operation in full scale for at least 2 years. This
evaluation can be partly based on the monitoring information collected during *ex-ante* and *ex-post* verifications, and partly on revisiting the companies and observing the eventual value of the outcome of the innovative activities to the company.
6 Risks and mitigating measures for the programme in Romania

Introducing a new EBRD instrument into Romanian financial markets should be relatively straightforward. The markets – both banks and companies – have prior experience with an earlier EBRD programme focusing on energy efficiency. The planned new programme consists of similar features, thus making it relatively easy to understand and adopt.

However, innovation is somewhat different from energy efficiency, as discussed in the previous chapter. Especially the risks inherent in all innovation activities and the uncertainties which may require changes to the business plan during implementation, mean that the success of the planned EBRD instrument depends much more on the quality of the technical assistance, than the previous instrument focusing on energy efficiency. The quality of technical assistance is further emphasised by the underlying rationale for the planned EBRD instrument, i.e. identifying and encouraging previously non- or less innovative companies to become more innovative. Technical assistance – both verification and especially innovation management support – are elemental in reaching the desired impact.

To mitigate the risks related to the quality of technical assistance, EBRD should on one hand rely on the existing SME support activity (financial and business management support), and on the other hand, rely on existing, extensively tested, established and successful methods for helping companies develop their innovation management skills and plan their innovation activities. The external expertise needed for the verification should consists of a network of Romanian and if necessary also international experts.

The approach to mitigate the risks related to verification quality, EBRD should establish a contract with an experienced, respected and successful local entity (e.g. consulting company) which sub-contracts individual verification experts and manages the network of experts. This should also include practices for eliminating potential conflicts of interest (e.g. experts with personal interests towards specific companies), as well as backups if specific verification experts would not be available (ref. verification delivered within 24/48 hours). EBRD may require or request further measures from as part of the verification consultancy agreement, such as double checking (i.e. one expert does the verification, but before it is sent to the bank, another expert double checks it, i.e. the verification is never only one expert’s opinion), or mutual learning (i.e. verification experts have regular telecon’s to discuss cases selected by the coordinating entity possibly together with EBRD to ensure common interpretation of verification guidelines).

Similarly, the technical assistance for innovation management and planning of innovation activities should be organised in the form of a contract with an experienced, respected and successful local entity (e.g. consulting company) which provides or sub-contracts individual experts and manages them. If there are several such entities in the Romanian markets, it may also be viable to enter into a framework contract with two or more of them. However, in this case, EBRD should take the role of coordinating any joint activities between the entities included in the framework contract. If the contract is with one entity, coordination is managed by it. Same as the verification contract, this (framework) contract may include double checks, mutual learning, etc. activities to ensure consistency between experts and over time. It should in any case include practices for eliminating conflicts of interest and for ensuring the pre-defined response time (i.e. backups, if/when necessary).

The other main risk related to the introduction of the planned EBRD instrument is related to market acceptance. Given that a similar instrument (energy efficiency) has already been implemented successfully in Romanian financial markets, the banks and also some companies may find the planned new instrument attractive because of their previous positive experiences. However, as discussed earlier, the characteristics of innovation differ from energy efficiency and therefore the eligibility criteria are different.

More importantly, the eligibility criteria are more demanding than for energy efficiency. For example, whereas energy efficiency could be increased by simply acquiring new production equipment to replace old ones, eligibility for innovation requires that the new equipment represents a technology that is new to the country or sector, or it facilitates the development of new or significantly improved products,
services, processes or business models, or it forces the company to seek new markets, etc. These additional eligibility requirements compared to the previous energy efficiency instrument may and will cause at least an adjustment period with both the banks and the potential target companies.

Because the final formulation of the eligibility criteria with regards to innovation have not yet been fixed, the estimates given by the banks may in part be optimistic. In view of mitigating the potential acceptance risk, EBRD should organise multi- or bilateral discussions/negotiations with the banks to establish the banks’ true interest in the new EBRD instrument. We believe, that the interest indicated by the banks is sufficient to reach a positive outcome from these discussions/negotiations. However, the eventual deals with the banks may be below what has been earlier indicated in this report. Given the funds planned for the new EBRD instrument for Romania, this should not present a serious risk.

The pace the banks will eventually have in issuing out the new EBRD innovation loans is likely to depend on the familiarity the banks and their loan officers as well as the companies have with the new instrument. It is therefore advisable, that EBRD organises a regular platform (telecon, physical or a combination of both; possibly also a webcast option to communicate selected parts to a wider audience of loan officers) between the participating banks, the external verification and innovation management experts (entities coordinating the expert networks) and EBRD (and possibly at times also Horizon 2020 people, if that is seen as useful). The purpose of this platform is to discuss any open or unclear issues and establish a common understanding of them. This platform could also act as a sounding board for preparation of all communication material related to the new EBRD instrument.

Further mitigating measures with respect to acceptance could include contacts and discussions with public funding agencies and entities providing any other public support for targeted companies. The purpose of these discussions would be to help these entities understand and know what the new EBRD instrument could offer and thus market it to the appropriate companies. The other purpose of these discussions would be to provide further insight into the size and characteristics of the potential target groups (less innovative and more innovative companies) to EBRD, the participating banks and the external experts. The former would strengthen marketing activities, thus revealing the market potential, encouraging a larger number of companies and allowing faster pick of the loans. The latter would reveal where the highest market potential may be and how it can be approached. Furthermore, the collaboration with public funding agencies will help verification of more innovative companies as they have the information of earlier or on-going public R&D and innovation support the company may have received.
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Appendix A Businesses, R&D, Innovation and Access to Finance

A.1 Business demographics

Figure A-1 Basic figures on SME demographics

<table>
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<th>Class size</th>
<th>Number of enterprises</th>
<th>Number of persons employed</th>
<th>Value added</th>
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<tr>
<td>Small</td>
<td>40,413</td>
<td>10.2</td>
<td>6.0</td>
</tr>
<tr>
<td>Medium-sized</td>
<td>7,993</td>
<td>1.8</td>
<td>1.0</td>
</tr>
<tr>
<td>SMEs</td>
<td>446,537</td>
<td>99.7</td>
<td>99.8</td>
</tr>
<tr>
<td>Large</td>
<td>1,463</td>
<td>0.3</td>
<td>0.2</td>
</tr>
<tr>
<td>Total</td>
<td>447,006</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Source: (European Commission, 2017b)

There were over 445,000 SMEs in Romania in 2015, amounting to 99.7% of all companies. They employed 67.5% of the private sector employees (more than the EU average) and accounted for half of the value added (but under EU average) (European Commission, 2017b). SMEs’ value added has been on a rising trend since 2013, and it is estimated to surpass the pre-crisis position in 2016–2017 (Figure A-2). Mid-sized companies make up a share of 1.8% of all companies, and employed 21.1% of the employees, both indicators above the EU level.

Figure A-2 Value Added of SMEs, 2008-2017

Source: (European Commission, 2017b), index: 2008=100, estimates as from 2014 onwards

An alternative study by the National Bank of Romania (NBR) identified a number of 600,706 companies active in Romania, based on the analysis of balance sheets and performance submitted by the companies to the Ministry of Finance. This number also includes the companies whose turnover equals 0, and small
companies of 1-9 employees and 250+ employees, which are not part of the Eurostat definition cited above. Moreover, the study notes that around half of the companies have negative own capital, which makes them not bankable. There is also an increasing tendency of the companies to generate losses, since the crisis, especially in the SMEs sector. SMEs contributed, in fact, to 75% of the aggregate volume of losses in the economy in 2014, especially in the industrial and services sectors.26

A further study from the NBR27 analysed the features of the companies (excluding start-ups) that make up the critical mass that drives Romania’s economy, estimated at around 57,000 – 59,000 companies, which have shown constant growth and made up on average for 55% of GVA per year in the past ten years28. They represented under 10% of all firms active in the business economy in December 2016. The categories of companies identified by the study include “veteran companies” (existing for over 15 years), “elites” (high-performing in terms of value added), and state-owned enterprises. Some of the findings include29:

- The ‘veterans still in power’, are companies who have maintained growth over the past fifteen years and amounted to 52,500 firms in 2015.30 The ‘veterans in power’ form the major part of the critical mass of companies still driving the economy, but show vulnerabilities such as low internationalisation rate, concentration of activities in low- and medium-fields and diminishing technological intensity. In addition, they show high volumes of imports, while exports are rather low-tech.

- The number of high-performing firms (“the elites”) amounts to 13,100, and despite their low number, they generated around 41% of the gross value added in the economy in 2015. The majority are SMEs, as 62% are small, 29% are medium ones. The majority of these companies are active in the field of manufacturing (30%) and retail (26.4%), followed by services (21%). The high-performing companies in the manufacturing sector are actually rather low- and medium-tech (84%), as only 630 of them are technology intensive. Interestingly, these 630 high-tech manufacturing “elite” companies contributed to 38.3% of total GVA in the manufacturing industry in 2015. Another interesting finding is that these high-performing firms have been using bank lending services more consistently than the other companies, which made them more disciplined in their activities. In addition, they show higher labour productivity than ‘veterans in power’ and the average companies in the economy.

- There are 1,100 state-owned enterprises, which are mostly focused in the utilities sector, extractive industries, agriculture and services. The study also finds that 90% of the R&D investment in the private sector is performed by firms among the 57-59,000 companies that construct the critical mass in the economy, but especially (almost 70%) by the state-owned enterprises.31

A brief analysis of the company demographics in Romania shows that the company birth rates have been rather diminishing and have not caught-up with pre-crisis levels especially in the case of smaller enterprises in 2010-2014 (Technopolis Group, 2016). There was a spike in companies with 0 employees, potentially due to a change in the regulation incentivising former employees to undertake self-employment (Andrez, Tatã, Romanainen, & Dalle, forthcoming). Survival rates of companies have also

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26 ibid, Neagu 2016
27 The study used an innovative method to calculate the numbers and performance of companies, based on the balance sheets and results submitted annually by the companies to the Ministry of Finance.
29 The numbers of the ‘veterans in power’, ‘elites’ or ‘state-owned companies’ do not add up to 59,000, as some companies might be belong to two categories also.
30 The rest of over 60% of the 133,000 veteran companies identified by the study have experienced decreasing GVAs and are in decay.
been facing a downward trend, especially when looking at the 3- and 5-year survival thresholds. The company survival rates have dropped from 60% to 40% in 2009-2014, especially for firms employing 1-4 persons.

Figure A-3  Companies’ five-year survival rate by size (# of employees), in %, 2009-2014

Source: Technopolis Group (2016), Eurostat data

The 2016 study by NBR experts notes that new-founded companies in Romania tend to maintain their initial size class and not grow beyond their original size. It appears that 95% of the Romanian micro-enterprises remain so over a period of 5 years, and only 0.5% of micro-enterprises manage to grow to the small enterprise class in that period. In addition, 60% of the small companies tend to remain the same size over five years, while 35% actually migrate to the micro-enterprise class and shrink their activities.32 The same proportions are valid for medium companies migrating to lower sizes over a period of five years. This shows the lack of dynamism of the overall business population, which faces high difficulties to grow.

Another characteristic of the business sector in Romania is the relative significant longevity of the existing companies. Young firms (below three years) represented 22% of the active firms’ population, while firms above 7 years old represented 56% of the entire population of active companies in 2014.33 Analysing the trends over the past twenty years, the NBR study concluded that the Romanian companies’ average lifespan is of 7 years.

According to a recent report analysing high-growth enterprises in Europe, there are low numbers of high-growth enterprises or gazelles, accounting for only 0.16% of all enterprises and representing 3.3% of total employment.34 This is another weakness in the entrepreneurial environment in Romania.

The largest concentration of SMEs is located around the capital city, in the Bucharest-Ilfov region (24% of the SMEs), followed by the North-West region (14.3% of SMEs) (where Cluj-Napoca is a rising tech city). The majority of the other six regions have a rather even spread of SMEs, each attracting 10-11% of the total number (with the exception of South-West Oltenia, which attracts 7% of SMEs). The geography of the start-ups is even more unevenly spread across Romania, as mapped by the Romanian Internet Tech Start-ups directory (Romanian Startups.com, 2017). The directory shows that out of a total number of 264 start-ups located in Romania, 75% are located in Bucharest, and 21% in Cluj, in the North-West.

32 Neagu, 2016
33 Ibid, Neagu 2016
region. Other start-up locations are Timisoara in the West region (with 25 registered start-ups), Iasi in the North-East region (12 start-ups) and Brasov in the Centre region (10 start-ups) (ibid).

A.2 Innovation performance of the SMEs in Romania

A.2.1 General overview of innovation system performance

Romania is a “modest” innovator country, and its innovation performance has been experiencing a striking decline since 2008, as it dropped from 50% of EU average in 2008 to 34.4% of EU average in 2015 (European Commission, 2016). In comparison, peer countries like Latvia or Bulgaria, have been rather improving their performance (ibid).

Figure A-4 Innovation performance in Romania and peer countries

Source: (Technopolis Group, 2016) based on the European Innovation Scoreboard 2016

Romania’s innovation ecosystem’s major weak points, highlighted by the 2016 European Innovation Scoreboard report, are represented by the linkages between entrepreneurship and innovations and the low numbers of PCT applications (see figure below). Also worrying are the relative drops in scores of key performance indicators along dimensions such as venture capital investments, the number of SMEs innovating in-house, or numbers of SMEs having product or process innovations compared to EU average (European Commission, 2016).
Figure A-5 Romanian innovation system performance by dimensions

Source: (Technopolis Group, 2016) based on the European Innovation Scoreboard 2016

Looking at the overall population of innovative companies, 69% of the innovative companies seem to be small-size (with 10-49 employees), 31% are mid-size (with 50-249 employees), and only 4.2% of the innovative companies are large ones (250+ employees).

The gross expenditure in research and development (GERD) has been historically low in Romania, reaching 0.49% of GDP in 2015. The post-crisis drop in investment from both the public sector and private sector (BERD) seems to have been slightly reversed for the past years. BERD has been increasing from 0.12% of GDP in 2013 to 0.21% of GDP in 2015. However, this level of business R&D intensity is one of the lowest in EU.

Figure A-6 Gross expenditure on research and development, % of GDP, 2006-2015

Source: Technopolis Group based on Eurostat

Almost half of the total business R&D expenditures in 2008-2014 have been concentrated in the manufacturing sector (47%), followed by the professional, scientific, administrative and support services
sector (26%) and the information and communication sector (12%) (Eurostat). Within the manufacturing sector, mirroring the country’s trade specialisation presented in the previous sector, the highest amounts invested in R&D are in the manufacturing of motor vehicles, trailers and semi-trailers sector (€44.5m on average per year, in 2008-2014) (Eurostat, Figure A-7). Further fields where the private sector invests more in R&D include the manufacturing of chemicals and chemical products (€10.5m per year on average), and the manufacturing of computer, electronic and optical products (€9.4m per year on average).

*Figure A-7 Average yearly BERD by manufacturing sector, 2008-2014 (in million EUR)*

More than a quarter (27.6%) of the Romanian manufacturing companies are active in high-technology sectors (compared to more than a third at EU level – 36.4%) (European Commission, 2017c). The majority of the enterprises in high-technology sectors (94.5%) were active in the knowledge-intensive high-technology services, however, while only 5.4% of the high-tech enterprises are active in the manufacturing field. The overwhelming majority of the manufacturing enterprises (90%) are active in the low-technology and medium-low-technology manufacturing sectors (Eurostat). There has been a significant decrease in the number of high-technology manufacturing enterprises in 2008-2014, as only 75% of the enterprises active in high-tech manufacturing in 2008 could still be categorised as such in 2014 (Eurostat).
According to the latest Community Innovation Survey results, the distribution of the innovative companies by industries in Romania shows that the top sectors where innovative companies can be found include the manufacturing sector (48%), wholesale and retail trade (19%), and the ICT sector (13%) (Eurostat). Furthermore, within the manufacturing sector itself, innovative companies are distributed in the manufacturing of metal products, computers and electronics, machinery, motor vehicles and other transport equipment (27%), followed by the manufacturing of food products and beverages (22%), and the manufacturing of textiles, leather products (14%) (Eurostat).

The types of innovation that are most frequent in enterprises are related to acquisition of machinery, equipment and software (almost 30%), in-house R&D activities (24%), or acquisition of external knowledge (18%) (Eurostat, own calculations based on CIS survey).
A.2.3 Fintech and emerging sectors

The core sectors mapped by the Invest Romania team of the Ministry of Economy are based on the domains prioritised in the RIS3 Strategy and the Competitiveness Strategy include the ICT sector, aerospace, creative industries, the bio-economy, the automotive sector and the high-tech ecosystem. Some findings from the mapping include:

- **The IT start-ups ecosystem** benefits from the presence of large multinational IT companies such as Oracle, Microsoft, Google, IBM or also Deutsche Bank focusing on software development (InvestRomania.gov, 2016). The market size of the IT services sector reached €4b in 2014, and is forecasted to grow to €20b by 2020. The numbers of IT graduates amount to ca 7,000 per year, specialising in a variety of programming languages, 2,000 focused on a “rare mix of technologies” (ibid). It is also important to note that the sector is also highly driven by outsourcing activities, but with tendencies of the employees of outsourcing companies to take up entrepreneurial endeavours.

- The **aerospace and automotive industries** are dominated by large enterprises and their suppliers, but drive investments in RDI in Romania. In the aerospace and auxiliary industry, there were 31 players in 2014, with revenues of up to €400m (InvestRomania.gov, 2016c). The automotive market is one of the largest in terms of revenues, reaching €18b in 2014 (split between automobile components and automobile production). Two main passenger car manufacturers operate in Romania: Renault Dacia and Ford, while there are over 600 OEMs producing components in Romania (InvestRomania.gov, 2016b).

- The **bio-economy sector** combines the food, bio-energy and bio-based products (clothing and cosmetics) sectors in the Invest Romania mapping. The largest growth potential was identified in the fields of waste (collection, treatment and the recovery of recyclables materials), biotechnology and renewable energy (especially biomass and renewable wastes, geothermal, solar). The total turnover of the sectors reached €2.5b in 2015, largely based on the waste industry, which reached a total turnover of €1.7b (InvestRomania.gov, 2016). The number of companies active in the bio-economy sectors gradually increased in 2008-2015, reaching 3,000, with 80 players mapped for the biotech sector, 810 for the entire energy production sector, and the majority (2,100) representing the waste sector (ibid). Romania was landfilling 92% of its waste in 2015, which shows the high potential of circular economy solutions also (Eco-Innovation Observatory, 2016).

- **Creative industries** are a highly dynamic sector in Romania, but also very concentrated in Bucharest (62.5% of this sector’s total turnover is located in the capital) (InvestRomania.gov, 2016d). The number of companies has kept growing, reaching over 62,000 in 2015 (ibid). The main sectors represented are the Software, consultancy and Informational Services (57%), and Creative arts and entertainment (21%). In terms of profits, it is rather the Arts and Sports sectors, who are more profitable, as well as design and architecture (ibid).

Newer industries can also be spotted based on the domains of the companies supported by incubators and accelerators, which have been established during the past few years. For instance, the MVP Academy incubator’s priority sectors are Artificial Intelligence, Security, Energy, Health, Mobility and Agritech. Spherik Accelerator is recruiting start-ups in the field of Virtual Reality and Augmented Reality, Artificial Intelligence (AI), Robotics, Cyber Security, 3D Printing, and Transportation / Mobility. Gecad Ventures has funded companies in the Fintech sector, Biotechnology or ICT.

The 2017 Romanian Software Index maps 27 IT companies working on applications for the banking and financial services industry, developing products or services based on big data, business process management, e-commerce, etc. (ANIS, 2017). Moreover, the Romanian Tech Start-ups Directory lists 11 start-ups working in the financial sector. There were already two editions of the Fintech Camp hackathon organised in Bucharest (the latest in November 2016), as a partnership between Raiffeisen

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Bank, TechHub and Ultrahack, with challenges related to bitcoin (blockchain), real-time payments, banking, billing, mobile payments, peer to peer lending, e-wallets, security, or encryption.

A.3 Access to finance in Romania

A.3.1 General overview of access to finance and bottlenecks in Romania

According to the latest available issue of the pan-European SAFE survey on access to finance for SMEs (November 2016), Romanian SMEs do not consider access to finance as their most important problem they are currently facing, as only 9% of companies considered this as their top difficulty (European Commission, 2016b). The problems that were considered the most important by a larger share of companies related primarily to finding customers (25% of SMEs), availability of skilled staff (19%) and costs of production of labour (14%) (ibid).

Nevertheless, the Romanian companies ranked access to finance as the second highest in importance for the six months prior to the survey, higher than the EU average (8.8 versus 7.1 at EU level on a score from 1 (not important) to 10 (extremely important)). Access to finance was ranked at the same level with the availability of skilled staff and experienced managers, and was only surpassed by the difficulties posed by regulation (ranked 10) (ibid).

The most relevant sources of funding for Romanian firms were considered credit lines and overdrafts (59% of SMEs compared to 55% at EU level). Bank loans were the next most relevant source (35% of SMEs in Romania versus 50% at EU level), at the same level with trade credits (35%) and other loans (35%) (European Commission, 2016b). For 59% of the SAFE survey respondents, the main reason why bank loans were considered not relevant was that the enterprise ‘does not need this type of financing’. Other important reasons were the fact that the interest rates or prices are too high (18% of respondents), ‘there is too much paperwork involved’ (9%), or the companies have access to ‘insufficient collateral or guarantee’ (8%) (ibid).

![Figure A-10 Relevant sources of financing for enterprises](http://fintech.camp/bucharest/press/)

Source: (European Commission, 2016b)

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The results of a barometer run by EY among Romanian established entrepreneurs in 2016 also show that access to finance is among the top four obstacles for their business (8% of entrepreneurs say so), however, the overwhelming majority of entrepreneurs believe that the fiscal and legislative framework (35%), bureaucracy (17%) and legislative instability (13%) are the biggest hurdles they face (EY, 2016a). Another obstacle is the ‘precarious level of education, including the entrepreneurial one’ (4% believe so). The sources of financing that were planned to be used in the future include bank loans (40%), trade credits (21%), EU funds (17%), clients (8%) and government subsidies (3%) (ibid).

In contrast, the first barometer of start-ups also run by EY shows that, while bureaucracy is the top problem for a large share of them (28%), access to financing is the second most important problem of start-up entrepreneurs (17%) (EY, 2016b). This is larger than in the case of the established entrepreneurs (8%) (EY, 2016a). Moreover, the start-ups think that the third most impactful government measure needed for the persons wishing to start a business is the existence of more financing programmes (14% of start-ups selected this aspect, while 46% - tax exemptions for start-ups, and 18% - reducing bureaucracy) (ibid). 69% of the start-ups started their business by using own funds (savings, salary or bank loan for private consumption), while 11% had used EU structural funds, and 6% grants from the Romanian government or other institutions. 21% of the start-up entrepreneurs were planning to use clients as sources of funding within a year, while 15% were planning to use EU funding, 13% government grants programmes. Only 6% of them were planning to use bank loans as a future source of funding (ibid). Financing growth ideas was considered a very difficult or difficult challenge to 74% of the start-ups.

While accessing EU funds still seems an alternative for start-ups and established entrepreneurs, according to the barometers run by EY (EY, 2016a) and (EY, 2016b), other sources that surveyed a larger sample of average Romanian SMEs show they seem very reluctant to this option. According to a survey by the Romanian Council of SMEs, enquiring on the SMEs’ status in the process of accessing EU funding, 81% of Romanian SMEs state that they do not intend to access structural funds in the future (CNIIPMMR, 2016). The low rate of success for companies can be a factor deterring them from applying, as only 0.18% of companies answered they tried to access structural funds and obtained an approval of their project (ibid). However, further 16.4% of the companies were in the process of informing themselves on the opportunities, while 2.9% had also contacted a consulting company for help (ibid).

The main perceived obstacles to accessing EU funding are the excessive bureaucracy and instability of the legislation (for 77.4% of companies), insufficient information on the available funding (44.2%), insufficient own fund for co-financing (38.23%), unsuitable eligibility criteria (36.7%), and the high cost of loans and insufficient guarantees (34.4%) (ibid). Overall, Romania had a low absorption rate in terms of accessing the EU funding in 2007-2013 (69% reached for the previous programming period by May 2016, the time of the survey quoted). There were major problems related to the roll-out of the structural funds due to the poor capacity of the Romanian managing authorities to design and implement the programmes efficiently. Experiences of delays in payments and burdensome reporting formalities have been further issues that are de-motivating entrepreneurs from applying to such funds (Eurofound, Technopolis Group, forthcoming).

Recently, the Romanian government also requested support from the European Commission as part of the Horizon 2020 Policy Support Facility (PSF), to improve the performance of the entrepreneurship ecosystem.

The PSF panel of experts offering advice to the Romanian government found that gaps in finance availability exist especially for the early stage companies, since equity crowd funding, business angels and venture capital funds have been investing very little in new ventures (Andrez, Tataj, Romanainen, & Dalle, forthcoming).

Another issue identified by the PSF Panel of experts is the less performant credit guarantee system in Romania along the past years (ibid), as the mechanism for guaranteeing and counter-guaranteeing SME

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38 In this survey, start-ups were defined as companies that were 3 years young or less.
loans was not functioning for some time between the National Fund for Credit Guarantees for SMEs (FNCGIMM) and the Romanian Counter-guarantee Fund (FRC). It was reported on the institutions' websites that they had re-launched the mechanism in October 2016. However, according to the forthcoming report of the PSF Romania panel, the counter-guarantee system was still not operational in early 2017 (Andrez, Tataj, Romanainen, & Dalle, forthcoming).

The PSF Panel also emphasised the importance of developing the culture encouraging business angels and formation of business angel networks, as a key source for early-stage financing (ibid). The improvement of the regulatory environment and was recommended as another priority to incentivise the development of this field (in spite of the existence of a business angel law – which, in the view of the PSF Panel, may have counterproductive effects) (ibid).

The PSF Panel also recommended that the Romanian government supports the creation of venture capital funds to invest in Romanian companies that are a later stage than the companies that business angels would support, and are connected to international markets.

A.3.2 The banking sector and financial situation of SMEs in Romania

The banking sector dominates the Romanian financial system, covering a share of 76.3% of the system’s total assets, while investment funds’ assets represented 7.7% in December 2016. According to the May 2017 post-programme surveillance assessment report of the European Commission, the banking sector in Romania is characterised as “well capitalised and with appropriate liquidity buffers”, at a capitalisation rate of 18.3% at the end of 2016. The banks interviewed during the field visit to Romania all mentioned they are liquid. Return on equity has been on the rise in 2015 and 2016, reaching 10% at the end of 2016 (ibid). The banks have been undergoing a significant balance sheet clean-up in 2014, which supported the improved recent profitability (ibid). Non-performing loans have declined significantly since 2013, reaching 18.9% in the case of corporate exposures in December 2016, from 27.1% in December 2015 (ibid).

The Romanian National Bank’s (NBR) 2017 Financial Stability Report remarks the fact that there are no severe systemic risks in the financial sector in Romania, and some of the legal uncertainty risks present in 2016 have been diminished in 2017. The only rising tension is sensed from the evolution of the macroeconomic environment, driven more by consumption and less by investments and twin deficits (budget and current account deficit), which calls for prudent macroeconomic policies from the government side.

The banks’ role in stimulating the Romanian economy is relatively low in comparison to the EU average, as the banks tend to lend more to the population and the government sector. There are broadly two types of constraints in the banks’ contribution to the companies’ growth through lending, as outlined in the following paragraphs. On the one hand, the difficult bankability of a significant share of the businesses and the lack of payment discipline are threats that make the banks act conservatively when lending. On the other hand, the banks’ appetite for stimulating and easing the conditions for companies taking loans is low, as they maintain relatively high costs of the loans to companies.

The NBR analysis mentions that banks maintain the lending to companies and especially to SMEs in the non-financial business economy at low levels. Reasons for this include the SMEs’ lack of payment discipline leading to non-performing loans, as also mentioned in some of the interviews with banks. Nevertheless, the rate of non-performing loans has been decreasing in 2016.

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Another important factor restricting the banks’ lending to firms is the fact that half (48%) of the Romanian active companies (268,700) are not bankable, according to another NBR report, as they have negative own capital or below the limit imposed by law, which excludes them from being eligible to take loans. In addition, 155,900 companies had null turnover in 2015. Many companies are also highly indebted through the loans received from own shareholders, which has become a trend in the past years, in general as a tax avoidance mechanism as well. This is why the financial health of the Romanian SMEs is a risk factor for the lending industry.

Nevertheless, the Romanian companies’ capacity to generate profit has had a positive evolution in 2014-2016, as return on equity reached 16%, and return on assets reached 6.2% in June 2016. NBR data also shows that the SMEs have improved their capacities to cover debt and expenses with interest (the ratio EBIT / expenses with interest increased from 5.4 in 2015 to 5.9 in 2016).

It is also interesting to note that companies in high-tech or medium-high tech manufacturing sectors and in knowledge-intensive services have a superior financial situation than the less innovative ones. The return on equity for the (medium-) & high-tech manufacturing companies was 1.4pp higher than in companies with lower technology intensity, while the profitability of companies in knowledge intensive services reached levels with 2pp higher than in the rest of companies in 2014.

Bank lending based on business plans or business projects is, however, “a rare practice” in Romania, as mentioned by an economic analyst recently, since the banks “lack vision” and still charge high commissions and interests for loans. This practice has been confirmed by some of the interviewees in the non-banking sector in Romania as well.

The 2016 Romanian Banking Association & EY Banking Barometer shows that the banks expect to restrict their lending policies for companies in the field of construction in 2017 (potentially also because this is the sector with the highest rates of non-performing loans as shown by the NBR analysis), but 58% of the surveyed banks plan to relax the lending to companies in the field of IT, healthcare and in general to SMEs (70% of banks).

The top six banks in Romania include: BCR, Banca Transilvania, BRD SocGen, Raiffeisen Bank, ING Bank, CEC Bank.

A.3.3 Available funding to innovative SMEs in Romania

A.3.3.1 EU structural funding and public incentives for SMEs and private sector RDI

EU structural funds are available in significant amounts and can be important sources of funding for Romanian enterprises, with a total allocation of EUR 30.8b for 2014-2020 for all sectors in Romania, (2.6% of GDP per year and almost 44% of the expected national public investment) (European Commission, 2017). An estimated EUR 3.5 billion were allocated to projects out of ESI Funds by December 2016, also targeting all sectors. Allocations clearly targeting SMEs amount to roughly €1.4b.

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42 Neagu et al, 2016; the share is based on the total number of active companies, which includes the ones that have 0 turnover, adding up to over 600,000 companis.

43 The NBR report mentions the fact that there were 608,200 companies in the non-financial business sector that filed their balance sheet with the Ministry of Finance, which is higher than the SME Performance Review data quoted in an earlier chapter.

44 Ibid, NBR 2017

45 Ibid, NBR 2017, based on Eurostat. As noted in an earlier chapter, the number of technology intense companies is diminishing in Romania – the medium-high-tech manufacturing represent 1.5% of the companies in Romania and 12% of the companies in the industry sector and generate under 10% of gross value added, while the number of knowledge-intensive service companies increased to 15% in 2016, generating 18.5% of the total gross value added.


47 NBR, 2017

distributed across the Regional Operational Programme (OP) (for generic SME support), Competitiveness OP (supporting research, development and innovation in companies), and the Human Capital OP (see Figure A-11).

Figure A-11 ESI funds allocated to SMEs in Romania 2014-2020

<table>
<thead>
<tr>
<th>Operational Programme</th>
<th>Description of type of funding</th>
<th>Amount allocated (Euro)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Regional OP (ERDF), Axis 2</td>
<td>Generic productive investment in SMEs</td>
<td>632,978,722</td>
</tr>
<tr>
<td></td>
<td>SME business development, support to entrepreneurship</td>
<td>111,702,128</td>
</tr>
<tr>
<td>Human Capital OP (ESF)</td>
<td>Self-employment, entrepreneurship and business creation</td>
<td>284,010,731</td>
</tr>
<tr>
<td>Competitiveness OP (ERDF)</td>
<td>Research and innovation processes in SMEs (including vouchers, process, design, service and social innovation)</td>
<td>50,000,000</td>
</tr>
<tr>
<td></td>
<td>Research and innovation processes, technology transfer and cooperation in enterprises focusing on the low carbon economy and on resilience to climate change</td>
<td>15,000,000</td>
</tr>
<tr>
<td></td>
<td>Technology transfer and university-enterprise cooperation primarily benefiting SMEs</td>
<td>325,531,915</td>
</tr>
<tr>
<td></td>
<td>ICT Services and applications for SMEs</td>
<td>4,000,000</td>
</tr>
<tr>
<td></td>
<td><strong>Total</strong></td>
<td><strong>1,423,223,496</strong></td>
</tr>
</tbody>
</table>

Source: (DG REGIO, 2017)

The Regional OP (ERDF) funds generic tangible asset investments in the construction / upgrading and expansion of the SME production space / services, including endowment with installations, equipment (including IT systems), machines (new technologies creation / modernization / extension of incubators / business accelerators etc). The value of the regional state aid to companies differs between regions in the country, as the Bucharest-Ilfov region and the West region are considered more developed:

- SMEs residing in Bucharest can receive 35% if small (25% if medium) of funding out of the total eligible value of the project in 2014-17, and 30% if small (20% if medium) in 2018-2020;
- SMEs in the Ilfov county and West region can receive 45% if small (55% if medium) across the entire period, out of eligible project costs;
- while SMEs in the rest of the country can receive 70% if small (60% if medium) out of the total project costs in 2014-2020.

The amount of the funding awarded from the depends on the calls. For instance, a recent call within Axis 2.2 of the Regional OP funds investments in the competitiveness of SMEs and has a regional state-aid component, where SMEs in regions outside of Bucharest can receive funding of up to €1m (in co-funding rates similar to the ones above). Companies residing in Bucharest are not eligible for funding.

The companies also have an option to obtain de-minimis aid (but only covering up to 20% of the costs of the project), in case there are eligible costs next to the costs funded through regional state aid. The

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maximum amount of ERDF aid that can be awarded per company based on a *de-minimis* scheme is up to €200,000 over three consecutive fiscal years, and can fund up to 90% of the eligible expenses.

The Romanian government funds RDI activities within the framework of the National Plan for RDI 2015-2020, which implements the National Strategy for RDI 2014-2020. The plan defined the following fields for smart specialisation (RIS3): bio-economy; ICT, space and security; energy, environment and climate change; eco-nanotechnologies and advanced materials.

While funding for public research is also supported through own national funds, private sector research and innovation is primarily funded through the Axis 1 of the Competitiveness OP (COP), for ‘RDI in support of economic competitiveness and business development’, which is implemented by the Ministry for Research and Innovation and UEFISCDI – the Executive Agency for Financing Higher Education, Research, Development and Innovation. The funding schemes under the COP are specifically targeting the nationally RIS3 fields defined above.

The main grant funding schemes for private sector RDI that were launched since 2014 are under the COP Axis 1 - Action 1.2.1 – ‘Stimulating the companies’ demand for innovation’, and include:

- The 2015 competition for projects of innovative start-ups and spin-offs funded 41 new companies to develop new or improved products, technologies or processes, with a total of €6.8m (RON 31m) (Ministry of Research and Innovation, 2016a);
- The 2016 competition for projects from newly founded companies developing new or substantially improved, in support of production and commercialisation. The total awarded funding amounted 31 to over €23m (RON 108m) (Ministry of Research and Innovation, 2016b)

Further grant funding is available for RDI, targeting private sector support through knowledge or technology transfer from the public research sector to the private sector, innovation vouchers, as well as experimental and demonstration projects (here, eligible organisations include public or private research performers, companies, or partnerships) (Ministry of Research and Innovation, 2016c). Most of the calls were launched in 2015-2016, with few announcements for funding since the start of 2017.

Innovation Norway and EEA Grants have been also supporting RDI projects through the Green Industry Innovation Grant Programme in Romania. In 2013-2016, the programme funded 52 projects with grants amounting to €27.3m, invested in developing innovative green technologies, green products and green services. See Innovation Norway, 2017: http://eeagrants.org/project-portal/2009-2014?action=search&type=3&country%5B%5D=Romania&programme-areas%5B%5D=PA21

No calls have been launched yet but are expected.

The newest grant programme that the government launched in June 2017 to support entrepreneurs (replacing many previous entrepreneurship support programmes) is the “Start-up Nation Programme”, a de-minimis scheme, which provides grants of up to €44,000 per company, with no requirements for co-funding (Ministry of Business Environment and Entrepreneurship, 2017). To be eligible, the company needs to be founded after 30 January 2017, create at least one job, and maintain the jobs created for at least two years. The funding is only offered for a new activity of the company, acquiring new equipment (and maintaining it for at least 3 years). The companies in the field of manufacturing and IT are favoured in the scoring criteria, followed by companies in creative industries, services and trade and e-commerce.

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Romania also offers 50% supplementary corporate tax deduction for R&D expenditure, but only 200 companies had been registered for this incentive in 2015 (European Commission, 2017). Further fiscal incentives are described below:

**Figure A-12 Fiscal incentives for private RDI and IT sector**

<table>
<thead>
<tr>
<th>Fiscal incentive</th>
<th>Short description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exemption from profit tax</td>
<td>16% profit tax exemption for the reinvested profit in new technological equipment used for business purposes</td>
</tr>
</tbody>
</table>
| Income tax exemption for IT&C employees      | An exemption of the 16% income tax is available in Romania for employees working in IT, under conditions including:  
- Bachelor’s degree in one of the 14 technical specializations available  
- Employee is hired on a software/ engineer/programmer/software analyst position  
- Annual revenue per exempted employee must be over USD 10 000 |
| Deduction of R&D eligible expenses           | Eligible R&D expenses are considered the depreciation of R&D equipment and salaries for R&D personnel  
50% of these expenses can be deducted from the taxable income |
| Accelerated depreciation of machinery, equipment and real estate used for R&D purposes | A deduction of 50% from the fiscal value of the assets can be applied during the first year of use, while the remaining value may be depreciated linearly along the expected remaining lifespan  
Accelerated depreciation can also be used for equipment and/or for research and development activities  
If a company benefits from exemption of the income tax for reinvestment, it will not benefit from accelerated depreciation |

Source: (InvestRomania.gov, 2017)

### A.3.3.2 The use of financial instruments for SMEs and start-ups

The National Fund for Credit Guarantees for SMEs (FNGCIMM) has partnered with up to 27 local banks to offer several types of credit guarantees for financing SMEs (Andrez, Tataj, Romanainen, & Dalle, forthcoming):

- Standard guarantees for loans for investment projects or bridge guarantees for SMEs requiring co-financing for EU-funded projects (guarantees of up to €2.5m);
- The fund manages a Credit Guarantee Programme for SMEs whereby bank credit lines of up to EUR 1 million are guaranteed for 24 months (with a 12-month extension possible). The FNCGIMM guarantee equals up to 50% of the bank financing value (excluding interest, etc.);
- The Ministry of Economy has been running SME grant schemes such as Start-up Nation in partnership with FNCGIMM, guaranteeing access to finance;
- FNGCIMM also offers guarantee ceilings of up to 80% of the loans provided by 23 partner banks to SMEs;

During the previous programming period, the JEREMIE initiative (funded with €225m from the Competitiveness Operational Programme 2007-13 of ERDF), supported the provision of 6,000 new loans and investments of up to €600m (EIF, 2017).

While in the previous programming period, the provision of support for SMEs and innovation was rather limited to initiatives such as JEREMIE, for 2014-2020 there are several other new financial instruments that have been set up since 2016, especially focused on guaranteeing bank loans for general support to SMEs, some also targeting innovation or sectors (e.g. agriculture, IT or creative industries).

As of May 2017, Romanian projects managed to attract EUR 148m in funding from the EIB under EFSI, which are expected to trigger €424m investments ((European Commission, 2017b)).
One of the signed projects under EFSI is the **Agricover Loan for SMEs**. For this, EIB offered a loan amounting to €15m to Agricover Credit IFN, a financial institution located in Romania. The loan is expected to trigger a total of €54m of investments and will augment its credit line for farmers, with the purpose to support the provision of ‘affordable medium-term loans’ to SMEs in the agricultural sector.\(^{53}\)

The other three projects approved under EFSI in Romania are not targeting SMEs, but support R&D in a pan-European programme of a large company (Accelor Mittal) or other Romanian public or private large companies (National Radio Company, Transgaz, Private Healthcare Network Regina Maria) to enhance their digital, energy or healthcare infrastructures.\(^{54}\)

Further two programmes are in the pre-approval phase under EFSI, both targeting small companies in Romania and the Central and East European Region:\(^{55}\)

- the **Mid-Cap Programme Loan Central South East Europe** – credit lines “to finance investments of eligible Mid-caps in industry, services, tourism and agriculture sectors in Austria, Bulgaria, Cyprus, Czech Republic, Greece, Hungary, Romania and Slovakia”, with a proposed EIB finance of up to €300m and total cost of €800m.\(^{56}\)
- the **CSEE Employment and Start-ups Programme**, which is an “EIB Programme to finance small and medium size eligible investments promoted by riskier SMEs or Mid-caps, including start-ups, self-employed, and other SMEs and Mid-caps creating training and/or employment opportunities”.\(^{57}\)

The Romanian Government has been making increasing efforts to support the entrepreneurial environment lately. An important development is also that the government signed an agreement with the European Investment Fund (EIF) in October 2016, in order to set up the **SME Initiative Operational Programme**, which mobilised €100m of ERDF funding from the Romanian government, and is topped by H2020 budget and EIB Group funding.

**The aim of the SME Initiative is to support SMEs in growing their capacity on regional, national and international markets and get engaged in innovation processes. A risk-sharing mechanism meant to be leveraged with commercial lending, it is expected to generate more than €540 million in up to 3,700 new SME loans at favourable terms.**\(^{58}\)

By June 2017, EIF signed SME Initiative guarantee transactions with the following five commercial banks: Raiffeisen Bank, Banca Comerciala Romana (BCR), ProCredit Bank, Banca Transilvania and Banc Post.\(^{59}\) In October 2017, the EIF signed three further transactions with BRD Groupe SocGen, ING Bank (Bucharest Branch) and Libra Internet Bank, which are expected to benefit further 300 SMEs.

The SME Initiative guarantee covers 60% of the loan meant for investments or current expenses. Maximum amount offered is up to €1.5m, for a period of up to 36 months (for current expenses) or 120 months (for investments). Eligible companies must have their turnover below €5m, and should not activate in the field of agriculture, fisheries or aquaculture.\(^{60}\)

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Within the SME Initiative, each bank has to create a sub-portfolio of InnovFin type of loans, targeting innovation. According to the interviewees, this sub-component ranges between 3-5% of total SME Initiative funding for each bank.

Due to the fact that the instrument is very new, the interviewed banks that are part of the SME initiative could not provide information assessing the implementation and take-up of the funding by SMEs.

In March 2017, the EIF signed an agreement with Libra Internet Bank, to support its lending to the cultural and creative sector with guarantees from the Cultural and Creative Sector Guarantee Facility. It is expected that the funding would support 200 companies active in the creative industries in Romania with loans of up to a total of €10m.61

In addition, in October 2017, the EIB signed a further loan agreement with ProCredit Bank S.A., of €20m (cca RON 90m) in order to support investments in SMEs and midcaps.62

Based on the EIF reporting as of March 2017, the EU COSME Programme – Loan Guarantee Facility has reached a total number of 880 SMEs in Romania, with an amount of committed funding of €47m.63 In May 2017, mobilising funding from the EU COSME Programme – Loan Guarantee Facility and EFSI, the European Investment Fund and Raiffeisen Bank signed an agreement to provide Romanian SMEs with loans of up to €177m, with lower collateral requirements and extended maturities, and also targeting start-ups.64 The COSME guarantee covers 50% of the loan, with a value between €5,460 and €147,420 (RON equivalent) for a period of up to 36 months (for current expenses) or 120 months (for investments).65

In total, according to interviews carried out during the field visit to Romania, EIF plans to deploy around €150m funding for innovation in Romania for the next five years, meaning roughly €30-40m/year.

The InnovFin instrument is deployed in Romania through ProCredit Bank, which signed an umbrella agreement with EIB in January 2016. The total amount of the programme for ProCredit Banks is of €420 million, available at group level, not only for Romania. The amount of individual credit facilities ranges between €25,000 – €7.5 million (EIB, 2017). The guarantee covers 50% of the loan’s value, and the loan is at a lower interest rate, for investments in equipment or current capital expenses (ProCredit Bank, 2017). Based on interviews during the field visit, the bank already managed to leverage €30m in loans to companies in Romania from this facility in Romania.

In addition, Unicredit Bank signed an agreement with EIF in January 2017 to use InnovFin SME Guarantees of up to €160m to support innovation in SMEs and Mid-caps in eight countries in Western Balkans and Eastern European regions, including Romania.66 So far, Unicredit has not used funding from this facility in Romania, according to interviewees.

Building on the JEREMIE initiative, in September 2016, the EIF in cooperation with the (former) Ministry of European Funds launched the Competitiveness Funds-of-Funds in Romania, based on resources from the Competitiveness Operational Programme 2014-20 amounting to €59.3m (EIF, 2017). The funding will be distributed to:

- Entrepreneurship accelerator and seed funds (€40m)
- A portfolio risk-sharing loan instrument (remaining €19m)

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The EIF launched the call to select equity management teams by February 2017, and re-launched the call for selecting the financial intermediaries in June 2017, with a deadline by 31 December 2017.

A.3.4 Private finance for innovation
The non-banking financial markets have had a positive evolution in the past years, and have started to increasingly support especially the early stage SMEs. The Bucharest Stock Exchange (BSE), albeit small and not very dynamic, is slowly starting to become an interesting source of funding as well. Nevertheless, its liquidity is below expectations, as also remarked by the PSF Panel of experts. The BSE launched AeRO, an alternative trading system in 2015, which is the first market for small and medium companies in Romania. According to an interviewee, this alternative market attracted “a few early stage companies to get listed, also launching some bond issues”. In the Bucharest Stock Exchange, major Romanian private companies that have IPO-ed include MedLife, the largest private health network in Romania and Digi, a large telecom and Internet/Cable provider.

In terms of private finance for innovation, the annual investment values have been on the rise in the past years, growing from €28m in 2012 to €144m in 2015, which made Romania the fourth largest market in Central and Eastern Europe after Poland, Serbia and Hungary (Invest Europe, 2016). Nevertheless, the numbers of investments are lower than in other CEE countries, with only 11 companies funded in Romania, as opposed to Poland (105), Hungary (60), Lithuania (35) and Latvia (31) in 2015 (ibid).

At a closer look, the different types of investments that took place in Romania have been concentrated rather in later stage ventures, than seed and start-ups, with total investments in ventures amounting to €5.3m in 2014, and €1.8 in 2015. The relatively larger amounts of overall investments recorded in 2014 and 2015 are in fact driven by buyouts. This explains the small number of investments made in practice.

<table>
<thead>
<tr>
<th>Stage focus</th>
<th>Latvia</th>
<th>Romania</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2014</td>
<td>2015</td>
</tr>
<tr>
<td>Seed</td>
<td>310</td>
<td>251</td>
</tr>
<tr>
<td>Start-up</td>
<td>3,700</td>
<td>5,149</td>
</tr>
<tr>
<td>Later stage venture</td>
<td>1,547</td>
<td>1,225</td>
</tr>
</tbody>
</table>

Source: (Invest Europe, 2016)
A mapping study undertaken by the Romanian Agency for Higher Education, Research and Innovation Funding (UEFISCDI) also showed that in spite of existence of financial institutions providing broad access to finance, these instruments do not cover funding for all stages of company or product development, and especially the early stages of support are not covered (UEFISCDI, 2015).

Currently, the business angel activity is in the incipient stages in Romania. Nevertheless, there are already known networks such as Venture Connect⁶⁷, AngelConnect⁶⁸, Business Angels Romania and TechAngels⁶⁹, which have been launched by Romanian experienced entrepreneurs. According to an interviewee, “the business angel ecosystem has increased significantly, with business-angel clubs and networks starting to be active on the market and with many innovative start-ups being now initially financed by business angel syndications (for example, together with 3TS’s Catalyst Romania, in a portfolio of 10 companies, no less than 15 business-angels are co-investing, in some cases multiple business angels being syndicated in one company)”.

Moreover, newly founded incubators and accelerators are increasingly bridging the gap between early-stage ideas and early-stage funding. The Romanian Tech Start-ups Directory maps 10 such organisations, at different stages of development, almost all of them offering funding under €500k.⁷⁰ The main incubators offering this type of support in Romania are: MVP Academy⁷¹, SpherikAccelerator, Innovation Labs and Startarium⁷² (run by TechHub), who have reportedly incubated over 100 start-ups, and raised more than €1m in financing for ventures at various stages of development by 2014 (InvestRomania.gov, 2016). The market is growing fast, as MVP Academy itself supported 45 start-ups that raised €1.7m in 2014-2016, launched 18 products on the global market, and 12 of the start-ups already are generating revenues (MVP Academy, 2017).

An interviewee from the sector mentioned that “it has become easier to access funding for innovative activities in the past years, primarily as a result of a few categories of investors appearing and/or growing in the market: VC’s for tech start-ups, such as Catalyst Romania, the 3TS Romanian fund, based on the EU JEREMIE initiative and having EIF as the main LP; other VC’s from the region started to also pay more attention to Romania and to invest in Romanian tech or IT companies (e.g. EarlyBird, Credo, etc.).”

However, it is difficult to have a full overview of the market, as there is conflicting data on the number of existing VC firms. The mapping by UEFISCDI shows three active VC funds started or brought to Romania by Romanian successful entrepreneurs (3TS Capital Partners, TechAngels, EarlyBird Venture Capital) (UEFISCDI, 2015). The tech start-up ecosystem overview made by the Invest Romania team of the Ministry of Economy mentions that Romanian start-ups also obtained funding from Seedcamp⁷³,

<table>
<thead>
<tr>
<th>Total venture</th>
<th>5,557</th>
<th>6,625</th>
<th>5,303</th>
<th>1,829</th>
</tr>
</thead>
<tbody>
<tr>
<td>Growth</td>
<td>25,700</td>
<td>28,953</td>
<td>24,144</td>
<td>2,265</td>
</tr>
<tr>
<td>Rescue / Turnaround</td>
<td>0</td>
<td>0</td>
<td>1,060</td>
<td>0</td>
</tr>
<tr>
<td>Replacement capital</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Buyout</td>
<td>4,970</td>
<td>0</td>
<td>49,182</td>
<td>140,200</td>
</tr>
<tr>
<td>Total</td>
<td>36,227</td>
<td>35,578</td>
<td>79,689</td>
<td>144,294</td>
</tr>
</tbody>
</table>

Source: (Invest Europe, 2016)

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⁶⁷ See http://www.ventureconnect.ro/
⁶⁸ See http://www.angelconnect.ro/
⁶⁹ See www.techangels.ro
⁷¹ http://mvpacademy.co/
⁷² https://www.startarium.ro/
⁷³ http://seedcamp.com/
Fribourg Capital, Gecad Ventures and Francisco Partners (InvestRomania.gov, 2016). Gecad Ventures is one of the first venture capital funds developed in the late 2000s, and boasts seven exits by mid-2017. In April 2017, Accel Partners (an American investment fund) offered the largest sum a Romanian tech company received as VC funding to date ($30m) to UiPath, a Romanian robotics process automation company that became leader in this field.

The EU Commission R&I Observatory report counts seven further international investment funds operating in Romania, focused on more mature investments (Advent International Romania, AIG New Europe Fund, Global Finance International Ltd., Danube Fund, Environmental Investment Partners, ORESA Venture Romania, and Romanian Investment Fund (Cyprus) LTD) (Gheorghiu et al, 2016).

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74 http://www.fribourgecapital.com/
75 http://www.fribourgecapital.com/
76 A Silicon Valley venture capital fund for technology companies - not operating in Romania, but acquired Avangate, a start-up supported by Gecad Ventures in 2013.
77 See Gecad Ventures, http://gecad.com/investments/
Appendix B Consistency with State aid regulations

The following discusses the relevant state aid provisions related to R&D and innovation, as well as SMEs. The discussion is based on the relevant EU State aid regulations.

B.1 Relevant state aid provisions

The following State aid provisions are relevant for assessing eligibility of R&D and innovation activities:

B.1.1 Article 25 - Aid for research and development projects

The following activities can be aided:

**Industrial research**, which means the planned research or critical investigation aimed at the acquisition of new knowledge and skills for developing new products, processes or services or for bringing about a significant improvement in existing products, processes or services. It comprises the creation of components parts of complex systems, and may include the construction of prototypes in a laboratory environment or in an environment with simulated interfaces to existing systems as well as of pilot lines, when necessary for the industrial research and notably for generic technology validation;

These are in practice only systematic and well-designed research projects with dedicated personnel.

**Experimental development**, which means acquiring, combining, shaping and using existing scientific, technological, business and other relevant knowledge and skills with the aim of developing new or improved products, processes or services. This may also include, for example, activities aiming at the conceptual definition, planning and documentation of new products, processes or services;

Experimental development may comprise prototyping, demonstrating, piloting, testing and validation of new or improved products, processes or services in environments representative of real life operating conditions where the primary objective is to make further technical improvements on products, processes or services that are not substantially set. This may include the development of a commercially usable prototype or pilot which is necessarily the final commercial product and which is too expensive to produce for it to be used only for demonstration and validation purposes.

Experimental development does not include routine or periodic changes made to existing products, production lines, manufacturing processes, services and other operations in progress, even if those changes may represent improvements;

**Feasibility study**, which means the evaluation and analysis of the potential of a project, which aims at supporting the process of decision-making by objectively and rationally uncovering its strengths and weaknesses, opportunities and threats, as well as identifying the resources required to carry it through and ultimately its prospects for success;

These are typically activities done prior to the main R&D and innovation activities, but they may also be done to some extent in parallel.

The **eligible costs** of research and development projects consisting of industrial research, experimental development and feasibility study activities include the following:

- **personnel costs**: researchers, technicians and other supporting staff to the extent employed on the project;
- **costs of instruments and equipment to the extent and for the period used for the project**.

Where such instruments and equipment are not used for their full life for the project, only

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the depreciation costs corresponding to the life of the project, as calculated on the basis of generally accepted accounting principles are considered as eligible.

c. costs for of buildings and land, to the extent and for the duration period used for the project. With regard to buildings, only the depreciation costs corresponding to the life of the project, as calculated on the basis of generally accepted accounting principles are considered as eligible. For land, costs of commercial transfer or actually incurred capital costs are eligible.

d. costs of contractual research, knowledge and patents bought or licensed from outside sources at arm’s length conditions, as well as costs of consultancy and equivalent services used exclusively for the project;

e. additional overheads and other operating expenses, including costs of materials, supplies and similar products, incurred directly as a result of the project;

Eligible costs for feasibility studies shall be the costs of the study.

The max aid intensity for each beneficiary is:

- Industrial research: 50 % (60% for medium-sized and 70% for small enterprises) of the eligible costs.
- Experimental development: 25 % (35% for medium-sized and 45% for small enterprises) of the eligible costs.
- Feasibility studies: 50 % (60% for medium-sized and 70% for small enterprises) of the eligible costs.

This provision is the most relevant one for the grant component, since it is possible for both SMEs and Mid-caps. Experimental development would most likely be the type of R&D activity most companies would engage in. If the grant component is supposed to be at the same level for all SMEs and Mid-caps, the max level of the grant should not exceed 25%, as this level would be possible for all companies.

What makes this provision challenging for some innovation activities, is that the cost of instruments and equipment is allowed only to the extent and for the period used for the project, i.e. the extent and period R&D activities are carried out. This means that acquiring new technology by investing in new machines, equipment, etc. can’t be supported to the full cost of these, but only to the extent they are used for R&D activities. This means that eligible costs are not the investment cost, but depreciation costs corresponding to the duration of the R&D activities. Same applies for building, land and other infrastructure relevant for the R&D activity.

Another challenge with this provision is that it is limited to R&D activities. According to the definition of experimental development, it can cover all activities necessary for prototyping, demonstrating, piloting, testing and validation of new or improved products, processes or services in environments representative of real life operating conditions where the primary objective is to make further technical improvements on products, processes or services that are not substantially set. This may include the development of a commercially usable prototype or pilot which is necessarily the final commercial product and which is too expensive to produce for it to be used only for demonstration and validation purposes.

However, the definition doesn’t cover innovation activities, which result in final commercial product, process or service. For example, acquisition of new technology in the form of a new production machinery – a typical form of innovation activity in Romania – can be regarded as innovation, but not R&D. Hence, it is eligible for the loan, but not for the grant component.

On the other hand, activities for screening, scoping and analysing customer needs and markets can be included as eligible R&D expenses based on the rules concerning feasibility studies. Activities aimed at developing a new business model can also be considered as eligible either based on feasibility studies, experimental development or in the case of SMEs (and Mid-caps collaborating with SMEs) on organisational and process innovation.
B.1.2 Article 28 - Innovation aid for SMEs

The eligible costs shall be the following:

a. costs for obtaining, validating and defending patents and other intangible assets;

b. costs for secondment of highly qualified personnel\(^{80}\) from a research and knowledge-dissemination organization or a large enterprise, working on research, development and innovation activities in a newly created function within the beneficiary and not replacing other personnel;

c. costs for innovation advisory and support services\(^{81}\);

The max aid intensity is 50 % of the eligible costs. In the particular case of aid for innovation advisory and support services the aid intensity can be increased up to 100 % of the eligible costs provided that the total amount of aid for innovation advisory and support services does not exceed €200,000 per undertaking within any three-year period.

This provision is relevant for SMEs, but limited to specific activities. This provision doesn’t allow grants for Mid-caps.

B.1.3 Article 29 - Aid for process and organisational innovation\(^{82}\)

The eligible costs shall be the following:

d. personnel costs;

e. costs of instruments, equipment, buildings and land to the extent and for the period used for the project;

f. costs of contractual research, knowledge and patents bought or licensed from outside sources at arm’s length conditions;

g. additional overheads and other operating costs, including costs of materials, supplies and similar products, incurred directly as a result of the project.

The max aid intensity for SMEs is 50 % and for large companies 15 % of the eligible costs. Aid to large companies is possible only if they collaborate with SMEs and the collaborating SMEs incur at least 30 % of the total eligible costs.

This provision is relevant and easy to use for SMEs, but for Mid-caps would require extensive collaboration with SMEs.

B.1.4 Other state aid provisions

De-minimis aid provision would allow highest flexibility for providing the grant component. However, de-minimis is frequently used as a legal basis for public support schemes, and companies therefore often

\(^{80}\) ‘highly qualified personnel’ means staff having a tertiary education degree and at least 5 years of relevant professional experience which may also include doctoral training; ‘secondment’ means temporary employment of staff by a beneficiary with the right for the staff to return to the previous employer;

\(^{81}\) ‘innovation advisory services’ means consultancy, assistance and training in the fields of knowledge transfer, acquisition, protection and exploitation of intangible assets, use of standards and regulations embedding them; ‘innovation support services’ means the provision of office space, data banks, libraries, market research, laboratories, quality labelling, testing and certification for the purpose of developing more effective products, processes or services;

\(^{82}\) ‘organisational innovation’ means the implementation of a new organisational method in an undertaking’s business practices, workplace organisation or external relations, excluding changes that are based on organisational methods already in use in the undertaking, changes in management strategy, mergers and acquisitions, ceasing to use a process, simple capital replacement or extension, changes resulting purely from changes in factor prices, customisation, localisation, regular, seasonal and other cyclical changes and trading of new or significantly improved products; ‘process innovation’ means the implementation of a new or significantly improved production or delivery method (including significant changes in techniques, equipment or software), excluding minor changes or improvements, increases in production or service capabilities through the addition of manufacturing or logistical systems which are very similar to those already in use, ceasing to use a process, simple capital replacement or extension, changes resulting purely from changes in factor prices, customisation, localisation, regular, seasonal and other cyclical changes and trading of new or significantly improved products;
have much less than the maximum quota at any given time. As the max allowed *de-minimis* aid over any 3-year period is €200,000, it is not suitable legal basis for the grant component, except for small loans. For example, a 20% grant component for a €500,000 loan would be €100,000, which is already half of the max allowed *de-minimis*. Theoretically, 20% grant component would allow for max €1M loans, but as companies typically benefit from one or more *de-minimis* support schemes at the same time, it would not be advisable to go much beyond half of the *de-minimis* quota. Hence, loans up to €500,000 (or with some risk of *de-minimis* cumulation up to €750,000) would basically be possible to link to a grant component using *de-minimis* as the legal basis.

**Article 17 – Investment aid to SMEs** is a provision that under certain conditions allows 10 % aid for medium size and 20 % aid for small enterprises. As the intention is to focus on innovation and not make the instrument overly complex, this general provision is not suitable as a legal basis for the grant component.

**Article 14 - Regional investment aid** would allow higher aid intensities, but would only be available in assisted regions. In Romania, this would mean only outside of Bucarest region. Furthermore, additional criteria e.g. for maintaining the investment in the region after the investment, and the investment having to be new economic activity (thus, excluding investments e.g. into current production processes) in the region, would further limit the use of this provision.

**Article 22 - Aid for start-ups** would allow grants up to €400,000 (even higher in assisted regions, i.e. outside Bucarest; double the amount if the startup is innovative) be given to companies less than 5 years old. This aid would be easy to use, since only the eligibility of the company has to be established. This provision would allow loans up to €2M with a fixed 20% grant component. However, this would limit the grant component only to companies less than 5 years old. These companies typically prefer equity based funding and the size of the market in Romania is relatively limited.

There are also a number of sector specific and special thematic aid provisions (such as the aid for energy efficiency investments, which EBRD has used earlier in Romania), which allow aiding a more targeted set of companies and activities. However, the responses from the banks indicate that the instrument should not be narrowly limited to specific sectors. Hence, the use of sector or thematic aid provisions as a legal basis for the grant component is not viable in this context.

### B.2 Notification of a new innovation support programme for Romania

It would, at least in theory, be possible to design a formal innovation support programme for the planned grant component at a fixed 20% level and submit that for Commission approval. However, the notification process is lengthy and would in this case most likely take several months. Furthermore, as the analysis above regarding current block exempted state aid provisions shows, it may not be possible in the end to get the approval for such a programme from the Commission.

Should this option be considered, the main challenge is to provide sufficient evidence and strong argumentation that a serious enough market failure exists in Romania with regards to innovation in SMEs and Mid-caps. While there is no doubt that such a market failure does exist, providing compelling enough evidence to convince the Commission that the failure is serious enough to warrant a new innovation support programme and therefore approve it will be challenging.

If this approach is eventually followed, the task and resources could be shared with the Romanian government. The local ministry or an appropriate funding agency might see that the evidence of the seriousness of the market failure and the potential of a subsequent new innovation support programme could offer interesting new possibilities also for them83.

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83 An aid programme is member state specific (or European) and can be implemented by several managing authorities at the same time. In this case, the managing authorities would be EBRD (or Horizon 2020, depending on the arrangement between EBRD and Horizon 2020) and potentially a local government agency or ministry providing public funding to support innovation in SMEs and Mid-caps. Naturally, the same companies couldn’t be supported by both at the same time.
**B.3 Possible size of the grant component based on the relevant state aid provisions**

It should be noted, that the legal basis for the grant component in the previous energy efficiency programme was a single provision in the general block exemption regulation. *Article 38 - Investment aid for energy efficiency measures* allows a max 30% aid for eligible costs directly related to achieving higher level of energy efficiency. The adopted size of the grant component (10%/15%) was below the allowed max level, but apparently sufficient to act as an incentive for these investments as indicated by the demand for the instrument in Romania.

Based on the available state aid provisions for R&D and innovation, it seems that some form of a compromise must be reached with regards to the grant component. If the target group would be limited to SMEs only, then more provisions and bigger grant component would be possible. For SMEs, the level of the grant could easily be as high as 35%, and it would allow both R&D activities as well as selected innovation activities to be covered.

However, if the grant component is made available to both SMEs and Mid-caps, the level shouldn’t exceed 25%. Furthermore, it must be limited to R&D activities as innovation activities can only be aided in a very limited way for non-SMEs. In practice, this would mean that in typical innovation projects in Romania, the eligible costs from which the grant component is calculated would in most cases be only a small part of the loan component. A rough estimate could be that for a typical innovation project of acquiring new technology through a purchase of a new production machinery, R&D costs would most likely not be more than 15 or 20%. For a €1M loan, this would mean that the effective size of the grant component – if the grant component is 20% and 15% of the total costs are eligible R&D costs – would remain at €30,000. This would mean that for typical innovation projects in Romania, the effective size of the grant component would most likely be below 5%, if based only on eligible R&D costs.

This would suggest that a more appropriate approach would be to limit the instrument to SMEs only. This would allow a bigger grant component and more extensive eligible cost basis. Using the same example in the case of an SME and assuming a 35% grant component and 25% eligible R&D and innovation costs, the effective grant component would be €87,500, i.e. closer to 10%.

The purpose of these estimations is to illustrate how important it is to clearly define what the appropriate legal basis and thereby the eligible cost basis is for the grant component. Cases where buying production machinery is not the main objective, the grant component may be much higher. However, it will eventually depend more on the R&D and innovation activities and their eligibility than on the size of the loan. This means that the size of the grant component can’t be fixed, but will depend case-by-case on the activities.

Marketing an instrument, where the size of the grant component can’t be fixed, will be challenging. Marketing that it can vary between 0-20% (or 0-35%) will most likely lead into lots of disappointments as companies realise that often only a small share of the activities can be regarded as R&D, which is the basis for the grant component. This will most likely make the instrument less attractive also for the banks.

As the grant component originates from European level and the decision making is not influenced by any national or regional authority, it is not subject to state aid considerations. However, as it is Horizon 2020 funding, it should be sufficiently aligned with the principles outlined for R&D and innovation state aid. In practice and given the current financial market gap for R&D and innovation, the alignment mostly refers to the maximum size of the grant component. Hence, the lower limit for the size of the grant component is defined by minimum sufficient attractiveness of the instrument, whereas the upper limit should be defined by alignment with state aid principles and the availability of grants from public support schemes for similar purposes.
Appendix C Eligibility criteria

C.1 General exclusion criteria – these should be verified first

This section is based on the InnovFin criteria defined and used by the EIB/EIF, and on the EU State aid regulations.

- The beneficiary **must be a micro, small or medium-sized enterprise** as defined in the Commission Recommendation 2003/361/EC (OJ L124, 20.05.2003, p. 36), as amended, restated, supplemented and/or substituted from time to time **or a midcap** (defined as enterprises with less than 3000 full-time equivalent employees);
  
  In practice, all companies with less than 3000 employees are eligible.

- The beneficiary **can’t be** a "firm in difficulty" within the meaning of Article 2.1 of the Community guidelines on State aid for rescuing and restructuring firms in difficulty (OJ C 244, 1.10.2004, p. 2), as amended, restated, supplemented and/or substituted from time to time (prolonged, OJ C 296, 2.10.2012, p.3);
  
  **In practice, if the company is bankable, it is eligible.**

- The beneficiary **can’t be involved** in any of the following business activities:
  - Production (or construction) of, distribution (or processing) of, and trade in **weapons and arms, ammunition, military or police equipment or infrastructures**, and equipment or infrastructure which result in limiting people's individual rights and freedom (i.e. prisons, detention centres of any form) or in violation of human rights
  - Production (or construction) of, distribution (or processing) of, and trade in **gambling** and related equipment
  - Production (or construction) of, distribution (or processing) of, and trade in **tobacco** products
  - Activities involving **live animals for experimental and scientific purposes** insofar as compliance with the "Council of Europe’s Convention for the Protection of Vertebrate Animals used for Experimental and other Scientific Purposes" cannot be guaranteed
  - Activities which give rise to environmental impacts that are not largely mitigated and/or compensated
  - Activities considered ethically or morally controversial or which are forbidden by national law, e.g. research on human cloning
  - Pure real estate development activity
  - Pure **financial activities** e.g. purchasing or trading in financial instruments
  
  **In practice, any company with any of its businesses directly related to these listed business activities is not eligible. This may also include its parent company or any other linked businesses.** Customers of the company can be engaged into the listed activities, as long as the company itself is not.

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85 A firm is regarded as being in difficulty where it is unable, whether through its own resources or with the funds it is able to obtain from its owner/shareholders or creditors, to stem losses which, without outside intervention by the public authorities, will almost certainly condemn it to going out of business in the short or medium term.

86 Two or more enterprises are linked when they have any of the following relationships: (1) one enterprise holds a majority of the shareholders’ or members’ voting rights in another; (2) one enterprise is entitled to appoint or remove a majority of the administrative, management or supervisory body of another; (3) a contract between the enterprises, or a provision in the memorandum or articles of association of one of the enterprises, enables one to exercise a dominant influence over the other; (4) one enterprise is able, by agreement, to exercise sole control over a majority of shareholders’ or members’ voting rights in another. A typical example of a linked enterprise is the wholly owned subsidiary.
C.2 Innovative company – company is eligible for the EBRD instrument

This section is based on the InnovFin criteria defined and used by the EIB/EIF\(^{87}\). Eligibility can be confirmed by complying with at least one of the described criteria.

- **Purpose of the loan must be innovation**

  The company intends to use the loan to invest in producing or developing or implementing new or substantially improved (i) products, processes or services, or (ii) production or delivery methods, or (iii) organisational or process innovation including business models that are innovative and where there is a risk of technological or industrial or business failure as evidenced by an evaluation carried out by an external expert

  Company can verify this by providing a business plan or a separate plan for a R&D or innovation project.

  We propose that general guidelines will be drafted (based on Chapter 4.3.3), so that the banks can easily exclude companies/projects which are clearly not eligible. We further propose, that a checklist is provided of the issues that the business plan or a separate innovation project plan must include for the external expert to be able to establish eligibility.

  However, verifying the innovativeness of the proposed products, processes or services, production or delivery methods, or organisational or process innovation as well as the related technological or industrial or business risks will eventually **require the use of external expert, which will be provided cost-free by EBRD as technical assistance.**

- **Company must be a fast-growing enterprise**

  The company is a “fast-growing enterprise”, which is an SME or a Small Mid-cap operating in a market for less than 12 years following its first commercial sale and with an average annualised endogenous growth in employees or in turnover greater than 20% a year, over a three-year period, and with ten or more employees at the beginning of the observation period

  Company can verify this by providing the appropriate financial statements from the last 3 years.

  The average annual growth in employees or turnover must be more than 20%. This can’t include any mergers or bought businesses.

  **We propose not to use this criterion in Romania**, because (1) the number of eligible companies is very small (between 0-0.05% of all enterprises), and (2) in positive economic conditions many companies may fulfill this criterion without showing any signs of innovativeness (e.g. small construction companies tend to be born and grow fast for a couple of years, when the economy is bouncing back from recession or otherwise difficult situations).

- **Company has verifiably invested in R&D and/or innovation earlier**

  The company has been operating in a market for less than 7 years following its first commercial sale and its R&D and innovation costs represent at least 5% of its total operating costs in at least one of the three years preceding the company’s application for the loan, or in the case of an enterprise (and particularly a start-up) without any financial history, according to its current financial statements

  Company can verify this by providing the appropriate financial statements from the last 3 years, or in the case of a start-up, its current financial statements.

  Company can be formally older than 7 years. Eligibility is defined by first commercial sale. Company formally older than 7 years can verify this by providing annual financial statements from the early years showing no or negligible revenues.

  One financial statement from the last 3 years must show R&D and/or innovation costs at least 5% of company’s total operating costs.

- **Company must have innovation potential, which can be verified by fulfilling one of the following criteria:**

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The company’s R&I costs represent at least 10% of its total operating costs in at least one of the three years preceding the company’s application for the loan, or in the case of an enterprise without any financial history, as per its current financial statements; or the company is a Small Mid-cap and its R&I costs represent either, at least 15% of its total operating costs in at least one of the three years preceding the company’s application for the loan, or, at least 10% per year of its total operating costs in the three years preceding the company’s application for the loan; or

In the case of an SME, the company has invested at least 10% of its turnover in R&D and innovation activities during one the previous 3 years. In the case of a start-up, it is enough that this condition is fulfilled for the current financial period.

In the case of a Small Mid-cap, the company has invested at least 15% of its turnover in R&D and innovation activities during one of the previous 3 years, or alternatively it has invested at least 10% of its turnover in R&D or innovation activities every year during the last 3 years.

Company can verify this by presenting documentation received from certified accountant.

- The company undertakes to spend an amount at least equal to 80% of the loan on R&I activities as indicated in its business plan and the remainder on costs necessary to enable such activities; or

Company intends to use at least 80% of the loan into R&D or innovation activities, and the rest 20% to activities enabling these R&D and innovation activities. Company must verify this by presenting a business plan or a separate plan for a R&D or innovation project.

Verifying the eligibility of the proposed R&D and innovation as well as enabling activities will require the use of external expert, which will be provided cost-free by EBRD as technical assistance.

- The company has been formally awarded grants, loans or guarantees from European R&I support schemes e.g. Horizon 2020 or FP7 or through their funding instruments e.g., Joint Technology Initiatives or Eurostars or regional, national research or innovation support schemes over the last thirty-six (36) months, under the condition that the loan is not covering the same expense; or

Company has received public funding for R&D or innovation activities/project during the last 36 months. This refers to the date of the formal letter received by the company informing it that it has been awarded with a grant, loan or guarantee.

The loan can’t be used to cover any of the costs of these earlier funded projects.

We propose that this will also include any other form of R&D or innovation support, such as de-minimis support in the form of a voucher or subsidised service, which can be verified by formal information letter the company has received from a national or regional authority responsible for managing the R&D or innovation support scheme. Managing authorities of these regional or national schemes should be mandated to formally inform companies of any de-minimis or other state aid the company has received.

As the launch of the national support schemes for the 2014-2020 funding period have been significantly delayed, we propose that the interpretation of this criterion could be extended to cover any grant or loan payment received by the company during the last 36 months. This would allow companies that have received public funding decisions during the final years of the previous funding period 2007-2014 to be eligible based on this criterion.

We also propose that this would also include companies that have received a notification of approval for public funding, even if the actual funding contract is not yet signed. Provided, of course, that the loan or the grant component is not used to cover any of the same expenses as the publicly funded project.

- The company has been awarded over the last twenty-four (24) months an R&D or Innovation prize provided by an EU institution or an EU body; or
Company can verify this by presenting a formal letter informing it of the prize. This includes European prizes, but also any publicly recognised national or regional innovation prize.

- The company has been designated in the past 36 months as an innovative company by an EU or national or regional institution or body, provided that in each case the designation is based on the publicly available criteria where such criteria is not limited to or otherwise favour any particular industry or sector, and it reflects at least one of the criteria used in R&D or Innovation prizes provided by an EU institution or an EU body, or it reflects the substance of at least one of these criteria but is not less stringent; and the body or institution is independent of the bank and the company; and the loan covers incremental expenditure as indicated in the company’s business plan; or

This must be a national or regional arrangement, where an independent body or group of independent experts assesses companies using a set of transparent and publicly available criteria (one of which must either be the same or highly similar to the ones used in awarding European innovation prizes), and eventually designates selected companies as innovative companies. **We suggest that EBRD compiles and maintains a list of acceptable arrangements.**

The company can verify this by providing the formal documentation it has received from the body awarding this designation.

- The company has registered at least one technology right (such as patent, utility model, design right, topography of semiconductor products, supplementary protection certificate for medicinal products or other products for which such supplementary protection certificates may be obtained, plant breeder’s certificate or software copyright) in the last twenty-four (24) months, and the purpose of the loan is to enable, directly or indirectly, the use of this technology right; or

Company can verify this with the formal registration documents. Both national and international technology rights are eligible. The loan must be used for the purposes of commercialising this particular technology right.

- The company is an early stage SME and has received an investment over the last twenty-four (24) months from a venture capital investor or from a business angel being a member of a business angels network; or such venture capital investor or business angel is a shareholder of the company at the time of the company’s application for the loan; or

Company’s shareholders include either a private equity fund or a respectable business angel. Company can verify this with the latest shareholder agreement.

These entities don’t make investments without taking equity, so being a shareholder can be regarded as sufficient to verify this. In the exceptional case, where the private equity fund or business angel has already exited from the company, then this can be verified with the formal investment documents between the company and the private equity fund or business angel.

The requirement for a business angel to be a member of business angel network can be interpreted to refer to any form of arrangement, whereby the business angel is accepted by a respectable community of other business angels, or accepted/certified by a national business angel co-investment fund or any other form of public support given only to business angels complying with eligibility requirements (e.g. business angel law) ensuring that e.g. they have the necessary competences/experience, sufficient financial means, etc.

- The company requires a risk finance investment which, based on a business plan prepared in view of entering a new product or geographical market, is higher than 50% of its average annual turnover in the preceding 5 years; or
Company can verify this by providing the latest statutory financial statements, and by providing a business plan, which clearly indicate the ambition to enter a new product or geographical market.

- The company’s R&I annual expenses are equal or exceed 20% of the loan as per company’s latest statutory financial statements, under the condition that the company’s business plan indicates an increase of its R&I expenses at least equal to the amount of the loan; or

During the last financial period, the company invested in R&D and innovation activities an amount of money that is at least 20% of the size of the applied loan. The company must also present a business plan in which it clearly shows that the R&D and innovation investments are planned to grow at least as much as the amount of the applied loan.

Company can verify this by providing the latest statutory financial statements, and by providing a business plan.

- The company has incurred R&I expenses qualified in the past 36 months by competent national or regional bodies or institutions as part of general support measures approved by the European Commission and designed to incentivize companies to invest in R&I, provided that i) such body or institution is independent of the bank or the company and ii) the loan covers incremental expenditure as indicated in the company’s business plan and iii) the loan is not covering the same eligible costs already supported by aforementioned measures.

In practice, this means that if the company has received any funding from a public R&D or innovation support scheme managed by a public agency or other independent organisation without any ties to the bank or the company during the last 36 months, the company is eligible.

However, the loan can’t be used to cover any expenses resulting from the publicly funded project.

The company can verify this by providing formal documentation indicating that it has received money from any of the relevant public R&D or innovation support schemes during the last 36 months, and that this money was for covering costs of R&D or innovation activities. Most of the relevant schemes are grant programmes.

The schemes include also tax exemptions, if they are directly related to R&D and innovation. In Romania, these include:

- R&D tax relief. Companies can benefit from an additional deduction of 50% of the eligible expenses for their R&D activities. Moreover, accelerated depreciation may be applied for devices and equipment used in the R&D activity.

- Exemption from profit tax for companies engaged exclusively in innovation and R&D activities. Taxpayers that exclusively perform innovation and R&D activities on scientific research and technological development and related activities are exempt from profit tax for the first ten years of activity.

In the case the company can’t benefit from the R&D tax relief because it has insufficient tax liability, unused credits can be carried forward for 7 years. This means that the company can benefit from the R&D Tax relief max 7 years after the eligible R&D costs have occurred. If the company can provide formal documents to verify that it has been able to benefit from the carry forward during the last 36 months, it would make it eligible according to this criterion.

We propose that EBRD compiles and maintains a list of public R&D and innovation support schemes to make this verification easier.