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SME Innovation Financing Facility

Latvia – final report

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SME Innovation Financing Facility

Latvia – 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 Latvia. The rationale is deeply founded on the combination of a loan and technical assistance. Together they address a clear gap in the Latvian financial markets, and the needs of the economy as well as the needs of the targeted companies. The market analysis indicates a market gap and therefore that the potential does exist. However, the size of the market gap is currently relatively small as the private banks, ALTUM and public support schemes already cover it partly. Latvian banks show little interest in partnering with EBRD, and perceive it more as a potential competitor. Successful implementation relies on collaboration with ALTUM and the quality of the technical assistance. Unsurprisingly, the main risks are related to eligibility criteria and thereby acceptance by the ALTUM 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 Latvia are modest. To secure future growth and catching up with the rest of Europe, Latvian 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 Latvian 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, the InnovFin instruments have not been picked up by Latvian banks to a large degree.

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 the planned EBRD instrument is less 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 loan combined with technical assistance can 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 added value of the technical assistance is to help 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 Latvia are either targeted to start-ups or already innovative companies. Although the launch of the public support programmes has been delayed, they are expected to be in full operation by 2018.

Given the current situation in Latvia with respect to innovation, and funding available to facilitate it, there seems to be an identifiable gap in the financial markets (market failure). The gap is related to the availability of smart funding for companies engaging in innovation activities with an identifiable technological, business or commercial risk. These companies don’t necessarily have full collateral, their
business plan is ambitious and potential success can therefore not be assessed based on earlier market or financial performance, and for implementing the business plan the company needs to acquire new competences (e.g. financial management, innovation management, specific technologies, R&D and/or innovation project management, etc.).

While the public support schemes try to address this gap, they can only do it partly as all schemes require companies to fund their innovation activities partly on their own (grants don’t cover all funding needs), getting and using public grants is administratively demanding and includes uncertainties (e.g. applications may be rejected, there may be too long delays in receiving grant decisions, even necessary changes to the original business plan may not be possible, etc.), and grants are payed afterwards, which means that the company may need to find bridge-funding to cover the expenses until the grant is paid. Private banks, on the other hand, require sufficient collaterals and are less willing to take risks always inherent in innovation activities. Equity markets may further address this gap, but focuses mostly on start-ups (early stage venture capital), scale-ups (later stage venture capital targeting high-growth companies), or large companies (traditional capital markets, stock markets, etc.).

It would therefore seem that there is a market gap (market failure), which current public and private financial instruments can’t fully address. The planned new EBRD instrument addresses this gap by proving both funding (loan) and support for competences to develop the necessary competences (technical assistance).

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 Latvia by encouraging previously less innovative companies to engage in innovative activities (incl. R&D), and more innovative companies to strengthen their 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 Latvian financial markets and companies interest to use bank loans to fund their activities, and interviews with the Latvian 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).

The estimations indicate that the number of less innovative companies would be around 300 and the number of more innovative companies would be around 100, resulting in a total of 400 companies. While this estimate may eventually prove conservative, it reflects the current situation in Latvia as evidenced by statistics and estimates received from local financial market actors.

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 for more innovative companies shows varying levels, ranging from €240k to €400k. Due to the fact, that the target companies would need to have less than 3,000 employees, an **average ticket size of €300k for more innovative companies** would seem plausible. At the same time an **average ticket size of €100k for the less innovative companies** would be a plausible size of the awarded loans. This would mean an average ticket size of €150k in the whole target group.

Based on the number of eligible companies and the estimated average ticket size, introducing the new EBRD innovation support facility of up to €60m would be feasible to cover the needs and potential of the Latvian market for innovation. However, given the novelty of the EBRD instrument, it is suggested that it is designed appropriately below this estimated maximum volume. Hence, **the suggestion is to design the EBRD instrument at the level of around €20m**. Based on our estimates, this would allow the funding of about 140 companies, even more if the average ticket size proves to be smaller and/or if ALTUM opts to syndicate some loans with private banks.
Preliminary interest indicated by ALTUM towards a new EBRD instrument is at the level of €10m, which can be regarded as conservative given the estimated size of the potential market. However, if the initial launch and implementation proves successful, there should be no reason why the full €20m wouldn’t be picked up by the market within the next couple of years.

**Characteristics**

The **planned new EBRD instrument is planned to consist of two components: a loan and technical assistance.** The Latvian financial market is already quite crowded with European instruments. These are mostly either guarantee or equity arrangements. It seems that the EBRD loan would be picked up by ALTUM mainly because of the added value the EBRD programme can offer through technical assistance.

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. It is proposed, that the **minimum eligibility criteria** are, that the technology (or methodology, business model, etc.) they are adopting or developing must be **new at least to the company (innovation),** and the adoption or development must aim at a **commercial introduction of a new or significantly improved product, process 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 new EBRD programme for Latvia should clearly define and communicate the added value of the new EBRD credit line compared to funds the banks already have or other European financial instruments. The key argument should be the added value of the technical assistance for the banks and the companies, e.g. for better planning of R&D and innovation activities, better management of risks, etc. The programme should be streamlined to encourage participation. This means that the process flow should be as understandable, fast and predictable as possible. From our interviews with banks, the greatest need for any new program is a transparent system of checks and balances.

It would seem that a viable option would be to **partner with ALTUM** instead of commercial banks. Although ALTUM already has funds in can’t fully allocate to the market, the technical assistance component could provide the necessary added value to allow more companies to be funded than is possible today. This is because some companies must be rejected because they lack the necessary competences and processes to manage external funding and/or innovation activities.

We estimate, that the **appropriate size of the loan for Latvia is around €20m.** We believe the market to be much bigger (around €60m), but launching a new instrument into the Latvian markets should be done carefully and with a limited volume. It is important that the private banks don’t see the EBRD instrument as competing with their own activities. It is also important to collect experiences from the Latvian markets and if necessary adjust the instrument before extending it to a larger scale. The first introduction through ALTUM is likely to reduce competition related concerns. It also allows banks to see how the instrument functions in the Latvian financial markets. This may in time change their interest towards possible collaboration with EBRD to a more positive direction.

The **main purpose for the technical assistance** would be to help ALTUM to verify the eligibility of the company and its planned innovation activities prior to the loan decision. 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 ALTUM should be delivered free of charge.** Otherwise the ALTUM 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 ALTUM, technical assistance should 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 developed using earlier experiences from Romania (EBRD SME support). The assistance would given to a company by request from ALTUM.

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. 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. 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 ALTUM. Once ALTUM identifies the potential or the company expresses strong enough interest, it 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.

Assuming that the total number of companies entering the loan process is around 150 and all use either the financial or innovation management support, the total volume of technical assistance would amount to no more than 600 days. Given an average daily rate of €1000, this would mean €600k 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 Latvian 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. 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, and take action, should the monitoring information indicate that something is not proceeding as planned.

EBRD should also consider organising regular **monitoring meetings with ALTUM**. The purpose of these meetings would be to monitor the implementation of the programme and identify when further guidelines to support the implementation would be needed. The role of the meetings would be most important at the beginning of the programme and again towards the end of the programme. EBRD could consider inviting Latvian banks to participate in these meetings to keep them informed of the programme, its implementation and impacts.

The verification of the implementation of the planned innovation activities should be sufficient to verify that the funding has been used for innovation activities. This verification should be done by an external expert. Some allowances could be extended to changes in business plan during implementation, as long as the original ambition level isn’t lowered, and the activities can still be regarded as innovative. Should the activities deviate significantly from the business plan, this may even lead to the need to immediately recall the loan partly or completely.

There may also be a need to monitor not only the implementation of R&D and innovation activities, but 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 start-ups, 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 Latvia 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 Latvian financial markets may prove somewhat challenging. The financial markets in general are already covered by the banks. Furthermore, public support schemes will be in full operation in 2018. However, there seems to be a gap in Latvian financial markets that can be addressed with the planned EBRD innovation support facility.
Latvian banks have indicated little or no interest in the instrument. They perceive EBRD as a potential competitor rather than partner. ALTUM has indicated interest towards collaboration with EBRD. However, successful launch and implementation of the new EBRD instrument is seen to depend highly on the final eligibility criteria and the quality of technical assistance. The latter in particular provides clear added value to ALTUM and is probably the main motivation for collaboration with EBRD, as ALTUM has indicated that they already meet companies they are not able to fund because of the company’s competences or ALTUM’s ability to assess the risks related to innovative business plans.

To mitigate the risks related to the **quality of technical assistance**, EBRD should develop financial and business management support for companies based on experience from Romania, where EBRD has already implemented a similar SME support activity. Support for innovation management and planning of innovation activities should rely on existing, extensively tested, established and successful methods for helping companies develop their innovation management skills and plan their innovation activities.

The approach to mitigate the risks related to the quality of technical assistance, EBRD should establish contracts with experienced, respected and successful local entities (e.g. consulting companies) which sub-contract individual verification experts and manage the network of experts. This should also include practices for eliminating potential conflicts of interest, as well as backups if specific experts would not be available. EBRD may require or request further measures from as part of the consultancy agreement, such as double checking or mutual learning.

The other main risk related to the introduction of the planned EBRD instrument is related to **market acceptance**. In view of mitigating the potential acceptance risk, EBRD should organise bilateral discussions/negotiations with ALTUM to establish its true interest in the new EBRD instrument. We believe, that the interest indicated by ALTUM is sufficient to reach a positive outcome from these discussions/negotiations.

The pace ALTUM will eventually have in issuing out the new EBRD innovation loans is likely to depend on the familiarity ALTUM and its loan officers as well as the companies have with the new instrument. It is therefore advisable, that EBRD organises a regular platform between ALTUM, the external verification and innovation management experts and EBRD. 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.

It may also be worth considering, that ALTUM could seek to syndicate the EBRD loans with Latvian banks. 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.
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 divide 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 coordinated 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 Midcaps 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 Midcaps, 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 Latvia and is structured in the following sections:
1. Current situation and needs for SMEs and Midcaps 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 Latvian economy

Figure 1 Global Competitiveness Index Economy Profile for Latvia

Latvia is a developed economy with a high-income classification per capita, according to the UN. The Global Competitiveness Index Report 2016-2017 shows that Latvia currently takes 49th place in overall performance of 138 countries, with very high indicators in macroeconomic environment (score 5.6 out of 7), health and primary education (score 6.2 out of 7); high indicators in technological readiness (score 5.2 out of 7), higher education and training (score 5 out of 7), and labor market efficiency (score 4.6 out of 7). Latvia scores lower in business sophistication, which currently stands at 4.1, and its innovation, which is scored as 3.4. Innovation is recognised as the weakest point in the performance of Latvia. Business R&D is among the lowest in the EU and there is insufficient cooperation between research institutions and business.

Historically, after years of booming economic success, in 2008 the Latvian economy took one of the sharpest downturns in the world. While there had been an almost 90% increase in GDP from 2000-2007, the economy contracted by a staggering 25% from 2007-2009. Through extreme fiscal austerity and a rigorous reform programme supported by the EU-IMF, these decisive measures led to a swift rebalancing of the economy and return to economic growth in 2011. According to the EBRD, Latvia has managed one of the most successful macroeconomic adjustment programmes in recent history, registering a quick and consistent economic recovery with admirable resolve in fiscal policy and rapid labour market adjustment. In 2011 and 2012, GDP increased by close to 5%, and since 2013 the annual growth rate has been between 2%-3%. Stringent fiscal policy has led to a decrease in total Government debt from 40.7% of GDP in 2014 to 36.3% by the end of 2015. According to the Central Statistic Bureau

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2 EBRD Latvia report
of Latvia’s April 2017 report, at the end of 2016, it had increased to 40.1%.
This may be attributed in part because economic growth in Latvia slowed down significantly in the first half of 2016 as the use of EU funding for investment was much lower than expected.

The general fiscal situation remains stable in Latvia. The general government deficit stood at 1.3% of GDP in 2015. In 2016, the government deficit is projected to improve to 0.8% of GDP due to expected tax revenue growth underpinned by the pick-up in private consumption and the strong wage growth, as well as a one-off receipt from anti-money laundering investigations.

During the crisis, European Structural and Investment Funds (ESIFs then called SFs) were distributed according to need rather than through a competitive model. Although beneficial at the time, the result was that Public Research Organisations (PROs) and Higher Education Institutions (HEIs) became heavily reliant on continued funding from SF/ESIF.

The European Commission’s 2017 country report for Latvia suggests that as the economic situation normalized and external pressure decreased, the urgency of policy measures abated, leading to a slowdown in the reform process. Although according to the European Commission’s Science for Policy report by the Joint Research Centre (JRC), the general fiscal situation remains stable. The Latvian economy advanced 1.6% on the quarter in the first three months of 2017, compared to a 1.2% expansion in the previous period and better than a preliminary estimate of 1.5% rise. It is the strongest growth rate since third quarter of 2011. Year-on-year, the GDP grew 4%, accelerating from a 2.6% increase in the previous period and better than preliminary estimates of 3.9% growth. Greater economic growth is expected in 2017 (2.8 %) and 2018 (3.0 %), fuelled by the need for investments and the upturn in the EU financing cycle, according to the European Commission 2017 Latvia Country Report.

According to the European Commission Report, despite weak demand from trading partners, Latvia runs a limited external deficit. The trade balance is expected to deteriorate slightly in 2017 and 2018 in line with the recovery of investments. Though in 2016 there was a negative trade balance, it is worth mentioning the distribution of exports by sector: 17.5% was production of various mechanical devices, machinery, and electrical devices; 17.4% was timber and associated products; 8.1% was foodstuffs; and another 8.1% was metals and their products.

The export profile, as provided by OEC, shows the fastest annual growth in exports by products for the years 2010-2015, and is as follows: mineral and precious metals have experienced a steady growth of 27% per year; vegetable products and instruments have experienced an annual growth of around 20%; whereas the largest export products (machines and wood products) have experienced annual growth of around 11% per year.

Growth in the construction sector was very strong in 2010-15. SME value-added and employment grew by 83% and 29% respectively. The information and communication sector performed particularly strongly in 2010-15, with employment growth of approximately 50%. SME value-added rose even more rapidly, by more than 80%. In 2010-15, SME value-added in the wholesale and retail trade sector increased by almost 30%. This strong performance is set to continue in 2016 and 2017. SME value-added was expected to grow by 7% in 2016 and by 8% in 2017.

Data provided by the Central Statistical Bureau of Latvia indicates that the service sector accounted for 73.8% of Latvia’s value-added in 2015. Two other sectors that have been steadily losing their relative weights are the industrial and the agricultural sectors, accounting for 23% and 3.3% of GDP in 2015.

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3 Central Statistics Bureau. Reporting of Government Deficits and Debt Levels
4 EU Stairway to Excellence Country Report: Latvia
6 EC Country Report working document Latvia 2017
7 ibid
respectively. The country’s medium-low and low-tech industries, however, still account for around 82% (in 2014) of the entire manufacturing industry.

Figure 2 Latvia GDP growth rate

Latvia is a major beneficiary of the European Structural and Investment Funds (ESI Funds) with an allocation up to €5.6b by 2020. This is equivalent to around 3% of GDP annually (over 2014-2017) and 67% of the total public investment. By the end of December 2016, an estimated €1.8b, which represents about 32% of the total allocation for ESI Funds, was already allocated to concrete projects. Financing under the European Fund for Strategic Investments, Horizon 2020, the Connecting Europe Facility and other directly managed EU funds is additional to the ESI Funds. By end 2016, Latvia has signed agreements for €255m for projects under the Connecting Europe Facility. The EIB Group approved financing under EFSI amounts to €91m, which is expected to trigger nearly €315m in total investments (as of end 2016). These funds address wider structural obstacles to growth and competitiveness, including innovation and private investments (objective to increase the share of innovative enterprises to 40%)

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9Supra at note 6
3 SMEs and Mid-caps market in Latvia

3.1 A snapshot of the business economy

The share of SMEs of the added-value in the Latvian economy is relatively high, more than 70%. SMEs are, to a large extent, concentrated in sectors with low and medium-low research intensity, such as metal processing and machinery, wood products and food processing (82%). High-tech and medium-high-tech manufacturing industries make up about 8% of total manufacturing sector. Knowledge-intensive services make up 34% of total services, out of which 23% are high-tech services.

The research system seems to create small incentives for innovation and commercialisation of research. Furthermore, government purchasing practices are not innovation-oriented. Latvian financial markets are underdeveloped and the underdevelopment is a dampener to economic growth. The exception is venture capital and private equity investments which are relatively active. Challenges seem more to be related to demand for capital rather than supply, e.g. IPOs have been oversubscribed and in terms of venture capital and private equity funds, financing is available but there are few attractive investment opportunities.

The Smart Specialisation Strategy of Latvia puts an emphasis on supporting economic transformation and was developed by taking into account the structural challenges to enable the transformation and sustainable development of the Latvian national economy. The RIS3 of Latvia is laid out in one of the central RD&I documents, the “Guidelines for Science, Technology Development and Innovation for 2014-2020” (STDIG). The chosen specialisation fields are: (1) knowledge-based bio-economy; (2) biomedicine, medical appliances, bio-pharmacy and biotechnology; (3) advanced materials, technologies and engineering systems; (4) smart energy; and (5) the Information and Communication Technologies (ICT).

The Ministry of Economics commented that the future of Latvian innovation will lie in the usage of natural resources available in Latvia (mostly wood derivatives), which is already seen by the increasing number of entrepreneurs specialising in the creation of design-wise innovative wooden furniture, mobile housing, design objects, etc. Another well-developed area in Latvia is the pharmacy sector, with such companies as Grindex and Olainpharm employing highly specialized workers and developing new medicine, as well as recreating popular drugs of other countries for the local and regional market. Creation of food products using either innovative processes or technologies is on the rise—e.g., Getlini Greenhouse, a company using naturally produced heat from trash decomposition to supply the local market with fresh tomatoes year-long. Many small enterprises specialising in craft foods (hand-made, eco-friendly, concentrating on design) are appearing daily.

3.2 Innovation performance in the private sector

The overall picture of Latvian SME and Mid-cap market is that it is relatively weak in innovation and business R&D. Less than 30% of all Latvian SMEs are considered innovative. Based on the relative strengths of Latvia in non-R&D innovation and the share of innovative companies focusing on market innovation rather than product or production innovation, it seems obvious that innovation activities are relatively non-systematic, modest and practically oriented.

Although Latvia’s expenditure on R&D has grown steadily since its accession to the EU, it still lags the EU28 average. In 2015, Latvia spent 0.6% of its GDP on R&D. Only a fifth of the funds for R&D come from the business enterprise sector, highlighting the modest business interest in R&D and the non-R&D orientation of innovation activities.

Based on findings in Annex A, there are 1,453 companies that have been classified as innovative during the period of 2014-2016. Of these, 611 come from the Manufacturing sector, 192 from the Transportation sector...
and Storage sector, 138 from the ICT sector, and 96 from the Professional, Scientific, and Technical Service sector.

**Table 1 Population of innovative enterprises by sector 2016**

<table>
<thead>
<tr>
<th>Population of innovative enterprises by sectors</th>
<th>Nr.</th>
<th>Innovation expenses (€1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of innovative enterprises in 2014-2016</td>
<td>1,453</td>
<td>262,800</td>
</tr>
<tr>
<td>Mining and quarrying</td>
<td>17</td>
<td>3,100</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>611</td>
<td>113,300</td>
</tr>
<tr>
<td>Electricity, gas, steam and air conditioning supply</td>
<td>26</td>
<td>31,400</td>
</tr>
<tr>
<td>Water supply; sewerage, waste management and remediation activities</td>
<td>24</td>
<td>1,100</td>
</tr>
<tr>
<td>Wholesale and retail trade; repair of motor vehicles and motorcycles</td>
<td>278</td>
<td>19,400</td>
</tr>
<tr>
<td>Transportation and storage</td>
<td>192</td>
<td>48,600</td>
</tr>
<tr>
<td>Information and communication</td>
<td>138</td>
<td>27,400</td>
</tr>
<tr>
<td>Financial and insurance activities</td>
<td>70</td>
<td>12,000</td>
</tr>
<tr>
<td>Professional, scientific and technical activities</td>
<td>96</td>
<td>6,500</td>
</tr>
</tbody>
</table>

Source: Technopolis Group based on Statistics Latvia

The average innovation expenses in the total population and in manufacturing industry are approximately €180k. Average innovation expenses are higher in ICT, Transportation and storage, and Electricity, gas, steam and air conditioning supply. This is not surprising as these sectors typically include and are sometimes dominated by large companies. Given that also Manufacturing includes large companies, a realistic estimate for average annual innovation expenditures in Latvia would probably be at around €150k.

**Table 2 Population enterprises engaged in R&D by sector 2016**

<table>
<thead>
<tr>
<th>Sector</th>
<th>Nr.</th>
<th>Investments in R&amp;D (€1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total number of enterprises engaged in R&amp;D in 2016</td>
<td>230</td>
<td>26,982.7</td>
</tr>
<tr>
<td>Primary production (agriculture, forestry, fishing, mining, quarrying)</td>
<td>3</td>
<td>63.2</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>80</td>
<td>16,781.4</td>
</tr>
<tr>
<td>Electricity, gas, steam and air conditioning supply</td>
<td>2</td>
<td>408.8</td>
</tr>
<tr>
<td>Water supply; sewerage, waste management and remediation activities</td>
<td>1</td>
<td>36.0</td>
</tr>
<tr>
<td>Construction</td>
<td>9</td>
<td>482.1</td>
</tr>
<tr>
<td>Wholesale and retail trade; repair of motor vehicles and motorcycles</td>
<td>6</td>
<td>112.6</td>
</tr>
</tbody>
</table>
Based on the R&D statistics, the average annual R&D investments among the more innovative companies are around €120k. The average is somewhat higher in Manufacturing and Electricity, gas, steam and air conditioning supply, around €200k. This indicates the role of large companies in these sectors, but also the existence of R&D intensive companies, especially in Manufacturing. Average in ICT and Education sectors is close to the overall average, whereas the average in the remaining sectors is below €60k.

Combining these two statistics for R&D and innovation, it would seem that there are about 200 companies that engage in R&D and can therefore be depicted as more innovative. Their annual average R&D investments amount to around €120k. Given that the innovation statistics include a fairly large number of non-R&D companies, the average annual innovation expenditures of more innovative companies can be expected to be higher than the overall average. If we estimate that the innovation expenditures of more innovative companies are on average roughly 50% higher, that would mean average annual innovation expenditures at the level of €250k–€300k.

3.3 Access to Finance in Latvia

Venture capital seems to be readily available in the Latvian markets. The role of commercial banks in the area of start-ups seems limited. Potential to increase their role and support the growth of new high-tech enterprises in Latvia might be possible through appropriate instruments.

Companies seem to prefer to avoid the use of external funding due to several reasons. When they do, they seem to prefer credit lines, overdraft arrangements and short-term bank loans.

Based on these observations, an approach focusing on credit lines or short-term loans would seem appropriate in the Latvian SME and Mid-cap markets. It would probably be best welcomed as it already represents the preferred form of external funding used by the SMEs.

The Latvian single multi-fund Operational Programme "Growth and Employment" (OP) aims at achieving key national development priorities along with the "Europe 2020" objectives. By combining support from the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Social Fund (ESF) and the specific allocation for the Youth Employment Initiative (YEI), the OP will provide a significant support to the economic growth and employment, with a particular focus on the competitiveness of Latvia’s economy. The European Regional Development Fund has made approximately €171.4m available to enterprises engaging in the development of new products and

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11 EC Regional Policy
processes with the intention of increasing worker productivity\textsuperscript{12}. The Cohesion Fund scheme has made €86.9m available.

In relation to business and innovation, the OP funding allocations include:

- 10.58\% to support RTD and innovation in Latvia, helping the country reach its national Europe 2020 target of \(1.5\%\) of the GDP invested in RTD (0.66\% in 2012). In particular, the OP contribution is expected to increase Latvia's innovation potential by having the share of innovative SMEs increased to 40\% (from 29.9\% in 2010).

- 7.11\% of the OP resources are allocated to supporting the competitiveness and innovation of SMEs by creating the necessary preconditions for private investments, and by creating new enterprises and jobs in the national and regional development centres. Under this priority axis, the ESF will support strengthening the institutional capacity of public administration and judiciary to create a better environment for business and less corruption.

- 11.68 \% will be allocated to investments in education, skills and lifelong learning. ESIF investment will be instrumental for reforms in the higher education through supporting establishment of an internationally recognised accreditation agency, elaborating new joint doctoral study programmes and programmes in EU languages and implementation of result-based governance. ESIF will promote vocational education and training, with focus on work-based learning, support comprehensive career guidance system and a new lifelong learning implementation model (through regions).

The idea of introducing a new complementary financial instrument might prove challenging in the Latvian SME and Mid-cap market. The market is already well covered with several debt and equity instruments making use of European interventions.

In Latvia, the European Investment Fund (EIF) has designed and successfully launched a broad number of debt and equity financial instruments under the JEREMIE initiative (Joint European Resources for Micro to Medium Enterprises), by utilising the European Regional Development Fund (ERDF) resources made available in the period 2007-2013.\textsuperscript{13} The JEREMIE initiative offered EU Member States, through their national or regional Managing Authorities, the opportunity to use part of the allocated Structural Funds to finance SMEs by means of equity, loans or guarantees, through a revolving fund acting as an umbrella fund. The €91.5m JEREMIE Holding Fund was set up by EIF in 2008. In 2012, as agreed since the launch of the initiative in Latvia, its management and the related transactions were transferred to the Latvian Development Finance Institution, ALTUM. Equity EIF investments in Latvia cover a wide range of the equity spectrum, from early-stage operations to mezzanine funding. Under JEREMIE, equity transactions were concluded with Imprimatur Capital Baltics, supporting technology-based seed and start-up companies, and BaltCap Latvia Venture Capital Fund, supporting start-ups and mature companies with international growth potential.

In 2012, EIF launched the Baltic Innovation Fund (BIF), a €100m fund-of-funds established in partnership with three national development finance agencies in Latvia, Estonia and Lithuania to boost equity investments into high-growth SMEs located in the region. BIF, the first multi-country “fund-of-funds” in Europe created by EIF, is represents a €40m investment by EIF with each Baltic Government committing €20m through their respective national agencies (ALTUM). Under BIF, EIF invested €20m into BaltCap Private Equity Fund II (BPEF II), managed by BaltCap, one of the leading independent private equity firms in the Baltic States since 1995. As the result of the investments made by EIF, EBRD and the larger Baltic pension funds, BPEF II reached €81.5m of available capital at the second closing and is now the largest investment fund launched by BaltCap in the region. In December 2014, EIF invested in BPM Mezzanine, a first-time team setting up a first mezzanine fund in Baltics for a quite a few years. EIF investment consisted of €15m under BIF and €15m under RCR (former MFG), with the fund reaching €70m.

\textsuperscript{12} Ministry of Finance of the Republic of Latvia, Research, technological development and innovation funding
\textsuperscript{13} European Investment Fund Latvia Fact Sheet
To guarantee this funding, under JEREMIE, EIF concluded Funded Risk Sharing debt facilities transactions with Swedbank and SEB bank, the two major banks in Latvia. Under the Competitiveness and Innovation Framework Programme (CIP), EIF is cooperating with ALTUM in order to support its risk-taking capacity and thus enhance access to finance of Latvian SMEs to boost the competitiveness of the local economy by creating new jobs and supporting new entrepreneurs.

Table 3 Allocation of the estimated viable market gap for 2016-2020 period by financial instruments, €m

<table>
<thead>
<tr>
<th>Financial Instruments</th>
<th>Micro, EUR m</th>
<th>Small, EUR m</th>
<th>Medium, EUR m</th>
<th>Total SMEs, EUR m</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term loans, on demand</td>
<td>13-23</td>
<td>122-223</td>
<td>13-24</td>
<td>148-270</td>
</tr>
<tr>
<td>Medium and long-term loans</td>
<td>85-156</td>
<td>156-285</td>
<td>9-16</td>
<td>234-427</td>
</tr>
<tr>
<td>Leasing</td>
<td>23-42</td>
<td>25-46</td>
<td>7-12</td>
<td>55-101</td>
</tr>
<tr>
<td>Factoring</td>
<td>10-18</td>
<td>64-118</td>
<td>33-60</td>
<td>107-196</td>
</tr>
<tr>
<td>Credit and export credit guarantees</td>
<td>0.6-1</td>
<td>95-175</td>
<td>19-35</td>
<td>115-211</td>
</tr>
<tr>
<td>Advanced payments from the customers</td>
<td>27-49</td>
<td>10-19</td>
<td>9-16</td>
<td>46-84</td>
</tr>
<tr>
<td>Micro-financing</td>
<td>1-2</td>
<td></td>
<td>1-2</td>
<td></td>
</tr>
<tr>
<td>Venture capital&lt;sup&gt;1&lt;/sup&gt;</td>
<td>65-118</td>
<td>208-381</td>
<td>21-38</td>
<td>294-538</td>
</tr>
<tr>
<td>Debt instruments</td>
<td>159-292</td>
<td>473-865</td>
<td>90-165</td>
<td>706-1,292</td>
</tr>
<tr>
<td>Equity instruments</td>
<td>65-118</td>
<td>209-381</td>
<td>21-38</td>
<td>294-538</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>224-410</strong></td>
<td><strong>681-1,246</strong></td>
<td><strong>111-203</strong></td>
<td><strong>1,000-1,830</strong></td>
</tr>
</tbody>
</table>

<sup>1</sup>Note: Venture capital includes also Growth capital, Business Angels, Transfer of Technologies, Rescue/twillaround and replacement capital

Source: Ex ante assessment of access to finance, Ministry of Economics, 2015

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 statistics (Eurostat) and on qualitative data collected from six interviewed banks in Latvia, as well as the state-owned institution ALTUM. Altum cooperates with all major banks in the country and it also operates as a fund of funds providing indirect financial support through acceleration, seed and start-up as well as expansion capital funds.

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

Excluding large companies and start-ups, and taking into account companies interest in using bank loans, we estimate that roughly 2/3 of innovative companies (see Table 1) could potentially be interested in applying for the EBRD loan. Of these 1000 companies we estimate that 75% are bankable, giving us a potential target population of about 750 companies. Based on innovation statistics, we estimate that the average annual innovation expenditures of these companies are around €150k.

According to R&D statistics, only 230 companies were registered as performing R&D activities in 2016. Since this also includes large companies and start-ups, which are not included in the target group, we estimate that the number of more innovative companies that could potentially be interested in the loan is somewhere between 100 and 150. Based on the statistics, we estimate that in the remaining group of SMEs and Mid-caps the average annual innovation and R&D expenditures are at the level of €250k-€300k and €120k respectively.

The statistical information corrected with bankability and general interest among companies to use bank loans would indicate, that the potential target population would consist of about 100-150 more innovative companies and a further 600 less innovative companies.
As the probable time to implement a business plan with the help of the EBRD loan is expected to be close to 2 years, the average related innovation costs would be around €300k for less innovative companies and €500k–€600k for more innovative companies. If the costs would be limited to R&D costs only, the target group would consist of 100–150 companies and the respective cost base would be €240k per company.

The market potential for the EBRD loan based on these estimates would be around €200m, including for both less and more innovative companies and covering all innovation expenditures of potential companies for 2 years. This is naturally the absolute theoretical maximum. The real market potential is likely to be much smaller, probably somewhere between €50m and €100m.

If the loan is targeted only for more innovative companies, the theoretical maximum market volume would be around €60m. A more realistic estimate would be between €20m and €30m.

3.4.2 Market size based on estimations from the Latvian financial market actors

The study team collected information from five Latvian banks, as well as the government finance institution ALTUM. The total market size of the five largest banks is 50.11% of the assets in the Latvian banking market.

Only one bank was willing to give any estimate of the size of the potential target group of companies. This could indicate that the banks are not familiar with funding innovation activities. This might also be related to the banks’ concerns regarding EBRD entering Latvian financial markets. Regardless of the reasons, the reliability of the banks’ estimates regarding the market potential should be treated with care.

Table 4 Market estimation based on data collected from the interviewed banks

<table>
<thead>
<tr>
<th>Answers</th>
<th>Market share by bank (% of Latvia market)</th>
<th>Average number of target beneficiaries estimated by banks (rounded figures, excluding primary production sectors)</th>
<th>Average ticket size (€1000) (rounded values)</th>
<th>Total amount (€1000) (rounded values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank 1</td>
<td>18.02</td>
<td>-</td>
<td>-</td>
<td>25,000</td>
</tr>
<tr>
<td>Bank 2</td>
<td>12.12</td>
<td>10</td>
<td>100</td>
<td>10,000</td>
</tr>
<tr>
<td>Bank 3</td>
<td>9.36</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bank 4</td>
<td>7.47</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Bank 5</td>
<td>3.15</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Total</td>
<td><strong>50.109</strong></td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Estimated market size for all target companies 10 100

Estimated market size for highly innovative companies (10% of target companies) 10 10

Source: Technopolis Group based on qualitative data from interviews with five of the largest Latvian banks.

If we assume that the estimate given by one bank is in any way representative of the banking sector in general, using the respective market share (12.12%), we can estimate that the total market size as estimated by the banks would be around 80 companies. We believe this to be highly conservative and

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most likely referring to what we have earlier depicted as more innovative companies (those engaged in R&D activities).

We also received an estimate of the potential market size from ALTUM. They indicated that the potential market would consists of about 200 companies. This is clearly closer to the market size estimate based on statistical information. We can assume that these 200 companies include both less and more innovative companies, as the estimate exceeds the statistical estimate of more innovative companies. Assuming that ALTUM’s market size estimate is conservative and short term (1 year), we believe the real market to be roughly twice what ALTUM estimates within the next couple of years. We further believe that the public innovation support schemes are likely to increase the size of the potential target group in the coming years.

Based on the information from the financial market actors – banks and ALTUM – and taking into account the uncertainties and conservatism of this information, we estimate that the size of the potential market in Latvia is around 400 companies, of which 100 can be considered as more innovative.

The only estimate from a bank refers to a possible average ticket size of €100k. If this is indeed indicative of the average size of the EBRD loan, the total volume of EBRD loan in Latvia shouldn’t be more than €10m for more innovative companies and another €20m–€30m for less innovative companies, as their average ticket size would probably be below that of the more innovative companies.

The most interested partner in signing an EBRD loan is ALTUM. ALTUM began using InnovFin Portfolio Guarantees in Oct. 2016, granting seven guarantees of €1.47m total (although this portfolio will decrease by €480k as some deals fell through and will be removed from the portfolio). According to ALTUM, it is almost impossible to set trustworthy estimate for the loan. Presently in the corporate division, there are 4–5 highly innovative projects. ALTUM estimates that in the first years, not more than ~€10m would be possible to introduce to the Latvian market.

There is a clear indication that ALTUM might be interested in partnering with EBRD. However, the conditions of the innovation support instrument are extremely important – how the collateral will be divided; what will be the interest rates; how strict the compliance criteria will be set, etc. Their projection is based on their historical project pipeline with rejected loans to highly innovative projects.

The responses from Latvian banks vary, but are nevertheless, not promising:

- Bank 1 signed a confidential contract with EIF (European Investment Fund). Based on an informal conversation, they’ve granted 4–5 guarantees of an estimated €2m in total (the bank can only issue a counter-guarantee for deals more than €250k).
- Bank 2 indicated that it is not particularly interested in signing a bilateral agreement with EBRD. Bank 2 has plenty of funding and the ability to offer good terms and conditions on its own. Historically, either there has been an administrative burden or some limiting covenants that have not been acceptable. Bank 2 might consider signing a moderate amount (up to €10m) only for the positive public relations and ability to promote loan availability, but there would have to be a light structure from an administrative perspective and no limiting covenants (like pari passu, etc). Presently, Bank 2 has less than 10 clients that are innovative companies who might be interested in this product.
- Bank 3 has a signed contract with EBRD, but is not using the product.
- Bank 4 recently signed a contract with EBRD for the risk-sharing facility, which will be used for larger deals.
- Bank 5 does not plan on actively working with the type of instrument proposed by EBRD.
- Bank 6, judging from previous experience, believes that the balance between the administrative burden and a good market impact is in bigger deals (€20–25m).

The bank representatives we interviewed noted that there are strict lines between debt and risk capital in Latvia. Either pure equity is available for a new, innovative company or debt financing is available for
mature companies with no innovation. The idea of financing innovation with debt instruments is not a popular one in Latvia. Most start-ups are not currently looking for loans. But for those that continue to grow, there is an opportunity for scale-up stage loans to fund expansion. Currently, it is investors who bring competence and a knowledge of the markets. The potential exists for banks, in partnership with EBRD, to have the same type of competence to offer to growing companies.

Many of the banks interviewed perceive the new EBRD instrument as a competitor to the current debt instruments in the Latvian financial markets. This might explain the reluctance of banks to be forthcoming with their plans and more detailed information about the potential market. For instance, Bank 2 says the instrument will be a competitor as there is already an ample supply of existing instruments, but added that if the EBRD is willing to enter segments like start-ups that are not already crowded by banks, then the program could be complementary.

From ALTUM’s perspective, it is a different story. ALTUM believes that the new EBRD instrument might complement Latvian financial market. Currently startups are financed with ALTUM resources via start-up loans (hobby businesses) and venture capital program. However, ALTUM notes that company/idea owners do not always want to share their interests in their companies with venture capitalists and business angels. Therefore, this might be a good opportunity for the most promising projects to get leverage instead of financial investors, who demand company shares in return. ALTUM also notes that this program could be a good way for innovative companies to be able to expand their operations. ALTUM has seen cases where venture capital is used to develop a prototype, but then the company does not have enough working capital to further develop the project. ALTUM believes that this EBRD instrument might allow such companies to take the next step by starting production or expanding by using this leverage.

As far as the number of companies in Latvia defined as innovative, ALTUM considers both the InnovFin definition which encompasses almost all manufacturing companies, as well as the stricter definition of companies that have unique patents or unique products/business models. If this stricter definition is employed, than ALTUM’s estimate is approximately 200. This number has not been analyzed by ALTUM; it is an educated guess. In terms of ALTUM’s own portfolio, some highly innovative companies are in the credit guarantee program and venture capital program. Currently, ALTUM is almost the only institution providing support for start-ups and green-field companies.

What would make the EBRD loan more attractive, according to Bank 2, are lower requirements on hard collateral and price. Other factors that influence or could influence the Latvian banks’ interest towards the EBRD loan include things like funding issues in regular credit markets for Scandinavian banks, according to Bank 2.

The sectors that look most promising for the EBRD loan are those who are most interested - the manufacturing companies - wood processing, textile, food processing, metalworks. Currently, ALTUM sees promise in the start-ups that are established in IT sectors (various applications and services). For ALTUM, it would be very important to have EBRD support in technical due diligence and also to cover financial advisor costs for clients. According to ALTUM, project developers are often experts in their field, but they do not have the necessary competences in financial planning and business plan structuring. ALTUM stresses assistance is needed because they (as well as commercial banks) don’t have the technical knowledge to evaluate projects (for instance, whether it is possible to replace coal with new type of wooden pellets). Therefore, ALTUM recommends a support mechanism is provided to evaluate these factors, similar to that of EIF programs. Finally, ALTUM insists that the EBRD loan conditions are extremely important as to whether the EBRD would take higher risks at lower costs. According to ALTUM, if this fundamental condition is not fulfilled, then it will be very hard to implement this product in the Latvian financial market.

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

Based on the available evidence presented above, we can compile a summary estimation of the suitable size of the financing instrument for the Latvia market.
Many banks surveyed, as well as the Association of Commercial Banks and the EIB, all agreed that all existing programs in Latvia should be administered through ALTUM. ALTUM suggests that the criteria be simple and understandable, otherwise it will be difficult to identify the companies that qualify. A strong criticism from the banking community is that the current InnovFin criteria are difficult to understand.

As the criteria are refined, the banking community is adamant that the criteria should not be reduced or be redefined to concentrate on innovation as an introduction of a new product/service that has never been seen in the market or sector. Doing so, they warn, will further limit the possible market size in Latvia. Their concern is that innovation levels are already low in Latvia and to further raise the bar would only hinder possible investment/loan possibilities. According to Bank 6, criteria that are too rigid will decrease the potential number of the loan receivers. Removing criteria would further limit the possible number of eligible recipients. Bank 6 says that Latvia’s biggest challenge is a lack of quality loan requests not funding and/or capital scarcity. Bank 2 notes that the reasons why some companies could not receive the loans are insufficient assets; too much existing debt; overly optimistic forecast of cash flow; and that the business owners do not have enough experience or knowledge.

In terms of administering the program, ALTUM could take various roles. For instance, ALTUM could be a national contact point for this program in the same way it operates for the EFSI (Junker Plan) projects. ALTUM acts as the first entry point, where a project developer can turn to get information about the program, conditions, decision making process, etc. ALTUM might also participate in marketing activities because the brand recognition of ALTUM is increasing as more and more people associate ALTUM with the EU and State aid for innovative/higher-risk project financing. An important factor in this will be to determine the marketing budget and who will cover the costs. ALTUM is interested in financing the projects together with EBRD if it is possible to pay for these resources with structural funds.

ALTUM notes that having high quality evaluations for financial risks, both from a technical and market capacity standpoint, is crucial. ALTUM points out that these resources exist for large projects through the European Fund for Strategic Investments (EFSI), and having similar resources for smaller projects would be an important part of this program. ALTUM suggests that this kind of analysis/evaluation could be the support function from EBRD to make the innovative project more attractive to funders.

As a conclusion, we estimate that there could be around 400 SMEs and Mid-caps in Latvia that would be bankable, potentially interested in the EBRD instrument, and eligible. If the average size of loan for these companies is around €150k, the total volume for the EBRD instrument in Latvia would be around €60m. This is much higher than the volume that ALTUM has indicated they could be interested in (€10m). Given that ALTUM’s estimate is bound to be conservative, the €20m might be close to a realistic estimate of the initial market volume in Latvia.

We can therefore conclude, that the estimated total size of the Latvian market for the planned new EBRD instrument would be at the level of €40m. However, it may prove appropriate to launch the instrument at a lower level – between €10m and €20m – as the Latvian markets have limited experience with this type of instruments and collaboration with EBRD. Based on the earlier estimates – 300 less innovative with average ticket size of €100k, and 100 more innovative with average ticket size of €300k – this would allow the funding between 70 (€10m) to 140 (€20m) companies.
4 Proposed key features of the programme for Latvia

The programme for Latvia is planned to consist of 2 components: (1) a loan, and (2) technical assistance. Both can be based on the eligibility of the company and its innovative activities.

4.1 Rationale

Innovation activities in Latvia are modest. To secure future growth and catching up with the rest of Europe, Latvian 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 Latvian 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, the InnovFin instruments have not been picked up by Latvian banks to a large degree.

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 the planned EBRD instrument 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 loan combined with technical assistance can 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 added value of the technical assistance is to help 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 Latvia are either targeted to start-ups or already innovative companies. Although the launch of the public support programmes has been delayed, they are expected to be in full operation by 2018.

Given the current situation in Latvia with respect to innovation, and funding available to facilitate it, there seems to be an identifiable gap in the financial markets (market failure). The gap is related to the availability of smart funding for companies engaging in innovation activities with an identifiable technological, business or commercial risk. These companies don’t necessarily have full collateral, their business plan is ambitious and potential success can therefore not be assessed based on earlier market or financial performance, and for implementing the business plan the company needs to acquire new competences (e.g. financial management, innovation management, specific technologies, R&D and/or innovation project management, etc.).

While the public support schemes try to address this gap, they can only do it partly as all schemes require companies to fund their innovation activities partly on their own (grants don’t cover all funding needs), getting and using public grants is administratively demanding and includes uncertainties (e.g. applications may be rejected, there may be too long delays in receiving grant decisions, even necessary changes to the original business plan may not be possible, etc.), and grants are payed afterwards, which means that the company may need to find bridge-funding to cover the expenses until the grant is paid. Private banks, on the other hand, require sufficient collaterals and are less willing to take risks always
inherent in innovation activities. Equity markets may further address this gap, but focuses mostly on start-ups (early stage venture capital), scale-ups (later stage venture capital targeting high-growth companies), or large companies (traditional capital markets, stock markets, etc.).

It would therefore seem that there is a market gap (market failure), which current public and private financial instruments can’t fully address. The planned new EBRD instrument addresses this gap by proving both funding (loan) and support for competences to develop the necessary competences (technical assistance).

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 Latvia by encouraging previously less innovative companies to engage in innovative activities (incl. R&D), and more innovative companies to strengthen their innovative activities.

The direct impact of the new EBRD instrument is in the number of innovative companies (previously less innovative), and in the increased private R&D and innovation investments (both previously less innovative 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.

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 B, we propose that, after the company has passed the general exclusion criteria, the main eligibility criterion would be the purpose of the loan or that the company has verifiable innovation potential (see the box).

We propose that the novelty requirement is not strict and that new to the company itself would be considered as eligible, but only when combined with the aim to launch a new or significantly improved product or service (or business model) to the markets.

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 or technological risk. In practice, this means entering new geographical or otherwise different markets (e.g. new industries, new applications for existing
products, etc.) or introducing a new or significantly improved product or service (or business model) into the existing or new markets. We believe, that these requirements are appropriate to align with the rationale, allow for a large enough target group of potential companies, and at the same time focus sufficiently on innovation.

**Eligibility criterion: 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 both innovativeness and risk 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. Preliminary screening for risk can be similarly done with simple guidelines (based on Chapter 4.3.4). We further propose, that a checklist is provided of the contents 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.**

The minimum eligibility criterion therefore is, that the technology (or methodology, business model, etc.) they are adopting or developing must be **new at least to the company (innovation),** and the adoption or development must aim at a commercial introduction of a new or significantly improved product, process or service, which they may not be able to develop (technological risk) or potential clients may not buy (commercial risk).

**Eligibility criterion: the company must have verifiable innovation potential**

Company is also eligible, if the company has verifiably invested in R&D and/or innovation earlier, or the company has innovation potential, which can be verified by fulfilling one of the following criteria (for more detailed analysis/guidelines, see Appendix C):

- The company has invested at least 10% of its turnover in R&D or innovation activities during one the previous 3 years; 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; or
- Company has received public funding for R&D or innovation activities/project during the last 36 months; or
- 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
- The company has been designated in the past 36 months as an innovative company by an EU or national or regional institution or body; or
- The company has registered at least one technology right (such as patent) 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’s shareholders include either a private equity fund or a respectable business angel; or
- 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; or
- 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; or
- The company has received 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.
Technological risks are almost 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.

4.3 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\(^{15}\). 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.

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\(^{16}\). 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.

\(^{15}\) http://dx.doi.org/10.1787/9789264013100-en

\(^{16}\) 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.
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 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\(^{17}\). 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.

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

\(^{17}\) sometimes also services, if they include a technological component
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 it 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 **apply 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

While Latvia enjoys a well-developed and stable banking system, the funding environment for innovative enterprises needs to be expanded to include new financial instruments, such as private equity and venture capital. At present, these remain underdeveloped and fragmented between relatively small local markets as local stock exchanges in the Baltics continue to lose liquidity. Banks are anxious to loan money and are competing amongst themselves to do so, but generally agree that they are only 25,000 SMEs that are actually creditworthy.

The 25,000 represent only about 10% of the total population of SMEs, which means that banks have an underlying potential to expand their customer base in Latvia considerably. Several banks are offering training and other support on their own cost to companies to help them become bankable. The banks see the need for all companies to digitalise, which means that the potential number of companies that should engage in some form of innovation is even higher than the 25,000 that is currently estimated to be bankable. While it is not clear what percentage of these companies will eventually be interested in the new EBRD loan, it seems that a sufficient market potential does exist.
Latvia stands to benefit from a substantial allocation of EU structural and investment funds in 2014-2020 (€5.6 billion, or about 3.3 per cent of annual GDP). This funding is expected to increasingly shift away from the traditional grant-based instruments and towards commercially based financial mechanisms that leverage private funds. There is a need to establish the institutional underpinnings of such EU finance that could partner with private investors. PPPs in public infrastructure are one such avenue worth developing.

In the view of those interviewed, funding, both national and EU funding shouldn’t be able to get into hands of government ministries because it “gets wasted” by agencies who “have no knowledge or understanding of the economy or how to commercialize an idea.” Rather, money should “be given to actual business people who understand business.” Of those interviewed, ALTUM was the most trustworthy partner for disseminating funds.

From our interviews with banks, the most promising sectors in view of R&D and innovation activity, RIS3, and any other factor indicating current and/or future demand for innovation related financing are in digitization, outsourcing, and modernization services. For many banks, present financing is directed to IT and service sectors. They see exports as the primary driver of the economy.

The fundamental question in the view of banks is why should Latvia take more EU funds when the banks already have so many funds and nowhere to put them. Their view is that any new financial instruments would be redundant. This would indicate that the attractiveness of the new EBRD credit line would eventually be highly dependent on the added value of the technical assistance component, which could at least partly address the bankability problem and reduce the need for the banks to engage in training and other support services they currently pay for themselves.

From our interviews with banks, the InnovFin list of eligibility criteria is onerous and facilitates the trend of SMEs to seek funding from family and friends rather than from banks or government schemes. They see regulatory hurdles as the biggest stumbling block to SMEs getting needed funding. The recommendation from banks is to dramatically streamline the process to encourage more participation. Narrowing the list of eligibility criteria set by InnovFin could improve the success of the Programme in terms of the mandate of the EBRD vis a vis the impact of the universe of potential end-clients under the Programme. Banks continue to have discussions with the EIB, especially on the requirement of giving assets as collateral, but are unable to come to common terms and talks break down. This is why they are eager to have ALTUM as a partner to share the risk.

The new EBRD programme for Latvia should therefore:

- Clearly define and communicate the added value of the new EBRD credit line compared to funds the banks already have or other European financial instruments. The key argument should be the added value of the technical assistance for the banks and the companies, e.g. for better planning of R&D and innovation activities, better management of risks, etc.
- The programme should be streamlined to encourage participation. This means that the process flow should be as understandable, fast and predictable as possible.
- From our interviews with banks, the greatest need for any new program is a transparent system of checks and balances.

It would seem that a viable option might be to partner with ALTUM instead of commercial banks. Although ALTUM already has funds in can’t fully allocate to the market, the technical assistance component could provide the necessary added value to allow more companies to be funded than is possible today. This is because some companies must be rejected because they lack the necessary competences and processes to manage external funding and/or innovation activities.

Some banks also indicated that a more sustainable future is in using hybrid financing, like ALTUM. However, SMEs are reluctant to allow ALTUM to be part owner of their equity. Latvian entrepreneurs “don’t want to allow others in their garden” and believe it is better to “ride their own horse.”
We estimate, that an **appropriate size of the loan for Latvia is between €10m and €20m**. We believe the market to be much bigger (around €60m), but launching a new instrument into the Latvian markets should be done carefully and with a limited volume. It is important that the private banks don’t see the EBRD instrument as competing with their own activities. It is also important to collect experiences from the Latvian markets and if necessary make adjustments to the instrument before extending it to a larger scale. The first introduction through ALTUM is likely to reduce competition related concerns. It also allows banks to see how the instrument functions in the Latvian financial markets. This may in time change their interest towards possible collaboration with EBRD to a more positive direction.

### 4.5 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 that the innovation activities covered by the loan have been carried out as planned and have resulted in the planned innovation. This is based on the monitoring concept described in Chapter 5.2.

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. 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. The assistance could be established and organised using a similar approach EBRD already has in use in Romania for local SMEs.

- **Planning of innovation activities and innovation management.** 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. The assistance could be established and organised by contracting consultants already active in Latvian markets and using internationally recognised and available tools and methods. These include e.g. Improve\(^\text{18}\), Civitta\(^\text{19}\), PwC\(^\text{20}\), etc.

The main added value from the technical assistance offered by the new EBRD programme would results from the 3 key elements listed below. All these services would be offered free of charge to the bank and to the company.

- **Support to the company prior to the loan decision.** Once a bank has identified a company with a viable growth potential, but insufficient business plan, financial management capabilities or other necessary competences to capture the benefits of innovation, it could suggest that the company receive technical assistance. This would allow some of the companies to revise their business plan.

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and to sufficiently fill key competence gaps, and thereby become ready for receiving a loan. We propose this assistance would consist of (1) financial management and business development support using the similar approach EBRD already has for SMEs in Romania, and (2) planning of innovation activities and innovation management benefiting from tools and consultancy already available in the Latvian markets.

- **Support to the banks during the loan decision.** External expert evaluation would be provided to the banks free of charge to verify the eligibility of the company for the EBRD loan (InnovFin criteria).
- **Support to the banks after the funds have been used** and the plan implemented to verify that the activities were implemented according to the business plan. This reduces the administrative burden to the banks by limiting the reporting needs to EBRD.

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 150 and all use either the financial or innovation management support, the total volume of technical assistance would amount to no more than 600 days (150*4.0=600 days). Given a daily rate of €1000, this would mean **€600k 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.

### 4.6 Concluding remarks

The Latvian financial market is already quite crowded with European instruments. These are mostly either guarantee or equity arrangements. It seems that the EBRD loan will not be picked up by the Latvian banks (incl. ALTUM) just for the sake of additional funds. The decisive factor will be the added value the EBRD programme can offer through technical assistance.

The EBRD loan doesn’t include any state aid. This makes it possible to combine it with various guarantee schemes. However, to what extent this is desirable, can be decided later after sufficient experiences have been collected. The technical assistance to companies or consultants providing the assistance don’t include state aid, as the funding originates from a European institution which is not subject to state aid.

Technical assistance can help develop otherwise non-bankable companies (due to lack of competences, not due to financial reasons) to become bankable and thereby valid clients for the banks. The assistance related to innovation management capabilities can also help companies become more innovative.

In fact, helping companies become innovative should be recognised as the main rationale for the new EBRD instrument in Latvia. There is already sufficient supply of funding available in the Latvian
markets. Therefore, a new innovation support facility introduced by EBRD in Latvia should focus on something that the markets and financial market actors currently can’t manage. As soon as the companies are bankable and innovative, they can be funded by the banks and their existing or other InnovFin-based instruments. However, companies that have the potential to become innovative, but have no prior track record or experience in innovation have much more limited access to funding. The EBRD loan especially in combination with the technical assistance can potentially have a significant impact in this target group. Their innovation activities may not be very innovative at the beginning, but with proper technical assistance (innovation management in particular), these companies may find the ambition and courage to engage in innovation, as well as the means to do so with the combined EBRD loan.

It is our conclusion, that EBRD should primarily focus on establishing collaboration with ALTUM with regards to the new innovation support facility. ALTUM is a logical choice given its role in Latvian financial markets as well as its existing instruments. ALTUM is also the only financial market actor in Latvia that has shown any serious interest towards the new EBRD instrument.
5 Implementation and monitoring the programme for Latvia

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

Figure 3 Process flow of the new SME innovation financing facility.

Marketing activities in collaboration between EBRD and the partnering banks.

The bank verifies the general eligibility for the company.

The bank asks for the business plan and other necessary documentation from the company.

Bank asks for external verification of the company.

The company delivers the necessary documents.

OPTIONAL: The company receives technical assistance for updating business plan and filling any competence gaps.

External expert evaluates the business plan and verifies the eligibility.

The bank concludes the loan agreement.

Company submits the final report to the bank for monitoring purposes. Bank forwards it to the external expert.

Company implements the planned activities according to the business plan.

External expert verifies the implementation of the business plan based on the final report and if necessary, contacting the company.

Bank reports to EBRD on the use of the loan and technical assistance.

Source: Technopolis Group; Colours indicate the active parties in each process step (— bank, — = company, — = EBRD, — = external expert subcontracted by EBRD)

The critical point in the process flow with regards to timing is the external expert verification step, in case it is needed. It 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 least 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.

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.
• Description of service packages for verification and monitoring purposes. These should include the verification services for (1) company ex-ante eligibility and (2) analysing the company’s final report and delivering the monitoring information. The description should cover the main content, as well as response times.

• Description of service packages for companies. These should include financial management and business development, as well as innovation management and project planning. Alternatively, these services could be contracted separately 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 Latvian companies to avoid any conflicts of interest. As EBRD doesn’t have permanent presence in Latvia, 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 and take action, should there be any indication 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 and technical assistance. The website should also offer an application for companies and ALTUM to help identify if a company is eligible for the EBRD loan and technical assistance. The application would consist of a set of easy and understandable questions based on the underlying InnovaFin criteria. The application could end in a screen offering the possibility to ask for more information or even request a meeting with a ALTUM.

EBRD should also consider establishing a steering group for the programme together with ALTUM (and later if others join, all 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 ALTUM (and Latvian 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. This verification should be done by an external expert. Some allowances could be extended to changes in business plan during implementation, as long as the original ambition level isn’t lowered, and the activities can still be regarded as innovative. 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.

There may also be a need to monitor not only the implementation of R&D and innovation activities, but 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 Latvia 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 Latvia

Introducing a new EBRD instrument into Latvian financial markets may prove somewhat challenging. The financial markets in general are already covered by the banks. Furthermore, public support schemes will be in full operation in 2018. However, as we have indicated before, there seems to be a gap in Latvian financial markets that can be addressed with the planned EBRD innovation support facility.

The main risks related to the planned new EBRD instrument are closely related to two specific areas: market acceptance and quality of technical assistance, especially that offered to companies.

The planned EBRD instrument is new to the Latvian financial markets. The local banks have indicated little or no interest in the instrument. Furthermore, the Latvian banks perceive EBRD as a potential competitor rather than partner. ALTUM has indicated interest towards collaboration with EBRD. However, successful launch and implementation of the new EBRD instrument is seen to depend highly on the final eligibility criteria and the quality of technical assistance. The latter in particular provides clear added value to ALTUM and is probably the main motivation for collaboration with EBRD, as ALTUM has indicated that they already meet companies they are not able to fund because of the company’s competences or ALTUM’s ability to assess the risks related to innovative business plans.

The risks and uncertainties inherent in all innovation activities may require changes to the business plan during implementation. This and the underlying rationale for the planned EBRD instrument, i.e. identifying and encouraging previously less innovative companies to become more innovative, further emphasise that the success of the planned EBRD instrument depends on the quality of the technical assistance. 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 develop financial and business management support for companies based on experience from Romania, where EBRD has already implemented a similar SME support activity. Support for innovation management and planning of innovation activities should rely on existing, extensively tested, established and successful methods for helping companies develop their innovation management skills and plan their innovation activities. As indicated, these are available in Latvia. To avoid conflicts of interest typical in small countries, the external expertise needed for the verification should consists of a network of Latvian 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 Latvian 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. In view of mitigating the potential acceptance risk, EBRD should organise bilateral discussions/negotiations with ALTUM to establish its true interest in the new EBRD instrument. We believe, that the interest indicated by ALTUM is sufficient to reach a positive outcome from these discussions/negotiations.

The pace ALTUM will eventually have in issuing out the new EBRD innovation loans is likely to depend on the familiarity ALTUM and its 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 ALTUM, the external verification and innovation management experts (entities coordinating the expert networks) and EBRD. 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.

It might be beneficial to issue an invitation to the Latvian banks to participate in the discussions at the platform. Alternatively, the Latvian banks could be invited at regular intervals (e.g. once or twice per year) to discuss show the implementation of the EBRD instrument is proceeding and what the impact has been so far.

It may also be worth considering, that ALTUM could seek to syndicate the EBRD loans with Latvian banks. This might be viable, especially in cases where the company already has a relationship with the bank or ALTUM, and both the bank and ALTUM see potential benefits from collaboration. Syndication would allow the Latvian bank to benefit from the technical assistance without having to sign up for the EBRD loan (which would be managed by ALTUM). As ALTUM doesn’t seek to compete with private banks, this may offer an easy and acceptable access to the banks to the benefits of the EBRD instrument and perhaps encourage them later consider collaboration directly with EBRD. This can also further strengthen collaboration between private banks and ALTUM, further ensuring that they are not competing in the Latvian financial markets.

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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21 ALTUM is a state-owned financial market actor, which aims to address financial market gaps and failures, thereby complementing rather than competing with private banks.
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European Bank for Reconstruction and Development. *Where we are: Latvia Overview.* Retrieved from EBRD: http://www.ebrd.com/where-we-are/latvia/overview.html


Appendix A Businesses, R&D, Innovation and Access to Finance

A.1 Business demographics

Figure A-1 Basic figures on SME demographics

<table>
<thead>
<tr>
<th>Class size</th>
<th>Number of enterprises</th>
<th>Number of persons employed</th>
<th>Value added</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Latvia</td>
<td>EU28</td>
<td>Latvia</td>
</tr>
<tr>
<td></td>
<td>Number</td>
<td>Share</td>
<td>Share</td>
</tr>
<tr>
<td>Micro</td>
<td>94,147</td>
<td>91.4%</td>
<td>92.8%</td>
</tr>
<tr>
<td>Small</td>
<td>7,276</td>
<td>7.1%</td>
<td>6.0%</td>
</tr>
<tr>
<td>Medium-sized</td>
<td>1,410</td>
<td>1.4%</td>
<td>1.0%</td>
</tr>
<tr>
<td>SMEs</td>
<td>102,842</td>
<td>99.8%</td>
<td>99.8%</td>
</tr>
<tr>
<td>Large</td>
<td>198</td>
<td>0.2%</td>
<td>0.2%</td>
</tr>
<tr>
<td>Total</td>
<td>103,040</td>
<td>100.0%</td>
<td>100.0%</td>
</tr>
</tbody>
</table>

Source: (European Commission, 2017b)

From the figures published by the European Commission’s SME Performance Review, there were 102,842 SMEs in Latvia in 2016, amounting to 99.8% of all companies. They employed 484,689 persons for a share of 79% of the private sector employees (more than the EU average) and accounted for 72.1% of the value added (more than the 57.4% EU average) (European Commission, 2017b). Mid-sized companies make up a share of 1.4% of all companies, and employed 23.3% of the employees, both indicators above the EU level.

Figure A-2 Business Demographics and Persons Employed
According to the European Commission, Latvia’s SMEs are experiencing healthy growth. During 2010-2015, value-added increased by over 45% and employment by 16%. The information and communication sector performed particularly strongly in 2010-15, with employment growth of approximately 50%. SME value added rose even more rapidly, by more than 80%. The outlook for SMEs is positive: SME value added was expected to grow by 7% in 2016 and by 8% in 2017.

According to the European Commission, Latvia has a very competitive SBA profile. The country outperforms other EU Member States in the principle Entrepreneurship and in State aid and public procurement. It scores above the EU average in the principles ‘Second chance’, ‘Responsive administration’, Access to Finance, and Environment. Average results are found in Single market and Internationalisation. The only weak performance occurs in Skills & Innovation. Since 2008, most principles show a positive or stable trend, while only the scores on Environment have been deteriorating.

Overall, the SME stakeholders acknowledge that the progress in implementing the SBA has been limited. Most emphasis in policy actions in 2015 was put in Skills & Innovation and Access to Finance. Furthermore, a number of support programmes for promoting the development of the SMEs' competences in the research and innovation field were adopted, but there is still a lot of room for improvement. The main challenge is for the government to pursue a policy which incentivises the transition to higher value-added production, services, and greater innovation. Improvement in vocational education is necessary as well as more incentives to support private investment in innovation.

According to the World Bank Doing Business index, Latvia ranks 22nd in place worldwide in the ease of starting a business (7th place in the EU) and in 14th place worldwide in the ease of doing business. The number of procedures to start a business in Latvia is an average of 4, compared to the regional average of 5.3, and the number of days to start a business averages 5.5 in Latvia compared to the regional average of 10.4. The entry cost to start a business also adds to the ease, with 1.5% cost of income per capita, compared to the regional average of 3.7%.

Of this ease is attributed to the fact that Latvia made starting a business easier by reducing the minimum capital requirement and introducing a common application for value added tax and company registration.

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22World Bank Group. *Doing Business 2017*
A.2 Innovation performance of the SMEs in Latvia

A.2.1 General overview of innovation system performance

Latvia is a “moderate” innovator country and its innovation performance has increased by 8.5% relative to that of the EU in 2010. (European Commission, 2017). According to the European Innovation Scoreboard 2017, relative strengths of the innovation system are in non-R&D innovation and venture capital investments in the areas of Innovation-Friendly Environment, Human Resources, and Employment Impacts. Latvia performs well below the EU averages in the areas of Innovators, Attractive Research Systems, and Linkages. The relatively worst performing indicators are Public-private co-publications and License and patent revenues from abroad.

![Figure A-4 Innovation performance in Latvia and peer countries](image)

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

The European Commission notes that over the last eight years Latvia had a positive growth of business R&D investment of about 4.8 % per year. However, in 2015, business investment in R&D declined to 0.15 % of GDP (from 0.24 % in 2014). The take-up of R&D tax incentives is increasing, though in absolute terms the amounts are still limited. The sectoral distribution of SME’s is not conducive to innovation. SMEs are, to a large extent, concentrated in sectors with low and medium-low research intensity, such as metal processing and machinery, wood products and food processing (82 %). There is however a growing eco-system of hi-tech start-ups, supported by conferences, accelerator funds, a new start-up association, and cross-border experience sharing.

The 2017 Scoreboard points out notable differences where there is a larger share of employment in Agriculture & Mining there is a smaller share of employment in High and Medium high-tech manufacturing. Additionally, there is a larger share of microenterprises and SMEs in turnover and a smaller share of large enterprises in turnover. More specifically, the composition of turnover of SMEs (defined as 10-249 employees) was 51.4% between 2011-2014 compared to 38% in the EU. The average of enterprise births (10+ employees) was 2% between 2012-2014 compared to 1.5% for the EU.23

One of the main structural challenges that Latvia is facing and has received multiple CSRs about is the high level of fragmentation in the higher education system. In 2016, Latvia was home to 77 scientific

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23Innovation Scoreboard 2017
institutions and 58 higher education institutions. That makes 38 institutions engaged in R&D and 29 HEIs per million population. The excessive number of institutions leads to the inefficient use of financial and administrative resources, and causes problems for knowledge management. Inadequate public funding in a fragmented research and innovation system (fragmentation makes an increase in public financing ineffective) is also naturally leading to a lack of scientific excellence (for example, the share of scientific publications in the top 10% of the most cited worldwide as % of total scientific publications of the country was 3.3% in 2012). High growth is observed for Non-EU doctorate students (40%), Community trademarks (12%), New doctorate graduates (9.4%), and International scientific co-publications (9.3%). A large decline in performance is observed for Public-private co-publications (-14%) and License and patent revenues from abroad (-12%). The share of the population with digital skills is among the lowest in the EU (European Commission, 2016b). The Latvian RD&I and education systems are not only fragmented with regard to their large number of institutions, but also from a geographic standpoint. A well-developed research infrastructure should enable more efficient cooperation between the stakeholders in the system and attract new competitive talent and capital.24

Figure A-5 Innovation performance in Latvia relative to EU

Source: European Innovation Scoreboard 2017

A.2.2 Overall population of SME and mid-cap enterprises in Latvia

In 2014, Latvian SMEs generated around 69% of the non-financial business economy's value added which is much higher that the European average (58%). However, Latvian SMEs are concentrated in sectors with low and medium-low research intensity.25 The total population of SMEs and Mid-caps in Latvia currently stands at around 109,000, with micro enterprises (number of employees: 0-9) making up 91.6% (100'204); small enterprises (number of employees: 10-49) at 6.7% (7'348); medium enterprises (number of employees: 50-249) at 1.3% (1'459); large enterprises (number of employees: 250+) at 0.18% (197).26 In regards to the distribution of enterprises in possibly innovative sectors: 5.85% of enterprises operate in information & communication; 18.03% operate in professional, scientific & technical activities; 3.59% operate in accommodation & food services.27

The percentage of high-tech manufacturing and knowledge-intensive services versus total manufacturing and services currently stands at 31%. High technology manufacturing industries make up 1.8% of total manufacturing; medium-high-technology industries stand at 6.3%; medium-low-technology industries make up 27%; and low-technology industries make up 65%. Knowledge-based service distribution: knowledge-intensive services make up 34% (29'630) of total services, out of which 74% are market services, while 23% are high-technology services. Current distribution of employees: 32.5% (209,032) are employed in micro enterprises; 23.6% (152,220) in small enterprises; 23.4% (150,611) in medium enterprises; 20.5% (131,833) in large enterprises).

25 Ibid.
26 EC SME Perfomance Review Fact Sheets:
27 EC SME Performance Review 2016 Annual Report:
According to national statistics, 49.8% of enterprises are located in Riga (capital), the next 5 biggest cities (Daugavpils, Liepaja, Ventspils, Valmiera, Jelgava) make up 8.5%, the other 41.6% are located in other regional municipalities. The Competitiveness Report, commissioned by the State Chancellery of the Republic of Latvia, noted that the research system seems to create small incentives for innovation and commercialisation of research. Furthermore, government purchasing practices are not innovation-oriented. Latvian financial markets are underdeveloped and the underdevelopment is a dampener to economic growth. The exception is venture capital and private equity investments which are relatively active. Challenges seem more to be related to demand for capital rather than supply – IPOs have been oversubscribed and in terms of venture capital and private equity funds, financing is available but there are few attractive investment opportunities (due to poor corporate governance and lack of transparency).

The European Commission statistics on SMEs for 2015 showed that the greatest value added by sectors is as follows: services made up 44.17% of the overall value added; trade made up 25.63%; manufacturing made up 19.84%; and construction made up 10.37%.

The standard rate of the micro-enterprise tax has been increased from 9% to 15% yielding some 0.2% of GDP, which is paid into social contributions. The micro-enterprise tax remains prone to abuse and provides low social guarantees for workers. In 2016, 11% of the workforce was employed under the micro-enterprise tax scheme. The authorities plan to replace the micro-enterprise tax with a better targeted support scheme for real small business. Latvia’s shadow economy is estimated at 21% of GDP in 2015, down by over 2 percentage points from 2014, but still approximately 6 pps. more than in Estonia and Lithuania (Sauka & Putniņš, 2016). During 2013-2015, by far the highest level of shadow activity was linked to the construction sector (40%), followed by retail (25%).

Government measures affecting small businesses were reversed at the last minute. The introduction of minimum social contributions was cancelled, given their negative impact on part-time employment and small businesses. The plan to discontinue the micro-enterprise tax was also dropped, instead of this a new tax regime will be introduced as of January 2018. This new tax scheme impacts business R&D expenditure, by, most importantly, applying a 0% tax on reinvested earnings- quite important if a company wants to grow, develop and innovate. Corporate income tax- where the income is invested in the company’s further development the respective corporate income tax rate will be 0% while the regular corporate income tax rate will increase from 15% to 20%. With the tax reform, several tax reliefs will be abolished, including depreciation for tax purposes, extra tax allowances for new equipment, support for research and development costs, as well tax relief for large investments. As previously informed, the current PIT at rate 23% will be replaced by progressive tax. It is set at the following rates: 20% rate on income up to 20 000 EUR per year, 23% rate on income over 20 000 EUR per year, and 31.4% effective rate (consisting of 25% CIT and 11% solidarity tax) on income over 55 000 EUR per year. A change will be added to PIT (personal income tax) for patent fees next year – it ranges between EUR 50 to EUR 100 a month instead of the previous EUR 43 to EUR 100. Amendments to the micro-enterprise tax payment regime provide for maintaining a unified tax rate for all micro-enterprises at 15% for turnover. Maximum turnover allowed for a company to apply for micro enterprise scheme is planned to be reduced from the current EUR 100,000 to EUR 40,000.

A.2.3 Overview of business innovation in Latvia

In Latvia, a strength of the innovation system is the relatively innovation-friendly environment. Larger enterprises are for the most part stable and the country has a higher growth rate of GDP. The

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28 Lursoft Statistics Latvian Enterprise Registry
29 Latvia Competitiveness Report, Stockholm School of Economics, 2011
31 Latvia Tax Reform 2018
performance of the country has increased by 8.5% relative to that of the EU in 2010, according to the 2016 European Innovation Scoreboard report.\textsuperscript{32}

The major innovation weak points, highlighted by the Scoreboard report, are that the country does not have enough innovators or attractive enough research systems to advance business innovation. What is also missing are the linkages between entrepreneurship and innovations that drive progress, as well as the intellectual assets in the form of useful patents and trademarks that can directly invigorate businesses. This lack of cooperation leads to failures in science-industry linkages and university technology transfer.\textsuperscript{33} To help, now the Investment and Development Agency (LIDA) is tasked with developing an Innovation System Governance Model to encourage more stakeholder involvement in the national innovation system and policy development.

Also worrying are the relative drops in scores of key performance indicators along dimensions such as investments in innovation (a significant drop) and R&D, the number of SMEs innovating in-house, or numbers of SMEs having product or process innovations compared to EU average. The turnover rate of micro-enterprises and SME is also higher than that of other EU countries and there is a larger share of foreign controlled enterprises in the country. The negative population growth rate is also worthy of note (European Commission, 2016).

According to Eurostat, though Latvia’s expenditure on R&D has grown steadily since its accession to the EU, it still lags the EU28 average. Business enterprise R&D expenditure in high-tech sectors in Latvia in the period of 2006-2015 was around €38m per year, whereas the EU28 average was at €5,788m per year. Business expenditure on R&D (BERD) has been stagnating in Latvia, with a low of 0.15% of GDP in 2015.\textsuperscript{34} Although the Latvian government budget appropriations or outlays for R&D (GBAOORD) increased from nearly €30m in 2011 to about €47m in 2015, the Latvian government support to R&D is very low at 0.19% of GDP in 2015, which is three times lower than the EU average. Consequently, the country relies on EU funding on R&D.\textsuperscript{35}

Publicly funded R&D is almost entirely performed by the public sector. In the recent years, R&D performed by the governmental sector has shown increasing volumes, accounting for 28.3% of the total GERD in 2013 but decreasing to 24% of the total GERD in 2014. In 2015, the absolute expenditure on R&D by the government sector was the same as in 2014 (€39m), and as a percentage of the total it picked up to 25.6% due to the lower total expenditure in 2015. The share of R&D performed by the higher education sector is still the most significant contributor to the R&D activity in Latvia, spending a half of the total R&D funds (49.7% in 2015).

Since 2009 the external funding accounts for around 45-50% of the total GERD. In 2013, 51.6% and in 2015, 44.4% of Latvian total GERD was funded from abroad. Thus, it is largely thanks to the EU Structural funds that Latvia continues to fund its R&I policy mix. The use of EU SFs in Latvia in the period 2007-2013 was directed mostly towards investments in infrastructure, production equipment purchases or replacement, construction and other capital goods. In the 2014-2020 period €482.6m (8.8% of total structural funds allocation) is allocated to strengthening research, technological development and innovation (European Commission, 2014). As for indirect funding, a new tax incentive (enhanced allowance scheme) was introduced in July 2014. The new scheme offers a 300% super deduction of a range of R&D expenditures.\textsuperscript{36}

In 2015, Latvia spent 0.6% of its GDP on R&D, while EU28 average amounted to 2%. What is more, Latvia spends twice as much of the funds in the higher education sector than it does in business enterprise sector. Almost half of the funds for R&D are sourced from abroad, and a third from the government itself. Without EU funds, such expenditure would drop drastically. Only a fifth of the funds

\textsuperscript{32} European Commission Innovation Scoreboard 2017:
\textsuperscript{34} ibid
\textsuperscript{35} RIO Country Report Latvia 2016
\textsuperscript{36} ibid
come from the business enterprise sector, highlighting the problem of innovation- the market does not adapt to the need for innovation quickly enough.

In general, Latvia faces a shortage of human resources employed in RD&I activities. Around 70% of employers regularly face lack of qualified workforce, according to the Latvian Employers' Confederation. This lack relates not only to the number of people, but also to the relevance of their knowledge.37

BERD intensity in Latvia has been stagnating during the recent years and is one of the lowest in the EU. It peaked in 2006 but then went back down to values of around and below 0.2% of GDP. The value for 2014 (0.24% of GDP) marked a notable increase from 2013 but in 2015 it decreased to as low as 0.15% of GDP. The business sector performed 24.7% of total GERD in 2015 which is way below the EU average of 64%. The highest BERD spenders have been the manufacturing and business services sectors. In 2011 business services R&D intensity dropped and manufacturing became the most important sector in this respect. In the manufacturing top sectors (in terms of BERD) the manufacture of wood products, the pharmaceutical industry and the manufacture of computer, electronic and optical products are responsible for the increase in manufacturing BERD since 2011. Thanks to long-standing traditions, Latvia has a strong manufacturing base in fine chemicals and pharmaceuticals. The country was the principal location for these sectors in the former Soviet Union, with 25% of new Soviet-era drug technology designed there. But by far the most R&D intensive sector in Latvia in 2014 is the wood sector (mostly plywood for different commercial transport and housing applications). In the business services sector professional, scientific and technical activities, ICT, as well as the financial and insurance activities sector are the top BERD spenders. The Latvian ICT sector is less developed than in the neighbouring Baltic countries and for a while its R&D spending was quite small but since 2013 an increase is observable and the sector is developing fast, especially in the field of gaming services.38

**Figure A-6 Types of Innovation Cooperation**

<table>
<thead>
<tr>
<th>Innovation Cooperation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Romania</td>
</tr>
<tr>
<td>Lithuania</td>
</tr>
<tr>
<td>Latvia</td>
</tr>
<tr>
<td>Estonie</td>
</tr>
<tr>
<td>European Union (28 countries)</td>
</tr>
</tbody>
</table>

Source: Eurostat

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37 *ibid*
38 *supra at note 22*
The Central Statistical bureau report of 2016 notes that in 2014, 93.2% of economically active enterprises in Latvia were micro enterprises and 99% were classified as SMEs. These SMEs generated 69% of the non-financial business economy’s value added (the European average is only 58%). Although predominantly, they are concentrated in low-research sectors like wood products, metal and food processing.

In Latvia, less than a third of all companies are thought of as innovative. According to the Central Statistical Bureau of Latvia, in the period of 2012-2014, innovative companies in the industry sector

were only 28.2%; in the manufacturing sector, the number was 28.9%; whereas in the services sector 23.4% of the companies were considered as innovative.\textsuperscript{40} During that time, the share of enterprises that had product innovations was around 8%, whereas the EU28 average was at 24%.\textsuperscript{41}

Innovation in high tech sectors in SMEs includes 14% in high tech manufacturing, 10% in medium tech, and 3% in low tech manufacturing (Eurostat). This is changing rapidly though, as traditional sectors like railroad transit services exports were surpassed for the first time in 2016 by ICT exports.\textsuperscript{42}

The percentage of innovative companies in the industry sector is as follows: 66% of the companies producing machinery are considered innovative; 52.9% producing electrical and optical appliances; 50.4% working in the chemical industry and associated sectors.

The gross expenditure in research and development (GERD) has been historically low in Latvia, reaching 0.63% of GDP in 2015. This makes it one of the lowest in the EU. The breakdown is 0.15% in the business enterprise sector, 0.16% in the government sector, and 0.31 in higher education.

The post-crisis drop in investment from both the public sector and private sector (BERD) dropped in recent years. BERD has been decreasing from 0.8% of GDP in 2011 to 0.3% of GDP in 2015. This level of business R&D intensity is one of the lowest in EU.

During 2014, a rapid increase in R&D activities in the Latvian business sector was observed. BERD increased by 13% to €57.8m in 2014. Growth was also experienced in the number of full-time employees (FTE) in research and development in the business sector, which went from 981 in 2013 to 1,382 in 2014. However, the impressive increase in business R&D experienced in 2014 seems to have been only a temporary improvement. In 2015, Latvian business R&D indicators reversed to similar levels as in 2013 – BERD in 2015 stood at €37.6m and the full-time (FTE) R&D personnel count in the business sector was 1,145 (Central Statistical Bureau of Latvia, 2016). The predominant source of funding for the business enterprise sector in 2015 was foreign (mostly EU) funds - €19m. Most of the innovative companies in Latvia are SMEs. The accounting principles and underreporting of R&D activities by enterprises could partially explain the low expenditure on R&D. Latvian enterprises (especially if they are SMEs) rarely pay much attention to the classification of R&D activities. Such a culture might be due to the lack of R&D tax incentives until recently as well as to the lack of recognition of R&D in the expense reports of the enterprises that actually perform a great deal of R&D. However, these circumstances are starting to change and they might lead to at least a partial correction of the underreporting. The private sector investment in R&D, according to the National Development Plan of Latvia for 2014-2020,\textsuperscript{11} is set to reach at least 48% of the total investment in R&D by 2020. This corresponds to BERD/GDP target of 0.72% by 2020 which at this stage seems quite ambitious.

Despite a slowdown in 2016, investment in Latvia through EU funds is expected to increase over the next two years, with the expected economic growth to improve from the low of 1.0% in 2016 to an expected 2.8% in 2017 and 3.0% in 2018.\textsuperscript{43} According to the Ministry of Economics, the total funding for the 2014-2020 for innovation support from both EU and national funding equals to about €195,5m. This is comprised by both national and EU funds. This funding is divided as follows: €64,3m for the competence centre support programme to develop new products; €40,6m to support technology transfer (€27,6m for the commercialisation of scientific ideas; €8,92m for the development of entrepreneurial ideas-innovation voucher), innovation vouchers, attraction of highly specialised workers (responsible body LIAA); €60m for the development of new products (governing body - Central Finance and Contracting Agency of the Republic of Latvia- CFLA); €5,7m for the entrepreneurial motivation programme (LIAA); €24,9m for the training of workers (responsible bodies: 10 sectoral associations, LIAA).

\textsuperscript{40} CSB. Innovation Key Indicators
\textsuperscript{41} Eurostat Innovation Statistics
\textsuperscript{42} RIO Country Report Latvia 2016
\textsuperscript{43} ECFIN Autumn 2016 Economic Forecast
According to the Ministry of Economics, total EU and National Funding for SME Competitiveness amounts to €295,7m. This funding is divided as follows: €15m for grants (ALTUM); €66m for loans (ALTUM); €32,8m business incubators (15 business incubators under LIAA); €60m for risk capital (ALTUM); €6,2m (Clusters); €60,9m for the Increase in International Competitiveness (LIAA); €24,8m for the development of production facilities (CFLA); €15m technology accelerators (ALTUM); €15m business angels (ALTUM). ALTUM is the joint stock company Development Finance Institution, a state-owned institution that provides state aid to specific target groups by means of financial instruments (loans, guarantees, investments in venture capital funds, e.o.). By way of implementing the state aid programmes, ALTUM fills in the market gaps and ensures accessibility to the funding in the areas the state has identified as a priority.

In Latvia, there are only 596 innovative enterprises that take advantage of public sector procurement, according to Eurostat figures. According to a 2014 Eurostat report, only 0.10% of companies have received public funding for innovation.

Latvia introduced some changes in the ESIF governance system for programming period 2014-2020 – concentrating the administration of the funds in the hands of one coordinating authority, namely the CFLA, with the aim of decreasing costs and increasing efficiency. Primary barriers to entrepreneurship and access to finance for innovative enterprises include the insolvency process (risk of abuse) and the shadow economy.

According to the Ministry of Economics: in the period of 2012-2014 the proportion of companies considered as innovatively active (as a percentage of all companies) fell by 4,9%, but the number of

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44 Ministry of Economics. Latvian investment environment and supporting instruments for SMEs
46 RIO Country Report Latvia 2016
companies that had non-technological innovations (marketing and organisational) rose by 10.1%. Thus, the proportion of what can be considered innovative companies in the period of 2012-2014 was 25.5% (In 2010-2012 it was 30.4%). 60.2% of the industrial sector, and 47.9% of the service sector introduced technological innovations; non-technological innovation was introduced by 39.8% and 52.1% respectively.

It should be concluded that the innovation and research capacity of Latvian companies is insufficient to ensure the creation of new competitive advantages and long-term growth of companies. This is largely due to the existing structure of the economy, the low manufacturing sector, where low and medium-tech industries dominate. In addition, the majority of Latvian enterprises are micro and SMEs. In turn, the innovation potential and performance of micro and SMEs is affected by both the limited human resources and the financial resources available to them for the implementation of R&D and innovation activities, including the limited ability to attract funding due to high technological and business risks. Similarly, Latvian enterprises are largely underdeveloped in terms of intra-sectoral and cross-sectoral cooperation, but in particular, there is a lack of cooperation with research institutions in Latvia and abroad. The decrease in private sector R&D expenditures is attributable to a combination of factors, in particular Russia’s embargo on certain products and the devaluation of the Russian rouble, as well as the termination of operations of one of the largest manufacturing companies “Liepājas Metalurģs JSC”. As a result of the Russian crisis, the turnover of Latvian companies from this market decreased, and companies were forced to make radical cost reductions - redundancies, freezing of investment projects, as well as postponement of innovation, and R&D work.\(^\text{47}\)

A.3.3.1 Fintech sectors

Latvia is a growing centre for Fintech, particularly in consumer finance, P2P, and crowdfunding. Amongst the Fintech companies there are:

4Finance- one of the largest mobile and online consumer lending groups in Europe. Since 2008 the company has provided over 11,500,000 Single Payment, Line of Credit and Instalment Loans totalling more than €3.4b.

Monea- presents an application that allows people to make fast money exchange transactions through their mobile phones. Its operational app is integrated with 4 banks in Latvia (SEB, Nordea, Citadele, and Swedbank).

Coinfide- a payment specialist that offers invoicing, e-Wallets and payment solutions for small and medium-sized enterprises and a full service for merchants

Swipe- a Latvian gateway for invoicing and instant payments. It is currently available in 13 currencies across European countries.

Mintos- a consumer peer-to-peer lending platform that connects borrowers with investors. The platform currently serves personal unsecured loans, mortgage loans, small business loans and secured car loans

Transaction Value in the Fintech market amounts to US$878m in 2017. Transaction Value is expected to show an annual growth rate (CAGR 2017-2021) of 22.8% resulting in the total amount of US$1,999m in 2021. The market's largest segment is the segment "Digital Payments" with a total transaction value of US$816m in 2017. From a global comparison perspective, it is shown that the highest transaction value is reached in China (US$1,086,493m in 2017).\(^\text{48}\)

Large Nordic banking groups like SEB and DNB, as well as global companies like Cabot, Alnexit and Solvay SA, have already moved either their back-office operations to Riga or have created global business services centres there. Financial operations taking place in Riga include: trading and payment processing transactions; client support; securities settlement; and risk and control operations.

\(^{47}\)Ministry of Education and Science (MoES). *Smart specialisation strategy monitor*

\(^{48}\)Statista Fintech: *Latvia Highlights*
A.2.5 Identification of underfinanced sectors where innovative SMEs are active

The Latvian RIS3 strategy as part of the Europe2020 plan looks to increase productivity by identifying sectors where small incremental changes can leverage substantial return. Specifically identified is Latvia’s knowledge base in bio-economy; bio-medicine, medical technologies, bio-pharmacy and technologies; advanced materials, technologies and engineering systems; smart energy; and information and communication technologies.

Challenges in the Smart Specialisation Strategy monitoring system are that there is not enough funding to properly monitor and evaluate, that the monitoring system doesn’t properly track increases in the volume of R&D activity (instead focusing on monetary terms), and that as a new strategy, it lacks scope to evaluate short-term progress.

Since most of the Structural funds will be allocated to RIS3 sectors, the need for external funding (bank loans, credit lines, etc.) related to innovation activities is potentially higher than in other sectors, as the public funding cover only part of the costs and only the R&D and limited innovation activities – commercialisation after the publicly supported funding ends still typically requires significant external funding. And the public funding is typically awarded after the costs have accumulated, so there is a need to cover those costs as well during the project and if the project is large enough or the company has any challenges with their cash-flow, they would need a bank loan or a credit line to cover these costs. Hence, the allocation of public funding doesn’t reduce the need for innovation oriented banking instruments, quite the contrary.

Some findings from the mapping include:

- The Advanced materials, technologies and engineering ecosystem includes companies such as Groglass Ltd., JSC Sidrabe, Z-Light Ltd., JSC Jauda, JSC Valmieras stikla šķiedra, JSC Lode. These companies offer potential in the areas of machinery (including electrical equipment), mechanisms and industrial machines. The greatest inventiveness potential in this sector include: implant materials, composites, thin layers and coatings.

- The Bio-medicine, medical technologies, bio-pharmacy and biotechnology ecosystem benefits from the industry organizations of JSC Olainfarm, JSC Grindeks, JSC Dzintars, Madara Cosmetics Ltd., Silvanols Ltd., Riga East University Hospital Ltd., Pauls Stradiņš Clinical University Hospital Ltd. The greatest potential lies in four areas: Chemical and biotechnological methods and products for obtaining pharmaceutical and bioactive substances; Research and development of new and existing human and veterinary medicinal products; Molecular and individualized treatment and diagnostic methods and cell technologies; Functional food, medical cosmetics and bioactive natural products.

- The knowledge-based Bio-economy field in Latvia is represented by industries such as JSC Latvijas finieris, SJSC Latvijas Valsts meži, Pure chocolate Ltd., Fortum Ltd. Potential in this sector lies in seven areas: Sustainable and productive forest cultivation in variable climate conditions; Innovative, competitive (niche) products with high added value; Full usage of wood biomass for the chemical processing and energy; Innovative, risk-reducing plant and animal breeding technologies; Innovative high added-value niche product development from traditional and non-traditional agricultural plant and animal materials; Technological solutions for plant and animal breeding and processing side-products usage for obtaining high added-value products; and Food safety.

- In the field of Smart energy, the industries in Latvia include SJSC Latvijas gāze, JSC Rigas siltums, SJSC Latvenergo, JSC Komforts, Grandeg Ltd., Sun Investments Ltd., Sinergo Ltd., Altenergo Ltd., Enefit Ltd. The greatest potential lies in research and modelling, specifically, electrical and smart grid studies using mathematical modelling methods, research on energy-efficient solutions in companies, research on applications of electricity in transport, bio-energy solutions, and solutions for energy self-sufficiency.

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49 Latvian Ministry of Education and Science report: RIS3 in the context of Europe 2020: The Role of Universities
50 Smart Specialisation Strategy: Latvia
In Latvia, Information and communication technologies (ICT) are represented in the industry by Lattelecom Ltd., Tilde Ltd., JSC Rix Technologies, JSC Exigen Services Latvia, Dati grupa Ltd., JSC SAF Tehnika, Hanzas Elektronika Ltd. The greatest potential for economic growth lies in specialization niches (cyber systems, photonics, bio-photonics, micro and nanoelectronics, etc.) and horizontal platform for collaboration in solving society - important matters (such as health, transport, environment, public safety, etc.) for such sectors as innovative knowledge management, system modelling and software development methods and tools; innovative sectors of ICT hardware and software applications; language processing and semantic web; large-scale data and knowledge infrastructure; information security and quantum computers; and computer system testing methods.

The companies mentioned in RIS3 smart strategy part range from 8 people to more than a thousand employees - the larger companies employ between 500-1200 people (according to information available in Lursoft51). The companies listed in the previous paragraphs mostly concentrate on low-medium technological manufacturing (food, raw material production, forestry, energy production, and heating technology product development) - as mentioned in the text, such companies do not strive to innovate, because the local market does not require them to do so (low ability for the consumers to absorb higher technologies), and R&D expenditure in these companies is usually below 1%. The high technology companies (pharmaceuticals) like Grindeks and Olainfarm, as mentioned in the text, do not innovate on the level of their, e.g., German counterparts, but mostly imitates their success to create a product for the local market, being the strongest presence in the market. The new tax system might give these companies a boost in R&D expenditure through reinvested earnings.

A.3 Access to finance in Latvia

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

According to the latest available issue of the pan-European SAFE survey on access to finance for SMEs (November 2016), Latvian SMEs do not consider access to finance as their most important problem they are currently facing, as only 11% 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 (20% of SMEs), availability of skilled staff (15%) and competition (13%) (ibid).52

In the six months prior to the survey, the Latvian companies ranked access to finance as the least of their difficulties, at a score of 5.0 ranked from 1 (not important) to 10 (extremely important). (ibid).

The most relevant sources of funding for Latvian firms were considered credit lines and overdrafts (43% of SMEs compared to 55% at EU level). Bank loans (39% of SMEs) and other loans (31%) were also significant funding sources. Grants were used by 21% of SMEs; the sale of assets used by 20%; and trade credit was used by 18%. Of the respondents, Latvian firms found funding through equity capital (44%) and leasing or hire purchase (45%) (European Commission, 2016b).

For 52% 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 (9% of respondents), companies have access to ‘insufficient collateral or guarantee’ (8%), or no bank loans were available (6%) (ibid).

Latvia has a strong banking sector, so basically bank funding is available for SMEs and Mid-caps. Although bank financing is the most important external source of funding for most SMEs and Midcaps, due to several reasons such as inefficient legal framework, high administrative costs prohibiting lending low amounts, insufficient equity or insufficient collateral for loan co-financing required by banks, SMEs

51 Lursoft - data bases of enterprises of Latvia
52 SAFE survey
are cautious to increase their indebtedness, and increasing shadow economy availability of financing by banks remains limited.

The insolvency regime is perceived as an obstacle to investment, receiving a lot of criticism from industry groups and international investors as the rate of recovery is only 48% compared to an OECD member state average of more than 72%.

Abuse of the insolvency process is harmful for the Latvian economy and more emphasis should be given to increase recovery rates and fraud control. Though no official statements have been made, news coverage of corrupt insolvency administrators has been abundant. The problem lies in the fact that the insolvency process is riddled with corruption scandals. It is, or at least was, very easy to bribe an insolvency administrator so that he disregards certain assets a company might have, so that they do not get taken away when the debts have to be repaid. On the other hand, the administrators themselves were pushing for bribes, knowing their position in case of insolvency. Some of them have received jail time and severe monetary sanctions. These scandals were mostly related to banks and larger enterprises, where the debt was calculated in millions, but there are probably tens or hundreds of smaller cases of bribery as well.

According to the BEEPS V survey of 2014, workforce skills and access to finance were the chief business environment obstacles. The survey noted that the share of bank loans used to finance fixed assets is only 6% compared to a CEB average of 16% (although only 24% of firms reported needing a bank loan and more than 60% of those turned out to be credit constrained).

Based on the most typical reasons banks reject loan applications, and the reasons companies seek bank loans, it would seem that there is a market need currently not fully addressed. Almost 40% of medium sized companies seek bank funding for R&D and innovation specifically, developing international activities, or launching new products into the market. These activities may often be related and stem from innovation activities. Companies often don’t use banks because of insufficient capital or collateral, lack of previous loan history, too high interest rates, or too risky projects. In case these companies previously were not able to attract bank funding and seek the funding for the previously listed innovation related activities, a bank loan or credit line instrument becomes more attractive than currently on the markets for both the bank and to the company might have potential in Latvia.

As in other new Member states, significant amounts of Structural funds and other European funds are available in Latvia. ALTUM uses these funds in the form of loans to target SMEs and start-ups. It also provides Mezzanine funding and guarantees. Equity funding is organised through various venture funds.

The European Commission notes that despite post-crisis deleveraging, Latvia still has the largest banking sector among the Baltic countries. Bank assets amounted to €31.9b in 2015 (131 % of GDP). The banking sector is dominated by Nordic banks. Lending to companies picked up after a three- year contraction. By November 2016, overall lending growth reached 2.4 % annually. The cost of credit is relatively high in Latvia. Bank average interest spreads for new loans amount to about 2.7 percentage points for businesses.

53 RIO Country Report Latvia 2016
54 SBA Fact Sheets 2016
55 Business Environment and Enterprise Performance Survey (BEEPS) V, Latvia country profile
According to the European Commission, public investment fluctuations and uncertainty over future tax policies weigh on the business environment. Delays in implementing EU-funded projects have disrupted public investment. The announced stability of tax policy was undermined by last minute changes to the 2017 budget and uncertainty over the upcoming tax strategy.

According to the Survey on Access to Finance of Enterprises (SAFE), only 1% of Latvian firms say that access to public financial support, including guarantees, has improved.

SMEs across segments mostly fund their growth with short-term, medium term loans and leasing. Micro companies cannot rely on retained earnings as a significant source of funding, and instead rely significantly on loans provided by ALTUM, investments from shareholders, and family of friends, while private investors (such as Business Angels), and micro-financing is most scarcely used, possibly indicating a lack of knowledge of such financial instruments.

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56 SAFE Survey
As seen in the graph above, for micro companies, the most popular source of external funding is loans from ALTUM. As micro companies lack collateral which is required by banks, ALTUM has taken on the role of supporting smaller companies, in a similar fashion as a bank. For both micro and small companies, internal investments is still popular, which could lead one to think that Latvian entrepreneurs are afraid to risk with other people`s money, so they rely on their own resources or those of family and friends. Small companies also rely on short-term loans, bank overdrafts and credit lines - this can be explained by the need to finance working capital, because often they lack liquid assets such as cash to cover expenses. Leasing is popular for both small and medium companies, mostly to finance the acquisition of equipment - they cannot afford to buy it outright, and thus rely on leasing to pay the sum in parts. Around 10% of small and medium enterprises rely on medium and long-term loans, which have become less popular since the financial crisis of 2008 when companies couldn’t repay the loans and thus were forced to sell assets and downgrade production. Latvian entrepreneurs have become more cautious when it comes to borrowing money for fear of another crisis. When the new tax system is implemented (2018), we can expect a greater reliance on retained earnings as a source of finance, because there will be a 0% tax on it - this could greatly increase intramural R&D expenditure and the development of new products/processes and non-technological innovation.

As seen in Figure 13, both micro and small companies use external funding to finance working capital and for acquiring machinery and equipment, while medium companies have more widespread needs where external funding is used: acquire machinery, equipment (26%), financing working capital (18%), launch a new product (17%), enter new markets (13%). It is clear from the graph that only 6% of small companies use external financing to launch a new product/service. Even more worrying is that only 1% of small companies use external finance for R&D and development, and only 10% of medium companies respectively. This points to the overall lack of interest in funding innovation and development.
As illustrated in Figure 14, SMEs cannot obtain financing purely using company assets as collateral. The owner is required to pledge his personal assets to obtain the necessary funding, regardless of the SME segment, thus suggesting that the entrepreneur is rarely limiting his risks to the extent of the investments in the limited liability company, but mostly is required to risk losing other personal assets in case of ill performance of the business, which is possibly indicating a market failure. Both small and medium companies significantly rely on public support, namely state guarantees, to obtain loan financing, while micro companies do not view guarantees as a notable source of collateral or do not have access to them, instead relying more significantly on family and friends’ assets as collateral.
Debt instruments are seen as the primary preferred source of future funding for any segment of SMEs, followed by owner funding, and support from state authorities (see Figure 15). Commercial banks and leasing companies are viewed increasingly as a preferred source of funding as the company matures. Micro companies seem to expect significant state support, as micro companies have indicated state authorities (e.g. subsidies) as the key preferred source of funding, followed by owners' funds and family and friends. Neither micro companies, nor later stage companies see private investors (BA, VC) and mezzanine funding as a significant source of funding.

Source: *Ex ante* assessment of access to finance, Ministry of Economics, 2015
Figure A-13 Expected source of funding in future, 2014-2016

Source: Ex ante assessment of access to finance, Ministry of Economics, 2015

Figure 14 Distribution of interest in financial instruments

<table>
<thead>
<tr>
<th>Financial Instruments</th>
<th>Micro</th>
<th>Small</th>
<th>Medium</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short-term loans, on demand</td>
<td>6%</td>
<td>18%</td>
<td>12%</td>
</tr>
<tr>
<td>Medium and long-term loans</td>
<td>38%</td>
<td>23%</td>
<td>8%</td>
</tr>
<tr>
<td>Leasing</td>
<td>10%</td>
<td>4%</td>
<td>6%</td>
</tr>
<tr>
<td>Factoring</td>
<td>4%</td>
<td>9%</td>
<td>30%</td>
</tr>
<tr>
<td>Credit and export credit guarantees</td>
<td>0%</td>
<td>14%</td>
<td>17%</td>
</tr>
<tr>
<td>Advanced payments from the customers</td>
<td>12%</td>
<td>2%</td>
<td>8%</td>
</tr>
<tr>
<td>Mezzanine</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Micro-financing</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
</tr>
<tr>
<td>Venture capital(^1)</td>
<td>29%</td>
<td>31%</td>
<td>19%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>100%</td>
<td>100%</td>
<td>100%</td>
</tr>
</tbody>
</table>

Source: Ex ante assessment of access to finance, Ministry of Economics, 2015
Supply of equity funding (largely venture capital) available for SMEs during 2016-2020 is estimated at €155-167m, however the funding is skewed towards the later stage VC and expansion stage. In fact, there seems to be no equity supply to be available for pre-seed stage (if assume that private investors primarily consider investing in seed stage and later in development).

Source: *Ex ante* assessment of access to finance, Ministry of Economics, 2015
Guarantees schemes for Latvian SMEs are supported by ALTUM that issues credit guarantees for new financial obligations. A credit guarantee offered by ALTUM covers up to 80% of the principal of the financial service and does not exceed €1.5m for one commercial activity (except for road transportation activities – €0.75m). The maximum length of the guarantee term is 10 years. As per OECD, on average guarantees are typically set at 5 years. As per ALTUM the most active sector in Latvian economy seeking for credit in the last years is the processing industry. While export credit guarantees were not popular among micro companies, they were still being used actively.

A.3.3.1 Recent R&I Public Policy Developments (2016)

- In May 2016, the Cabinet of Ministers confirmed a government action plan for the development of the economy with “innovation as a necessary precondition for economic transformation, private sector motivation for 47% of total investment in research and development in 2018”.  

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57 Report by the Ministry of Education and Science of the Republic of Latvia
The Ministry of Economics, in cooperation with other responsible ministries, began the development of the innovation system governance model to create a permanent multilevel discussion between the government sector, private sector and the research and education sector to facilitate more cooperation in policy development.

The Ministry of Economics has approved the acceleration fund and growth fund programmes executed by ALTUM making extra €30 million available to the SME market from the second quarter of 2017.

Market failures for bank lending and leasing and factoring

Stakeholders’ interviews have revealed that there are several market failures that are ecosystem related, chiefly that SMEs are insufficiently informed about the availability of various financing instruments, especially for micro companies and early stage. Even if they are informed, there is insufficient understanding what financial instruments are suitable in what circumstances.

According to The Global Competitiveness Report for 2013-2014, Latvia holds the 117th place in the country ranking for efficiency of legal framework in settling disputes. Even if a company has a sound business plan, a track record of positive and predictable cash flows, banks are reluctant to lend to companies that are not clients of the particular bank due to perceived excessive risk of low recovery in case of failure to pay. If banks do offer to lend to a new client, often they require hard collateral (instead of commercial pledge, for instance), thus limiting availability of credit to SMEs.

For particular types of investment leasing as a financial instrument can somewhat address this market failure, as leasing provides a higher security and lower recovery risks than lending with collateral. Insufficient equity for loan co-financing required by banks also hinders growth as banks typically require a 30% equity co-financing for the project. In Latvia, SMEs are cautious to increase indebtedness. Despite statistics not suggesting overleveraging for companies in Latvia (total loans outstanding as a percentage of GDP is 35%), banks see SMEs regardless of segment either being particularly cautious to finance growth with funding from banks, given the recent sour experience in the aftermath of the global financial crisis, or SMEs being fully leveraged. Additionally, an increasing shadow economy, further limits availability of financing by banks as reputable banks in Latvia would not lend to SMEs obviously operating in the shadow economy. The accessibility of Business Angels financing is hindered by lack of formalized BA networks, which would allow entrepreneurs to more easily approach BAs for financing instead of relying on personal connections. There is positive development, most notably the formation of Latban BA network in 2014 with the financial support of ALTUM.

Market barriers for financing innovative companies and innovative projects

According to the European Commission: Overall, Latvia has made limited progress in addressing the 2016 country-specific recommendations. Some progress has been made in the consolidation of research institutions, in strengthening private sector innovation incentives, in improving tax compliance, in improving vocational education, with the involvement of social partners, in increasing the accountability and public oversight of insolvency administrators and in supporting social assistance recipients in finding and retaining work. Regarding progress in reaching the national targets under the Europe 2020 strategy, more effort is needed in R&D investment. Latvia’s tax structure is not very growth-friendly.

Investment in research and innovation remains low. Public research relies on EU funds and its effectiveness is hampered by fragmentation and low internationalisation. The framework for supporting business innovation is in place.

A public-sector reform aims to increase the quality and efficiency of the central administration, but local authorities are not covered. Efficiency gains are expected by simplifying procedures, making better use of IT solutions and increasing pay. However, there are no reforms planned at local government level.

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58 Ex ante assessment of Access to Finance, Ministry of Economics of the Republic of Latvia, 2015
which accounts for a large share of public employment and has not seen significant efficiency gains from past reforms. Also, there is little oversight and few incentives for efficiency of the local authorities.

The Latvian mentality is very risk averse. Latvians are petrified by the idea of failing in business, especially as an entrepreneur, so many people choose to be employees rather than employers. The 2008 financial crisis austerity measures aggravated the Latvian risk aversion leading to a severe drop in investments, risk capital financing, and people are still traumatised by it. The Programme could strive to popularise entrepreneurship by showing the commitment of Europe when it comes to helping young business-eager individuals. Through extra financing, institutions such as ALTUM can make it easier for entrepreneurs to get financing, because according to the European Commission, access to loans remains a relevant problem for many Latvian enterprises. The inability to acquire funding for their businesses is proven by the fact that 44% of enterprises consider equity capital as a relevant source of financing, this is the highest percentage in all of Europe. Latvian businesses state that the difficulty in acquiring, e.g., a bank loan is mostly due to lack of a collateral or guarantees, which is easily solved by implementing the Programme. The rejection rate for loans remains one of the highest in Europe, according to Eurostat.

Technology Transfer market failures

- Low interconnectedness between scientist and entrepreneurs

The insufficient knowledge transfer between public research institutions and third parties, including industry, has been identified by the EC as one of the key areas to improve across Europe and Latvia is not an exception. A university (as opposed to a corporate) laboratory usually does not have the skills and incentives to transform the invention into an innovation. There are few technology intensive ventures at an early or later stage that are part of the pipelines of the key investors in the market as suggested in interviews with market participants, which is attributable to scientists seldom teaming up with entrepreneurs to form ventures. As Latvia consolidates its research system, cutting the number of institutions from 44 to 20, there may be opportunities for richer connections. According to the EU Stairway to Excellence Report, ESI funds could be used as one of the tools facilitating this process.

- Lack of supply to finance pre-seed, seed stage technology intensive ventures

TT is investment intensive area that has a high risk associated with it, whereas especially academic research is by private sector considered to be ‘too new’ or ‘too high-risk’. Consequently, there are constraints on the transfer of academic research out of the laboratory and attraction of funding from traditional investors. Given that private investors are reluctant to finance pre-seed, seed stage especially technology intensive ventures, and the fact that Imprimatur Capital managed €50k seed stage soft-loan fund investment period is likely to expire by the end of 2015, there are no notable market participants identified that are expected to finance TT in 2016-2020.

- Lack of smart money

Besides the lack of supply for TT in the market, there is also lack of technical expertise among institutional investors due to the small market size and resulting inability to finance specialized technical competence within the teams. Consequently, the few technology start-ups that do reach market traction stage and require next stage financing (post-production, late VC stage), are often not considered for investment due to costly or impossible verification of the market potential due to lack of specific technical expertise.

- Insufficient size of economy to generate substantial pipeline of TT enterprises

The small size of economy affects the academic research financing in absolute amounts, which consequently limits the size of the scientific community, and limits the number of TT enterprises that can emerge from within the market. As an example, Commercialization Reactor has addressed the issue by attracting scientists from CIS and beyond to connect with entrepreneurs locally.

60 SAFE Report
61 Stairway to Excellence Country Report: Latvia
Inability to shift to debt financing

Innovative projects are investment intensive. This limits ability of SMEs to use a self-financing option. Moreover, it usually puts constraints on the attraction of debt financing of innovative start-ups. The usual reason is the absence of collateral or track-record to offset the risk associated with the financing.

A.3.3.2 EU structural funding and public incentives for SMEs and private sector RDI

According to the European Commission’s Science for Policy report by the Joint Research Centre (JRC), Latvia is actively working to encourage more research and innovation. In May 2016, the Cabinet of Ministers confirmed the government action plan “Cabinet of Ministers priority lines of action for the development of the economy”. The Ministry of Economics, in cooperation with other responsible ministries, began the development of the innovation system governance model. November 2016, the Latvian Parliament approved the Innovative Start-up Law to create a tax regime that will stimulate the growth of innovative Latvian start-ups. The Ministry of Economics has approved the Acceleration Fund, Seed and Growth Fund programmes executed by ALTUM making extra €60m available to the market from the second quarter of 2017.62

The financial crisis of 2008 still influences lenders in their decision-making, leaving them more risk averse. Which means reliance on European Structural and Investment Funds, the EU’s main investment tool. All of these funds are available to Latvian enterprises if they meet the criteria. Through three national and regional programmes, Latvia has been allocated 5.63b from ESI Funds over the period 2014-2020. With a national contribution of €1.27b, Latvia has a total budget of €6.9b to be invested in various areas, from creating jobs and growth to promoting innovation as well as protecting the environment and supporting social inclusion.

Figure A-19 Debt instruments of 2014-2020

<table>
<thead>
<tr>
<th>FI</th>
<th>ESI Funds, m EUR</th>
<th>Other public sources, m EUR</th>
<th>Private sources, m EUR</th>
<th>Total budget, m EUR</th>
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<tr>
<td>Direct microloans</td>
<td>3</td>
<td>7</td>
<td>-</td>
<td>10</td>
</tr>
<tr>
<td>Indirect microloans</td>
<td>3</td>
<td>12</td>
<td>2.65</td>
<td>17.65</td>
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<tr>
<td>Start-up loans</td>
<td>10</td>
<td>10</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Growth loans</td>
<td>-</td>
<td>40</td>
<td>-</td>
<td>40</td>
</tr>
<tr>
<td>Loan guarantees</td>
<td>20</td>
<td>-</td>
<td>-</td>
<td>20</td>
</tr>
<tr>
<td>Export credit guarantees</td>
<td>-</td>
<td>20</td>
<td>-</td>
<td>20</td>
</tr>
</tbody>
</table>


62 RIO Report Latvia
One of the goals for 2020 is to support Latvia’s investment in R&I, making it possible for Latvia to invest 1.5% of its GDP in RTD enterprises to support the introduction of new product to the market. Latvia will benefit from €185m under the financial instruments available to support businesses and finance energy efficiency measure. Loan, guarantee, and equity instruments will be used to support SME’s and energy efficiency in buildings. The EU has also contributed 85% of the €123.9m budget for a project that promotes start-ups.

Current state interventions are targeted to cover all possible financing gaps in different development stages of an enterprise, thus providing opportunities for organic growth of SMEs. One of the main reasons for state interventions is to produce critical mass to foster self-development of the market by not distorting market competition and crowding-out private investment.
The new one-stop-shop for public financial support for businesses, ALTUM (the joint stock company Development Financing Institution ALTUM) was created in 2014 and merged with the other two existing institutions in 2015, completing the consolidation of the support activity in a single entity. At the end of 2015, ALTUM managed a portfolio of financial instruments of the total value of 1.5 % of GDP, made up of 8 900 projects, of which 90% were loans and guarantees and 10% venture capital funds. ALTUM provides financial and non-financial support, including counselling, training, mentoring, in various fields such as energy efficiency of buildings, agricultural business and even housing loan guarantees for families with children. ALTUM is also the contact point for the European Investment Bank and the European Investment Fund in Latvia. A substantial part of funding is provided for by European Structural and Investment Funds, with a 2014-2020 allocation from the European Regional Development Fund exceeding 0.6 % of GDP.

In 2016 the funding granted within the state aid ALTUM programmes amounted to €131.5m (increase by 11.4% compared to year 2015), the total number of supported projects- 4'461 (an increase by 58.2% compared to year 2015). In 2016 the aid provided to businesses amounted to €111.6m supporting 1643 business projects. With the new covenant signed with Central Finance and Contracting Agency (CFCA) on implementation of Fund of funds, it is estimated that the total funding of the European Regional Development Fund (ERDF) available through the aid programmes under Fund of funds programmes will amount to €125m. Together with the addition of private funds, the total funding available to entrepreneurs under these programmes is estimated at €376m. On 14 October 2016 ALTUM concluded an agreement with the European Investment Fund (EIF) on the counter-guarantees of InnovFIN Facility for the guarantee portfolio worth €30m.

In 2016 ALTUM granted €4.3m to 223 start-up projects under the Start-ups programme.

Within the framework of funds ALTUM has initiated the selection process of the managers of accelerator funds. Acceleration is an activity not yet practiced in Latvia intended to support the companies that are in a very early development stage. ERDF funding of €15m is earmarked for the activity. Around 120 perspective ideas will receive accelerator and investment services. In year 2017 the volume of new transactions performed with ALTUM’s financial instruments is estimated at €180m with support to be provided to more than 5'500 business projects. The financed projects will create more than 3100 new work places. The total investment of ALTUM’s financial instruments, including the co-financing of the aid beneficiaries, in the national economy, is expected to be around €290m.

While Latvia ranks fourth in the European Innovation Scoreboard for venture capital, such investments remain small. The annual gross operating surplus of Latvian companies is higher than the EU average, suggesting that companies have the potential to finance investment from retained earnings. A draft financial sector development plan has been announced to support lending and capital market development, as well as to ensure the competitiveness of Latvia’s financial sector. Public financial funds primarily offer SMEs guarantees and loans for growth, largely supported by European Structural and Investment Funds. The government supported the creation of the Baltic Innovation Fund, managed by the European Investment Fund, to provide growth capital for SMEs and promote the development of Latvia’s venture capital market.
Latvia has been very active in enhancing access to finance for SMEs. A range of financial instruments for SMEs have been made available (public loans, public guarantees and microfinance measures) and a number of venture capital, pre-seed and seed capital funds have been established since 2011, to help young and innovative businesses throughout the different stages of growth. Previously, the support instruments were managed by different entities, now a single public development institution is in charge. The rollout of the new support schemes started at the end of 2016 for financial products directly managed by the government agency ALTUM. It is expected in 2017 for financial products to be procured to third parties.

ALTUM cooperates with all major banks in the country and it also operates as a fund of funds providing indirect financial support through acceleration, seed and start-up as well as expansion capital funds. Other venture risk capital funds may be mentioned: Baltic Investment Fund offers €90m; Baltic Small Equity Fund offers €8.3m; Akembla Growth Fund offers €80m.

### A.3.3.3 Private Equity Finance for Innovation

- **BaltCap Management Latvia**

  BaltCap is the largest independent private equity firm focusing on small and midmarket buyout and growth capital investments in the Baltic States. Investors are local pension funds, institutional investors and other investors. The fund provides financing to SMEs for their expansion, including the diversification of products. The public funding is not subordinated to the private investments and does not act as a downside protection.

  BaltCap Private Equity Fund invests in small and mid-size Baltic companies through buyout and later stage expansion transactions. The enterprise values of the target companies typically range between €5 million and €40 million. BaltCap in the process of establishing a new growth fund to invest in small and medium enterprises. BaltCap has secured commitments to establish a new regional fund to provide growth capital across the Baltic region for small and medium sized companies. The new fund would target both local and pan-Baltic companies who want to create new products and services, accelerate organic growth or acquire businesses with an ambition to grow and become the market leaders. The target size of the Fund will be €50m.

- **Imprimatur Capital Seed fund**

  Imprimatur Capital Seed fund provides early stage investments with total funding of €8.5m. The fund has been increased, redirecting funding of €3.5m to pre-seed investments, thus addressing market gap regarding limited pre-seed funding for the creation of initial business concepts. The fund...
is 100% public financed. By the end of 2014, the Imprimatur Capital Seed fund has ensured the creation of 44 new innovative companies (portfolio consists of 15 investments and 29 soft loans). Seed investments are being made in the sectors of nano-technology, B2B e-commerce, enterprise software, digital media, digital security, and data and workflow solutions for healthcare industry.

- **Imprimatur Capital Start-up Fund**
  Imprimatur Capital Start-up Fund provides start-up capital with total funding of around €7.4m, of which €5m is public and €2.4m is own private co-financing. A technology focused early-stage fund has invested in 9 companies in the sector of professional, scientific and technical services, and in information and communication service sector, reaching the leverage rate 60%. A start-up capital fund provides investments up to €600k.

- **Expansion co-investment funds**
  Three new expansion co-investment funds Expansion Capital, FlyCap, ZGI-3 with a total public funding of €31.5m have been established in the August 2013, providing early stage investments and expansion investments up to €1.5m per company. Funds address market failure regarding insufficient access to early stage and later stage venture capital investments. Expansion capital funds have increased the number of funds operating in the market, thus enhancing the development of the market.

- **Baltic Innovation Fund**
  BIF invests public funding to venture capital and mezzanine funds, making investments mainly in companies in Baltic States. BIF provides access to investments from €3m up to €15m, however smaller investments can be made in innovative and knowledge based companies. The venture capital investment term is up to 5 years. In January 2015, four financial intermediaries are selected by the EIF (BPM Capital, BaltCap, Livonia Partners, Karma Venture). The total amount of financing is €130m, of which €26m is invested by Latvia. The Fund is managed by the European Investment Fund (EIF).

### A.3.3.4 Private Business Angel funding

![Latban Investments 2015-2016](image)

*Figure A-23 Latban Investments 2015-2016*

Source: Latvian Business Angel Network

The chief frustration of the Latvian Business Angel Network (Latban) is that it is difficult to find innovative projects to support. According to interviews with Latban, the interest and number of investors continues to grow, but the number of investments decreased because start-ups don’t require much financing. The money is there, but the projects to fund are not, so in the meantime Latban works to educate members and push for more cooperation between the scientific community and business specialist who know what innovations will actually be useful and needed in the marketplace.
Appendix B Eligibility criteria

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

This section is based on the InnovFin criteria defined and used by the EIB/EIF\(^{63}\), 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\(^ {64}\)"** 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\(^ {65}\). Customers of the company can be engaged into the listed activities, as long as the company itself is not.


\(^{64}\) 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.

\(^{65}\) 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.
B.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. 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 Error! Reference source not found.), 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 Latvia, 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:

The company’s R&I costs represent at least 10% of its total operating costs in at least one of the three years preceding 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.

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