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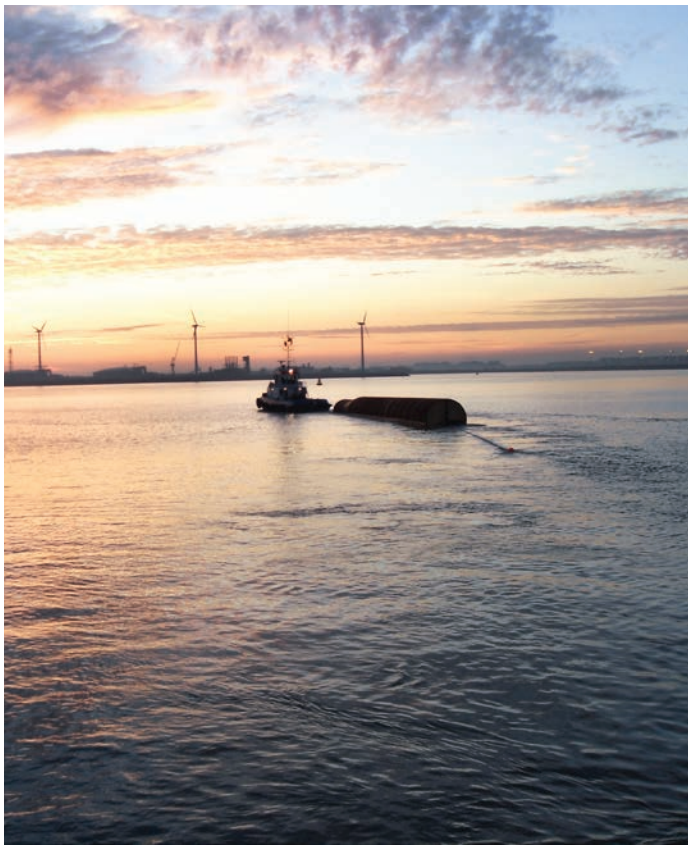

Breaking Down Investment Barriers at Ground Level

Case studies and other evidence related to investment barriers under the third pillar of the Investment Plan for Europe

Contents

Introduction

Eight years after the global financial and economic crisis, economic recovery in the EU is slow. A major reason for this weak recovery is subdued investment activity. At the same time, Europe faces the protracted challenge of declining productivity and competitiveness. This makes Europe vulnerable to economic turmoil, undermines the recovery and threatens long-term economic well-being. It is crucial for the future of Europe to create the right conditions for investment and to accelerate the reallocation of resources to enhance competitiveness.

Subdued investment activity erodes existing productive capital and means that Europe does not make the investment in human and physical capital that is needed for future productivity, growth and employment. This trend has undermined the ability of European firms to compete in the global economy and to provide rewarding jobs and a high standard of living.

Investment barriers slow down or reduce investment in the economy. They diminish the economy's productive capacity and suppress long-term economic growth and employment. For example, regulatory uncertainty causes project revenue risk, which reduces project viability, investment, private sector interest and innovation. Fragmented markets diminish producers' incentives to invest by making the potential size of the end-market smaller. This reduces the likelihood of recouping large, risky up-front investments in R&D or new production capacity. Weak planning and project preparation capacity of public-sector promoters reduces the efficiency of government investment. This undermines the scope of the public sector to enhance future economic prospects. Without adequate access to finance, companies, especially SMEs, cannot roll out the investment necessary to fulfil their potential to innovate and grow. In turn, this limits the creation of new jobs.

The Investment Plan for Europe (IPE) is an initiative by the European Commission which aims to support investment in the EU by making smarter use of new and existing financial resources, providing visibility and technical assistance to investment projects, and by removing obstacles to investment. Due to the nature of its core business, the EIB Group[1] has particularly strong links to the IPE's first and second pillar, through the European Fund for Strategic Investments (EFSI) and the European Investment Advisory Hub.

However, thanks to almost 60 years of project experience and market knowledge across many countries and economic sectors, the EIB Group also has first-hand experience of barriers that hamper the implementation of investment projects on the ground. This experience is directly relevant to the IPE's third pillar, which addresses the improvement of the investment environment. In this regard, the European Commission aims to put forward measures that will provide greater regulatory predictability and remove investment barriers. The Energy Union, the Capital Markets Union, the Single Market and the Digital Single Market Strategies, as well as the Circular Economy package all contain specific measures that will remove concrete obstacles and further improve the environment for investment. The Commission has also engaged in a structured dialogue with Member States to help remove national obstacles to investment in the context of the European Semester in areas like insolvency,

[1] The EIB Group consists of the European Investment Bank (EIB) and the European Investment Fund (EIF).

public procurement, judicial systems, and the efficiency of public administration or sector-specific regulations.

This publication constitutes an EIB Group contribution in the area of the third pillar of the IPE. Its purpose is twofold. First, it presents some examples of common/typical investment barriers that hold back investment, as observed in the EIB Group's everyday project work. These examples are representative of barriers that the Bank's experts encounter in many operations and many countries. Second, it describes some innovative/new solutions to overcome these barriers. These solutions show that investment barriers can be overcome when the political will exists. Against this background, the EIB Group's contribution to improving the investment environment in the EU complements that of other institutions, which tackle the issue from a different angle and at a different level.

This report begins by defining investment barriers and presenting a generic classification of investment barriers. It summarises empirical evidence on the economic impact of investment barriers and/or their removal. The report continues by presenting examples of investment barriers that are frequently observed by the EIB Group's sector experts at project level. These case studies cover four broad categories of barriers, namely those related to regulation, market size and structure, public-sector promoter constraints, and access to finance. Each example also presents a solution that has been put forward to remove the investment barrier in question. The report concludes by highlighting key findings and making recommendations for further research.

Existing evidence on barriers to investment

The objectives of this section are:

- to describe an analytical framework to identify, classify and understand the factors that may act as barriers to investment in Europe;
- to provide a preliminary assessment of available evidence regarding the impact of those barriers on investment levels and on investment-related outcomes, such as innovation, productivity, employment and growth.

The analysis presented in this section is a desk-based literature review, covering academic peer-reviewed journals and other relevant sources, including government reports, publications by international organisations and international financial institutions in addition to the EIB Group, think-tanks, and private associations.

A framework for understanding barriers to investment in the EU

The barriers to investment in the EU analysed in this report are location-specific factors that affect:

- the cost of investing;
- the risks of investing;
- the level of competition in the market.

Deciding when and how much to invest requires the weighing of costs, typically concentrated up front, and potential benefits, typically spread over time. The costs and the benefits of investing can be affected by future uncertain events. Risk and uncertainty need to be taken into account, especially in the case of irreversible fixed capital investment expenditures. Competitive markets generate incentives for firms to invest: to enter new markets, to innovate, and to improve productivity[2].

This definition of barriers to investment is consistent with the analysis of the ways in which government policies and behaviours can affect a country's investment climate provided in the World Bank's 2005 Development Report. The framework presented in this section is based on the World Bank's approach, but it is suitable also for advanced economies, adapted and updated to reflect additional literature[3] with a focus on key issues affecting investment in the EU.

[2] In principle, the level of competition in the market is one of several factors which affect the opportunities and incentives to invest. These factors may also include, for example, geography, consumer preferences, or culture. In turn, each of these elements can be influenced by governments more strongly (competition) or less strongly (geography, culture, consumer preferences). In line with the objectives of this report, the focus is on factors that can be influenced by government policies and behaviours, such as costs, risks, and level of competition.
[3] Including the OECD's Policy Investment Framework and the OECD/G20 Report on Investment Strategies.

Figure 1 illustrates the framework. The factors affecting cost of investment, risks, and level of competition can be grouped into four categories that have been reported in the literature on barriers to investment, and that are consistent with the examples of barriers experienced by the EIB when undertaking its lending, investing and advisory activities:

- regulation (e.g. the costs to businesses of complying with regulatory standards);
- market size and structure (i.e. factors influencing the potential demand for a good or service, including the extent of competition in markets);
- public-sector promoter constraints (e.g. the institutional capacity of public-sector promoters to procure and implement a large infrastructure project);
- access to finance (i.e. factors influencing the ability of businesses, especially small and medium-sized enterprises, to obtain financial services, such as credit, insurance, and other risk management services).

Figure 1 identifies the main factors or channels through which each of the four categories of barrier to investment may affect costs, risks and competition.

Figure 1 covers a wide range of factors — somewhat wider than those most frequently experienced by the EIB Group and that are covered by the examples in subsequent sections. However, investment decisions may also be affected by other elements. Specifically, the literature has considered extensively two additional categories of barriers to investment:

- the properties of the legal system: the protection of property rights in legislation and in its enforcement, the prevalence of crime, and the efficiency of the judicial system;
- macroeconomic conditions, including a country's fiscal and monetary policies and their predictability.

The analysis in this section focuses on the four categories of barriers to investment presented in Figure 1 — areas where the EIB Group's operational experience can suggest policy changes or structural reforms that may be needed to remove or relax such barriers to investment in the EU. Those four areas are briefly introduced next.

Regulation

Regulation can affect investment costs in a number of ways. The OECD (2014a) classifies regulatory costs. The main category includes the costs of complying with regulation, which can take the form of

Figure 1. Barriers to investment typology

	Costs	Risks	Barriers to competition
Regulation	Regulatory burdens and administrative procedures; regulatory fragmentation	Regulatory uncertainty	Barriers to market entry and exit; incentives in regulated sectors (e.g. utilities)
Market size and structure	Market fragmentation	Lack of standards	Implementation of competition law and policy
Public-sector promoter constraints	Infrastructure, public sector efficiency and capacity	Weak planning and project preparation capacity	Possible unintended consequences of public procurement procedures
Access to finance	Cost of finance	Financial instability, unavailability of instruments to allocate risk	Limiting entry into new product and geographical markets

Source: Frontier Economics, adapted from World Bank (2005) and other literature.

administrative burdens (defined as the costs of complying with information obligations), or other costs (e.g. adapting business processes to meet requirements, payments for licensing fees, etc.). Regulation that is fragmented across geographic or product markets can increase the cost of investing by requiring firms to comply with several sets of regulatory requirements across different jurisdictions.

Changes over time in regulation, or in the way regulation is enforced, may generate uncertainty, thereby increasing the (perceived) risk that costs and benefits of investing may also change over time. Uncertainty may be particularly relevant where regulation has an important role in determining the costs and benefits of investing, as for example with energy generation from renewable sources.

Regulation can affect which firms are allowed to participate in a given market, potentially limiting competition by restricting the entry of new firms. Where the role of competition in the market is necessarily limited, as in the case of natural monopolies (e.g. energy transmission or water distribution), effective regulation seeks to incentivise welfare-enhancing investment by network operators.

Market size and structure

The total potential demand for a good or service defines the size of the market. Market size can depend on geography, on the level and distribution of income among consumers, on regulation (particularly trade regulation), and the availability of technological standards. The structure of a market, on the other hand, is determined by the number and characteristics of sellers of the good or service. In principle, both market size and market structure can affect investment through several channels. When it comes to the adoption of new production technology, for example, size matters: investing in the new technology may only be profitable if future sales can be large enough (Murphy et al., 1989). Given the size of the market, empirical evidence shows that greater competition can lead to greater incentives for private firms to invest, particularly in innovation, although theory suggests that this need not always be the case[4]. In practice, it is difficult to disentangle the role of size and the role of competition. Larger markets tend to attract more sellers and, as a result, are often more competitive than smaller markets.

Public-sector promoter constraints

Capital goods can be characterised by positive externalities: the benefits they produce cannot be entirely appropriated by agents who bear the costs of generating them. This is typically the case for infrastructure. In these cases, government intervention is required to obtain socially desirable levels of investment. Constraints on public-sector promoters, due to limited budgets or limited institutional capacity, can then act as barriers to investment. Specifically, they can increase the costs and the risks that private investors face when investing in projects that involve the public sector. Other investment projects can also be more costly or risky when local infrastructure is inadequate.

Public-sector promoters can also affect the level of competition in local markets, particularly markets where the public sector is an important buyer.

Access to finance

The cost of financing is a key determinant of investment decisions. Assessing the expected benefits of an investment and its riskiness can be difficult for external financiers, particularly for certain types of investors (e.g. small, young enterprises) and certain types of investment (e.g. in innovation). As a result, these investors can face high costs of external finance, or have limited access to any external finance at all.

The risk of investing can be affected by a number of factors, including the stability of the financial system and the predictability of public policy. For investments that involve the participation of both the public and private sectors, the availability of financial instruments, mechanisms and policies that allocate appropriately risks to each of the parties is key to making private participation viable.

The availability of external finance also influences a firm's choices on whether to bear the costs necessary to enter into new markets, thereby shaping the level of competition and incentives to invest.

[4] With greater competition, firms may have to innovate to survive (see for example Aghion and Howitt, 1998); however, as suggested by Schumpeter, some degree of both pre- and post-innovation market power may be necessary to make the investment worthwhile (see for example Cohen and Levin, 1989). Ahn (2002) provides a summary of the arguments. Recent evidence in Aghion et al. (2005) suggests that greater competition leads to higher investment innovation up to a point, after which the relationship becomes negative.

Summary assessment

Evidence on the impact of product market regulation and access to finance is relatively strong compared to the evidence on market concentration and market fragmentation. However, available evidence on those four investment barriers is much stronger than that regarding other regulation barriers (regulatory uncertainty, regulatory fragmentation, and administrative procedures), public-sector promoter constraints, or lack of EU-wide standards. The relative strength of the evidence available across investment barriers regarding their impact on investment levels and investment-related outcomes suggests potential areas for future research.

A preliminary review of available evidence about the impact of investment barriers finds the following patterns:

- the evidence considered in this review is strongest on the effects of overall levels of regulation and market integration on productivity, and of financing constraints (or policy initiatives aimed at removing them) on firms' investments in R&D, employment, and sales;

- while there is strong evidence on the effects of product market regulation, measured through composite indices, the review uncovered limited sources investigating specifically the effects of those regulation issues that are central to the EIB's experience: uncertainty, fragmentation, and the administrative procedures required to implement and comply with regulation;

- the review also uncovered limited evidence on the impact of public-sector promoter constraints and lack of standards;

- where there is strong evidence on the impact of investment barriers, it is on the effects on employment, productivity and economic growth, rather than the effects on investment itself. The literature on financing constraints is an important exception, providing a good evidence base for their impact on investment in R&D;

- available evidence suggests that young and small firms are especially likely to face financing constraints to their investment decisions, and credit guarantees issued by governments can be an effective means of alleviating these barriers to investment;

- it is difficult to disentangle the effects of market size and market structure from each other. However, it is relatively clear that EU integration, leading to both increased market size and increased competition, has been beneficial in terms of productivity growth in Member States. On the other hand, there is a thin line between studies on regulation and studies on integration, as the integration of EU markets has been the product of reforms, including regulatory reforms.

- a good amount of credible evidence is available on the impact of market structure — specifically, market concentration. While this literature suggests consistently that higher market concentration leads to lower productivity (or slower productivity growth), evidence on the impact of concentration on investment is rather mixed.

Practical examples of investment barriers

The EIB's daily experience confirms that the investment barriers can become a major obstacle to the implementation of investment projects on the ground. This section presents the barriers that EIB experts encounter most often in their project work, and it provides examples of how such barriers can be overcome.

Regulation

Investors understand that the regulatory framework — and tariffs, in particular — will evolve over time. Changes can be introduced in a transparent, predictable, and timely manner, so that investors understand the new risk proposition.

Designing regulation to impose time constraints — not only on regulated operators but on the regulators themselves — can help.

Delivering capital-intensive infrastructure assets in Europe requires significant private-sector involvement. The overall regulatory framework is a key element in determining the scale, speed and cost of private sector involvement. From the perspective of a potential investor in infrastructure assets, an ideal regulatory framework provides:

- **certainty**, notably when the framework determines tariffs or payment streams (e.g. availability-based PPPs; renewable energy support policies; tariffs for regulated utilities);
- **scale**, which avoids local or regional fragmentation and allows international investors to perceive a sufficient scale in the market;
- **efficiency**: clear and efficient administrative procedures, notably for licences and permits.

For the public sector, improving the regulatory framework helps place downward pressure on the costs of capital — which ultimately should turn into lower customer bills. This section of the report discusses each issue in turn, illustrating recent examples of good practice and political will that were instrumental in overcoming the barrier in question.

The first issue — providing certainty to investors — has been much discussed in the renewable energy sector since the onset of the financial crisis in 2008 and the ensuing fiscal consolidation. Many investors were hit by retroactive changes in support, notably towards solar panel projects. For capital-intensive infrastructure assets typically characterised by a high upfront fixed cost and low marginal or operating costs thereafter, the core of the investor concern can be characterised as follows[5]. Prior to the investment, the investor case is established assuming, for a projected level of demand, a tariff level above average unit cost. After the investment has been made, however, there is a risk that the tariff is retroactively reduced below average

[5] See Dieter Helm (2010), EIB papers. Available at: http://www.eib.org/infocentre/publications/all/eibpapers-2010-v15-n02.htm.

cost towards marginal cost. If this risk is perceived as tangible, investors may decide not to invest. In practice, of course, this risk is largely mitigated through the credible nature of the regulatory framework, including a legally binding agreement on the tariff level. Retroactive changes, however, destroy investor confidence in the credibility of that framework.

While the cost of capital may depend on the credibility of the framework, this does not imply that it needs to be set in stone. Investors understand that the regulatory framework — and tariffs in particular — will evolve over time, particularly in response to falling technology costs or legitimate changes in public policy. However, this change can be introduced in a transparent, predictable, and timely manner and thus ensure that investors have understood the new risk proposition. The next section provides an example of introducing just such a change in the tariffs for network companies in the UK.

The second issue concerns scale — i.e. avoiding undue fragmentation in regulatory frameworks which may push up financing costs or even deter investment all together. This issue often forms part of the political motivation around greater harmonisation at European level, but can also be an issue between local, regional and national levels of government within a Member State. An example from the French energy efficiency market of a recent initiative to provide a clearer national framework, notably to support third-party financing of investments can be found in this section.

The third issue concerns clear and efficient procedures. Administrative procedures embody the practical implementation of the various regulations that frame project implementation. Obtaining licences and permits involves costs in terms of financial and managerial resources. It may also lengthen the lead time for project conception and implementation. An added element is the extent to which the duration of the administrative process can be gauged with reasonable certainty. Large investment projects tend to involve a wide range of licences and permits. Moreover, they tend to be politically sensitive and the administrative process tends to be subject to political interference at various stages, which can result in a high degree of uncertainty regarding the duration of the process. Improving administrative procedures involves not only minimising the number of procedures and the costs associated, but also increasing the predictability of the duration of the process.

Regulatory uncertainty

Energy network companies are a natural monopoly. Thus tariffs are approved by regulators to ensure value for money for consumers. The standard regulatory model was developed in the 1980s, at which point power was predominately generated in large-scale conventional power stations located relatively close to centres of demand such as large cities. Networks were designed accordingly. As a relatively stable system, the chief concern for regulators traditionally has been to incentivise the network company to seek efficiency gains in operating and maintaining the network. The regulatory framework was designed to provide such incentives, through the so-called RPI-X model in which tariffs fall over time by a given percentage (X) below inflation.

Arguably, this model needs to be reformed if network companies are to be incentivised to support the investment and innovation required to meet long-term climate targets. Firstly, it needs to incentivise the significant investment required to reinforce the network to transmit and distribute a growing share of renewable power, which is often smaller in scale and more decentralised than the conventional system. Moreover, there may be significant growth in power demand over the medium term in response to the electrification of transport. Secondly, those investments need to offer value to customers and avoid "gold-plating" the system. Striking this balance is not straightforward. The benefits of the network investment depend crucially on when, where and which forms of power generation are built. This is often uncertain — at least for the network company. As a result, if it invests relatively early, there is a risk that the underlying power generation investment fails to materialise and customers are left funding a stranded asset. If, on the other hand, it invests only relatively

late, there is a risk of not being able to exploit new assets for some time, and thus failing to meet the commercial expectations of private-sector generators. For relatively large investments, such as new interconnectors, which in some cases require decades to develop, the costs of poor decisions could be substantial. Thirdly, network companies need to be incentivised to innovate both hardware (i.e. assets such as smart meters) and software (e.g. operating procedures).

From a public policy perspective, a change in the regulatory framework may be required. However, introducing such a reform will invariably affect the main revenue stream for regulated companies — and, if perceived as introducing new risk, may place upward pressure on the cost of capital for network companies. This would be an unhelpful side effect, particularly as network companies are currently being asked to increase investment.

Moving to a new regulatory framework (RIIO, UK)

In 2013, the UK applied a new regulatory framework for energy network companies (gas and electricity). This framework (termed RIIO, for Revenues = Incentives + Innovation + Output) introduced several changes to the traditional RPI-X regulatory model to ensure that network companies support the decarbonisation agenda.

Mindful of the fact that any changes would need to be introduced in early 2013, the regulator Ofgem started public consultation in late 2008. The programme of review and consultation was tailored to deliver clear recommendations by late 2010. This input was used to develop specific strategies for power and gas transmission and distribution strategies by spring 2011, allowing the companies time to prepare the relevant business plans for implementation in early 2013. This relatively lengthy process has the advantage of allowing all concerned parties sufficient time to adjust to the change.

From the outset an independent Advisory Panel was established with several members from the banking and investment community. In setting out the objectives of the reform, the regulator stated clearly its overriding aim to ensure continued good access for network companies to international capital markets. Dedicated financial workshops were held as part of the public consultation process to ensure that any concerns were addressed.

The funding cost for network companies has not noticeably deteriorated as a result of the change in regulatory framework. This success reflects the nature of the measures proposed, as well as the comprehensive consultation programme, including with investors, accompanying the change.


UK Power Networks
Danger
High voltage
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UK Power Networks Services

Regulatory fragmentation

Investors tend to look for scale in markets. Undue fragmentation can, therefore, deter investment. This can stem from various sources, including fragmentation in the market itself: e.g. small investments; multiple actors with different incentives to invest; or barriers to growth for SMEs. However, it can also be exacerbated by fragmented regulations — different regulations in comparison to the potential size of the market. Market fragmentation is discussed further in this section. This section focuses on regulatory fragmentation.

While regulatory fragmentation affects many sectors, a good illustrative example concerns energy efficiency in buildings across Europe. Evidence[6] has repeatedly shown the potentially large pool of energy efficiency investments with a relatively short payback period. That is, where the savings in energy bills, measured in present value terms, exceed the cost of the investment. It appears many of these investments are not made. Compared to the US, the European market appears fragmented[7].

Part of the explanation lies in the market itself. Investments are typically small and often only considered as part of periodic renovation projects. In the case of the rental markets, incentives are split between building owners (who pay for the investment) and renters (who benefit from lower energy bills). However, in contrast to the US, the different regulatory frameworks within and amongst Member States have not helped support a pan-European market.

This situation is improving. European legislation on the energy performance of buildings has helped to provide some clarity and common benchmarks to apply to new construction and building renovations. In the case of new buildings, it has introduced the concept of a Near-Zero Emission Building, with the definition provided by each Member State. Similarly, for building renovations it has introduced the concept of cost-optimal levels, defined by each Member State following the general principles set out in the Directive. In terms of renovating public buildings, a recent Eurostat ruling has helped provide greater clarity for the balance sheet treatment of energy performance contracts. However, the largest market to tap concerns private residential buildings. The next example illustrates how France has helped to stimulate investment by improving the regulatory framework.

Administrative procedures

Administrative procedures are a by-product of regulation and are relevant for all sectors and all EU countries. When implementing a project the promoter has to provide evidence that it complies with existing laws and standards affecting the construction and operation phases, and involving a wide range of aspects, including safety, product standards, the environment, financial position, compliance with governmental planning objectives, etc. The objective is to ensure that users and other stakeholders are satisfied that the project is safe and sound. Far from being an obstacle to the project and to investment, these requirements should benefit the project by reassuring users. The problem is that this process involves a cost to the promoter in terms of financial and managerial resources, as well as lengthening the time required to carry out the project.

The key is to balance the benefits and costs of regulation and the associated administrative procedures. Weak regulation and poorly enforced procedures may lead to poor performance, accidents, etc., creating public mistrust and reducing demand for the output of the project. Unduly burdensome administrative requirements increase the transaction costs associated with entering the market or expanding. That discourages investment and ultimately increases costs to consumers. When administrative procedures act as a barrier to entry, the cost may hide rents accruing to incumbent producers.

Perhaps the most practical way to judge whether administrative procedures are excessive is by making a comparative analysis. The World Bank ranks countries on the ease of doing business[8]. It normal-

[6] Capturing the Multiple Benefits of Energy Efficiency. International Energy Agency (2014).
[7] For instance, the US ESCO market was estimated to have gross annual revenues of USD 5bn in 2011 largely devoted to energy efficiency programmes for municipal governments, schools, universities and hospitals. The Chinese market is also estimated at around USD 5bn. By contrast – outside Germany and France – the EU market remains underdeveloped. See Stuart et al. (2014) Vol 77, Energy pp 362-371.
[8] http://www.doingbusiness.org/reports/global-reports/doing-business-2016

Energy efficiency in residential buildings in France

In 2010, France adopted *La Loi Grenelle 2,* which required each region to put forward a plan (*un Schéma Régional Climat Air Energie*) elaborated jointly with the state. This plan includes a specific strategy to support further energy efficiency measures in buildings.

In a second step, in 2015 France adopted *la programmation de la transition énergétique* which establishes an operational framework for third-party financing by public companies and includes an energy renovation platform (a "one-stop shop") to assist private individuals with information concerning finance, certified suppliers, energy audits and construction companies. This allows in effect a third party to finance the investment in return for a "rent", or annual payment, less than the energy savings.

Although it is too early to judge performance, the combined effect is to have introduced a more coherent and conducive regulatory environment to support energy efficiency. Consequently, the Bank has been able to approve a transaction to finance the programme with the aim of renovating 500 000 buildings per year by 2017.

ly calls for the number of administrative steps to be reduced and simplified. The emphasis, however, is placed on improving the business environment for SMEs, which are an important generator of wealth and employment and which have fewer resources to pay for administrative procedures.

Large projects tend to be led by large promoters, rather than SMEs. The process of implementing such projects is generally complex, with greater direct involvement by the authorities. Such projects tend also to be politically relevant. This can raise risks regarding time for approval and delays to implementation. Delays in obtaining approval for a given element of the project can compromise the obtaining of approval for other elements. It can hold back the implementation of projects for long periods. The design of the project may even be altered to avoid a certain administrative step, or projects may be put on hold indefinitely.

Designing regulation to impose time constraints — not only on regulated operators, but on the regulators themselves — can help. Formalising certain elements that are vague can improve predictability for the promoter, diminishing time-related risks for the project.

This highlights a dual nature of economic regulation: first, creating the necessary financial incentives to invest; and second, as an aid to planning, reducing administrative uncertainty. In terms of incentives, economic regulation is normally viewed from an economic angle as an accompaniment to privatisation to guarantee primarily two objectives:

- to provide a protection mechanism against market power;
- to provide a level of profitability to incentivise investment.

The second role is one of reducing the costs associated with obtaining approvals to carry out investment projects, whether by the private or public sectors.

Programme contracts for Italian airports

The process of planning investments in the Italian airports sector used to be hampered by negotiations with the state that were lengthy and of uncertain duration, often due to lobbying from interested parties and political interference. A crucial aspect for an Italian airport was obtaining at least an indication of the level of charges it would be allowed to levy. This would allow it to define the scale and phasing of the investment programme for infrastructure development. This in turn was a prerequisite for an airport to obtain all necessary planning and environmental approvals, as well as to plan for and secure external financing. One Italian airport wanted to carry out works to expand capacity. First, it needed approval for a masterplan. This would lead to the defining of a phasing schedule and the obtaining of planning and environmental approval for each development phase. To prepare the masterplan, the airport needed to understand how much funding it could expect through its own revenues. For this it needed to understand how much money it could raise through charges to airlines, which are government-regulated, unlike non-aeronautical revenues, which are not. The administrative procedure for the approval of aeronautical charges depended on ad hoc requests to the government. There was much uncertainty about how long the process would take and what might occur in the future. Meanwhile, the airport was increasingly congested. There was a clear need for additional capacity. But there was no way of starting the planning process, because of protracted negotiations with the state with no predetermined deadline for approval.

The government introduced the Contratti di Programma (CdP, or programme contracts) as a regulatory and administrative tool. A CdP would be signed between the Italian Civil Aviation Authority and each airport. The CdP constituted an additional administrative step, but it also defined the sequence and timing of revisions in charges and offered guidance as to what level of charges the airport could expect in the long term. The system complies with the general principles of the European Directive on Airport Charges, adding detail on conditions and process to the Directive. The procedure, timing and sequence of the revision of aeronautical charges is agreed in advance, giving operators greater certainty on the extent to which they can count on own funds, helping them get on with scaling their investment projects, obtaining additional planning approval, and raising financing. The elements of automaticity in the CdP eliminated the uncertain, ad hoc negotiations. The contractual arrangement meant that delays resulting from political interference could, in principle, be brought before court for resolution.

Market size and structure

Market fragmentation leads to sub-optimal firm sizes without triggering consolidation, stagnant productivity growth without triggering firm restructuring, and insufficient growth of successful, more productive firms.
Common standards may not be enough in situations where a substantial leap in technology is required. There, an impartial coordinating body must work to incentivise all the players in a sector.

Market fragmentation can be defined as a less than perfectly integrated market. The effect of market fragmentation on corporate investment is a recurrent phenomenon in EIB discussions with its clients in goods and service industries. In some sectors, international manufacturing and service companies feel impeded by their inability to access the wider EU market on equal terms with local competitors, despite all the efforts made to create a true European Single Market. In other cases, they may be overly protected from effective foreign competition in their home markets. Regardless of whether the affected companies perceive such fragmentation as favourable or as an impediment to their success, the aggregate economic and social consequences are likely to include lower levels of investment and lower medium-term growth in productivity and employment.

Market fragmentation essentially affects investment through two channels. First it reduces the size of the potential accessible market for any one producer. In particular in the case of the riskier investments that characterise innovative start-up companies and investments in new technologies more generally, access to a sufficiently large end-market is essential for recovering large and risky up-front R&D investments, as well as new production capacity. The smaller the potential accessible market, the less likely that the returns even of a successful firm will justify the initial risky investments. The European market is, in some industries, served by a larger number of firms with regional or national focus than would be the case with a truly unified European market.

The second channel through which market fragmentation may impede investment is by hampering cross-border competition, so that local players enjoy a more protected position. The effect of such weakened competition on the level of investment is somewhat ambiguous and also operates through a number of effects. On the one hand, the stronger market power of the incumbent firms may improve profitability and their return on investment. Conversely, the incentive to invest in R&D and productivity-enhancing process innovation may be weaker. Empirical evidence suggests that the latter effect becomes more important as economies close in on the global technology frontier. This implies that the problem has become an increasing constraint on European growth.

Evidence of market fragmentation in the EU can be found, for instance, in comparisons between intra-EU and intra-US trade. Trade in manufactured goods between EU countries stands at just over 20 percent of GDP, which can be compared with 35 percent in the United States. Similarly, consumer prices differ around three times as much across EU countries (and two times across Euro Area states) as they do across US states. Pertinently, none of these ratios have changed much in the past decade, suggesting that the reasons for this greater market segmentation in the EU are structural and persistent[9].

[9] OECD (2016) Economic Surveys: European Union 2016, Chapter 1: Priorities for completing the Single Market.

Fragmented market structure

Examples of market fragmentation in Europe are on the whole easiest to find in regulated sectors, such as finance, digital services, telecommunications, energy, or transportation. In finance, the fragmented European market affects in particular SMEs, which can in turn hamper their ability to expand beyond their own borders. In the provision of digital services, or e-commerce, fragmentation of the EU market has been persistent due to inconsistently applied consumer protection rules across countries. In telecommunications, roaming surcharges, national regulation and spectrum auctioning contribute to a segmented market and higher participation costs. Efforts to create an Energy Union continue, although much remains to be done in building interconnectors between Member States and in facilitating common regulation for grid and pipeline access and a common fee framework. In transport, market fragmentation is a direct result of a lack of common standards in railway and air traffic, and of national regulation in cross-border trade in services in the road sector.

Market fragmentation can also arise in "non-regulated" sectors through notably less conspicuous and less sector-specific channels. The success of EIB loan projects in the corporate sector is often affected by the fact that the size, openness and contestability of specific markets are notably influenced by economy-level product and labour market regulation, as well as taxation, corporate ownership and financing models. The effects of such market fragmentation have been visible on numerous occasions in the Bank's work to support smaller and mid-sized innovative manufacturing companies in largely unregulated sectors, such as manufacturing of machinery and equipment, automotive and aerospace suppliers and services.

Such market fragmentation has typically been visible through a combination of:

- persistence of sub-optimal firm sizes without triggering consolidation;
- persistence of stagnant productivity growth without triggering firm restructuring;
- persistence of adequate firm profitability, even in the presence of the first two conditions;
- insufficient growth of successful more productive firms.

These observations can have several causes, but together they do point to imperfections in basic market mechanisms. They suggest ineffective competition across national borders, an impaired process of creative destruction, and a weakened ability of capital markets to exploit the opportunities for value-creating restructuring of undervalued companies. In turn, such impaired market mechanisms hamper corporate investment, risk-taking and, ultimately, growth.

An important channel through which competition and creative destruction affect investment and growth is through allocative efficiency. As experienced in a number of EIB projects, potentially successful firms with high levels of innovation and productivity may be prevented from reaching their full growth potential when less productive firms are protected from forced exit or takeover. Allocative efficiency is enhanced when the least productive firms shrink and eventually exit the marketplace in favour of fast-growing, more productive firms. The prospect of a rapidly growing market share when successful provides an added incentive for the most productive firms to recruit skilled labour and to invest more in fixed capital and R&D. If less productive firms hold on to a market share, along with resources such as capital and skilled labour, because the conditions for their exit or restructuring are not in place, market access and scarce resources are withheld from the more productive firms, hampering the aggregate economy.

Efforts to deepen Europe's Single Market have continued, with notable positive effects on accessible market size, competition and efficiency, especially as regards manufactured goods, despite the remaining obstacles discussed above. Perhaps the most tangible progress in reversing market fragmentation for European manufacturers has come as a result of the EU's eastward expansion. Transnational and globally connected enterprises from Western Europe and the rest of the world have

played an instrumental role in integrating Central and Eastern European manufacturing capabilities with the European manufacturing supply chain and, thus, lifting the region's manufacturing competitiveness to global benchmark levels. This has not merely been achieved through transfer of capital and technological and managerial know-how, but also crucially by providing access to European and global markets not easily obtained by the region's manufacturers on their own. By and large, this integration has been driving the region's sustained growth in employment and productivity, and thus its continuing income convergence with the rest of Europe. It also serves as an example for other regions in Europe, where local resistance to cross-border mergers and acquisitions and the required corporate restructuring and competition lingers.

Qwant (European internet search engine)

Size does matter. That is why US-based companies, such as Google, are so successful compared to firms operating in nationally fragmented internet search engine markets in Europe. European national initiatives have mainly created small, local copies of Google's search functionality, because European companies must base their business models on local advertising revenues. The result: Google has a higher market share in Europe than in the US.

Google and other US companies have the advantage of a large home market, where new ideas can be tested and commercialised. If successful, cash flow is strong enough to launch on an international basis – something that is easily achieved with digital formats. Consequently, US-based internet companies are able to introduce proven products in new markets and, with this head start, immediately become market leaders.

One innovative and dynamic Franco-German joint venture, Qwant, managed to overcome national fragmentation with an alternative solution to Google Search. In 2013 it launched a solution equipped with a highly effective web search methodology tailored to the local needs of European users and advertisers. Qwant's search engine indexes, contextualises and ranks web content, including social networks, to give users a broader view of the results of their searches.

It is not possible to catch up with Google's enormous advantage in terms of data processing capacity and its search index. So Qwant developed a solution that offered a more localised search service that guaranteed the personal integrity of the user, because no user data is stored. The search results are also neutral and not ranked by advertising revenues as they are by other search engines. Qwant's revenues are mainly generated by the click-through rate of the search results, a model which also brings better targeting of ads. The company had 25 million users in August 2016. Qwant has a market share of 2% of searches in France and 1% in Germany, compared to Google's 90% in both countries. Qwant's long-term target is only an 8% market share, which confirms that it sees itself as a complement rather than a competitor to Google.

The EIB's financing of Qwant helped the company through the critical period from launch to commercialisation of its services, so that it could reach a critical size and further internationalise its product on a pan-European basis. Thus it reduced the fragmentation of the European market for search engines.

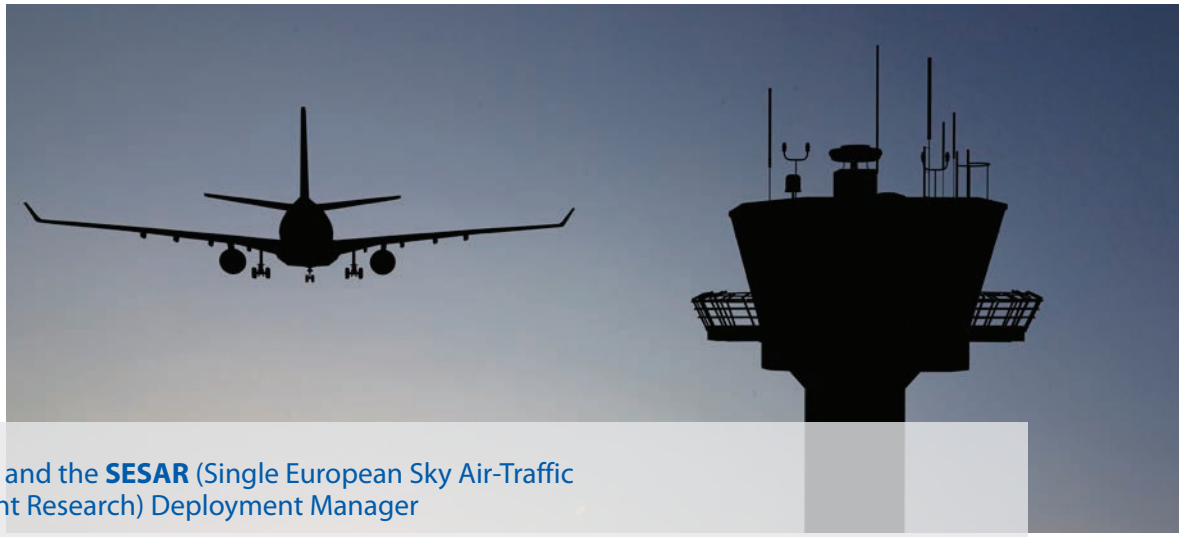
Lack of EU-wide standards

Lack of EU-wide standards segments a market, reducing the market size available for a product. Meeting alternative standards to access neighbouring markets tends to mean higher costs for producers. This reduces the scope for exploiting economies of scale and for productivity gains, and would result in higher prices for consumers. It could also reduce competition. Indeed, setting alternative standards can be a back-door vehicle for protectionism. Where raising tariffs is not possible or insufficient to prevent unwanted foreign competition, setting alternative standards can be one of various barriers available for governments to protect domestic producers.

However, setting different national standards across borders need not in itself constitute a barrier to investment. It simply tends to guarantee a higher price, which can actually encourage investment. Reduced competition could also add to an incentive to invest. The effect of non-tariff barriers is to encourage investment from domestic incumbents and to discourage investment from more efficient foreign producers. By encouraging inefficient producers to invest and efficient producers to invest less, the net result is that consumers lose out.

Where lack of EU standards can act more directly as a barrier to investment is, for example, in transport, automotive, pharmaceutical or network industries. In networks the investment decisions of the different producers that form the network are interrelated. Uncoordinated standards would affect each one's payoff to the extent that they may prompt some players to delay investment until some early mover gains critical mass. Meanwhile, those contemplating an early move would have to weigh benefits against substantial obsolescence risk, resulting in private and societal waste.

Therefore, networks call either for a single producer or, in competitive or otherwise atomised markets, some degree of coordination. Such coordination would consist of agreeing common standards, which may possibly involve setting up a coordinating agency, either through a trade association, as a means of industry self-regulation, or by the government. For highly complex projects the coordinating agency may take an even more proactive role and set up a unit to manage the roll-out of technology across the different players in the network. In the air traffic management industry, Eurocontrol is an example of a governmental coordinating body, and SESAR (Single European Sky Air-Traffic Management Research) Deployment Manager (SDM) is an example of coordinators taking a proactive, or leading role.



Eurocontrol and the **SESAR** (Single European Sky Air-Traffic Management Research) Deployment Manager

Airspace in Europe is fragmented across national barriers. Air traffic management relies on technology, involving investments by the airlines and the air traffic controllers, known as air navigation service providers. Users need technology that works across various air navigation service providers. These tend to monopolise service provision in their domestic markets. Investment in technology aimed at improving efficiency across the EU airspace relies on setting EU-wide standards in order to reduce risk and maximise benefits. The International Civil Aviation Organisation, a UN body, provides international guidelines, but it cannot legislate or enforce standards. It is up to each country to implement the guidelines. At the same time, each country sees control of its airspace as an issue of national security, including sections of airspace being segmented for exclusive military use. Air traffic management is essentially a network industry. Other than when all parties are mandated to do so, the case for an air navigation service provider investing in a given air traffic management technology rests on the extent to which the airlines see it as beneficial to invest in a technology, which in turn depends on the extent to which other air navigation service providers introduce such technology.

Without coordination, wasteful tit-for-tat outcomes can develop. A national government, in conjunction with its local air navigation service provider, aeronautical industry, airline, or other sector in its air transport industry, may make a given technology mandatory in its airspace. That may be interpreted as a non-tariff barrier by a neighbouring government and its air transport industry, which in turn may issue retaliatory requirements for other types of technology. As a result, aircraft end up carrying more equipment than necessary.

The solution is coordination to ensure that technical requirements are uniform across the EU. This has been made possible by the political support that created Eurocontrol. Eurocontrol defines standards across Member States, which may also be adopted by neighbouring countries. It provides a larger market for technologies, incentivising investment, reducing risks and unnecessary costs for air navigation service providers and airlines.

Just setting common standards may not be enough where a substantial leap in technology is required. For example, the Single European Sky initiative goes beyond standard evolutionary technology. It is a quantum leap in technology implementation with implications also for how aircraft navigate and even how the airspace is organised across national borders. A coordinating body setting common standards may not be sufficient for effective implementation of such initiatives. The various players need to be convinced of the case and incentivised; the technological effort needs to be coordinated; and ancillary industries, such as finance, need to be brought in.

The solution is to set up a special entity such as the SESAR Deployment Manager. For a major initiative like the Single European Sky, all parties need to be incentivised, which means assuming an impartial role in informing and negotiating among all parties, as well as engaging ancillary sectors.

Public-sector promoter constraints

Leveraging national contributions and funds available through an integrated territorial investment with EIB finance requires new financing structures. It also requires that national authorities adequately support cooperation between different levels of government.
In some Member States, good quality assessments of climate risk exist, but have not resulted in the preparation of investment pipelines of projects ready for financing. In others, well-designed investment programmes exist, but the responsibility for their implementation rests with multiple entities at national and local level in the absence of a financial coordination mechanism, which limits finance at scale.

Several European countries recorded general government gross debt (as a percentage of GDP) in excess of 60 percent before the 2008 crisis. Even more of them saw their debt levels increase sharply in the wake of the financial crisis. This was a direct consequence of government bailouts of the banking sector and the lower revenue/higher costs associated with the recession that followed the crisis.

Government attempts to promote demand and support economic activity via accommodative fiscal measures led to significant budget deficits across many European countries, which ultimately raised major concerns about the sustainability of debt servicing. Difficulties in meeting the EU Stability and Growth Pact requirements put governments under pressure to reduce their excessive debt and budget deficits. Thus, government investment is currently at historically low levels in most European economies.

Limited government budgets constrain investment in infrastructure, be it economic (e.g. roads, railways, water) or social (e.g. schools, hospitals). The lack of budgetary resources also undermines the capacity of governments to develop a pipeline of sustainable, economically viable and well prepared projects. These difficulties are further exacerbated by the fragmented nature of public service delivery systems, which often lead to inefficiencies and suboptimal government investment.

To boost investment, governments need to optimise the use of budgetary resources, including by leveraging private funds to complement public finance. Beyond budgetary constraints, however, a key constraint to increased, better quality government investment is weak strategic planning and project preparation. Authorities need to define efficient mechanisms/frameworks, which provide for the effective planning, allocation, and implementation of projects. Examples of ways to overcome investment barriers for public-sector promoters are presented below. They reflect the will of governments at different levels to ensure that their resources are used efficiently and effectively.

Difficulties in coordination among funding sources

The magnitude of financing requirements for public infrastructure is such that it is essential to enhance coordination between the different sources of funding from the public and private sectors. This is frequently more relevant in less-developed regions, where budgets are constrained and access to financing other than EU budgetary funds and/or EIB financing is limited and so costly that it often deters investment.

The rules governing the Cohesion Policy 2014-2020 introduce new tools to support a more integrated and territorial approach toward investment

Urban development funds

An urban development fund is a new kind of investment vehicle that provides a way around constrained investment budgets. Sources of city budget revenue — central government transfers, shares of tax revenue, or local taxes — have been hit by central government cuts, the downturn in economic activity, and reduced employment. Even where cities have relatively buoyant property tax revenue, their costs of borrowing and the loan maturities they can obtain in the market are limited by sovereign rating ceilings and the weakness of the domestic banking sector. With municipal expenditure on the rise — especially social expenditure arising from the ageing population and the health, housing and education burden of accommodating and integrating refugees and other migrants — cities have limited operating surpluses to devote to investment. Making EU grant funds go further with an urban development fund is one possible approach for some cities. The fund is an instrument into which a layer of EU or other public grant funding can be paid to absorb some of the risk, thereby attracting further investment from sources such as commercial banks and international organisations like the EIB. The fund serves as a revolving financial instrument to finance revenue-generating project investment, such as the regeneration of brownfield sites to bring them back into economic use, or low carbon investments, such as schemes focusing on energy efficiency or renewables. When the first loans are paid off, the funding is re-used for new projects.

The EIB has some experience with managing and advising on the set up of urban development funds[10] and the Investment Plan for Europe's EFSI enables the EIB to be bolder in its investment in such funds. Using the EFSI guarantee, the EIB has already financed one brownfield fund in France[11] and is considering investing in new urban development funds. These can be city-specific, covering a range of sectors, or sector-specific funds covering a region or country. For example, the EIB is developing a social housing fund targeting several Italian regions. Given that the structuring of such facilities is challenging, EIB advisory support through dedicated instruments like fi-compass or through the European Investment Advisory Hub can be helpful for promoters who need support in specific areas such as state aid, or those who would like to know how similar funds were set up and managed in other countries.

[10] See blog on one successful UK fund http://blog.eib.org/urban-agenda-urban-development-funds/
[11] Video https://youtu.be/mbe0BdjWN20

in Europe, in line with the territorial cohesion objective introduced by the Lisbon Treaty. This approach allows Member States to combine investments from several priority goals of one or more operational programmes to support cross-sectoral interventions in a designated area (e.g. integrated territorial investments). Leveraging national contributions and funds available through an integrated territorial investment with EIB finance would extend the impact of such a strategy. However, this requires that national authorities adequately support cooperation between different levels of government to deliver an effective response to the development challenges. New financing structures are also necessary to enable integrated territorial investment agencies to move beyond a role as "coordinating bodies" or "regulatory bodies" for infrastructure services towards a role as "borrowing entities" which can actually raise co-financing for integrated territorial investment programmes. EIB advisory support can potentially further such a development.

The small scope of some investment projects may prevent the use of EIB financing. However, EIB framework loans for financing multi-component investments have significantly extended the Bank's financing reach. This is of particular relevance for regional/municipal projects which enable the Bank to support investment programmes of a much broader, cross-cutting nature than single investment projects. There are a growing number of examples supporting Smart Cities and Sustainable Development in this way, where beneficiaries are cities, public authorities, public companies, financial intermediaries and, in some instances, private corporates (e.g. an energy service company implementing energy savings projects).

Weak planning and project preparation capacity

In many Member States, national and local authorities generally lack the resources needed to build a robust and well-prioritised pipeline of projects that are sustainable, economically viable, and ready to be implemented. Implementing the "wrong" projects — from a social point of view — leads to significant opportunity costs for society, as the maintenance of a project that is not needed or oversized is usually very large. If projects are not well designed at the beginning, correcting mistakes later also leads to large, unnecessary expenses. To this end, projects should be part of a solid strategic planning framework that considers inter-sectoral and spatial linkages. They should also stem from a thorough options analysis and be based on solid feasibility studies addressing their economic justification, environmental and social impact, and their financial sustainability, among other aspects.

This is especially challenging for local administrations, particularly when the information and special competences needed for project preparation are not readily available to the entities in charge of investment, or in domains characterised by multi-level governance, e.g. natural resources management, with planning and project level dialogue across administrative boundaries and/or coordination between public and private entities required.

Investment in environmental protection and climate action, particularly adaptation to climate change, presents special challenges. Its benefits are often difficult to quantify and preparation and assessment require a long-term strategic and systemic perspective well beyond the direct project boundaries. Examples include the definition of local flood-risk management investment. It may require coordination with river basin-level flood management plans, which may be transboundary. Another example is investment in climate action in urban areas, which involves cross-sectoral considerations and dialogue across public and private stakeholders. In the private sector many companies, especially SMEs and mid-caps, do not have in-house expertise to carry out climate vulnerability assessments. Financial intermediaries, which constitute their natural source of financing, are often unable to gauge the financial viability of investing in adaptation.

The considerable need to invest in climate risk management is not being met in many Member

States. That is due to the absence of: long-term strategies and well-coordinated planning tools based on a thorough understating of climate risks and vulnerabilities; the capacity to develop robust project pipelines that credibly respond to the identified climate-related risks; and competent implementing agencies and coordination mechanisms. In some Member States, good quality assessments of climate risk exist, but they have not resulted in the preparation of investment pipelines of projects ready for financing. In others, well-designed investment programmes exist, but the responsibility for their implementation rests with multiple entities at national and local level in the absence of a financial coordination mechanism, which limits finance at scale.

To overcome these barriers, additional resources should be devoted to strengthened strategic planning and improved coordination across relevant authorities. Capacity building should be provided with a special focus on local administration, and regional and local public service providers, as well as the financial intermediaries that support them. Technical assistance for sound project preparation should also be made available for non-major projects.

The Bank has a strong track record in providing advisory services for project preparation at national and subnational level through JASPERS and, more generally, through the technical support provided by its sector experts. Its role in this area could also be further expanded through the European Investment Advisory Hub to support cities, utilities or other entities in carrying out climate risk and vulnerability assessment and to identify necessary and viable adaptation investment options, depending on demand from national and local authorities.

Investing in Europe's resilience to climate change

Increasing Europe's climate resilience calls for action on various fronts, including improved planning at national and local levels; improved data, modelling and institutional coordination, including for disaster emergency response; increased use of insurance and direct protective investment by home and business-owners; and sizeable (mainly) government investment in climate risk management at various levels from urban to multi-country (e.g. in flood risk management).

When good strategic planning and multi-level governance systems exist, large investment programmes can be financed. Ireland is implementing a EUR 445 million flood risk management programme. Its design included an assessment of the vulnerability of communities through two future climate change scenarios, as well as an options analysis to decide whether to pursue costlier structural measures with appropriate allowances for climate risk in their design or less expensive, "adaptable" measures that could be upgraded in a technically feasible and cost-efficient manner in the future, once additional information about specific risks becomes available. Climate impacts and climate incremental costs were estimated.

The magnitude of the problem differs depending on the nature of climate-related risks, as some are more local in nature (e.g. heat islands in cities), while others require dialogue across sectors and administrative lines (e.g. droughts, floods), and on the capacity of the entity in charge. Investment in urban resilience, for instance, is constrained by the weak capacity of most cities in incorporating climate change at planning and project level.

Initiatives such as the Covenant of Mayors for Climate & Energy, with almost 7 000 signatories representing over 210 million inhabitants, play a crucial role in helping local and regional authorities implement EU climate and energy objectives in their territories. One of its signatories, the City of Bologna, is implementing an EIB-financed investment programme that includes elements of its adaptation strategy. Technical assistance played a key role, as Bologna's adaptation plan was supported by a LIFE+ project in 2012-15 that also produced guidelines for the definition of adaptation plans by other medium-sized Italian cities.

The EIB has experience in supporting clients with Climate Risk and Vulnerability Assessments and the identification of adaptation options. The Bank, in coordination with the EC, supports signatories of the Covenant of Mayors or other clients by providing technical assistance at city or other relevant levels (e.g. for utilities providing services at municipal or regional level).

Access to finance

To support investment by local public entities across Europe, it is important to develop financial products tailored to their risk profile and to the economic life of the underlying assets.
The financing problems of SMEs are best mitigated by tackling the root causes, especially by establishing long-term relationships between borrowers and lenders. This reduces information asymmetries.

Financing of small and medium-sized enterprises[12] tends to be more challenging than financing of large firms. This may create a barrier to investment. In addition, local public infrastructure providers have found it more difficult to obtain financing from banks especially since the financial crisis, as banks have focused on raising capital and deleveraging balance sheets to meet more stringent regulations (e.g. capital adequacy ratios). Local public infrastructure providers have also seen their access to government guarantees, which would enhance their credit profile, severely restricted.

Local and regional public infrastructure providers

To support investment from local public entities across Europe, it is of the utmost importance to develop financial products tailored to their risk profile and to the economic life of the underlying assets, which in the case of assets used for the provision of public services is often a long time. In this regard, the Bank has supported a number of innovative initiatives, notably in the water sector, where investments required to meet national and European environmental regulation have been financed through so-called hydrobonds.

The provision of water services is often fragmented in many member states, despite being a natural monopoly with clear economies of scale. In addition, water pricing does not always adequately support the financial sustainability of the service providers, which undermines their capacity to implement works necessary to comply with European directives, notably the Water Framework Directive 200/60/EC and the Urban Wastewater Treatment Directive 97/271/EEC. As a result, municipal and regional operators often lack the necessary financial base to access long-term finance, generating a mismatch between long-term assets and available credit maturities (short-term liabilities).

[12] The EC defines SMEs as enterprises with less than 250 employees on a consolidated basis.

Hydrobonds

The hydrobond is an innovative financing approach based on Italy's minibond financing tool in combination with the well-tested Italian securitisation framework. Minibonds were introduced by the Italian government in 2012 as an additional source of long-term financing for SMEs. In this case, a group of small operators issued minibonds to fund their multi-annual investment programmes to expand and upgrade water and wastewater infrastructure. These senior unsecured debt obligations were aggregated in a portfolio and then securitised to reach an investment size sufficient to involve institutional investors such as the EIB.

This structure allowed small operators to access long-term funding at competitive rates. It also led to the crowding-in of private investors alongside the EIB. The EIB's financing thus contributed to the accelerated development of much-needed water and wastewater infrastructure in a context of limited public funding and difficult socio-economic conditions, while having a catalytic effect on investments from the private sector.

In new hydrobond operations currently being studied by the EIB, there is expected to be a mix of private and public investors alongside the Bank. The combination of minibonds and securitisation is an extremely attractive tool through which the EIB can lend to smaller companies in all sectors of the economy, and thereby directly access a new type of beneficiary. This structure could be replicated in other European countries which benefit from an established securitisation framework.

Smaller corporates/SMEs

This section considers the causes of SME financing problems and their empirical relevance, and discusses how these problems can be mitigated, including the role that international financial institutions such as the EIB and the European Investment Fund can play.

Information and control problems are crucial for understanding the financing of firms. In comparison to large enterprises, information about SMEs is often more opaque. This makes the financing of SMEs especially challenging, since asymmetric information may create adverse selection and moral hazard problems. As a result, firms may not get as much credit as they want, even though they are willing to meet the conditions set by the lender on equivalent contracts. To clear the market, banks would need to raise the interest rate. However, a higher interest rate may have adverse effects on the riskiness of the projects that will be presented to the banks (i.e. adverse selection) and the incentives of SME managers to carry out the projects in the best interest of the banks (i.e. moral hazard). Therefore, banks may decide not to raise the interest rate, despite leaving part of the demand among SMEs for credit unserved. When banks charge more for their SME loans than is justified by the risk of the underlying projects, the credit market clears, but under-provision of credit may still hamper investment.

Other challenges to SME financing directly stem from the limited size of SMEs. This is an entry barrier to capital markets, because of fixed costs associated with information and reporting requirements that cannot be spread over large volumes of finance, as well as investors requiring minimum issue sizes. Furthermore, limited economy of scale also puts small firms in a weak negotiating position vis-à-vis large firms in supply chains. It is not uncommon for small firms to be net creditors of large firms, but all parties could be better off if more finance was provided by those firms with easy access to bank and capital markets.

Providing empirical evidence of financing constraints, let alone their impact on investment, is inherently difficult. Although anecdotal evidence points at financing problems for small businesses, this cannot be taken as hard proof. SMEs may find it unfair that they are asked to pay higher interest rates and/or provide more collateral for their loans than large companies. But lenders may have good reasons to charge such rates if the risk of default on small loans is higher and cannot be diversified. Beyond anecdotal evidence, is there more systematic evidence of finance constraints? Results from the EC/ECB survey on the access to finance of enterprises in the euro area show that the proportion of loan applications fully or partially rejected or discouraged (by high costs or otherwise) fell from 15.1 percent at the peak of the economic crisis in 2011 to 10.7 percent in 2015. Access to bank finance has thus considerably improved in recent years. Investment activity by private equity firms located in Europe has also partly recovered with EUR 47 billion invested in 2015 compared to EUR 25 billion at the height of the financial crisis in 2009, although the volume of investment as well as the number of companies financed still remains about one third below pre-crisis levels[13].

The financing problems of SMEs are best mitigated by tackling the root causes. An important means of reducing information asymmetries between borrowers and lenders is the establishment of long-term relationships. Besides gathering information about clients through relationship banking over time, bankers can mitigate the problem by sharing information among lenders, such as in credit registers. Empirical evidence shows that information sharing increases bank lending and reduces credit risk, regardless of whether information is privately or publicly organised. SMEs can mitigate the problem by becoming more transparent and producing audited accounts and clear, well-founded business plans.

What role can national promotional banks or international financial institutions play? A variety of public policy schemes have been set up to mitigate the finance problems of SMEs. Examples include direct loans, interest subsidies, and loan guarantees. While such schemes usually benefit the recipients and help ease financing constraints, it has been questioned as to whether they improve the allocation of resources in an economy, which essentially means that gains

[13] See Working Paper 2016/35, EIF Research & Market Analysis

accruing to the beneficiaries of such schemes come at the expense of others in the economy.

Bearing in mind this slightly sober assessment of the expected efficiency effects of many public interventions, there are nevertheless examples of success stories. For instance, the European Investment Fund was one of the very few investors that continued to support the European SME loan securitisation market during the crisis. Such securitisations create a secondary market for SME loans and enable the diversification of risks and an increase in liquidity. They have advantages for banks and investors, but they also positively affect SME access to finance. Despite the relatively good performance of the European SME loan securitisation market in terms of default rates throughout the crisis, the issuance volume has fallen from an annual average of about EUR 60 billion in 2007-2009 to an annual average of about EUR 30 billion in 2013-2015. Retention rates remain very high: in 2015 only 6 percent of the SME issuance was placed in the market, which remains underdeveloped. Regulatory uncertainty is seen by market participants as the main barrier. New securitisation regulation is expected by the end of 2017.

The bulk of the EIB's support for SME finance is through intermediated loans. Funds are channelled on competitive terms from markets to SMEs through financial intermediaries. Financial intermediaries are required to pass on part of the funding advantage of the EIB loan or the EIB purchase of an asset-backed security to the SMEs. In 2015, the Bank disbursed EUR 20 billion in intermediated loans for SMEs and midcaps. More than EUR 12 billion was allocated by financial intermediaries in European regions with youth unemployment rates above 25 percent. In addition, SMEs benefit from the EIF's risk financing in the form of equity and debt financial instruments which are designed specifically to meet the needs of this market segment. In 2015, the EIF committed EUR 2.2 billion in 85 different funds, leveraging almost EUR 10 billion in additional investments, and it committed EUR 4.9 billion to guarantee and microfinance transactions, mobilising over EUR 17 billion. These actions supported access to finance for 110 000 businesses and helped sustain over 700 000 jobs.

In the second half of 2014, the EIB launched the Youth Employment Survey of SMEs to analyse the effectiveness of its Jobs for Youth programme. About 900 firms participated in the survey, of which 500 firms were in the control sample, consisting of firms which did not receive support from the EIB. Survey outcomes support the hypothesis that the EIB programme reduced the external financing costs of the treatment firms. More specifically, the interest rate on EIB-supported loans was on average just over one percentage point lower than the financing quotes on other loan proposals received by the firms. Compared to the control firms, if everything else were equal (such as size, sector, location, growth opportunities, etc.) the treatment firms were more likely to report that the loan had an impact on the expansion of the workforce. This result is tentatively explained by the fact that the reduction in funding costs allowed the treatment firms to invest more than the control firms.

New innovative techniques to support SME finance through factoring and reverse factoring schemes have been developed at the EIB. These schemes benefit SMEs by shortening the payment period of invoices to be paid by large enterprises.


€
PRODUCTS
RETAIL
EQUITY
SALES
$
FINANCIAL
SERVICE
BUSINESS
PROFIT
ASS
MRTN 125.45 -1.23%
MNIK 22,457.54 +6.33%
RTN 1,246.61 +1.89%
EXDZ 250.22 -0.25%
DNK 80.45 +1.19%

Access to finance for SMEs and midcaps

To improve the investment environment, alternative sources of financing must be incentivised, particularly for SMEs. On the equity side, the development of a vibrant, international venture capital ecosystem in Europe is important to support start-up and high-growth companies, and to ensure long-term growth. The European Investment Fund plays a key role in crowding in VC activities[14]. In 2016, the EIF and Germany's KfW threw their weight behind small businesses with an investment in the securitisation of loans originated across the world's leading online marketplace for business loans. Funding Circle is a peer-to-peer platform that matches small businesses that want to borrow with investors who want to lend in Europe and the USA. Funding Circle determines loan rates based on risk category and loan term. Whole or fractional loans are purchased by individual or institutional investors, while transaction and administration processes are kept lean. Since its launch in 2010, investors at Funding Circle (including 50 000 individuals, financial institutions and the UK Government) have invested more than USD 2.2 billion in 15 000 businesses. In the current subdued bank lending environment, this business model reduces the dependence of SMEs on traditional bank loans. Through Funding Circle's financing model, small businesses are able to access financing in a matter of days, rather than several weeks.

With an overall volume of almost GBP 130 million, the SBOLT transaction is a securitisation of loans originated via Funding Circle's online platform that are extended to SMEs and individual entrepreneurs in the UK. Securitisation is the pooling of assets (here: loans to SMEs) and the subsequent transfer of these loan portfolios or their underlying risks to capital-market investors. The portfolios are typically tranched into different risk classes. Loan portfolios can thus be transformed into liquid assets of different risk categories and the originators are able to provide more loans to SMEs[15] . In the SBOLT case, the EIF guaranteed part of the senior notes (which cover the tranche with the lowest risk, but typically the greatest size). These notes were then purchased by KfW, while the remainder of the capital structure was placed with market investors. As a consequence, room for new lending via the Funding Circle was freed up.

This transaction was the first of its kind across Europe, opening up such small business lending as an asset class to a wider range of investors. It represents an alternative and complementary financial instrument that can increase lending to small businesses in the real economy and reduce their dependency on bank lending. It was followed later in 2016 with a GBP 100 million EIB loan directly to Funding Circle that is expected to stimulate over GBP 200 million in new loans over the next seven years.

The Investment Plan for Europe is closely linked to the creation of a Capital Markets Union. The SBOLT transaction supports two key elements of the Union: the development of emerging marketplace lending and, as such, the diversification of financing sources of SMEs; and the revival of the SME securitisation market.

Online SME lending is relatively new and untested, but securitisation can reduce the dependency of SMEs on traditional bank lending and open up new channels of access to finance.

[14] Kraemer-Eis, H., Signore, S. and Prencipe, D. (2016), The European venture capital landscape: an EIF perspective Volume I: The impact of EIF on the VC ecosystem, Working Paper 2016/34, EIF Research & Market Analysis. http://www.eif.org/news_centre/publications/eif_wp_34.pdf.

[15] For more information see Kraemer-Eis H., Passaris G., Tappi A. and Inglisa G. (2015). SME Securitisation – at a crossroads?, Working Paper 2015/031, EIF Research & Market Analysis. http://www.eif.org/news_centre/publications/eif_wp_31.pdf.

Conclusions

The purpose of this report was to contribute to the policy discussion on investment barriers and how to improve the investment environment in the EU. To this end, concrete examples of investment barriers based on the experience of the EIB Group have been presented. These examples are representative of investment barriers that the EIB Group's experts have observed across many sectors and European countries. The examples also incorporate solutions to remove the barrier, often in an innovative way. These solutions highlight the fact that investment barriers can be overcome with political will. The sharing of such solutions and best practice among Member States is an important catalyst for removing barriers. The report further describes a generic classification of investment barriers and it summarises empirical evidence on the impact of investment barriers — or their removal — on investment, productivity, employment and economic growth.

The main investment barriers encountered in the EIB Group's everyday work on investment projects include regulation, market size and structure, public-sector promoter constraints and access to finance. While the Bank encounters different problems in different EU Member States, there is scope for improvements in all Member States, as well as on the EU level. Addressing these structural barriers would boost the right types of investment, unleash the Single Market, and support sustained economic growth and employment.

To support evidence-based policymaking, some studies have assessed the impact of investment barriers. Their conclusions are summarised in the first section of this report. The review of the studies reveals that there is a clear niche for much more empirical work to properly understand which of the investment barriers are the most significant and the removal of which barriers would bring the greatest benefit in terms of economic growth and employment.

Annex. Evidence on the impact of investment barriers

The following analysis is based on available evidence from academic and non-academic sources on the impact of investment barriers, or their removal, with a focus on the EU. It is not an exhaustive and systematic review of the literature, but rather a limited exercise intended to provide an indication of the relative strength of the evidence across the four types of barriers to investment under analysis: regulation, market size and structure, public-sector promoter constraints, and access to finance.

Regulation

Many sources provide quantitative evidence on the impact of regulation and regulatory reform. Most studies examine the effect of regulation on productivity. A small number of studies focus on the impact of regulation on investment. This research typically exploits variation in composite indices of regulation across time and space to identify the impact of more or better regulation. The key aspect of regulation taken into account is "Product Market Regulation" (PMR)[16]. Other studies also consider employment protection legislation, or focus on specific aspects of PMR, such as barriers to market entry and exit. There is limited evidence on the impact of specific administrative burdens.

Studies of the effect of regulation on productivity typically measure productivity as Total Factor Productivity (TFP), also defined as Multi-Factor Productivity, a measure of how efficiently labour and capital are used in production (see e.g. Nadiri, 1970). Available estimates suggest that variations in the level and quality of regulation are linked with substantial variation in annual TFP growth across OECD countries — about 0.5 to 2 percentage points. Nicoletti and Scarpetta (2005) find that aligning PMR to OECD best practice[17] in EU countries could have led to an increase in annual TFP growth of 0.4 to 1.1 percentage points over a period of 10 years. Reducing PMR in a particular industry can also have effects on downstream industries. According to Bourlès et al. (2010), removing all regulatory burdens in non-manufacturing sectors that provide intermediate inputs can increase TFP growth by 1.7 percentage points per year.

Alesina et al. (2003) find that a one unit decrease in PMR[18] is linked to a 1.1 percentage point increase in the national annual investment rate[19], an impact which persists in the long run.

A large body of evidence focuses on the impact of uncertainty on investment. However, several of the contributions in this area look at macroeconomic uncertainty, measured by the volatility of stock market returns or interest rates, and the uncertainty of monetary and fiscal policy[20], which is outside the scope of this review.

[16] In OECD work on regulation, PMR includes measures of: direct state control of economic activities, barriers to private entrepreneurial activity, through legal limitations on access to markets or administrative burdens; regulatory barriers to trade and investment (Scarpetta and Tressel 2002).
[17] Defined as the regulatory stance of the most liberal OECD country over the period examined (1984-1998).
[18] Both Nicoletti and Scarpetta (2005) and Alesina et al. (2003) rely on the OECD International Regulation Database.
[19] Defined as the ratio of investment to the capital stock at baseline.
[20] Some of the key contributions to this area of research are cited in Kellogg (2014).

Evidence on the impact of uncertainty due to regulation is limited. Theoretical work from at least the 1980s onwards suggests that uncertainty depresses the quantity and quality of investment (e.g. Viscusi, 1983), but there is a dearth of empirical findings supporting the theoretical framework. Recently, the impact of uncertainty around renewable energy generation has come under scrutiny. Fabrizio (2012) finds that perceived regulatory instability in the US led to lower investment in renewable generation assets. This is consistent with qualitative evidence in Leete et al. (2013) on marine renewable energy in the UK.

Recent work undertaken by the OECD and the G20 Investment and Infrastructure Working Group[21] suggests that private investors see unstable regulatory settings and the possibility of political interference as key barriers to investment in infrastructure projects. These reports and additional work also by the OECD (2014b and 2015) suggest that capital requirements imposed on institutional investors (under Basel II and III and the Solvency II Directive) may act as barriers to their investing in infrastructure assets. The World Economic Forum, as part of its Strategic Infrastructure Knowledge Series, has provided recommendations for the mitigation of political and regulatory risk, which include developing infrastructure regulation that can adapt in predictable ways to changing circumstances (WEF, 2015).

This review found limited evidence on the effect of regulatory fragmentation. There is, however, some evidence that it has been a barrier to the implementation of EU-wide infrastructure projects. Stakeholders in electricity transmission perceived the lack of comprehensive regulations as a barrier to the expansion of electricity grids, according to a survey and to qualitative interviews with sector stakeholders (Battaglini et al. 2012). The key policy recommendation of this study is to adopt a common European approach for regulations.

[21] OECD (2014), "Private Financing and Government Support to Promote Long-Term Investments in Infrastructure"; G20/OECD report on G20 Investment Strategies (2015).

Market size and structure

Several studies provide good evidence on the effect of integration of EU Member States' markets into the EU Single Market. EU integration required the removal of a number of non-tariff barriers to trade, which led to an increase in both the number of sellers and buyers in several markets, affecting both market size and market structure. This area of research has focussed on productivity and economic growth as outcomes, without investigating specifically the evolution of investment.

Griffith et al. (2010) and Bottasso and Sembenelli (1999) focus on the Single Market Programme (SMP)[22]. These studies exploit variation in the expected impact of the SMP across countries, industries, or types of firms[23]. Griffith et al. (2010) estimates a positive significant impact of SMP on investment in R&D and on productivity growth. For industries affected moderately to highly, the SMP was associated with a 7.3 percentage point increase in R&D intensity[24]. Bottasso and Sembenelli (1999) find a positive temporary shock to productivity growth rates between 1985 and 1987 (immediately after the announcement of the SMP programme[25]) for Italian firms in industries with high non-tariff barriers to trade.

Recent research has analysed the effect of the 2006 Services Directive[26] on GDP growth. Monteagudo et al. (2012) estimate a positive, statistically significant EU-level impact on GDP of 0.8 percent and review previous contributions, which also estimated positive, statistically significant effects.

Economic research has also examined more broadly the effects of competition (or its mirror image, market concentration) on productivity and innovation. Evidence reviewed in Ahn (2002) points to positive effects of competition on productivity, but mixed results concerning the effect on investment in innovation, typically measured as R&D intensity, defined as the ratio of firm expenditure on R&D to sales. Aghion et al. (2005) estimate an inverted-U relationship between competition in US markets and innovation, measured as the average number of patents granted to firms in an industry.

Market size can also depend on the availability of technical standards. Recent empirical work in the UK (CEBR, 2015; DTI, 2005), France (AFNOR, 2009), and Germany (DIN, 2011) finds statistically significant effects of increases in the stock of available technical standards on labour productivity. However, the relationship between the availability of standards and productivity is likely to be mediated by a number of factors. For example, increasing standards may lead to higher innovation, but they may also be caused by innovation. As a result, these studies may not always identify the causal effect of technical standards on growth.

[22] Bottasso and Sembenelli specify the SMP as set of legislative proposals put forward in the 1985 White Paper on Completing the Internal Market and the legislative measures actually implemented in the years 1988-1993.
[23] For example, the SMP would be expected to have a relatively small effect on industries that were already very open to international competition before the early 1990s.
[24] Measured as annual expenditure on R&D divided by gross value added.
[25] Defined as the publication of the European Commission's White Paper "Completing the Internal Market", COM(85) 310, Brussels 14 June 1985.
[26] Directive 2006/123/EC of the European Parliament and of the Council of 12 December 2006 on services in the internal market.

Public-sector promoter constraints

The role of the public sector in preparing and implementing investment plans and investment projects, along with or in place of the private sector, has been discussed extensively. Recent policy initiatives led by the OECD, the G20, the World Bank, and the WEF have focussed on the financing and preparation of infrastructure projects, and in particular on what governments can do to increase the participation of institutional investors. Recent work on investment in infrastructure by the OECD, the G20 Investment and Infrastructure Working Group[27], and the World Bank[28] indicates that governments could encourage investment in infrastructure by developing:

- internationally accepted norms to implement public-private partnerships (PPPs), specifying accepted project structures, financing arrangements, and transparent mechanisms to allocate public support to PPP projects;
- long-term infrastructure plans and further capacity for project design, to ensure that private investors face a solid pipeline of investable projects.

The World Economic Forum (2012) discusses how governments can prioritise infrastructure projects and best develop long-term infrastructure plans. Other recent work by the WEF (2013) also reviews the steps needed to prepare individual infrastructure projects so they can be efficiently structured as PPPs.

Access to finance

Due to market failures, often relating to imperfect information, businesses can lack access to the finance they need. This is traditionally the case for small and young enterprises (see for example Beck et al., 2005).

A considerable body of literature has investigated empirically the link between financial constraints – internal liquidity constraints or limited access to external finance and investment. Many studies focus on investments in R&D, which are likely to be affected by financing constraints. Their outcomes are generally highly uncertain, and investment in R&D is typically intangible, providing limited collateral to lenders compared with other types of investment.

Recent studies on European firms find evidence of liquidity constraints negatively affecting R&D investment (Brown et al., 2012; Cincera and Ravet, 2010). Young and small firms appear to be particularly affected, although there is evidence that large corporates in the EU also experience liquidity constraints.

Ferrando and Ruggieri (2015) find that financial constraints faced by firms in the euro area between 1995 and 2011 had a negative impact on labour productivity. This impact was significantly higher in the utilities, information and communication, and R&D-producing industries, and for small and micro-firms regardless of their sector of activity. Italy, France, Spain and Portugal were found to be most affected: their estimates suggest that financial constraints are associated with 10 percent lower value-added.

Governments can intervene to support access to finance through regulation, providing information, incentives to lenders, or finance, directly (e.g.

[27] See footnotes [16] and [17] above.
[28] World Bank (2015), "Long-Term Financing of Infrastructure: A Look at Non-Financial Constraints", Issues Note for Consideration by G20.

through subsidised loans, public venture capital funds) or indirectly (e.g. through loan guarantees)[29]. The characteristics of R&D have also motivated many government initiatives aiming to support investment in this area, including the provision of grants to private firms and the establishment of publicly funded innovation centres. These programmes are outside the scope of this review, which focusses on the impact of initiatives aimed at improving access to finance for private firms.

A recent evidence review (What Works Centre for Local Growth, 2014) presents findings from 27 evaluations of access to finance programmes implemented in OECD countries. The most frequently evaluated policy is the provision of state-led guarantee programmes (11 of the 27 evaluations), followed by state-led or state-sponsored venture capital schemes. Overall, the evaluations reviewed found access to finance programmes to have a positive effect on firm access to finance, in terms of availability of credit or cost of borrowing, and on firm performance, measured through sales or employment, but there is relatively little evidence regarding their impact on investment.

Among the evaluations of guarantees, D'Ignazio and Menon (2012) consider the effect of guarantees in an EU country on investment, finding a positive impact, statistically significant only in the first year after loans are taken out. Other evaluations of guarantee schemes considering investment, based in Korea and Japan, find no effect on investment.

The two evaluations of venture capital schemes based on the EU found mixed evidence on the effects of these programmes on investment and employment.

[29] Taxonomy based on What Works Centre for Local Growth (2014)

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