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## **EIBIS 2016/2017**

Surveying Corporate  
Investment Activities,  
Needs and Financing  
in the EU



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Needs and Financing in the EU

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Economics Department  
European Investment Bank

## **EIB Group Survey on Investment and Investment Finance Country Overview: Surveying Corporate Investment Activities, Needs and Financing in the EU**

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### About the EIB Investment Survey (EIBIS)

The EIB Group Survey on Investment and Investment Finance is a unique, EU-wide, annual survey of more than 12 500 firms. It collects data on firm characteristics and performance, past investment activities and future plans, sources of finance, financing issues and other challenges that businesses face. Using a stratified sampling methodology, EIBIS is representative across all 28 Member States of the EU, as well as for firm size classes (micro to large) and four main sectors. It is designed to build a panel of observations to support time series analysis, observations that can also be linked to firm balance sheet and profit and loss data. EIBIS has been developed and is managed by the Economics Department of the EIB, with support for development and implementation by Ipsos MORI. *For more information see:*  
<http://www.eib.org/eibis>.

### **About this publication**

This publication is intended to provide an overview of analyses of EIBIS data. For the purpose of this publication, data is weighted by value added to better reflect the contribution of different firms to economic output.  
*Contact:* [eibis@eib.org](mailto:eibis@eib.org).

### **About the Economics Department of the EIB**

The mission of the EIB Economics Department is to provide economic analyses and studies to support the Bank in its operations and in the definition of its positioning, strategy and policy. The Department, a team of 40 economists, is headed by Debora Revoltella, Director of Economics.

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Philipp-Bastian Brutscher and Annalisa Ferrando (lead authors); with contributions from Atanas Kolev, Christoph Weiss and Miroslav Kollar.

The authors appreciate the comments and feedback received at workshops held at the European Commission (DG ECFIN) and the ECB. Research assistance by Carsten Preuss and Ilaria Nava is gratefully acknowledged.

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# Surveying Corporate Investment Activities, Needs and Financing in the EU

## Report at a glance

**Business investment is recovering across Europe.** SMEs and firms active in the construction sector and service sector expect an expansion from relatively low levels of investment activities; whereas large firms, manufacturing firms and firms active in the infrastructure sector expect an expansion from already relatively high levels of investment activities.

**The investment recovery is broad based,** with more firms expecting an investment expansion going forward than expect a contraction. Denmark, Latvia, Lithuania, Malta and Estonia are the main exception to this. The investment cycle diagram suggests that investment by Danish firms may be in for a contraction whereas investment in Latvia, Lithuania, Malta and Estonia is yet to bottom out.

**The positive investment dynamics notwithstanding, there are signs of an investment gap.** Some 15% of firms report that their investment activities over the past three years were too low to ensure the success of their business going forward. Reported investment gaps are slightly more pronounced among firms active in manufacturing and the construction sector.

**Investment gaps reflect concerns about the quality of firms' capital stock (rather than the quantity).** On average, firms report that 44% of their machinery and equipment can be considered state-of-the art, and that 40% of their building stock satisfies high energy efficiency standards. Among firms that report an investment gap, these shares are 12 pp and 11 pp lower. More generally, a wide variation in firms' reported quality of their capital stock within the same country, sector and size class suggests substantial potential for catching up with the technological frontier.

**Firms' desire to upgrade their capital stock is reflected also in a strong focus on replacement investment.** When asked about their investment priorities for the next three years, replacement comes out as firms' main priority going forward. On aggregate, 40% of firms name replacement of existing buildings, machinery, equipment and IT as their principal investment priority for the coming years. This is followed by about 26% of firms reporting investments in new products or processes as their investment priority, and another 25% of firms seeing their investment priority in capacity expansion; 9% of firms report that they plan no investment in the next three years.

**Investment in new capacity is held back by (still) relatively low levels of capacity utilisation.** Firms operating at or above capacity are – all else being equal – more likely to name capacity expansion as an investment priority. This is intuitive as the need to expand capacity is higher among firms that are already operating at or above capacity than those that still have room to increase output with currently available capacity. However, given that currently only about 50% of firms in the EU report that they are operating at or above capacity, it comes as little surprise that investment in new capacity remains of secondary importance for now.

**When it comes to investment by types of asset, the EIBIS data suggest that firms' investment activities are skewed towards tangibles.** The bulk of firms' investments tend to go into machinery and equipment and land, business buildings and infrastructure. Intangibles – comprising R&D, software, data, IT and website services as well as training of employees – account for only some 38% of firms' investment outlays. The bias in firms' investment activities towards tangibles is most pronounced in the cohesion countries of the CESEE region.

**The motives for investments in intangibles vary across sectors.** In the services sector, for example, investments in intangibles are largely driven by software data and website activities with the aim of adopting the latest technologies; whereas in the construction sector, investment in training dominates investments in intangibles with the primary purpose of compensating for years of labour shedding now that a cautious upswing is in sight.

**In terms of short-term drivers of investment activities, the political and regulatory climate negatively affects firms' ability to carry out planned investment; whereas access to finance is becoming increasingly supportive.** The political and regulatory environment is perceived as a bottleneck across all sectors and size classes, with the share of firms considering this factor to have a negative effect on their ability to implement planned investment clearly outweighing the share of firms considering it a positive force. Interestingly, sectors within the same country often hold quite different views on the political and regulatory climate (suggesting the need for fine-grained policy analysis).

**When it comes to longer term barriers to investment, uncertainty and lack of skilled staff stand out as the main bottlenecks.** The issue reported most frequently as a barrier to investment is 'uncertainty': overall, 69% of firms named this as an obstacle to their investment activities. This is followed by lack of skilled labour (67%) and business regulation (58%). Access to finance follows in 6th place (43%), after labour market regulation and high energy costs (52% and 48%, respectively).

**There is both a cyclical component to 'uncertainty' and a structural one.** We find that uncertainty is reported as a barrier to investment most frequently by firms in countries that have experienced a strong economic downswing. For example, about nine in ten firms consider uncertainty to be an issue in Cyprus, Greece, Italy, Portugal and Spain. At the same time, we also find that uncertainty is closely correlated with high mentions of labour and business regulation, which suggests that – apart from a cyclical dimension – uncertainty may also reflect structural aspects of the economy, so that firms that face e.g. high regulatory barriers often perceive them as a source of uncertainty (holding back their investment activities).

**When it comes to 'lack of skilled staff', the two main stories are i) outward migration and adverse demographics and ii) economies operating close to potential recording more pressure on their workforce.** Outward migration and adverse demographics make 'lack of skilled staff' a relatively frequently named issue in particular in the cohesion countries of the CESEE region. In the case of the UK, Sweden and Germany, high mentions of 'lack of skilled staff' are more likely a reflection of the corresponding economies operating close to their potential.

**Generally, the skills gap is too large for firms to close by themselves.** We find that lack of skilled staff does not translate into higher investment in training, with the notable exception of the construction sector. A likely explanation for this is that – due to a lower overall required skills level – the gap that needs to be bridged in the construction sector is small enough for firms to shoulder it themselves; whereas in other sectors; it would be too expensive for firms to invest in a skills upgrade that is substantial enough to ensure the level of skills needed.

**Business and labour market regulations are a major barrier in some countries (and sectors within countries).** More than three in four firms name business regulation as a barrier to investment in Greece, Spain, Portugal and Latvia. The countries that top the list in terms of share of firms reporting labour market regulations as a barrier are Spain, Italy, Portugal, Slovakia and Latvia. The sectors most affected by business regulation are: the construction sectors in Hungary, Latvia, Spain and Ireland; the service sectors in Greece and Croatia; and the infrastructure sector in Latvia. As for labour market regulation, the construction sectors in Croatia and Ireland, the manufacturing sector in Latvia and Cyprus and the services sectors in Portugal and Slovakia are most affected.

**Both business and labour market regulation are associated with lower investment in intangibles.**

Firms that name business or labour market regulation as a barrier to investment tend to invest on average about 3-4 percentage points less in intangibles than others. In the case of business regulation, this is primarily due to lower investment spending on training; in the case of labour market regulation, it is due to lower investment directed towards software, data and IT networks, as well as organisation and business process improvements (presumably because it is difficult for firms to benefit from these types of investment without sufficient flexibility in their workforce).

**When it comes to firms' access to finance, the EIBIS data suggest two polar situations.** About 16% of high productivity firms see no need for external finance. This is due to high levels of profitability and relatively more investment activities in areas that come with a low investment intensity (such as investments in software, data and website activities). At the other end of the spectrum, there are segments of firms that are heavily dependent on external funds to finance their investment activities but have trouble obtaining them. The latter is particularly pronounced among firms that are active in countries which experienced a more pronounced economic downswing, smaller firms, young firms and innovative firms.

**Young firms merit more policy attention.** In line with the literature, the EIBIS data suggest that young firms are a major contributor to job growth. This notwithstanding, the data show that young firms are often confronted with a particularly difficult investment environment: they are more likely to have their finance application rejected, and more likely to finance investment with funding from family and friends and/or not to invest. The EIBIS data also show that, while financing constraints are less prevalent for more productive firms, this relationship breaks down for many young firms (as they tend to record a loss in their early years, which makes them unattractive borrowers, despite their economic importance).

**The data suggest that firms have little desire to change their financing mix.** If anything, firms tend to want more of the external finance types that they already heavily use, including bank lending and leasing, suggesting that in order to achieve a rebalancing of firms' financing mix toward more market-based sources, it will be important to change incentives.

**Several policy conclusions follow from the analysis:**

- **There is a continued need to support the investment upswing in Europe.** While the EIBIS data point to a positive investment outlook for the corporate sector in Europe, they also suggest that there is still an enormous amount of uncertainty surrounding firms' business outlook.
- **Closing the investment gap with regard to the quality of firms' capital stock is a key priority for firms.** Firms indicate that the investment priority for the coming years is to close the investment gap with regard to the quality of their capital stock, which implies investment in the replacement of existing capital stock (with modern machinery and equipment) and the adoption of state-of-the-art technology. Effective policies to support investment will pay attention to this.
- **Targeted investment in training and education are a pre-condition for a continued improvement of investment.** In large parts of Europe, lack of skilled staff is the main bottleneck to investment. To avoid this endangering the nascent recovery, swift and targeted action on the part of policy-makers is needed. (Firms indicate that more often than not the skills gap is too large for them to bridge themselves).
- **Business and labour market regulations should be reviewed with regard to their impact on investment, in particular investment in intangibles.** The EIBIS data suggest that regulation is often not only a barrier to investment per se, but also tends to bias investment (towards tangibles). In line with the literature, the data suggest that regulation often dis-incentivises firms from investing in intangibles and the modernisation of their capital stock (as it reduces their flexibility e.g. in adapting their workforce to the needs of new technologies).

- **Any review of business and labour market regulation should take a detailed view, rather than focusing on headline findings for a country.** The EIBIS data suggest that regulation often affects investment by different segments in a country differently. As a consequence, any review of business and labour market regulations vis-à-vis their impact on investment should take a detailed view on how they affect firms in different sectors of different size classes.
- **While access to finance is not a bottleneck to investment for large numbers of firms, there are clear pockets of constrained firms. Young companies should receive special attention.** Despite an improvement in the financing environment overall, firms in the countries that experienced the strongest economic downturn and smaller firms still report being financing-constrained disproportionately often. Young firms are particularly affected, and due to their high importance for economic activity should receive special attention. The data suggest the risk of misallocation of resources.
- **To achieve a re-balancing of firms' financing mix towards more market-based sources, firm incentives need to change.** While there is broad consensus that from a macroeconomic perspective, it is desirable to diversify firms' financing mix, the EIBIS data suggest that it will be very hard to achieve this without changing incentives. Under current conditions the type of finance firms want more are the types they use most already (i.e. in particular bank loans). Investment in financial education may be an important complementary measure for achieving a re-balancing of firms' financing mix.



Debora Revoltella  
Director, Economics Department  
European Investment Bank



## 1.1. Introduction

What is happening to business investment in the EU? What are firms' investment needs? What are the drivers of their investment decisions? Are there barriers to firm investment? And if so: are they different for different firms, different sectors and/or countries?

With overall investment activity in Europe still some 8% below its pre-crisis levels and corporate investment only gradually getting back on track, being able to monitor changes in business investment and identify investment needs and constraints is crucial to informing effective policy-making.

The EIB Group Survey on Investment and Investment Finance (EIBIS) is a new initiative that helps address these challenges. EIBIS is an EU-wide survey that gathers qualitative and quantitative information on investment activities by both SMEs (with between five and 250 employees) and larger corporates (with 250+ employees), their financing requirements and the difficulties they face. EIBIS collects data on firm characteristics and performance, past investment activities and future plans, sources of finance, financing issues and other challenges that businesses face.

Using a stratified sampling methodology, EIBIS is representative across all 28 Member States of the EU and applies to four firm size classes (micro, small, medium and large) and four sector groupings (manufacturing, services, construction and infrastructure) within countries. It is designed to build a panel of observations over time (to support time series analysis), and is set up in such a way that survey data can be linked to firms' reported balance sheet and profit and loss data. The first wave of the survey took place between July and November 2016. All data are weighted by value added to better reflect the contribution of different firms to economic output.

EIBIS is intended to complement already available information on investment activities in the EU. It adds a firm dimension to available macro-economic data and thus allows for more fine-grained analysis of firm investment patterns. EIBIS also adds to existing firm level surveys at the national level by providing full comparability of results across countries. EIBIS complements the EC investment survey by asking a much wider set of both qualitative and quantitative questions on firm investment activities and the ECB/EC SAFE survey by focusing on the link between firm investment and investment finance decisions.

This report provides an overview of the business investment situation in the EU28. It is published alongside 29 survey fiches with key descriptive statistics (one for the EU and 28 for each Member State separately), a methodology report (with all key facts and figures on how the survey was carried out), and a data portal that allows interested readers to download further survey statistics.<sup>1</sup> The report is an extension of the EIB's annual investment report (which monitors investment and investment finance activities more broadly).

The following is divided into two parts. The first provides summary statistics on firms' self-reported investment activity, plans, priorities and needs, as well as the short and long-term drivers of their investment decisions. The second examines how firms finance investment, whether they are finance-constrained, and their satisfaction with the financing conditions they are able to obtain. In each section we present some simple analyses to explore questions arising from the data: How productive are firms? What do firms mean if they say that uncertainty is holding back their investment activities? What is the impact of the UK's decision to leave the EU on firm investment? Two boxes examine the difference in investment behaviour between young firms and older ones, and the link between financing constraints and the ECB/EC SAFE survey.

<sup>1</sup> [www.eib.org/eibis](http://www.eib.org/eibis)

## 1.2. Investment activity, outlook and drivers

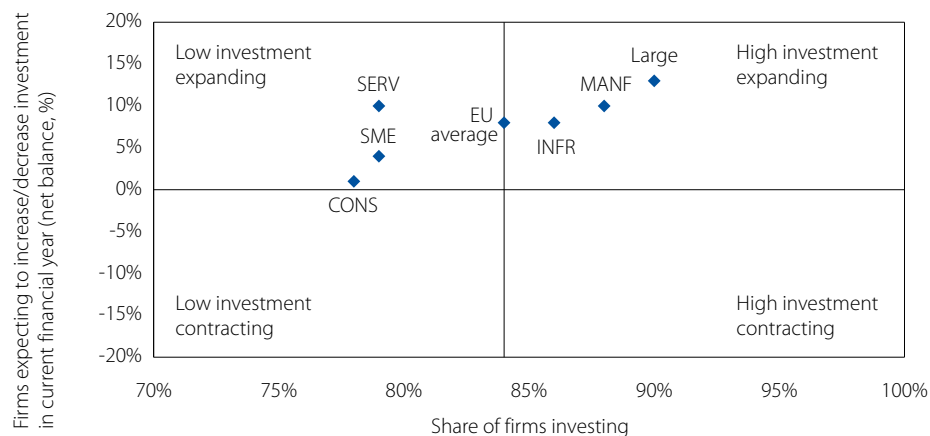
### 1.2.1. The investment cycle is strengthening

**Eighty-four percent of firms invested in 2015, with more firms expecting to expand their investment activities going forward than expect a contraction.** Thirty-four percent of firms expect to expand their investment activities; 38% expect them to remain the same; and 26% expect a contraction vis-à-vis 2015. On balance, therefore, the share of firms with a positive investment outlook outweighs the share of firms with a negative one (+8%).

**Overall this places the EU in the upper half of the investment cycle diagram.** In fact, Figure 1 shows that all sectors and size classes are situated in the upper half of the diagram. SMEs and firms active in the construction sector and service sector expect an expansion from relatively low levels of current investment activities (i.e. investment activities below the EU average); whereas large firms; manufacturing firms and firms active in the infrastructure sector expect an expansion from already relatively high levels of investment activities (i.e. investment activities above the EU average).

**Firms active in the manufacturing sector are most upbeat about their investment outlook.** This is driven primarily by manufacturing firms active in countries that are recovering from a more pronounced economic downturn and those that are part of the German-Central European supply chain: that is, the overall positive investment outlook for the sector is supported by large net positives in: Cyprus (+64%); Portugal (+25%); Spain (+22%) and Italy (21%); as well as by firms located in the Czech Republic (+22%); Hungary (+23%); Slovenia (+16%); and Poland (12%). Malta, the Netherlands and the Baltics are the only countries where the investment outlook of manufacturing firms is markedly negative. In the case of Malta and the Netherlands, this comes after relatively high levels of investment activities in the last financial year; in the case of the Baltics after an already relatively weak investment performance of the sector.

**Figure 1** Investment cycle. EU aggregate.



Note: Share of firms investing shows the percentage of firms with investment per employee greater than EUR 500. The y axis crosses the x axis at the EU average

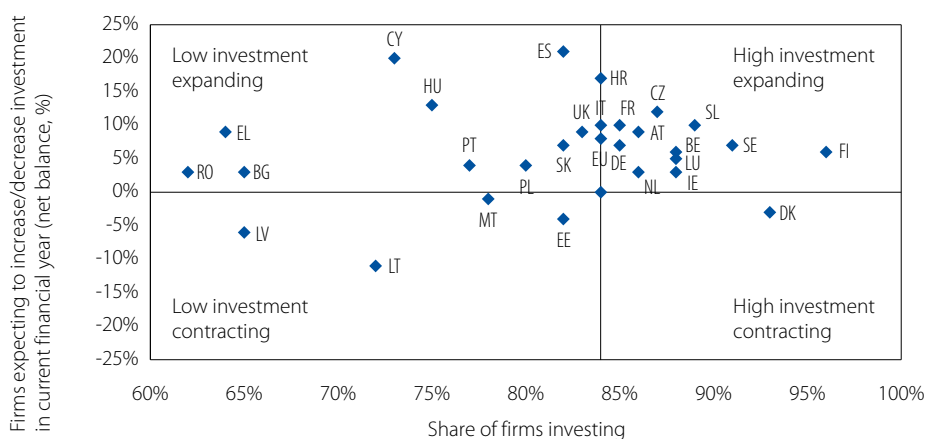
**Firms active in the construction sector are more conservative about investment going forward.**

In particular construction sector firms active in: France (-21%); Portugal (-15%); and large parts of the CESEE region – Estonia (-15%); Hungary (-12%); Latvia (-35%); Lithuania (-19%); Poland (-11%); Romania (-14%); and Slovakia (-16%) – still show a significant negative net balance of firms expecting an investment expansion vs a contraction.

**Larger firms respond stronger to the overall improvement in investment outlook.** In almost all countries in which the overall investment outlook is positive, larger companies are more optimistic than SMEs. On the other hand, in those countries in which the investment outlook is negative (in the aggregate), larger firms are more downbeat than smaller ones. Given the relatively large number of EU countries with a positive investment outlook, this results – on aggregate – in a somewhat more positive investment outlook for larger firms than smaller ones.

**The large majority of EU countries is placed in the upper half of the investment cycle,** that is, firms foresee an improvement in investment activities from either a relatively low level of current activities (Romania, Greece, Bulgaria, Cyprus, Hungary, Portugal, Poland, Slovakia, Spain, United Kingdom) or an expansion on top of a relatively high level of current investment activity (Croatia, Italy, France, Germany, Netherlands, Austria, Czech Republic, Ireland, Luxembourg, Belgium, Slovenia, Sweden, Finland) (Figure 2).

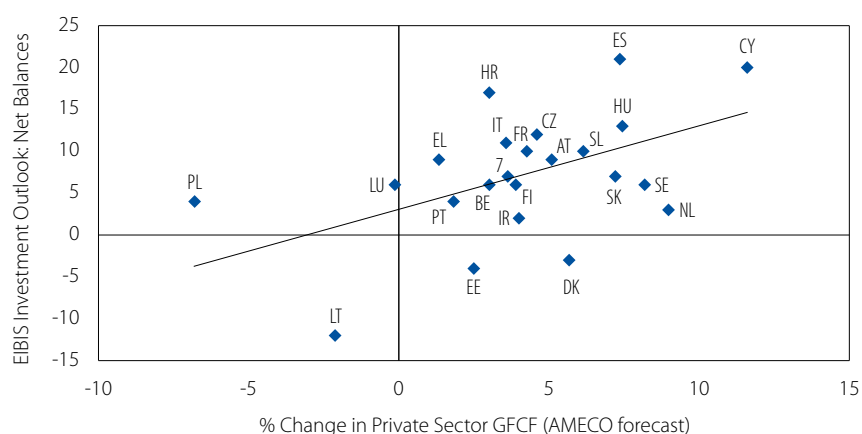
**Figure 2** Investment cycle. Country comparison.



**The main exceptions to this are Denmark, Latvia, Lithuania, Malta and Estonia.** The investment cycle diagram suggests that investment by Danish firms may be in for a contraction whereas investment in Latvia, Lithuania, Malta and Estonia is yet to bottom out. In Denmark investment is likely to contract in 2016 after a strong investment performance in 2015 (with the infrastructure sector and service sector being the most bearish). Firms in Latvia, Lithuania, Malta and Estonia remain in a relative investment slump: even after a year of low investment activities, firms in these countries do not expect an uptick in their investment activities going forward. On the contrary, more firms expect to further reduce their investment activities than expect an expansion.

**Firms' stated investment outlook is in line with macroeconomic forecasts.** Figure 3 compares the predicted change in corporate gross capital formation, as produced by the European Commission (Ameco database) with the net balances of firms expecting an investment expansion vs contraction going forward. The figure shows a clear positive correlation between the two, some outlier values notwithstanding. That is, it shows that the prediction of an investment expansion (on the basis of the survey data) is in line with the macro data.

**Figure 3 Firm investment outlook. Micro vs macro data.**

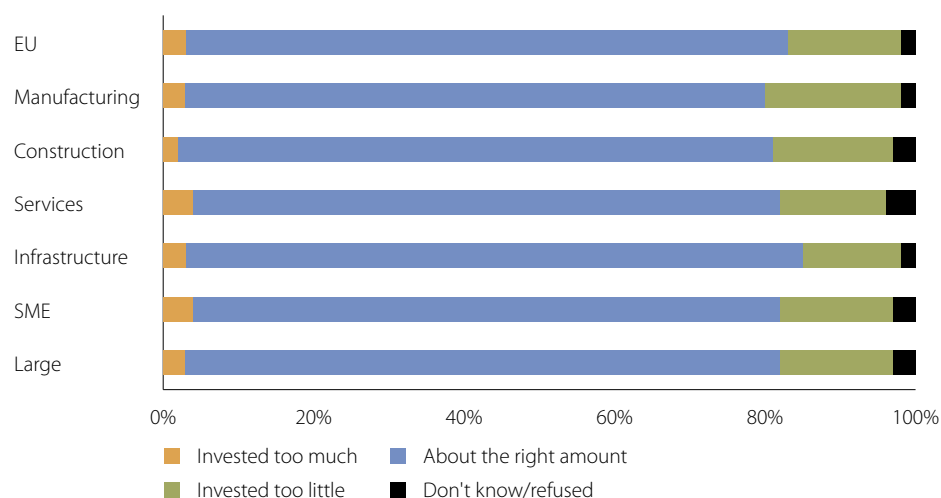


Source: EIBIS and European Commission (AMECO) forecast of Private Sector Gross Fixed Capital Formation. LV, BG, RO and UK excluded due to missing data/outliers

## 1.2.2. A strengthening investment cycle notwithstanding, (quality) gaps exist

**Most firms consider their investment activities over the past three years to have been in line with needs.** Looking back at their investment activities over the past three years, 78% state that their investments were in line with needs (Figure 4).

**Figure 4 Perceived investment gap. EU aggregate.**



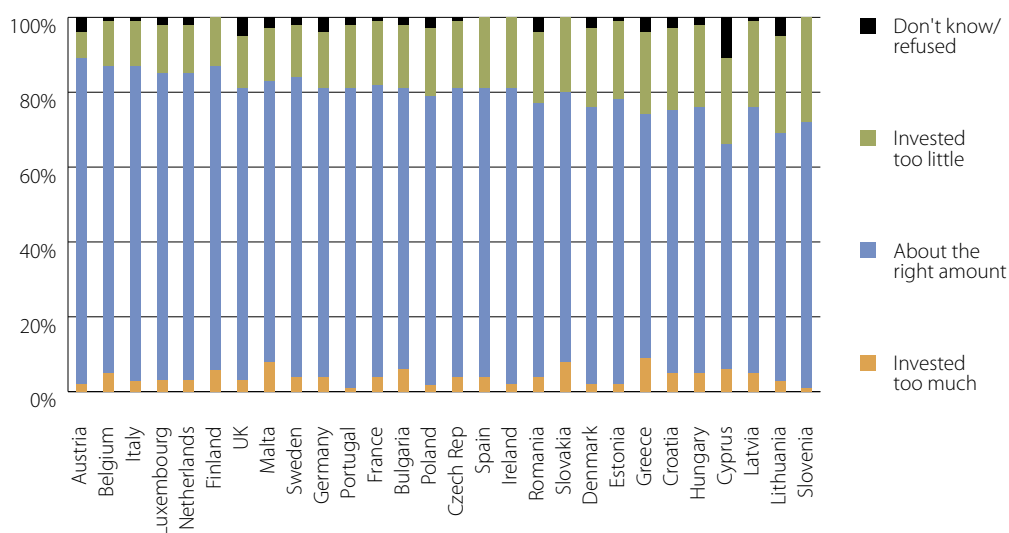
Base: All firms (excluding don't know/refused responses)

Q. Looking back at your investment over the last three years, was it too much, too little, or about the right amount to ensure the success of your business going forward?

**Yet, we also find that some 15% of firms consider their investment activities to have been too low to ensure the success of their business going forward.** Only 3% of firms state that their investment activities exceeded needs. The balance between those that consider their past investment activities to have been too high and those that consider them too low is, therefore, clearly negative (-12%).

**Reported investment gaps are slightly more pronounced among firms active in manufacturing and the construction sector.** The net balance for the two sectors stands at -15% and -14%, respectively, which compares to -10% for service sector firms and firms active in the infrastructure sectors. Cyprus and Slovenia show the largest investment gaps in the manufacturing sector (with net balances of -62% and -32% respectively), Greece, Lithuania and Luxembourg the largest investment gaps in the construction sector (with net balances of -36%, -35% and -32%) (Figure 5). There is no discernible difference between SMEs and larger firms in terms of share of firms reporting an investment gap.

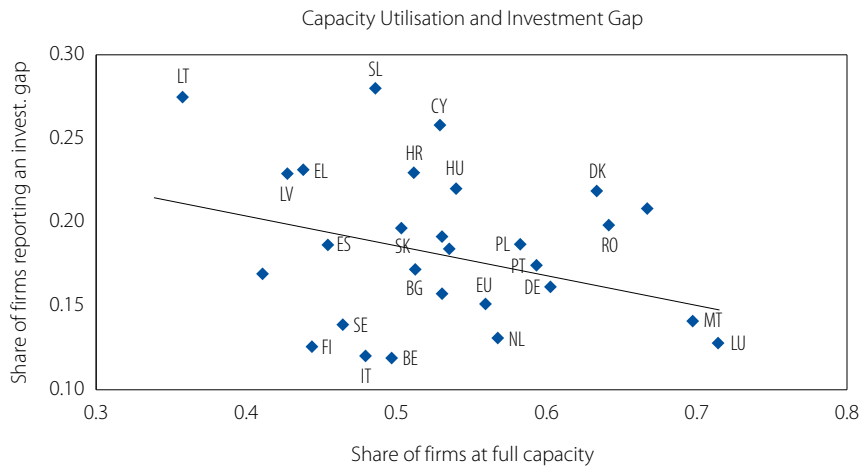
**Figure 5 Perceived investment gap. Country comparison.**



**There is little evidence for a link between firms’ reported investment gaps and capacity constraints.** Overall, the share of firms reporting ‘too little’ investment is largest in Slovenia, Lithuania, Denmark and Estonia, and smallest in Austria, Malta, Belgium, Finland and Italy. Interestingly, many of the countries with the highest net balances in terms of under-investment also record low shares of firms at or above full capacity (Figure 6). This suggests that lack of sufficient (production) capacity is most likely not at the core of firms’ concern when they report too little investment over the past three years.<sup>2</sup>

<sup>2</sup> A regression analysis at the micro level backs up the negative correlation: regressing whether or not a firm reports an investment gap on their level of capacity utilisation (plus the usual set of controls to control for size, age, sector and country heterogeneities), we find a statistically significant, negative correlation between the two variables.

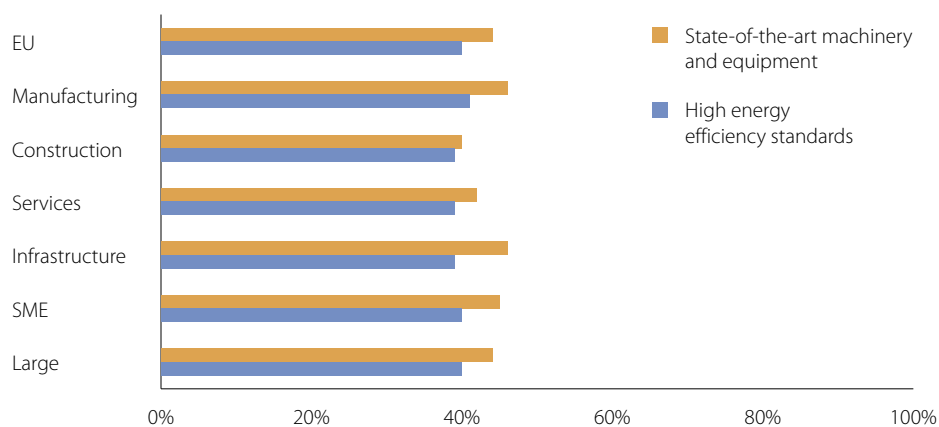
**Figure 6** Correlation between the share of firms at or above full capacity and the share of firms reporting an investment gap.



While there is little evidence for a link between firms' reported investment gaps and capacity constraints, there are signs of under-investment in the 'quality' of firms' capital stock. EIBIS includes two questions which aim to proxy the quality of firms' capital stock: the first asks firms to state the share of their machinery and equipment that is 'state-of-the-art' (which is further specified as referring to 'cutting-edge' or 'developed from the most recent ideas or methods'); the second asks them to state the portion of their commercial building stock that satisfies high or the highest energy efficiency standards. Both measures are negatively correlated with the share of firms that report an investment gap in a country.

On average, firms report that 44% of their machinery and equipment can be considered state-of-the-art, and that 40% of their building stock satisfies high energy efficiency standards. There are relatively modest differences across sectors and firm size classes in terms of the 'quality' of firms' capital stock (Figure 7). The construction sector lags somewhat in terms of state-of-the-art machinery and equipment, with Bulgarian, Polish, French and UK construction sector firms reporting the lowest shares, but overall cross-sector differences are small.

**Figure 7** Average share of state-of-the-art machinery and equipment. EU aggregate.

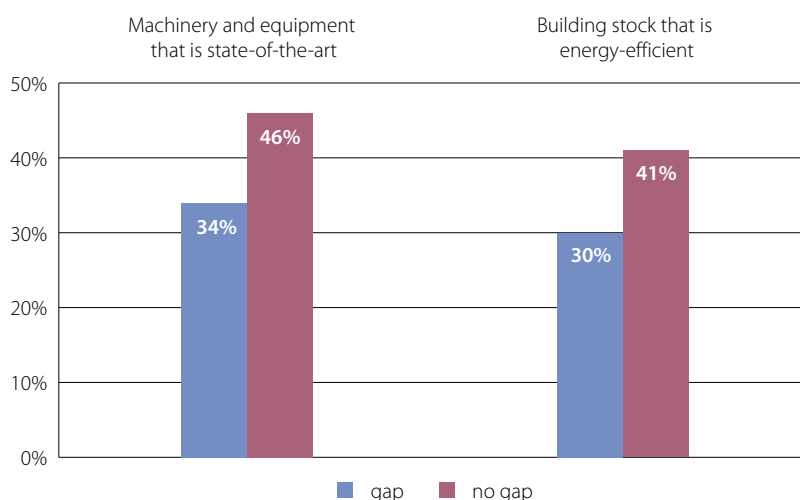


Base: All firms

Q. What proportion, if any, of your machinery and equipment, including ICT, would you say is state-of-the-art?

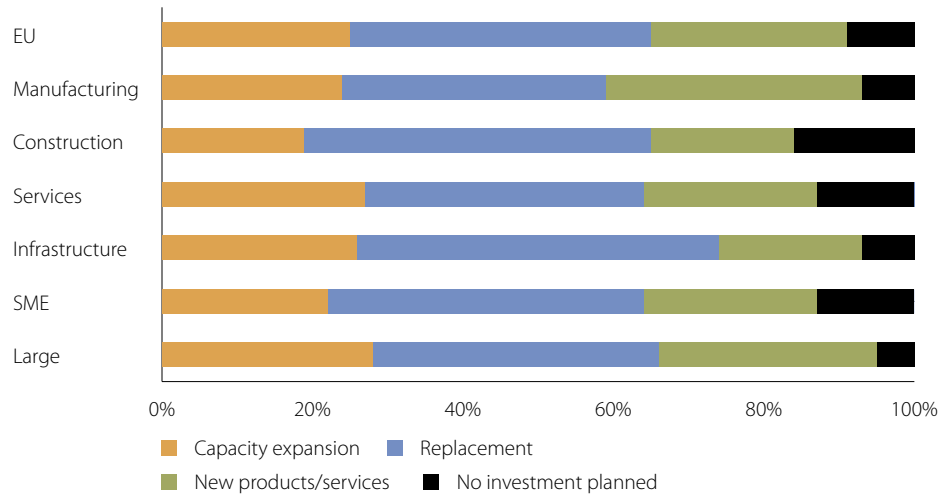
**Firms that report an investment gap also report a lower 'quality' of their capital stock.** The share of machinery and equipment described as state-of-the-art by firms that report an investment gap is 12 pp lower than for firms that do not report an investment gap (34% vs 46%) (Figure 8). In terms of building stock that satisfies high or the highest energy efficiency standards, we find a difference of 11 percentage points (30% vs 41%) for the two groups. Both differences hold not only in the aggregate but also within individual countries, sector and size class.

**Figure 8** Investment gap by quality of capital stock.



### 1.2.3. The main aim of firm investment activities is replacement; investment in new capacity is held back by low levels of capacity utilisation and a (still) fragile recovery in the construction sector

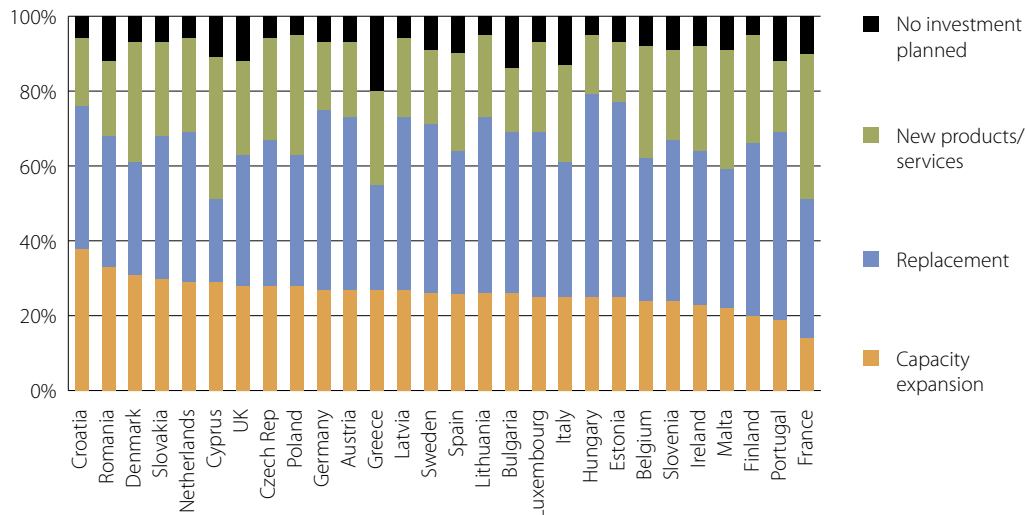
**Replacement investments are the main priority for firms in the next three years.** In line with the idea that firms are concerned about the quality of their capital stock, the EIBIS data show that – on aggregate – 40% of firms name replacement of existing buildings, machinery, equipment and IT as their principal investment priority for the coming years. This is followed by about 26% of firms reporting investments in new products or processes as their investment priority and another 25% of firms seeing their investment priority as capacity expansion. 9% of firms report that they plan no investment in the next three years (Figure 9).

**Figure 9** Future investment priorities. EU aggregate.

Base: All firms (excluding don't know/refused responses)

Q. Looking ahead to the next three years, which of the following is your investment priority (a) replacing existing buildings, machinery, equipment, IT (b) expanding capacity for existing products/services (c) developing or introducing new products, processes, services?

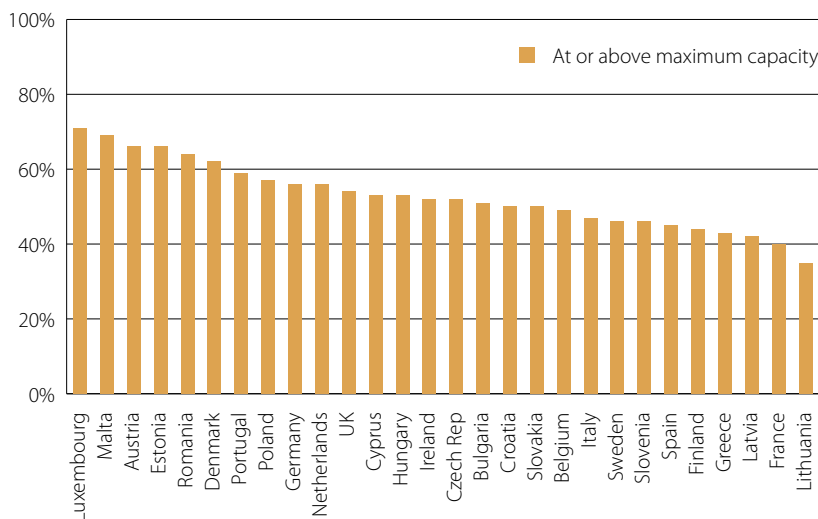
**The need to replace existing capacity is most pronounced among firms active in Hungary, Estonia, Portugal and Germany.** Firms in Denmark, the Netherlands and Cyprus, on the other hand, stand out in terms of capacity expansion plans. Firms in France, Cyprus and Poland are the ones most focused on the introduction of new products, processes and services (Figure 10).

**Figure 10** Future investment priorities. Country comparison.

**Investment in new capacity is held back by low levels of capacity utilisation.** Firms operating at or above capacity are – all else being equal – more likely to name capacity expansion as an investment priority. This is intuitive as the need to expand capacity is higher among firms that are already operating at or above capacity than those that still have room to increase output with currently available capacity. Given that currently only about 50% of firms in the EU report that they are operating at or above capacity, it comes as little surprise that investment in new capacity is still of secondary importance to firms (Figure 11).



**Figure 11** Share of firms operating at or above full capacity.

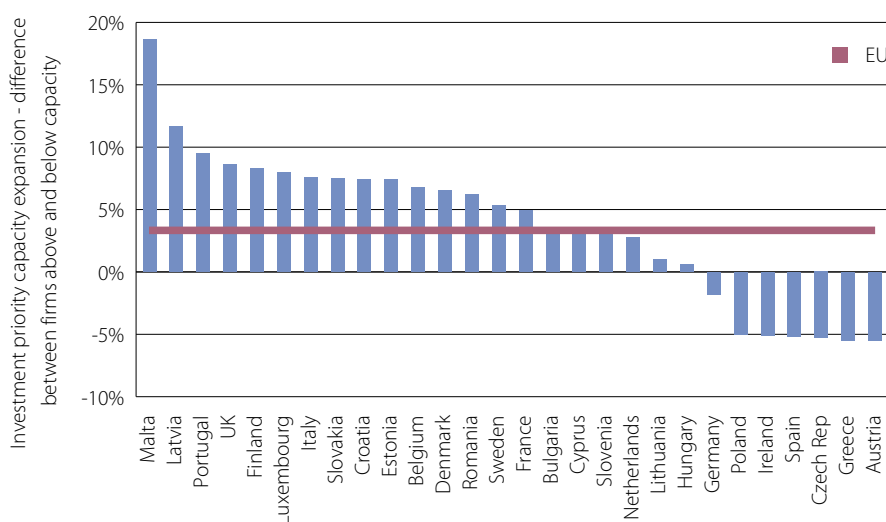


Base: All firms (excluding don't know/refused responses).

Q. In the last financial year, was your company operating at its maximum capacity attainable under normal conditions?

**In some cases even operating at or above capacity does not necessarily translate into investment plans in new capacity.** Figure 12 below illustrates that across most countries firms operating at or above capacity are more likely to name capacity expansion as a future investment plan than firms operating below capacity. In some cases, however, this correlation breaks down. Upon closer inspection, we find that often this is linked to a still rather cautious outlook of firms active in the construction sector in these countries. That is, while generally the positive economic outlook means a close correlation between capacity utilisation and expansion plans, the more cautious outlook of firms in the construction sector makes this link break down for some countries.

**Figure 12** Plans to invest in capacity expansion: Difference between those at/above capacity and those below.

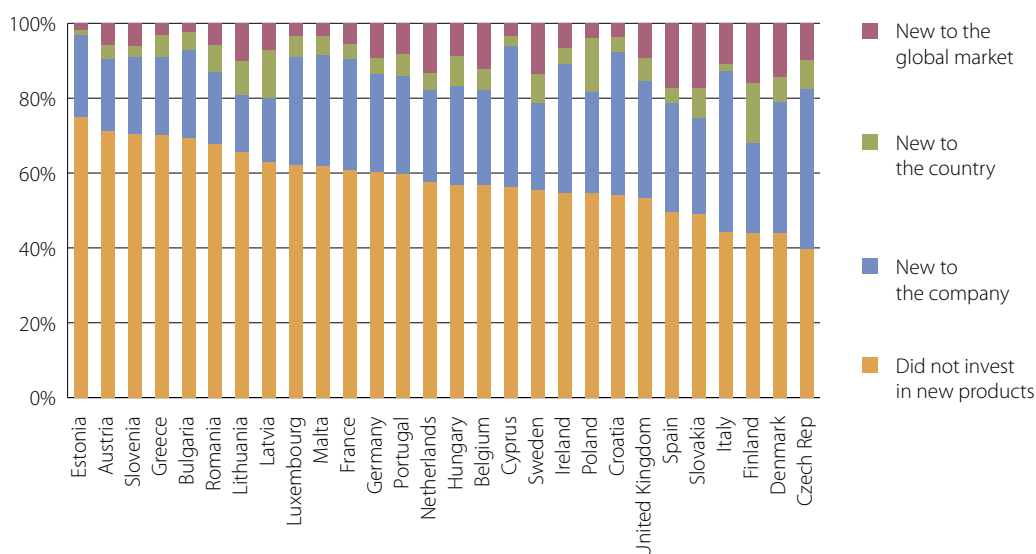


**The adoption of latest technologies dominates firms' innovation activities.** 59% of firms that invest in the development of new products, processes or services say that these products, processes or services are new to the firm (rather than new to the country or global market), in line with the over-arching theme of this report that firms see a need to modernise themselves/catch up with the frontier. With 72% this effort is most pronounced among service sector firms (which currently are most exposed to changing business models), followed by the infrastructure sector (65%), construction sector (63%) and manufacturing sector (55%). From a country perspective, innovating firms in Estonia, Cyprus, Croatia, Malta and Italy are the most likely to focus on 'new to the firm' innovations.

**Slovakia, Spain, Finland, Denmark, Sweden and the Netherlands are the countries with the highest share of firms that introduced innovations that are new to the global market** (Figure 13). With the exception of Slovakia these are also the countries that score highest on the European Commission Innovation Scoreboard (a composite indicator of a country's innovation performance).<sup>3</sup> The countries with the highest share of firms that introduced a product, process or service that is new to the national (as opposed to global) market are: Finland, Poland, Latvia, Lithuania and Hungary.

**The countries that lag the most in terms of investment performance are: Estonia, Austria, Slovenia, Greece and Bulgaria.** Less than three in ten firms report having invested in the development of new products, processes or services (Figure 13).

**Figure 13** Investment in new products, processes and services.



Base: All firms that invested in the last financial year (excluding don't know/refused responses)

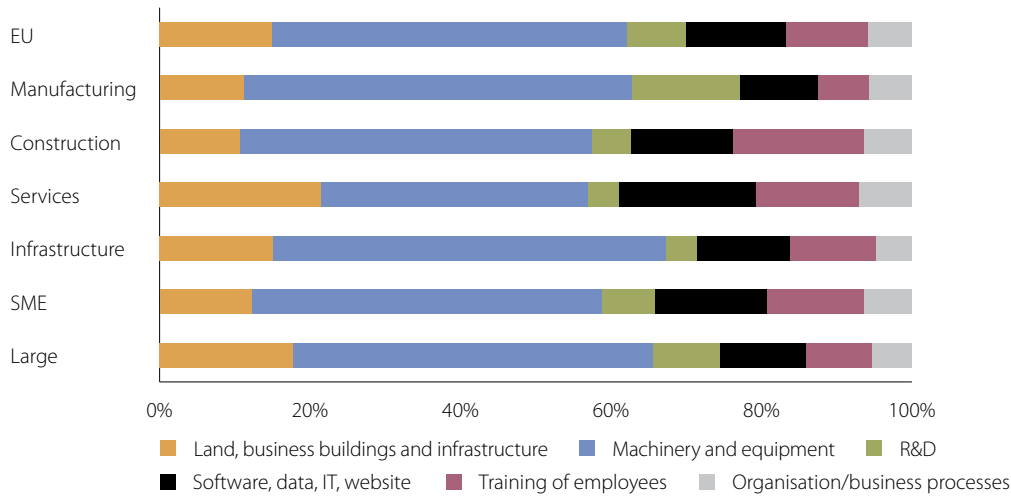
Q. Were the new products, process or services (a) new to the company, (b) new to the country, (c) new to the global market?

## 1.2.4. Firms' investment activities remain skewed towards tangibles

**Overall, firms' investment activities are skewed towards tangibles.** The bulk of firms' investments tend to go into machinery and equipment (accounting for 47% of total investment outlays) and land, business buildings and infrastructure (15%). Intangibles – comprising R&D, software, data, IT and website services as well as training of employees – account for only some 38% of firms' investment outlays (Figure 14).

<sup>3</sup> While Slovakia scores relatively low with respect to the Commission's overall innovation indicator, it is above average in terms of sales' share of new product innovations, exports of medium and high tech products and the employment of fast-growing firms in innovative sectors (which explains the positive innovation profile coming out of EIBIS).

**Figure 14 Investment areas. EU aggregate.**



Base: firms who have invested in the last financial year (excluding don't know/refused responses)

Q. In the last financial year, how much did your business invest in each of the following with the intention of maintaining or increasing your company's future earnings?

**Investment in intangibles is correlated with innovation activities.** In countries in which firms make a larger share of their investment in intangibles, a larger share of investment is also directed to the development of new products, processes and services.

**The high share of investment in intangibles in the service sector can serve as an illustration for this.** It is driven primarily by investment spending on software, data, IT and website activities, which reflects the earlier seen striving of service sector firms to adopt technologies that are new to the firms in order to keep up with a rapidly changing environment (of new business models).

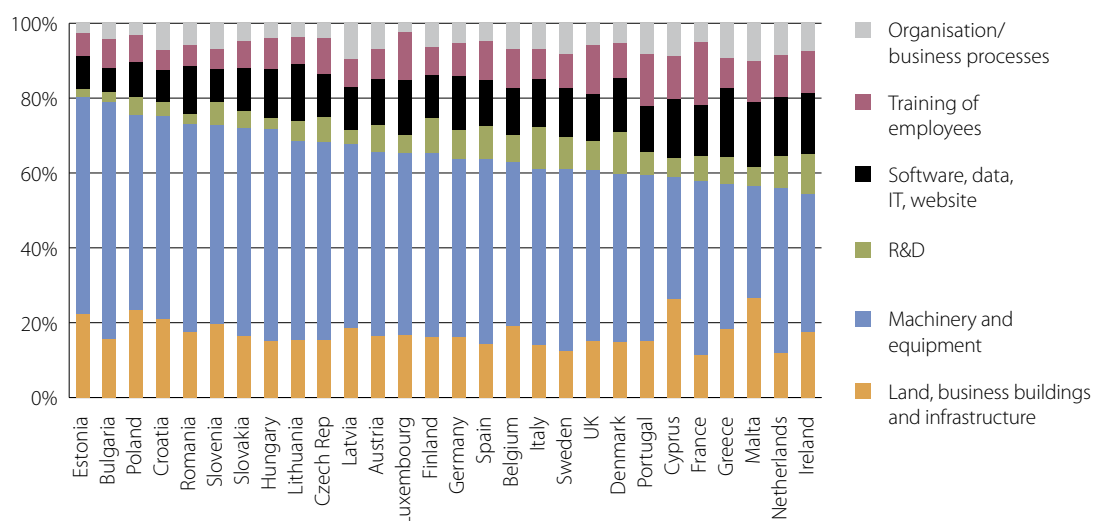
**Not all components of intangibles are related to innovation, however.** Further analyses suggest that the positive correlation between firms' investment in intangibles and firms' investment in new products, processes and services is entirely driven by investments in research and development and software, data, IT and website activities. Investment in training and organisation/business process improvements, on the other hand, seem to be motivated by things other than innovation such as, for example, increasing productivity through optimisation, or the need to deal with labour shortages.

**A case in point for investments in intangibles that are unrelated to innovation activities: after years of labour shedding, construction firms are starting to (re-)invest in training.** The construction sector allocates the largest share of investment to training of employees (across all sectors). This can be explained by years of downsizing in the construction sector in many countries and the need to reverse this trend now that signs point towards a (cautious) recovery. There is little evidence that investment in training in the sector can be linked to innovation activities.

**From a country perspective, firms active in the cohesion countries of the CESEE region tend to spend a relatively small share of their investment outlays on intangibles,** allocating on average 27% of their investment spending to R&D, software, data, IT and website services as well as training of employees (Figure 15). This compares to 39% for the rest of the EU. The difference can be explained (at least to some extent) by the catching-up of firms in the region in terms of tangible fixed assets, bearing in mind significant cross-country differences within regions.

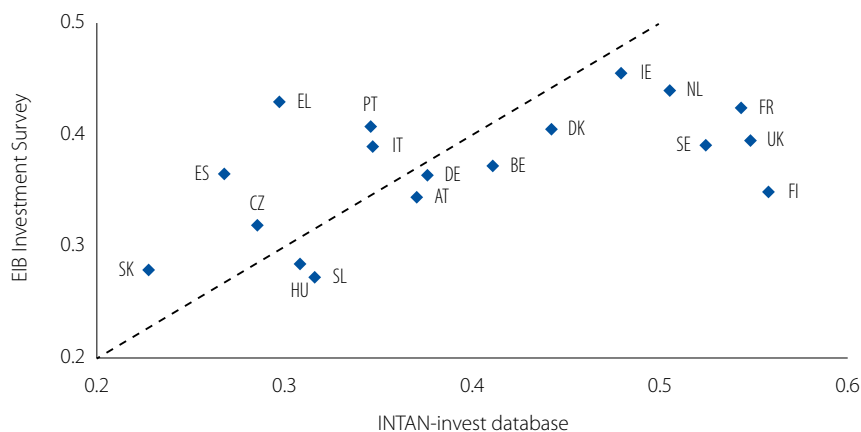
At one end of the spectrum, there are Latvia, the Czech Republic and Lithuania leading the pack of CESEE countries in terms of investment in intangibles, and Ireland, the Netherlands and Malta the group of other EU countries (with the latter at least partly due to the relatively favourable tax treatment of investment in intangibles). At the other end of the spectrum, there are Estonia, Bulgaria and Poland (dragging down the average in the group of CESEE countries), as well as Austria, Luxembourg and Finland (as the countries with the lowest share of investment in intangibles in the rest of the EU).

**Figure 15 Investment areas. Country comparison.**



**The EIBIS data on intangible investments correspond broadly with the macro data.** EIBIS data on intangible investment are self-reported by firms but are in line with macroeconomic data on intangibles (Figure 16). There are some differences between the two sources of data: for instance, the share of intangible investment in Finland is 35% in the EIB Investment Survey, while it is 56% according to the macroeconomic database of INTAN-Invest. If the share of intangible investment was identical using firm-level and macroeconomic data, all countries would be on the 45 degree line. Overall, however the differences are small and most likely driven by the fact that the INTAN-Invest database covers a broader set of sectors of the economy, e.g. agriculture and the financial sector, while the EIB investment focuses on non-financial companies.

**Figure 16 Investment in intangibles. Micro vs macro data.**



Source: EIBIS and INTAN-Invest database

### Box 1 Firms' Total Factor Productivity

The EIBIS data allow us to derive firms' total factor productivity, which is a fairly comprehensive measure of how effective firms are in converting inputs into outputs (taking into account both their labour inputs and capital stock). This box lays out the methodology of how we estimate total factor productivity and examines the link between firm performance and the probability of being financing-constrained.

To derive a measure of firms' total factor productivity, we estimate the following equation:

$$\log(VA_{it}) = \beta_{c0} + \beta_{j0} + \beta_{jk} \log(FA_{it}) + \beta_{jL} \log(H_{it}) + \omega_{it} + u_{it}$$

For each industry with country fixed effects,<sup>4</sup> where *VA* stands for 'value added in euros' and is calculated as the sum of wages and profits.<sup>5</sup> *FA* stands for 'total fixed assets'; *H* for 'hours worked'.

Since there is no information on the effective number of hours worked in the survey, but only the number of employees (headcount), we calculate *H* as follows:

$$\begin{aligned} H_{it} &= NE_{it} \cdot part_{ijct} \cdot avh_{ijct}^{part} + NE_{it} \cdot (1 - part_{ijct}) \cdot avh_{ijct}^{full} \\ &= NE_{it} \cdot (avh_{ijct}^{full} - part_{ijct} \cdot (avh_{ijct}^{full} - avh_{ijct}^{part})) \end{aligned}$$

where:

$NE_{it}$  := total number of employees

$part_{ijct}$  := Share of part-time workers by country/industry from Eurostat

$avh_{ijct}^{part}$  := Average hours worked by part-time workers by country/sector from Eurostat

$avh_{ijct}^{full}$  := Average hours worked by full-time workers by country/sector from Eurostat<sup>6</sup>

Firm total factor productivity is then the sum of the constant term, country fixed effect and residual from this estimation.<sup>7</sup>

Figure 17 shows the result of the exercise. That is, it plots the distribution of each sector against EU TFP quintiles. What it shows is that the service sector records the largest number of firms falling into the top productivity quintile (32%), a result which holds across most countries with the notable exceptions of Germany, Poland, Slovakia, Portugal and Cyprus, where the service sector tends to lag behind the rest of the economy in terms of productivity performance.

4 We make the following adjustments:

1. Censoring of input factors (total fixed assets, hours worked): at their 99-percentile level by country in order to reduce the influence of outliers on the regression.
2. Value added weighted OLS: in order to obtain estimates that are representative for the value added distribution in the population.

5 Wages: We use answers to questions q46, q47 for the currency value of wages. Profits: Need to be calculated using the currency value of turnover (q10, q11) and the percentage of turnover that profits represent (q49). The truncation of the profit question is corrected by using the median percentage of earnings before interest, taxes, depreciation and amortisation (EBITDA) over turnover by country above 15% from ORBIS. The measure of value added is then converted into euros for non-euro area countries of the EU28 using exchange rates from Eurostat at the date of the end of the financial year of each firm.

6 The corresponding datasets are: *lfsa\_epgan2*; *lfsa\_ewhan2*; and *lfsa\_ewhan2*.

7 There are four important shortcomings to bear in mind when considering the estimation results: i) Endogeneity of input choice. Input choices are typically not exogenous, but determined endogenously by characteristics of the firm including its productivity (there is a correlation between inputs and productivity). It is likely, that higher total factor productivity makes firms choose higher amounts of inputs. Therefore, production function coefficients are likely to be biased downwards; ii) Bias due to firm-specific or country-specific output prices (also due to product mix at the firm level): Value added is measured in euros; iii) Bias due to using total number of employees as a proxy. It is possible that the proportion of part-time workers increases with the size of a firm. If this is the case, the proxy overstates labour input for larger firms producing a larger value added. This introduces an upward bias in the coefficient for labour input; iv) Bias due to truncated profit question. Question q49 is truncated by the highest category on profits as a percentage of turnover ('15% or more'). It is possible that large firms employing higher amounts of inputs actually have higher profits as a percentage of turnover. In this case the coefficients on inputs are biased downwards, since the 'true' value added would be higher.

At the other end of the spectrum, the infrastructure sector shows the lowest share of firms in the top productivity quintile (15%), with infrastructure firms in particularly the Nordic countries, Italy and Croatia lagging behind their peers in other sectors.

**Figure 17** Share of firms by productivity class. EU aggregate.

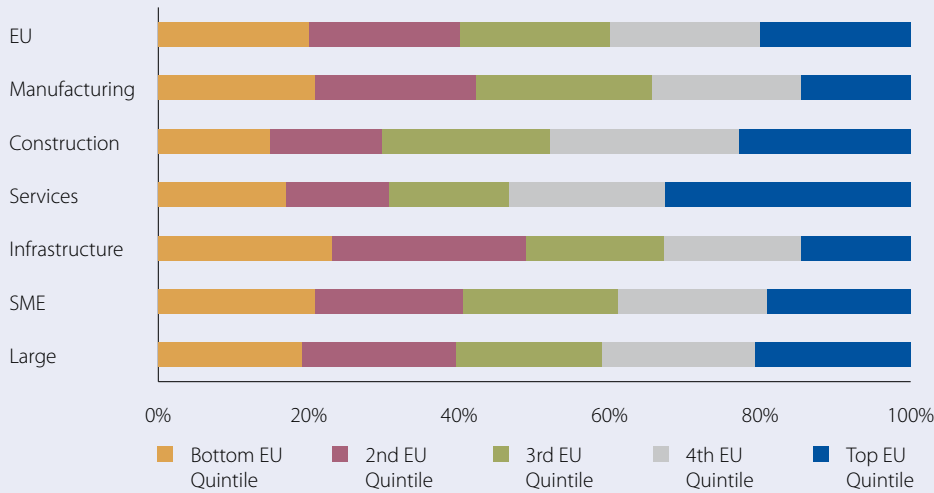
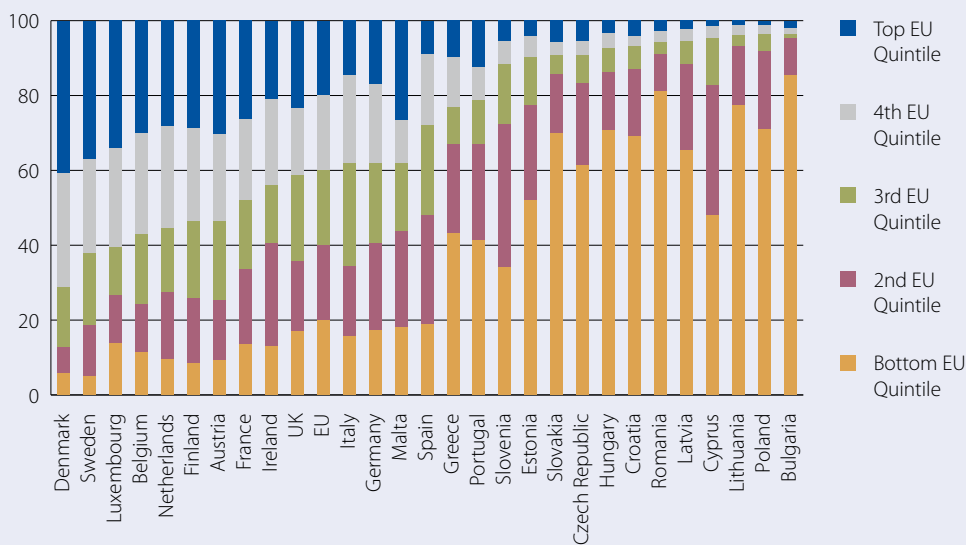


Figure 18 plots the distribution of firms into the different EU TFP quintiles. It shows that in Denmark about 41% of firms fall into the highest EU quintile, whereas in Poland, this is just 1%. The figure also shows that having a large share of firms in the highest productivity class does not necessarily mean a low share of firms in the bottom TFP quintiles: a case in point is Malta, Portugal and Greece, which do have a significant number of high productivity firms, but at the same time are also characterised by fairly high shares of firms falling into the bottom productivity quintiles.

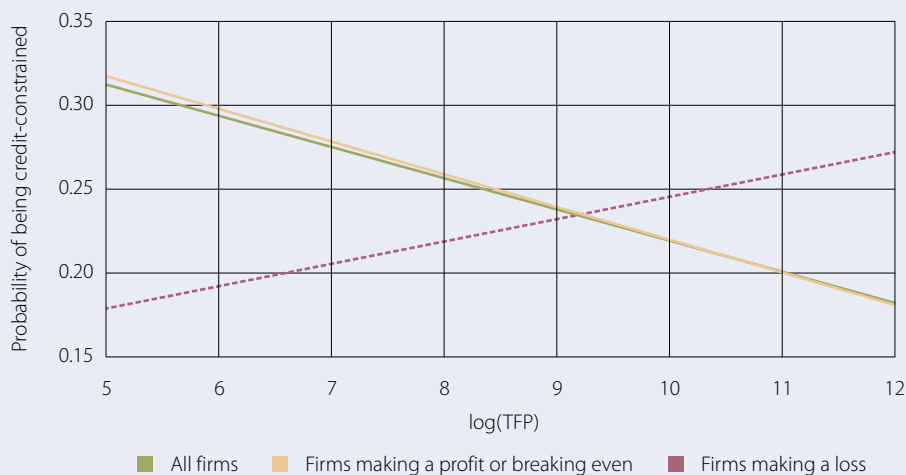
**Figure 18** Share of firms by productivity class. Country comparison.



An efficient allocation of resources would require capital to flow into the most productive investment opportunities. Theoretically this means that more productive firms should face fewer difficulties when trying to mobilise external financing than is the case for less productive firms. However, in times of ongoing tense economic conditions, it is possible that the allocation of financial resources is driven by additional motives that lead to a decoupling of firm-level total factor productivity and access to finance. For instance, lenders and equity investors might be reluctant to realise losses and turn a blind eye to fundamentals of firms demanding credit (such as productivity) in order to improve their balance sheet performance measures. Alternatively, lending decisions of external finance providers can be largely driven by increased risk aversion dominating other considerations than firms' bottom line.

Using the EIBIS data we tried to shed some light on this question by investigating how a firm's probability of being finance-constrained relates to its total factor productivity. We find that more productive firms are generally less likely to face finance constraints, suggesting that lenders and equity investors on average screen firms well and channel resources into more productive investment alternatives. However, looking separately at firms making a profit and firms making a loss reveals that external finance providers seem to turn a blind eye to the productivity of those firms realising a loss. In particular, while for profitable firms higher total factor productivity reduces the likelihood of being finance-constrained, the correlation breaks down for firms realising a loss (Figure 19). While this finding should not be overstated, it nonetheless suggests that external financing is less sensitive to a firm's productivity when the firm is in distress and therefore misallocation of external financing should be further investigated.<sup>8</sup>

**Figure 19** Productivity and access to finance.

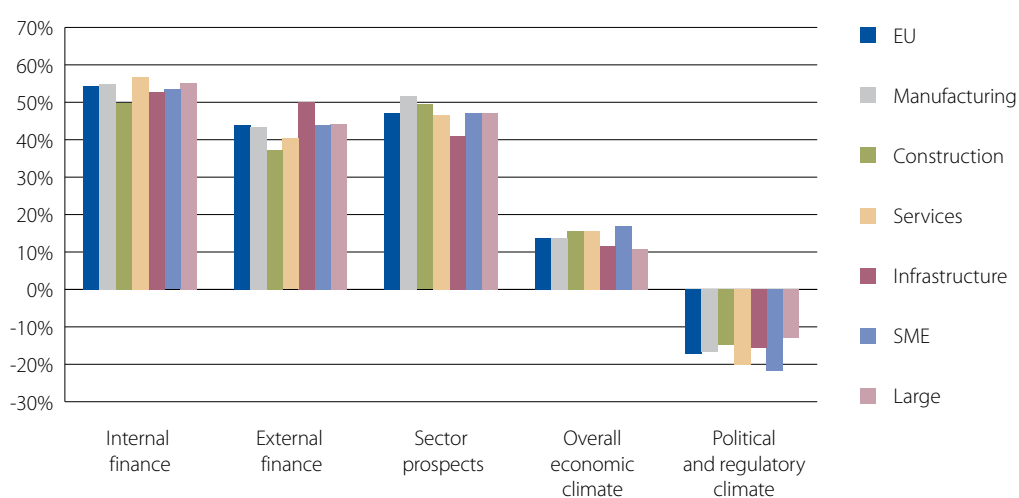


<sup>8</sup> For an in-depth analysis of a potential misallocation of resources in the European economy, please see Kolev, A. et al. (2016): Investment and Investment Finance. Investing in Competitiveness. Part II. EIB.

## 1.2.5. The political and regulatory climate hampers the implementation of planned investment most; access to finance is improving

**The political and regulatory climate negatively affects the ability of firms to carry out planned investments in the current financial year.** This holds across all sectors and size classes, with the share of firms considering this factor to have a negative effect on their ability to implement planned investment clearly outweighing the share of firms considering it a positive force (Figure 20).

**Figure 20** Short-term influences on investment.



Base: EU average of all firms who have planned to invest in the current financial year

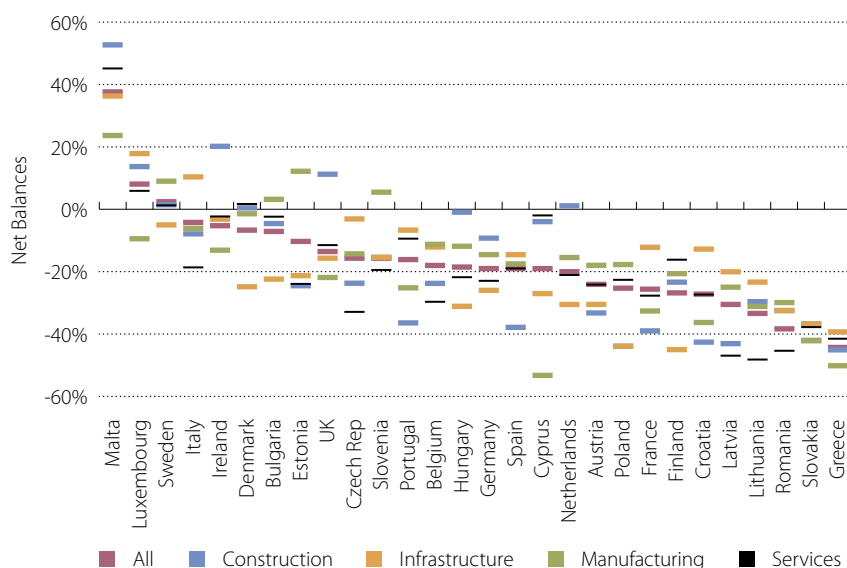
Q. How do each of the following affect your ability to carry out your planned investment. Does it affect it positively or negatively, or make no difference at all?

Note: Net balance is the share of firms seeing a positive effect minus the share of firms seeing a negative effect

**Sectors within the same country are often affected very differently by the political and regulatory climate.** In the case of the construction sector, for example, firms in Ireland, the UK and the Netherlands are more positive about the current political and regulatory climate than firms in other sectors. The opposite holds for construction sector firms in Poland, Spain and Portugal (where construction sector firms seem to be particularly negatively affected by the current political and regulatory environment). The manufacturing sector is disproportionately negatively affected by the political and regulatory environment in France, Croatia and Cyprus; the service sector in Latvia, Slovenia and Estonia; and the infrastructure sector in the UK, Hungary and the Netherlands. (See Figure 21 for more details).



**Figure 21** Net balance of firms considering the political and regulatory climate a positive vs negative driver of investment.

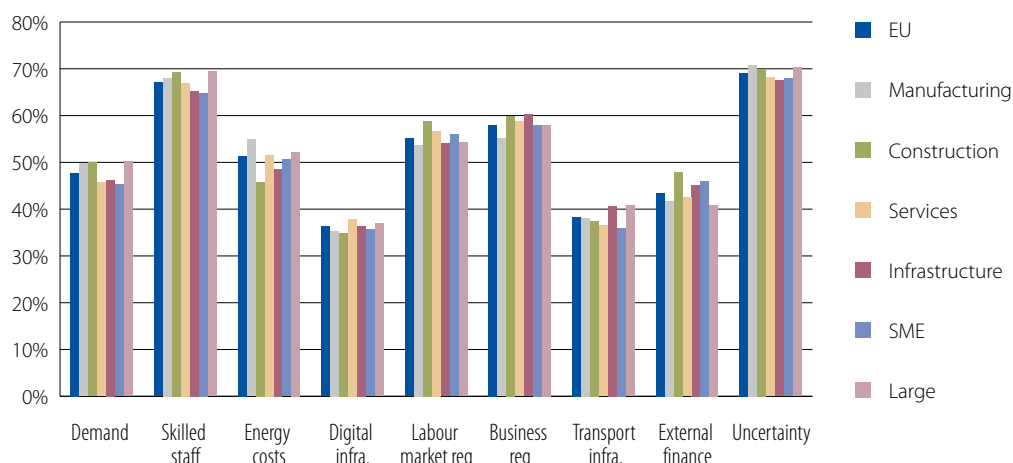


**On the influence of the overall economic climate, firms are more divided.** On balance, firms consider the general economic environment to be conducive to the implementation of their investment plans, but only modestly so.

**The largely positive assessment of the availability of external finance points towards an improvement in financing conditions (not the absence of financing constraints).** With the exception of firms in Cyprus, all countries report on balance a positive effect of the availability of external finance on the ability to carry out planned investment. As we will see in the coming section, this does not mean that firms in these countries experience little or no financing constraints. Rather, the finding suggests that financing conditions are largely as good as or better than what firms expected when they planned their investment activities (which means that they do not pose much of a bottleneck to the actual implementation of their planned investment, even though they may have biased downwards investment plans in the first place). Accordingly, among firms that have invested, the perception that the availability of finance might have been an obstacle for them is further reduced in most countries.

### 1.2.6. Uncertainty and lack of skilled staff are the main (long-term) barriers to investment

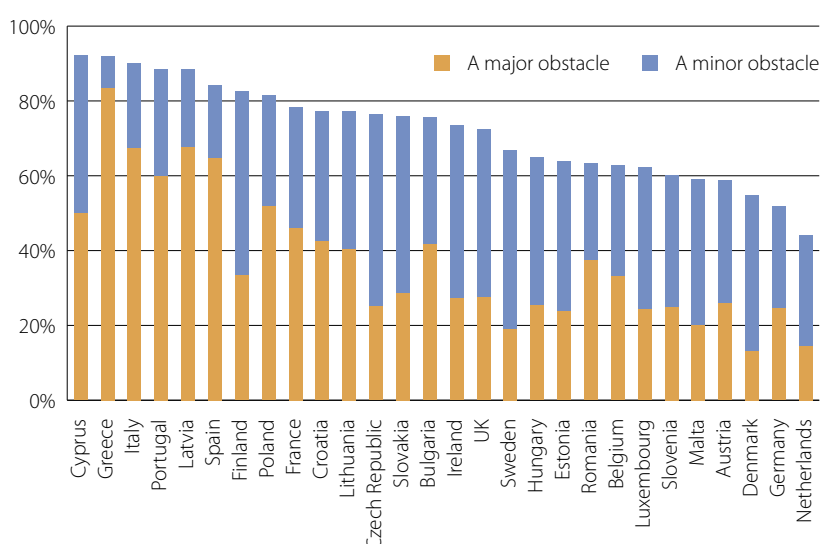
**Uncertainty and lack of skilled staff are the most significant obstacles to investment in the EU.** EIBIS asks firms about (absolute) obstacles to investment in their countries of operation. The issue reported most frequently is ‘uncertainty’: overall, 69% of firms named this as an obstacle to their investment activities (Figure 22). This is followed by lack of skilled labour (67%), and business regulation (58%). Access to finance follows in 6<sup>th</sup> place (43%) after labour market regulation and high energy costs (55% and 51% respectively).

**Figure 22 Long-term barriers to investment.**

Base: EU average of all firms (data not shown for those who said not an obstacle at all/don't know/refused)

Q. Thinking about your investment activities in #country#, to what extent is each of the following an obstacle? Is it a major obstacle, a minor obstacle or not an obstacle at all?

**There are relatively little differences across sectors and size classes in terms of barriers, with some notable exceptions.** The EIBIS data suggest that larger firms are somewhat more likely to name lack of demand, unavailability of skilled staff and (inadequate) transport infrastructure as barriers to investment than smaller firms, while SMEs are relatively more likely to report access to finance as an obstacle. From a sectorial perspective, the construction sector stands out as the most likely to report access to external finance as a barrier to investment, while manufacturing firms are more concerned about energy costs than firms active in other sectors.

**Figure 23 Uncertainty as a barrier to investment**

**Uncertainty is reported as a barrier to investment most frequently by firms active in countries that experienced a strong economic downswing suggesting that it is linked to the state of the economy.** About nine in ten firms consider uncertainty to be an issue in Cyprus, Greece, Italy, Portugal and Spain (Figure 23). This compares with about five in ten firms (that name uncertainty as an obstacle) in Germany and the Netherlands. Firms in the UK fall somewhere in between the two extremes, most certainly (at least in part) pulled down by the outcome of the UK referendum on EU membership (See Box 4).

**However, there is also a structural component to uncertainty.** In Box 3, we discuss how uncertainty as a barrier to investment is closely correlated with high mentions of labour and business regulation (as barriers to investment). This suggests that – apart from a cyclical dimension – uncertainty may often also reflect structural aspects of the economy, so that firms that face e.g. regulatory barriers to investment often perceive them as a source of uncertainty that holds back their investment activities.

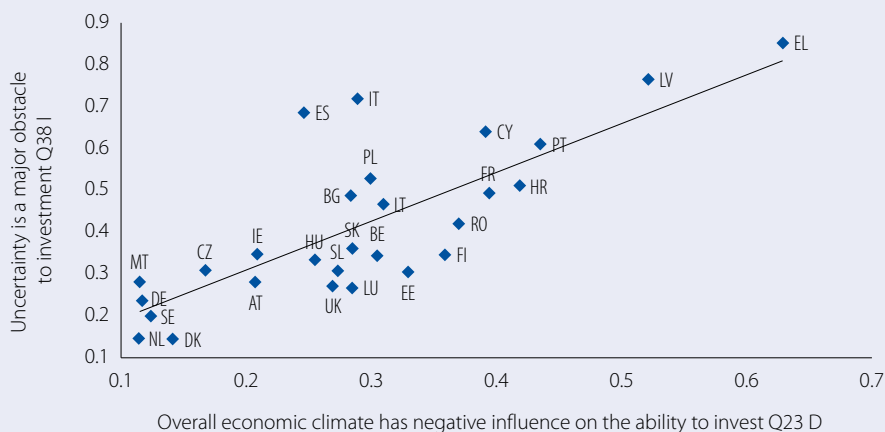
**Box 3 Uncertainty and the economy**

Perceived uncertainty – together with lack of staff with the right skills – is the aspect most frequently named by firms in Europe as a barrier to investment. This raises the question, what is it that underlies this uncertainty? This box explores this question using the EIBIS data.

The first finding of this exercise is that high perceived uncertainty is associated with an unfavourable overall economic climate. Figure 24 relates the share of firms that consider uncertainty as a major obstacle to investment to the share of firms that see a negative influence on their ability to invest by the overall economic climate. It shows that an unfavourable economic climate is closely associated with uncertainty being perceived as an impediment to investment.

The overall economic climate, in turn, is determined both by the current position in the business cycle and structural factors like ease of doing business, availability of adequate infrastructure and access to finance.

**Figure 24 Unfavourable economic climate is associated with high perceived uncertainty.**



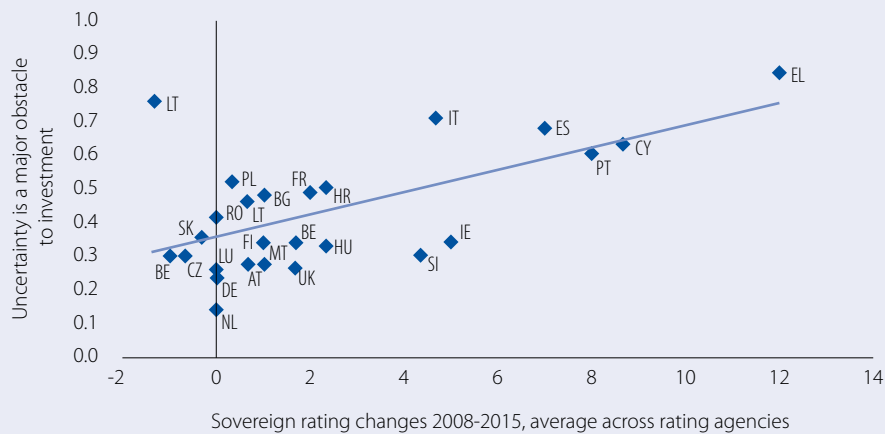
Starting with the cyclical component, the financial crisis brought about significant increases in uncertainty as suggested by numerous measures and studies.<sup>9</sup> Uncertainty did not rise uniformly across countries. In the most affected countries, the crisis led to sovereign debt problems that were reflected in changes in the ratings of government bonds.

Figure 25 plots the number of notches that ratings changed between 2008 and 2015, against the share of respondents in each country answering that uncertainty about the future is a major obstacle to investment. The two series are highly positively correlated (correlation coefficient of 0.62) suggesting that cyclical problems related to the financial crisis have caused some of the dispersion in Figure 24.

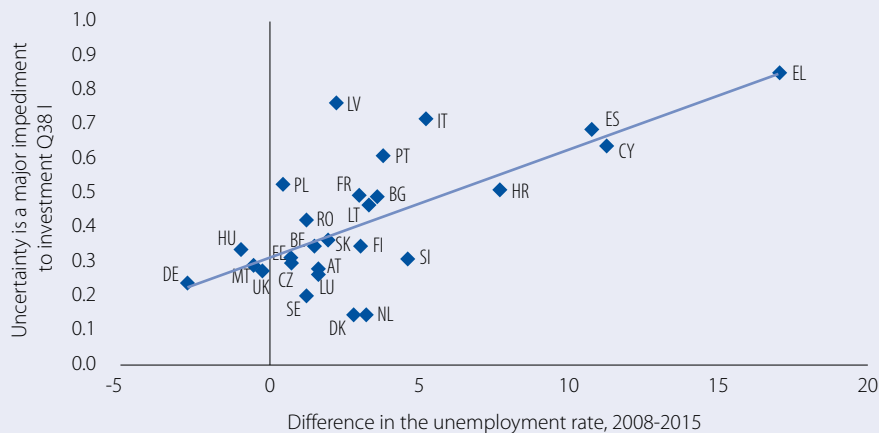
<sup>9</sup> See e.g. Bloom (2014): 'Fluctuations in Uncertainty'. Journal of Economic Perspectives, 28(2), 153-176.

The perceived negative effect of uncertainty is strongly associated with the country-specific economic situation. Economic downturns and fluctuations in aggregate demand have also contributed significantly to the dispersion observed in Figure 24. The share of firms that consider uncertainty as a major impediment to investment is significantly negatively correlated with changes in real gross disposable income of households and positively correlated with changes in the unemployment rate: -0.57 and 0.68, respectively (Figure 26). This suggests that aggregate demand fluctuations are a major source of uncertainty for corporates.

**Figure 25** Uncertainty and sovereign rating changes.



**Figure 26** Perceived high uncertainty and changes in the unemployment rate.

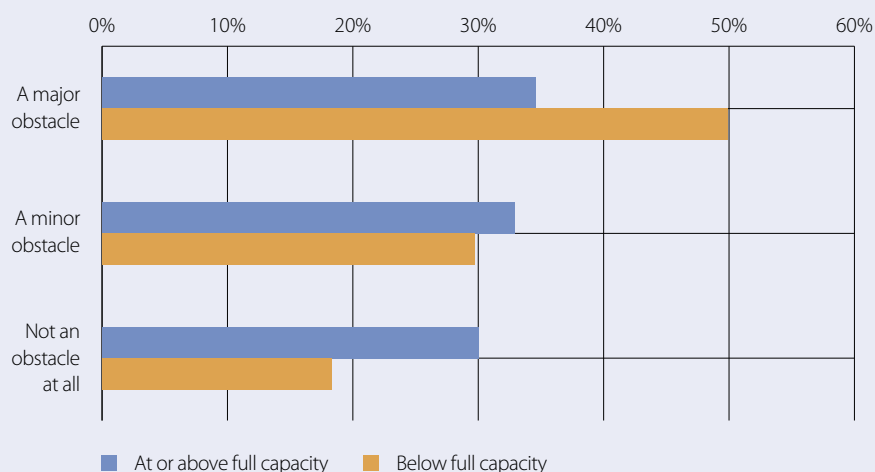


There is a strong structural component in the dispersion of uncertainty perception across countries in the EU too. The EIBIS singles out a number of structural impediments to investment like labour and business regulations, access to finance and availability of skilled staff. It turns out that there is a significant positive association between firms that see uncertainty about the future, on the one hand, and labour market regulations, business regulations and availability of finance, on the other, as major obstacles to investment. This suggests that cross-country differences in Figure 24 would most likely persist even after the negative effects of the financial crisis fade away.

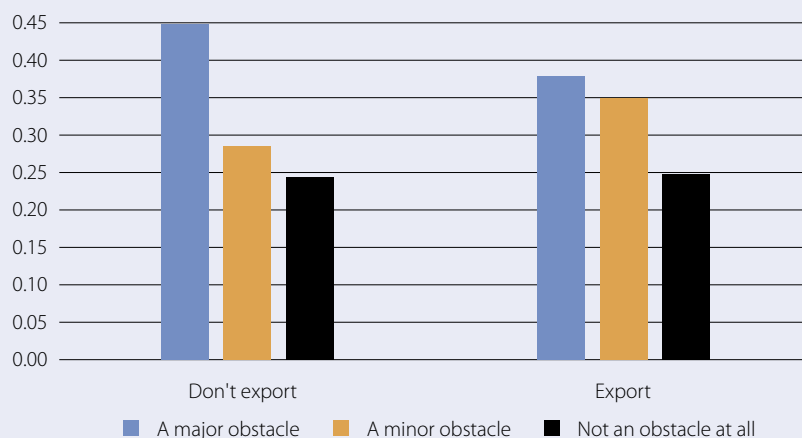
Perceived uncertainty also has an idiosyncratic component that reflects firm-specific shocks. Firms that see weak demand for their products and services as a major impediment to investment

and are not able to secure enough orders to use their capacity optimally also see uncertainty as a major impediment to their investment (Figure 27). Likewise firms that just break even or incur losses are more likely to see uncertainty about the future as an impediment to investment. Thus, independent of aggregate demand conditions, weak firm-specific demand increases the association between uncertainty and low investment.

**Figure 27** Uncertainty perception and capacity utilisation.

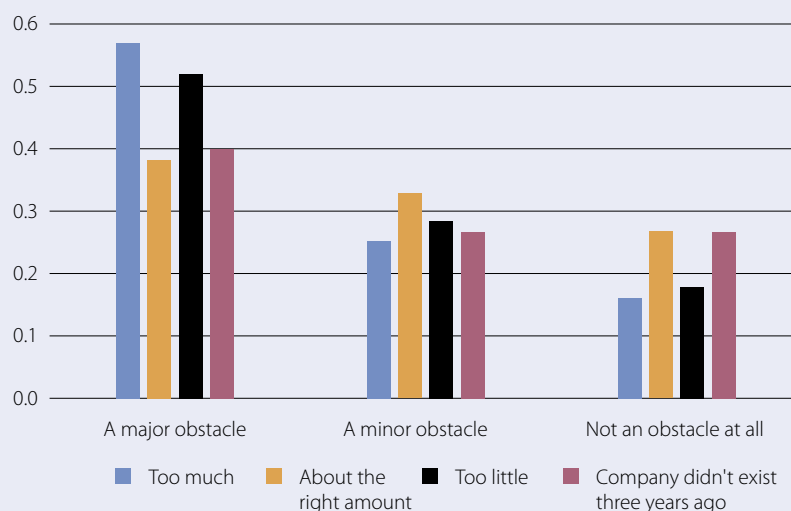


**Figure 28** Exporting firms are less likely to see uncertainty as impediment.



More productive firms consider uncertainty to be less of an impediment to investment. Firms that export and invest abroad are less inclined to consider uncertainty to be an impediment to investment than other firms. Several studies<sup>10</sup> have shown that exporters and firms involved in FDI are among the more productive ones. In addition, a regression analysis shows that lower productivity and smaller firm size are associated with a higher likelihood of a firm considering uncertainty to be a major obstacle to investment.

10 For a review see e.g. Aghion (2016). Investing in Competitiveness, in Investment and Investment Finance in Europe 2016. EIB

**Figure 29** The investment gap and perceived uncertainty.

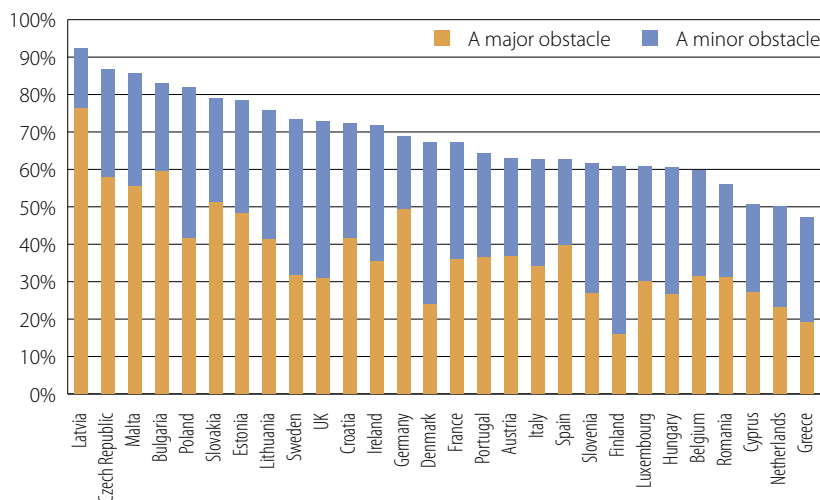
Uncertainty reduces investment but also breeds inefficient investment. Companies that see uncertainty as an impediment to investment were less likely to invest in 2015. In addition, these companies are more likely to see the investment decisions inefficient ex-post. Figure 29 shows that firms that see uncertainty as a major obstacle to investment are much more likely to report that they invested too little or too much over the past three years. Hence heightened uncertainty may reduce the efficiency of resource allocation across firms.

**Outward migration and adverse demographics make 'lack of skilled staff' a relatively frequently named issue in the CESEE region.** 76% of firms in the CESEE region name 'lack of skilled staff' an obstacle to investment (Figure 30). The high share of mentions in the region can be explained (largely) by adverse demographics and significant outward migration. In the case of Latvia, for example, it is estimated that the country's population may have declined by some 25% over the past 25 years. Within the CESEE region, it is primarily firms active in manufacturing and larger firms which seem to suffer most from the lack of skilled staff (with manufacturing firms in Latvia, the Czech Republic, and Bulgaria reporting this barrier most frequently).

**Outside the CESEE region, lack of skilled staff is an important issue in Malta, Sweden, the UK, Ireland and Germany,** but much less so in Cyprus, the Netherlands and Greece. In the case of Malta and Ireland, the high share of firms reporting lack of skilled staff as an obstacle is driven by the construction sector, most probably due to the fact that firms in this sector need to re-attract talent fast after years of labour shedding to put into place their (ambitious) investment plans for the coming years. In the case of Sweden, the UK and Germany, the share of firms considering lack of skilled staff to be an issue is much more evenly distributed across sectors, and most certainly a reflection of the fact that the three economies operate at or close to their potential.

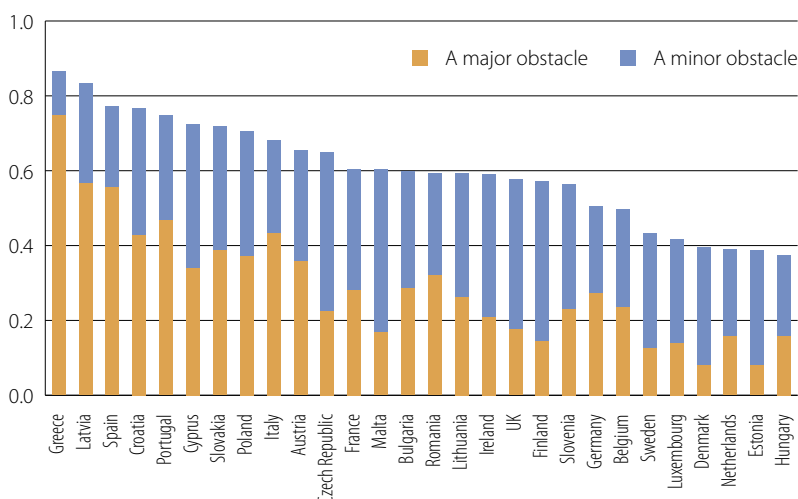
**The skills gap is too big for firms to bridge by themselves.** If we compare investment outlays for training between firms that report a lack of skilled staff and those that do not, we find no difference. This is true for different countries/regions and sectors. The only exception to this is construction: in the construction sector firms that report 'lack of skilled staff' as a barrier to investment invest more in training (than firms that do not suffer from a lack of skilled staff). A possible explanation for this could be that – due to the lower overall skills requirement – the gap that needs to be bridged in the construction sector is small enough for firms to shoulder by themselves (whereas in other sectors it would be too expensive for firms to invest in an upgrade of skills to the levels needed, underlining the importance of public investment in training).

**Figure 30 Lack of skilled staff as a barrier to investment.**



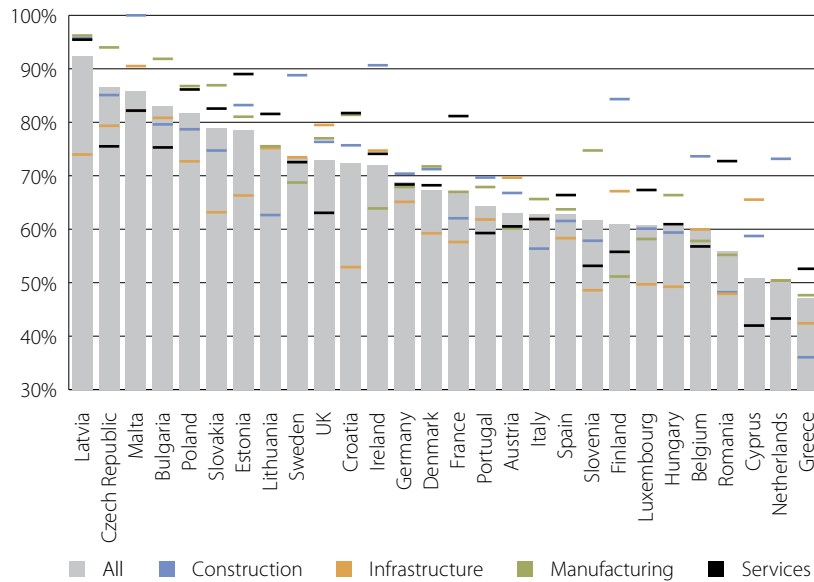
**More than three in four firms name business regulation as a barrier to investment in Greece, Spain, Portugal and Latvia** (Figure 31). The countries that top the list in terms of share of firms reporting labour market regulations as a barrier are Spain, Italy, Portugal, Slovakia and Latvia. In the countries in which business regulation is reported as a barrier most frequently it is often larger firms that pull up the average, whereas labour market regulation tends to affect smaller and larger firms equally. The sectors that are most affected by business regulation are: the construction sectors in Hungary, Latvia, Spain and Ireland; the service sectors in Greece and Croatia; and the infrastructure sector in Latvia. As for labour market regulation, the sectors most affected are the construction sector in Croatia and Ireland, the manufacturing sector in Latvia and Cyprus and the services sector in Slovakia, Italy and Portugal (See Figure 32).

**Figure 31 Business regulation as a barrier to investment.**



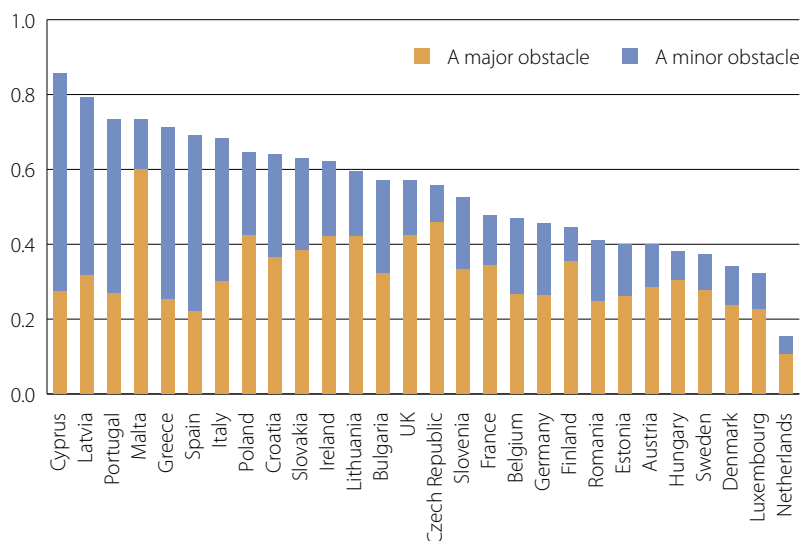
**Both business and labour market regulation are associated with lower investment in intangibles.** Firms that name business or labour market regulation as a barrier to investment tend to invest on average about 3-4 percentage points less in intangibles than others. In the case of business regulation, this is primarily due to lower investment spending on training; in the case of labour market regulation, lower investment spending on software, data and IT networks, as well as organisation and business process improvements (presumably because it is difficult for firms to benefit from these types of investment without sufficient flexibility in their labour force).

**Figure 32 Labour market regulation as a barrier (major or minor) to investment, by country and sector.**



**High energy costs are often perceived as a drag on competitiveness.** There are significant cross-country differences in the perception of energy costs as a barrier to investment. While more than seven in ten firms consider energy costs to be an obstacle to their investment activities in Cyprus (86%), Latvia (79%), Portugal (73%), Malta (73%) and Greece (71%), the corresponding shares are less than half that in the Netherlands (15%), Denmark (33%) and Luxembourg (34%). Across most countries with high mentions of energy costs, this is driven primarily by larger firms and firms active in manufacturing, suggesting that – given the typically stronger export orientation of these firms – firms mentioning energy costs as a barrier to investment often perceive these as a drag on their competitiveness.

**Figure 33 Energy costs as a barrier to investment.**



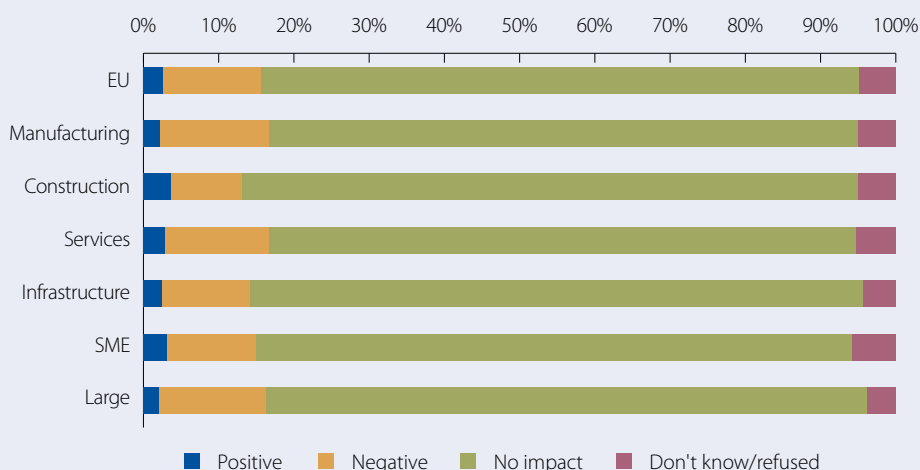


**Box 4 Brexit and firm investment**

EIBIS asked firms how the outcome of the UK referendum on EU membership is likely to affect their investment activities in the coming year.

Most firms reported that they do not expect this to affect their investment activities in a significant way (78% of firms). This may partially reflect the fact that the referendum brought no immediate change to the relationship between the UK and the European Union. It may also reflect the fact that for many firms, investment decisions depend mostly on domestic economic activity and/or exports to other EU countries, which they do not expect to suffer much from the outcome of the referendum.

**Figure 34** Expected effect of outcome of Brexit referendum on investment activities. EU aggregate.



*Base: All firms (excluding don't know/refused responses).  
Q. How do you expect the outcome of the UK referendum on EU membership to affect your investment activities in the coming year?*

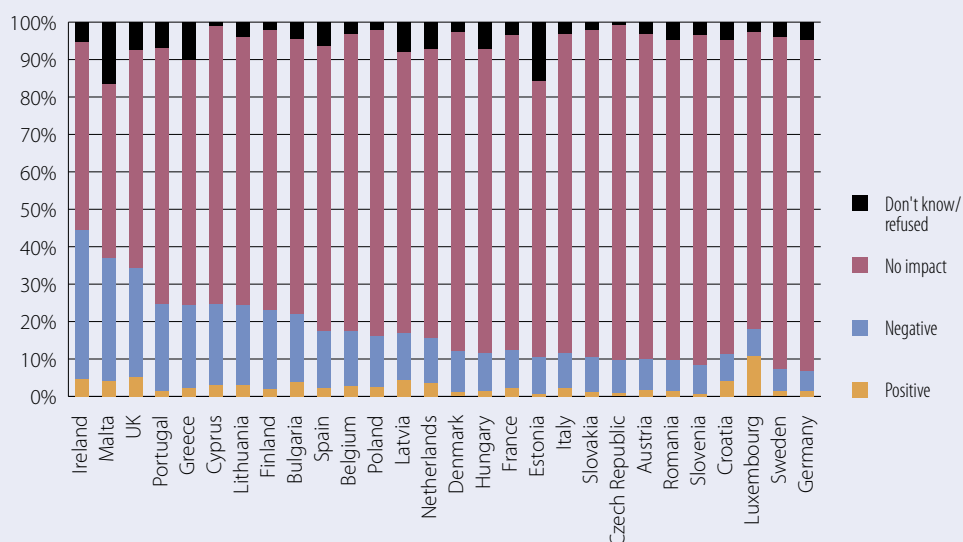
A small – but still noteworthy – share of firms (12%) expects the referendum to have a negative effect on their investment activities. A still smaller share of firms expects the Brexit referendum to have a positive impact (approximately 4.5% of all firms in our sample).

In general, countries with a high share of ‘negatives’ either:

- i) tend to also have a relatively high share of ‘positives’ (and uncertainty) indicating that, in countries with strong trade links, there are winners and losers from the Brexit referendum; or
- ii) tend to fall into the group of countries with significant economic headwinds. Ireland, Cyprus and Malta can be attributed to the first category; Greece, Portugal and Finland to the second.

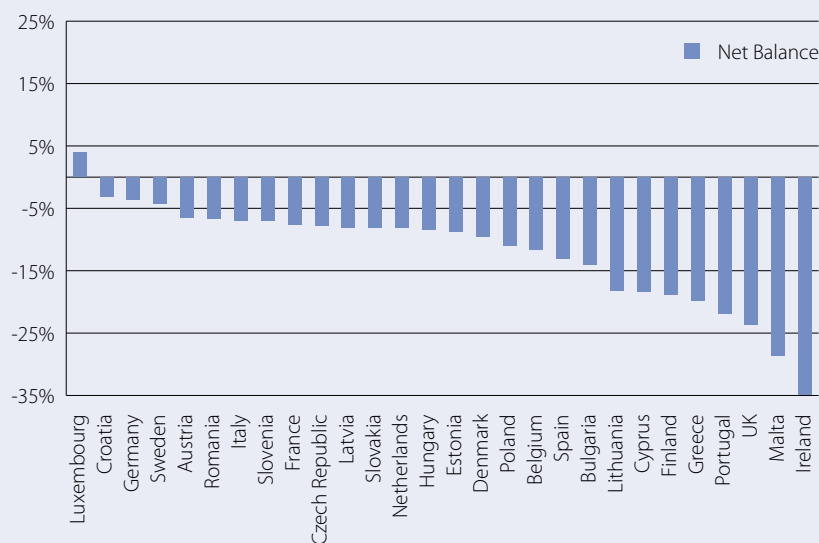
Firms in the UK are most divided on the likely effect of the referendum outcome: both the share of firms expecting a negative effect from the EU referendum and the share of firms expecting a positive effect are among the highest for the UK. About 24% of UK firms expect a negative effect; 8% of firms – primarily micro firms – expect a positive effect.

**Figure 35** Expected effect of outcome of Brexit referendum on investment activities. Country comparison.



From a sectorial point of view, manufacturing firms are among those that are most concerned about the potential negative effects of the outcome of the Brexit referendum. The share of manufacturing firms expecting a negative effect of the Brexit vote clearly outweighs the share of firms expecting a positive effect (-13% on balance). This reflects the stronger export orientation of manufacturers and their generally closer integration into global value chains compared to firms active in other industries.

**Figure 36** Expected effect of outcome of Brexit referendum on investment activities. Net balances.



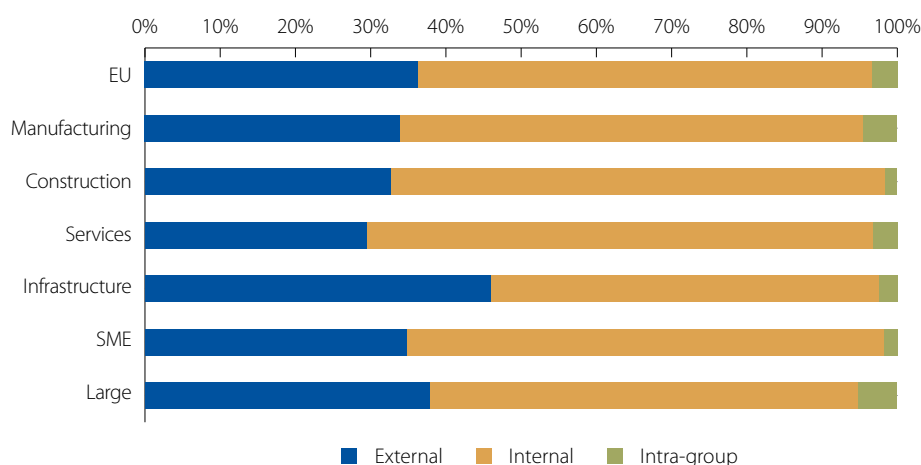
Note: Net balance is the share of firms seeing a positive effect minus the share of firms seeing a negative effect

## 1.3. Investment finance

### 1.3.1. Firms' use of internal versus external financing

**Firms tend to finance their investment predominantly through internal sources.** While internal funds or retained earnings such as cash or profits amount to almost two thirds of total investment of the average firm (60%), a considerable contribution is also made by external sources (36%). A small part of the investment capital is sourced through intra-group funding such as loans from a parent company (3%); the latter is most used among larger companies (where intra-group funding accounts for, on average, 5% of total firm funding) (Figure 37).

**Figure 37** Source of investment finance.



Base: All firms who invested in the last financial year (excluding don't know/refused responses).

Q. Approximately what proportion of your investment in the last financial year was financed by each of the following?

The survey results tend to support the 'pecking order theory' of firms' financing decisions, which states that firms prefer using internal funds to more expensive external sources for their investment plans<sup>11</sup>.

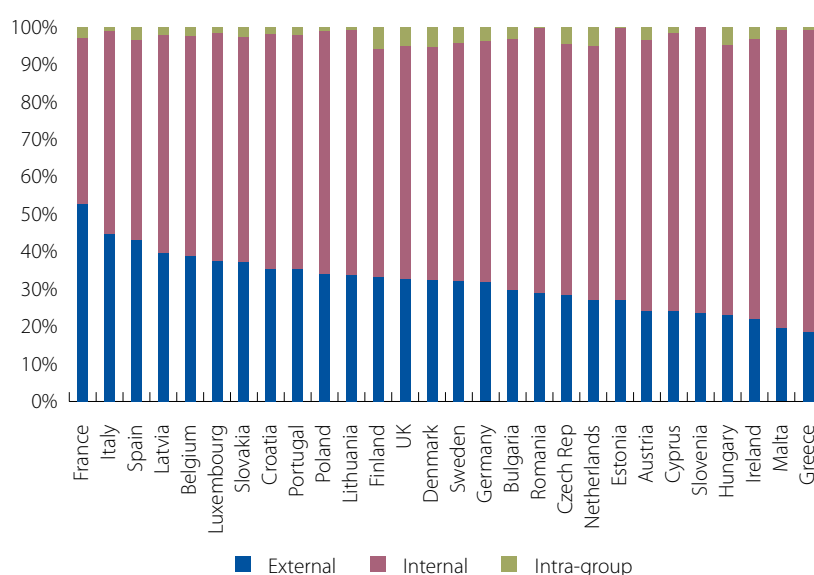
**Firms that invest heavily in intangibles tend to rely more on internal funds**, presumably because they have more problems providing the collateral to access external sources of finance.<sup>12</sup> Conversely, (more capital intensive) larger firms and firms active in the infrastructure sector have a higher external financing share.

11 See the seminal work by Majluf and Myers (1984), 'Corporate financing and investment decisions of firms when firms have information that investors do not have', *Journal of Financial Economics*, vol. 13, n. 2, pp. 187-221, and Berger, A. N., & Udell, G. F. (1998), 'The economics of small business finance: The roles of private equity and debt markets in the financial growth cycle', *Journal of Banking and Finance*, 22, 613-673. Other business surveys lead to similar results, for the UK, Saleheen and Melonina (2017), 'The financial system and productive investment: new survey evidence', Quarterly Bulletin 2017 Q1, and ECB (2016) Report on the results of the Survey on the Access to Finance of Enterprises in the Euro Area – April to September 2016, <https://www.ecb.europa.eu/press/pr/date/2016/html/pr161130.en.html>.

12 The correlation also holds in an econometric setting where the proportion of intangible investments are regressed on a set of dummies indicating whether a firm is using internal and external finance, an indicator of finance constraints and the interactions between external finance and finance constraints. In addition the specification also includes a set of control dummies to disentangle the overall effect of financial constraints on investment from firm characteristics (firm size, age and sector of activity) and from country differences (simple country dummies).

**The large cross-country variation in the breakdown of investment finance between internal and external sources suggests a strong country dimension in firms' financing mix** (Figure 38). With an average share of around 53%, French firms champion the reliance on external financing compared to other firms in our sample, followed by Italian and Spanish firms. On the lower side, only around 20% of Greek and Maltese firms reported having used external finance for their investment expenditures. The low share of external financing in Greece is most likely a reflection of the country's tight credit conditions and the attempt of Greek lenders to deleverage and reduce risk exposure. Intra-group financing is reported more often in those countries mostly related to the German-Austrian value chain, in Nordic countries and in countries where holding companies are mostly concentrated.

**Figure 38** Source of investment finance by country.



Base: All firms who invested in the last financial year (excluding don't know/refused responses).

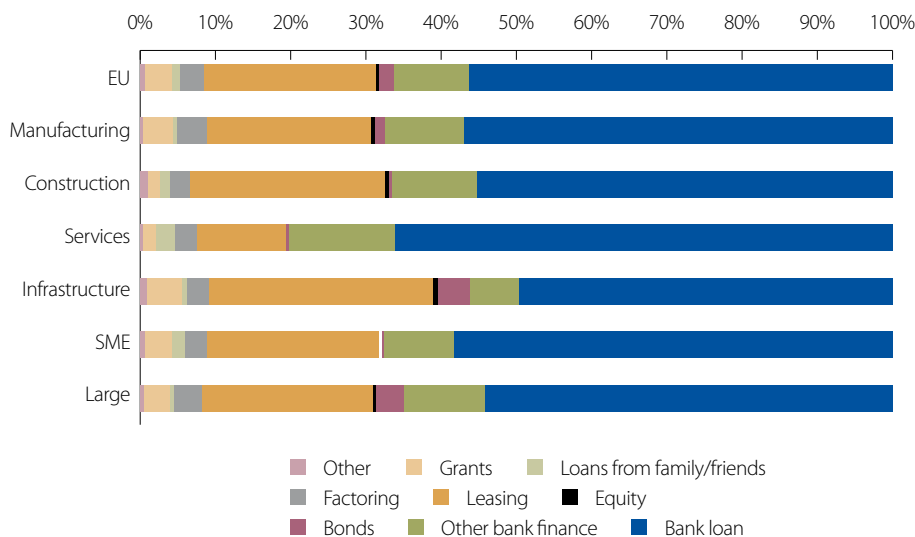
Q. Approximately what proportion of your investment in the last financial year was financed by each of the following?

**16% of firms that invested in the last financial year stated that they were happy to rely exclusively on internal sources of funding to finance their investment activities and as such they did not even apply for external finance.** This share was highest for firms active in Austria, Denmark, Finland and Estonia (with nearly a quarter of investing firms) and lowest in Latvia, Cyprus and Slovakia (with less than 1 in 10 firms stating that they are happy to rely solely on internal funds to finance their investment activities). A simple regression exercise shows that the sufficiency of internal sources of finance is driven by high profitability (of high productivity firms) as well as investment activities in areas with lower investment intensity (such as investments in software, data and website activities).

### 1.3.2. External sources of investment finance

**Bank financing is the main external financing source, while capital markets are rarely used.** Bank financing (bank loans, overdrafts and other credit lines) accounts for more than half of firms' external financing (67%) on average. Leasing or hire purchases are also used to a considerable extent (23%). This might reflect firms' reluctance to take on risk, and preference for more flexible financing products, in an economic climate with an uncertain outlook. Capital markets, both equity and bond issues, are rarely reported by firms in the survey, making up on average only 0.4% and 2% of external finance. Grants account for on average around 3% of firms' external financing (Figure 39).

**Figure 39** Type of external finance used for investment activities.



Base: All firms who invested in the last financial year (excluding don't know/refused responses).

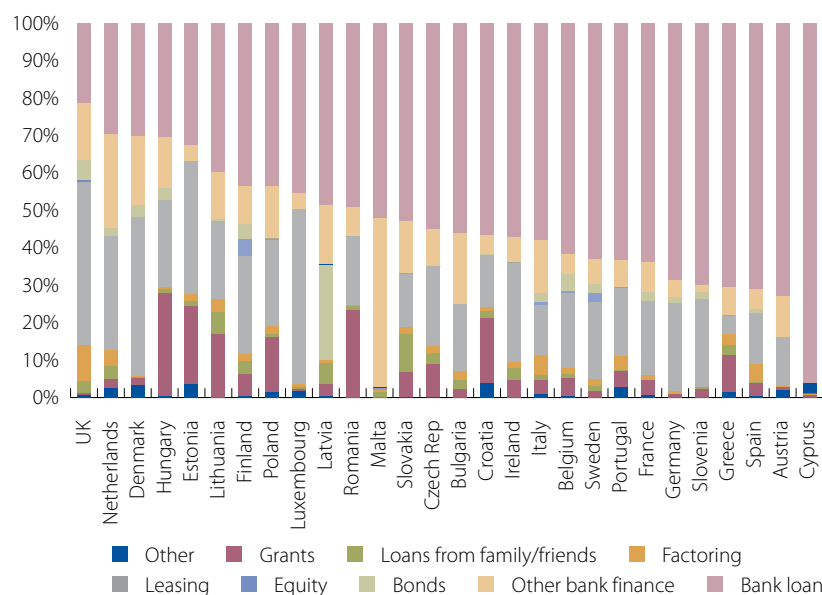
Q. Approximately what proportion of your investment in the last financial year was financed by each of the following?

**The dominance of bank loans over other external financing instruments is more pronounced among SMEs and firms active in the service sector.** Leasing and hire purchases are used to a large extent in the infrastructure and construction sectors and much less by the service firms, mainly due to the nature of their business. According to the survey replies, factoring is used by broadly the same percentage of firms across sectors.

**The UK stands out as the country that is least bank-based, with a variety of other financial instruments, while Malta and Cyprus are at the other end of the spectrum, with almost no alternative to bank-based financing.** Bank loans, overdrafts and credit lines account for around 40% of external funds for firms in the UK, Hungary and Estonia and around 50% in Denmark, Lithuania and Luxembourg, where the external financing mix is somewhat more balanced. In the UK, Denmark and Luxembourg leasing accounts for a relatively large share of firms' external financing mix partly due to a favourable fiscal treatment<sup>13</sup>. Among the large European countries, those that rely the most on bank financing are Spain, Germany and Italy (where bank instruments account for approximately 76%, 73% and 72% of external financing), dwarfing other external financing sources.

**Grants used to finance investment activities are mainly concentrated in a few countries.** The use of support from public resources is more widespread among firms in countries where the allocation of EU funds is relatively high, such as Hungary (28%), Romania (23%) and Estonia (21%). In these countries grants represent the third most used source of external finance after bank loans and leasing. The EIBIS data suggest that firms in Greece also cover a significant share of their external investment financing through grants (10%).

<sup>13</sup> Traditionally, the largest European leasing market is in the UK, followed by Germany and France. In 2015, Leaseurope's total penetration rate (measured as the amount of overall new leasing volumes granted to businesses divided by investment) was 13.9% ([http://www.leaseurope.org/uploads/documents/LeaseuropeFF\\_15.pdf](http://www.leaseurope.org/uploads/documents/LeaseuropeFF_15.pdf)).

**Figure 40** Type of external finance used for investment activities by country.

**Firms that allocate the majority of their investment to intangibles<sup>14</sup> differ in terms of financing mix.** Specifically, they tend to rely less on external finance, with a share of only 27%, compared to those with lower intangible investment intensity (whose share of external finance is 42%). This can be explained by the fact that intangible assets do not typically qualify as collateral and financial intermediaries tend to be reluctant to extend uncollateralised credit, especially to young firms lacking credit history.<sup>15</sup> In addition, firms that invest heavily in intangibles tend to rely relatively more on bank loans and relatively less on leasing (compared to those that invest more in tangible assets).

<sup>14</sup> Firms with high intangible investment intensity are defined as firms that invest 50% or more in intangibles. 35% of firms in the EU make the majority of their investment in intangibles.

<sup>15</sup> See WEF and EIB (2017), 'Beyond the Equity-Efficiency Trade-Off: Practical Ideas for Inclusive Growth and Competitiveness in Europe', White Paper.

**Box 5 Investment behaviour of young firms**

An important dimension in any analysis of firm activity is age. In this box, we compare investment and investment finance decisions by younger firms with those of older ones. What we find is that young firms are more dynamic in terms of jobs creation, invest more in intangibles and make recourse to family and friends for their financing more often. Although bank loans remain the major source of finance, young firms report more often that they are finance-constrained.

In the EIB sample, around 6% of the firms are under five years old, 11% are between six and ten years old and the rest are over ten years old. Given that the firms that were chosen to participate in the survey had a minimum size threshold of five employees, the younger companies in our sample may not be representative of the population of young companies overall (but only the larger ones).

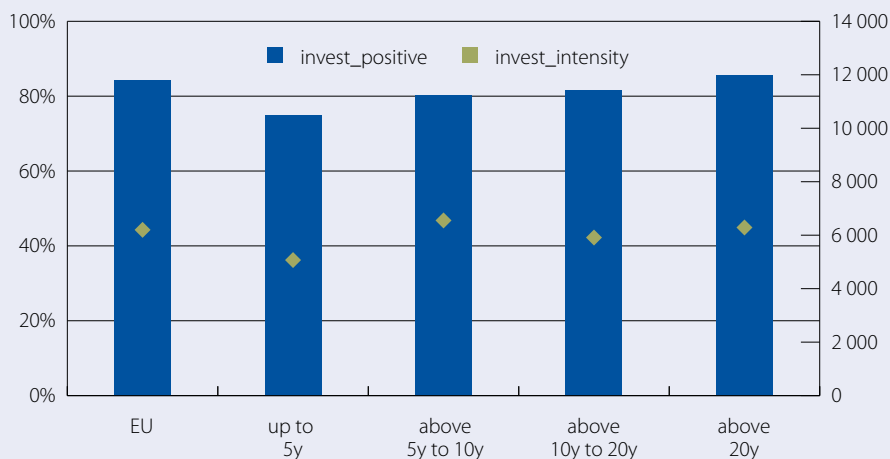
This notwithstanding, it is useful to examine the investment situation of young firms (vis-à-vis that of older ones), given their economic importance. Table 1 below shows three-year employment growth by size class and age category. What it illustrates is that, in line with the literature on young companies, across all size classes young firms show, on average, more dynamism (in terms of employment generation) than older ones.

**Table 1 Three-year-employment growth by firm age and size.**

	Total	Micro	Small	Medium	Large
up to 5y	11.3%	4.7%	13.7%	11.6%	31.5%
above 5y to 10y	9.1%	2.4%	12.8%	11.7%	14.1%
above 10y to 20y	4.0%	-0.5%	3.2%	6.8%	10.6%
above 20y	1.9%	-1.0%	0.5%	2.7%	5.1%

Figure 41 shows firm investment activity by four age groups, with the youngest firms being defined as operating for up to five years and the oldest as operating for more than 20 years. What it shows is a positive relationship between firm age and the share of firms investing. While the overall share of investing firms stands at 84%, there is a large gap between young firms and old ones (with 75% and 86% of firms investing among young firms and old firms respectively).

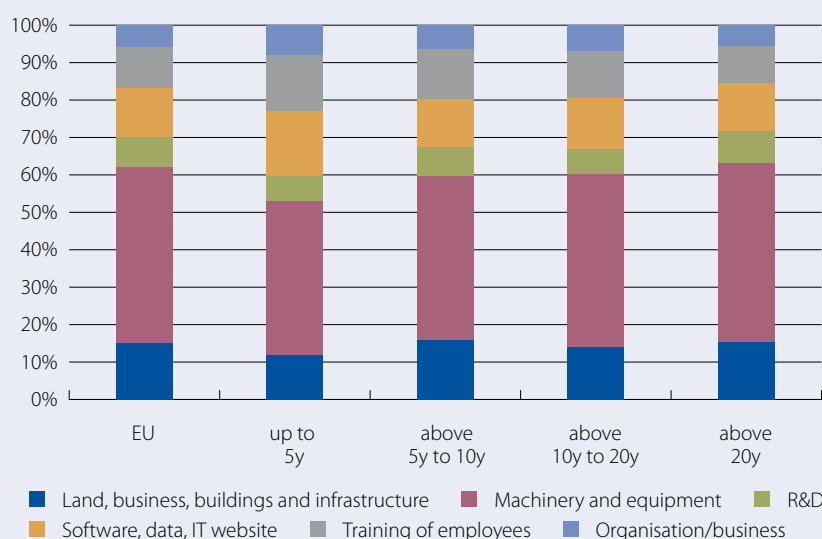
**Figure 41 Investment activity by age.**



The difference between younger firms and older ones is even more pronounced when it comes to firms' investment outlays, with young firms investing roughly 20% less (per employee) than older ones. Interestingly, the change in firms' investment intensity is not continuous; instead, we find a substantial jump in firms' investment intensity from firms younger than five years to firms aged five to ten years and hardly any change thereafter.

The age threshold of around five years carries over to several other dimensions of firms' investment activities: while firms across all age groups concentrate most of their resources on investments in tangible assets (most notably machinery and equipment), young firms tend to allocate a significantly larger share of their investment activities to investments in intangibles. The big jump occurs again around age five, when firms' investment patterns become much more comparable to that of older firms (Figure 42).

**Figure 42** Investment area by age.

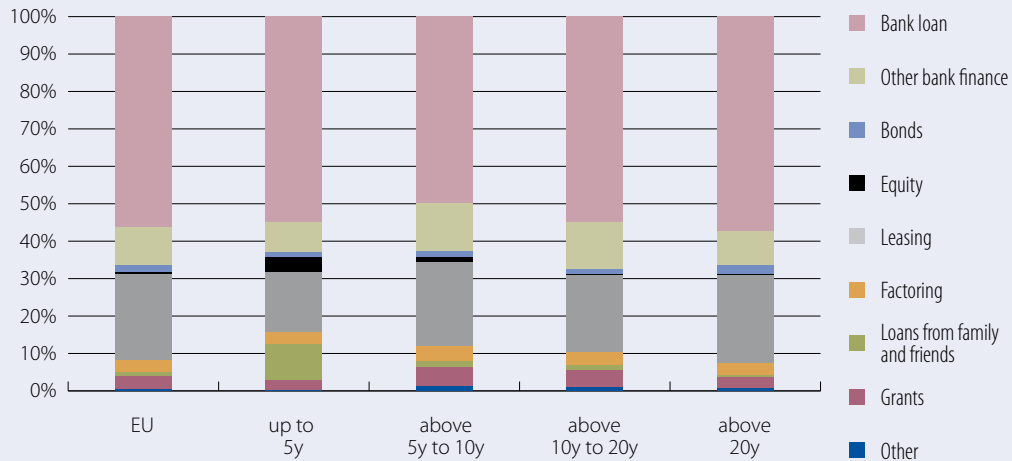


A similar picture arises for firm financing: Figure 43 shows that bank loans are the major source of finance (for investment activities) across all firm age groups. However, the group of firms aged five and younger differs from the older ones insofar as it uses a disproportionately high share of loans from family and friends as well as (external) equity. Both shares are about 15 times higher than those for older firms. Once we move beyond age five, the financing pattern becomes much more homogenous.

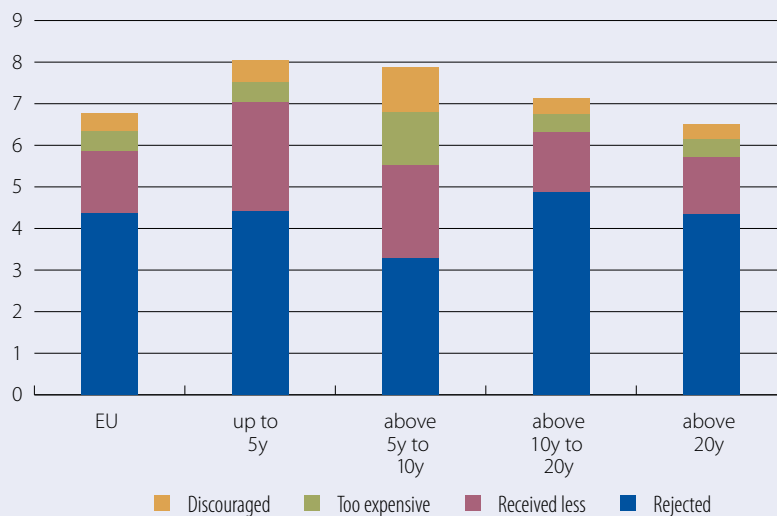
In terms of firms' access to finance, we find a negative relation between firm age and being financially constrained (Figure 44). While the biggest issue for all constrained firms is that their loan applications are rejected, younger firms also report relatively frequently that they received less than expected/needed. Firms between six and ten years old report relatively often that they found the loan offer too expensive or did not apply because there were discouraged (2.5 times higher than average). This could be linked to the higher demand for external finance on the one hand (due to a higher investment intensity) and the fact that collateral is not yet sufficiently available for firms of this age group.



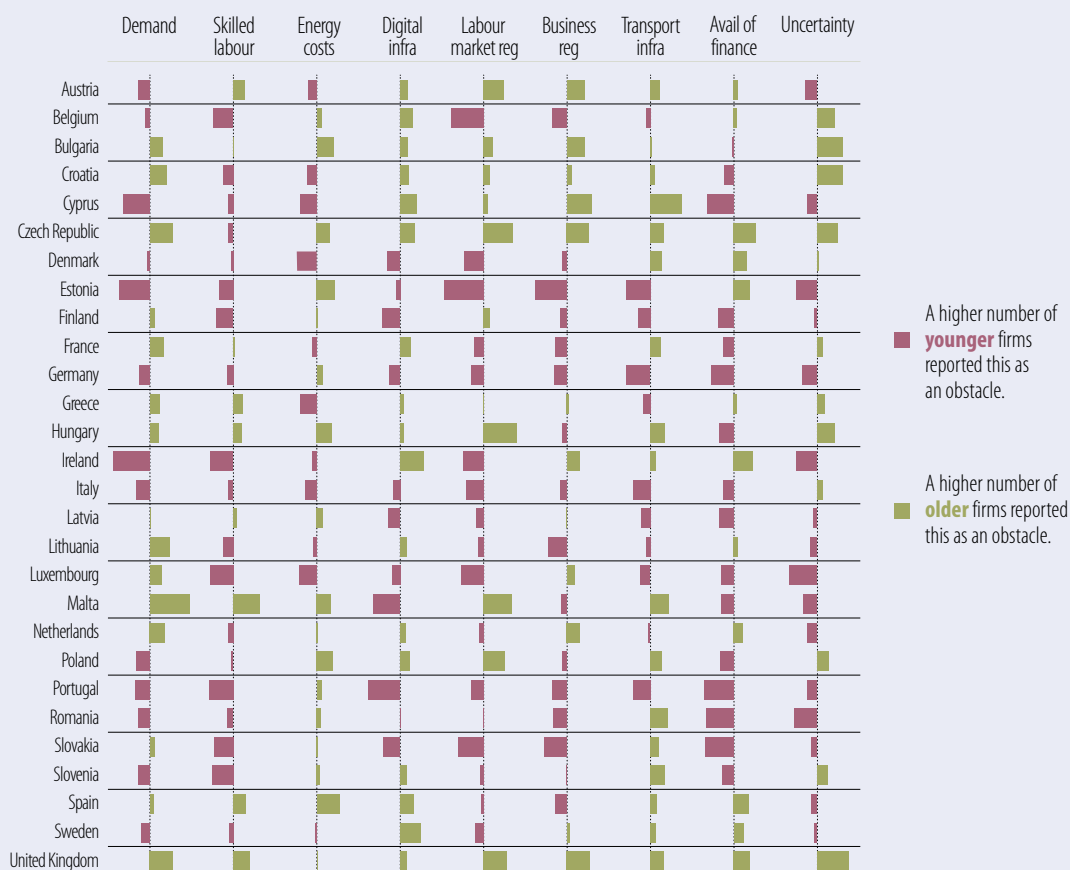
**Figure 43 Sources of investment finance by age.**



**Figure 44 Financing-constrained firms by age.**



If we compare differences in what young firms (< 5 years) and older firms (>5 years) consider to be the main barriers to investment, we find a strong country dimension (with young firms at a systematic advantage/disadvantage in some countries vis-à-vis older firms across all dimensions), but very few barriers that affect younger firms differently from older firms across all countries. In Figure 45 we report the difference in the shares of young and older firms naming individual areas as an obstacle to investment across countries. The red bars indicate a higher share of young firms naming an area as an obstacle, green bars a higher share of older firms.

**Figure 45** Barriers to investment. Difference younger vs older firms.

*Base: Differences between the average of firms that reported that they have been operating for 2-5 years and 6-10 years and firms that reported that they have been operating for 11-20 years and more. All firms (excluding don't know/refused responses).*

*Q: Thinking about your investment activities in [COUNTRY], to what extent is each of the following an obstacle? Is it a major obstacle, a minor obstacle or not an obstacle at all?*

*Note: Red bars indicate a higher share of young firms naming an area as an obstacle while green bars indicate a higher share of older firms.*

What the table shows is that in some countries – including Estonia, Germany, Italy, Luxembourg and Portugal – young firms tend to be at a disadvantage vis-à-vis older firms across all areas. The biggest difference between young and old firms is seen in Portugal, where the average difference in the share of young firms perceiving an area as an obstacle is some 17 percentage points higher than for older firms.

At the other end of the spectrum, there are some countries where younger firms seems to have a somewhat more positive view than older ones: this is true in particular for the UK and the Czech Republic, where the share of young firms reporting an area as a barrier to investment is generally lower than the share of old firms; that is true for all areas except the (un)availability of skilled labour.

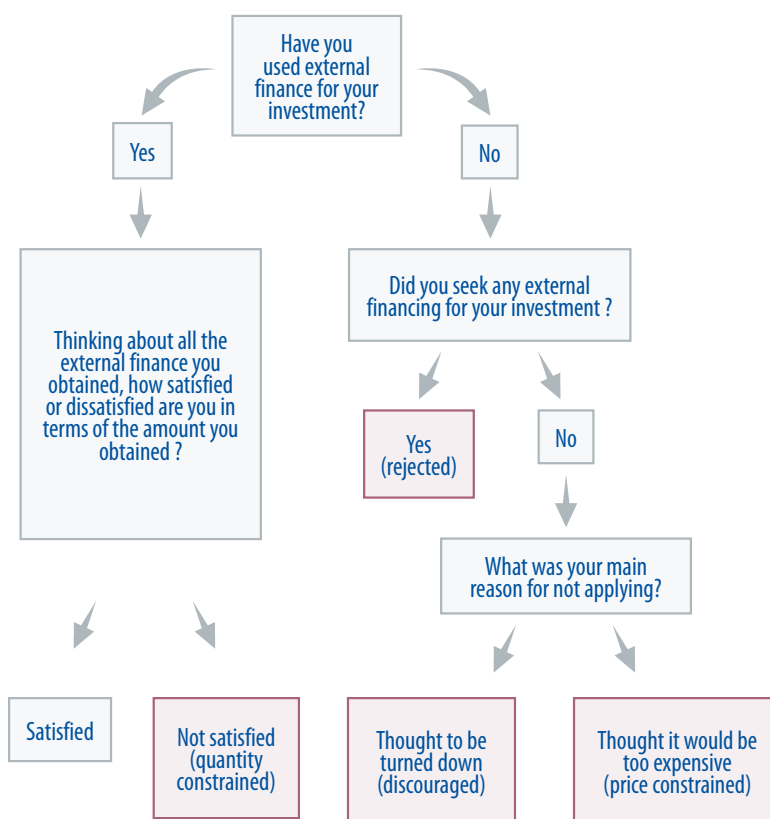
Looking at the barriers to investment across countries, the differences between younger and older firms do not seem to follow a pattern. A minor exception is 'availability of finance', which is more of an issue for younger firms across most countries. Here young firms face on average the most severe disadvantage compared to older firms (by about 4.9 and 5 percentage points respectively).

### 1.3.3. Finance-constrained firms

According to the EIBIS definition, finance-constrained firms are firms that have used or were willing to use external finance for their investment but either were not able to get finance when seeking it, received less than they asked for, or did not seek external finance because they thought that the borrowing costs would be too high or that they would be turned down anyway.<sup>16</sup>

The schema below shows how the financially constrained indicator is created. The reference group of firms are those that invested (more than 80% of firms in the sample); among those around two-thirds sought external funds, while one-third signalled that they were not looking for external finance. Along the decision tree, the indicator combines information on formal (rejected and quantity-constrained firms) and informal (discouraged borrowers and price-constrained ones) types of financial constraints<sup>17</sup>. In Box 6 the indicator is compared to the financing obstacles indicator constructed using the Survey on the Access to Finance of Enterprises (SAFE).

**Schema 1** Correspondence between components of the finance-constrained indicator and EIBIS questions.



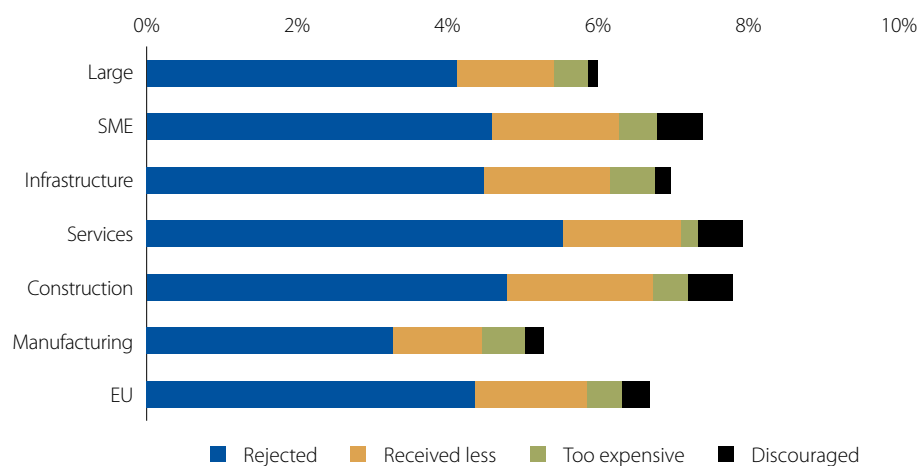
Base: All firms who invested in the last financial year (excluding don't know/refused responses).

<sup>16</sup> Financing constraints are a key measure of firms' access to finance and can serve as an indicator for financing gaps. It is important to emphasise, however, that being financing-constrained is not always a sign of financing gaps, nor are financing gaps always linked to financing constraints. The efficient allocation of resources requires finance to flow to investment projects that yield the highest returns; for low productivity firms this means that financing constraints need not indicate any financing gap (but may simply be a reflection of low returns). On the other hand, firms that do not experience any financing constraints may find themselves underinvesting in certain types of project (e.g. if these come with significant positive economic spill-overs, such as most investments in research and development). In these cases, the absence of financing constraints does not mean an absence of a financing gap.

<sup>17</sup> Recent evidence suggests that informal credit constraints (i.e. being a discouraged borrower) are more important in some countries and categories of firms than formal ones (Brown et al., 2011, 'Who Needs Credit and Who Gets Credit in Eastern Europe? Economic Policy 26 (65): 93–130), and that these informal constraints can vary systematically across countries (Ferrando and Mulier, 2015, 'The real effects of credit constraints: evidence from discouraged borrowers in the euro area', ECB WP n. 1842).

**Seven percent of firms that invested are finance-constrained.** As explained, the extent to which firms finance their investment externally is not an outcome of firms' decisions alone, but depends crucially on the willingness of lenders and equity investors to supply funds. In particular, about 7% of firms that have invested can be classified as finance-constrained, considering all the different components of financial constraints (Figure 46).

**Figure 46** Share of finance-constrained firms.



Base: All firms

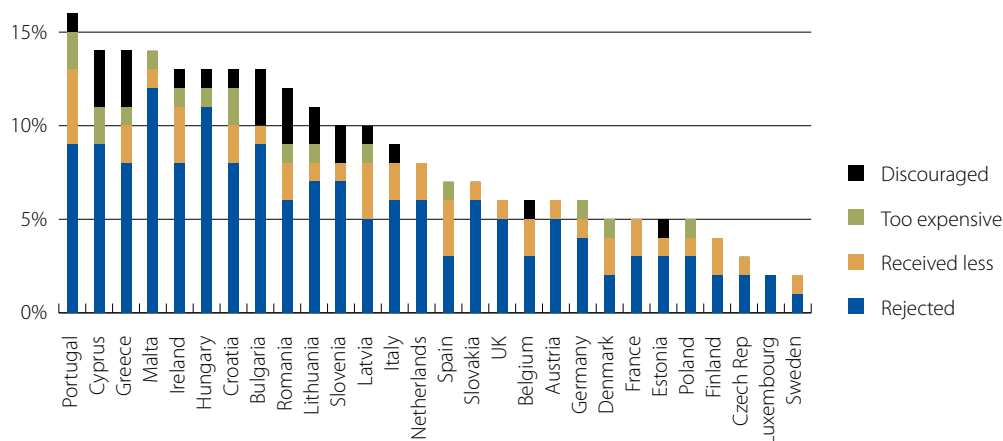
Q. Finance-constrained firms include those dissatisfied with the amount of finance obtained (received less), firms that sought external finance but did not receive it (rejected) and those that did not seek external finance because they thought borrowing costs would be too high (too expensive) or they would be turned down (discouraged).

**Small and micro firms are more likely to be finance-constrained, as are service sector firms.** The prevalence of finance-constrained service sector firms can be linked to the fact that collateral demands are more difficult to meet in less capital intensive sectors. As for size, SMEs are generally characterised by higher risk profiles which make them less attractive to lenders. As shown in Box 5, there is also a strong relationship between firm age and being financially constrained. In particular, while 7% of SMEs are reporting difficulties to access finance, the percentage goes up to 16% when firms are less than five years old.

**Finance-constrained firms are more frequent in countries that experienced a strong economic downturn.** Unsurprisingly, a high proportion of Portuguese (16%), Greek and Cypriot (14%, in both countries) firms are finance-constrained according to the above definition. This reflects tight supply of capital presumably due to bank deleveraging and increased risk aversion among lenders. By contrast, finance in Sweden and Luxembourg is much more accessible as only 2% of firms reported some kind of obstacles to obtaining finance for their investment activities.

**Looking at the various components of the finance-constrained indicator, finance rejections are the most common obstacle to finance across countries.** However, in Cyprus and Greece, as well as in Bulgaria and Romania, discouragement from applying for a bank loan plays also an important role (Figure 47).

**Figure 47** Share of finance-constrained firms by country.



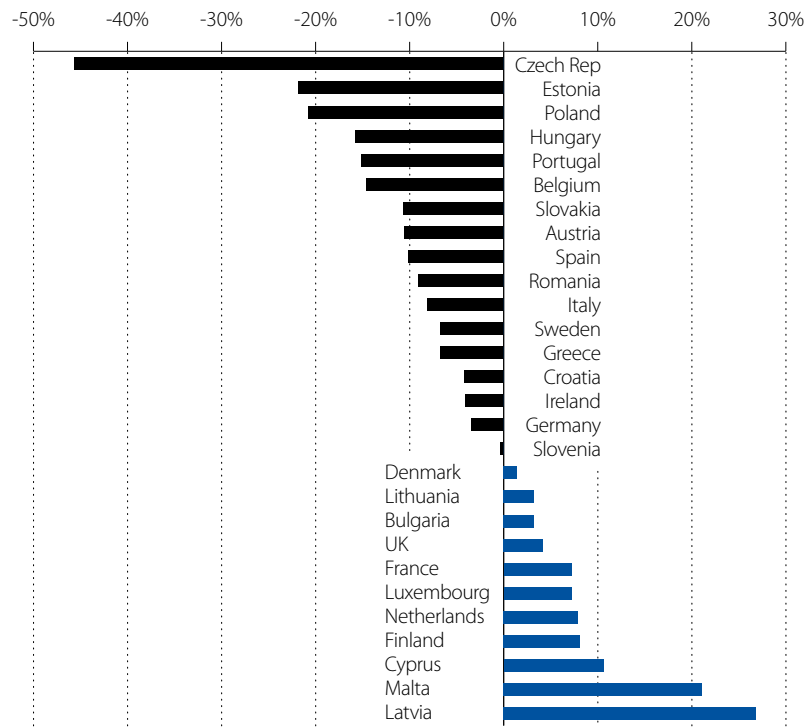
Base: All firms

Q. Finance-constrained firms include those dissatisfied with the amount of finance obtained (received less), firms that sought external finance but did not receive it (rejected) and those that did not seek external finance because they thought borrowing costs would be too high (too expensive) or they would be turned down (discouraged).

**Firms that do not invest are often held back by financing constraints.** An indirect and more subjective measure of financial constraints can be derived from firms’ replies on whether they consider availability of finance an obstacle to investment activities in general (see section 1.2.5). As the question is asked to the whole sample of firms, it is possible to distinguish between firms that invested and those that did not. In Figure 48 the bars indicate the difference in the percentages of firms that consider access to finance to be a (major or minor) barrier to investment between the two groups of firms.

As expected, in most countries firms that invested consider access to finance to be less a barrier to investment than those that did not invest (bars in black). Differences are statistically significant in the Czech Republic, Estonia, Hungary, Poland, Romania and Spain. In some countries, the perception of financial obstacles seems to be higher for firms that invested than for firms that did not invest (blue bars); however, differences are statistically significant only for the UK and Cyprus.

**Figure 48** Differences in the perception of financial obstacles between firms that invested and those that did not invest, by country (*percentage points*).



*Note: Bars denote the difference in the percentage of firms that perceive availability of finance to be an obstacle and that have invested and those that have not invested.*

**Box 6 A technical comparison of the indicator of financial constraints derived from EIBIS and ECB/EC SAFE**

In this box we relate the indicator of finance-constrained firms derived from the EIB survey to the financing obstacles indicator constructed using the Survey on the Access to Finance of Enterprises (SAFE).

Most of the survey-based research on determinants of firms' difficulties to access external finance in the European context relies primarily on the firm-level data obtained from SAFE conducted on behalf of the European Commission and the European Central Bank. SAFE gathers facts about firms' access to finance within the European Union. It is an ongoing survey that has collected data every six months since 2009 and systematically covers euro area countries. Firms in the non-euro area countries were initially surveyed every two years and since 2013 have been so every year.<sup>18 19</sup>

The two surveys complement each other insofar as SAFE questions focus on financing conditions for general business activities of firms (including working capital and investment activities) whereas firms in the EIBIS are asked to answer with regard to their investment finance decisions only.

A comparison between the two surveys is not straightforward as there are differences which relate to sample selection, weighting scheme, time framework and, more importantly, the very definition of financing constraints.<sup>20</sup>

In order to perform a meaningful comparison, we implemented some adjustments for the sample differences between the two surveys: that is, we consider in the SAFE sample only firms with five or more employees (like in the EIBIS) and we made the time framework as close as possible. In the case of SAFE, we considered the results for the period from April to September 2015 when data for all EU countries are available. This is compared with EIBIS data that cover the 2015 financial year.

While the SAFE sample is stratified by firm-size class, economic activity and country, as in the EIBIS, the calibrated weights are different. In order to restore the proportions of the population of firms, SAFE data are calibrated using weights based on the number of persons employed whereas the results of the EIBIS presented in this report are weighted using value added. To facilitate the comparison we use also weights based on employment data for the EIBIS replies.<sup>21</sup>

We turn now to the definition of financially constrained firms. In the SAFE, the financing obstacles indicator is defined as the total of the percentages of firms reporting loan applications which were rejected, loan applications for which only a limited amount was granted, and loan applications which resulted in an offer that was rejected by the firm because the borrowing costs were too high, as well as of firms which did not apply for a loan for fear of rejection (i.e. discouraged borrowers).

18 See [https://www.ecb.europa.eu/stats/ecb\\_surveys/safe/html/index.en.html](https://www.ecb.europa.eu/stats/ecb_surveys/safe/html/index.en.html) for the euro area and [http://ec.europa.eu/growth/access-to-finance/data-surveys\\_en](http://ec.europa.eu/growth/access-to-finance/data-surveys_en) for the EU28.

19 For more information on SAFE see Methodological information on the survey and user guide for the anonymised micro dataset.

20 The firm population from which the samples are derived is also different. Firms in the SAFE sample are randomly selected from the Dun & Bradstreet database while in EIBIS from ORBIS BvD.

21 There might therefore be some differences on the percentages of finance-constrained firms across countries reported in this box and those presented in the previous sections.

In comparison with the EIBIS indicator, the SAFE indicator published by the ECB focuses on one specific instrument (bank loans) and is defined for the set of firms that find bank loans relevant for their activities, although they might have not used them during a specific period of time. In the EIBIS, the reference group of firms are those that have invested and either used (any kind of) external funds for their investment activity or (if they did not use them) sought them.

The components of the SAFE financing obstacles are directly related to a loan application and to the results of the negotiations between firms and financial intermediaries. Therefore, although they are qualitative indications provided by firms, firms themselves might refer to specific events ('hard' data). A kind of 'softer' information is associated instead with the replies by firms on being discouraged. Conversely, in the case of the EIBIS indicator the formulation of the questions is more subjective and relates to firms' 'perceptions' of their difficulties in accessing external funds.

At *prima facie*, one would expect that financing constraints should be smaller when firms are able to carry out their investment plans, hence when firms are signalling 'healthy' behaviours in their business activity. At the same time, given that investment plans are often bulky and require more external funding, firms may have a more negative attitude towards their ability to access finance with investment projects in mind than when judging based on a more general mind-set of running their business.

Bearing in mind these *caveats*, it is nevertheless interesting to compare the two indicators across countries, as in Figure 49. First of all, on average, 7.4% of firms in the EU suffer some kind of financing constraint according to the SAFE indicator<sup>22</sup> while the percentage is 5% in the EIBIS. Second, we find that the two indicators are broadly related to each other and intuitive as they show the highest problems in accessing finance in countries with more problems in the financial sector.

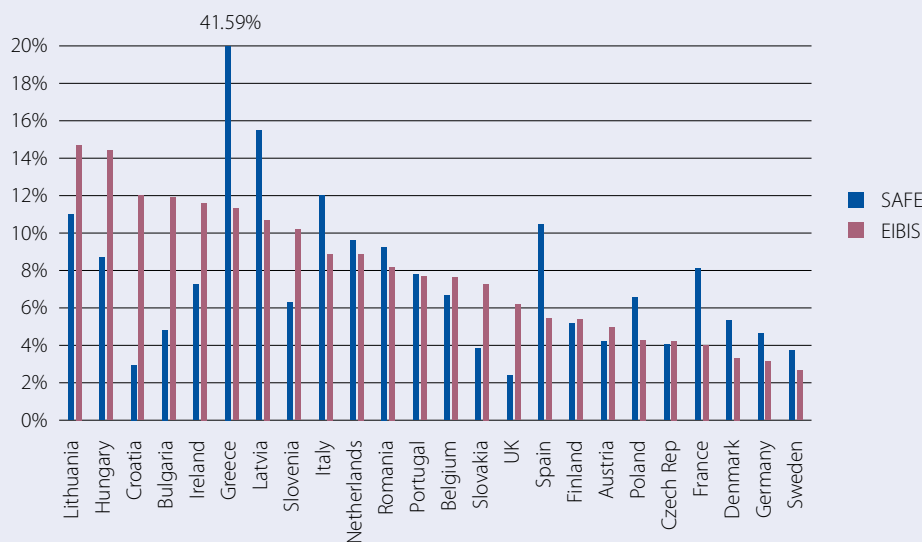
The figure shows that in many countries the EIBIS indicator is higher than the SAFE one, pointing to a larger fraction of firms that find it more difficult to get overall external finance than just bank loans for their investment. However, this is mostly in those countries where non-bank loans play a more important role and where the investment intensity is lower (as in Malta, Croatia, Bulgaria, Ireland and Hungary). Differences are accentuated by the fact that the EIBIS refers to all financing instruments (e.g. equity, leasing, etc.), which are often associated with higher rejection rates than pure bank loans (the reference product of SAFE).

This does not seem to be the case for a few countries where the SAFE indicator signals higher percentages of firms with problems to access bank loans, as in Greece (with a magnitude five times higher than the EU average) but also in Spain and France.

22 Excluding Greece, whose percentages are very dissimilar between the two surveys, the figure stands at 6.8%.



**Figure 49** Indicators of financially constrained firms in SAFE and EIBIS across countries (percentages).



Source: ECB/EC SAFE and EIBIS and EIB calculations.

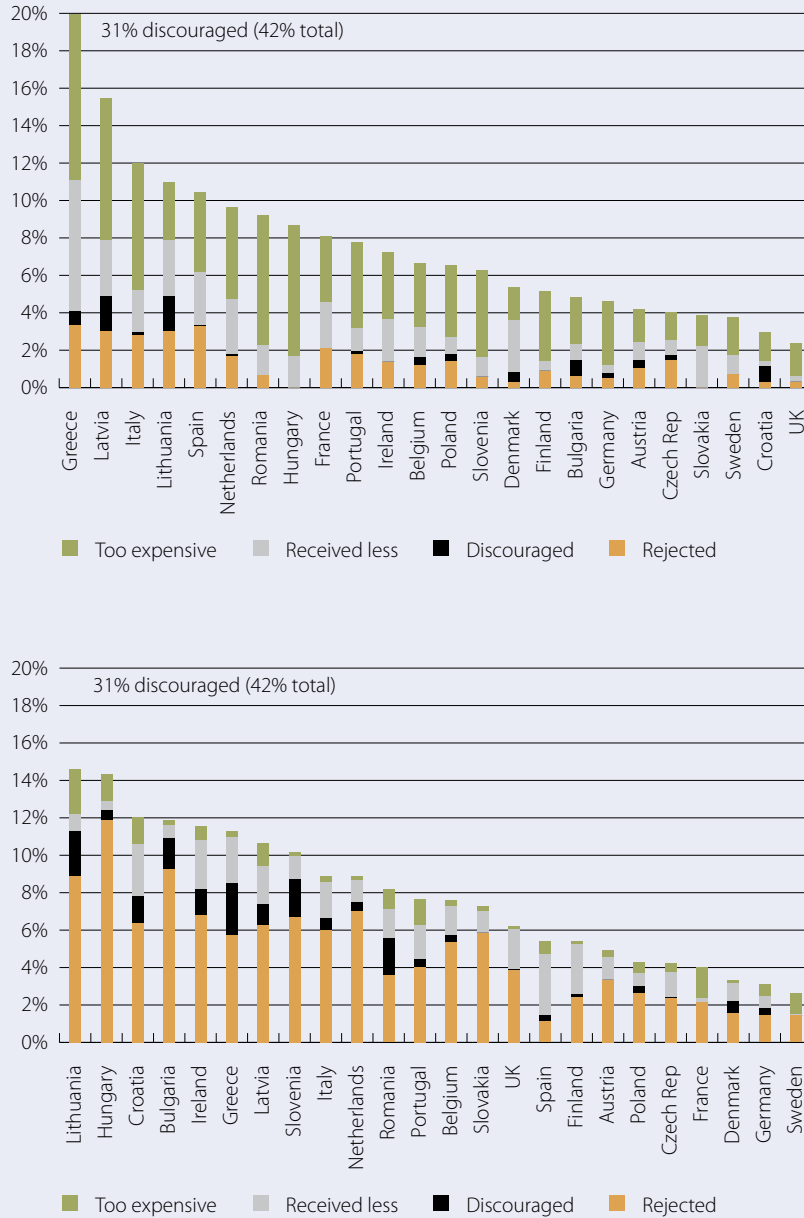
Note: All figures are weighted by number of employees. SAFE data is based on firms with five or more employees and refer to wave 13 (April-September 2015) and EIBIS data to 2015 financial year. Data for Cyprus, Estonia, Luxembourg and Malta are not reported due to the small sample in SAFE.

Finally, there are some differences also in the composition of financing constraints which are related to the definitions of discouraged borrowers versus rejected ones. The approach to defining the two differs between the two surveys. Figure 50 shows that the informal constraints are very important when a firm decides whether to apply or not for a bank loan. In fact, the proportion of discouraged firms is very high across countries in the SAFE indicator in comparison with the rejected one and also in comparison with the corresponding component in the EIBIS indicator. It has been shown that the majority of discouraged borrowers in the SAFE survey tend to be risky firms which would have most probably been unable to get a loan if they had applied (Ferrando and Mulier, 2015). A self-selection process could have been in place that has reduced the potential demand for bank loans and hence eventual rejection by banks.

In the EIBIS indicator most firms are classified as 'rejected'. As described in the main text, 'rejected firms' refers to firms that, while investing, have not made use of external finance although they have sought it. The formulation is wide enough to include not only firms that were formally rejected by financial intermediaries but also firms that might have been discouraged in their search for finance. Therefore the concepts of discouraged and rejected firms are interconnected in both surveys.

Overall, both surveys provide useful and complementary information on the number of finance-constrained firms in the EU countries.

**Figure 50** Components of financial constraints by country. SAFE indicator (first graph) vs EIBIS indicator (second graph).



Source: ECB/EC SAFE and EIBIS and EIB calculations.

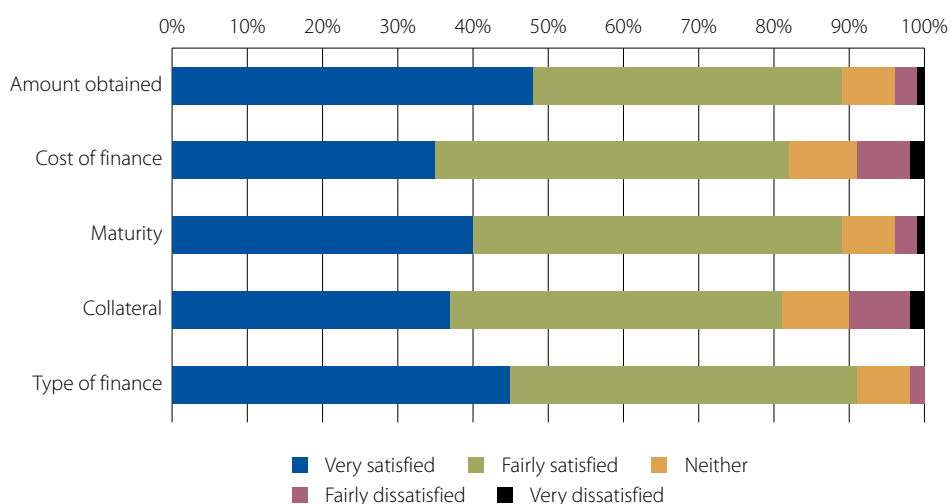
Note: All figures are weighted by number of employees. SAFE data is based on firms with five or more employees and refer to wave 13 (April-September 2015) and EIBIS data to 2015 financial year. Data for Cyprus, Estonia, Luxembourg and Malta are not reported due to the small sample in SAFE.

### 1.3.4. Satisfaction with external financing

**Firms that used external finance are on balance satisfied with the amount, cost, maturity, collateral and type of finance received.** SMEs are somewhat less satisfied with the external finance that they received than large companies, with the biggest difference (vis-à-vis larger companies) occurring in terms of collateral requirements (Figure 51).

**Firms who invest more in intangibles are more likely to report that they are dissatisfied with the external finance conditions.** This holds along all the dimensions, including the amount, cost, maturity, collateral and type of finance received.

**Figure 51** Satisfaction with external finance obtained.



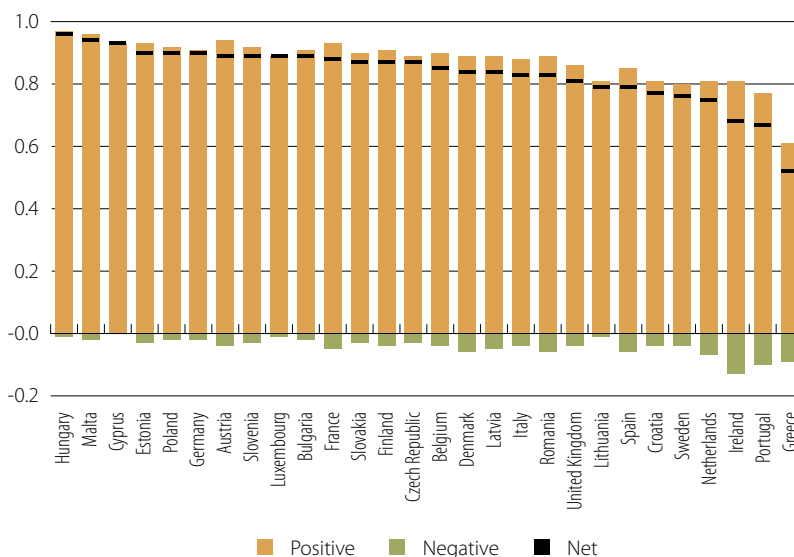
*Base: All firms that used external finance in the last financial year (excluding don't know/refused responses).*

*Q. How satisfied or dissatisfied are you with...? Net is defined as the difference between the share of firms very/fairly satisfied and those fairly/very dissatisfied with ....*

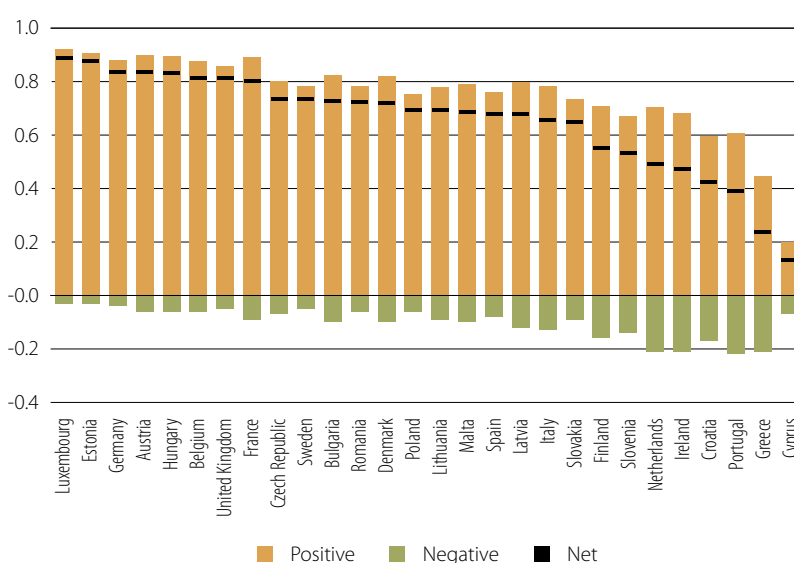
**Most of the firms are satisfied with the amount of finance they received.** Among all firms that succeeded in obtaining external finance, 84% reported on net that they were satisfied.

**The amount of finance obtained is more often considered sub-optimal among construction firms and smaller firms.** In the overall sample about 4% of firms did not obtain as much as they would have liked. Higher shares of dissatisfied firms when it comes to the amount obtained were reported in the construction sector (6%) and especially among micro firms.

**Across countries, shortages of external financing volume are most pronounced in Ireland (13%), Portugal (10%) and Greece (9%)** (Figure 52).

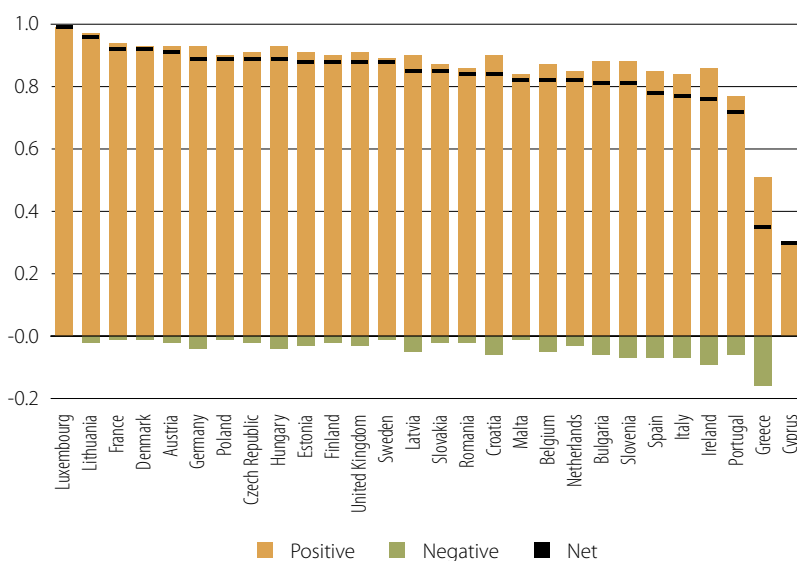
**Figure 52** Satisfaction with external finance by country. Amount obtained.

**The cost of external financing is a particular issue for firms in Greece, Cyprus and Portugal.** Although satisfaction with the costs of external financing is generally lower than that with the other dimensions of external financing obtained, on net the majority of firms that obtained finance (74%) still judge the cost of external funds to be satisfactory (Figure 53). This suggests that external financing costs are generally low, reflecting the pass-through of non-standard monetary policy measures put in place by the ECB to boost inflation to target. Nonetheless, 8% of firms are dissatisfied with the cost of external funds obtained. Elevated external financing costs remain a problem for firms in the Netherlands, Ireland, Portugal and Greece (about 20% of dissatisfied firms) and for those in the service and construction sectors and for micro firms (5-10 employees).

**Figure 53** Satisfaction with external finance by country. Cost of funding.

**Loan maturity is generally less of an issue, except for clients of weaker banks.** The maturity of external financing instruments seems generally well adjusted to the needs of firms: on net 85% of firms are satisfied with the lengths of time over which funds need to be repaid (Figure 54). The exceptions to this overall picture are Greek firms (35%), which seem to face important difficulties raising capital over longer horizons, which is likely to impede their capacity to invest in long-term projects<sup>23</sup>. Although maturities are not a major source of dissatisfaction on aggregate, a recent EIB analysis suggests, that this may nonetheless be an important channel through which banks may make it more difficult for firms to plan investment expenditures.

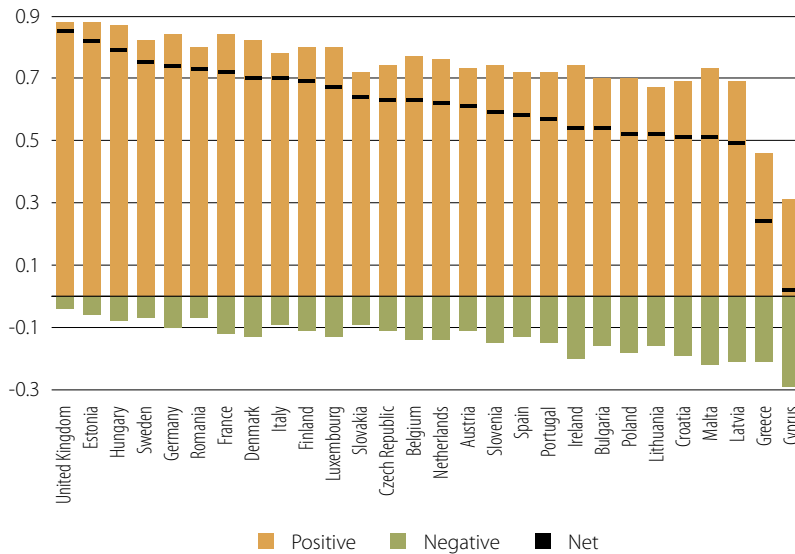
**Figure 54** Satisfaction with external finance by country. Maturity.



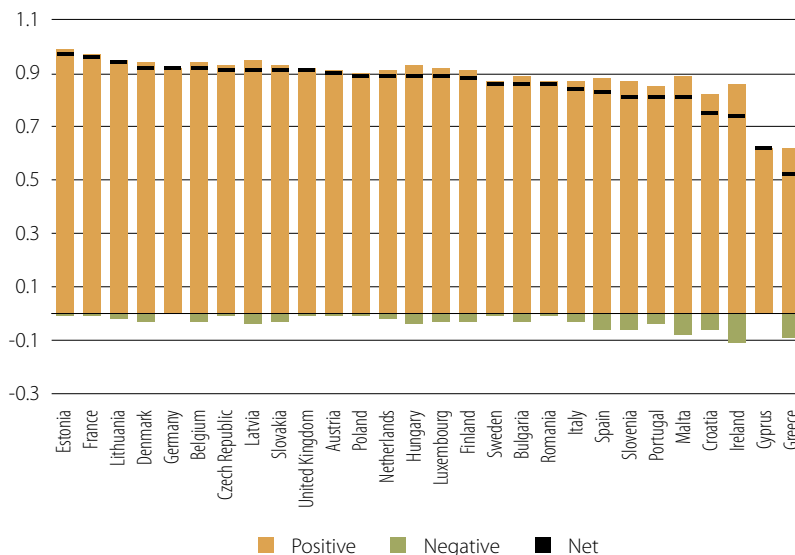
**Collateral requirements are seen as a problem by a more significant share of firms.** Although 70% of firms were on net satisfied with collateral requirements, around 11% reported being fairly or very dissatisfied (Figure 56). In contrast to the other external financing conditions, it seems to be more or less uniformly difficult for firms to come up with the required collateral regardless of their location, with the exception of firms located in the UK where collateral demands seem to be more easily met and the external financing mix is less tilted towards bank loans. The high proportion of firms facing difficulties providing sufficient collateral might reflect the increased risk aversion of lenders and their subsequent major demands for security. Indeed, firms in countries facing difficult economic conditions were signalling more often their dissatisfaction (notably in Cyprus, but also in Greece, Malta and Ireland).

Large firms and firms active in the infrastructure sector are less concerned with collateral required, which is likely related to the fact that the infrastructure sector is more capital intensive than other sectors and large firms dispose of more assets that they can provide as collateral.

<sup>23</sup> In the case of Cyprus, around 70% of firms replied that they were neither satisfied nor dissatisfied and no interviewed firm was dissatisfied with the length of the funding obtained.

**Figure 55** Satisfaction with external finance by country. Collateral required.

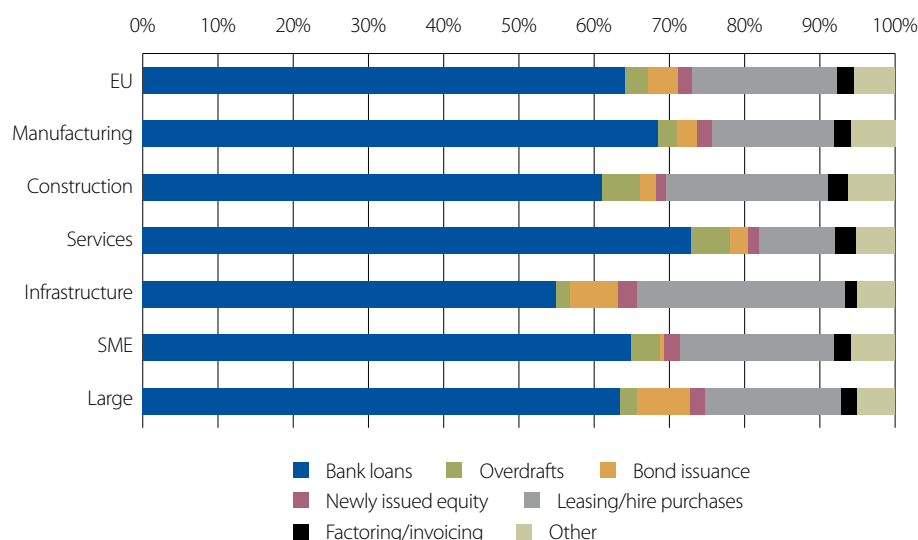
The vast majority of firms in our sample report satisfaction with their external financing mix (89% on net, whereas 2% signalled that they were not satisfied). A rebalancing of external financing instruments seems to be more desired by firms located in Ireland (11% were dissatisfied), Greece (9%) and Malta (8%) (Figure 56). Across sectors, construction firms are more dissatisfied with the type of their external financing instruments (4%).

**Figure 56** Satisfaction with external finance. Financing mix.

### 1.3.5. External finance types that firms want to play a more prominent role

**Firms signal very little change in their external financing mix for the future on average.** Despite the fact that bank loans already figure as the number one source in firms' current external financing mix, an even more prominent role of bank loans was the biggest desire expressed by firms across countries, sectors and size classes (64% in aggregate and 61% in the CESEE region) (Figures 57 and 58). Second place in the list of external financing instruments for investment is taken by leasing or hire purchases: (19%) across countries, sectors and size classes with the exceptions of Malta, Cyprus, Bulgaria and Slovakia, where a high demand for overdrafts (18% in the first two countries and 26% and 15% in the other two) seems to reflect the need for more flexible bank financing<sup>24</sup>. However, the strong desire to increase the role of hire and leasing purchases also suggests that firms are (still) trying to outsource risk in the face of the highly uncertain economic outlook and future demand for products and services.

**Figure 57** Type of finance that firms would like to play a more prominent role in their financing mix.



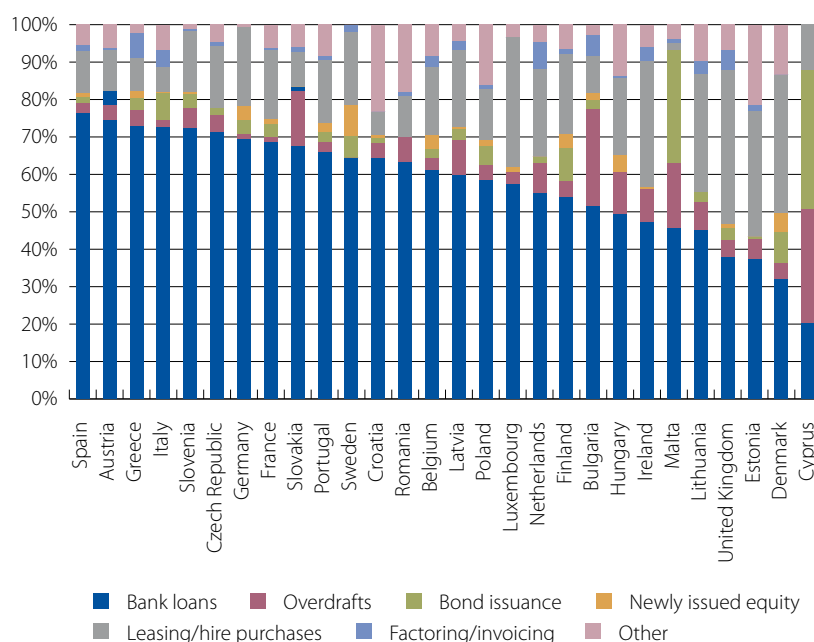
Base: All firms that used external finance in the last financial year (excluding don't know/refused responses).

Q. If you were to seek finance over the next three years, which type of finance would you want to play a more prominent role in your financing mix?

**Very few firms would see a shift in their external financing mix towards capital markets:** Newly issued equity is wished to increase in importance, in aggregate, by only 2% of firms and bond issuance is planned as a future source of capital by only 4% of firms. The reason for this might be the high share of small and medium-sized firms, which find it difficult to pay the fixed costs of raising funds on the capital markets. Consistent with this view is the higher share of large firms that name bond issuance and new equity as sources of funds that should play a larger role in the financing mix.

<sup>24</sup> In Estonia (22%) and Croatia (23%) as well in Hungary (14%) and Denmark (13%) 'other' types of external finance are the second most reported. Specifically, in most cases firms refer to either grants or subsidised loans.

**Figure 58** Type of finance that firms would like to play a more prominent role in their financing mix by country.



Base: All firms that used external finance in the last financial year (excluding don't know/refused responses).

Q. If you were to seek finance over the next three years, which type of finance would you want to play a more prominent role in your financing mix?

## 1.4. Conclusion

This report has provided a snapshot of some of the information gathered by the new EIB Group Survey on Investment and Investment Finance (EIBIS). Although the report is only the beginning of a much bigger research project into the drivers of and barriers to firms' investment and investment financing activities, it already provides a wealth of indications on where we stand in Europe. Some of the main conclusions are as follows:

**Business investment is recovering across Europe.** This comprises all sectors and the majority of EU countries with the exception of Denmark, Latvia, Lithuania, Malta and Estonia.

**This notwithstanding, years of underinvestment have left a mark on the 'quality' of firms' capital stock:** 15% of firms report that their investment activities over the past three years were too low to ensure the success of their business going forward, with the firms reporting underinvestment citing a significantly lower share of machinery and equipment that is state-of-the-art, commercial building stock that satisfies high or the highest energy efficiency standards, and a particular need to adopt new-to-the-firm technologies.

**Underinvestment is largely unrelated to capacity constraints.** Firms that say that they invested too little in the past three years are not more likely to operate at or above capacity than other firms. On average still about 50% of firms operate below capacity, which makes capacity expansion plans of secondary importance to them.

**When it comes to investment by types of asset, the EIBIS data suggest that firms' investment activities are skewed towards tangibles; in particular in the countries of the CESEE region this may hold back the adoption of new technologies.** The bias in firms' investment activities towards tangibles is most pronounced in the cohesion countries of the CESEE region.



**Uncertainty and lack of skilled staff stand out as the main bottlenecks to investment in Europe.**

Uncertainty is driven both by macroeconomic developments, as well as firm-specific shocks. It is higher in countries that experienced a strong economic downswing (cyclical macro component), and where business regulation plays a stronger role (structural macro component). In addition to this, the EIBIS data show that firms with lower productivity and firms operating below capacity are more likely to consider uncertainty a barrier to investment.

**There is a need for more public investment in education.** Lack of skilled staff is a key barrier to investment. This is more pronounced in the cohesion countries of the CESEE region (that suffer from strong outward migration and adverse demographics) but also an issue in many of the countries operating close to their potential. With minor exceptions, the EIBIS data suggest that the skills gap is so large that firms cannot shoulder it themselves (making a strong case for more public activity in this area).

**Business and labour market regulation is another important barrier in some countries and sectors within countries.** When it comes to business and labour market regulation the data suggest that a detailed look is important. Often there are substantial within-country differences in how much business and labour market regulation affects firms' investment activities. More generally, we find that stricter business and labour market regulation is associated with lower investment in intangibles (presumably because it is difficult for firms to benefit from these types of investment without sufficient flexibility in their labour force).

**When it comes to firms' access to finance, the EIBIS data confirm that firms' strong reliance on bank loans is likely to change only if incentives change; financial education may also play a role.** The EIBIS data confirm firms' strong reliance on internal sources and bank loans. Firms show little desire to change their financing mix. If anything, firms tend to want more of the external finance types that they already heavily use, including bank lending and leasing, suggesting that in order to achieve a rebalancing of firms' financing mix toward more market-based sources, it will be important to change incentives.

**Smaller firms and firms investing more heavily in intangibles are less satisfied with the type of finance that they receive.** This is true in particular with regard to the cost of funding and the collateral requirements that they face when it comes to accessing external finance. The share of financing constrained-firms is highest in the countries hardest hit by the economic downturn.

**Young firms are a major driver of economic activity, but require more policy attention.** In line with the literature, the EIBIS data suggest that young firms are more dynamic in terms of job creation than older ones, and an important contributor to overall investment in intangibles. This notwithstanding, young firms often face difficulty in accessing external finance, and as a consequence need to rely on funds from family and friends or reduce their investment activities.

**Several policy conclusions follow from the analysis:**

- **There is a continued need to support the investment upswing in Europe.** While the EIBIS data point to a positive investment outlook for the corporate sector in Europe, they also suggest that there is still an enormous amount of uncertainty surrounding firms' business outlook.
- **Closing the investment gap with regard to the quality of firms' capital stock is a key priority for firms.** Firms indicate that the investment priority for the coming years is to close the investment gap with regard to the quality of their capital stock, which implies investment in the replacement of existing capital stock (with modern machinery and equipment) and the adoption of state-of-the-art technology. Effective policies to support investment will pay attention to this.
- **Targeted investment in training and education are a pre-condition for a continued improvement of investment.** In large parts of Europe, lack of skilled staff is the main bottleneck to investment. To avoid this endangering the nascent recovery, swift and targeted action on the part of policy-makers is needed (firms indicate that more often than not the skills gap is too large for them to bridge themselves).

- **Business and labour market regulations should be reviewed with regard to their impact on investment, in particular investment in intangibles.** The EIBIS data suggest that regulation is often not only a barrier to investment per se, but also tends to bias investment (towards tangibles). In line with the literature, the data suggest that regulation often dis-incentivises firms from investing in intangibles and the modernisation of their capital stock (as it reduces their flexibility e.g. in adapting their workforce to the needs of new technologies).
- **Any review of business and labour market regulation should take a detailed view, rather than focusing on headline findings for a country.** The EIBIS data suggest that regulation often affects investment by different segments in a country differently. As a consequence, any review of business and labour market regulations vis-à-vis their impact on investment should take a detailed view on how they affect firms in different sectors of different size classes.
- **While access to finance is not a bottleneck to investment for large numbers of firms, there are clear pockets of constrained firms. Young companies should receive special attention.** Despite an improvement in the financing environment overall, firms in the countries that experienced the strongest economic downturn and smaller firms still report being financing-constrained disproportionately often. Young firms are particularly affected, and due to their high importance for economic activity should receive special attention. The data suggest the risk of misallocation of resources.
- **To achieve a re-balancing of firms' financing mix towards more market-based sources, firm incentives need to change.** While there is broad consensus that from a macroeconomic perspective, it is desirable to diversify firms' financing mix, the EIBIS data suggest that it will be very hard to achieve this without changing incentives. Under current conditions the type of finance firms want more are the types they use most already (i.e. bank loans). Investment in financial education may be an important complementary measure for achieving a re-balancing of firms' financing mix.

### On the EIB's role in supporting investment in Europe

**The EIB plays an important catalytic role in promoting sound investment projects in support of EU policy goals in Europe and beyond.** As a bank, it raises money from international capital markets, using its AAA credit rating. As a public institution owned by the 28 Member States of the EU, it lends these funds to finance investment projects that address systemic market failures or financial frictions, targeting four priority areas in support of growth and job creation: innovation and skills, SMEs, climate action and strategic infrastructure.

**In 2016, the EIB Group provided EUR 83.8bn in long-term finance to support private and public productive investment.** At a first estimate, this helped realise investment projects worth roughly EUR 280bn. All the projects the EIB finances must not only be bankable, but also comply with strict economic, technical, environmental and social standards in order to yield tangible results in improving people's lives. Alongside lending, the Bank's blending activities can help leverage available funding by, for example, assisting the transformation of EU resources under the European Structural and Investment Funds (ESIF) into financial products such as loans, guarantees, equity and other risk-bearing mechanisms. Advisory activities and technical assistance can help projects to get off the ground and maximise the value-for-money of investments.

**The Investment Plan for Europe** undertaken by the European Commission and the EIB further enhances the EU policy response to the need to relaunch investment and restore EU competitiveness. It consists of three main pillars: finance through the European Fund for Strategic Investments (EFSI) to enhance the EIB Group's capacity to address market failures in risk-taking that hold back investment; the European Investment Advisory Hub (EIAH) to provide comprehensive technical assistance in the sourcing, preparation and development of investment projects; and support for regulatory and structural reform to remove bottlenecks and ensure an investment-friendly environment. As of mid-October 2016, 362 EFSI transactions were approved, potentially leveraging 44% of the full EUR 315bn envisaged.





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