MACROECONOMIC IMPACT OF THE EUROPEAN FUND FOR STRATEGIC INVESTMENTS

COMPLEMENTARY SECTION TO THE EVALUATION OF THE EUROPEAN FUND FOR STRATEGIC INVESTMENTS 2021
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EXECUTIVE SUMMARY

This is a complementary section to the third evaluation of the European Fund for Strategic Investments (EFSI) undertaken by the European Investment Bank Group’s (EIBG’s)1 evaluation function.2 The evaluation covers aspects of relevance, efficiency and effectiveness, as well as access to financing for mid-cap companies, small mid-caps and small and medium-sized enterprises (SMEs), and the mobilisation of private sector financing. This complementary section, prepared by the EIB Economics Department, covers the analysis of the macroeconomic impact of the EFSI on growth and employment in the EU-27 and the United Kingdom.3

To assess this macroeconomic impact, a modelling approach is used to better capture the wider economic effects. The chosen model is a computable general equilibrium model called RHOMOLO-EIB, developed by the European Commission’s Joint Research Centre (JRC). It provides sector-specific, region-specific and time-specific simulation results and so is particularly well suited to assessing financial instruments such as the EFSI. According to RHOMOLO-EIB, EFSI-supported investments will help generate an increase of 2.4% in gross domestic product (GDP) and create 2.1 million jobs by 2025, relative to the baseline. The results appear well within the scope of earlier impact estimates of the EFSI, and consistent with results of comparable studies. The model also shows a positive long-term impact on income in all 267 NUTS 2 European regions considered4; that all countries hit hardest by the 2008 economic and financial crisis benefited relatively more than the most well-off countries; and that cohesion regions benefited significantly more than better-developed regions (with the difference in impact as a percentage of GDP peaking at 100% and still reaching 10% in the long run). Although the scope of the results should be interpreted by reference to the modelling framework, they appear robust and in line with the findings of similar exercises.

Access to finance for SMEs and small mid-caps varied between 2015 and 2020 according to the EIB Investment Survey (EIBIS). Not enough data (especially at firm level) are available for more rigorous studies of the impact of such lending on SMEs. Based on earlier studies on similar lending approaches by the EIB and EIF, the results are expected to be equally positive.

These first results on the impact of the EFSI suggest that the initiative has made valuable contributions to the European economy. More data will become available as the implementation of projects progresses, while macroeconomic data are being collected at EU, national and regional levels. In due course, therefore, future impact assessments can further refine the results of this evaluation.

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1. The EIBG is formed of the EIB and the European Investment Fund (EIF).
2. The two previous evaluations done in 2016 and 2018. Article 18(3) of the EFSI Regulation prescribes that by 30 June 2018 and every three years thereafter, the EIB must publish a “comprehensive report on the functioning of the EFSI.”
3. This report examines effects within the EU-28; during the evaluation period, the EFSI also covered the United Kingdom.
4. Nomenclature des unités territoriales statistiques (NUTS) refers to a hierarchical system for dividing up the economic territory of the European Union. Level 2 covers the basic regions for the application of regional policies.
MODELLING MACROECONOMIC IMPACT

Macroeconomic modelling complements the assessment of direct results from each project. While investment outputs and outcomes are assessed at the project level (such as through the EFSI Scoreboard), the wider economic impact of such operations, in terms of indirect and induced effects, typically encompasses complex economic interlinkages that project-level assessment cannot capture.

For example, when an internet cable is laid, it is possible to directly measure project outputs and outcomes such as project employment, kilometres of cable laid, number of households connected, and the increase in data transmission speed. However, the investment will also have important wider economic effects, such as the production of the fibre optic cable that is used, increased spending by project workers, and not least the impact of more efficient internet on market access and the overall competitiveness of regional businesses.

Tracing such indirect and induced effects for individual operations is near impossible or prohibitively expensive, so they are typically modelled (see Figure 1). There are several modelling strategies for capturing the highly complex and indirect interlinkages in the economy, ranging from simple input–output models to highly complex computable general equilibrium (CGE) models. Based on the available data, CGE models attempt to represent the economic interlinkages between sectors and regions; the behaviour of households, workers and investors; and the effects on competitiveness, thereby producing a rich picture of how the effects of an initiative work their way through.

![Figure 1: Assessing Impact Through Measurement and Modelling](image-url)
THE RHOMOLO-EIB MODEL

This macroeconomic impact assessment was carried out jointly by the EIB Economics Department and the JRC, building on the well-established RHOMOLO model originally developed by the European Commission to assess the macroeconomic impact of EU policies, such as the EU cohesion policy.

A slightly adapted version of the model is used, called RHOMOLO-EIB. This is particularly well suited to accommodating both the functioning of the EFSI and the scope of public interventions: the model is able to characterise the most relevant sectors and policy areas of the EFSI, and to reflect the EIB’s activity in channelling investment loans (as opposed to regulatory interventions or grants), where money is borrowed on the market, lent for a specific investment project and repaid over time (see Figure 2). Generally, the model set-up allows for (rather than precluding) public interventions to address market failures.

RHOMOLO-EIB is a spatial computable general equilibrium (SCGE) model, covering 267 regions in the EU-27 and the United Kingdom. Each regional economy is, in turn, divided into ten economic sectors connected to one another and to the rest of the world through trade. The model relies on an equilibrium framework where supply and demand respond to price changes in order to clear the markets. All decisions in the economy are reflected in the model through the optimising behaviour of different economic agents.

The RHOMOLO-EIB model builds on good practices and is well grounded in economic theory and the available data. The model and its applicability are presented in a transparent manner with all modelling details made publicly available.5

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HOW THE RHOMOLO-EIB MODEL WORKS

EFSI-supported operations affect the EU economy through two main channels: a shorter-term investment effect and a longer-term structural effect (see Figure 3 for a stylised representation).

The investment effect stems from the implementation of the projects, but also from the financing needed for such operations. In the short run, ongoing investments lead to higher demand for goods and services, especially during the construction phase. However, so-called second round effects are also derived from the higher incomes generated. Further, investments in one sector are expected to affect other sectors through spillover effects, seen for example through trade and factor mobility. Over time, as capital depreciates and loans are paid back, the funding channel changes direction with streams of capital flowing from the borrowing region back into the lending region (see Figure 2).

The longer-term structural effect of completed investments manifests through changes in the structure and competitiveness of the economy. Some examples include the availability of cheaper traded goods due to a better transport network, or an increase in productivity due to greater availability of research facilities and enhanced technologies. Overall, five key channels are modelled: (i) transport infrastructure, for better connecting people and markets across Europe and beyond; (ii) non-transport infrastructure, for more affordable and more reliable infrastructure; (iii) human capital, for increased productivity; (iv) industry and services, for the deployment of more modern and productive technologies; and (v) research and development (R&D), for increased productivity and competitiveness of companies.

FIGURE 3: THE IMPACT CHANNELS IN THE RHOMOLO-EIB MODEL

![Diagram showing the impact channels in the RhomoLo-EIB model](image-url)
THE MACROECONOMIC IMPACT ON JOBS AND GROWTH

As of 31 December 2020, the investment supported through approved operations under the EFSI amounted to €545 billion. The RHOMOLO-EIB model estimates that these EFSI-supported operations will create 2.1 million jobs and increase EU GDP by 2.4% by 2025, compared to the baseline scenario (see Figures 4 and 5). These predicted outcomes are mainly driven by the short-term investment effect, which is temporary in nature and fades over time.

The EFSI focuses particularly on more persistent structural effects, such as enhanced production technologies, better private and public infrastructure, and greater labour productivity, all of which can help improve European competitiveness and ultimately growth in the longer term. The results suggest that by 2040, EFSI-supported operations will still have created 1.3 million jobs and increased EU GDP by 1.6%, relative to the baseline.

Analysis of more disaggregated data reveals that the effects of EFSI-supported operations are heterogeneous across countries, regions and sectors in Europe.

- All 267 NUTS 2 European regions included in the model show a positive long-term impact on income (the lowest being 0.3% of GDP), but the magnitude of the effect differs (see Figure 5).
- Cohesion regions benefit significantly more than better-developed regions: as a percentage of GDP, the impact peaks at twice as high for cohesion regions and in the long run is still 10% higher.
• Countries hit hardest by the 2008 economic and financial crisis benefited relatively more than the most well-off countries. In particular, the initial investment effect is stronger in these countries in the short term, although the structural effect is more dispersed across Europe in the long term.

• Regions also benefit from investment in other regions. On average, around 40% of the GDP impact is explained by spillovers, whereby investment in one country also benefits jobs and employment in other countries. This reflects the high degree of interlinkages in the European economy.

FIGURE 5: ESTIMATED IMPACT AS PERCENTAGE OF GDP AT NUTS 2 LEVEL BY 2040
INTERPRETING THE RESULTS

The RHOMOLO-EIB model and the underlying assumptions are published in a transparent manner.6 The results from the model have proved to be sound and resilient to an extensive and rigorous sensitivity analysis. They are robust to specific model and market assumptions and in line with the findings of similar exercises performed by other institutions.

However, as for any other model, the results should be interpreted considering the specific modelling context. The RHOMOLO-EIB is a CGE model that produces results expressed relative to a specific baseline. This baseline is not designed to project possible developments over the coming 30 years, such as economic shocks, but is built on a stable baseline. Large shocks will naturally impact on the scope of the results but are not expected to radically alter the outcome. Consequently, the direction and relative scope of the impact assessment will remain largely the same despite any disturbances from events such as the COVID-19 pandemic. More details on the methodological foundations and all the assumptions and variables employed have been published. It should also be noted that the model periodically undergoes rigorous scientific review.

The RHOMOLO-EIB is one of many models and approaches that can be used to assess the EFSI’s impact on jobs and growth. In studies using other techniques:

- The European Commission estimated using the QUEST model that the EFSI could add €330–410 billion to EU GDP and 1.3 million jobs at its peak.7
- Oxford Analytica, an economics consulting firm, concluded that the EFSI would result in an increase in GDP of 1–1.8%.8
- The International Labour Organization (ILO), using the Global Economic Linkages Model, expected up to 2.7 million jobs to be created.9

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6. EIB/JRC (2018) Assessing the macroeconomic impact of the EIB Group; see also previous RHOMOLO results, e.g. 2019
7. EC (2014) EU launches investment offensive to boost jobs and growth.
Extrapolating these results to EFSI-supported activities as a whole (€545 billion compared to the initially targeted €315 billion for the estimated EFSI impact), the results from the RHOMOLO-EIB model appear well within scope.

The results are also in line with findings from other uses of the RHOMOLO model, such as for macroeconomic assessment of regional policy by the Directorate-General for Regional and Urban Policy, and somewhat more conservative but of a similar order of magnitude to the results of other impact assessments of public funding, such as the American Recovery and Reinvestment Act.10

The macroeconomic impact assessment provides a sense of scope and shows that the EFSI is clearly making a significant contribution to EU growth and employment. It complements project-by-project assessment of the additionality and impact of EFSI-supported operations. Overall, the results of the RHOMOLO-EIB look reasonable and in line with the results of similar exercises, if perhaps a little more conservative in line with the modelling strategy.

These are only the first results on the estimated impact of the EFSI. They suggest that the initiative is playing a valuable role in boosting the European economy. As the ongoing projects reach completion and more data become available at EU, national and regional levels, further impact assessments can be conducted to fine-tune understanding of the EFSI’s impact.

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ACCESS TO FINANCE FOR SMES AND MID-CAPS

The EFSI was launched to help sustain recovery from the global financial crisis, with uncertainty still the main barrier to investment at that time: the market was flooded with abundant liquidity but the financial sector had little risk-taking capacity, heavily limiting the availability of risk finance.

Between the launch of the EFSI and the outbreak of the COVID-19 crisis, overall access to finance improved (see Figure 6). At the EU level, the share of finance-constrained SMEs dropped from 7.1% to 5.8%. The improvements were especially noticeable in Southern Europe, where the share of finance-constrained SMEs dropped from 9.7% in 2017 to 6.6% in 2020. SMEs that receive external finance tend to be relatively satisfied with the finance conditions, although some have expressed concerns about collateral requirements and cost of credit, signalling that risk-taking remains the key constraint.

According to the EIBIS 2020, finance-constrained firms are almost twice as likely as non-finance-constrained firms to report an investment gap (27% vs. 15%).

As the COVID-19 crisis unfolds, the different challenges it poses compared to the previous financial crisis are clear. The current problems are on the real side of the economy: firms face difficulties generating profits, while policy efforts are keeping the credit channel open. As avoidance of the liquidity crisis continues, bank leverage risks and recapitalisation needs will likely materialise as the next major challenge.

FIGURE 6: PERCENTAGE OF SMES REPORTING CREDIT CONSTRAINTS, BASED ON EIBIS RESPONSES

THE IMPACT OF SUPPORT TO SMES

The impact of SME financing is generally captured in the RHOMOLO modelling. This can be complemented by more specific assessments of the financial sector, only indirectly reflected in the RHOMOLO-EIB model. Prior studies of EIBG products/financing instruments similar to the EFSI have demonstrated a significant positive impact.

For example, a recent study found that receipt of an EIB-supported loan had significant positive effects on EU SMEs’ employment and investment activity in the following three years. The results suggested that access to external funding on advantageous terms improved the economic situation of beneficiary firms to the extent that they were more likely to keep employees and/or hire new ones compared to firms without EIB support. On average, firms receiving EIB lending increased their employment by 4–6% relative to the peer group of firms without EIB financing (see Figure 7).

FIGURE 7a: EMPLOYMENT EFFECTS OF EIB SUPPORT TO SMES IN THE EUROPEAN UNION

FIGURE 7b: THE DIFFERENCE IN EMPLOYMENT BETWEEN THOSE FIRMS RECEIVING EIB FINANCING AND THE CONTROL GROUP THAT DO NOT, IN NUMBER OF EMPLOYEES (LOG).

Another study provides the first pan-European assessment of the impact of the EIF credit guarantee on SMEs. After receiving a guaranteed loan, beneficiary SMEs grew more rapidly than non-beneficiaries in terms of assets, revenue and employment. The effect on growth is economically significant, ranging from 7 to 35 percentage points for assets, 6 to 35 percentage points for revenue, and 8 to 30 percentage points for employment. Beneficiary SMEs were also about 30% less likely than non-beneficiaries to default after receiving an EIF-guaranteed loan.

Moreover, the study analyses differences in the magnitude of the economic impact across Europe (see Figure 8). These differences are due to the industrial landscape of different economies, as well as the characteristics of beneficiary SMEs. This comparative analysis enables better understanding of the impact on EU SMEs.12

**FIGURE 8: OPERATING REVENUE EFFECTS OF EIF CREDIT GUARANTEE SUPPORT TO SMES IN THE EUROPEAN UNION**

*Central, Eastern and South-Eastern Europe: Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Slovakia, Slovenia

**Denmark, Finland, Norway, Sweden

THE IMPACT OF VENTURE CAPITAL SUPPORT TO STARTUPS

In the EIF Working Papers series collectively titled “The European venture capital landscape: an EIF perspective”, six studies provide sound evidence of the impact of policy-driven EIGB activity in the European venture capital (VC) ecosystem.

For example, a recent study found that EIF-supported startups experienced faster growth in terms of assets compared to similar, non-VC-backed firms between 2007 and 2014. This led to higher capitalisation, revenues and job creation in the first five years following the VC investment. Moreover, EIF-supported startups increased their investment and borrowing levels. These findings, in line with current economic research, point to the effectiveness of the EIF’s policy instruments in fostering SME access to VC financing. On average, startups receiving EIF support increased their employment by 70-100% relative to non-VC-backed startups (see Figure 9).13

FIGURE 9: EMPLOYMENT EFFECTS OF EIF VC SUPPORT TO STARTUPS IN THE EUROPEAN UNION

In another study on the impact of EIF-supported VC investments, beneficiary startups were found more likely to experience favourable exit and innovation outcomes. Specifically, startups receiving EIF VC support were about three times more likely than non-recipients to participate in an M&A deal or experience an IPO, and twice as likely to apply for a patent (see Figure 10).14

There are not yet sufficient available data to enable such studies to be conducted on the EFSI’s impact. Such evaluations require balance sheet data covering several (typically more than three) years after the treatment. Due to the usual lags in the balance sheet data reporting of standard databases, a similar analysis for the EFSI can only be performed in the future.

**FIGURE 10: AGGREGATE PATENTING ACTIVITY COMPARISON**

*Patenting activity at investment year is comparable by construction (Pavlova and Signore, 2019).*

CONCLUSIONS

- This assessment of the EFSI’s macroeconomic impact finds significant effects on the EU economy in terms of growth and employment.
- The RHOMOLO-EIB is a well-established and rigorous model to assess the macroeconomic impact.
- According to the RHOMOLO-EIB model, EFSI-supported investments will help generate an increase of 2.4% in GDP and create 2.1 million jobs in the EU-28 by 2025, relative to the baseline; in the long run (by 2040), GDP will still be increased by 1.6% and jobs by 1.3 million.
- The results provide a sense of magnitude of the EFSI’s impact on the EU economy. They proved to be robust and are in line with the findings of alternative and similar assessment approaches.
- Access to finance has improved over the evaluation period. Earlier studies of other interventions suggest a significant impact of EIBG support to SMEs, but there are not yet sufficient data to conduct equivalent studies for EFSI-supported operations.
- These are the first results from ongoing EFSI-backed projects and will be fine-tuned as more data become available.
FURTHER INFORMATION ON RHOMOLO-EIB

RHOMOLO-EIB set-up and use:
http://www.eib.org/attachments/efs/assessing_the_macroeconomic_impact_of_the_eib_group_en.pdf

Technical model description:

Scientific model review:

Scientific publication:

Policy brief:
FURTHER INFORMATION ON ACCESS TO FINANCE

Pavlova, E. and Signore, S. (2021)
*The impact of VC on the exit and innovation outcomes of EIF-backed start-ups.*

*Measuring microfinance impact: A practitioner perspective and working methodology.*

*The social return on investment (SROI) of four microfinance projects.*

*Making a difference: Assessing the impact of the EIB’s funding to SMEs.*

Pavlova, E. and Signore, S. (2019)
*The economic impact of VC investments supported by the EIF.*

*The real effects of EU loan guarantee schemes for SMEs: A pan-European assessment.*

*The impact of international financial institutions on small and medium enterprises: The case of EIB lending in Central and Eastern Europe.*


*Econometric study on the impact of EU loan guarantee financial instruments on growth and jobs of SMEs.*
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