

## THE EUROPEAN FUND FOR STRATEGIC INVESTMENTS: THE RHOMOLO-EIB 2019 UPDATE

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- The European Fund for Strategic Investments (EFSI) is the central pillar of the Investment Plan for Europe. It tackles the post-crisis investment gap in the EU and aims to revive investment in strategic projects in all EU Member States.
- EFSI was launched jointly by the European Investment Bank (EIB) Group and the European Commission.
- Every year, policy simulations are carried out using the RHOMOLO-EIB Computable General Equilibrium (CGE) model in order to assess the macroeconomic effects of EFSI-supported operations.
- This Policy Insight contains the result of the latest set of simulations quantifying the estimated macroeconomic impact on EU GDP and employment of all EFSI-supported operations approved as of June 13, 2019.
- The EFSI is contributing significantly to job creation and growth. The EIB-JRC estimates suggest that, by 2019, it has already, created more than 1 million jobs (1.7 million by 2022), with a positive contribution to GDP of 0.9% (1.8% by 2022) over the baseline.
- The results of the analysis highlight the importance of investments for jobs and economic growth.

### 1. Policy context

In 2014, the EU was still facing the consequences of the 2008 economic and financial crisis. Thus, the European Commission and the EIB collaborated to launch the Investment Plan for Europe, also known as the Juncker Plan. One of its pillars, EFSI, aimed to trigger €315 billion of investment in the EU by mid-2018. The key to fulfilling this objective was a €21 billion guarantee in support of EFSI. In 2017, the European Council and the Parliament extended the duration of the plan to the end of 2020 and increased its investment target to €500 billion.

EFSI supports strategic investments in key areas of European interest. Amongst the eligible sectors are transport, energy, research and innovation, environment, agriculture and forestry, digital technology, and social infrastructure projects. The initiative also helps start-ups and small companies to grow and expand. The extension of EFSI strengthened its focus on sustainability: under EFSI 2.0, at least 40% of the infrastructure and innovation projects aim to contribute to climate action in line with the Paris Agreement.

In addition to the evaluation of individual EFSI-supported investment projects, there is a need to assess the overall macroeconomic impact of EFSI operations. That is because, in addition to the direct

impact of investments on the beneficiaries, these operations produce both indirect and induced effects in the economy, that could be positive or negative, and which should be taken into account when assessing the policy.

Regular macroeconomic impact assessment of EFSI is carried out jointly by the EIB and the European Commission's JRC (see EIB, 2018a, for the first assessment of the whole EIB portfolio, including the EFSI). The dynamic spatial CGE model RHOMOLO-EIB, parametrized on 267 NUTS2 regions of the EU and developed by the JRC for territorial impact assessment, is used in this context (this version of the model builds on the one illustrated by Lecca et al., 2018).

This Policy Insight contains the updated results of the macroeconomic impact assessment of the EFSI-supported operations approved as of the June EIB board meeting on June 13, 2019. The analysis has been carried out with the RHOMOLO-EIB model and results are reported both at the EU level and with a higher level of regional and sectoral detail in order to understand fully the economic effects of the EFSI investments. Note that a separate assessment of the economic effects of the legislative measures contained in the third pillar of the Investment Plan for Europe was carried out in 2018 (see Christensen et al., 2018).

## 2. The RHOMOLO-EIB model

The CGE model RHOMOLO-EIB is used to estimate the overall impact of EIB Group-supported operations (both EFSI and non-EFSI) and of EFSI operations on their own. The model is based on RHOMOLO, developed and used by the European Commission's JRC for policy impact assessment, and provides sector-specific, region-specific and time-specific simulation results. RHOMOLO-EIB differs from RHOMOLO (normally used to study the effects of standard EU structural and investment funds) in the way it handles the EIB Group-supported investments. It is based on loans rather than grants and this makes a difference both in terms of financial flows and in the areas of engagement.

Modern macroeconomic models such as RHOMOLO-EIB provide coherent and internally consistent frameworks to analyse the channels through which macroeconomic policies affect national and regional economies. The model covers all EU NUTS2 regions, each regional economy being disaggregated into ten economic sectors calibrated to a steady-state based on 2013 data, which is the latest available data at this level of granularity. The analysis is capable of distinguishing between the short and long-term effects of investments and takes into account the EU territorial specificities and the spatial interlinkages of the European regions and countries.

Any model has certain limitations, which need to be acknowledged and taken into account when interpreting the results. RHOMOLO-EIB is a CGE model and as such does not provide unconditional forecasts, but rather give answers to "what if" type questions and contributes to uncovering the economic mechanisms triggered by certain public interventions such as the EFSI. The RHOMOLO-EIB model builds on good practices grounded in economic theory and available data (for an illustration of the data, see Thissen et al., 2019). A thorough sensitivity analysis is performed to check the robustness of the results to the specific modelling specifications and assumptions (EIB, 2018a).

## 3. Main results

EFSI projects affect the economy both in the short term (investment effect) and in the long term (structural effect). The short-term investment effect reflects higher demand for goods and services as the investments take place during the implementation and construction phase. The repayment of the loans used to finance the investments over time is also taken into

### The policy impact of this research

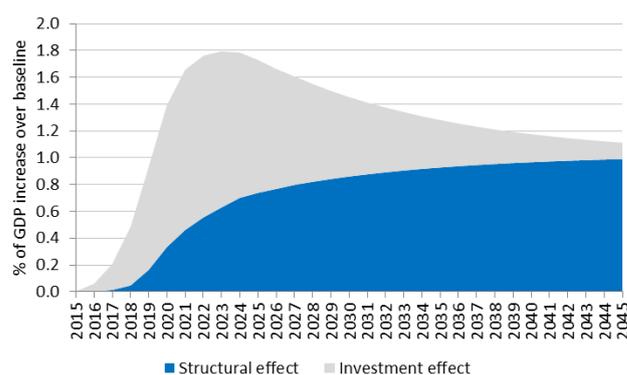
*The RHOMOLO-EIB results illustrated in this Policy Insight have been mentioned by President Juncker in his statement at the European Parliament on October 22<sup>nd</sup>, 2019.*

*The results are also featured in the annual EFSI report from the EIB to European Parliament and the Council on EIB Group Financing and Investment Operations under EFSI (the latest results can be found in EIB, 2018b).*

account. The longer-term structural effect reflects the impact on the structure and competitiveness of the economy through changes in infrastructures, human capital, and productivity.

Figure 1 reports the estimated GDP effects of the EFSI-supported operations approved between 2015 and June 2019. The total mobilised investments based on these approvals amount to some €408 billion over the following years. Mobilised investments are up from €335 billion as of July 2018 and the expected impact on GDP is accordingly higher. The results in Figure 1 show that the EFSI operations are expected to increase EU GDP by 1.76% by 2022, with the creation of more than 1.68 million jobs by the same year.

Figure 1: Expected GDP impact of EFSI-supported operations (based on approvals between 2015 and June 13, 2019)



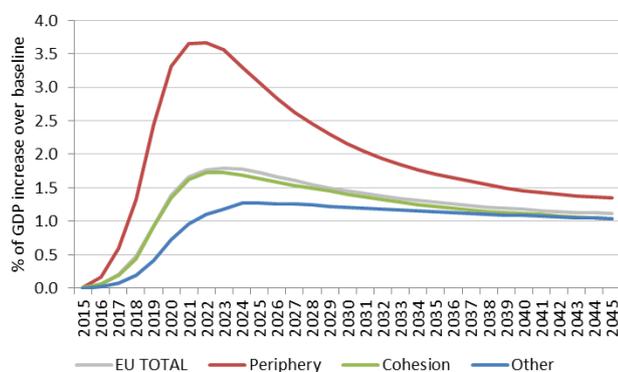
Source: RHOMOLO-EIB calculations

Figure 1 distinguishes between the investment and the structural effects and shows that the short-term impact is mainly driven by the investment effect which sets in quickly and fades out over time. Investments are made and have both forward and backward linkages along the value chain, as well as second-round effects on income and sector spending. As investment activities reach completion and start

repaying the loans, this effect starts to phase out while longer term structural effects grow over time as more investment projects reach completion and start affecting the structural functioning of the economy. The long-term effects are persistent, as enhanced production technologies, better private and public infrastructures and greater labour productivity have a lasting impact on the economy.

Given the nature of the RHOMOLO-EIB model, results can be analysed under different point of view by exploring both their geographic and their sectorial characteristics.

Figure 2: Expected GDP impact of EFSI-supported operations (2015 – June 13, 2019 approvals), by macro regions



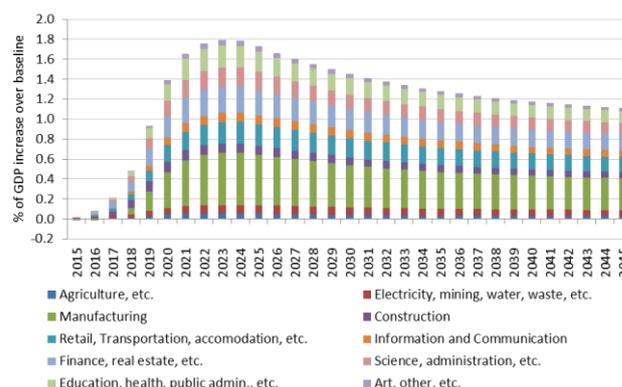
Source: RHOMOLO-EIB calculations

Figure 2 demonstrates that EU regions and countries benefit in terms of jobs and economic growth, on average. When looking at percentage changes, it is clear that the countries that were hit hardest by the 2008 economic and financial crisis (the EU periphery), and those lagging behind in terms of income (the cohesion countries), benefited relatively more than the most well-off countries. While the effects cannot be only linked to the level of local investments given the spill overs of the effects from one country to the rest, a key explanation lies also in the economic situation of the countries, their level of unemployment, the economic situation, and their competitiveness.

It is equally interesting to look at the sectorial results of the simulations. Figure 3 shows the GDP effects of the EFSI-supported operations on the ten sectors in which the economy is disaggregated in the RHOMOLO-EIB model.

In the short term, investments drive up demand which spills into other sectors of the economy thanks to sectorial spillovers and indirect and induced effects. In the longer term all sectors benefit from the EFSI-supported operations thanks to structural effects.

Figure 3: Expected GDP impact of EFSI-supported operations (2015 – June 13, 2019 approvals), by sector



Source: RHOMOLO-EIB calculations

## 4. Conclusions

The RHOMOLO analysis summed up in this Policy Insight concludes that EFSI-supported investments are contributing positively and significantly to EU GDP and employment and are expected to do so even more in the coming years.

In particular, the EFSI-supported operations approved as of June 13, 2019 have already generated more than 1 million jobs (1.7 million by 2022), with a positive contribution to GDP of 0.9% (1.8% by 2022) over the baseline.

As for any modelling exercise, the results presented in this Policy Insight should be read with due care. While the model produces specific results in terms of number of jobs and GDP changes over its baseline, these results provide more of a sense of scope of the impact than a concrete number. While the RHOMOLO-EIB is a version of the well-established RHOMOLO model and therefore its results can be considered robust and credible, other models may deliver different results depending on their baseline calibrations, structure, and main assumptions. Details of both the model and the use of the RHOMOLO-EIB are publicly available (EIB 2018a).

### How to cite:

Christensen, M., Weiers, G., Conte, A., Wolski, M., and Salotti, S (2019). The European Fund for Strategic Investments: the RHOMOLO-EIB 2019 update. JRC - EIB Territorial Development Insights Series, JRC118260, European Commission.

## Read more

Christensen, M., Conte, A., Di Pietro, F., Lecca, P., Mandras, G., and Salotti, S. (2018). The third pillar of the Investment Plan for Europe: an impact assessment using the RHOMOLO model. JRC Working Papers on Territorial Modelling and Analysis No. 02/2018, European Commission, Seville, 2018, JRC113746.

EIB (2018a). Assessing the macroeconomic impact of the EIB group. Economics - Impact Studies. European Investment Bank, June 2018. Available [here](#).

EIB (2018b). 2018 EIB Group Financing and Investment Operations under EFSI. European Investment Bank, 2018 EFSI REPORT. Available [here](#).

European Commission (2018a). Juncker Plan exceeds original E315 billion investment target. Press release IP-18-4469. Available [here](#).

European Commission (2018b). Investment plan for Europe: stock-taking and next steps. COM(2018) 771 final. Brussels, 22.11.2018.

Lecca, P., Barbero, J., Christensen, M., Conte, A., Di Comite, F., Diaz-Lanchas, J., Diukanova, O., Mandras, G., Persyn, D. and Sakkas, S. (2018). RHOMOLO V3: A spatial modelling framework. JRC Technical Reports JRC111861, EUR 29229 EN. Publications Office of the European Union, Luxembourg.

Thissen M., Ivanova O., Mandras G., and Husby T. (2019). European NUTS 2 regions: construction of interregional trade-linked Supply and Use tables with consistent transport flows. JRC Working Papers on Territorial Modelling and Analysis No. 01/2019, European Commission, Seville, JRC115439.

The graphic features the word 'RHOMOLO' in a large, bold, black, sans-serif font on the left. To its right is a stylized map of Europe composed of small yellow dots. A network of green lines with circular nodes connects the text to the map. Below the logo, there is contact information for the project leader and main authors.

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