

// ZEW expert brief 20-06 · 04/22/2020

**Friedrich Heinemann**

# **SIMULATING A EUROPEAN RECOVERY FUND**

## 1. INTRODUCTION

European leaders debate the establishment of a “European Recovery Fund” (ERF). The ERF shall help the European economy to restart growth after the COVID-19 pandemic-related recession that is currently unfolding. Early national and European fiscal measures of anti-crisis policy have been focused on helping companies and employees to get through the immediate lockdown phase. The ERF targets at the second crisis phase that begins once the lockdowns are over.

The rationale of an ERF rests on assumptions that are rarely made explicit. It assumes that EU spending can create an added value compared to national spending packages. Moreover, the ERF presupposes that Member States themselves are unwilling or unable to provide the necessary financial means to support their economies’ quick turnaround after the crisis. In this context, the dire fiscal situation of some highly-indebted countries is one of the most pressing arguments in favor of an ERF. Countries that might find it increasingly difficult to finance additional crisis measures on their own could hope to get relief from an ERF.

This expertise sheds light on the realistic magnitude of such a relief. It provides simulations on the spending and refinancing side of an ERF. It also assesses to which extent a European debt instrument with joint and several liability (“Corona bonds”) would modify the distributive effects of an ERF.

The simulation quantifies the gross and net burden for each single EU Member State from an ERF with a financial volume of 1.5 trillion EUR, which corresponds to the current magnitude in the political debate.

## 2. ASSUMPTIONS

The following assumptions guide the simulation of the ERF with its 1.5 trillion EUR budget:

### Spending side:

New European fiscal instruments should promote the stabilization of asymmetric macro-economic shocks. They can then fulfill an insurance function, which is distinct from a redistributive function. With redistribution, we would expect systematic financial flows from the rich to the poor countries as it is the case with the EU’s cohesion policy. With a new stabilization tool, we would, instead, expect financial flows from countries in a milder recession towards countries in a more severe recession.

Besides macro-economic stabilization, the ERF may also serve a humanitarian and health-related function, and activate resource flows into those countries that suffered in a particular severe way from the COVID-19 pandemic. This component reflects not only the idea of humanitarian solidarity but also the special needs of national health systems under particular stress.

The simulation allows for both functions in the following way: It is assumed that

- two thirds of the ERF budget are allocated across Member States with the logic of macro-economic stabilization: spending across EU Member States is in proportion to the expected GDP loss in 2020;

this GDP loss is quantified along the projections of the IMF World Economic Outlook from April 2020;

- one third of the ERF budget is allocated across Member States following the logic of compensating for the humanitarian dimension of the crisis: spending across EU Member States is in proportion to deaths from COVID-19; deaths are quantified along the numbers of the Institute for Health Metrics and Evaluation (as of 16 April) for projected total deaths by August 4, 2020; this forward-looking approach avoids distortions that could occur because some countries were hit earlier than others.

#### Financing side:

Even if the ERF will be established as a line in the EU budget the Member States have to provide the financial resources. The most logical formula for burden sharing is a Member State's share in EU's Gross National Income (GNI). In the current budget, Member States pay contributions for the EU budget closely in proportion to their share in GNI. As a consequence of the "UK Rebate" there is currently some divergence from GNI proportionality. However, a large consensus exists that the Brexit should be used to abolish the remaining rebates. This will make the burden sharing on the revenue side even more in line with GNI proportionality. Hence, a GNI key is the most plausible assumption for the financing side of the ERF.

Today, the European budget must be balanced and the EU has no general competency to debt-finance its spending. If Corona bonds are introduced they would shift the ERF's financing costs into the future. It would still be Member State resources that are needed to repay this new debt in the future. Hence, also with Corona bonds, the GNI key remains a good predictor for the final burden sharing. However, Corona bonds would have a modifying effect on burden sharing. Since Member States would jointly and severally guarantee these bonds, the yields will mirror the average creditworthiness of EU Member States. The consequence is that Corona bond financing is attractive for countries with a credit rating below the EU average and unattractive for countries with a credit rating above the EU average. Hence, Corona bonds introduce an implicit transfer element with transfers from low-debt countries towards high-debt countries.

To account for these possible effects, the simulation on the revenue side does not only quantify the GNI-related division of the costs but also the additional interest rate (dis-)advantage in case these costs are shifted into the future. These assumptions are summarized as following:

- The ERF is financed from Member State contributions that are paid according to a country's share in the total EU GNI (GNI values of 2019, source: AMECO database).
- If Corona bonds are used to shift the burden on Member States into the future there is an additional redistributive effect. The size of this effect is quantified based on the rating-dependent yields of euro area countries in the market situation as of 20 March (yields from European Central Bank). It is assumed that Corona bonds receive an AA rating (Standard & Poor's).

## 3. RESULTS

### 3.1. SPENDING SIDE

The above summarized assumptions lead to an allocation of the ERF 1.5 trillion EUR budget across EU Member States that is shown in Tables 1 to 3. Countries are ordered according to their increasing benefit in % of GDP.

Table 1 shows the allocation of the full budget according to solely the first criterion (GDP loss in 2020 as forecasted by the IMF in April 2020). The countries with the most severe recession (as predicted by the IMF) are the Southern European and the Baltic countries. As a consequence, these countries would benefit the most (in % of their 2019 GDP).

Table 2 shows the allocation of the full budget according to solely the second criterion (projected COVID-19 deaths). The top recipients (in % of GDP) are those countries with the most pessimistic death projections (Sweden, Netherlands, Estonia, Spain, Belgium, Italy) relative to the size of the country.

Table 3 shows the allocation according to the combination of both criteria: the weighted average of the economic (weight 2/3) and the humanitarian criterion (weight 1/3).

**Table 1: Allocation exclusively based on GDP loss 2020 (IMF World Economic Outlook April)**

Country	Allocation in bn. EUR	in % 2019 GDP
Malta	0.6	4.17%
Hungary	6.6	4.62%
Bulgaria	3.6	5.96%
Poland	36.1	6.86%
Luxembourg	4.6	7.30%
Romania	16.6	7.45%
Finland	21.6	8.94%
Slovakia	8.7	9.24%
Denmark	29.9	9.69%
Czechia	21.1	9.69%
Cyprus	2.1	9.69%
Ireland	35.0	10.14%
Sweden	47.7	10.14%
Belgium	48.6	10.29%
Germany	357.6	10.44%
Austria	41.6	10.44%
France	259.3	10.73%
Estonia	3.1	11.18%
Netherlands	90.2	11.18%
Portugal	25.1	11.93%
Slovenia	5.7	11.93%
Spain	148.1	11.93%
Lithuania	5.9	12.08%
Latvia	3.9	12.82%
Croatia	7.2	13.42%
Italy	241.1	13.57%
Greece	28.3	14.91%
EU-27	1500.0	

**Table 2: Allocation exclusively based on number of total COVID-19 deaths (as projected by IHME)**

Country	Allocation in bn. EUR	in % 2019 GDP
Finland	3.0	1.25%
Austria	5.5	1.39%
Bulgaria	0.9	1.43%
Czechia	3.2	1.49%
Slovakia	1.5	1.57%
Ireland	6.9	2.00%
Lithuania	1.1	2.29%
Cyprus	0.5	2.38%
Slovenia	1.2	2.40%
Greece	4.9	2.58%
Germany	96.2	2.81%
Croatia	1.7	3.06%
Hungary	5.1	3.54%
Portugal	8.2	3.89%
Romania	9.9	4.47%
Luxembourg	3.5	5.51%
Malta	0.8	6.16%
Poland	33.3	6.34%
Denmark	21.9	7.11%
France	229.0	9.48%
Latvia	4.4	14.36%
Italy	277.4	15.61%
Belgium	79.3	16.79%
Spain	245.6	19.78%
Estonia	6.5	23.58%
Netherlands	207.8	25.77%
Sweden	240.5	51.10%
EU-27	1500.0	

**Table 3: Allocation based on GDP loss 2020 (2/3 weight) and projected number of total COVID-19 deaths (1/3 weight)**

Country	Allocation in bn. EUR	in % 2019 GDP
Hungary	6.1	4.26%
Bulgaria	2.7	4.45%
Malta	0.6	4.84%
Finland	15.4	6.38%
Romania	14.4	6.46%
Poland	35.2	6.68%
Slovakia	6.3	6.69%
Luxembourg	4.2	6.71%
Czechia	15.2	6.96%
Cyprus	1.6	7.25%
Austria	29.6	7.42%
Ireland	25.6	7.43%
Germany	270.5	7.89%
Slovenia	4.2	8.75%
Lithuania	4.3	8.81%
Denmark	27.2	8.83%
Portugal	19.5	9.25%
Croatia	5.4	9.97%
France	249.2	10.32%
Greece	20.5	10.80%
Belgium	58.8	12.45%
Latvia	4.1	13.33%
Italy	253.2	14.25%
Spain	180.6	14.54%
Estonia	4.3	15.31%
Netherlands	129.4	16.04%
Sweden	112.0	23.79%
EU-27	1500.0	

### 3.2. REVENUE SIDE AND NET FINANCIAL ADVANTAGE

Table 4 summarizes the results for the burden sharing. It shows each country's GNI-related (gross) financial contribution to the ERF (1<sup>st</sup> column). It calculates the net benefit as the difference between the funding received (Table 3 allocation with the weighted average of economic and humanitarian criteria) in absolute amount (2<sup>nd</sup> column) and in % of GDP (3<sup>rd</sup> column). The 4<sup>th</sup> column indicates the interest payment (dis-) advantage that would result from a Corona bond financing each year. Countries are ordered with the increasing financial net benefit from the ERF (in % of GDP).

Results can be summarized as follows: Some of the poorest EU Member States would be the largest net payers. This is the consequence from a (predicted) relative mild recession and a relatively low number of COVID-19 deaths in these countries. Conversely, some of the richer countries are among the top recipients. Not all high debt countries would benefit. Portugal and France are among the net payers.

Italy could expect a net benefit through the whole lifetime of the ERF of a total of 3.4% of its GDP. For comparison: Italy's current public debt level to GDP was at 135% at the end of 2019 and is projected to reach 156% at the end of this year (IMF projection). The annual interest rate advantage for Italy would reach a maximum of 3.1 billion EUR. For comparison: Italy's public debt level was at 2,421 billion EUR at the end of 2019.

**Table 4: Contributions to European Recovery Fund, net benefit and interest advantage**

Country	Contribution in bn. EUR (GNI key)	Net benefit in bn. EUR (Table 3 spending allocation)	Net benefit in % GDP	Interest advantage with Corona bonds in bn. EUR per year
Bulgaria	6.6	-3.9	-6.42%	0.105
Hungary	14.8	-8.7	-6.10%	0.236
Malta	1.3	-0.7	-5.05%	0.006
Finland	26.1	-10.7	-4.44%	-0.021
Romania	23.5	-9.2	-4.12%	0.306
Slovakia	10.0	-3.7	-3.93%	0.008
Poland	54.6	-19.4	-3.69%	0.240
Austria	42.9	-13.3	-3.33%	-0.021
Czechia	22.3	-7.1	-3.26%	0.024
Germany	379.2	-108.7	-3.17%	-1.896
Cyprus	2.3	-0.7	-3.15%	0.030
Denmark	34.0	-6.8	-2.20%	-0.126
Slovenia	5.1	-0.9	-1.89%	0.003
Lithuania	5.1	-0.8	-1.65%	0.018
Portugal	22.3	-2.8	-1.31%	0.167
Ireland	28.6	-3.0	-0.87%	0.031
Luxembourg	4.7	-0.5	-0.80%	-0.015
France	266.4	-17.2	-0.71%	-0.053
Croatia	5.7	-0.3	-0.61%	0.074
Greece	20.3	0.1	0.06%	0.409
Belgium	51.3	7.6	1.60%	0.010
Latvia	3.3	0.8	2.68%	-0.001
Italy	193.7	59.5	3.35%	3.079
Spain	134.2	46.4	3.74%	0.752
Estonia	2.9	1.3	4.73%	0.003
Netherlands	87.3	42.1	5.22%	-0.253
Sweden	51.5	60.5	12.84%	-0.191
European Union	1500.0	0.0		

## 4. CONCLUSIONS

The exact results of the simulations presented must be taken with caution. Underlying projections on this year's GDP losses and the final number of total deaths from the COVID-19 pandemic are highly uncertain. However, the results convey a first impression of the magnitudes and the direction in equalizing payments that could be mobilized through an ERF.

A European Recovery Fund that focuses on the compensation of GDP losses would tend to benefit Southern, Western and Northern European countries with smaller payouts to Central and Eastern Europe. Adding the death toll from COVID-19 would change the payout structure with some of the wealthier countries likely to be among the top recipients.

Central and Eastern European countries (apart from Latvia and Estonia) that, according to current projections, expect a milder recession and a lower number of deaths, would be net payers. Very poor countries like Bulgaria and Romania are also among the net payers. Main beneficiaries are Sweden, Netherlands, Estonia, Spain, Italy, Latvia and Belgium.

The net financial advantages for the high-debt countries are limited. They reach a maximum of between 3 and 4% of GDP for Spain and Italy. Hopes that the ERF could, in any significant way, improve Italy's deteriorating creditworthiness, are therefore ill-founded. Net effects, even from a 1.5 trillion EUR fund, are much too small to compensate the country for the crisis-induced massive increase in public debt.

Shifting the gross financing burden into the future through Corona bonds has a negligible additional impact on the burden sharing. For example, the interest rate advantage for Italy would only amount to 3.1 billion EUR annually, not much more than one per mill of the country's public debt level.

A key insight from these simulation is: Even a generously funded ERF cannot contribute to a significant improvement in the creditworthiness of the highly-indebted EU countries like Italy even if the payment formula accounts for the particular humanitarian and economic costs from the pandemic. The assessment would only change if a country could permanently avoid to pay its share in the Fund's costs in future or if the new Corona bonds would be used in future also to refinance the existing stock of national debt.

AUTHOR

**Prof. Dr. Friedrich Heinemann**

ZEW – Leibniz Centre for European  
Economic Research Mannheim GmbH

L 7, 1

Tel.: +49 (0)621 1235-149

68161 Mannheim

[friedrich.heinemann@zew.de](mailto:friedrich.heinemann@zew.de)