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# Vaccine Distribution and the EU Recovery and Resilience Facility

Corrado Macchiarelli and Renato Giacon

LEQS Paper No. 173/2022

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# **Vaccine Distribution and the EU Recovery and Resilience Facility**

Corrado Macchiarelli\* and Renato Giacon\*\*

## **Abstract**

In this article, we discuss the interaction between the Covid-19 vaccine rollout in EU member states and the effective use of grants and soft loans from the EU pandemic recovery fund. With some of the national spending plans for the Recovery Fund still awaiting initial submission (Bulgaria), others pending the Commission's endorsement (Poland, Hungary) or formal Council's approval (Romania, Estonia), and various other national plans in their implementation stage, the next challenge for policymakers will be to ensure that the initial and subsequent tranches of EU funds are released as economies reopen. We claim that special attention ought to be paid to Central and Eastern Europe, where some countries are lagging in their vaccine rollout and/or the preparation for their use of the EU recovery funds. This is likely to be an important test for EU institutions in determining the stability and coherence of the European project as a whole.

**Keywords:** Vaccination; Covid-19; EU

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# Vaccine Distribution and the EU Recovery and Resilience Facility

## 1. Introduction

More than a year since the French president Emmanuel Macron and German Chancellor Angela Merkel threw their weight behind the idea of the EU Recovery Fund, and the EU-27 leaders agreed to the Next Generation EU Programme, the large majority of EU governments have formally submitted their national Recovery and Resilience (RR) Plans to the European Commission. As it stands, only Bulgaria and the Netherlands are lagging in their submission, while the EU “big four” – Germany, France, Italy and Spain – have all presented their plans well ahead of the initial Friday 30 April soft submission deadline.

The Next Generation EU (NGEU) programme – the European Commission’s EUR 800 billion plan, equivalent to 5.3% of the EU GDP – aims to make European economies more sustainable, resilient, and better prepared for the challenges and opportunities of the green and digital transitions.<sup>1</sup> The large majority of the NGEU budget, amounting to 100% of the loans and 80% of the grants, will be channelled through the Recovery and Resilience Facility (RRF). Each member state can request EU grants and concessional loans, based on a set of macroeconomic indicators, to boost structural reforms, and long-term public and private investments.

The RRF focus on long term investments, rather than short term fiscal transfers (e.g., differently from Biden’s fiscal package in the US) should limit any risks of overheating of the EU economies besides the normal demand-rebound after the pandemic. In this

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<sup>1</sup> NGEU amounts to 750 billion euro in 2018 prices.



sense, the goal of Next Generation EU and the Recovery and Resilience Facility appears to be increasingly more focused on raising potential growth, improving long-term fiscal sustainability, and helping economic convergence across the EU and the euro area, rather than achieving short-term fiscal stabilization. This is particularly significant as it moves the goalpost from mutualizing legacy debt to financing new investment (Giacon and Macchiarelli, 2021).

The EU recovery funds will be paid for by issuing new EU debt, establishing for the first time a large-scale joint funding model to support government spending and reforms in EU countries.<sup>2</sup> According to early estimates by the European Central Bank (see Giovannini et al., 2020), NGEU issuances will raise the existing EU debt by a factor of roughly x15, making it the largest ever experience of supranational euro-denominated debt sharing. The framework on NGEU joint debt issuance restricts any mutualization of the existing debt stock, rather focusing on financing new investment opportunities with a three-pronged objective:

1. Boosting aggregate demand, by acting as leverage for private and public sector investment from commercial banks, IFIs (EBRD, EIB) and National Promotional Banks to help roll out the RRF funds;
2. Supporting the most hard-hit countries in the pursuit of cohesion and economic convergence across the EU; and
3. Strengthening the EU economic growth potential by prioritizing longer-term strategic reforms and sectoral investments mainly in the green and digital sectors.

Detailed milestones and targets need to be outlined and subsequently achieved related to public and private investments and reforms that have been pre-approved based on each country's structural and productivity gaps, as detailed in each National Recovery

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<sup>2</sup> This model builds on the recent success of the European Commission's 'Support to mitigate Unemployment Risks in an Emergency (SURE)' bonds which were able to raise EUR 100 billion on the capital markets to counter short-term unemployment in the EU due to the Covid-19 pandemic.

and Resolution Plan (RRP). Green and digital investments will be directed toward industries that are typically recognized to have higher economic multipliers and implications on long-term economic growth (Hausmann et al., 2021; Hepburn et al., 2020; Batini et al., 2021). Thus, the return on the EU recovery funds and the impact on output will be a combination of factors such as the economic structure of each country and its absorption capacity, the instruments used, the policy assumptions, the investment strategies, the leverage targets, and the effect on confidence and expectations.

The European countries previously at the centre stage of the European sovereign debt crisis – Italy, Spain, Greece and Portugal – have so far emerged in a positive light with their plans receiving initial praise from the European Commission for their high quality and serious level of ambition in terms of investments and policy reforms. These countries have been the first cohort of EU Member States whose plans have been approved by the EU Council and have already received the disbursement of the first pre-financing tranche of RRF funds during the summer months. It seems previous experiences in implementing far-reaching reforms in front of the market and institutional creditors during the Euro area sovereign debt crisis have served the Southern European economies well in taking seriously the Commission’s requests to allocate the EU funding efficiently.

While the approval process of the funds might appear cumbersome on paper, especially when compared to the US fiscal package approved in the early days of Biden’s presidency (Holland et al., 2021), we argue that a more protracted and months-long planning could represent a serendipitous timing in matching the exit from the longer than expected EU pandemic recession. With most EU countries experiencing a technical recession between the fourth quarter of 2020 and the first half of 2021, the initial round of actual recovery funds’ disbursements in some EU member states has coincided with the actual reopening of their economies (Sandbu, 2021). In the medium to long term, this could play out well, as rebounding economies could get a breath of fresh air from EU funds just when vaccinations are ramped up in meaningful

proportions, allowing for efficient and timely use of the European fiscal resources. These interactions might contribute to building up private investors' trust in the EU and national governments' institutional efficiency, and help the return of unfettered mobility of people, especially for those EU member states most dependent on tourism receipts (see also Macchiarelli, 2021).

## 2. The recovery fund's initial bonds issuance and grants and loans' disbursements

The EU's broad-based response to the Covid-19 pandemic, and specifically the creation of NGEU resources, will guarantee a coordinated European fiscal reaction, in addition to the usual EU budget, i.e., the Multiannual Financial Framework (MFF). This initiative naturally feeds into the debate on the limited fiscal European resources that were diverted to fight the Eurozone crisis a decade ago, as markets were left wondering whether public backstops would be enough to stop financial contagion for some time (Hausmann et al., 2021).

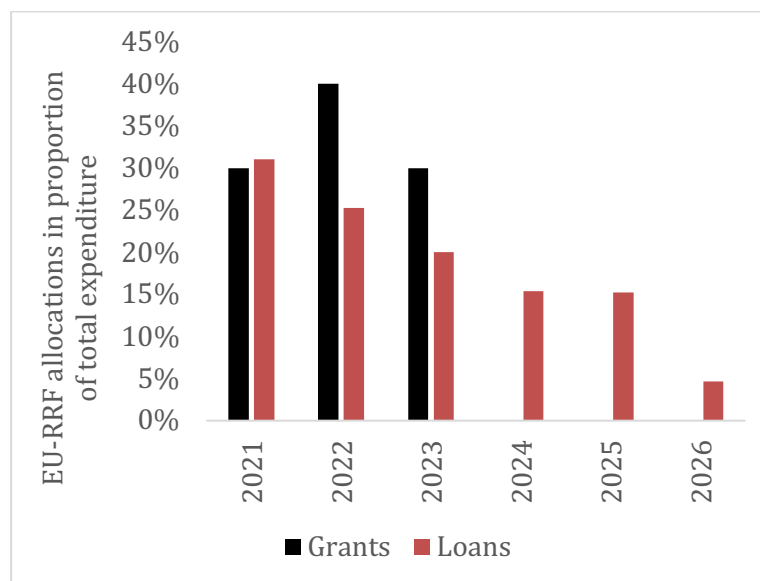
NGEU Loans, worth up to EUR 384 billion, and non-repayable financial support in the form of NGEU grants, for up to EUR 416 billion, will be distributed until the end of 2026 and repaid by 2058. Much of the EU financial support will be frontloaded, with 70% of grants to be committed by December 2022, the remaining 30% of grants by December 2023 and the entire amount of RRF loans by the end of 2026 (figure 1).

The European Council decided to adopt the so-called 'Own Resources Decision' (ORD) which ensures that EU grants and concessional loans will be funded by current and new EU own resources, on top of existing gross national income-based contributions. This decision legally authorises the European Commission to borrow up to 800 billion euros in current prices on the capital markets until the end of 2026. This decision has

been ratified by all 27 EU Member States by 31 May 2021.<sup>3</sup> On 1 June, the Commission has adopted its ‘Annual Borrowing Decision’ in which it planned to issue around EUR 80 billion of long-term bonds in 2021 plus tens of billions of short-term debt to cover the remaining financing requirements.

The majority of EU member states can already borrow at historically low rates on capital markets thanks to the European Central Bank’s ultra-accommodative monetary policy (Liadze and Macchiarelli, 2021). To make use of the full EU fiscal firepower, EU and national policymakers have the option to also request RRF loans which offer an additional opportunity to devolve resources to growth-enhancing reforms and investment.

**Figure 1:** The EU Recovery and Resilience Facility (per cent of total loans and grants, respectively)



Note: The amounts for grants refer to the average spending profile of countries that have detailed their spending plans in their NRRP (Belgium, Czechia, Denmark, Estonia, Germany, Hungary, Portugal and Spain).

Source: European Commission, Bruegel and NIESR data. Authors’ elaborations.

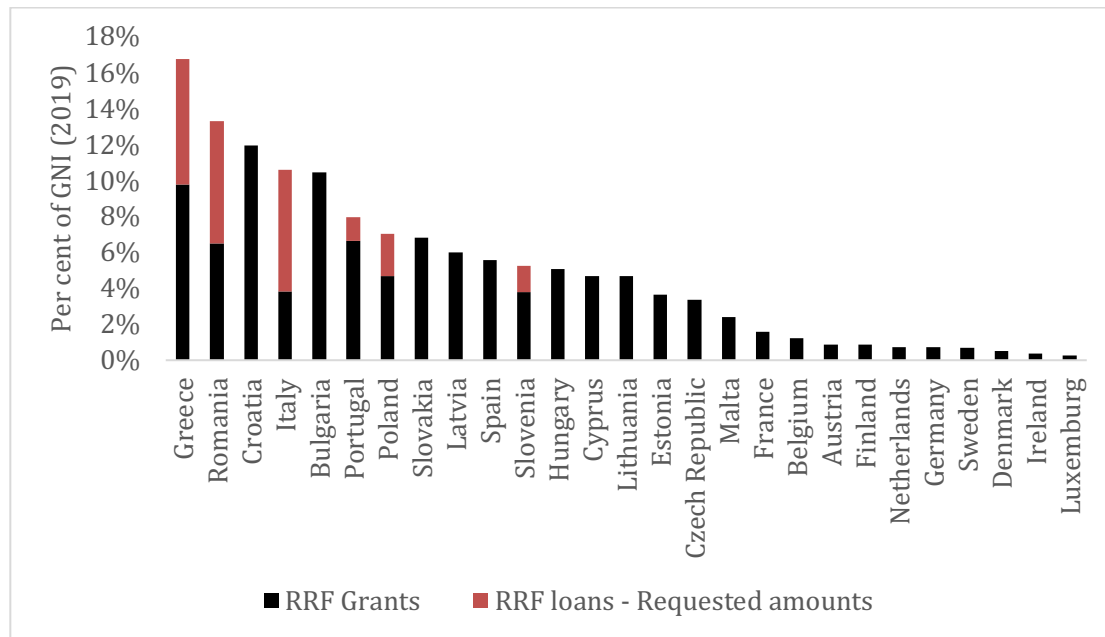
<sup>3</sup> [https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690520/EPRS\\_BRI\(2021\)690520\\_EN.pdf](https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/690520/EPRS_BRI(2021)690520_EN.pdf)

## *Vaccine Distribution and the EU Recovery and Resilience Facility*

So far, only Italy, Greece and Romania have sought the full amount available of both grants and loans. Portugal, Poland, Slovenia and Cyprus have also requested loans, but below their maximum available ceilings (figure 2). EU countries which are among the largest intended recipients of RRF funds as a per cent of their GNI either suffer from large product complexity or productivity gaps compared to the EU average (Greece, Romania, Croatia, Bulgaria, Portugal, Spain), lower GDP per capita (Greece, Croatia, Bulgaria, Romania, Portugal, Slovakia), higher unemployment rates (Spain, Greece, Italy), steeper GDP falls (Greece, Italy, Spain, Portugal, Croatia) or a combination of the above.

The expected effect of NGEU and the RRF is going to be larger for those countries triggering the RRF loan facility. A recent study by Liadze and Macchiarelli (2021) has evaluated the macroeconomic impact of the European fiscal boost implied by the EU recovery funds. Based on the current allocation of grants and loans reflected in Figure 2, their calculations suggest that the RRF would imply a debt-based fiscal expansion of 0.65% of GDP on average over the five years between 2021 and 2026, with countries that are among the scheme's major beneficiaries, such as Italy and Greece, benefiting more than countries which have decided not to apply for loans.

**Figure 2:** Requested allocations of RRF loans and grants as a % of Gross National Income



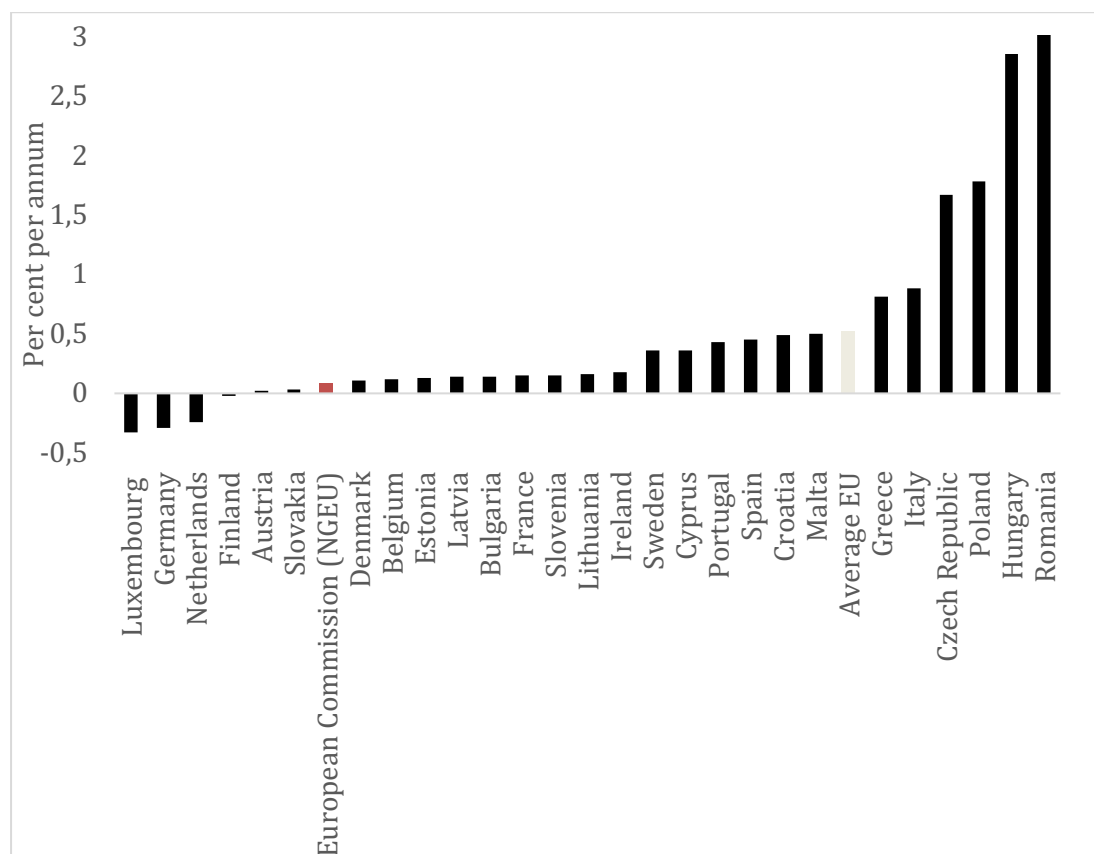
Source: European Commission (RRF grant and loans) and World Bank data (GNI 2019). Authors' elaborations.

This scenario could further change with a possible increase in the reference rates of the European Central Bank, which would make the subsidized loans by the EU recovery funds more appealing compared to the financing of individual countries on the capital markets (figure 3). Other Member States, such as Hungary, Czech Republic, Croatia and Spain could therefore consider applying for loans: this will have to be no later than the 31 August 2023 deadline.

By looking at EU bond yields at the time the NGEU was launched compared to the financing terms obtained by the European Commission in its recent NGEU bonds issuances for the same maturity, a larger number of EU countries could have incentives to borrow from the RRF, although these incentives clearly change over time. Under such a more optimistic scenario where a larger number of countries with market incentives (figure 3) would request RRF loans, the EU recovery funds would imply a

stimulus of at least 1 per cent of GDP on average over the five years between 2021 and 2026 (Liadze and Macchiarelli, 2021). At the upper bound, where all countries would request RRF loans, the plan would imply a stimulus of up to 1.5 per cent of GDP in the Euro Area on average over the five years between 2021 and 2026, particularly when the uptake is from some large savers, such as Germany (Liadze and Macchiarelli, 2021). For now, EU governments that do not have borrowing constraints, or whose funding costs are low, may nevertheless decide to borrow directly from the market.<sup>4</sup>

**Figure 3:** Market yields of government bonds with maturities of 10 years, and European Commission’s first issuance under the Next Generation EU in June 2021 (%)



Notes: Authors’ elaborations based on data from the ECB and European Commission.

Source: Liadze and Macchiarelli (2021).

<sup>4</sup> At the time of writing, Germany, the Netherlands, Austria, Finland, Sweden, and Denmark, which all supported the allocation of NGEU loans, have not requested such loans, while they have all requested or planning to request the full amount of available grants.

The Commission has had a very successful start with three significantly oversubscribed bond issuances amounting to EUR 45 billion under NextGenerationEU raised in the summer months (representing over half of the EC's target in long-term funding by 2021). The June 2021 EUR 20 billion inaugural issue was a landmark issue: the largest-ever institutional bond issuance in Europe, the largest-ever institutional single tranche transaction, and the largest amount the EU has raised in a single transaction. Strong interest in the next issues is expected as NGEU bonds provide an opportunity to buy into a 'safe-haven' while getting a marginal return over the German Bunds. The fact that more than 30 per cent of NGEU bonds will be green bonds is also expected to attract investors and could lead to considerable savings for the EU due to the lower spread over the benchmark. Nevertheless, these significant issuances in quick succession may affect individual national issuers, which must navigate around EU's choices on timing and maturity and deal with the volatility that future large NGEU trades can cause. The fast pace and large volumes may also cause questions as to whether the bonds can be fully absorbed by the market and how this will affect volatility and spreads, which also depend on the continuation of the ECB's PSPP.

By early October 2021, 25 EU governments had submitted their investment and reform proposals to access their allocation of funds. This represents more than 95 per cent of the available RRF grants. However, the road ahead in the implementation of the RRF and the full deployment of the funds in various instalments is still long with some key milestones creating potential hurdles for the rollout of the funds, especially in some of the EU member states.

The European Commission can take up to two months to vet the plans, particularly as they need to fulfil targets for green and digital investments, as well as show commitment to a sufficient number of structural reforms and the rule of law (see also Creel et al., 2020; Guttenberg and Nguyen, 2020). Finally, there is peer scrutiny. Once the Commission approves the national plans, it makes a funding proposal to the



Council; national governments then have up to one month to pass judgement on their peers, with political pressure likely to build especially on the net recipients (Reichlin, 2020; Tamma, 2021). So far, the EU Council has swiftly approved all the Plans previously endorsed by the European Commission.

Overall, the large amounts involved, and previous experiences with inefficient absorption of EU funding in most member states, justifies the Commission's insistence on structural and long-term targets, such as productive digital and green investments, which extend to the adoption of economic and administrative reforms.

### 3. Serendipity or a missed chance?

After a first, deep, recession in the first half of 2020 and a second shorter recession in the first quarter of 2021, the euro area is currently not forecast to return to pre-pandemic levels until 2022Q1 (Macchiarelli et al., 2021). The weight of subsequent waves of infections and supply-side problems in accessing the vaccines over the first few months of this year have left most EU economies lagging some large trading partners, such as China and the US.

The accelerating pace of vaccinations across most of Northern, Western and Southern Europe has fuelled hopes of a sustainable demand-driven economic rebound that could continue in 2021Q4 and into 2022, especially as the initial Recovery and Resilience Facility funds are disbursed.

Yet, also because of the lack of coordination due to specific national political hurdles around the rule of law, such as in the case of Poland and Hungary, internal political uncertainty and recurrent national elections, such as in Bulgaria, and some initial delays around the internal implementation capacity (Romania), it is increasingly likely that a second batch of European countries – mainly in central and eastern Europe – might be left high and dry with no initial tranches of recovery funds received until

December 2021, or even 2022Q1, experiencing the double whammy of delayed vaccination supplies and lack of European RRF fiscal resources.<sup>5</sup>

Table 1 below reports the Recovery and Resilience Facility funds disbursements', partitioned by grants and loans, together with the per cent of total population fully vaccinated.

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<sup>5</sup> For a discussion on the RRF procedural legitimacy see Guttenberg and Nguyen (2020), CEPS (2020).

**Table 1:** Recovery and Resilience Facility allocation, Recovery and Resilience Plan submission, and vaccine coverage as of 6 October 2021

EU Member States	RRF Grants in billion euros	13% pre-financing of RRF Grants in billion euros	RRF loans in billion euros	13% pre-financing of RRF Loans in billion euros	RRP submitted	RRP approved with 13% pre-financing tranche disbursed	Population fully vaccinated (%)
Austria	3.5	0.5			✓	✓	61.4%
Belgium	5.9	0.8			✓	✓	73.6%
Bulgaria	6.3	0.8					19.3%
Czechia	7.1	0.9			✓	✓	56.1%
Croatia	6.3	0.8			✓	✓	42.2%
Cyprus	1	0.1			✓	✓	63.6%
Denmark	1.6	0.2			✓	✓	75.4%
Estonia	1	0.1			✓		46.5%
Finland	2.1	0.3			✓		63.8%
France	39.4	5.1			✓	✓	75.3%
Germany	25.6	3.3			✓	✓	64.8%
Greece	17.8	2.3	12.7	1.65	✓	✓	57.6%
Hungary	7.2	0.9			✓		57.9%
Ireland	1	0.1			✓	✓	74.6%
Italy	68.9	9.0	122.6	15.9	✓	✓	74.8%
Latvia	1.8	0.2			✓	✓	45.1%
Lithuania	2.2	0.3			✓	✓	58.4%
Luxemb.	0.1	>0.1			✓	✓	65.1%
Malta	0.3	>0.1			✓	✓	85.2%
Netherlnd.	6	0.8					66.9%
Poland	23.9	3.1	12.1	1.6	✓		51.5%
Portugal	13.9	1.8	2.7	0.4	✓	✓	84.3%
Romania	14.3	1.8	15	1.95	✓		27.9%
Slovenia	1.8	0.2	0.7	0.1	✓	✓	48.9%
Slovakia	6.6	0.8			✓	✓	41.5%
Spain	69.5	9.0			✓	✓	79%
Sweden	3.3	0.4			✓		64.3%

Sources: Authors' elaboration based on Bloomberg Covid-19 Vaccine Tracker and European Commission<sup>6</sup>

<sup>6</sup> [https://ec.europa.eu/info/sites/default/files/about\\_the\\_european\\_commission/eu\\_budget/recovery\\_and\\_resilience\\_facility\\_.pdf](https://ec.europa.eu/info/sites/default/files/about_the_european_commission/eu_budget/recovery_and_resilience_facility_.pdf)

The Commission's decision on which EU member states receive the Recovery and Resilience Facility funds is based on merit, which includes compliance with the 11 criteria set out in the Recovery and Resilience Facility Regulation, including first and foremost the green and digital targets (European Commission, 2021).

The national plans of all Southern EU member states have been approved by the EU Council and the initial 13 per cent tranche of recovery funds has been already disbursed (Portugal, Spain, Greece, Cyprus, Malta and Italy);

- The national plans of the majority – but not all – western and northern EU member states have been approved by the EU Council and the initial 13 per cent tranche of recovery funds has been already disbursed (Germany, France, Belgium, Luxembourg, Ireland, Austria and Denmark);
- Only six central and eastern EU member states (Czech Republic, Slovakia, Lithuania, Latvia, Slovenia and Croatia) have had their plans approved by the EU Council and the initial 13 per cent tranche of recovery funds has been disbursed;
- Romania and Estonia still need to receive the Council's approval after a late endorsement of the Commission at the end of September;
- Poland and Hungary are yet to receive the Commission's endorsement due to ongoing discussions around the rule of law; and
- Bulgaria has yet to submit its Recovery Plan.

On the vaccination front, the east-west divide has become even more obvious. On the one hand, vaccination rates have accelerated thanks to intense campaigns that resulted in green pass' obligations boosting vaccine rollouts in some western and southern European countries particularly through engaging the youngest. On the other hand, the diffusion of the delta variant raised issues as regards to the optimal percentage of double vaccinated people. Yet, several countries in central and eastern Europe have remained behind because of local perceptions of corruption and an embedded mistrust of local authorities which have slowed down vaccine demand, even after the supply-

side and centralised procurement bottlenecks at the EU level have substantially improved since Spring 2021.

- Malta, Portugal Spain, Denmark and France are all above 75 per cent of their adult population fully vaccinated.
- Italy, Ireland and Belgium will achieve the 75 per cent target within weeks.
- All the remaining Western, Northern and Southern EU countries are at or above 60 per cent and should achieve the 75 per cent target in Q4 2021.
- Hungary, the Baltics, Czech Republic, Slovakia, Slovenia, Croatia and Poland are below the EU average and will reach the 75 per cent target most likely only in 2022 at current vaccination rates.
- With less than a third of adults fully vaccinated, Bulgaria (19.3 per cent) and Romania (27.9 per cent) might never reach the EU target unless further public policy measures are imposed.

## 4. Conclusion

To conclude, most western, northern and southern EU member states are moving ahead both in terms of their vaccine rollouts as well as in the approval of their recovery plans, which has already triggered the disbursement of the initial tranches of recovery funds. However, having several countries in Central and Eastern Europe lagging in terms of both their vaccine rollouts and access to recovery funds underscores the difficulty of coordinating efforts between vaccination campaigns and full absorption of EU-RR funds.

For the most part, the timing of the EU recovery funds' initial disbursements in 2021Q3 has coincided in a serendipitous, and not entirely planned, manner with the reopening of most – but not all – European economies.

If Italy, Spain, Greece, and Portugal had created the biggest concerns to the markets and European policymakers at the time of the European sovereign debt crisis, this time the same countries of Southern Europe could lead by example. This is true not only in

terms of their recent ramp-up of the vaccine roll-out but especially in taking seriously the Commission's requests to allocate EU funding towards the green and digital priorities of the future while providing full details of the requested reform programmes.

While much of the focus throughout the Covid-19 pandemic and the EU vaccine rollout has been on Southern and Western Europe, little attention has been paid to Central and Eastern Europe, where the picture is more nuanced, with many countries left behind when it comes to either the national delivery of vaccines and/or the EU recovery funds' preparedness (see also *The Lancet*, 2021). The public health scenario alone could have economic and social repercussions in those countries with a potential re-imposition of containment measures, which in turn could impact their ability to sustain an economic rebound beyond the summer months, thus undermining their ability to fully benefit from the EU recovery funds, when they'll become available.

After the Covid-19 pandemic, Europe must look East, and not just South. This will be an important test for the EU's institutions (see also Bergsen et al., 2020; Odendahl and Springford, 2020; Fuest, 2021), not only for the significant and necessary transformations in terms of structural reforms, climate and digital transitions, but first and foremost for the political implications for the stability and coherence of the European project as a whole.

## 5. References

Aubry, Manon and M. Schirdewan (2020), Solidarity is the cure for post-pandemic Europe. EU Observer, 12 May. Available at

<https://euobserver.com/stakeholders/148324>

Bergsen, Pepjin, A. Billion-Galland, H. Kundnani, V. Ntousas, and T. Raines (2020), Europe after coronavirus: the EU and a new political economy, June 2020, pp. 1–20, London: Chatham House. Available at:

[https://www.chathamhouse.org/sites/default/files/2020-06-08-europe-after-coronavirus-bergesen-et-al\\_0.pdf](https://www.chathamhouse.org/sites/default/files/2020-06-08-europe-after-coronavirus-bergesen-et-al_0.pdf)

Bloomberg COVID-19 Vaccine Tracker

<https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/>

(accessed on 3 June 2021)

Centre for European Policy Reforms (2020), Next Generation EU: Breaking a taboo or breaking the law? CEPS in Brief, 24 June, Brussels: Centre for European Policy Studies. Available at: <https://www.ceps.eu/next-generation-eu/>

Creel, Jerome, M. Holzner, F. Saraceno, A. Watt A and J. Wittwer (2020), How to spend it: a proposal for a European COVID-19 recovery programme, Policy Brief 72, 18 June 2020, Paris: French Economic Observatory.

Darvas, Zsolt, S. Tagliapietra (2021), Setting Europe's economic recovery in motion: a first look at national plans, Bruegel Blog, 29 April. Available at:

<https://www.bruegel.org/2021/04/setting-europes-economic-recovery-in-motion-a-first-look-at-national-plans/>

European Commission (2021), Questions and answers: The Recovery and Resilience Facility, 22 April. Available at:

[https://ec.europa.eu/commission/presscorner/detail/en/qanda\\_21\\_1870](https://ec.europa.eu/commission/presscorner/detail/en/qanda_21_1870)

European Commission, Recovery and Resilience Facility: Maximum grant allocations (current prices)

[https://ec.europa.eu/info/sites/default/files/about\\_the\\_european\\_commission/eu\\_budget/recovery\\_and\\_resilience\\_facility\\_.pdf](https://ec.europa.eu/info/sites/default/files/about_the_european_commission/eu_budget/recovery_and_resilience_facility_.pdf) (accessed on 3 Oct 2021)

Fuest, Clemens (2021), The NGEU Economic Recovery Fund, CESifo Forum, ISSN 2190-717X, ifo Institut - Leibniz-Institut für Wirtschaftsforschung an der Universität München, München, Vol. 22, Iss. 01, pp. 03-08.

Giacon, Renato, C. Macchiarelli (2021), After the Covid-19 pandemic, Europe must look East, and not just South, NIESR blog, 18 May 2021.

Giovannini, Alessandro, S. Hauptmeier, N. Leiner-Killinger and V. Valenta (2020), The fiscal implications of the EU's recovery package, ECB Economic Bulletin, Issue 6/2020.

Guttenberg, Lucas, T. Nguyen (2020), How to spend it right: A more democratic governance for the EU Recovery and Resilience Facility, Jacques Delors Centre (Hrsg.)

Hausmann, Ricardo, M. Santos, C. Macchiarelli and R. Giacon (2021), What Economic Complexity Theory Can Tell Us about the EU's Pandemic Recovery and Resilience Plans. Growth Lab / European Politics and Policy. Available at: <https://growthlab.cid.harvard.edu/publications/economic-complexity-theory-eu-pandemic-recovery-resilience-plans>

Liadze, Iana, C. Macchiarelli (2021), Simulating the effect of the EU Recovery and Resilience Facility in NiGEM, National Institute Economic Review, Issue 257. Available at: <https://ideas.repec.org/a/nsr/niesrb/vbi3y2021p23-33.html>

Luo, Chih-Mei (2021), The COVID-19 Crisis: The EU Recovery Fund and its Implications for European Integration – a Paradigm Shift, European Review, First



## *Vaccine Distribution and the EU Recovery and Resilience Facility*

View, pp. 1 – 19, Cambridge University Press, 19 March 2021,

<https://doi.org/10.1017/S106279872100003X>

Macchiarelli, Corrado (2021), How is Covid-19 affecting international travel and tourism?, The Economics Observatory (ECO), 22 April

Macchiarelli, Corrado and Naisbitt, Barry, with J. Boshoff, D. Holland, I. Hurst, H. Küçük, I. Liadze, X. Mao, P. Sánchez Juanino, C. Thamotheram, K. Whyte (2021), Global Economic Outlook: Lifting the Pandemic Cloud, Issue 257, Summer. Available at: <https://www.niesr.ac.uk/publications/global-economic-outlook-summer-2021-lifting-pandemic-cloud>

Odendahl, Christian and J. Springford (2020), Three Ways COVID-19 Will Cause Economic Divergence in Europe, London, Brussels and Berlin: Centre for European Reform. Available at:

[https://www.cer.eu/sites/default/files/pb\\_econdiv\\_20.5.20.pdf](https://www.cer.eu/sites/default/files/pb_econdiv_20.5.20.pdf)

Reichlin, Lucrezia (2020) Everything you need to know about the EU's 500 billion COVID-19 recovery fund, The World Economic Forum COVID Action Platform. 4 June. Available at: <https://www.weforum.org/agenda/2020/06/european-union-germany-france-proposal/>

Reuters (2021), UPDATE 2-EU to kick off pandemic plan with 10 bln euro bond issue -French minister, 31 May. Available at: <https://www.reuters.com/article/eu-economy-bonds-idUSL2N2NI1N9>

Sandbu, Martin (2021), EU recovery funds will flow at last and could be game-changers, Financial Times, 4 May. Available at:

<https://www.ft.com/content/31b43bee-82cf-4fe9-9b3d-6cc2a630f3fa>

Tamma, Paola (2021), Recovery fund slalom: 5 things to know about Europe's relief package, POLITICO. Available at: <https://www.politico.eu/article/europe-eu-recovery-fund-5-things-to-know/>

The Lancet (2021), Editorial: COVID-19: building a stronger Europe, Vol 397, 27 March. Available at: <https://www.thelancet.com/action/showPdf?pii=S0140-6736%2821%2900720-0>

Valero, Jorge (2021), Recovery fund faces new hurdles with first disbursements, EURACTIV.com. Available at: <https://www.euractiv.com/section/economy-jobs/news/recovery-fund-faces-new-hurdles-with-first-disbursements/>





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