zoe institute for future-fit economies

Building back better?

Economic resilience in the era of the Recovery and Resilience Facility

ZOE Institute for Future-fit Economies

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Summary

The era-defining challenge for governments today is to deal with shocks in the short-term whilst simultaneously managing the long-term transition to sustainable societies with high levels of well-being for all. We can liken this to running a sprint and a marathon at the same time.

To rise to this challenge, building economic resilience is key. A holistic understanding of economic resilience is one in which economies can absorb and recover from crises whilst also adapting in ways that make future crises less likely.

The multitude of crises faced by the EU in the early 2020s led it to create a first-of-its-kind instrument explicitly designed to bolster Member States economic resilience: the Recovery and Resilience Facility (RRF). Three years into the implementation of the RRF, this paper uses a holistic approach to economic resilience to assess the evolution in the resilience of EU economies and asks whether the RRF is contributing to 'Building back better'.

Main findings:

- Despite the crises faced by the EU since 2019, the average **economic resilience of EU Member States has not decreased,** when assessed using the holistic methodology of the Economic Resilience Index (ERI).
- However, this development is uneven across ERI dimensions. There has been notable progress across the EU in the dimensions Financial Resilience and Economic Independence. Conversely, Production Capacity, and Education & Skills saw declines. And equally crucial dimensions such as Social Progress & Cohesion stagnated. The overall stable ERI performance of countries was primarily influenced by dimensions aligned with a conventional, narrower definition of economic resilience.
- **There has been an overall convergence trend across the EU.** Countries with an initially lower ERI score improved their economic resilience more between 2019 and 2022 than countries with an initially higher ERI score.
- Latvia, Italy, and Hungary were able to increase their economic resilience, measured by the ERI, the most.
- Poland and France were subject to the biggest losses in economic resilience.
- **A possible driver of this convergence is the EU's Recovery and Resilience Facility (RRF).** Looking at 24 EU countries, we identified a positive correlation between the per capita amount of RRF funds disbursed until 2022 and the improvement of the countries' economic resilience score between 2019 and 2022.
- The impact of the RRF on economic resilience hinges not solely on the per capita funds allocated to countries and their effectiveness in meeting targets and milestones to access these funds. Equally vital is the **quality of the planned reforms and investments.** Our deep dive analysis found that the degree of policy integration and the level of systemic change potential, to go beyond simply addressing the symptoms of structural socioeconomic challenges, also impacted the capacity of National Recovery and Resilience Plans (NRRPs) to enhance economic resilience.
- The RRF has offered Member States **additional fiscal leeway** which has further enabled the allocation of funds toward innovative social and cohesion policy measures.
- Our findings suggest the RRF is a crucial instrument which contributed to stable economic resilience in the EU despite multiple crises. Now the RRF needs a longer-term follow-up and critical upgrades. Strengthening economic resilience will be just as important after 2026 and the EU needs to take an intergenerational approach which consistently embeds longview thinking so that all Member States can implement resilience-enhancing reforms and investments.

1. Introduction

The great challenge for governments in the European Union and beyond is to deal with current crises whilst simultaneously managing the transition to sustainable societies with wellbeing for all. In other words, Europe needs to win a marathon and a sprint at the same time. This challenge requires governments to shape resilient economies that help mitigate future crises and remain adaptable to current ones, whilst enabling a good life for all within planetary boundaries.

In response to this challenge, the EU set a precedent for an instrument in 2020 with the Recovery and Resilience Facility (RRF). The RRF aims to assist EU Member State economies to recover in the short-term whilst also making their economies more resilient in the long-term. A strategic response to the COVID-19 pandemic, the RRF provides Member States with substantial financial resources sourced from joint EU borrowing. With the €723 billion fund, Member States can channel new funding towards investments and reforms to kickstart their economies and to support the green and digital transitions, promote social and territorial cohesion, thus making Europe more fit for future challenges.

Three years into the RRF's implementation, the current economic outlook is relatively positive in terms of short-term recovery (European Commission, 2023). The forthcoming interim evaluation of the RRF, due in early 2024, will delve deeper and assess the extent to which the RRF objectives have been met. These objectives encompass: contribution to the green transition, adherence to climate targets, and advancement of the digital and energy transitions. The Facility's commitment to contributing to the Union's long-term sustainability is clear (Regulation (EU) 2021/241 of the European Parliament and of the Council of 12 February 2021 Establishing the Recovery and Resilience Facility, 2021). The specific objectives of financial support provided to Member States align with the milestones and targets set out in their National Recovery and Resilience Plans (NRRPs). Consequently, these objectives suggest that cultivating a more adaptable, sustainable, and inclusive economy is instrumental in building resilience. Put differently, the exact composition of a resilient economy is not explicitly outlined.

To fill this gap, we have developed a comprehensive concept of economic resilience: one that understands economic resilience as the ability to not only 'bounce back' from shocks but to 'bounce forward' to a green, stable, and prosperous economy (Hafele et al., 2023). To enable the measurement of this understanding of economic resilience, we developed the Economic Resilience Index (ERI) – a tool for quantifying how well economies are performing with respect to a holistic concept of economic resilience based on a social-ecological approach. Building on this concept, this paper monitors the economic resilience of EU Member States during the recovery from the COVID-19 crisis and other subsequent crises, namely the war in Ukraine and the resulting energy price shocks.

Using the ERI, we have assessed the development of EU Member States' economic resilience in the period 2019–2022. The goal of this paper is to compare Member States' economic resilience over time in the context of the RRF and derive lessons about the effectiveness of the RRF in building economic resilience in a holistic sense.

We conducted a quantitative correlation analysis of RRF funds received per Member State with changes of ERI scores, as well as a qualitative deep dive for three Member States from heterogenous geographical and economic backgrounds. This allowed us to explore the success of the RRF in building holistic economic resilience.

The paper is structured as follows. Chapter 2 explains the role of economic resilience in EU policymaking and elaborates on the necessity to complement this with a holistic understanding of economic resilience. Chapter 3 delineates how economic resilience can be measured in such a holistic manner. Chapter 4 presents and discusses how economic resilience of EU Member States developed between 2019 and 2022. Chapter 5 complements this through a qualitative Member State deep dive to derive lessons from the RRF, with a specific focus on Social Progress & Cohesion. Chapter 6 provides a conclusion and an outlook for taking forward this paper's findings.

2. Economic resilience in the EU

2.1 Economic resilience as an EU priority – the Recovery and Resilience Facility

In recent years, the European Union (EU) has placed a strong emphasis on the concept of resilience. With the first Strategic Foresight Report of the von der Leyen European Commission in 2020, resilience was named as the new *'compass'* of EU policymaking (European Commission, 2020). In the wake of the COVID-19 pandemic, resilience became a key goal of the EU's response to this crisis. Member States agreed on a new funding instrument 'to help the EU emerge stronger and more resilient from the current crisis': the Recovery and Resilience Facility (RRF) (European Commission, 2024c).

Conceptualised as a centrepiece of the NextGenerationEU plan, it entered into force in February 2021 and is, to date, the most extensive EU initiative targeting resilience. It provides a maximum of €385 billion in loans and another €338 billion[1] in grants to finance reforms and projects in EU Member States from the start of the COVID-19 pandemic in February 2020 until the end of 2026. The reforms and investments facilitated by the RRF aim to make EU economies and societies more sustainable, resilient, and prepared for the green and digital transitions. Simultaneously, the RRF aims to address the challenges identified in the country-specific recommendations of the European Semester framework of economic and social policy coordination. It also seeks to contribute to the implementation of REPowerEU and, consequently, the EU's strategic autonomy.

Member States must submit National Recovery and Resilience Plans (NRRPs) to obtain RRF funding. The planned reforms and investments specify clear milestones and targets which must be fulfilled to receive the payment of RRF grants and loans. RRF payments are hence subject to performance. Moreover, at least 37% of the budget outlined in those plans must be dedicated to green measures and 20% to digital measures. As of January 2024, 15% of the previously specified milestones and targets have been reached. Less than 15% of available loans and around 39% of available grants have been disbursed so far (European Commission, 2024a).

The Commission's interim evaluation plays a crucial role in assessing the RRF's progress. It scrutinises whether the stated objectives and goals are being met and provides insights into adjustments that may be required. However, building genuine economic resilience demands a broader perspective. Merely meeting the criteria outlined in the RRF does not suffice for a holistic understanding of economic resilience. To bounce forward from shocks and continuously transform the economy for the needs of a green and just transition, a broader understanding of economic resilience is needed.

2.2 The concept of economic resilience

To shape this understanding of economic resilience as the ability to bounce forward after crises, we have developed a concept of economic resilience (Hafele et al., 2022). This concept embeds the economy within society as well as the environment. It defines its higher-level purpose as the provision of well-being for present and future generations while remaining within planetary boundaries. Thus, in providing goods and services at an appropriate quantity and quality for society, the economy faces two constraints: (1) the minimisation of negative social consequences that detriment wellbeing and (2) respect for the hard environmental limits on economic activities imposed by planetary boundaries (Hafele et al., 2022). This understanding of the purpose of the economic system is visualised below.

1 At 2022 prices.

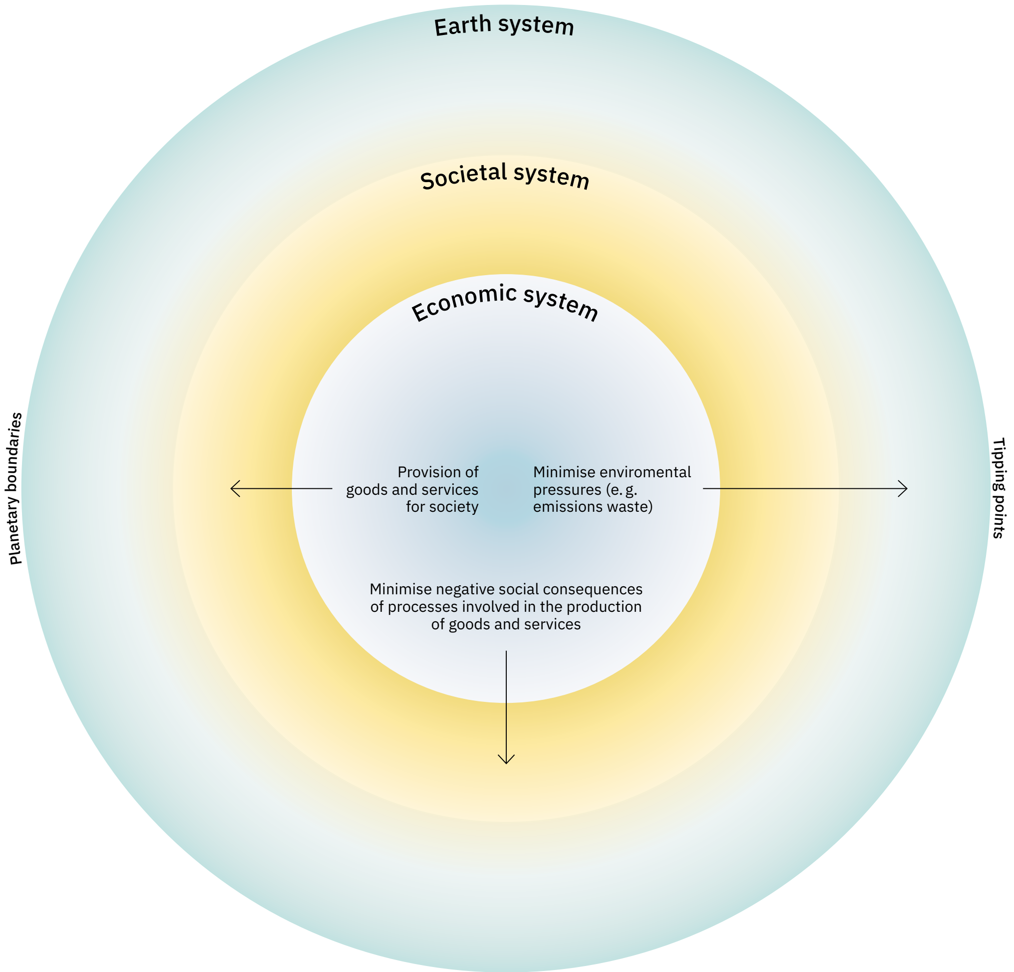


Figure 1: The purpose of the economic system in relation to the societal and Earth system

Within the economic system, households, communities, businesses, and the state are the provisioning actors. To adequately perform both monetary and non-monetary interactions and work towards the higher-level purpose of the economy, actors need a set of abilities. For example, for businesses to provide goods and services at appropriate quality and quantity, it is an essential ability to develop, distribute, and use technology. Hence, a resilient economy needs to make these abilities resilient, i.e. it needs to maintain these abilities during and after shocks.

There are various ways in which a system can be resilient. Based on the work of Manca et al. (2017) and Martin and Sunley (2015), three capacities which make a system resilient can be distinguished: absorption, recovery, and adaption. The capacity to absorb a shock implies resistance because it denotes a short-term bounce back to a past performance level without sustaining permanent damage (Manca et al., 2017). The capacity to recover from a shock denotes the efforts to regain lost system function in the medium to long run (Linkov & Trump, 2019). Finally, the capacity to adapt to a shock implies efforts to change the system with the aim of better managing future threats of similar nature (Linkov & Trump, 2019).

As Figure 2 illustrates, the combination of provisioning actors, resilience abilities and resilience capacities result in a large set of resilience characteristics that render an economy resilient. The more characteristics an economy has, i.e. the better an economy's four provisioning actors are able to absorb, recover from, as well as adapt to a shock with respect to all their resilience abilities, the more resilient the economy is.

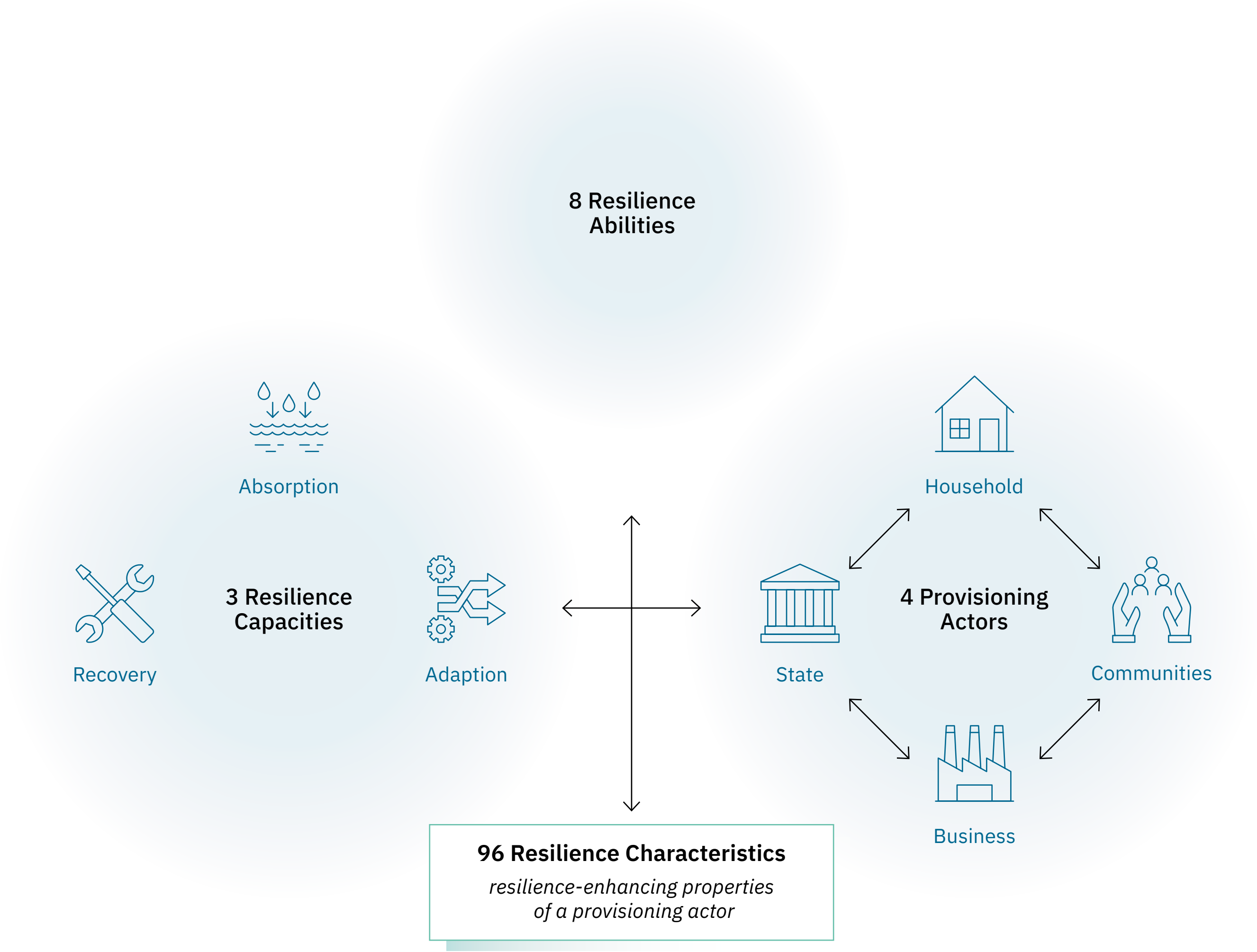


Figure 2: Interplay of resilience capacities, abilities, and provisioning actors

3. Measuring economic resilience in the EU

To enable the measurement of economic resilience, we developed the Economic Resilience Index (ERI). The ERI is a single composite indicator that measures the economic resilience of EU Member States. Based on the holistic concept of economic resilience, we measure the different actors' resilience abilities distinct to each resilience capacity. For each combination of resilience ability and resilience capacity, one or several determinants are chosen. For example, to recover from a shock to their ability to develop, distribute, and use technology, businesses need innovation. As innovation helps to solve challenges, it can enhance the system's capacity to recover in times of crises, hence contributing to resilience. As these determinants partly overlap for the different actors, we identified 27 determinants which can be grouped into the following six dimensions:

1. Economic Independence
2. Education & Skills
3. Financial Resilience
4. Governance
5. Production Capacity
6. Social Progress & Cohesion

To measure the 27 different resilience determinants, a quantitative indicator has been chosen for each of them. For example, 'Innovation' is measured by a country's number of patent grants per inhabitant. Table 1 gives an overview of the 27 indicators which make up the ERI.[2]

Using new data to update the ERI for the years 2019–2022 allows us to analyse EU Member States' development in terms of economic resilience over the time period of the RRF. This analysis allowed us to uncover trends, for instance Member States catching up to others. By computing correlations between the changes in ERI scores over time and the amount of RRF funds received by Member States, it can also indicate whether the RRF has been successful in building economic resilience.

Dimension	Determinant	Indicator
Economic Independence	Economic complexity	Economic Complexity Index
	Energy independence	Energy imports dependency
	Export market diversity	Export partner concentration
	Supply chain vulnerability	Import partner concentration
	Natural resources access	Resource productivity
Education & Skills	Skills	Executives' perception of readily available skilled labour
	Reskilling	Adult participation rate in education and training
	Education quality	Programme for International Student Assessment (PISA)
	Research & Development	Scientific publications
Financial Resilience	Corporate finances	Importance of finance as a problem for firms (SAFE study)
	Household finances	Household saving rate
	Public finances	Refinancing cost
	Financial equality	Income quintiles share ratio S80/S20
Governance	Government effectiveness	Trust in government
	Institutional quality	Regulatory quality
	International collaboration	International co-operation in research
	Welfare state quality	Net replacement rate in unemployment
Production Capacity	Employment	Long term unemployment rate
	ICT capacity	ICT service sector in GDP
	Innovation	Patent grants per 1000 inhabitants
	Investment	Investment share of GDP
Social Progress and Cohesion	Economic participation	Employees in trade unions
	Employment quality	Job satisfaction
	Gender equality	Gender employment gap
	Social cohesion	People at risk of poverty or social exclusion
	Regional cohesion	Regional dispersion of GDP
	Trust	Trust among people in neighbourhood

Table 1: Overview of economic resilience dimensions, determinants, and indicators

2 For some of the 27 resilience determinants, the corresponding indicator is different from the indicators used in Hafele et al. (2023). This is due to better data becoming available or methodological improvements.

4. The development of economic resilience over time

4.1 Changes in Member States' ERI scores

Measured by the ERI, the EU's overall economic resilience has increased slightly since 2019. Most Member States improved their performance. Only five Member States had a worse ERI score in 2022 than in 2019.

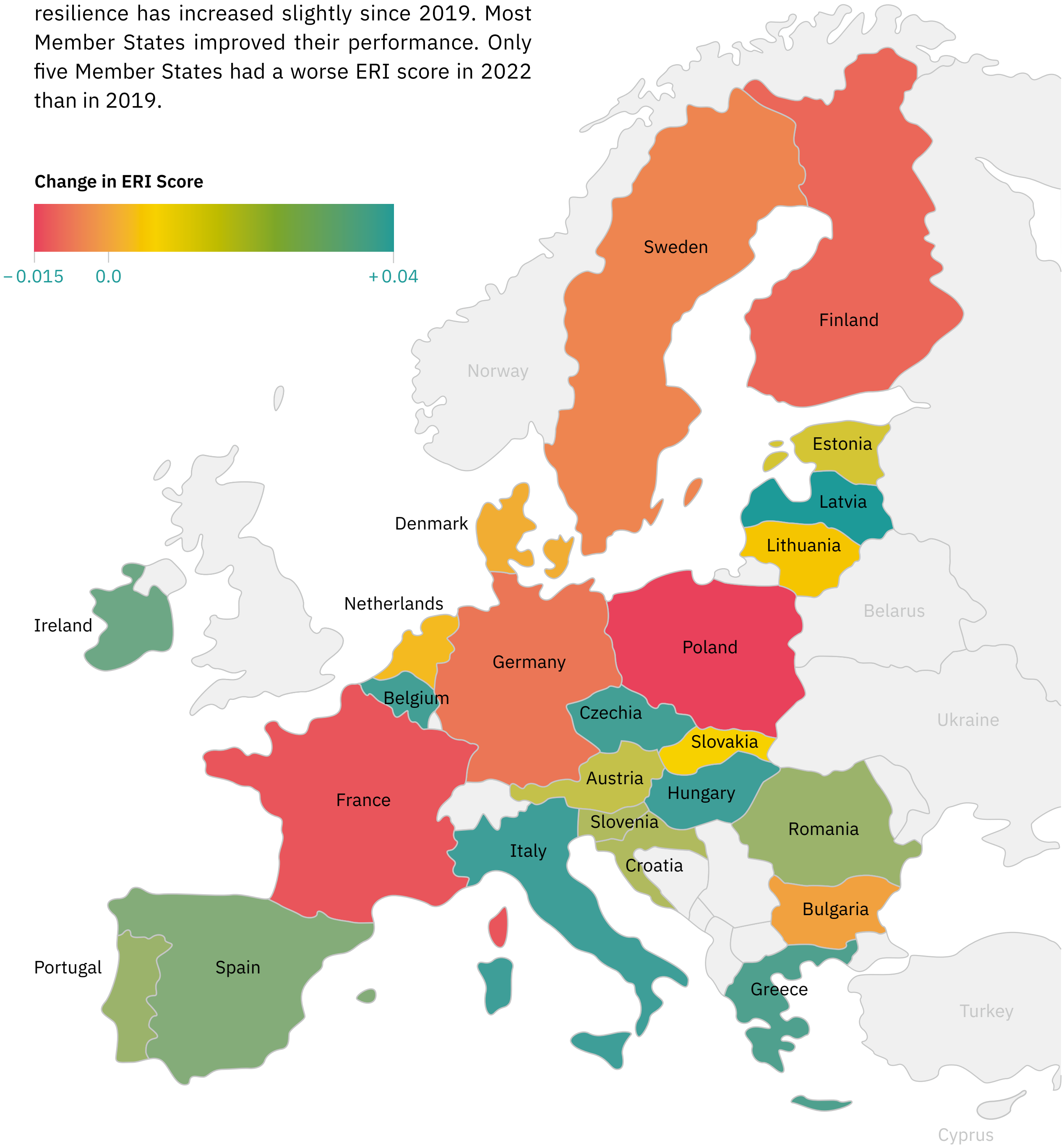


Figure 3: ERI score development in the EU 2019–2022

In terms of patterns, it is striking that many Central and Eastern European countries, as well as Southern European countries, with initially low-to-average scores, were able to improve their ERI score considerably. Conversely, several high performers, including Sweden, Finland, France, and Germany, scored lower in 2022 than in 2019. In absolute terms, Latvia was able to increase its economic resilience the most. Poland's ERI score fell the furthest.

In the case of Latvia, its increased score was strongly driven by improvements in the dimensions of Governance and Education & Skills. Latvia was, for example, able to improve the quality of its welfare state – the net replacement rate of income in the case of unemployment rose by over 10 percentage points.[3] Moreover, executives' perceptions of the availability of skilled labour, expressed on a scale of 0–10, increased from an average of 5.13 to 6.15 over the period.

Poland, which saw the biggest losses in the overall ERI, lost most in those dimensions in which Latvia saw its improvement. In the dimension of Governance, Poland deteriorated in the variables estimating Institutional Quality and Government Effectiveness. Furthermore, over the four years observed in the sample, there was a significant decrease in the availability of skilled labour as perceived by executives, from an average of 4.9 to 3.75.

4.2 The ERI Member State ranking

The divergence in the evolution of ERI scores over the period drives some movement within the overall ERI ranking. Table 2 presents the ERI scores for 24 EU Member States[4] in 2022 and the change in ranking compared to the first data point in 2019, with 0 being the worst and 1 being the best possible score.

Sweden (1 out of 24), Denmark (2) and Finland (3) top the ranking, followed by the Netherlands (4). The Member States occupying the first four places in the ranking remained unchanged since 2019. The same goes for the very bottom of the ranking which remains occupied by Greece (24). In the middle of the ranking, some countries have switched positions since 2019. Germany and France have both fallen two places, whilst Belgium has jumped up two places. Lithuania and Poland both show a significant descent of three and four rankings, respectively.

Country	ERI Score 2022	Δ ERI Score 2019 to 2022	Δ to Rank 2019
Sweden	0.724	-0.002	0
Denmark	0.703	0.005	0
Finland	0.67	-0.005	0
Netherlands	0.631	0.006	0
Slovenia	0.573	0.024	1
Ireland	0.565	0.028	1
Germany	0.562	-0.004	-2
Belgium	0.561	0.036	2
Austria	0.554	0.022	-1
Estonia	0.525	0.016	1
France	0.514	-0.011	-2
Czechia	0.512	0.036	0
Portugal	0.452	0.026	0
Spain	0.449	0.027	0
Latvia	0.44	0.040	1
Hungary	0.433	0.038	2
Croatia	0.429	0.024	3
Lithuania	0.418	0.010	-3
Italy	0.417	0.038	2
Slovakia	0.406	0.014	-1
Poland	0.377	-0.015	-4
Romania	0.315	0.026	1
Bulgaria	0.313	0.004	-1
Greece	0.298	0.030	0

Table 2: Changes in the ERI ranking in the EU

3 For a single person with an average wage and no children after 24 months of unemployment.
4 Cyprus, Luxembourg, and Malta are excluded because of data shortages.

4.3 The convergence trend in ERI scores

The following correlation graph shows that, on average, countries with a lower score in 2019 increased their ERI scores more than countries with higher scores in 2019. Hence, we see a trend of convergence in economic resilience across the EU. This trend is mostly driven by the poor performance of countries with an initially high ERI score, namely Germany, the Netherlands, Finland, Denmark, and Sweden. A potential general explanation for such a trend could be a declining marginal return of economic resilience policies, i.e. the more economically resilient an economy is, the more challenging it becomes to build economic resilience.

Romania is an example of a country with an initially very low ERI score but an above-average increase over the period 2019–2022. The reasons for this improvement are multidimensional. The biggest increase took place in the dimension of Financial Resilience, due to improved public finances in the form of falling refinancing costs, and to increased financial equality, measured by the ratio of total income received by the 20% of the population with the highest income (top quintile) to that received by the 20% of the population with the lowest income (bottom quintile). Romania also achieved improvements in the dimensions of Economic Independence, Education & Skills, Production Capacity and Social Progress & Cohesion. The Social Progress & Cohesion dimension benefited from an improvement in Employment Quality and a slight improvement in its exceptionally poor score in Social Cohesion: the share of people at risk of poverty or social exclusion in Romania decreased from 36.1% to 34.4% between 2019 and 2022 (Eurostat, 2024). Governance is the only dimension in which Romania observed a marginal decrease.

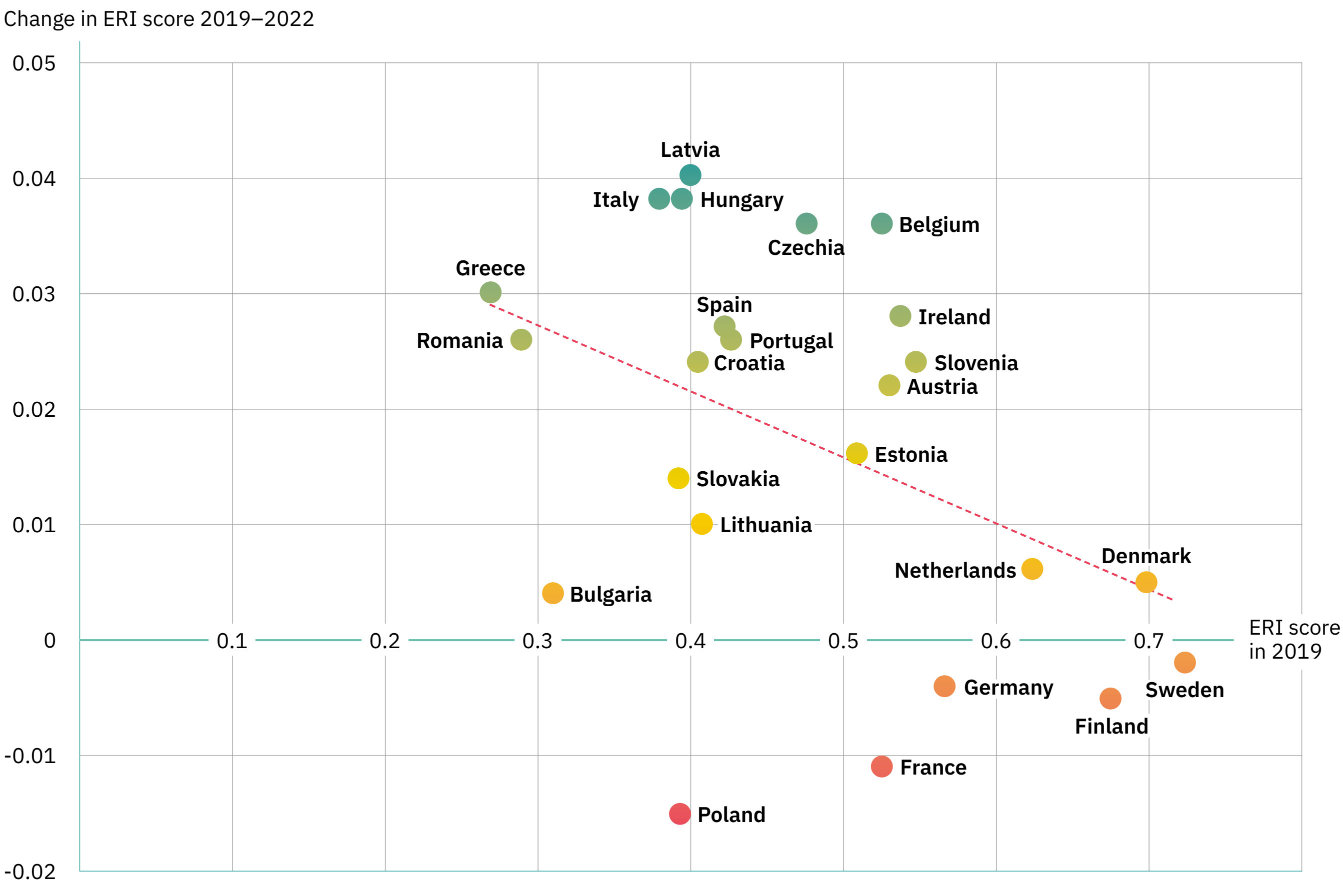


Figure 4: Countries ERI score in 2019 in relation to its change between 2019 and 2022

Germany is an example of a high-performing country with a stagnant ERI score. Its overall score is marginally lower than four years ago. The biggest decreases were in the dimensions of Production Capacity and Social Progress & Cohesion. The reduction in Production Capacity primarily results from reduced innovation: between 2019 and 2022 the number of patents granted per 1,000 inhabitants fell by nearly 30%. At the same time, Germany saw a decrease in Social Cohesion: the share of people at risk of poverty or social exclusion increased from 17.3% to 20.9% between 2019 and 2022. However, Germany improved its Financial Resilience during the same time period. This is explained by better public finances, as refinancing costs in a moving 10-year average have fallen, and by improvements in financial equality which is a measure of the ratio between the income of the top 20% versus the bottom 20%.

4.4 The development of economic resilience dimensions

Despite the multitude of crises which have shaken the EU in the past years, most notably the COVID-19 pandemic and the war in Ukraine, there has been no general deterioration of economic resilience. The average ERI score, weighted by inhabitants per country, slightly improved between 2019 and 2022, by a magnitude of 0.012 ERI points. However, the contribution of the different economic resilience dimensions to this trend was not uniform. The biggest increases were observed in the dimensions of Financial Resilience and Economic Independence which generally receive most attention in the public discourse on economic resilience. Meanwhile, commonly neglected dimensions, like Education & Skills and Social Progress & Cohesion, deteriorated and stagnated, respectively. Their contribution to the overall development of economic resilience remains disproportionally low.

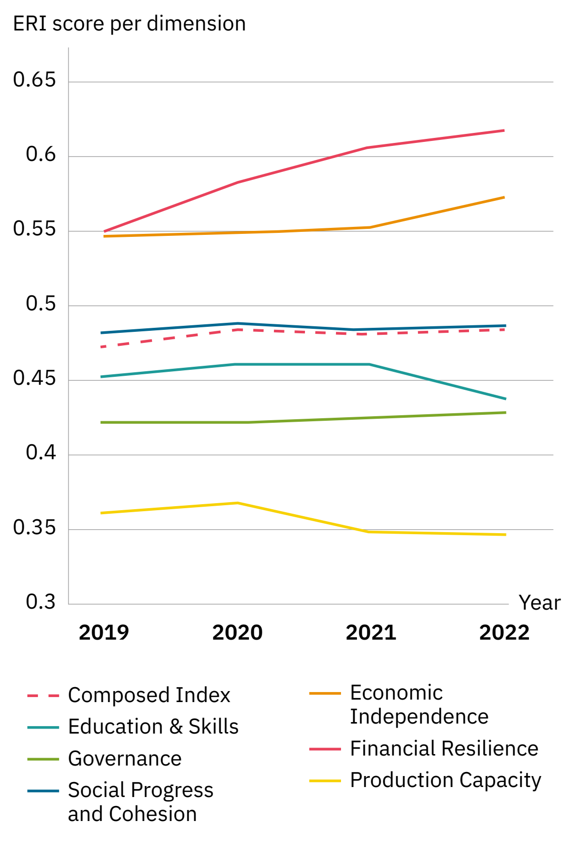


Figure 5: Development of the weighted EU-average ERI score per dimension

The analysis of the intertemporal development of economic resilience in the EU as measured by the ERI allows for three main conclusions:

- Firstly, there has been a trend of convergence between Member States from 2019 to 2022.
- Secondly, despite various crises, we do not observe an overall deterioration in economic resilience in the EU.
- Thirdly, the six ERI dimensions have not contributed to the overall development uniformly.

The remainder of this paper explores the relation of these observations to the RRF which is the main measure targeting resilience at the EU level of the past years. To illuminate the workings of the RRF, a bird's-eye view analysis is completed via a Member State deep dive of Germany, Romania, and Spain.

5. The ERI and the RRF 2019–2022

5.1 Correlation analysis

The RRF entered into force at the beginning of 2021 and is the most significant policy intervention to date targeting economic resilience at the EU level. This first-of-its-kind approach provides both grants and loans, the disbursement of which is conditional on the fulfilment of country-specific milestones and targets with respect to economic resilience. Hence, to understand influences on the development of ERI scores across Member States and with respect to the six dimensions of the ERI, it is worth examining the disbursement of RRF funds.

As with the development of ERI scores in the years since 2019 there is heterogeneity in the disbursement of RRF funds to Member States. A correlation analysis can therefore reveal whether Member States which received more RRF funds tend to have improved their ERI scores more than other Member States. The graphic below illustrates the disbursement per capita of RRF funds until 2022 to countries correlated with the change in their ERI score between 2019 and 2022.

The improvement of the ERI score was calculated with the base year 2019. Although it came into force at the start of 2021, the RRF can be used to fund reforms and investments dating back to the beginning of the COVID-19 pandemic in February 2020. As the available data allowed us to calculate the ERI up to the year 2022, we included all the RRF funds disbursed until the end of that year in the analysis. Clearly, some milestones that have been hit and financed before the end of 2022 will take more time to show their full effects. Also, as some ERI data for

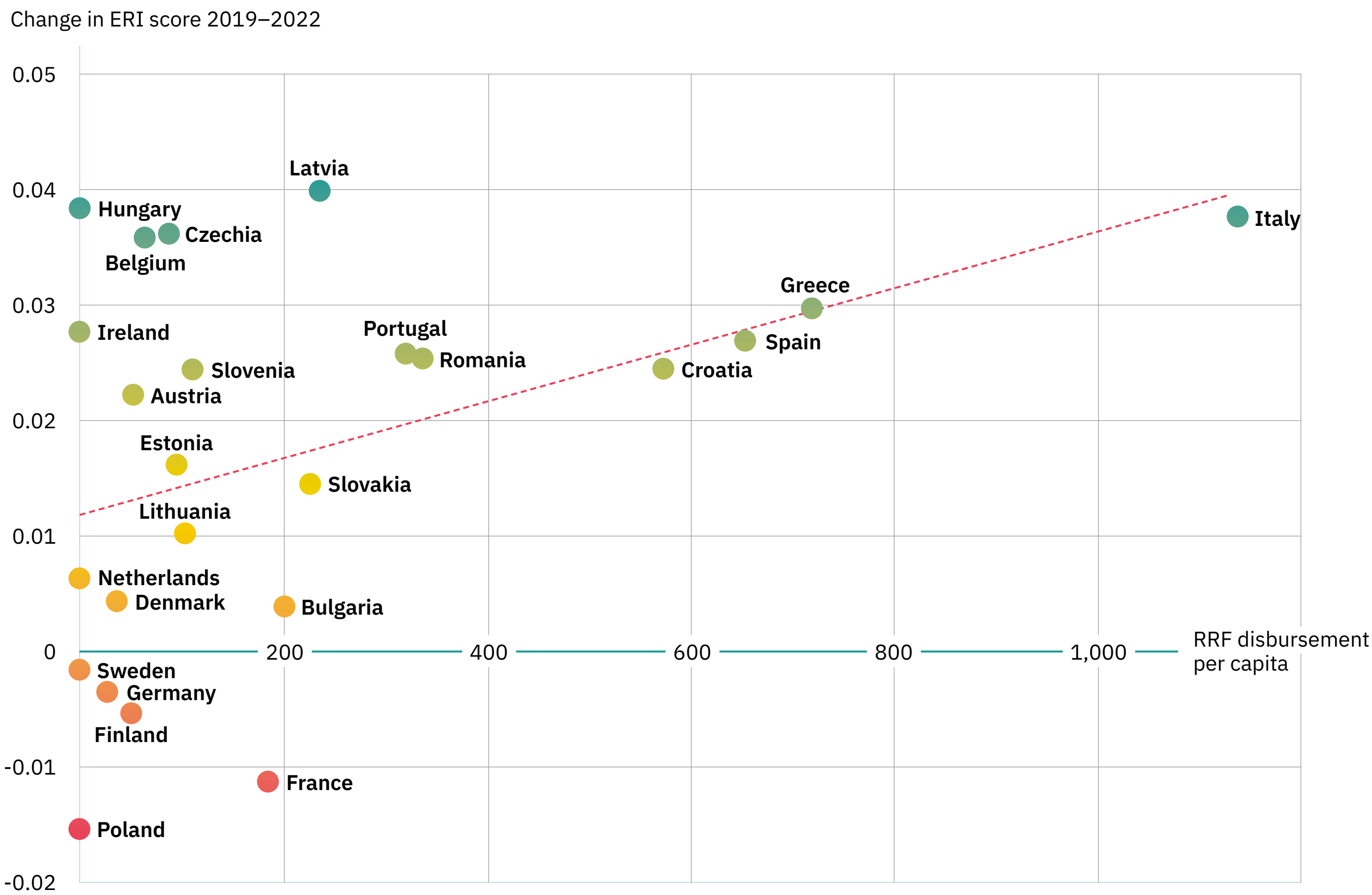


Figure 6: RRF disbursement per capita in € until 2022 in relation to the change in ERI score 2019–2022

the year 2022 was not collected at the end of the year, but at an earlier point, we can expect more effects to be observed in the future. In contrast, reforms that Member States have already initiated, but for which funding will only be disbursed in the next years, might show an effect already.

With a correlation coefficient of 0.42, we observe a low positive correlation between the change of countries' ERI score and their received RRF funds per capita.[5] The data supports a possible positive effect of the RRF on countries' performance in economic resilience. Such an effect was foreseeable, as increasing economic resilience is among the main goals of the RRF. Various factors shaping the ability of an economy to absorb, recover and adapt critically depend on policies that the RRF aims to incentivise, most prominently, the funding of reforms and investment. Improving economic resilience will often require access to finance, for example, to fund research and education, but also to improve institutional quality, social and regional cohesion, or energy independence.

Low correlation is not necessarily an indication that the RRF has not been impactful so far. First, although it is the largest fund in size[6], the RRF is not the only existing EU fund that can affect economic resilience. (Other examples include the European Regional Development Fund (ERDF), the Cohesion Fund (CF), the European Social Fund Plus (ESF+), and the Just Transition Fund (JTF)). Second, economic resilience is not influenced solely by the RRF funds themselves, but also by the design and quality of the policies implemented through the RRF and by other policies outside the scope of the RRF. The existence of other factors is illustrated by Hungary and Ireland. These countries did not receive any RRF funding but improved their ERI score considerably. Third, the concept of economic resilience that underlies the ERI is different from, and broader than, the prevailing understanding of economic resilience underpinning the RRF (see Chapter 2). Discussion of economic resilience tends to centre around topics like international competitiveness, supply chain vulnerability, and digitalisation. In contrast, the ERI assigns equal importance to dimensions like Social Progress & Cohesion and Education & Skills.

As seen in the previous chapter, the scores of these two ERI dimensions stagnated and deteriorated, respectively, despite the average weighted ERI score of the 24 EU countries having increased. Both Social Progress & Cohesion and Education & Skills dimensions show a negligible correlation to the disbursement of RRF funds. Countries' overall ERI score evolution exhibited a correlation coefficient of 0.42 with the disbursed RRF funds per capita. Meanwhile, the correlation of the change in the dimensions Social Progress & Cohesion and Education & Skills with the disbursed RRF funds had a coefficient of 0.26 and 0.05, respectively.

Considering that the RRF defines the promotion of social and territorial cohesion as one of its key objectives and aims to target education and skills as part of its Next Generation policy pillar (European Commission, 2024a), the disproportionally weak performance in these dimensions is alarming and warrants further investigation. To understand if these priorities are adequately addressed by the policies implemented and planned under the RRF, we undertook a deep dive into the National Recovery and Resilience Plans (NRRPs) of three Member States – Germany, Romania, and Spain. Using these examples, we sought explanations for the observed underperformances of two dimensions, Social Progress & Cohesion and Education & Skills. We also explore the potential to foster these in the RRF's remaining years.

5 Hungary is a salient outlier as it, despite its lack of access to EU funds was able to increase its Social Progress & Cohesion more than any other country in the sample. A more detailed discussion can be found in the annex.

6 It amounts to almost 60% on top of the entire EU multiannual financial framework for 2021–2027.

5.2 Deep dive into Member States' Recovery and Resilience Plans

In this chapter, we present a qualitative analysis of the reforms and investments (hereafter referred to as measures) funded by the RRF in three Member States. To refine our understanding of economic resilience and understand how countries aim to enhance it, we analysed NRRPs, in which Member States laid out the measures they committed to realise through the RRF. We paid special attention to two ERI dimensions: Education & Skills and Social Progress & Cohesion. Applying a qualitative category system, we comprehensively analysed the extent to which countries' measures address these issues. We also investigated the degree of policy integration and the NRRPs' transformative potential.

We focussed on these two ERI dimensions for two reasons. First, the resilience discourse on the European level tends to focus on issues of international competitiveness, supply chain vulnerability, environmental sustainability, and digitalisation, while paying less attention to social policy issues and socioeconomic cohesion considerations. This is also reflected in the fact that Member States were obliged to assign at least 37% of their RRF budget to sustainability-related measures and 20% to digitalisation measures, whereas no allocation requirements were put in place for social and cohesion measures. Second, our quantitative analysis indicates that these two dimensions have seen weak development, with Social Progress & Cohesion stagnating and Education & Skills even deteriorating over the period in question.

For the selection of countries, we employed a purposeful sampling approach (Patton, 2015) and selected information-rich and diverse cases based on Member States' ERI performance, the amount of funding received in the context of the RRF, and geographical variety. Considering these aspects, we conducted a deep dive analysis of Germany, Romania, and Spain.

For the analysis, we drew upon the European Commission's methodology for reporting on social expenditure in the context of the RRF (European Commission, 2021b) and amended it to fit the analytical needs of our investigation. We adjusted and broadened the Commission's category system to better account for issues of social inclusion and cohesion. In that way, the analysis covers RRF measures in the domain of social and cohesion policy (SCP). Here, we employed an extensional definition of SCP based on our category system[7], which comprises the following five, non-exclusive categories:

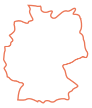
- **Employment & Skills:** measures in the areas of adult learning, training, skills as well as labour market policies.
- **Education & Childcare:** measures targeting early childhood education and care as well as general, vocational, and higher education.
- **Health & Long-term Care:** measures targeting the areas of healthcare and long-term care.
- **Social Inclusion & Protection:** measures focussed on the inclusion of vulnerable or disadvantaged groups and individuals, social protection, public provisioning, social housing, and public participation in political decision-making.
- **Regional Cohesion:** measures aimed at alleviating regional disparities and inequalities in terms of infrastructure, access to services, and socioeconomic development.[8]

Last but not least, the analysis builds on prior research, namely an analysis of NRRPs using the Recovery Index for Transformative Change (RITC) (Dirth et al., 2021). The RITC possesses a unique analytical strength for its capacity to assess RRF measures' potential to expedite systemic change. Here, systemic change refers to the extent to which NRRPs and the respective measures address root causes of societal challenges. A high potential for systemic change indicates that a country's NRRP comprehensively tackles the root causes of sociopolitical challenges in the domain of SCP , implying high

7 A detailed documentation of the NRRP analysis and the categorisation of SCP measures is available upon request.

8 Crucially, we only analyse measures that explicitly and directly address one of the categories. For instance, a measure targeting the digitalisation of SMEs may have positive employment effects; such a measure will, however, only be considered if this effect on employment is explicitly specified in the respective description of the plan.

transformative potential. Conversely, a low potential of systemic change is present when an NRRP merely tackles the symptoms of underlying structural issues.



5.2.1 Germany

Germany's total RRF plan amounts to €27.8 billion of which €26.4 billion can be accessed as grants. 42% of the total funds are planned to be used for climate objectives and 52% for the digital transition (European Commission, 2024a). However, in late 2023 Germany had only received 8% of the available grants, in the form of pre-financing. Only at the end of December 2023, the European Commission granted Germany access to another four billion Euros based on the achievement of 28 milestones and eight targets.

The reason for Germany's delay in accessing RRF grants has been attributed to its focus on national recovery programmes which made it less dependent on EU level funds (Schubert, 2023). The German federal court of audit (*Bundesrechnungshof*) is harsher in its critique: it argues that Germany failed to assign responsibilities in a way that ensures stability and efficiency in the realisation of measures necessary to receive RRF funding (Bundesrechnungshof, 2023). The major risk remains that Germany may fail to access part of its assigned grants due to its slow implementation, as all RRF measures must be realised by the end of 2026 (Bundesrechnungshof, 2023).

Our quantitative analysis indicates that Germany's ERI score stagnated between 2019 and 2022. While Germany's performance in the ERI dimension of Financial Resilience improved, the dimensions of Production Capacity, Social Progress & Cohesion and Education & Skills all exhibited a negative trend. The resilience determinant Social Cohesion is a key driver of this negative development. Since the onset of the COVID-19 pandemic and ensuing crises, the number of people at risk of poverty or social exclusion in Germany has risen considerably, from 17.3% to 20.9%. Recently published PISA results furthermore indicate a deterioration of education quality in Germany over the past four years (OECD, 2023b).

Social and Cohesion Policies in Germany's NRRP

Germany's SCP measures primarily focus on the domain of Education & Childcare, with almost half of all SCP measures in Germany's NRRPs addressing this area. Germany seeks to improve childcare services via an investment programme targeting the creation of new, and refurbishment of existing, childcare facilities. This measure represents a meaningful policy insofar as Germany lacks more than 429,000 daycare openings (Zinsmeister, 2023). This measure not only improves the availability of childcare services but also supports women's labour market participation and is hence an important auxiliary measure for promoting gender equality. Germany's NRRP also contains a measure to provide extra educational support to students with a learning backlog. This measure is notable, as it can help to alleviate disparities in educational attainment, thus also contributing to Social Inclusion & Protection.

The analysis of Germany's NRRP revealed that no SCP measure targets the category of regional cohesion, even despite the persistence of regional disparities along the West-East divide. Available income in Eastern Germany is still 11% below that in Western Germany and more people in Germany's East live in areas shaped by a shrinking population and comparatively low-quality public infrastructure (Der Beauftragte der Bundesregierung für Ostdeutschland, 2023). Moreover, 478 of the 500 largest companies in Germany are located in the West (ZDF, 2023). In this regard, Germany's NRRP would have clearly benefitted from special attention paid to regional cohesion measures, like targeting public infrastructure or channelling regional investment into socioeconomic development. Lastly, Germany's NRRP addresses the other three SCP categories to a moderate extent.

In most cases, Germany's SCP measures address only a single category. Only 21% of the measures analysed address one or more categories simultaneously which may indicate the lack of an integrated approach in the German NRRP, with measures oftentimes remaining in policy silos rather than applied through a more horizontal approach.

The transformative potential of Germany's Social and Cohesion Policies

Let us now turn to the question of the extent to which Germany's SCP measures tackle root causes of SCP issues. Overall, the transformative potential of Germany's SCP measures remains relatively low. While measures in the plan's component *Digitalisation of education* contribute to digital skills development and the modernisation of existing infrastructure, there is a distinct lack of measures focussing on the inclusion of disadvantaged groups. Measures of the component *Strengthening social participation* are very much centred around alleviating the negative effects of the pandemic on social security systems and the labour market in the short term. They unfortunately lack a long-term vision of how to transform these areas to achieve better social outcomes. Lastly, the component *Strengthening of a pandemic-resilient healthcare system* centres around modernising and digitising existing healthcare infrastructure. While these measures likely contribute to better health outcomes, there is no consideration of how to improve access to healthcare for socially disadvantaged individuals or a vision for fundamentally restructuring healthcare provisioning practices.

5.2.2 Romania

The RRF provides €15 billion in loans and another €14 billion in grants to Romania. In its NRRP, Romania allocates 41% of the total funds to climate objectives and another 20% to the digital transition. Until now, it has fulfilled 14% of its targets and milestones and received 24% of the available volume of loans and 40% of the available volume of grants (European Commission, 2024a).

Romania's ERI score has seen a considerable increase since 2019, when it was the EU's second least resilient country (23 out of 24). This improvement is multi-dimensional, with higher scores in the resilience dimension of Social Progress & Cohesion being a relevant driver. Indeed, in comparison with other Member States, Romania is one of the countries with the biggest increases in the dimension of Social Progress & Cohesion. The observed improvements encompass the resilience determinants Gender Equality, Employment Quality and Social Cohesion. Moreover, Romania performed above average in the resilience dimension Education & Skills, thanks to its improved rate of adult participation in education. However, this positive trend has been dampened by the worsening of executives' perception of the availability of skilled labour.

Social and Cohesion Policies in Romania's NRRP

Romania's NRRP has a dual focus on Education & Childcare and Social Inclusion & Protection. Another notable feature of Romania's plan is the explicit consideration of regional cohesion in various components and measures. Employment & Skills are moderately addressed by Romania's plan, while the category Health & Long-term Care is given little attention.

With respect to the category Education & Childcare, Romania's plan stands out in terms of its extensive component *Education*, which comprises a wide variety of often horizontal measures. The measures are characterised by their comprehensive coverage of educational issues, seeking to improve early childcare education, the school system as well as tertiary education. Particular attention is paid to improving the accessibility to educational infrastructure for both socioeconomically disadvantaged groups as well as rural communities, thus also contributing to Social Inclusion & Protection as well as Regional Cohesion. Another notable feature is the explicit consideration of sustainability when it comes to establishing new educational infrastructure such as new preschools, university campuses, or environmentally-friendly minibuses for student transport. Romania's focus on improving in the area of Education & Childcare in its RRP is meaningful, as it falls behind the OECD average for secondary and tertiary education enrolment (OECD, 2023a).

In terms of Social Inclusion & Protection, Romania's plan again displays an impressive diversity of measures and comprehensiveness. One of the most striking aspects of Romania's plan is the consideration of people's access to basic services with a special focus on socioeconomically disadvantaged groups and regions. Here, Romania's plan puts forward measures seeking to support the connection of the low-in-

Best practice measure in Romania: Domestic Work Vouchers

In April 2022, Romania decided to implement a system of vouchers for the payment of domestic work. The objective of this reform is to reduce undeclared work, provide incentives to formalise work, increase social security coverage, and allow inactive persons to find employment. Incentives for both domestic workers and their employers are incorporated into the policy to increase its usage. Tickets (valued at 15 Lei/€ 3) are issued by the Romanian National Employment Agency and can be bought to pay domestic workers. Households spending at least 600 vouchers per year receive 75 free vouchers (amounting to € 228) while workers who are paid with the vouchers are re-warded with free healthcare insurance if they redeem a minimum of 85 tickets per month. Moreover, they benefit from a reduced tax burden on their income.

Thereby, the measure is conceptualised multidimensionally, addressing the high informality in the domestic labour sector, and a lack of healthcare coverage while simultaneously stimulating demand for domestic workers, which, just like the reduced tax burden will primarily benefit the low-est income workers. Moreover, in the long run, the formalisation of the domestic work sector should allow for additional tax revenue and thereby im-prove public finances (Pop, 2022).

come population to water and sewage networks, to facilitate inclusive access to housing and mobility in urban areas, to promote the access of the senior population to long-term care facilities, as well as to improve access to basic healthcare services in marginalised communities. Such a focus is crucial, given that basic service access remains challenging for a large share of the population in Romania: in several regions, less than 30% of the population has access to the sewerage system and less than 40% of the population is connected to the water network (Statista, 2023). Beyond this focus on access to basic services, Romania's plan includes several measures that seek to improve on democratic governance practices and enhance civil society involvement in decision-making processes. Moreover, Romania's plan comprises crucial social reforms aiming to improve living standards of low-income households, such as increasing the adequacy of the lowest pensions and providing social assistance through a *Minimum Inclusion Income*. Lastly, measures address pivotal societal issues such as the inclusion of persons with disabilities and citizens' access to the judicial system.

In terms of policy integration, it is remarkable that 43% of Romania's SCP measures address multiple social categories simultaneously which may indicate a high level of policy integration based on an understanding of the interconnectedness of socioeconomic issues. Measures in the domains of Education & Childcare as well as Health & Long-term Care often address issues of Regional Cohesion and Social Inclusion & Protection, respectively.

The transformative potential of Romania's Social and Cohesion Policies

Regarding the potential of Romania's NRRP to contribute to systemic change, we assessed that Romania's SCP measures have medium transformative potential, partially addressing root causes of social challenges. The capacity of policy interventions to bring about systemic change is particularly apparent with respect to those measures that seek to enhance the population's access to basic services, especially those targeting socioeconomically disadvantaged regions and households. Ensuring access to basic services such as housing, education, and healthcare directly tackles structural issues that give rise to and perpetuate multidimensional inequalities. Moreover, Romania's plan includes measures that support civic engagement in political decision-making and enhance access to the judicial system, both of which are structural preconditions for democratic governance. On a more critical note, Romania's efforts to combat poverty through improving the adequacy of lower pensions and providing social assistance through a *Minimum Inclusion Income,* while important, treat symptoms rather than the structural causes of income inequalities. Furthermore, Romania's SCP measures would have benefited from a stronger focus on tackling structural issues that perpetuate gender inequalities. Lastly, Romania's plan lacks a coherent vision of how the green transformation of its economy can be orchestrated in a socially-just and equitable manner.

5.2.3. Spain

Spain can obtain grants with a volume of up to €80 billion through the RRF and another €83 billion in the form of loans. Over half of the planned expenditures foster objectives of the green transition, while nearly 30% address the digital transition. At the end of 2023, Spain had received more than half of its allocated grants and was, after Italy and Greece, the country with the highest per capita disbursement of RRF funds. Of its initially set milestones and targets, it has already fulfilled 29% (European Commission, 2024a).

Between 2019 and 2022 Spain's ERI score saw a considerable increase. Most notably, it was able to improve in the resilience dimensions of Financial Resilience and Education & Skills, the latter being primarily driven by a higher participation rate of adults in education. Even though it improved less in the dimension of Social Progress & Cohesion, Spain achieved progress through lowering the gender employment gap and improving job satisfaction.

Social and Cohesion Policies in Spain's NRRP

The SCP measures of Spain's NRRP distinctly focus on the categories of Employment & Skills and Social Inclusion & Protection, with both categories being addressed by more than half of all analysed measures. This focus, however, comes at the expense of the other three categories, which receive relatively little attention in Spain's plan.

Regarding the category of Employment & Skills, Spain's SCP measures are characterised by a high degree of variety. Spain's NRRP comprises several impactful measures, including re- and upskilling programmes for the green transition, enhancing the development of digital skills, vocational trainings for low-skilled individuals, supporting the creation of green jobs, active labour market policies, as

Best practice measure in Spain:
The 'Riders' Law

The so-called Riders Law is a reform implemented in the early stages of the RRF and came into force in August 2021, after an agreement was found through a tripartite social dialogue between representatives of the government, unions, and businesses. Its objective is to regulate the working conditions of riders who, through platform companies, are engaged in delivery activities to third parties. The reform intended to create fair and equal treatment in terms of working conditions and the right to access training and social protection, including sick and maternity leave, accident insurance, and unemployment benefits and training through establishing an employment relationship between the (digital) company and the rider.

Moreover, it aimed to increase the transparency of the algorithms and systems which determine working conditions. The inclusion of such a right to 'algorithm transparency' made the law the first of its kind implemented on a national level. By obliging platform companies in the delivery sector to recognize the riders working for them as employees, Spain sets a novel example of improving riders' working conditions by addressing a root cause of precarity in the platform economy – the disguise of a dependent employment situation as self-employment. In 2023, more than 2,000 workers were covered by the new law. Beyond fostering stability and social benefits cover-age, the law also contributes to creating an entrance point to the labour market for riders, who often are students or migrants, by increasingly facilitating internal promotions of riders to coordinating and administrative positions (European Commission, 2021a; Global Deal, 2023).

well as strengthening collective bargaining. A notable feature of Spain's SCP measures in this category is the high level of consideration of Social Inclusion & Protection aspects. A myriad of measures focus on enhancing skills and employment opportunities of disadvantaged social groups, such as women and platform workers. Here, relevant measures include interventions to reduce the gender pay gap through pay transparency measures and improving the working conditions of platform workers and their access to social protection (see best practice measure). Moreover, a variety of measures are tailored towards improving the skills and labour market integration of the younger generation. This focus is expedient, given that Spain has the highest youth unemployment rate in Europe, amounting to 26.8% in 2023 (Statista, 2024).

The second focus of Spain's SCP measures are interventions in the domain of Social Inclusion & Protection. Here, the measures envisioned in Spain's NRRP cover a comprehensive range of topics relevant for SCP. Most notably, Spain's plan comprises a multitude of measures that seek to improve broad access to, and improve the affordability of, basic services such as healthcare, education, digital infrastructure, and housing. Several measures with a primary focus on sustainability also pay attention to social inclusion, for instance by considering gender equality or energy poverty. Further SCP measures in this category include interventions to improve welfare state provisioning through a focus on poverty reduction, a minimum income scheme, and guaranteed adequate pensions. Beyond these general reflections, two aspects of Spain's NRRP deserve special recognition. First, Spain has measures dedicated to improving its capacities within the realm of migration policy, such as reforming the reception system to reduce long wait times and low recognition rates for individuals eligible for international protection. Second, two measures directly tackle issues of gender-based violence and sexual exploitation by creating 24-hour assistance centres, facilitating access to legal advice and psychological support, and establishing a dedicated support line. These measures seem highly appropriate given the fact that 24.4% of women aged 16 or older in Spain have experienced physical or sexualised violence by a man (Amnistía Internacional, 2023).

In terms of policy integration, our analysis indicates that almost half of Spain's SCP measures address two or more categories simultaneously. This horizontal approach to policymaking is particularly apparent when it comes to Social Inclusion & Protection. Spain's NRRP oftentimes incorporates social inclusion considerations into the policy design of measures spanning from sustainability- and digitalisation-centred measures to Education & Childcare as well as Employment & Skills.

The transformative potential of Spain's Social and Cohesion Policies

Analysing the transformative potential of Spain's NRRP, Spain's SCP measures have a high potential to bring about systemic change. This is mainly due to root causes of pressing socioeconomic issues being tackled in a wide range of different policy areas. The mainstreaming of social inclusion in various policy areas as well as the promotion of affordable and equal access to basic services constitutes a meaningful approach, as these interventions help to alleviate existing socioeconomic inequalities. Here, the focus on promoting gender equality deserves special attention given that respective measures address the structural discriminations women face in all areas of life. Strengthening of workers' rights and collective bargaining represents a significant contribution to altering societal power structures and empowering workers. A particularly transformative component in Spain's NRRP is the Just transition component. Measures in this component not only aim to alleviate the short-term negative social impacts of phasing out fossil fuel industries but also provide a long-term vision for the population by offering training and re-skilling programmes, creating new job opportunities, and fostering low-carbon economic development in affected regions. While systemic change aspects are well addressed by Spain's SCP measures, one area where additional transformative potential could have been realised is the dimension of Regional Cohesion, which Spain's NRRP rarely addresses.

5.2.4 Reflections on economic resilience and the role of the RRF

Based on the deep dive analysis and the systematic investigation of the three NRRPs, we conclude this chapter with some reflections on economic resilience and the role of the RRF:

A positive impact of the RRF on the development of economic resilience: First, the deep dive analysis supports the conclusions drawn from the correlation analysis in Chapter 5.1, namely that the RRF has had a positive impact so far on economic resilience, as assessed by the ERI. In particular, the qualitative analysis highlights that receiving additional budgetary resources from the RRF enables Member States to plan and implement resilience-enhancing SCP measures, the individual effects of which are likely to further unfold in the medium to long term.

RRF funded SCP measures contributed to socioeconomic convergence and integration: Second, the analysis of the three NRRPs indicates that the amount of RRF funding has important implications for the comprehensiveness of the respective plans in the domain of SCP. Unsurprisingly, countries such as Romania and Spain could devise broader and more ambitious plans given the high amount of per capita funding they received. The additional fiscal space enabled them to implement innovative measures, as illustrated by the two best practice examples in Romania and Spain. Given these considerations, we can tentatively conclude that the RRF and the measures it funded can contribute to socioeconomic convergence and integration in Europe.

Low prioritisation of Regional Cohesion and Health & Long-term Care in NRRPs: Third, in our sample of NRRPs, we observe a relatively low prioritisation of SCP measures targeting the categories Regional Cohesion and Health & Long-term Care. The low prioritisation of Regional Cohesion is particularly striking given that uneven socioeconomic developments within countries are of major concern when it comes to economic resilience. Issues of Health & Long-term Care are of similar importance when considering demographic developments in Europe and the possibility of future pandemics.

High prioritisation of Social Inclusion & Protection and Employment & Skills: Fourth, the deep dive analysis indicates that the three countries put high emphasis on Social Inclusion & Protection in their plans. This focus is expedient given that socioeconomic inequalities, inadequate access to basic services, and issues of social exclusion remain persistent challenges to Europe's economic resilience. The plans also exhibit a focus on Employment & Skills, which is similarly meaningful given the labour market challenges workers are encountering in the face of the green and digital transition. Lastly, the NRRPs analysed moderately address issues in the category of Education & Childcare.

NRRPs exhibit varying degrees of policy integration and systemic change potential: Fifth, the three NRRPs vary considerably when it comes to the level of policy integration as well as their potential to expedite systemic change. The RRF presented Member States with the unique opportunity to devise and implement horizontal and transformative measures to tackle contemporary policy challenges; an opportunity that not all Member States, however, leveraged to its full potential.

6. Key take aways

In this paper, we monitored EU Member States' economic resilience during a crisis-ridden period between 2019 and 2022, using the Economic Resilience Index (ERI). By quantifying a holistic concept of economic resilience into 27 measurable indicators and six economic resilience dimensions, the ERI represents a tool for measuring how well economies are performing with respect to a holistic concept of economic resilience based on a social-ecological approach.

We examined the evolution of Member States' ERI scores in the context of the RRF to explore the success of this instrument in building holistic economic resilience.

The analysis reveals that overall economic resilience has not decreased, despite the various crises the EU faced in these years. However, this development is uneven across economic resilience dimensions. There has been notable progress in the dimensions Financial Resilience and Economic Independence. However, Governance, Social Progress & Cohesion, Production Capacity, and Education & Skills do not demonstrate the same upwards trajectories (see Figure 5).

One key observation is a **convergence trend among Member States,** where those with lower initial scores improved their ERI score more than those with higher initial scores. The difference in ERI scores between the highest-performing and the lowest-performing country is smaller in 2022 than it was in 2019. Countries that have improved the most include Latvia, Italy, and Hungary, while Poland and France saw declines.

Our analysis suggests a **potential link between positive economic resilience trends and disbursements from the Recovery and Resilience Facility (RRF).** While the RRF plays a crucial role, its impact depends on factors beyond per capita fund allocations, including the quality of planned reforms and investments.

A higher degree of policy integration has positive effects on social progress and cohesion. Our deep dive analysis investigated three Member States' NRRPs in detail, focussing on measures in the domain of social and cohesion policy. This qualitative analysis assessed the degree of policy integration and the plans' potential to bring about systemic change. Germany's plan is relatively unambitious when it comes to innovative and transformative measures in the domain of social and cohesion policy and exhibits a low degree of policy integration. Conversely, both Romania's and Spain's NRRPs offer a much more comprehensive array of social and cohesion policies with clear potential to enhance their economic resilience in the mid to long term. While both countries' measures are characterised by a high degree of policy integration, Spain's NRRP stands out in terms of an exemplary level of transformative potential that goes beyond simply addressing the symptoms of structural socioeconomic challenges.

Reflecting on the deep dive analysis, we maintain that the RRF measures in the three analysed countries exhibit a **moderate bias towards interventions in the areas of Employment & Skills, Education & Childcare, and Social Inclusion & Protection,** while measures targeting Health & Long-term Care as well as Regional Cohesion received less attention.

The conjunction of our quantitative and deep dive analysis indicates that the **RRF is, and will continue to be, a crucial tool for enhancing economic resilience,** as it creates additional fiscal space on the Member State level. This, in turn, enables countries to implement impactful and innovative measures. Thus, in the analysed countries the RRF has demonstrated substantial potential not only to drive short-term economic recovery but also to contribute significantly to long-term progress in building economic resilience.

Policy Recommendations

As governments grapple with the dual challenge of managing short-term shocks and steering a transition towards sustainable, inclusive societies, this study underscores the importance of a holistic, nuanced approach to economic resilience. Building more resilient economies is not merely about bolstering classic, conventional dimensions but about ensuring progress across the broad range of dimensions necessary for economies to thrive. The insights about the development of economic resilience in the EU in the crisis-ridden period of 2019–2022, led us to make the following practical recommendations for policy discussions:

A longer-term approach to funding for economic resilience

- The RRF is a crucial instrument for increasing economic resilience in the EU and should be upgraded and have its time horizon extended.
  - **A long-term follow-up instrument to enhance economic resilience:** Strengthening economic resilience will be just as important after 2026 and needs to be a long-term goal. The RRF has been particularly beneficial for Member States with less fiscal space and has enabled them to fund important reforms and investments they would not otherwise have been able to fund. For this reason, a follow-up instrument after the expiration of the RRF in 2026 is needed to avoid a return to a situation in which only certain Member States can implement resilience-enhancing reforms and investments.
  - **Include targets for social spending:** The RRF has provided crucial incentives to Member States to advance long-term priorities including social progress and cohesion which is a necessary condition for lasting economic resilience. To ensure that the social dimension is addressed in any follow-up instrument, policymakers should consider integrating a target for the share of social spending, as they did with the 37% target for green spending in the RRF.
  - **Strengthen the transformative potential of measures:** Beyond guaranteeing that future funding is directed towards building holistic economic resilience, it is crucial that funded measures do not primarily treat symptoms of structural issues but focus on tackling the underlying root causes of challenges that hinder long-term economic resilience. For that purpose, the Commission should guide and inform Member States in their efforts to devise and implement transformative measures.

- **Prioritise economic resilience rather than GDP levels:** Given that GDP is an unreliable indicator of economic resilience, a follow-up instrument could be made more effective in increasing economic resilience with the introduction of a mechanism that takes into account the ERI scores of Member States (Bertram et al., 2023). Hence, the coherence between a future fund and its purpose can be improved by using issue-specific metrics such as the ERI for allocating funds among Member States (Kaufmann et al., 2023).

A more comprehensive evaluation of the RRF

- Evaluation of the RRF should be expanded to more holistically evaluate economic resilience. To guide the EU towards a resilient economy, indicators for evaluating the progress of the National Resilience and Recovery Plans (NRRPs) must serve as clear markers.
  - **Social and environmental indicators:** For future evaluations, enhancements to the common indicators used for monitoring progress on NRRPs are essential (European Commission, 2024b). These should integrate the social and environmental aspects of the six pillars of the RRF into the proposed set of indicators. They should formally incorporate the social methodology and include the monitoring of indicators assessing compliance with the mandatory 'Do No Significant Harm' (DNSH) principle. Moreover, we suggest the DNSH principle be extended to cover social issues to guarantee that measures do not

exacerbate socioeconomic inequalities or lead to increased risks of social exclusion.

- **Focus on outcomes:** The assessment of outcomes rather than merely outputs should be emphasised when evaluating the NRRPs.
- In addition to using the ERI for allocating funds ex-ante, regular ex-post measurement of progress should also use the ERI as a measure of holistic economic resilience.
- The European Commission's Resilience Dashboard and Resilience Report are a good starting point. An additional qualitative discussion of the results is important for deriving key political priorities for the improvement of economic resilience.

Keeping economic resilience at the top of the agenda by promoting long-term thinking beyond the RRF

The unpredictability of future challenges necessitates ways of working that systematically balance short- and long-term thinking in policymaking, investments, budgetary allocation and impact assessments. Embedding long-view thinking throughout the policy cycle can be done by:

- **Embedding Strategic Foresight:** Rigorously embed the existing strategic foresight work of the Commission into the policy cycle. Since 2019 there has been good progress in developing the foresight function. Now this function can be further embedded so that it feeds into the Commission's annual work plan and budget, and so that learning from models and scenarios is systematically embedded into strategic planning.

- **Utilising defined metrics:** Monitor progress towards the renewed vision of Europe using relevant indicators, ensuring resource allocation aligns with this vision by utilising socioeconomic and environmental metrics to define and enforce binding political targets and distribute budgetary resources among Member States.

- **Visioning:** Foster dialogue between European institutions and the public to envision a future Europe by building bridges through regular engagement.

- **Utilising ongoing citizen participation processes** like visioning exercises and deliberative mechanisms such as citizen assemblies or futuring techniques to engage citizens in shaping a forward-looking Europe.

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Annex

Annex 1: Change of ERI scores 2019–2022

Country	ERI Score 2019	ERI Score 2020	ERI Score 2021	ERI Score 2022	Δ ERI Score 2019 to 2022
Belgium	0.5249	0.5351	0.5636	0.5609	0.036
Bulgaria	0.3095	0.3113	0.305	0.3132	0.004
Czechia	0.4761	0.4855	0.4847	0.5122	0.036
Denmark	0.698	0.7114	0.7067	0.7027	0.005
Germany	0.5663	0.5748	0.5679	0.5625	-0.004
Estonia	0.5091	0.5341	0.5385	0.5252	0.016
Ireland	0.5378	0.561	0.5654	0.5655	0.028
Greece	0.2685	0.28	0.3048	0.2982	0.03
Spain	0.4222	0.4281	0.4315	0.4487	0.027
France	0.5256	0.5268	0.5221	0.5141	-0.011
Croatia	0.405	0.4031	0.4206	0.4293	0.024
Italy	0.3794	0.4028	0.4149	0.4169	0.038
Latvia	0.4001	0.4389	0.4355	0.4399	0.04
Lithuania	0.4078	0.42	0.4239	0.4181	0.01
Hungary	0.3943	0.4041	0.4176	0.4327	0.038
Netherlands	0.6243	0.6477	0.6478	0.6306	0.006
Austria	0.5313	0.5492	0.5479	0.5536	0.022
Poland	0.3927	0.3864	0.3689	0.3772	-0.015
Portugal	0.4265	0.4468	0.4138	0.4523	0.026
Romania	0.2892	0.2898	0.2943	0.3147	0.026
Slovenia	0.5484	0.5671	0.5667	0.5728	0.024
Slovakia	0.3921	0.3972	0.4054	0.4064	0.014
Finland	0.675	0.6901	0.6916	0.6699	-0.005
Sweden	0.7256	0.7202	0.7416	0.7239	-0.002

Annex 2: Difference between ERI scores in 2022 vis-à-vis scores in 2019 per dimension

Country	Economic Indepence	Education & Skills	Financial Resilience	Governance	Production Capacity	Social Progress and Cohesion
Belgium	0.011	0.05	0.057	0.126	-0.035	0.021
Bulgaria	0.014	-0.069	0.114	-0.043	0.004	0.012
Czechia	0.067	0.079	0.075	0.042	0.008	-0.029
Denmark	0.025	0.002	0.007	0.06	-0.058	-0.007
Germany	0.009	-0.013	0.075	-0.006	-0.062	-0.021
Estonia	0.023	0.049	-0.096	0.092	-0.002	0.026
Ireland	0.098	-0.002	0.151	0.065	-0.158	0.005
Greece	0.028	-0.053	0.106	-0.039	0.104	0.032
Spain	0.026	0.047	0.046	0.013	0.004	0.025
France	0.021	-0.134	0.067	-0.01	-0.016	-0.007
Croatia	0.004	0.067	0.05	0.003	0.008	0.017
Italy	0.019	0.011	0.107	0.054	0.039	0.012
Latvia	-0.003	0.071	0.035	0.084	0.026	0.038
Lithuania	0.052	-0.05	0.031	0.041	-0.002	-0.011
Hungary	0.065	0.07	0.067	-0.041	0.005	0.051
Netherlands	0.052	0.006	0.069	-0.059	-0.082	0.028
Austria	0.065	0.005	0.039	0.055	-0.035	0.004
Poland	0.024	-0.071	0.034	-0.102	-0.006	0.007
Portugal	0.035	-0.011	0.048	0.064	0.023	0.004
Romania	0.033	0.013	0.059	-0.011	0.02	0.034
Slovenia	-0.012	0.038	0.113	-0.01	0.015	0.016
Slovakia	0.059	0.069	-0.012	-0.017	-0.013	-0.002
Finland	0.027	-0.059	-0.022	0.078	-0.086	0.014
Sweden	0.007	0.023	0.005	0.115	-0.098	-0.044

Annex 3: The Economic Resilience Index – Notes on data, methodology, aggregation, and intertemporal comparability

The Economic Resilience Index is a composite index which summarises the information given by its 27 determinants in a single number. To compare such different indicators as for example the household saving rate and the export partner concentration it is necessary to normalise the data to a common scale. There are various approaches to normalisation, and it is important to consider their implications for two reasons. Firstly, normalisation creates a correspondence system: For instance, it determines what number of patents per inhabitant equals what level of resource productivity. Secondly, it can assign an implicit weight to the different indicators, as the normalisation method determines the resulting range of values on the new scale. We opt to normalise the ERI using the min-max method. Thereby, all indicators are brought onto the same scale with the extreme values observed within the sample being assigned a 0 or 1 respectively and all other values rescaled accordingly (OECD et al., 2008). As all values of one indicator are rescaled with regard to the same benchmark, the intertemporal comparison of the index is ensured. For instance, if a country improves its ERI score from a 0.7 to a 0.8 this represents an absolute improvement over time.

The consecutive step of constructing a composite index is the choice of an aggregation method. We chose to give equal weight to each of the determinants. This is the most typical methodology of composite indexes and was chosen to avoid normative value-judgement by the researchers (Greco et al., 2019). Moreover, we design the index to be compensatory. As a consequence, the contribution of one variable to the index is not moderated by the level of another variable. This choice might be controversial in certain applications, as the number of hospital beds might not compensate for a lack of doctors and vice versa (Greco et al., 2019). However, as most of the 27 determinants in the ERI contribute to several resilience abilities and capacities they should be understood as somewhat compensatory for each other.

The inclusion of such a wide range of indicators and constructing a time series for the very recent past brings some challenges. We countered two challenges:

1. Lack of availability of some data points because data is not collected yearly or because it is not yet available for 2022 and
2. Lack of data for a specific country. In the former case, we decided to impute the data.

For constructing the ERI 2022 we always use the most recently available data, which in four cases was only available from 2021. If there were data gaps because information is not collected on a yearly basis, we made use of a simple linear imputation. In the case of the PISA study, for example, we imputed the values for the years 2019–2021 based on the results of 2018 and 2022. If no data was available of some indicators for some country, the ERI was calculated based on the reduced number of variables. This effected Bulgaria, Croatia, and Romania. Malta, Luxembourg and Cyprus were excluded from the analysis because for each more than 2 indicators were not available.

Annex 4: Details on Hungary's Social Progress & Cohesion performance

Hungary is a salient outlier as it, despite its lack of access to EU funds was able to increase its Social Progress & Cohesion more than any other country in the sample. This increase is mainly driven by the higher share of people stating they are satisfied with their employment but also by a decreasing employment gap between men and women and finally a higher regional cohesion, as its poorest NUTS2 region Észak-Alföld, was able to increase its income more than Budapest, the country's richest region. The gender employment gap might reduce due to higher participation chances of women in the labour market and better childcare offers. However, it might also decrease out of an increasing economic necessity for a second income of families or even because a disproportional number of men are losing their jobs. To some degree this seems to have happened in Hungary as the male employment gap rose by roughly 0.6 percentage points between 2019 and the end of 2022 while that for women only rose by 0.3 percentage points. In any case, Hungary's achievements in terms of the reduction of the gender employment gap are less impressive than they appear: between 2009 and 2016 the gap has continuously been lower than its new low in 2022. Cases like this show the shortcoming of applying the ERI to a limited time frame. Another potential issue resulting from this application is the possibility that policies facilitated through the RRF only impact economic resilience with a lag, limiting the visibility of effects so shortly after their implementation.

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